

NUCLEAR REGULATORY COMMISSION

ORIGINAL

COMMISSION MEETING

In the Matter of: PUBLIC MEETING

SALEM 2 (PSE&G) FULL POWER OPERATING
LICENSE

DATE: May 19, 1981

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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Public Meeting on
SALEM 2 (PSE&G) FULL POWER OPERATING LICENSE

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Nuclear Regulatory Commission
Room 1130
1717 H Street, N.W.
Washington, D.C.
Tuesday, May 19, 1981

The Commission met, pursuant to notice, at 2:32 p.m.

BEFORE:

- JOSEPH M. HEWDRIE, Chairman
- JOHN F. AHEARNE, Commissioner
- VICTOR GILINSKY, Commissioner
- PETER A. BRADFORD, Commissioner

1 STAFF PRESENT:

2 MR. H. DENTON
3 MS. JANIS KERRIGAN
4 MR. D. EISENHUT
5 MR. B. MATTSON
6 MR. L. BICKWIT, General Counsel
7 MR. S. CHILK, Secretary
8 MR. V. STELLO
9 MR. W. DIRCKS
10 MR. D. RATHBUN
11 MR. E. CASE
12 MR. B. FERGUSON
13 MR. J. SCINTO
14 MR. L. NORRHOLM
15 MR. MEYER

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DISCLAIMER

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1 the findings and conclusions of the team; and then finally,
2 the NRR recommendation for the Salem 2 license.

3 Basically, on the next slide is the general
4 background.

5 (Slide.)

6 At the last meeting which was held on April 28th
7 all issues were resolved and discussed with the exception of
8 fire protection. Since that last meeting, there was a team
9 of people sent up to Salem to expedite the review of the
10 remaining aspects of fire protection that were outstanding.
11 A team report was issued, and we have drafted a supplement
12 to the Safety Evaluation Report for Salem and a draft
13 license. I think everybody has gotten copies of those.

14 COMMISSIONER GILINSKY: Could you please just go
15 over what it was that was lacking and what it was you were
16 looking for?

17 MS. KERRIGAN: Yes, sir. Basically, there was one
18 aspect that was left as an open item a few years ago, and
19 we've closed that out since that time.

20 COMMISSIONER GILINSKY: Could you be a little more
21 explicit than that because I must say I didn't understand it
22 very well last time. I'm just trying to get you to go over
23 it again.

24 (Laughter.)

25 MS. KERRIGAN: The team reviewed the cables

1 separation, the cables associated with safe shutdown
2 systems.

3 COMMISSICNER GILINSKY: No, but as I understood
4 it, there was a report that was supposed to have been here,
5 or at least you expected it to be here, which for one reason
6 or another wasn't here, and there was a question of
7 whether-- .

8 MR. DENTON: Well, we thought we had completed a
9 review of all the fire protection aspects right up until the
10 very last few days of the review.

11 COMMISSIONER GILINSKY: Right.

12 MR. DENTON: It turned out that we had not, in
13 fact, reviewed certain aspects that had mainly to do with
14 those systems needed for safe shutdown. In other words,
15 when we started to find the reviewer to ask where did this--
16 who was responsible for this piece of the input, it turned
17 out that everyone thought that that had been completed, and
18 in fact it had not been completed.

19 So the principal charter of the group was to look
20 not at all aspects of fire protection, but just at those in
21 particular, focusing on those that were needed for safe
22 shutdown.

23 COMMISSIONER GILINSKY: Was the problem that we
24 had inadvertently omitted a part of the review? I thought
25 at the time that there was a report --

1 COMMISSIONER AHEARNE: There was a report,
2 something that they were going to send in that they had not
3 sent in.

4 COMMISSIONER GILINSKY: -- a utility report which
5 we expected to have here and which, for one reason or
6 another, wasn't here. And I understood the group to be
7 going off to look for that report.

8 MR. DENTON: Janis, do you want to --

9 COMMISSIONER GILINSKY: I guess that is a little
10 bit of an oversimplification, but --

11 MS. KERRIGAN: That is basically it. There were
12 still some details of their fire protection program that
13 were to be supplied on no particular schedule, and we felt
14 when we went back and looked at that, that it really should
15 have been completed before a full power license issuance,
16 and we went up to close that out.

17 COMMISSIONER GILINSKY: But in other words, for
18 one reason or another, a portion of the review had been
19 omitted?

20 MS. KERRIGAN: Yes, sir.

21 COMMISSIONER GILINSKY: And that's what the group
22 went up to complete?

23 MS. KERRIGAN: Yes, sir.

24 COMMISSIONER GILINSKY: On a kind of an expedited
25 basis, on the spot.

1 MS. KERRIGAN: Yes, sir.

2 COMMISSIONER GILINSKY: And that's what you're
3 going to report on?

4 MS. KERRIGAN: Yes, sir.

5 COMMISSIONER GILINSKY: Okay.

6 MS. KERRIGAN: So the purpose of this meeting is
7 to discuss the team work we did up at Salem. Could we have
8 the next slide?

9 (Slide.)

10 Basically, the team was composed of I&E and NRR
11 personnel. I think we have a number of the members of the
12 team here, if you would like to get into more details on
13 particular parts of the report. We had two basic objectives
14 when we went up there: That was, to make a finding on the
15 adequacy of the cable separation study itself, the study
16 that the licensee performed; and then, take a look at the
17 corrective actions that came out of the licensee's work that
18 they felt needed to be done, and make a finding on the
19 adequacy of those. We were addressing the adequacy of the
20 corrective actions on an interim basis only.

21 (Slide.)

22 So we went up to Salem and basically, on this next
23 slide on conduct of review, we list the steps that the team
24 went through in reviewing the cable interaction study.
25 Basically, we looked at the systems that were needed for

1 shutdown; we looked at the equipment and cables associated
2 with those systems, what trains were needed, et cetera. We
3 went and looked at the cable routing and out of the
4 equipment and cables that we were looking at, we reviewed
5 which equipment and cables required protection to see if the
6 licensee had identified those adequately. And finally, we
7 evaluated the adequacy of the protective measures that were
8 taken.

9 Basically, we did the last piece, which was to
10 evaluate the adequacy of the protective measures taken, by
11 discussing with the licensee the criteria that they used in
12 their evaluation, what criteria they applied to decide which
13 protective measures should be taken. Those are listed in
14 the report, that's included as part of the safety evaluation.

15 (At 2:40 p.m., Commissioner Bradford entered the
16 meeting.)

17 And we were able to divide the licensee's criteria
18 into five basic groups. One group had no impact on our
19 review and we didn't evaluate the adequacy of the criteria
20 in that group. The second category of criteria were
21 criteria with which we agreed and we found no examples of
22 the licensee not meeting those criteria.

23 The third group was criteria with which we agreed
24 but in which there were instances in which the licensee had
25 not properly implemented those criteria. The team

1 recognized at the time that the cable separation study is
2 not yet in final completion. The licensee still has the
3 final engineering verification to do of that, and we were
4 confident that the licensee would have picked up the items
5 in Category 3, but we went ahead and identified them in the
6 team report anyway.

7 COMMISSIONER GILINSKY: Let's see. When you said
8 that some of the criteria were not relevant -- I forget what
9 words you used.

10 MS. KERRIGAN: "Not relevant."

11 COMMISSIONER GILINSKY: "Not relevant," that means
12 they didn't bear one way or another on any of the
13 conclusions?

14 MS. KERRIGAN: That's right.

15 COMMISSIONER GILINSKY: So it didn't matter
16 whether they --

17 MS. KERRIGAN: Essentially, more criteria that in
18 discussions with the licensee it came out that this was the
19 criteria that they had used, but it ended up not having to
20 be applied anywhere, essentially.

21 COMMISSIONER GILINSKY: Nothing depended on that
22 being correct or not --

23 MS. KERRIGAN: That's right.

24 COMMISSIONER GILINSKY: -- such as as far as in
25 containments, of being affordable, and so on?

1 MS. KERRIGAN: For an example, yes. That was one
2 of the ones.

3 COMMISSIONER GILINSKY: So that was not an
4 essential assumption anywhere?

5 MS. KERRIGAN: That's right.

6 COMMISSIONER GILINSKY: Okay.

7 MS. KERRIGAN: The fourth category was the
8 assumptions and criteria with which the team did not agree
9 were appropriate. We feel that the items that were in that
10 group, that category, would have been picked up in our
11 review of Appendix R, when we did an Appendix R review.

12 Finally, the fifth category was a category all by
13 itself of which systems or rooms that required alternate
14 shutdown, and we evaluated that also on an interim basis
15 during our review.

16 (Slide.)

17 So basically, on the next slide, we list the team
18 findings. We basically found that the program itself, that
19 the licensee's program itself was acceptable, and the
20 licensee has made some additional commitments on that
21 program.

22 One is that their verification, the engineering
23 verification of the program and implementation of their
24 program will be completed by July 15th. They are also
25 submitting some documentation to us. The interim response

1 will be on July 17th; and the final response by August
2 17th. That will provide all the documentation for the
3 drawings and things that the team looked at while they were
4 up there.

5 Finally, as far as the corrective actions that
6 were required, it turned out that in most of the plant
7 areas, the corrective actions that the licensee used were
8 acceptable to the team. We found them acceptable. However,
9 there were a couple of areas that did require some
10 short-term corrective action. These were mainly
11 concentrated in the major equipment areas like the pump
12 rooms and switch gear rooms and were not spread throughout
13 the plant.

14 And the team also had required some corrective
15 actions for their alternate shutdown procedures themselves,
16 and I will go into some more detail on these two groups.

17 (Slide.)

18 On the next slide, we see the major equipment
19 areas. Basically, they used the criterion -- again, we have
20 listed those criterion in the report. Because the team had
21 disagreed with some of the criteria, we did require
22 corrective actions of the type listed on the slide to be
23 completed. Of the corrective actions that the team
24 identified, there was one which we felt required immediate
25 action. There was one other one which we thought should be

1 corrected in the short term, that is, prior to operation
2 above 5 percent for Unit 2, and within two weeks for Unit
3 1. And finally, all the other corrective actions that were
4 identified by the team we felt that a July 31st, 1981, date
5 for completion of those actions was acceptable.

6 COMMISSIONER AHEARNE: Janis, last time you
7 mentioned that they were having some difficulty getting
8 enough material to complete the cable wrapping on the
9 previous date that they had committed to. What is their
10 current estimate?

11 MS. KERRIGAN: The current estimate is July 31st.
12 That date was modified a little bit by the team findings.
13 They needed some additional wrapping material, so July 31st
14 is the date now. And the license reflects that; the draft
15 license reflects that.

16 Finally, the second major category in which the
17 team felt corrective actions were required was in their
18 alternate shutdown procedure.

19 (Slide.)

20 Basically, PSE&G's approach to alternate shutdown
21 is to maintain operational control from the control room for
22 as long as possible. However, if for some reason equipment
23 operability is affected by fire at some place in the plant,
24 they do have alternate means, through local operation of
25 equipment from either the control room or an alternate

1 location, to operate the equipment manually. They basically
2 use their standard operating procedures, coupled then with
3 Emergency Equipment Operations Manual to step through their
4 procedure.

5 COMMISSIONER GILINSKY: This is from a single
6 other location?

7 MS. KERRIGAN: No, sir. Well, it would depend
8 upon where the fire was. I think for a fire in the relay
9 room, it would require -- How many?

10 MR. NORRHOLM: Okay, in the event of a fire in the
11 relay room they would have to go to several plant locations
12 to operate equipment, but they would not have to stay there.

13 COMMISSIONER GILINSKY: To shut the plant down?

14 MR. NORRHOLM: If the fire gutted the relay room,
15 that's true, in order to achieve both hot standby and
16 cooldown operation at various plant operations would be
17 necessary. The way the procedure is written, given any
18 postulated fire, they might take out some equipment or
19 control of that equipment; they can implement that portion
20 of the procedure that may be necessary to operate something
21 which has become inoperable.

22 But again, the control would be from a single
23 location in the plant, and then using communications they
24 would dispatch operators to various local operating stations
25 to open or shut a valve, close a breaker to start a pump, or

1 something like that.

2 COMMISSIONER GILINSKY: Is this a standard
3 situation?

4 MR. DENTON: I'm not sure there is a "standard
5 situation" in this area. The requirement is that you be
6 able to safely shut the plant down in the event of fires, so
7 they adopt various schemes. What we look at is to be sure
8 the procedures and the human factors aspects of it are
9 doable. So I'm not sure that even a single panel is
10 vulnerable to all postulated fires. You have to go to a
11 second one, sometimes.

12 We did find some areas in the original
13 procedures-- I think Janis has talked about those -- that we
14 thought were too demanding on the operators, and they've
15 made modifications to satisfy us in that area.

16 COMMISSIONER AHEARNE: The description, Janis, in
17 your report was rather harshly critical of the set of
18 procedures that they had.

19 MS. KERRIGAN: Yes, sir.

20 COMMISSIONER AHEARNE: It goes on to say that -- I
21 guess you also concluded that the same problems existed in
22 Unit 1 and that they ought to modify both at the same time.
23 What is the timescale over which they're supposed to correct
24 those?

25 MS. KERRIGAN: For Unit 2 it's prior to operation

1 above 5 percent power, and Unit 1 is on the same schedule.
2 They should do it at the same time as Unit 2 is doing it.
3 That was the team recommendation.

4 COMMISSIONER BRADFORD: That's in the license?

5 MS. KERRIGAN: Yes, sir. In the Unit 2 license.

6 COMMISSIONER BRADFORD: Right.

7 MR. NORRHOLM: If I might make one comment, their
8 organizational procedures are such that the changes will be
9 made to both units at the same time. I believe tomorrow is
10 the date when they will be implemented, the two changes.

11 COMMISSIONER AHEARNE: Now in this approach you
12 mentioned that they send people out from a single location
13 to these various places. Do they ever practice that?

14 MR. NORRHOLM: Not yet. One of the conditions
15 that we propose to put in the license was to actually do a
16 walk-through of this procedure during the shutdown outside
17 the control room test.

18 MS. KERRIGAN: However, we did have them go
19 through an example of each of the manual actions they would
20 have to perform so that we could get an idea of whether it
21 was feasible or not.

22 So basically the team concluded that there was
23 sufficient operational information available to achieve cold
24 shutdown, but we did want some corrective actions
25 implemented that basically have to do with the procedure

1 modifications which we've been discussing, and also some
2 corrective actions on their communications and lighting at
3 the alternate shutdown location. And I think we've already
4 discussed the schedule for both units.

5 (Slide.)

6 Finally, my last slide is a summary of the team's
7 conclusions. We concluded that the cable separation study
8 done by the licensee was acceptable; that their basic
9 program was acceptable; and that the corrective actions
10 implemented by the licensee were acceptable with the
11 recommended modifications that the team made, modifications
12 to the criteria that they were using.

13 MR. DENTON: I think it's important to note here
14 that contrary to the approach we were talking about at the
15 last meeting, they are not meeting Appendix R today, but
16 they are meeting General Design Criteria 3. They've
17 committed to meet Appendix R, and we think all the interim
18 actions they've taken are appropriate.

19 If you remember, last time we talked about it they
20 had stepped up front in terms of Appendix R in trying to
21 meet it in advance, and that's not the case today. It's not
22 required that they meet Appendix R today. We're quite
23 satisfied with what they do meet today.

24 COMMISSIONER BRADFORD: On what schedule will they
25 need Appendix R?

1 MS. KERRIGAN: The Unit 1 schedule.

2 MR. DENTON: The Unit 1 schedule, which is where
3 Appendix R applies, and they'll make them identical in terms
4 of their fire protection as they come into compliance with
5 Appendix R, like all plants.

6 COMMISSIONER BRADFORD: Can I ask a little more
7 about the one area that did pose an immediate safety
8 concern? Can you talk a little bit about, first of all,
9 what that was; and second, how it could have gotten this far
10 without being raised as a problem before?

11 MS. KERRIGAN: What I'll do is give a very, very
12 brief thing and then ask Leif to help out here. Basically,
13 it was the control room indication. They had routed the
14 alternate shutdown indication through the same location, so
15 that a single fire would have -- they would have lost the
16 control room indication and their alternate indication. And
17 it was basically just a design flaw that would have been
18 picked up, we feel, when they had finished their final
19 engineering verification.

20 COMMISSIONER AHEARNE: Indication of -- ?

21 MS. KERRIGAN: Everything.

22 MR. NORRHOLM: Primary parameters, reactor, steam
23 generator. Let me expand a little bit on that.

24 MS. KERRIGAN: Yes.

25 MR. NORRHOLM: The main problem was in the

1 instrument bus power supplies. There are four instrument
2 buses to supply the four redundant protection channels. For
3 the alternate shutdown capability, the C channel was
4 selected as the dedicated independent channel to be
5 displayed at the hot shutdown panel in the plant. It
6 received instrument power from the C instrument bus.

7 In picking up that C power to route it to the hot
8 shutdown panel, they made an error and routed that cable
9 through the remaining instrument power locations. So this
10 is a recent situation in attempting to meet the dedicated
11 hot shutdown panel with instruments independent of the relay
12 room providing that power that they made the error.

13 So we postulated the single fire in the relay room
14 that could affect instrument power both for the control room
15 and the alternate shutdown. And for that reason, we felt it
16 needed immediate corrective action, which has been taken by
17 the way.

18 COMMISSIONER BRADFORD: What is the action?

19 MR. NORRHOLM: The action was to reroute the power
20 cable so that it was more than 20 feet from the normal power
21 cable.

22 MS. KERRIGAN: While they were rerouting, they
23 stationed a fire watch in the room.

24 MR. NORRHOLM: Correct.

25 COMMISSIONER GILINSKY: This was picked up when?

1 MR. NORRHOLM: During the review.

2 COMMISSIONER GILINSKY: I see.

3 COMMISSIONER BRADFORD: When would it have been
4 picked up though, if the review hadn't been done?

5 MR. NORRHOLM: The licensee contends that in his
6 final engineering verification he would have picked up the
7 same thing.

8 COMMISSIONER BRADFORD: I guess it puzzles me that
9 a plant could get to that point -- that is, I don't know
10 when the licensee would have done the final engineering
11 verification, but it would have been after we had issued the
12 operating license -- that a plant could get to that point
13 with what I take it would have been what we would view as a
14 violation of the general design criterion still undiscovered.

15 MR. NORRHOLM: Bear in mind that the real issue
16 came up on Unit 1, which is an operating plant which is
17 doing this on the Appendix R schedule.

18 COMMISSIONER BRADFORD: Does the same problem
19 exist for Unit 1?

20 MR. NORRHOLM: It did; it's been modified.

21 COMMISSIONER BRADFORD: What about other plants?

22 MR. NORRHOLM: It would depend on the individual
23 design they selected for their hot shutdown panel.

24 COMMISSIONER BRADFORD: Does that mean it is
25 possible -- is this the kind of problem that you would

1 expect a certain uniformity of design among utilities on?

2 MR. NORRHOLM: You would have expected that in
3 making up the design they would have considered the
4 separation requirement in the power supply.

5 MR. DENTON: The intent would be to avoid it.

6 COMMISSIONER BRADFORD: Yes.

7 MR. DENTON: But you ask: Is it possible? It's
8 certainly possible. You've got to recall how many cables
9 there are, and the object of trying to design against any
10 fire that affects the control room, that you not also affect
11 the cables that go to your alternate shutdown panel. So the
12 only way to really do it is to identify all the systems you
13 need for auxiliary shutdown, and then look in every room
14 where the cables are. And I think in this case they found
15 an example where the cables were intermixed. The intent of
16 the design would be to avoid it.

17 I don't know how applicable, though, this is to
18 other plants. Does anybody in the audience want to comment?

19 (No response.)

20 MR. DENTON: I would doubt if this particular
21 design is widely extrapolable, because I think they are more
22 plant specific in designing their alternate shutdown panel
23 than routine.

24 COMMISSIONER BRADFORD: In that same category,
25 you've had a number of concerns that didn't quite rise to

1 the level of immediate safety concerns here with this
2 plant. Do you have any reason to think that if you put a
3 similar review on other plants at roughly the same stage in
4 the licensing process, to say nothing about operating
5 plants, you would have a similar experience? Is there any
6 reason to think Salem was especially troublesome in the fire
7 protection area?

8 MR. DENTON: They've all had a number of reviews.

9 COMMISSIONER BRADFORD: That's my difficulty.

10 MR. DENTON: Well, but this is one aspect. I
11 mean, remember, now, that fire protection is a big area and
12 we're coming down to one area of it. They've been reviewed
13 by I&E and they've been reviewed by NRR, and Appendix R goes
14 into effect.

15 MS. KERRIGAN: I think one of the things I tried
16 to point out earlier is that all of these deficiencies,
17 every one of them, would have been picked up by Appendix R.
18 If we went back and made a comparison with Appendix R, that
19 would have been picked up under Appendix R.

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1 COMMISSIONER BRADFORD: How would it have been
2 picked up, though, Janis? On reviews being done?

3 MS. KERRIGAN: In our Appendix R reviews.

4 MR. DENTON: Appendix R is not in force, yet.

5 COMMISSIONER BRADFORD: No, I understand. So that
6 really means that for purposes of putting Appendix R into
7 force, you are going to have to put the same kind of team
8 review effort into each of those plants?

9 MR. DENTON: Well, I am not sure it is the same
10 kind, but --

11 COMMISSIONER BRADFORD: That is what I am after.
12 If there is no reason to think that Salem is a lot worse
13 than other plants, then what is it that is going to uncover
14 these kinds of deficiencies in the other plants? It is the
15 Appendix R process?

16 MR. CASE: Let me try, Commissioner Bradford. I
17 do not think Salem is unique in this respect. I think if
18 you sent the team to other operating plants, or
19 ready-to-operate plants, you would likely find the same kind
20 of problems that we have found here. I do not consider them
21 to be substantial safety problems. They would have been
22 picked up in time, and that is the issue: of picking them
23 up today, or picking them up several months from now.

24 But as you will recall, in every discussion we
25 have on fire protection we freely admit there are some

1 deficiencies that have to be fixed; that comparing these few
2 things with the large number of things that have been done
3 to improve fire detection capability and fire resistance,
4 that we do not think these few things are significant in the
5 grand scheme of things.

6 I think we had that position with regard to this
7 plant and to the other operating plants, too.

8 MR. STELLO: I think there is one more point I
9 would like to make. I think you have got to recognize that
10 the team went in and was doing a review, even before the
11 licensee finished his review. He didn't do his own
12 verification. So if you have a review process going on and
13 you are exposing, even here at this level, to that detailed
14 review, you are surely going to expect to see that you are
15 going to find things that hopefully the licensee would have
16 found. And yet there are other layers of review beyond
17 that.

18 Recognize that the team went in looking at an area
19 for which there was a backfit requirement according to
20 Appendix R not yet finished. We went in, looked at it, the
21 licensee had not finished his job, and say: Look, you made
22 a design error. This cable was not intended to go that way.

23 And he says: Oh, yes, that is right; it
24 shouldn't. It is supposed to go another way. And they fix
25 it. I think that if you did this kind of review while a

1 licensee is doing a review in this plant, you ought to
2 expect to see this kind of a situation arise. That is what
3 design verification reviews and the QA program are all
4 about.

5 And then you have the layering of the NRC review
6 beyond those. So I do not think this would be unusual in
7 any sense. You are really in the middle of the design
8 process that is going on now to retrofit the Appendix R
9 requirements.

10 COMMISSIONER BRADFORD: Yes. I think I see what
11 you are saying in terms of the process of getting changes
12 made in the plants on fire protection, and that it is a
13 tangled and a difficult area. It does trouble me, though,
14 and I guess we are just trapped into it now, (a) that we
15 might easily have licensed a plant which had what the Staff
16 now considers to have been an immediate safety concern in
17 the fire protection area in it; and (b) just that it is a
18 long time since Browns Ferry.

19 And I understand the difficulties that you are
20 telling me, but I think in the area of fire protection it
21 bears emphasis that here is a plant that has really been
22 built almost entirely since the Browns Ferry fire. And with
23 all due respect to all the cables, and all the complexities,
24 Janis' trip report does point out a number of areas that I
25 must say I am surprised to see are still in plants being

1 completed today.

2 MR. STELLO: But the design was not finished. And
3 whenever you look, before a design is finished, I think you
4 must expect you are going to see this. You are going to
5 find it even after the design is finished. That is what we
6 are all about. Even after they're finished, we go in and we
7 either don't like what they did, or we find that they didn't
8 do it well enough. We have those kinds of problems, as
9 well. But in this particular case, unless I am wrong-- and
10 someone ought to correct me -- the licensee had not yet
11 finished his own design process.

12 MS. KERRIGAN: That's right. He hadn't finished
13 the engineering verification.

14 MR. STELLO: Right. So I would not say that it is
15 the least bit unusual.

16 MS. KERRIGAN: In the one Immediate Action --

17 COMMISSIONER BRADFORD: No. I'm really talking
18 less about Salem in particular here -- although as an
19 example it is not an unreasonable one -- than I am about the
20 length of time which it is appearing to take to get adequate
21 fire protection.

22 MR. DENTON: Well, I think it is going to take
23 right up to when Appendix R becomes effective, though, where
24 you have given them through regulations certain dates to be
25 effective. And there will be a mixture of people at any

1 time that are in compliance with those right up to the last
2 day.

3 COMMISSIONER BRADFORD: You've got a number of
4 requests for exemptions from specific parts of Appendix R on
5 these plants?

6 MS. KERRIGAN: Yes, sir. And we did not
7 evaluate-- the team did not evaluate that. We only looked
8 at the interim acceptability of their cable separation.

9 MR. DENTON: We haven't granted them any relief
10 from Appendix R --

11 COMMISSIONER BRADFORD: Right.

12 MS. KERRIGAN: No.

13 MR. DENTON: -- and we would propose to treat them
14 in the same class of all plants who have asked for relief,
15 and not deal with it here; that does not seem ripe to
16 decide.

17 MS. KERRIGAN: So that concludes the discussion on
18 the fire protection.

19 (Slide.)

20 Finally, on the next slide, everybody received --

21 COMMISSIONER AHEARNE: Could I ask a question on
22 your report, then?

23 MS. KERRIGAN: Yes, sir.

24 COMMISSIONER AHEARNE: Two questions, I guess.

25 First, you mentioned on page 15 of your report,

1 you are talking about to account for personnel requirements
2 to support unaffected unit operation, and apparently you
3 calculated the amount of staffing requirements that were
4 necessary. And then you concluded that they would have to
5 add two people that currently are not on the shift.

6 MS. KERRIGAN: Yes, sir.

7 COMMISSIONER AHEARNE: Where did you come out on
8 that?

9 MS. KERRIGAN: Well, we modified the tech specs to
10 increase the staffing level to account for those additional
11 people.

12 COMMISSIONER AHEARNE: So you are requiring them
13 to have those additional people?

14 MS. KERRIGAN: Yes, sir.

15 COMMISSIONER AHEARNE: The second question was:
16 Throughout the report there are statements that "completion
17 of the above-listed corrective action should be verified by
18 I&E prior to Unit 2 operation above 5 percent power."

19 Now does I&E have a -- has the baton been handed
20 over to I&E in any kind of a formal way so that they now
21 have a list of the things that they are supposed to be
22 verifying?

23 MS. KERRIGAN: Right. Well, Leif was a member of
24 the team, and he has a complete list of all the items that
25 the team identified. In addition, we have each of them

1 listed in the license, each corrective action that was
2 identified by the team as being necessary.

3 COMMISSIONER AHEARNE: Oh, I see. And so I&E then
4 will formally have to follow up on them?

5 MS. KERRIGAN: Yes, sir.

6 MR. NORRHOLM: As a matter of routine, license
7 conditions prior to a key event in the startup program are
8 confirmed.

9 COMMISSIONER BRADFORD: If you were about to leave
10 fire protection, let me ask you one other question, then.

11 In their letter of March 19th to you regarding
12 emergency lighting, it says that: "Installation has been
13 completed." In the SER, you say that "PSE&G cannot support
14 a near-term installation of emergency lighting."

15 Are you talking about two different things? And
16 if not, which of those is right?

17 MS. KERRIGAN: Leif, why don't you answer that.

18 MR. NORRHOLM: The emergency lighting system that
19 Public Service Electric & Gas described in their March
20 letter we found to be inadequate. You will note they use
21 the terms "emergency lighting system." They were relying on
22 a fixed lighting system which was powered from inverters
23 from the station batteries augmented by some battery packs.
24 We postulated a situation where they could lose
25 the emergency lighting system, the fixed system, and

1 therefore needed additional battery packs. That is the
2 reason the SER calls for the addition of more battery packs
3 in the locations that they would have to use for the
4 alternate shutdown, and also access and egress to those
5 areas.

6 COMMISSIONER BRADFORD: I see. So basically to
7 come up to snuff on emergency lighting, they were going to
8 have to do more than they had done as of the March 19 letter?

9 MR. NORRHOLM: That is correct.

10 COMMISSIONER BRADFORD: Now what does the phrase,
11 "they cannot support it" mean? Materials not available?
12 They disagree with it?

13 MR. NORRHOLM: No.

14 MS. KERRIGAN: That is in that --

15 MR. NORRHOLM: They agree with the finding, and
16 the fact that lighting is necessary in several of the plant
17 areas; since the team left, they have been obtaining
18 emergency lights to install. However, these are pretty
19 hefty battery packs and require a good installation to make
20 sure they stay there, and it will take some time to get them
21 in place in all the areas where they need them.

22 MS. KERRIGAN: All right. So that would be the
23 end of fire protection.

24 (Slide.)

25 Finally, on the next slide, the draft license that

1 you received, there have been some minor modifications to
2 that draft license. Basically there was a restatement of
3 the requirement for compliance with Appendix R to more
4 accurately reflect what the licensee's commitment is. That
5 is, they have committed to implement on Unit 2 any
6 modifications required for Unit 1 on that schedule.

7 The minimum staffing level was taken out of the
8 license and put in the tech specs instead, since it is a
9 permanent type thing, instead of a license condition.

10 And finally, revision to deadline for establishing
11 regularly scheduled eight-hour shifts. We had originally,
12 the license called for them to be on eight-hour shifts by
13 June 1st. It is now June 3rd. It is a two-day delay for
14 fire brigade training.

15 MR. DENTON: I think in addition there are perhaps
16 a dozen items in the license, in the draft license we sent
17 down which have now been satisfied to I&E's requirements,
18 and we will probably delete those when we type the final
19 version rather than to clutter it up.

20 COMMISSIONER GILINSKY: Let me ask you. You refer
21 to an "open items" list. I take it these are a whole
22 collection of minor items?

23 MR. NORRHOLM: They are some of the remaining
24 construction, and mostly preoperational testing deficiencies
25 which need to be resolved.

1 COMMISSIONER GILINSKY: Can you give me some idea
2 of the number of items, or the kinds of items?

3 MR. NORRHOLM: The total list probably still runs
4 between 50 and 100 items, but they are fairly minor. Many
5 of them relate to supporting documentation inaccuracies, and
6 things like that.

7 COMMISSIONER GILINSKY: And these are items that
8 are brought to our attention by the licensee, or what?

9 MR. NORRHOLM: They are brought to our attention
10 by our review of their outstanding items' list. It is their
11 system for tracking questions that came up during the
12 preoperational test program.

13 COMMISSIONER GILINSKY: And the inspectors have to
14 be satisfied --

15 MR. NORRHOLM: That's correct.

16 COMMISSIONER GILINSKY: -- on the entire list
17 before they go beyond 5 percent power? Is that a typical
18 number of items at this stage?

19 MR. NORRHOLM: I would say it is. Most of these
20 items have been deferred past power-range testing because
21 they have no impact on system operability or reliability,
22 but are rather design-type or maintenance-support type
23 questions which need to be resolved ultimately, but don't
24 impact on the current test program or operation of the
25 plant.

1 MR. DENTON: They still have some remaining
2 5-percent tests to run, I guess some more operators that
3 need to be tested or exposed to a low-power test; and then
4 it is probably the normal three-month startup toward full
5 power after that. And I guess during that phase is when
6 many of these open items would --

7 COMMISSIONER GILINSKY: Well, it says "prior to
8 exceeding 5 percent power," they've got to resolve the items
9 on this list.

10 MR. NORRHOLM: That's correct.

11 MR. DENTON: There are certain items that they
12 must meet. Then I think some of the open items, though, on
13 your list they can meet later?

14 MR. NORRHOLM: That's correct. The list reference
15 in the license is the licensee's tracking mechanism for
16 previous questions that have come up in the test programs.
17 Each of those is keyed to a key event. It could be -- Well,
18 it went all the way back to core load, initial criticality,
19 now 5 percent, full power, or commercial operation for
20 something which would not impact on safety of startup
21 testing.

22 Most of those items have been deferred to
23 commercial operation, because in fact they do not impact on
24 operability of the equipment; but are rather engineering
25 questions to be resolved for continued maintenance on the

1 equipment. The reason for putting the item there is to
2 ensure that we concur with their decision to defer the item.

3 COMMISSIONER GILINSKY: So when you say "resolved
4 to the satisfaction of I&E," that may mean allowing that
5 item to be deferred?

6 MR. NORRHOLM: That is correct.

7 COMMISSIONER GILINSKY: That's a possibility?

8 MR. NORRHOLM: Yes.

9 MS. KERRIGAN: All right. Thank you.

10 Finally, the Staff recommendation is that the
11 Commission authorize the Director of the NRR to issue a
12 full-power license to Salem Unit 2.

13 COMMISSIONER GILINSKY: Can I ask a couple more
14 questions?

15 MS. KERRIGAN: Yes, sir.

16 COMMISSIONER GILINSKY: Could you just tell me
17 what the exemption to GDC-57 amounts to?

18 MS. KERRIGAN: If I can recall it. That was the
19 check valves, wasn't it, or containment? Containment
20 isolation check valves? Do you remember?

21 MR. MIRAGLIA: It had a 90-day requirement.

22 COMMISSIONER GILINSKY: Right. It is a temporary
23 exemption.

24 MS. KERRIGAN: Yes. I think we discussed it in
25 Supplement No. 5 to the SER. It was a temporary exemption.

1 MR. MIRAGLIA: It is discussed in Supplement No. 5
2 to the SER, and it dealt with temporarily exempting GDC-57
3 to say that the stop checkvalve -- the had stop checkvalves,
4 and there was some question as to whether a stop checkvalve
5 would be constituted in such a manner to meet the
6 requirements of GDC-57, which indicates "remote operated" or
7 "manually operated." There are certainly manually operated
8 valves to stop check; and there was some question as to
9 whether that would meet fully the requirements of GDC-57.

10 They provided information that was evaluated in
11 that Supplement No. 5, and we agreed to a temporary
12 exemption. But there is a license condition in the license
13 that says that within 90 days, or 120 days --

14 COMMISSIONER GILINSKY: Well, it just says a
15 "temporary exemption."

16 MR. MIRAGLIA: Right. And the exemption exists
17 for a certain amount of time. Within a certain amount of
18 time, the applicant would have to come in and provide us
19 with additional information as to why that exemption should
20 be made permanent --

21 COMMISSIONER GILINSKY: Oh, I see.

22 MR. MIRAGLIA: -- or else modify the valves so
23 that they fully comply with GDC-57.

24 COMMISSIONER GILINSKY: And let me ask you one
25 more question.

1 On the last page of the license, it says: "The
2 licensee shall immediately notify the Commission of any
3 accident at this facility which could result in unplanned
4 releases of quantities of fission products in excess of
5 allowable limits," and so on.

6 Do we not have a general requirement? Is that
7 something that needs to be put into a license? And what is
8 the situation in the case of other plants?

9 MR. SCINTO: You do have such a provision in the
10 regulations, but I believe that that particular provision is
11 contained in one of the statutory modifications of last year
12 that says it shall be a condition of the license. The
13 statutory provision is written, therefore. That is my
14 recollection.

15 CHAIRMAN HENDRIE: The statutory provision of
16 what, Joe?

17 MR. SCINTO: Was written in the form that it
18 "shall be a condition of the license."

19 CHAIRMAN HENDRIE: I see.

20 MR. SCINTO: This is my recollection. I can
21 verify that, and if that is not accurate I will contact you
22 and make sure to give you a more accurate description. That
23 is my recollection.

24 MR. STELLO: As I recall, the 50.72 reporting
25 threshold is significantly lower than that, though, and that

1 is mandatory.

2 MR. SCINTO: Yes.

3 COMMISSIONER GILINSKY: Okay. Thank you.

4 CHAIRMAN HENDRIE: John?

5 COMMISSIONER AHEARNE: I just have a question
6 about steam generator tubes.

7 MS. KERRIGAN: Why doesn't Dick Vollmer answer
8 that question.

9 (Laughter.)

10 MR. VOLLMER: What is the question?

11 (Laughter.)

12 MS. KERRIGAN: Whatever the question is.

13 COMMISSIONER AHEARNE: Whatever it is. Do you
14 have some kind of an inspection program planned to try to
15 keep track of the tubes in the first year, and particularly
16 the ones with narrow radii?

17 MR. VOLLMER: Yes. We do have the inspection
18 program. First of all, they have committed to putting
19 inspection ports in the steam generators, and that
20 commitment I think was to be done at the first refueling
21 outage. I am not sure if the specific detailed inspection
22 program yet is a part of the tech specs, because at this
23 point in time they couldn't do it; so when that port is put
24 in, we would establish an appropriate inspection program to
25 see that the upper support plate is not getting the flow

1 slots clogged up, and things like that, which may affect the
2 tightly bent tubes.

3 COMMISSIONER AHEARNE: Now when you say "we," is
4 this something that you, NRR, is working with I&E on?

5 MR. VOLLMER: I think NRR has the lead on this at
6 this point in time, and when the inspection ports would be
7 put in I think it would be somehow a part of the tech specs
8 as to whatever the surveillance program we would require.

9 COMMISSIONER AHEARNE: So you would modify the
10 tech specs at that stage?

11 MR. VOLLMER: Yes, we would have to do that.

12 MR. DENTON: We have a report from another
13 facility in that is under review. At one time we had
14 thought within the Staff it might be a good idea to plug the
15 outer-row tubes --

16 MR. VOLLMER: The first row.

17 MR. DENTON: -- the first row. We deferred that
18 decision until we received this report and looked at it more
19 carefully, and we have not come to a conclusion that they
20 must be plugged, yet.

21 CHAIRMAN HENDRIE: Do we know how Unit 1 is doing?

22 MS. KERRIGAN: Yes.

23 MR. EISENHUT: Yes. We routinely are monitoring.
24 One of the things we are looking at, of course, is the
25 routine operation of the steam generator tube performance.

1 Salem 1 has not shown up as one of the really bad plants in
2 terms of any of the myriad of a half-dozen problems that we
3 are tracking.

4 All plants are showing a minor amount of
5 degradation of tubes, but it is nothing out of the real
6 ordinary.

7 In answer to Commissioner Ahearne's question, we
8 have sort of standard orders that on each steam generator
9 tube inspection, that is something we are following very
10 closely, particularly as I think there must be a half-life
11 of something about a year-and-a-half a new phenomena comes
12 up. So we are very closely following all the different --

13 CHAIRMAN HENDRIE: How long has it been since the
14 last new phenomena?

15 MR. EISENHUT: About a year-and-a-half.

16 (Laughter.)

17 MR. EISENHUT: I think we're on the verge,
18 though. We may have one already lurking back in the
19 woodwork that we're following; so we may have the second
20 one.

21 COMMISSIONER AHEARNE: So are you saying, Dick,
22 this is handled in your area? Do you have someone, then,
23 who is trying to work up a --

24 CHAIRMAN HENDRIE: -- new phenomena?

25 COMMISSIONER AHEARNE: -- an appropriate

1 inspection program?

2 MR. VOLLMER: We have been following the results
3 of the inspections at the Trojan which Westinghouse had
4 submitted before in February on that. Our preliminary
5 analysis of that report doesn't lead us to any conclusions
6 mechanistically of exactly what is causing them, so we are
7 looking into that further. And I think that Darrell will
8 look at those.

9 We have become aware of a second-row tube problem
10 which we are also looking into, and I think none of these
11 appear to be the types of situations which cause a large
12 leak a la Surry, for example. So we think that we can look
13 at the mechanisms and try to work out solutions without
14 hosing plugging of any specific rows of tubes.

15 CHAIRMAN HENDRIE: Unit 2, what is the secondary
16 cleanup system on Unit 2? Is that an all-volatile, now?

17 MR. SCHNEIDER: All volatile treatment.

18 MR. EISENHUT: I have been informed by the
19 licensee that it is a full-flow demineralizer, AVT, all
20 volatile treatment.

21 CHAIRMAN HENDRIE: Did Unit 1 start that way? Or
22 did it have to get converted?

23 MR. SCHNEIDER: It started with AVT, but not the
24 demineralizer.

25 MR. NORRHOLM: It started with AVT, but not the

1 demineralizer system.

2 COMMISSIONER AHEARNE: I thought I heard that
3 answer in the air somewhere.

4 (Laughter.)

5 CHAIRMAN HENDRIE: Well, it could be interesting
6 to see how they look, one against the other, in a couple of
7 years.

8 COMMISSIONER BRADFORD: One other very short
9 question. You were talking about fire protection in
10 containment when I came in, so I hesitated to ask about it,
11 but did you in fact make the licensee commitments in that
12 area license conditions?

13 MS. KERRIGAN: No, sir.

14 COMMISSIONER BRADFORD: Why not? It looked like
15 that was almost the only part of their letter that --

16 MS. KERRIGAN: Well, it actually is, because it is
17 tied up with Appendix R. Oh, no, that would be --

18 COMMISSIONER BRADFORD: But they have asked for an
19 exemption.

20 MS. KERRIGAN: -- that's a backfit.

21 That's right. No. Is that one of the ones that
22 they have an exemption request in on, the containment? I
23 don't think that was --

24 COMMISSIONER BRADFORD: Well, I think they do have
25 an exemption request, but I think they also have a number of

1 commitments in the letter that were of a type that you
2 generally picked up in the license, and I wonder if there
3 was any reason you hadn't done those?

4 MS. KERRIGAN: No, it wasn't part of the team
5 review. We did not do anything inside containment.

6 COMMISSIONER BRADFORD: Let's see. Why didn't you
7 do anything inside containment?

8 MS. KERRIGAN: Because I think that the Staff
9 position has always been that the probability of fire inside
10 containment is sufficiently low that we don't fire-protect
11 inside containment, or never have. Some? Not on Salem.

12 MR. FERGUSON: We left any fire consideration in
13 the containment out of the study because the team was
14 looking strictly at the interaction study. The interaction
15 study was concerned with -- it did not include the
16 containment and did not include the control room.

17 MS. KERRIGAN: Right.

18 COMMISSIONER GILINSKY: Let's see. To follow that
19 up, you said earlier that the assumption that you couldn't
20 have fires in the containment was irrelevant.

21 MS. KERRIGAN: Well, it wasn't part of the team
22 review. It had no impact on the team review.

23 COMMISSIONER GILINSKY: I see.

24 MS. KERRIGAN: I think the other criteria about
25 the control room fire had no impact on our review.

1 COMMISSIONER BRADFORD: Again, was there a reason
2 for leaving those commitments out of the license?

3 MR. DENTON: Other than the fact I guess they
4 would be -- we thought they would be subsumed by Appendix R.

5 COMMISSIONER BRADFORD: If there is no exemption
6 there.

7 MS. KERRIGAN: Right. When we do our review of
8 Unit 1, our review of the exemption requests, whatever we
9 decide on Unit 1 would also be applicable to Unit 2; and
10 that would be the license condition that we propose.

11 COMMISSIONER BRADFORD: Okay. Let me ask the
12 question another way. There are a fair number of
13 commitments set out in their letter of March 19, a number of
14 which you have picked up and put in the license. Why
15 wouldn't the same logic have applied to each of those? What
16 is the difference between a commitment that did get picked
17 up and one that didn't?

18 MS. KERRIGAN: All right. The team did not
19 approach it in that way, looking at what the licensee
20 commitments were. The team went about their approach in
21 looking at what was adequate for interim operation until an
22 Appendix R review can be done. And those are the
23 commitments that were put in the license.

24 COMMISSIONER BRADFORD: I see.

25 MS. KERRIGAN: The team went in there almost like

1 independent of any other correspondence or commitments.

2 CHAIRMAN HENDRIE: Yes, the license --

3 COMMISSIONER BRADFORD: Okay. That explains it.

4 CHAIRMAN HENDRIE: Yes. The license conditions
5 are presumably here a bridge to the --

6 MS. KERRIGAN: Appendix R.

7 CHAIRMAN HENDRIE: -- effective -- to the
8 implementation of Appendix R on both units.

9 MS. KERRIGAN: That's right.

10 COMMISSIONER BRADFORD: Let me just apologize for
11 keeping all of you waiting at the beginning. I think it's
12 the first plant license I may really have delayed.

13 (Laughter.)

14 COMMISSIONER AHEARNE: I don't want you to take
15 silence as agreement.

16 (Laughter.)

17 COMMISSIONER BRADFORD: I don't even hear silence.

18 CHAIRMAN HENDRIE: Actually, Peter, it was seven
19 minutes. Now if we take a million dollars a day, and then
20 seven minutes, then the question is whether or not --

21 COMMISSIONER BRADFORD: Anybody who sends this
22 transcript to the Appropriations Committee is in trouble.

23 (Laughter.)

24 CHAIRMAN HENDRIE: Do the capital carrying charges
25 get included or not, or some fraction. If we knew the

1 answer to that, we would probably --

2 COMMISSIONER BRADFORD: I know the answer to that.

3 (Laughter.)

4 CHAIRMAN HENDRIE: There seem to be several
5 answers to that.

6 Okay, this thing certainly looks like a reasonable
7 proposition to me. I would vote to authorize the Director
8 to issue the full-power license.

9 John?

10 COMMISSIONER AHEARNE: Aye.

11 CHAIRMAN HENDRIE: Peter?

12 COMMISSIONER BRADFORD: Aye.

13 CHAIRMAN HENDRIE: Vic?

14 COMMISSIONER GILINSKY: Yes.

15 CHAIRMAN HENDRIE: Agreed. Done.

16 (Whereupon, at 3:24 p.m., the meeting of the
17 Commissioners was adjourned.)

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NUCLEAR REGULATORY COMMISSION

This is to certify that the attached proceedings before the
COMMISSION MEETING

in the matter of: Public Meeting - Salem 2 (PSE&G) Full power Operating License

Date of Proceeding: May 19, 1981

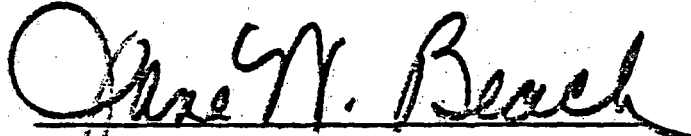
Docket Number: _____

Place of Proceeding: Washington, D. C.

were held as herein appears, and that this is the original transcript thereof for the file of the Commission.

Jane W. Beach

Official Reporter (Typed)


Jane W. Beach

Official Reporter (Signature)