

UNITED STATES OF AMERICA NUCLEAR REGULATORY COMMISSION

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FOR DESIGN CERTIFICATION

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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BRIEFING BY GE ON STATUS OF ABWR
APPLICATION FOR DESIGN CERTIFICATION

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PUBLIC MEETING

Nuclear Regulatory Commission
One White Flint North
Rockville, Maryland

Wednesday, January 26, 1994

The Commission met in open session,
pursuant to notice, at 10:00 a.m., Ivan Selin,
Chairman, presiding.

COMMISSIONERS PRESENT:

IVAN SELIN, Chairman of the Commission
KENNETH C. ROGERS, Commissioner
FORREST J. REMICK, Commissioner
E. GAIL de PLANQUE, Commissioner

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STAFF AND PRESENTERS SEATED AT THE COMMISSION TABLE:

SAMUEL J. CHILK, Secretary

WILLIAM C. PARLER, General Counsel

S.R. SPECKER, Vice President, GE Nuclear Energy

J.R. QUIRK, Project Manager, ABWR Certification
Program, GE

S.A. HUCIK, Manager, ABWR Projects, GE

D.R. WILKINS, General Manager, Nuclear Services and
Projects, GE

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

10:05 a.m.

CHAIRMAN SELIN: I'm sorry we're late, Mr. Specker. We'll, of course, give you the time at the end of the presentation to make up.

In any event, we're very pleased to have you here today. The status of the ABWR application for design certification is an important point. We're getting down close to the end and we're interested in your views of just how close, what other issues are out, et cetera. A number of significant issues have been dealt with the first time and in some sense it's a little unfair that your application was the first because you ended up solving both generic and specific problems along the way. But I think it's been -- certainly been a valuable experience for the Commission and the staff and I hope GE has also done okay in this sense.

I would like to reiterate one point that I've made to both GE and Combustion Engineering. At this point there is no order anymore. Well, let's rephrase that. You each have your own airplane, you have your own controller, your own runway and your own gate. So, each of the two applications is on its own schedule. Neither one will affect -- once the generic

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1 issues were addressed almost a year ago, neither one
2 will affect the status of the other one.

3 I understand the staff will be briefing
4 the Commission this Friday on the overall progress of
5 the design certification review. So, your
6 presentation is particularly timely.

7 Commissioners, did you have any opening
8 remarks?

9 COMMISSIONER REMICK: No, thank you.

10 CHAIRMAN SELIN: Mr. Specker, thank you
11 again for coming. We look forward to your
12 presentation.

13 DOCTOR SPECKER: Okay. Thank you. It's
14 a pleasure for the GE Nuclear Energy Team to be here
15 again today to brief you on our ABWR programs. I was
16 just told this is our eighth such briefing in this
17 series.

18 With me today are Doctor Dan Wilkins, who
19 I believe you all know, and Joe Quirk, who is the
20 project manager of ABWR Certification. And a new face
21 at the table is Mr. Steve Hucik who is our recently
22 appointed manager of ABWR Projects. Steve has about
23 20 years of experience with GE Nuclear Energy, the
24 last 12 of which have been intimately involved with
25 the ABWR in design and project management.

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1 (Slide) Our agenda for today's briefing
2 is shown on the next chart and should be on the screen
3 here. I'll provide just a brief overview of GE's
4 overall ABWR activities. Then Dan Wilkins will
5 discuss the safety improvements of the ABWR and the
6 status of the design certification activities, and Joe
7 Quirk will then review the design certification
8 process issues. If this agenda is satisfactory, we'll
9 move on with a few of my comments then.

10 Since the beginning of the ABWR, which was
11 in the late 1970s, GE has remained committed to the
12 design, the development, the testing, the licensing
13 and the commercialization of the ABWR in the U.S. and
14 internationally. We pursued this commitment with a
15 lot of persistence and prudence. Our commitment today
16 is stronger than it's ever been before to see it
17 through the commercialization.

18 In Japan, the ABWR is licensed and under
19 construction at the Kashawazaki site of TEPCO, Tokyo
20 Electric Power. Just as a progress report, I'm
21 pleased to report today that of the two units
22 Kashawazaki 6 is now 52 percent complete. K-7 is
23 about 25 percent complete, and the construction
24 schedule of 51 months is being adhered to and it's
25 right on schedule. I also would like to report in

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1 recent months the Japanese utilities have announced
2 plans for 11 additional BWRs over the next decade. GE
3 is currently involved in preliminary studies on a
4 number of these projects and we expect to have a key
5 role as these move into final design and construction.

6 I also wanted to update you. As you know,
7 we decided late last year not to submit a bid for two
8 ABWRs for the Lungmen Project in Taiwan. This
9 difficult decision was based on a careful assessment
10 of the potential financial risk and rewards of this
11 project. We simply determined that it was not in the
12 best interest of either GE Nuclear Energy or GE
13 shareowners to participate in this project by
14 submitting a bid. We will approach any other
15 opportunity for the ABWR on a case by case basis,
16 subject to the same rigorous scrutiny of the potential
17 financial risk and rewards. We, GE Nuclear Energy, is
18 very strong financially and we intend to stay that
19 way.

20 CHAIRMAN SELIN: Well, that's a very
21 interesting topic. We could easily spend the time on
22 that, but we are sort of obligated to stick to our
23 agenda. So, we'll forego asking you questions.

24 DOCTOR SPECKER: Fine. I thought I should
25 at least comment on it.

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1 Switching now to the U.S., we GE are very
2 committed to preserving the option for nuclear power
3 going into the 21st Century. As a result of that, we
4 have been very active in the overall licensing
5 certification activities and the commercialization
6 activities that follow on.

7 Just to brief you on this, as you know
8 we're a very active participant in NPOC's strategic
9 plan for building new nuclear plants. We've been
10 intimately involved in the development of the advanced
11 light water reactor utility requirements documents to
12 which the ABWR fully conforms. The ABWR is leading
13 the way in the design certification activity, as you
14 just mentioned, and the ABWR was selected as the
15 evolutionary design for the first-of-a-kind
16 engineering program. Our goal is very straightforward
17 in all this. We intend to have a fully licensed,
18 standardized, proven commercially competitive ABWR
19 ready to go to battle in what we think will be the
20 very competitive electric generation market of the
21 late '90s and the early 21st Century. That's our
22 clear commitment and our clear goal.

23 To achieve this goal, we're resolved to
24 obtaining an FDA for the ABWR that's free of open
25 issues or conditions and we're committed to working

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1 closely with the industry and the NRC to resolve the
2 last of the design certification process issues so
3 that the path will be clear to proceed in the design
4 certification rulemaking.

5 Thank you. If there are no questions on
6 those comments, I'll pass it on to Dan Wilkins.

7 CHAIRMAN SELIN: I do have a question on
8 that, procedural question. That is your views on the
9 relative timing of the final design approval of the
10 design control document, not so much the certification
11 itself.

12 MR. QUIRK: I'm going to address that
13 later in the presentation.

14 CHAIRMAN SELIN: Okay. Fine.

15 DOCTOR SPECKER: Any other questions?
16 Okay. I'll turn it over to Doctor Wilkins.

17 DOCTOR WILKINS: Okay. As we've
18 mentioned, we believe we're entering the home stretch
19 on the final design approval. I thought it might be
20 worthwhile to take a few minutes this morning and give
21 you some of our GE perspectives on what we've achieved
22 both in the safety area and in the process area to
23 date and then we'll finish up by talking -- Joe Quirk
24 will talk about a relatively small number of remaining
25 issues that we see before us.

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1 Let me start with a safety perspective.
2 I have noticed I have a number of acronyms in these
3 charts. I'll define them as I go.

4 (Slide) But if I could have the next
5 chart, please.

6 Perhaps the most significant change in the
7 ABWR relative to our past plants is the reactor
8 internal pumps, what we call the RIPs. These are
9 really the basis of many of the improvements in the
10 ABWR. They've eliminated large pipes and many valves
11 in the containment and by eliminating large pipes low
12 in the vessel they've enabled us to design the ABWR so
13 that there is no core uncover for any design basis
14 event. The core always remains covered, which means
15 it doesn't go through the heat-up and cool-down cycle
16 of the earlier designs.

17 Pipes in the drywell have always been the
18 source of major radiation in the drywell. By
19 eliminating those pipes and putting the pumps right on
20 the vessel we've greatly reduced the radiation fields
21 in the plant. By having ten pumps rather than our
22 previous two pump designs, we can maintain 100 percent
23 power and flow with one pump completely out of
24 service, which is a reliability improvement.

25 (Slide) If I go to the next chart, the

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1 second major area of improvement is the use of the
2 FMCRDs, fine motion control rod drives, in the ABWR.
3 These have eliminated the scram discharge volume which
4 has been troublesome. At some plants in the past
5 they've eliminated half of the plumbing inside the
6 containment.

7 They have given us an extra level of
8 diversity in that we can now insert the control rods
9 either with electric motors or hydraulically as in the
10 past designs. Through the design of the fine motion
11 drive, we have designed the housing so that you cannot
12 eject the drive from the vessel and that has enabled
13 us to eliminate that huge grid of shootout steel that
14 we have below the drives in all the current plants so
15 that it's easy to get to the drives. They're readily
16 accessible for maintenance.

17 And finally, through design improvements
18 in both the drive and the way it's mechanically put
19 together, we've eliminated both the rod drop and the
20 rod ejection accident from the list of things we have
21 to consider.

22 (Slide) If I go to the next chart on the
23 emergency core cooling systems, we've gone to three
24 complete separate mechanical and electrical divisions,
25 which is a higher level of redundancy than we've had

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1 in past designs. Because of the lack of large pipes
2 low in the vessel, these systems are much smaller than
3 they are on current plants. In spite of the fact
4 they're smaller, they still can keep the core covered
5 for any design basis accident. For all transient
6 events and almost all accident events, we've achieved
7 an N-2 design, which means we can have one system out
8 for service and also be able to have a single failure
9 and meet all the requirements, which has opened the
10 way for major improvements in the technical
11 specifications for the plant in terms of relaxing the
12 burden on the operators and stretching out of some of
13 the equipment out of service times.

14 We have also in our ECCS designs greatly
15 simplified the operation of the ECCS systems. In our
16 past designs, we've had to have the operator shift
17 realign the system for core cooling or containment
18 cooling or other functions. In the way we've designed
19 these systems, there is much less modes of operation
20 that the operator has to worry about. In effect,
21 we've kept the heat exchangers in the loop all the
22 time so that the cooling function is always there
23 whether or not you're injecting into the vessel.

24 The fact that we don't uncover the core
25 for any design basis event, we've eliminated the core

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1 spray spargers, which were always kind of a tricky
2 design element and have been the source of maintenance
3 issues in the field, and so they're gone. And we've
4 separated the injection level for the reactor core
5 isolation cooling system and the high-pressure core
6 flooders so that if you don't have a major drop in
7 water level or a major pipe break that the event will
8 be handled by the normal isolation cooling system
9 without activating the safety systems.

10 COMMISSIONER REMICK: Dan, what's the
11 difference between the N+2 concept and N-2 other than
12 N is defined differently? is there any other --

13 DOCTOR WILKINS: Same. It's just
14 basically level redundancy.

15 (Slide) Go to the next chart.

16 Another area that we're quite proud of the
17 improvements we made is the instrument and control
18 area. We've gone to multiplexed fiber optic cabling
19 networks throughout the plant which has eliminated
20 miles and miles of wire and cable pulling late in the
21 construction process and enabled us to shorten the
22 construction. We've gone for all the safety systems
23 the full digital two out of four logic and for all the
24 control systems we've gone to triplicated self-testing
25 fault tolerant control systems with enough redundancy

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1 that if you have a failure first of all it's announced
2 because of the self-testing feature and there's enough
3 redundancy to change the failed board on-line without
4 getting into a scram situation.

5 We've made some improvements in the
6 neutron monitor and scram protection system. The
7 automated rod block monitor eliminates the possibility
8 of rod withdrawal errors. And by the manner in which
9 we hook up the control rod drives in the start-up
10 mode, we can move 26 in a gang, which has greatly
11 reduced the start-up time for the plant.

12 The man-machine interface in the control
13 room is another area that we're quite proud of with
14 the ABWR. It's the first plant that has been designed
15 by us at least with all the lessons of Three Mile
16 Island at the beginning. The emergency procedure
17 guidelines, which were certainly one of the most
18 important lessons learned in improvements that came
19 out of Three Mile Island, have in this plant been
20 reflected into the whole layout and arrangement and
21 choice of displays in the control room, so that the
22 symptom-based approach to operating the plant during
23 an emergency is now not just in the procedures but the
24 displays and controls in the control room have been
25 engineered to go along with those.

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1 COMMISSIONER REMICK: Dan, what's the
2 difference between the rod block monitor in this
3 design in past because I thought the purpose was to
4 eliminate -- is it the number of errors that permitted
5 it or what's the difference because you've had rod
6 block monitors?

7 DOCTOR WILKINS: Joe, can you --

8 MR. HUCIK: This one is automated.

9 DOCTOR WILKINS: It's automated is the
10 main difference.

11 MR. HUCIK: This one updates as you go,
12 updates so that you can actually follow and not hit
13 the operational transients and the current one tries
14 to go to the safety limits, whereas this one protects
15 against the operational limits and provides a
16 continuous update as you go.

17 COMMISSIONER REMICK: Okay. So it's
18 basically a refinement of what you've had in the past?

19 DOCTOR WILKINS: Yes. It continuously
20 keeps track of how far you could move a rod without
21 getting in trouble and then make sure you can't go
22 past that.

23 COMMISSIONER REMICK: Okay. Thank you.

24 DOCTOR WILKINS: (Slide) Next chart.

25 On the ATWS events, we've made another

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1 major step forward in that in addition to having the
2 control rods can go in either electrically or
3 hydraulically, we have retained the standby liquid
4 control system which can inject boron and that is
5 automatic in the ABWR. When we look at station
6 blackout, we now have three diesel generators plus the
7 diversity of a gas turbine generator which gives a
8 backup means of electrical protection against loss of
9 off-site power.

10 (Slide) Next chart.

11 Finally in the severe accident area, we
12 have provisions for AC independent water addition to
13 the vessel as a feature that goes well beyond
14 requirements, but we felt was an easy and prudent
15 thing to do in this design. We've also designed, even
16 though our probabilistic risk assessments tell us the
17 probability of core damage in the ABWR is extremely
18 low, down in the 10^{-7} range, we have arbitrarily
19 designed such that if you just assume a core melt
20 without worrying about how it happens, we've designed
21 so that the lower drywell would be flooded and any
22 core debris would land in the water in the lower
23 drywell and provided a containment over pressure
24 protection feature to ensure that you do not have a
25 catastrophic or uncontrolled failure of the

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1 containment.

2 Those two features combined give us a
3 capability where in the event of a core melt we
4 believe there would be no observable off-site health
5 effects. The dose off-site would be less than 25 rem
6 at a mile, or at a half a mile.

7 One other feature that I should mention is
8 if you put all this together the ABWR is designed to
9 handle any design basis event for 72 hours without
10 operator action. That was one of the objectives of
11 our effort on the passive plant designs and when we
12 looked at the ABWR we found with relatively few
13 additional automation steps we could achieve the same
14 goal in the ABWR and we've, in fact, taken those steps
15 and done that.

16 So, we look at the ABWR as a major
17 technological and safety step forward from our past.
18 I mentioned core damage frequency in the 10^{-7} range.
19 We believe it will have a capacity factor capability
20 of 85 percent. We look to occupational exposure
21 annually to be below 100 man rem. We look for
22 significant reductions in rad waste volume and we
23 believe that the ABWR is going to be the most
24 economically competitive BWR we've ever had in the
25 market. So, we're quite pleased at this point with

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1 how far we've come with it.

2 Let me shift and talk a little about the--

3 COMMISSIONER REMICK: Dan, before you
4 leave that, I assume your core damage frequency of 10^{-7}
5 is for internal initiators only, not including
6 external initiators.

7 DOCTOR WILKINS: It's --

8 MR. QUIRK: Let's see. Our commitment is
9 10^{-6} , including external events and 25 rem in a half
10 mile, both internal and external. Now, Dan said 10^{-7}
11 and I think that's an internal event.

12 COMMISSIONER REMICK: Yes. Even 10^{-6} , the
13 return frequency on pretty large earthquakes is much
14 smaller than that. I don't know how you can make your
15 claim of 10^{-6} on an external, but we'll pass on that at
16 the moment.

17 DOCTOR WILKINS: This is designed for a
18 very high seismic region in Japan.

19 COMMISSIONER REMICK: But your U.S. design
20 is for .5 g, .3 g?

21 MR. QUIRK: .3 g, yes. Evaluated
22 probabilistically at twice that.

23 COMMISSIONER REMICK: I just raise a
24 question about that for external initiator list pass.

25 DOCTOR WILKINS: (Slide) Listed on the

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1 next chart, the next two charts for that matter, are
2 some of the major steps along the road. But as Doctor
3 Specker mentioned, this is our eighth meeting. I'm
4 proud to say I've been at all of them over the years
5 starting back in '86. Major events along the way have
6 been the utility requirements document. Early on in
7 '87 we developed with the staff a licensing review
8 basis which I think served us very well in guiding us
9 through many of the issues that we've dealt with in
10 this program. The standard safety analysis report was
11 in in submittals starting in '87 and continuing up
12 through '89. In the '88, '89 time frame, the
13 Commission requested us to expand the scope of the
14 submittal to include the whole plant. At the early
15 stage of this program we were planning to do the
16 nuclear island only. We took that advice and
17 submitted the whole plant in '89. We were in the
18 question and answer process with the staff through
19 '89, well into '91, and then into amendments which
20 have gone up to very recently. The most recent
21 amendments, what was it 30?

22 MR. QUIRK: 33.

23 DOCTOR WILKINS: 33, was an integrated
24 amendment where we took all of the loose ends and open
25 issues that had come out of the review to date and

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1 folded them into a completely new integrated version
2 of the SSAR rather than the original plus amendments
3 that you had to try to piece together.

4 We worked hard in '93 on the tier 1, the
5 design certification material. In parallel to all of
6 this, of course, the staff was developing what now is
7 going to end up as five major drafts of the safety
8 evaluation report and we believe that we are basically
9 on track with final design approval in May and design
10 certification process beginning after that.

11 (Slide) If we again -- next slide,
12 please -- look at the certification process a little
13 differently, I think certainly we at GE are proud and
14 I --

15 CHAIRMAN SELIN: I'm sorry. Say that
16 again. I didn't hear what you said.

17 DOCTOR WILKINS: I want to look at some of
18 the things we've covered in the certification process
19 in terms of issues that have been dealt with and
20 resolved. I said we at GE are quite pleased with the
21 way these have been resolved. We think as we've gone
22 through the integration of our effort with the utility
23 requirements document, the resolution of the major
24 technical issues, particularly severe accident and in
25 three SECY documents that are mentioned here, the

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1 manner in which we've dealt with the level of detail,
2 the ITAACs, the environmental issues and the
3 rulemaking process to the extent it's been dealt with,
4 our feeling is in all cases that these were difficult,
5 lengthy discussions but we got to good answers and
6 good workable, practical solutions that will make the
7 certification be useful in the future. So, it's been
8 a long, hard struggle, but we're pleased with the
9 outcome.

10 There are currently 14 open issues in the
11 draft of the final safety evaluation report and Joe
12 Quirk will talk about some of these in a little more
13 detail and give you our perspective. Four of them are
14 still in the staff's hands. Nine of them are in our
15 hands. One of them is before the Commission. We see
16 no reason that all of these shouldn't be fairly easily
17 resolved in the coming weeks or months.

18 COMMISSIONER REMICK: Dan, I don't think
19 that is literally before the Commission. If I recall,
20 the staff has indicated that they're going to handle--
21 in the final SER we did have a paper indicating a
22 staff leaning. But if I recall, the Commission was
23 not asked for a decision.

24 DOCTOR WILKINS: Okay.

25 COMMISSIONER REMICK: I could be wrong,

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1 but that's how I recall it. So, I don't think it's
2 actually sitting on the Commission's desk at the
3 moment.

4 MR. QUIRK: That is different than we
5 understand. We were told that there was an internal
6 memo from the staff to the Commission outlining the
7 basis for their requirement of a diverse RPV water
8 level system and that they asked for the Commission
9 endorsement. And along with that, they had a copy of
10 the ACRS letter that heard the GE presentation on why
11 no change was needed beyond that which is in existing
12 operating plants and the ACRS confirmed the GE
13 position in their letter. That package was sent to
14 the Commission for your input and we're very anxious
15 that the Commission promptly resolve this.

16 COMMISSIONER REMICK: I could be wrong.
17 I remember the draft and it was marked a draft --

18 MR. QUIRK: Yes, it was. It was.

19 COMMISSIONER REMICK: -- with indication
20 it was going to be resolved in the FSER. When that
21 came out, I purposely looked at that. It's not
22 addressed in there and I was told it would be
23 addressed in the final, but I could be wrong. Maybe
24 there's something I missed. I could be wrong.

25 MR. QUIRK: Could we encourage the

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1 Commission to please --

2 COMMISSIONER REMICK: One way or the
3 other, yes.

4 MR. QUIRK: Thank you.

5 DOCTOR WILKINS: So, I guess, just to
6 summarize, I believe we have a design here that's a
7 dramatic step forward in safety. I suspect it is the
8 most thoroughly reviewed design that we have ever
9 brought before the Commission. It has been through
10 the reviews by General Eclectic, Hitachi, Toshiba,
11 TEPCO and MITI in Japan. It has been through
12 extensive review by U.S. utilities and their
13 consultants. Many features of it, particularly the
14 process approach, has been reviewed by the U.S.
15 industry led by NUMARC, the NRC staff and consultants,
16 very extensive ACRS review.

17 We've been down an eight year road that
18 has pioneered a new regulatory process with, as I
19 said, good solutions to the issues that came along the
20 way. The lead plant is 50 percent built in Japan.
21 It's the lead plant for the first-of-a-kind program
22 here in the U.S. I think there's been a lot of hard
23 work by certainly GE and the staff and we think we're
24 in the home stretch and we'd like to move on and wrap
25 up the FDA on the current schedule and get on with the

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1 certification step.

2 Joe?

3 MR. QUIRK: (Slide) Next chart, please.

4 This chart shows the intensive ACRS
5 involvement that has occurred. As you can see from
6 this chart, the activity intensified in '92, which was
7 the high water mark for the ACRS meetings. If one
8 breaks down the two year period over '92 and '93, they
9 find that we met with the ACRS on an average of about
10 two meetings per month. That's both subcommittee and
11 full committee and that's quite an ambitious active
12 undertaking. We look forward to receiving a favorable
13 ACRS letter in the near future.

14 (Slide) Next chart, please.

15 While Dan's comments were very ringing and
16 gracious as to the progress that's been made on design
17 certification process issues, and I agree
18 wholeheartedly with those, there are however a few --
19 I'm going to call them loose ends, if you will, items
20 that came up under discussion of the advanced notice
21 of proposed rulemaking during which there was a
22 workshop and input received from industry. In
23 particular, NUMARC commented extensively on the
24 advanced notice of proposed rulemaking. General
25 Electric and other vendors provided comments. In GE's

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1 case, we fully endorsed the NUMARC comments and
2 emphasized a few issues that were still needing to be
3 resolved.

4 (Slide) I would like to go into the next
5 couple charts. There are four issues I'd like to
6 highlight to you for your attention. Some of these
7 are in the resolution mode and some we would like to
8 urge Commission decision.

9 As I said, tremendous strides have been
10 made by the industry and the staff in all the design
11 certification process issues. Only a few remain to be
12 discussed.

13 (Slide) The first such issue is the
14 design certification process issues that impact the
15 FDA. If you could go back to page 14, please. This
16 is the final design approval in design control
17 document separation. Now, industry has proposed that
18 the staff issue the FDA prior to completion of the
19 design control document. Design control document is
20 only needed for rulemaking. Resolution of design
21 control document issues will not effect the
22 completeness of the staff safety review, and
23 separation of these two issues would allow an
24 important milestone to be achieved, namely a
25 conclusion of the staff review and issuance of the

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1 final design approval.

2 We understand that the staff is
3 considering this position and will soon be forwarding
4 the essence of this position to the Commission for
5 approval. We were delighted in the progress and we
6 look forward to the ultimate resolution of this.

7 COMMISSIONER REMICK: Joe, I agree with
8 what you said here factually. What is the importance
9 of that? I guess I better understood it when you were
10 considering bidding in the Taiwan case. But what is
11 the importance to your company of what I presume would
12 be a several month delay?

13 MR. QUIRK: It could be even more than
14 that. But the importance is the achievement of a
15 major program milestone. And for no real good reason
16 not to, other than a subject that was going to be
17 dealt with next. That shouldn't affect attainment of
18 that important goal. So, nothing other than we've
19 been at this a long time, we need to show progress, we
20 need to show completion and for that reason we would
21 like to separate them and deal with them.

22 COMMISSIONER REMICK: Do you have any
23 position if when the design control document, when it
24 came out did reveal some apparent need for a change to
25 the FDA, do you have any views on that, whether that

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1 should be possible or not possible and how restrictive
2 that change should be, considering Part 52?

3 MR. QUIRK: You know, I would be surprised
4 if there was an issue. I don't think that's possible
5 and the reason is that the design control document is
6 two parts, tier 1 and tier 2, and tier 1, of course,
7 as you know, includes the certified design description
8 and ITAAC and interfaces and site parameters extracted
9 from the SSAR and packaged. Tier 2 is, in fact, the
10 SSAR minus proprietary information and minus some PRA
11 detailed information. So, it's not a new review
12 that's being done, it's repackaging what's already
13 been approved. So, there should not be changes in the
14 DCD apart from anything that's in the SSAR.

15 COMMISSIONER REMICK: Okay. Thank you.

16 MR. QUIRK: Okay. With regard to
17 secondary reference issue, this is the first of three
18 issues that I would like to talk about that impact
19 design certification. I'd like to up front say that
20 this one I believe is in hand. I think we are --
21 well, I know we are awaiting staff guidance to
22 satisfactorily resolve this and I think it is,
23 therefore, closed. It just hasn't been finalized and
24 documented. If you'd like to go into this anymore,
25 I'd be happy to, but --

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1 COMMISSIONER REMICK: Just explain it a
2 little bit more, just --

3 MR. QUIRK: Okay.

4 COMMISSIONER REMICK: -- what the problem
5 is without going into a lot of detail.

6 MR. QUIRK: Let me try to do that. The
7 design certification rule will reference the DCD.
8 Therefore, the DCD by definition is the primary
9 reference. But as you know, in tier 2 of the DCD
10 there are thousands of secondary references and the
11 question is what is the regulatory requirement
12 embedded in each of those references that must be
13 pulled out and put in the design certification rule.
14 We believe that there should be no secondary
15 references embedded in the design certification rule.
16 Rather, those references contained in tier 1 be
17 embedded. We believe this is consistent with the
18 philosophy of the two tier concept and consistent with
19 Commission guidance.

20 COMMISSIONER REMICK: Thank you.

21 MR. QUIRK: And we understand that that's
22 in essence been agreed to by the staff.

23 The next item affecting design
24 certification is treatment of PRA information. Let me
25 say that we received staff guidance in August that

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1 described what this PRA report would consist of. Now,
2 let me back up a minute. Chapter 19 of our SSAR is
3 the PRA and the severe accident evaluation. It is
4 some four volumes long and includes event trees and
5 fault trees and all the probabilistic voodoo, black
6 magic I call it, that comes about. You can see my
7 biases. Anyway, and a lot of that information is not
8 appropriate to be in the SSAR and the staff recognizes
9 that as well. So, the recipe, if you will, the
10 equation for what tier 2 and the DCD would be, tier 2
11 would be equal to the SSAR, minus proprietary
12 information, minus the PRA but plus, put back in, a
13 PRA report that summarizes the key PRA features and
14 insights and we agree with that. We have no
15 difficulty with that.

16 As I mentioned earlier, in August we got
17 some guidance from the staff that further asked for
18 very specific and quantitative information to go back
19 in as well. We believe that that will put a burden on
20 the Part 50.59 change process, that we may be required
21 to run the PRA and determine the effect of that change
22 on probabilistics. If we increased the core damage
23 probability minutely, say from 10^{-12} to 10^{-11} ,
24 nevertheless that is an increase in safety and could
25 be considered an unreviewed safety question which

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1 would put us back in a formal process for resolving
2 that.

3 So, we do not intend to use the PRA in
4 that manner and we don't think anyone should. So,
5 what we would like the staff to do is reach agreement
6 on what constitutes a PRA report, what do you put back
7 in, and we're in the discussion modes of that right
8 now and it's going pretty well. I don't mean to say
9 it's all lost. We just need to keep it on the table,
10 be mindful of it and make sure that it gets concluded
11 in a satisfactory way.

12 The next item is applicable regulations.
13 On this particular matter, the staff proposes that the
14 design certification rule adopt as applicable
15 regulations various Commission approved staff
16 positions that they have passed on over the years.
17 These are policy positions, if you will, that go
18 beyond the staff's SRP and reg. guides which had been
19 brought to the Commission and approved by the
20 Commission. And our design has been conformed to that
21 position. Features have been added, analysis has been
22 provided demonstrating compliance with the position.
23 So, we're not at odds here in any way, shape or form
24 with regard to complying with the Commission policy.
25 What the issue here is is must all those SECY

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1 documents and Commission policy statements be compiled
2 in an applicable regulation section of the design
3 certification rule? Those positions would have to be
4 redrafted, restated and we're worried about additional
5 interpretations and downstream interpretations that
6 could complicate proceedings. And so we believe that
7 that shouldn't be the case, that the design is
8 correct.

9 It will be certified as conforming to the
10 Commission policy and it's imbedded in tier 1 and tier
11 2 and this is rather moot, and we hope that the staff
12 does not continue in this direction to make applicable
13 regulations out of Commission policy statement.

14 COMMISSIONER REMICK: So, if I understand
15 your position, those requirements will be codified in
16 the design certification rulemaking, in that rule. I
17 thought your argument was, but perhaps I misunderstood
18 it, that it should not then also therefore be put
19 into, let's say, a requirement of Part 50. Am I --
20 you're basically saying something different than I
21 thought.

22 MR. QUIRK: Maybe I said -- let me try
23 again.

24 COMMISSIONER REMICK: Okay.

25 MR. QUIRK: The design has been approved

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1 as meeting the Commission policy statements and that
2 will manifest itself in tier 1 where appropriate and
3 tier 2 where appropriate.

4 COMMISSIONER REMICK: So it is codified.

5 MR. QUIRK: So it's codified. The design
6 is right.

7 COMMISSIONER REMICK: Yes. And you're
8 saying that's the only place --

9 MR. QUIRK: That's all one needs to worry
10 about.

11 COMMISSIONER REMICK: I thought that was
12 the argument.

13 MR. QUIRK: There is an item that I do not
14 have a chart for that we have talked about and I think
15 that it's worth raising here to the Commission, and
16 it's an item referred to as "tier 2 asterisk."
17 Industry refers to it as "tier 2 star." These are
18 items that came out as a result of the staff's safety
19 evaluation. They're not tier 1 items, but they're
20 important tier 2 items and the staff has defined a
21 limited set of these items, like 11 areas, and they
22 will require that these items not be changed without
23 review by the staff, and so it's not tier 1 and it's
24 a little more than tier 2. We're eroding somewhat the
25 simplicity of the two tier structure, however industry

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1 has acquiesced in this instance because it has been
2 defined and limited to just a few.

3 Where we have a problem on tier 2 star
4 items is in the process to resolve. The staff says
5 that these items cannot be changed using just 50.59,
6 that these items must be reviewed and approved by the
7 staff. That is okay from the industry point of view.
8 The process that is used in closing that out is all
9 that remains to be defined and we would hope that we
10 could get from the staff a review and a letter back
11 saying they have looked at the evaluation performed by
12 the applicant, it is consistent with what they hoped
13 for and it all right, and send a letter back, as
14 opposed to a formal amendment to a license or an
15 exemption or something that may be subject to
16 rulemaking or hearings later on.

17 CHAIRMAN SELIN: Which you would argue is
18 essentially tier 1.

19 MR. QUIRK: Yes, exactly. And I apologize
20 for not putting this on a chart. On the way to the
21 meeting we thought that it was important. This issue
22 was identified in the detailed industry comments
23 provided by NUMARC, was also emphasized in GE's
24 comments, and we think to be consistent we should
25 raise it at this time.

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1 (Slide) Please move to the summary chart.

2 In summary, as Dan walked through, we feel
3 very proud that the ABWR incorporates major
4 technological and safety improvements. We know and
5 we've heard from both the staff and the ACRS members
6 that the review conducted on the ABWR has been the most
7 thorough and rigorous ever conducted on a plant,
8 period. We believe that statement to be true, and
9 much progress has been made such that we're at the
10 threshold now for issuance of the first FDA under Part
11 52. We are holder of an FDA under Part 50 and we
12 thought we knew what was involved in achieving an FDA
13 under Part 52. Little did we know what was actually
14 involved. And, as Dan said, it's been a long road.
15 It's been a difficult road, but one in which meaty
16 issues have been dealt with and resolved in an
17 acceptable lasting way, we believe.

18 There are remaining items, just a few,
19 that need to be done.

20 Number one, we need to complete the ACRS
21 review and obtain a favorable letter.

22 We need to complete the Commission's
23 review of the advanced copy of the SER that was sent
24 to them by the staff in December.

25 We look forward to issuing the final

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1 safety evaluation report and the FDA, and of course
2 initiating then a design certification rulemaking.

3 We also want to encourage the Commission
4 from comments that we've made today to follow-on with
5 the good start and progress that's been made on the
6 advanced notice of proposed rulemaking. The
7 Commission guidance to the staff earlier was to go
8 through the workshop, factor in comments received and
9 issue the advanced notice of proposed rulemaking in
10 final form. We agree with that direction. We urge
11 that it be done and that it be done in a timely way to
12 enable orderly and easy transition into the
13 certification process.

14 CHAIRMAN SELIN: Doctor Specker, did you
15 have anything else that you wanted to add?

16 DOCTOR SPECKER: No. That concludes our
17 presentation.

18 CHAIRMAN SELIN: Thank you.

19 Would you, whoever is the appropriate
20 person, sketch out what the implications would be in
21 a technical sense if GE were required to provide an
22 alternative source of pressure vessel water level, an
23 alternative water level measurement?

24 MR. QUIRK: Yes.

25 CHAIRMAN SELIN: I mean, I understand the

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1 argument of why you don't think it's necessary, but,
2 if some arbitrary terrible person required you to do
3 it anyway, what would you have to do?

4 MR. QUIRK: Well, there are a number --
5 well, the staff has told us that there are some
6 options being developed in Europe. Heated junction
7 thermocouple is one and acoustics is the other. We've
8 looked into that. We believe neither of those are
9 qualified for this application and in fact wouldn't
10 serve the purpose that the staff really wants them to,
11 and I need to just explain that.

12 The staff agrees that the delta-P water
13 level measurement system in the ABWR and in earlier
14 plants is adequate and safe. They underscore that
15 statement for steady-state conditions. On conditions
16 where there is rapid depressurization, they think
17 there can be some artificial heat-up, for example, or
18 flashing of non-condensibles that could alter the
19 reading and make it erroneous. We've felt we dealt
20 with both those issues. Heat and flashing due to LOCA
21 energy we've dealt with, as well as non-condensable
22 generation upon rapid depressurization. We know of no
23 other issue that could common mode fail the water
24 level.

25 So the question then is, if you want

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1 anyway to have a diverse system, is there something
2 out there that would deal with this transient
3 situation, and we've looked at the two I've mentioned
4 and feel that they would not in fact do it.

5 CHAIRMAN SELIN: So, this will be a show
6 stopper then?

7 MR. QUIRK: No, no. If the Commission
8 said, whatever, we want you to do it, the staff has
9 outlined requirements that this system would have to
10 meet. It does not need to be safety grade. It should
11 be redundant. It does not need to be seismically
12 qualified. A whole list of things that we could work
13 with and incorporate and not at an overriding cost to
14 the plant.

15 CHAIRMAN SELIN: So there are solutions,
16 plausible solutions to this additional requirement?

17 MR. QUIRK: There are things that we could
18 do to comply with the staff request. Whether they're
19 solutions or not is argumentative.

20 COMMISSIONER de PLANQUE: Does the staff
21 say that those solutions meet their requirements?

22 MR. QUIRK: They really haven't said that.

23 COMMISSIONER de PLANQUE: They haven't
24 said that. Okay.

25 CHAIRMAN SELIN: Let me go back to your

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1 statement. You're saying -- well, what are you
2 saying? You're saying that you could comply with the
3 request.

4 MR. QUIRK: Yes.

5 CHAIRMAN SELIN: Whether that provides
6 further redundancy or not is subject --

7 MR. QUIRK: Whether that provides a
8 reliable indication during the conditions of interest.

9 CHAIRMAN SELIN: Don't read anything into
10 my sentence other than I need to know the answer.

11 MR. QUIRK: I understand.

12 CHAIRMAN SELIN: Okay. If the staff
13 required and the Commission supported the staff's
14 position, what would GE do and what would the
15 implications be in terms of cost or time or what have
16 you in your design?

17 MR. QUIRK: We would -- in terms of cost,
18 we think it would be manageable and we could proceed
19 and do it. In terms of time, it would depend on what
20 the staff would require. We think that we could
21 commit to meet the requirements and show a simplified
22 diagram of how we would do that with a brief textual
23 description that would describe the functionality and
24 rapidly get approval of that and then require
25 detailing that design at the COL application stage.

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1 We think that would be a rapid way to proceed.

2 CHAIRMAN SELIN: Okay. Thank you.

3 COMMISSIONER REMICK: Do you think it's
4 technically justified?

5 MR. QUIRK: Absolutely not. No, we do
6 not.

7 COMMISSIONER REMICK: While we're on that
8 subject, I'd like an update on the discussion of
9 whether before the Commission or not. The best
10 information I've received from the senior staff is
11 it's before the Commission only in the form as an open
12 item in the FSER and the fact we've received the ACRS
13 letter, which we have. But the staff apparently has
14 not pulled that together with specific request for the
15 Commission for a decision and the staff will do that
16 promptly. That's the word I get from the reaches of
17 the auditorium.

18 CHAIRMAN SELIN: Okay. Commissioner
19 Rogers?

20 COMMISSIONER ROGERS: Well, no. I thought
21 this was a very interesting briefing. I don't have
22 any technical questions, but I wonder if you could
23 comment or would care to comment on what you've seen
24 the role of the Commission, the Commissioners as the
25 Commission, in moving this ahead. Five years or so

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1 ago when the Commission really stepped in, I think, to
2 the process because we felt we did not know what was
3 happening and were concerned about policy issues that
4 might be somehow or other inadvertently overlooked
5 because they were embedded in technical matters, there
6 was some unhappiness about the Commission's action at
7 that time, particularly from General Electric. I
8 wonder in retrospect whether you see the Commission's
9 decision to be more actively and proactively involved
10 with this review process as positive, negative or
11 neutral?

12 DOCTOR SPECKER: Dan, you do want to --

13 CHAIRMAN SELIN: If you want to separate
14 between Commissioners still serving and --

15 DOCTOR SPECKER: We'll let our historian
16 here comment.

17 DOCTOR WILKINS: Well, I think when we set
18 out on this program in '86, I believe, and Joe,
19 correct me if I'm wrong, that our target for the FDA
20 at that time was like September of '90.

21 MR. QUIRK: Yes, sir.

22 DOCTOR WILKINS: So, it's now early '94
23 and so certainly the process from our perspective has
24 gone much slower.

25 COMMISSIONER ROGERS: Yes, but you didn't

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1 have Part 52 when you laid that out. So, you have to
2 take that into account, that it was a big change.

3 DOCTOR WILKINS: We didn't have Part 52,
4 but we did anticipate it.

5 I think though I'll go back to my earlier
6 comments. We are quite pleased with the resolutions
7 that have occurred on the policy issues and how long
8 it's taken us to get there is kind of behind us at
9 this point. I think the result that we see coming out
10 of this is going to be a high quality certification
11 and it's going to be a certification that I think will
12 establish the effectiveness and workability of Part
13 52. So, we're quite pleased with the outcome and then
14 I guess therefore with the process that has led to it,
15 assuming that we have an FDA in May and a timely
16 certification after that.

17 CHAIRMAN SELIN: Let me ask you a follow-
18 up question a little more towards the future. Are
19 there things in the process as it stands today as it
20 will affect the small boiling water reactor that you
21 have problems with or do you think we sort of have it
22 pretty much consistent with law where it ought to be
23 at this point?

24 DOCTOR WILKINS: I would say that this has
25 paved the trail very nicely for the small boiling

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1 water reactor and other than the technical issue of
2 passive safety and how that goes through, I think
3 everything else we have done here ought to apply
4 directly.

5 CHAIRMAN SELIN: Sorry.

6 COMMISSIONER ROGERS: No, that's fine.

7 CHAIRMAN SELIN: Commissioner Remick?

8 COMMISSIONER REMICK: Yes. Along that
9 line, I'd just say it's been a learning process for
10 all of us. A new part of our regulation, a very
11 important one. I think we've stumbled along the way
12 and vendors have stumbled along the way, but I've been
13 very pleased with the fact that people have worked
14 closely and I think the Commission has tried to
15 resolve the issue. So, I agree very much with what
16 you've said, but it is a new process. It's different
17 than the Japanese process, which is closer to what we
18 used to do. I think it's an improved process. I
19 agree. I think your design is a much improved design
20 with the things that you've gone over.

21 One thing that I'd like to clarify why I
22 raised the question about 10^{-7} , I'm not a seismic
23 expert. I don't claim to be a PRA expert, but I have
24 on a number of occasions asked our seismic expert what
25 is the probable frequency of an SSE in parts of the

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1 United States that you envelope in your design? The
2 answer is somewhere probably around 10^{-3} , 10^{-4} per year.
3 If you get up to maybe a couple times the SSE,
4 probably 10^{-4} or 10^{-5} . So, if it is possible to get an
5 earthquake of several times the SSE, in that range, I
6 honestly don't know how people can claim if they
7 include seismic how you can guarantee that the core
8 damage frequency is less than that.

9 I've taken this message not only in the
10 United States but in other countries where vendors
11 seem to be, each one, pushing a number lower than the
12 other and trying to get people to explain when you put
13 out numbers do you mean internal or external
14 initiators or both or what, just so we at least know
15 what's being -- so that's the purpose of my comment.
16 I don't claim to be an expert. I'm not questioning
17 your numbers, but I must admit in my mind there always
18 is a question when I see numbers like that,
19 particularly if they include external initiators in
20 countries where seismic frequencies are relatively
21 high and your envelope incorporates some parts of the
22 United States where there's reasonable expectation of
23 earthquakes. That's the basis for it.

24 If you have anything further on that after
25 the meeting and want to supplement it, I would greatly

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1 appreciate it, just for clarification.

2 I thank you very much for the briefing.
3 I think it's been very helpful and timely.

4 CHAIRMAN SELIN: Commissioner de Planque?

5 COMMISSIONER de PLANQUE: Yes. I have
6 just one question on the issue of approving the FDA
7 before the DCD. I think I heard you said you wouldn't
8 expect that to affect or feed back into the SSAR. If
9 that turned out not to be the case or the staff saw
10 that a change needed to be made there, do you see a
11 problem with that?

12 MR. QUIRK: No, I do not. If it's to an
13 extreme, of course. If it's a very limited area and
14 something that came up, no problem.

15 COMMISSIONER de PLANQUE: Okay. I have no
16 further questions. I found the briefing extremely
17 helpful. Thank you very much.

18 CHAIRMAN SELIN: Thank you. So have I.
19 We've been waiting for this presentation for a long
20 time. The Commission will obligate itself to address
21 the issues before it or better to be imminently before
22 us and get them settled. We also, now that the main
23 safety issues are well behind us, we are also desirous
24 of getting on with the certification both on the
25 procedural issues that Mr. Quirk raised and on the one

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1 technical issue which either is or isn't or is about
2 to be before the Commission, depending on your
3 definition of that.

4 Thank you very much, Doctor Specker.

5 DOCTOR SPECKER: Thank you.

6 (Whereupon, at 11:04 a.m., the above-
7 entitled matter was included.)
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CERTIFICATE OF TRANSCRIBER

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

TITLE OF MEETING: BRIEFING BY GE ON STATUS OF ABWR APPLICATION
FOR DESIGN CERTIFICATION

PLACE OF MEETING: ROCKVILLE, MARYLAND

DATE OF MEETING: JANUARY 26, 1994

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

Carol Lynch

Reporter's name: Peter Lynch

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GE Nuclear Energy

Advanced Reactor Programs

***Presented to
Nuclear Regulatory Commission***

S. R. Specker, Vice-President & General Manager

D. R. Wilkins, General Manager, Nuclear Services and Projects

S. A. Hucik, Manager, ABWR Projects

J. F. Quirk, Project Manager, ABWR Certification

January 26, 1994

COMMISSION BRIEFING

WEDNESDAY, JANUARY 26, 1994

AGENDA

- | | | |
|----------------|--|----------------------|
| 10 Min. | Introduction | S. R. Specker |
| 30 Min. | ABWR Features and
Certification Activities <ul style="list-style-type: none">• ABWR Safety Improvements• ABWR Certification Status | D. R. Wilkins |
| 15 Min. | Design Certification Process Issues | J. F. Quirk |
| 5 Min. | Summary | |

ABWR

Safety Improvements

RIPs

- ***Eliminated large pipes, valves***
- ***No core uncover LOCAs***
- ***Reduced radiation***
- ***100% flow with one pump out***

ABWR

Safety Improvements (Continued)

FMCRDs

- ***Eliminated scram discharge volume, 1/2 containment plumbing***
- ***Two ways to insert drives***
- ***Drive support eliminates shootout steel***
- ***Rod drop, rod ejection accident eliminated***

ABWR Safety Improvements (Continued)

ECCS

- ***3 separate mechanical and electrical divisions***
- ***1/3 less piping and valves***
- ***N-2 for transients***
- ***Nearly N-2 for accidents***
- ***Simplified number of modes***
- ***Eliminated core spray spargers***
- ***RCIC and HPCF initiation levels separated***

ABWR

Safety Improvements (Continued)

I&C

- ***Multiplexer fiber optics***
- ***Digital 2/4 for safety, voting mid of 3 for control***
- ***Fixed wide range neutron monitor***
- ***Period based scram protection***
- ***ARBM eliminates rod withdrawal error***
- ***Ganged rods (up to 26) in startup mode***
- ***Advanced MMI***

ABWR Safety Improvements (Continued)

ATWS

- ***Automatic for SLCS and other operator actions
(RIP runback, FW runback)***

Station Blackout

- ***3 diesel generators***
- ***Gas turbine generator***

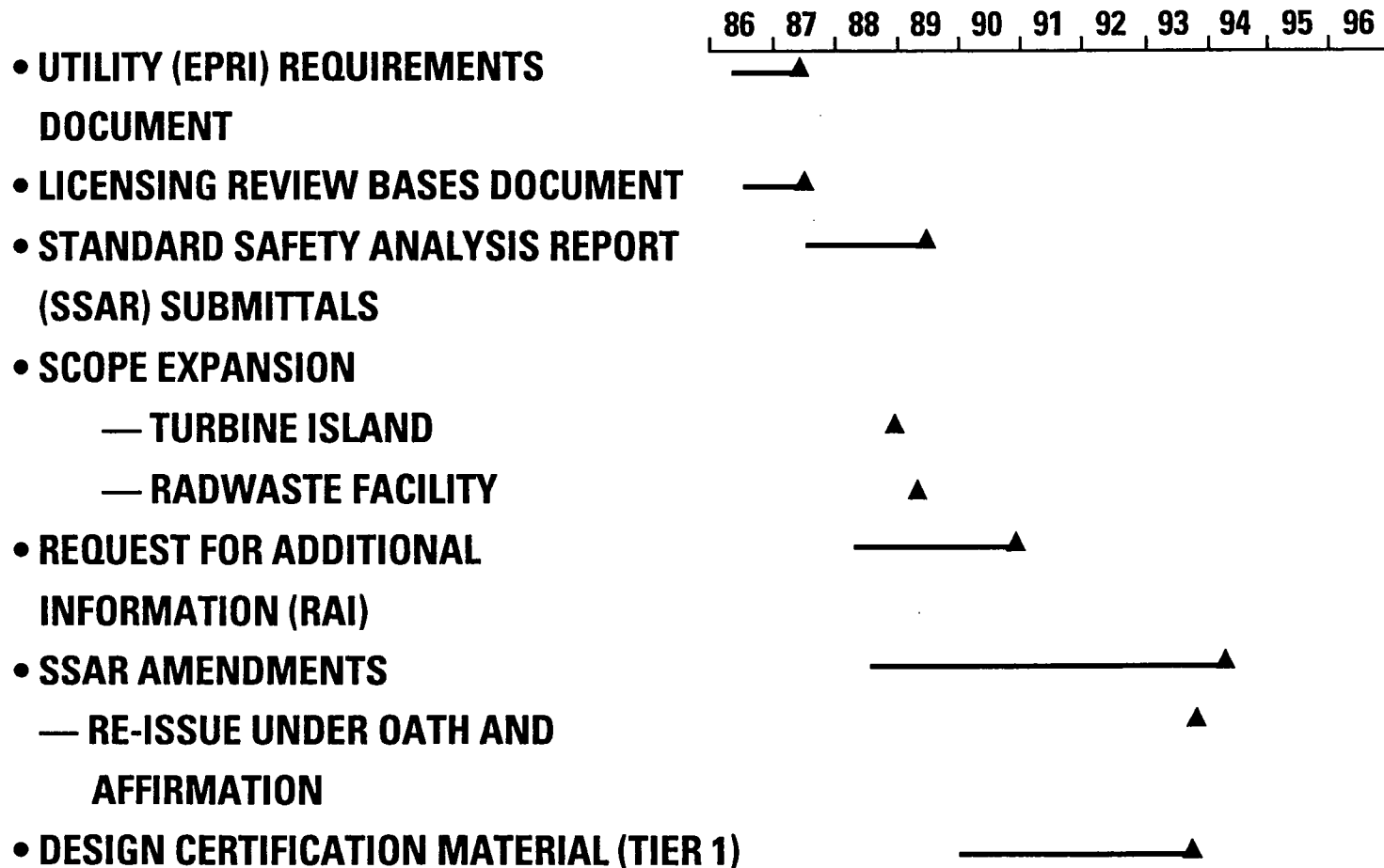
ABWR Safety Improvements (Continued)

Severe Accident Features

- ***AC independent water addition***
- ***Lower drywell flooders***
- ***Containment overpressure protection***

***ABWR INCORPORATES MAJOR TECHNOLOGICAL
AND SAFETY IMPROVEMENTS***

Summary of ABWR Certification



Summary of ABWR Certification (Continued)

- SAFETY EVALUATION REPORT

- PDSER

- DSER

- DFSER

- ADVANCED COPY OF SER

- FSER*

- FDA*

- DCD SUBMITTAL

- DESIGN CERTIFICATION*

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* per SECY-93-097

Certification Process Status

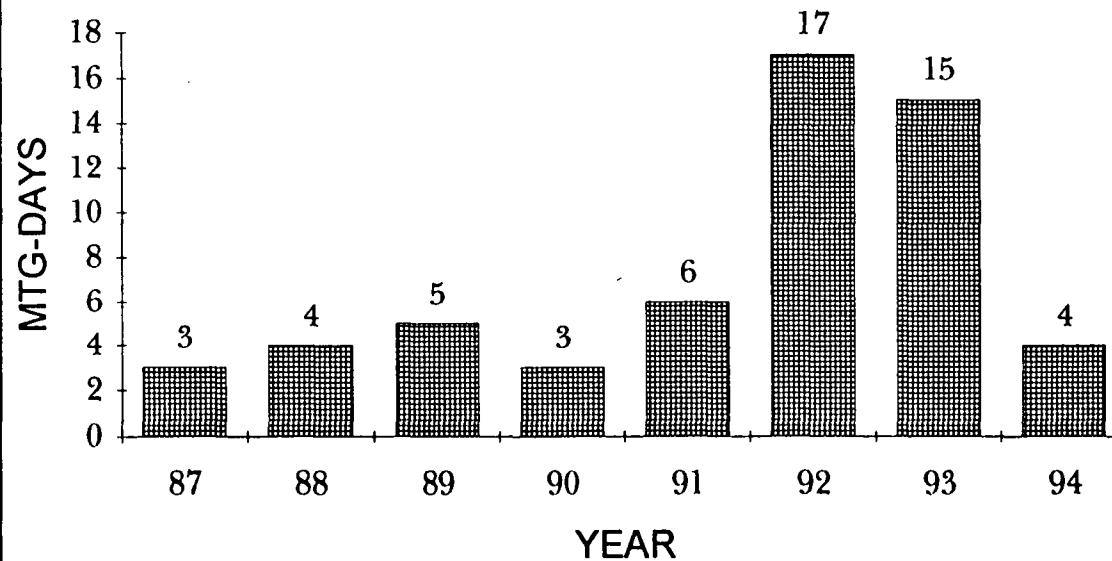
- **ABWR design certification and ALWR requirements are well integrated**
- **NRC review essentially complete**
- **All major technical issues resolved (SECY-89-153, SECY-90-016 and SECY-93-087)**
- **10 CFR Part 52 first time process issues resolved**
 - Level of detail
 - ITAAC - inspections , tests, analyses, and acceptance criteria
 - Environmental (NEPA) considerations
 - Rulemaking procedures

Certification Process Status (Continued)

- **Advanced copy of FSER issued: 14 open items identified**
 - 4 issues undergoing Staff action
 - 9 issues GE preparing response in January 1994
 - 1 issue (RPV water level instrumentation) pending Commission decision

NOW AT THRESHOLD OF FDA ISSUANCE

**ACRS FULL & SUBCOMMITTEE
MTG-DAYS FOR ABWR REVIEW**



SIGNIFICANT ACRS REVIEW ACCOMPLISHED

Design Certification Process Issues Impacting FDA

FDA/DCD SEPARATION

- **Proposal for staff issuance of FDA prior to completion of DCD approval process**
 - Resolution of DCD format issues will not affect content and completeness of safety review and findings supporting approval of FDA
 - DCD relates only to DC Rulemaking
 - Separation of two issuances would allow design review process to be completed within a time frame consistent with NRC-approved schedules
 - Understand that staff supports separating FDA and DCD issuance

**INDUSTRY URGES COMMISSION TO ENDORSE
SEPARATING FDA AND DCD ISSUANCE**

Process Issues Impacting Design Certification

SECONDARY REFERENCES

- **Preliminary Staff guidance on DCD treatment of SSAR secondary references caused serious Industry concerns regarding practicality and schedule impacts**
- **Further interaction has clarified Staff and Industry understanding**

**AWAITING NEW STAFF GUIDANCE TO
SATISFACTORILY RESOLVE MATTER**

Process Issues Impacting Design Certification (Continued)

TREATMENT OF PRA INFORMATION

- ***Staff proposes DCD include PRA details, including probabilities***
 - Would make 50.59 evaluations burdensome and divert licensee and staff resources from more important operating issues to handling of license amendments or exemption requests for trivial increases in PRA probabilities

**ONLY IMPORTANT DESIGN INSIGHTS FROM PRA
SHOULD BE INCLUDED IN DCD AND SUBJECT TO
50.59 REVIEW PRIOR TO CHANGE**

Process Issues Impacting Design Certification (Continued)

APPLICABLE REGULATIONS

- **Staff proposes DC rule adopt as “applicable regulations” various Commission-approved staff positions on severe accidents and other technical issues**
 - Industry believes that Commission-approved staff positions will be embodied in Tier 1 and Tier 2 DC rule requirements

THIS PROPOSAL SHOULD NOT BE ADOPTED BY COMMISSION

SUMMARY

- **ABWR incorporates major technological and safety improvements**
- **Much progress made . . . @ threshold of first FDA under Part 52**
- **Remaining actions**
 - ACRS letter
 - Commission review of advanced copy of SER
 - FSER and FDA issuance
 - Early commission action on ANPR process issues needed to maintain schedules for initiating ALWR rulemakings