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NUCLEAR REGULATORY COMMISSION

IN THE MATTER OF:

PUBLIC MEETING

BRIEFING BY I&E ON TMI LESSONS LEARNED

Place - Washington, D. C.

Date - Wednesday, 12 December 1979

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

PUBLIC MEETING

BRIEFING BY I&E ON TMI LESSONS LEARNED

Commissioners' Conference Room,
1717 H Street, N.W.,
Washington, D.C.

Wednesday, 12 December 1979

The meeting was called to order at 9:30 a.m.,
pursuant to notice, Chairman Ahearne presiding

IN ATTENDANCE:

CHAIRMAN JOHN F. AHEARNE

COMMISSIONER VICTOR GILINSKY

COMMISSIONER RICHARD T. KENNEDY

COMMISSIONER JOSEPH M. HENDRIE

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P R O C E E D I N G S

CHAIRMAN AHEARNE: Good morning.

Lee, I gather we have a meeting on the Inspection and Enforcement Lessons Learned.

MR. GOSSICK: Right. This has been on the schedule a number of times, but finally we are here to go ahead and give you a briefing on it. Mr. Stello will introduce the briefing.

Vic.

MR. STELLO: Thank you, Lee.

We have issued a report taking a look at what I&E has learned from Three Mile Island. The report is dated October 10, 1979. It was one of the things that as I took over the reins of Office Director of I&E I felt there was a real need to do.

Events since the issuance of this report, however, have overtaken what I felt was the need to do a detailed briefing of the report since we are developing Task Action Plans for the NRC to go forward with all the lessons that have been learned from Three Mile Island.

The first discussion on that will be this afternoon, of the Task Action Plans themselves.

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CHAIRMAN AHEARNE: We at the Commission felt it very important to hear from you before we heard about the Task Action Plans. We, as you know, have heard a lot from Harold

eb2 1 Denton on that side of the Lessons Learned. We believed it
2 essential to get your perspective on I&E's Lessons Learned
3 before we began to sit down and discuss the Action Plans.

4 MR. STELLO: I understand. What we have done for
5 the purpose of this briefing is to take the on-going activity
6 that has been in place, looking at what the recommendations
7 are, and digesting and understanding and trying to decide
8 which of these we ought to go forward with.

9 What we will do is be focusing more on the next
10 phase of activity that took place, taking some of those issues
11 that are the more important issues and bringing those to your
12 attention and briefly describe those with the understanding
13 that the in-depth evaluation of the particular issues will be
14 a part of the Task Action Plans rather than trying to do that
15 this morning because I don't think it ought to be done separately
16 now since another activity is going on.

17 I have asked Harry, with that flavor and philo-
18 sophy in mind of trying to go through and describe more of
19 where we are today, rather than where we were on October 10th
20 when the original report came out. However, we are prepared
21 to answer any questions you may have as a result of what is
22 in the report. But I wanted to assure you that all of what
23 is in the report has been considered in going to the next
24 step, that is, the development of the Task Action Plans them-
25 selves.

3 1 Harry.

2 (Slide.)

3 MR. THORNBURG: This summarizes the background for
4 the report. The Group, the Special Review Group, was con-
5 stituted by Mr. Stello by his memorandum of July '79. The
6 scope and objectives were to improve the I&E contribution to
7 public safety and on the basis of Lessons Learned from TMI.

8 If I could have the second slide, please?

9 (Slide.)

10 The composition of the Special Review Group was
11 principally field people. Of the full-time composition we had
12 six field inspectors, four field section chiefs, three Head-
13 quarters managers, a mix of experience, assignments, and
14 perspective.

15 We had materials inspectors and reactor inspectors,
16 materials inspectors, and a security and safeguards man, one
17 who had been at the site and helped make some of the adminis-
18 trative arrangements.

19 We had an operations man who had been an inspector
20 at TMI earlier on, some people that didn't know anything about
21 TMI. All regions were represented, and so on.

22 If I could have the next slide, please?

23 (Slide.)

24 The level of effort. We worked pretty hard for
25 12 weeks. The Regional people were away from home a lot, and

4 1 I believe they made a tremendous sacrifice. Many of them had
2 been away from home at TMI-2. And it was a privilege to work
3 with them. They were dedicated to the job, and very interested
4 and in my view, very productive.

5 The perspective of the report is shown on Slide 4 --

6 (Slide.)

7 -- and it's in between the I&E investigation report being
8 available and the Kemeny Report being available. The group
9 had the benefit of discussion with our investigating staff.
10 We went to the site, interviewed a lot of staff members, and
11 we met with various groups.

12 And then another thing that has occurred since the
13 report I think is very important, and Vic touched on that, and
14 that is that we've gotten out a perspective of the Task Action
15 Plan. Almost all of our recommendations have been integrated
16 into the Task Action Plan.

17 Slide Number 5, please.

18 (Slide.)

19 CHAIRMAN AHEARNE: Harry, do you intend to point
20 out-- You say "almost all." Do you intend to point out if
21 there are some significant ones that you believe have not and
22 should be? Or Vic, would you do that?

23 MR. THORNBURG: I can touch on that.

24 MR. STELLO: Go ahead.

25 MR. THORNBURG: Let me get to that at the end, if

55 1 I may.

2 CHAIRMAN AHEARNE: All right.

3 MR. THORNBURG: There were a number of general and
4 specific recommendations, about 200. Some of them we count
5 twice and some had several parts, but I'd say 200. They
6 ranged in importance from very, very significant in our view
7 to things that should be done but may be not as important as
8 some of the others.

9 We didn't have time to sit down and put everything
10 in an order, and I fully believe that has been done in the
11 Task Action Plan now.

12 The SRG made the finding as indicated. The SRG
13 has performed this review and has made its relatively large
14 number of recommendations with candor. The SRG believes with
15 equal candor that the I&E program is in general soundly based
16 and has been, to a large extent, adequately implemented. How-
17 ever, it recognizes that deficiencies exist that need correc-
18 tion and it is with this in mind that the many specific and
19 general recommendations are made.

20 If I may have Slide Number 6, please?

21 (Slide.)

22 Now these are what we consider to be some of the
23 more important recommendations that were made that relate to
24 NRC policy in the safety area. Many recommendations have been
25 instilled into the Task Action Plan by other I&E representatives

eb6 1 in that Working Group, working with representatives from other
2 offices. It has provided a great deal of insight I think now
3 into the importance of a number of our recommendations.

4 In some cases the approach recommended by the com-
5 bined staffs that developed the Task Action Plan may differ
6 in approach but I think the objective will be reached if the
7 Task Action Plan is carried out.

8 The first item, the definition of safety-related.
9 There are at least three terms that are used when we talk
10 about safety-related systems, the component systems and
11 structures that play a safety role in the plant. We either
12 call them safety related, safety grade or important to safety.
13 We believe if there is a difference in meaning in these terms
14 it ought to be sorted out or else one term used, or speci-
15 ficity be brought into this area so we know what we're talking
16 about.

17 If there is a difference in definition then that
18 differentiation ought to be stated.

19 We think that it might be possible to make a graded
20 approach in the designation of safety-related components and
21 structures. Maybe some are more important than others. Con-
22 sideration ought to be given to that.

23 Consideration ought to be given to the inter-
24 relationship between 10 CFR Appendix A and Appendix B, and we
25 believe that there is a connection to this matter to the TMI

eb7

1 accident.

2 CHAIRMAN AHEARNE: You also recommend extending the
3 definition essentially.

4 MR. THORNBURG: Yes.

5 We believe attention should be given to this area.
6 It is addressed in the Task Action Plan. I shouldn't steal
7 Dr. Mattson's thunder by going too deeply into that. I think
8 at this point a slightly different approach is taken but I
9 think you'll end up with a better definition of what is safety
10 related, and that we can cope with the problem better.

11 In some cases, as I understand from the Inspection
12 Report, the operators at TMI didn't rely on some instrumenta-
13 tion readings because they said it wasn't from safety-related
14 instruments and so therefore, they gave less credence to it.

15 And then there's the matter of the PORV, the power-
16 operated relief valve.

17 We believe the concept of shared systems -- that
18 we ought to re-evaluate the approach; particularly if we're
19 going to share systems, maybe there ought to be more design
20 verification of lack of interaction. And here again this is
21 a matter that the Task Action Plan addresses. At least it
22 did the last time I saw it.

23 There is heavy emphasis on the upgrading of radia-
24 tion protection at reactor sites. A number of recommendations
25 were made, and this is also a matter taken up in the Task

eb8

1 Action Plan.

2 We believe that internal review should be required
3 by licensees. There should be combined IE/NRR reviews of
4 licensee radiation protection systems and capability; this
5 sort of thing.

6 And by the way, I have lumped together under radia-
7 tion protection health physics, radiation protection, waste
8 handling, radioactive waste handling and this sort of thing.
9 That radiation control should be emphasized.

10 MR. STELLO: Excuse me for interrupting. This is
11 a particular area where we feel there is a need for signi-
12 ficantly more. We are attempting to have an evaluation done
13 using contractor help to go out and take a comprehensive look
14 at the entire health physics program at the facility, a concept
15 similar to the kind of look that NUS gave at Three Mile
16 Island that pointed up a number of problems that our inspec-
17 tion program didn't find before the accident. It is that kind
18 of lesson that I think we have learned here.

19 At least we need to go out and take a good look
20 all at one time, a snapshot if you will, and we're in the
21 process of gearing up to do that, hopefully starting at about
22 the beginning of the year. It is a rather ambitious effort.
23 I think we'll be able to compensate by saving on our own
24 manpower and substituting with the team effort similar to what
25 NUS did. We're moving in that particular area right now.

eb9

1 MR. THORNBURG: We believe that we ought to look
2 into upgrading procedures, sampling radiation measurements and
3 this sort of thing, that we ought to pay more attention to
4 radiation protection in our internal evaluation of licensee
5 performance.

6 Next, we believe that the Commission should con-
7 sider recognizing other codes and standards in 50.55-A. At
8 present the ASME code and changes are recognized in 50.55-A
9 and we think consideration ought to be given to including
10 IEEE codes and standards and American Concrete Institute codes
11 and standards. We believe that would give us little firmer
12 requirements.

13 CHAIRMAN AHEARNE: What is NRR's reaction?

14 MR. THORNBURG: This has been included-- The con-
15 sideration of this has been included in the Task Action Plan.
16 I don't think we are very far apart on it.

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1 COMMISSIONER HENDRIE: We either ought to add some
2 of the fundamental concensus codes to 50.55-A or take the
3 boiler code out, it's not clear to me which way you ought to
4 go. You have to recognize that we have those codes embedded
5 in the regulations. Every six months you have to update the
6 regulations because the boiler code, for instance, publishes
7 winter and summer addenda that in effect change the code
8 and the other codes also change from time to time. It's not
9 clear to me that --

10 CHAIRMAN AHEARNE: Are you saying they ought to
11 be consistent?

12 COMMISSIONER HENDRIE: I think there are other
13 codes that now begin to rank with the boiler code in authority
14 and usefulness to us and could very well be treated the same.

15 MR. STELLO: This specifically will be included
16 in the Task Action Plan. We think we ought to look not only
17 at this regulation but all the regulations to assure that that
18 balance is in fact in there.

19 MR. THORNBURG: What Dr. Hendrie says is certainly
20 true about the possible need for updating and this sort of
21 thing but, as regulators, we're usually looking for a better
22 handle in I&E.

23 We believe it is important to understand human
24 factors, we believe that lesson shines out of TMI. We ought
25 to look at the reduction of human errors, look at how we can

1 make humans more successful, have more human successes than
2 failures. We think that we ought to understand the man-machine
3 interface. Human factors did play a role, a significant role,
4 at TMI, and we think the agency should do everything it can
5 to understand how these things affect safety.

6 Component qualification. We believe there should
7 be more direct NRC involvement. Right now my division is
8 preparing an option paper with respect to how we -- recommending
9 how we think we should become involved in this sort of thing.
10 The options are whether, you know, the NRC ought to do it
11 itself or have a consultant do it and that sort of thing.

12 COMMISSIONER GILINSKY: Are you going to indicate
13 at some point what is more important and what is less
14 important? Because I get the impression you're saying we
15 ought to do everything better.

16 What you've got there is -- and in your report,
17 is in effect the entire list of all the factors that influence
18 safety.

19 MR. THORNBURG: We think these emerged as the
20 most important of all those that we recommended, particularly
21 based on the work that has gone into the Task Action Plan.

22 COMMISSIONER GILINSKY: You mean the items on
23 this slide?

24 MR. THORNBURG: Yes, and the ones to follow.
25 There are several others to follow.

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1 COMMISSIONER GILINSKY: But of these, which are
2 the two, three, four or five most important?

3 MR. THORNBURG: I could give you my opinion.

4 COMMISSIONER GILINSKY: That's what I would like
5 to have.

6 MR. THORNBURG: Would you prefer to give it?

7 MR. STELLO: Why don't you give your opinion?

8 MR. THORNBURG: Understanding human factors is
9 probably one of the most important. The definition of
10 safety-related, I think that has got to be cleared up so we
11 know exactly where the quality assurance program fits and where
12 our regulatory envelope fits, and everybody knows. Upgrading
13 radiation protection. Upgrade training and qualifications,
14 minimum staffing. The Committee thought that we must assure
15 that we've got enough people in the control room at all times
16 who are properly qualified.

17 Experience evaluation. The plant was talking
18 to us and we didn't hear it.

19 CHAIRMAN AHEARNE: I gather, Harry, that there are
20 -- in your view, what is most important, you don't have
21 any -- the most important things that I&E in turn has to do;
22 B, here are the most important things that NRC, external to I&E
23 has to do. You've got a mixture there.

24 MR. THORNBURG: Well the next slide shows what we
25 consider to be most important with respect to the I&E program.

1 But these are the things we thought that we could do internally
2 to upgrade our program and probably were more in our favor
3 than anyone else's. The others involved interaction with other
4 offices and, I think, involved further policy decisions.

5 CHAIRMAN AHEARNE: Vic, do you want to comment?

6 MR. STELLO: To me that is the most pressing
7 questions that's in front of us. The first issue was clearly
8 to have the recommendations from the group come forward. I
9 assigned another group who was integrating here, plus a
10 number of other recommendations that were made to me by other
11 groups, looking into the Task Action Plan. Now you have a
12 rather substantial document which has a list of a lot of
13 resources that are needed to do all of these things.

14 What now must take place and has not yet taken
15 place is to look at what those recommendations are in the
16 Task Action Plan, to take those and look at what we are doing
17 now and make the balance of what we think are the most
18 important things and perhaps decide to replace some of the
19 things that we are doing with what is more important and
20 to organize and prioritize that activity.

21 We're not there yet, so I can't answer your
22 question as to how we're going to rank, of those that are in
23 the Task Action Plan -- and clearly some of them are more
24 important than others -- and stack that up against what we
25 are already doing. And some of what we already may be doing

b5 1 may not be as important as what we recommend we do in the
2 future.

3 And until that exercise is finished and we've
4 had a chance to make those judgments, I don't think you can
5 really answer the question.

6 COMMISSIONER GILINSKY: Your answer sounds
7 terribly mechanical to me, I have to tell you. Here we are,
8 I don't know how many months after this accident, and we've
9 got a list of 200 items, and we can't pick out among these
10 which are the several most important? I can't believe that
11 you do not have in your mind a sense of which are in fact the
12 most important.

13 MR. STELLO: The first screening of which ones
14 are most important are the ones that Harry is giving you.
15 If you were asking him to order these, I'm saying we can't
16 do that.

17 Of the 200 that were here, he is giving you the
18 list of those that are gleaned from here as being the most
19 important. Now to get a further ordering of that screening
20 process has not been done. He is giving you --

21 COMMISSIONER GILINSKY: I don't get the feeling
22 that these are several of the 200, these are categories
23 which include -- each one of these would include, it seems
24 to me, several of the items that are covered in your report.

25 MR. STELLO: That's a fact.

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1 COMMISSIONER GILINSKY: So in effect you're just
2 laying out the whole list again.

3 MR. STELLO: No.

4 COMMISSIONER GILINSKY: And how are we to allocate
5 our effort and decide what to do if we can't decide what's
6 important?

7 MR. STELLO: Well I didn't think we ought to do
8 that as part of this exercise, I think that ought to be done
9 as part of the Task Action Plan.

10 COMMISSIONER GILINSKY: But we're listening to
11 you for advice.

12 MR. STELLO: Well I just told you that I'm not
13 prepared until I look at the balancing of what we are already
14 doing versus what has been recommended to me.

15 CHAIRMAN AHEARNE: I think what Vic Stello is
16 saying that, to the extent that I&E has screened through and
17 integrated -- correct me if I'm wrong -- that you have reached
18 a conclusion that this is the best at this time that you can
19 identify as most important and then, in addition, you have
20 folded these into the Task Action Plan.

21 MR. STELLO: The most important ones.

22 CHAIRMAN AHEARNE: Right. It is still certainly
23 true that at some time in the not too distant future you're
24 going to have to identify, as far as which elements of the
25 Task Action Plan are most important.

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MR. STELLO: Correct, and then further which of these are so important that we don't have the resources to do them, because they are additional, that we would want to change what we are already doing and readjust our program to do some of these things. That to me is the answer to the question, which of these are so important that we will use the existing resources we have to do them rather than something else.

CHAIRMAN AHEARNE: You say you're not there yet?

MR. STELLO: Not to answer the question completely. I can give you fragmented answers.

CHAIRMAN AHEARNE: Do you want to go ahead?

MR. THORNBURG: We believe that the authority of -- the authority of the NRC should be extended to include nuclear steam suppliers and architect-engineers.

COMMISSIONER KENNEDY: Harry, can we stop a minute?

As to that one and the previous one concerning the verification of testing, I have a question. In making a recommendation of that kind, there must be some general appreciation of the resource question. Can you give me some feel for what we're talking about? I'm not talking about precise numbers, but orders.

MR. THORNBURG: Well, component qualification; we propose that we do some -- contract someone to do independent

8
1 verification for us and that we get a little bit of a
2 dedicated staff, and then probably we'd be proposing ulti-
3 mately four people and maybe somewhere around \$10 million
4 in the area of the verification testing.

5 COMMISSIONER GILINSKY: Should we multiply that
6 by 200 to get the total for the list?

7 MR. THORNBURG: No. Some of those are intensive
8 of Staff time to prepare a change to the regulations or
9 standards or whatever. Some will increase the amount of
10 inspection work we have to do. In some cases we might have
11 to put on more people. The resource consideration varies
12 with each one of them, and that's something that the Task
13 Action planners have done, attempted to do. It's a difficult
14 job.

15 COMMISSIONER KENNEDY: Could you comment a little
16 more fully now on the AE and NMSS?

17 MR. THORNBURG: What we're proposing here is to
18 somehow extend the direct authority of NRC to NSSS's and
19 architect-engineers.

20 COMMISSIONER KENNEDY: That would be some sort of
21 Inspection and Enforcement program?

22 MR. THORNBURG: We do now inspect them.

23 CHAIRMAN AHEARNE: Do you inspect A&E's, or the
24 work of an A&E?
25

MR. THORNBURG: The work.

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1 COMMISSIONER HENDRIE: It's a Design and Analysis
2 quality assurance audit.

3 MR. THORNBURG: Yes.

4 COMMISSIONER KENNEDY: Okay. What is it that
5 you propose to add to it, to what is already being done?

6 MR. THORNBURG: There are two parts. One part
7 here, the thing we're addressing here is to change the
8 regulations and for us to either license them or make sure
9 that we have rules that apply to them, so we have more to
10 inspect against. And that's the length and breadth of that
11 proposal.

12 But concurrent with that, we are also proposing
13 to upgrade our review at the design stage -- we do more of a
14 quality assurance-oriented inspection, more of a technically-
15 oriented inspection -- bring some licensing expertise in with
16 us, increase our staff a bit more with engineering specialists
17 and change the focus of our inspection program. And that
18 would probably amount to five more people years.

19 COMMISSIONER GILINSKY: You're talking about
20 licensing the architect-engineers?

21 MR. THORNBURG: Yes. Either license them or --
22 well, we didn't include the vendors in this. You might
23 license them or you might make the rules apply to them a
24 little more closely, one or the other.

25 CHAIRMAN AHEARNE: So you would also then have a

1 large amount of, or some amount of NRR resources?

2 MR. THORNBURG: Yes. We would like, particularly
3 in the beginning, we would -- we have done some cooperative
4 efforts in the inspections of architect-engineers. We did
5 it a year or so ago in connection with ECCS calculational
6 problems. And it was a successful venture and they gave us
7 good technical insight into the problem. And we think it is
8 something that we ought to continue to do.

9 COMMISSIONER GILINSKY: You would license them
10 on what basis, on the basis of a particular design or just
11 give them a license to perform services as architect-engineers
12 on the basis of their qualifications?

13 MR. THORNBURG: Without being lawyers, I'm not
14 sure that we parsed it down that fine. What we wanted was
15 regulations that apply to them one way or the other.

16 MR. SHAPAR: The situation essentially now is
17 that they have controls over the vendors partially because
18 of the legal handle they do have on the applicant. In other
19 words, if we want something done we can get it indirectly by
20 placing the requirement on the Applicant or the Licensee.

21 I think the suggestion here is that this be
22 formalized in some manner so that there is a direct licensing
23 authority of certain of the architect-engineers.

24 COMMISSIONER GILINSKY: What I'm asking is is
25 that in connection with a particular plant or is it a license,

as one might grant a radiographer to perform radiography services?

We don't license the utility per se, we license them to operate a particular plant.

COMMISSIONER HENDRIE: And we don't license radiographers to do radiography. We license radiographers to possess by-product materials, and I have some question whether the statute in fact extends to direct licensing.

MR. SHAPAR: It does not.

COMMISSIONER HENDRIE: -- of professional services.

COMMISSIONER GILINSKY: So that parallel isn't right, I don't know that we license anybody to perform services.

COMMISSIONER HENDRIE: Reactor operators.

COMMISSIONER GILINSKY: Yes.

MR. SHAPAR: I think he's assuming legislative changes.

COMMISSIONER GILINSKY: I'm just asking what you're proposing.

MR. THORNBURG: We haven't proposed down to the detail of how you go about doing it, but we think that -- we felt that the agency should have more authority over these people, more direct authority.

COMMISSIONER KENNEDY: I understand what you're

b12

1 saying but it doesn't get far enough to help me. It says
2 that -- the report says, aside from the broad recommendations,
3 that there are a number of things that we ought to do. And I

4 And I was a little unclear about how much farther
5 it proposed we go than we are now going and what the impli-
6 cations of whatever that increase in effort would really
7 be. And I still don't have that feel.

8 MR. THORNBURG: Well, we are not in a position
9 to -- we weren't in a position to study the impact of this
10 recommendation.

11 COMMISSIONER KENNEDY: What you're saying is
12 somebody is doing that now?

13 MR. THORNBURG: It'll be done, it'll have to be
14 done in the process of the Task Action Plan.

15 CHAIRMAN AHEARNE: Did you endorse that particular
16 recommendation?

17 MR. STELLO: To the extent that it's in the
18 Task Action Plan, for which I think there needs to be
19 significant policy guidance, both on behalf of the Commission
20 and the individual offices, which is not yet done, and that's
21 a big task. To look at the depth of how far to go in this
22 particular area is extremely difficult, maybe we need to do
23 a study before we can --

24 CHAIRMAN AHEARNE: Is it correct at the moment
25

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1 that it's a suggestion, that it not --

2 MR. STELLO: Yes, the concern being our approach
3 to architect-engineers, nuclear steam suppliers and the rest.
4 Once the paper review is done at the construction permit,
5 there's an awful lot of activity that goes on in terms of
6 turning in general requirements as stated in the application
7 into actual design hardware, detailed designs, and following
8 that, the final construction of the facility. The analysis
9 of what goes on in the vendor's shop we get through this
10 indirect path, through mostly the auspices of QA rather than
11 having a clear understanding of how far we ought to go in
12 that area.

13 This recommendation and the one that will follow
14 speaks to that concern. How much more you need to do, you're
15 going to have to look at the equation of what is the resource
16 impact on behalf of the agency and how do you strike a
17 reasonable cost-benefit to do much more. Any step in this
18 process can have very, very large resource implications
19 if you get at all into detail.

20 But perhaps by requiring vendors to certify by
21 regulation would enhance safety quite a bit and be minimal
22 to our resources.

23 Now I am throwing out wild ideas as to what
24 part of this study might be. But without the study, I don't
25 think there can be any complete answer as to how far to go.

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1 MR. THORNBURG: We kicked this around, you know,
2 what form would the extension of authority take. And we saw
3 the need for it, but we didn't have the time or really the
4 people with position in the organization, I think, to carry it
5 to where we would select one alternative or the other.

6 MR. SHAPAR: It seems to me two questions have
7 been presented here: Number one, does more need to be done
8 insofar as controls over architect-engineers are concerned,
9 if so, what? The second question is, can it be done with
10 our existing licensing authority or can it not be? I think
11 there are two questions.

12 CHAIRMAN AHEARNE: AE and NSSS and you're saying
13 you have to have the first before you can get to the second
14 and the first hasn't yet been worked out.

15 MR. BICKWIT: By the way, we think they're all
16 rather the second.

17 The question is whether you want to make use of
18 the answer you get to the second. We think the answer to the
19 second is yes.

20 MR. THORNBURG: Proceeding on to experience
21 evaluation, TMI demonstrated the need for more work in this
22 area. We believe, and a lot of other people -- it has been
23 expressed by other groups -- we believe that it is important
24 to understand the feedback from the machine and it's important
25 that we proceed on the basis of what our experience tells us.

agb15 1 There's a significant body of it now generated and we should
2 listen to it.

3 CHAIRMAN AHEARNE: Do you feel the operational
4 data analysis meets that recommendation?

5 MR. THORNBURG: Yes. The concept depends on,
6 you know, we believe that the LER data system should be
7 upgraded. Based on what we see now, we have no real negative
8 comment. I&E is gearing up to do some things within itself.

9 MR. STELLO: Clearly there was a need recognized,
10 not only by I&E and others. So within each office there had
11 to be people already devoted to this task, that decision
12 has been made and those resources have been committed to
13 perform this task within the offices. A larger commitment
14 of resources to perform the task within the agency, that
15 clearly has already been done.

16 So there has been judgments made as to which
17 of these that are really more important by the fact that the
18 resources are already committed to them. So my judgment
19 certainly doesn't differ with that, I think putting in the
20 resources in the office and have the people on board starting
21 to do that just now.

22 But that is again a fragmented answer. There
23 is no looking at the entire process and distilling from it
24 the single most important thing. We are going to do with
25 the resources we have.

10b16

1 COMMISSIONER GILINSKY: When does that happen?

2 MR. STELLO: It's happening -- the overall
3 process?

4 COMMISSIONER GILINSKY: The distilling.

5 MR. STELLO: That is just -- that has been just
6 since the Task Action Plan came out. I think it needs
7 guidance both from within the Staff itself and from the
8 Commission itself.

9 COMMISSIONER GILINSKY: This is the plan we're
10 going to hear about later today?

11 MR. STELLO: Yes. And I think we ought to be
12 reserving discussion on that. I feel the need to do an awful
13 lot more to be able to answer the question. I feel I'm
14 not ready to come down here and feel that I'm satisfied,
15 that I could look at now the results of the Task Action Plan
16 and balance my own resources and say Here's what I recommend
17 to the Commission: (a), we ought to do with the resources
18 you have given me to work the problem and then say in addi-
19 tion to those resources, I recommend that the Commission ask
20 for additional resources for so much to do these following
21 things.

22 COMMISSIONER GILINSKY: What I don't understand
23 is how can you help put together a Task Action Plan or
24 comment on it if you have'nt in your mind decided which of
25 these items are the most important. There is inevitably

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1 going to be some set of priorities that have to be established
2 and we simply can't work on the basis of saying that every-
3 thing ought to be done.

end Tape 2

4 MR. STELLO: Absolutely not, I agree.
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301 1 CHAIRMAN AHEARNE: I think what you're saying is
2 that you are still in the process of trying to distill it.

3 COMMISSIONER GILINSKY: Here we have the Task
4 Action Plan coming to us later today and I assume you had
5 some role in putting it together or commenting on it.

6 MR. STELLO: I think the cover letter says that I'm
7 not yet satisfied with it.

8 CHAIRMAN AHEARNE: You're saying that even on the
9 Task Action Plan there is still more distillation to be re-
10 quired on that?

11 MR. STELLO: Considerably more. I think I also
12 need to see what Rogovin will come on with, how will he
13 impact what I do.

14 I certainly can't do everything that everyone
15 would like to do and there will be the need to make judgments.

16 CHAIRMAN AHEARNE: The question is can you do
17 everything that you think ought to be done.

18 COMMISSIONER GILINSKY: Right.

b2 19 MR. STELLO: I think with the resources we have
20 now we will have to prioritize the list of things that look
21 like they are good things to do, things we would like to do,
22 and then things that are really important and we will have to
23 have that ordering, both in terms of what we're doing today
24 as well as what has been suggested.

25 COMMISSIONER GILINSKY: But haven't we done that?

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1 MR. STELLO: Not yet.

2 COMMISSIONER GILINSKY: I must say I'm surprised.

3 CHAIRMAN AHEARNE: You say you are going to go
4 through this distillation process. Do you have some esti-
5 mate as to when that might be completed, just on the I&E por-
6 tion? I recognize there's an interactive interaction with the
7 Action Plan, but to the extent that it can be decoupled, when
8 would you expect for the I&E portion to be completed?

9 MR. STELLO: It will take at least another two or
10 three weeks.

11 MR. GOSSICK: A word on this before we leave.

12 The Action Plan we're going to talk about this
13 afternoon is going to have some of the problems in here as to
14 short-term, long-term priorities because there certainly is a
15 very significant resource impact that has got to be addressed
16 and the culling of this, and dependent on the guidance we
17 get from the Commission, is a process that still has to be
18 continued.

19 CHAIRMAN AHEARNE: Okay.

20 MR. THORNBURG: The next item, office interaction,
21 resolution of safety, is another obvious thing that comes out
22 of TMI. It encompasses the entire staff and in terms of we
23 must make sure that the inputs from all perspectives are
24 integrated together, you know, that we combine the viewpoint
25 of people that have the field experience and know what is

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1 going on in the field with those who have the perspective of
2 the technical people, the engineers, the nuclear engineers
3 and so on and so forth.

4 We have to have the perspective of the licensors
5 and everything has got to be melded together and the right
6 decision come to. And if there are people that have other
7 views they have got to be heard and brought forward and con-
8 sidered. Now we've got to have a system that assures that
9 all this is done.

10 We made extensive recommendations for the upgrading
11 of training and qualifications of licensed and unlicensed
12 personnel and NRC personnel, and this is certainly a part of
13 the Task Action Plan, and the upgrading of training and
14 qualifications is something Licensing has started to begin
15 with, too, so it is a moving target.

16 We concentrated not so much on the licensing of
17 people that are presently licensed but we said some of the
18 other people -- some of the people that aren't now licensed,
19 some of the operation people or some of the technicians at
20 the site should have stated qualifications and we should
21 assure that they meet them, maybe the auxiliary operators,
22 health physicists, maintenance people, electrical foremen;
23 this sort of thing.

24 Also we made strong recommendations about the
25 statement of qualifications of our people. We ought to firmly

1 know what various types of inspectors should be qualified to
2 do, and assure that we meet those standards and that we pro-
3 vide a training program that leads to it.

4 As I said, there are extensive recommendations in
5 the report.

6 CHAIRMAN AHEARNE: Would you say the general sense
7 was that-- Let me separate the two.

8 The general sense was that the operator or the
9 licensee personnel are not sufficiently well qualified, or
10 is it that they aren't sufficiently well examined?

11 MR. THORNBURG: Well, as I said, more of our
12 recommendations reached some of the people who are not now
13 licensed. We felt there ought to be some attention given to
14 that area.

15 CHAIRMAN AHEARNE: Of the ones that are not now
16 licensed, is the general flavor that they ought to be licensed
17 because we ought to reach to them, or is it that we expect
18 they aren't adequately qualified?

19 MR. THORNBURG: Well, we are not assured-- If you
20 had a definite state of level of qualification and you could
21 inspect against it, then you would have more assurance that
22 these people did meet the qualifications.

23 CHAIRMAN AHEARNE: I'm trying to see if we have a
24 flavor of they are saying this is an uncertain area and we'd
25 be a lot more comfortable if we had license requirements on

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1 them, or are they saying that we ought to put license require-
2 ments on them if that's the only way we're going to upgrade
3 them?

4 MR. THORNBURG: I think probably the former. We
5 feel uncomfortable in that area and think that we ought to
6 have more definition. I don't think we feel that there's a
7 big gulf there.

8 CHAIRMAN AHEARNE: Now let me ask a similar ques-
9 tion. You say upgrade training and qualifications of NRC
10 personnel. Are you saying-- Is it the general sense that
11 our people are not sufficiently well-trained or that they
12 aren't sufficiently competent?

13 MR. THORNBURG: It is not the latter. Here again
14 we don't have-- Some of our qualification levels -- and the
15 field people felt this particularly. I'm not sure I would
16 personally go that far, but they felt that we didn't have
17 enough specificity in stating the qualifications for the
18 various types of inspectors and this sort of thing, and that
19 we ought to come out and say what they are in fairly definite
20 terms and make darn sure people meet them.

21 And if it comes to examining boards and this sort
22 of thing they felt more formality should be placed on the
23 system and that we should have more technical training in a
24 number of areas.

25 COMMISSIONER GILINSKY: How do you relate this to

1 Three Mile Island? What was it that was lacking in the un-
2 licensed personnel that you would like to have found and that
3 would be there if they were licensed?

4 MR. THORNBURG: Will you give me a moment to re-
5 fresh myself?

6 COMMISSIONER GILINSKY: Sure.

7 COMMISSIONER HENDRIE: While he's looking, can I
8 help you?

9 Maybe the maintenance crew, if indeed it was the
10 maintenance crew that shut off the auxiliary feedwater block
11 valves, that apparently it was their final pass through that
12 process and a failure to open them, although the situation
13 is certainly murky in view of testimony both ways on it.

14 One could contemplate if you had a little more
15 contact with the maintenance chiefs and so on, there might
16 be a little more of a sense of preserving the safety envelope
17 of the plant and worrying about it than there was.

18 As a matter of fact there has been a recent inci-
19 dent where -- I don't think of any great import, but one of
20 those situations where part of the safety protection was
21 degraded a little bit because of some equipment being down
22 for a limited period of time. The maintenance crew went in
23 on the other train and -- well, it wasn't a complete blackout
24 of the situation. If anything had happened operators could
25 have taken manual action to recover it.

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Nevertheless, it reflected a lack of

b7 1 sensitivity on the part of the maintenance organization to
2 preserve that redundant safety protective envelope around the
3 system.

4 And there was a feeling that if you -- I don't know
5 whether the Licensing people had the right answer or not, but
6 if you provide some better interface with the regulatory
7 system to make them more aware of the need to protect that
8 safety envelope.

9 It's a specimen. I'm sure there are others.

10 MR. STELLO: As a generality, I think the recent
11 six months or so have shown that when equipment that is im-
12 portant to safety has somehow been lost from service it's as a
13 result of actions that are generally taken by unlicensed
14 people.

15 COMMISSIONER GILINSKY: Is that the kind of people
16 you're talking about, maintenance crews, people who get their
17 hands on the equipment, or are you talking about --

18 MR. THORNBURG: Auxiliary operators, maintenance
19 people, instrument technicians.

20 COMMISSIONER GILINSKY: That's what I was looking
21 for.

22 COMMISSIONER HENDRIE: The instrument techs in the
23 control room would drive you out of your mind.

24 MR. THORNBURG: I thought you were also asking me
25 for the TMI connection and there is one, and Dr. Hendrie brings

1 up one aspect of it, but also our people have thought for a
2 long time that we ought to do something in this area, and it
3 is a carry-through of that.

4 So to be quite honest with you --

5 COMMISSIONER GILINSKY: Well, I wasn't clear if
6 you had in mind maintenance crews or higher level supervisors.

7 MR. THORNBURG: Even the supervisors, too, the
8 maintenance foreman, the maintenance supervisor, and the
9 maintenance people that do hands-on work.

10 CHAIRMAN AHEARNE: Let's move along.

11 MR. THORNBURG: Okay.

12 Minimum staffing requirements for licensees. Our
13 people would like to see that second man in the control room.

14 CHAIRMAN AHEARNE: Is this a specific recommenda-
15 tion?

16 MR. THORNBURG: That's part of it. The main thing
17 is we ought to make sure that an adequate number of people are
18 present in the control room. But specifically we would like
19 to make sure that there are enough qualified people there when
20 the need arises.

21 CHAIRMAN AHEARNE: Now before you go on to the next
22 could I ask? I think you were scheduled for an hour.

23 MR. STELLO: An hour and a half is what the agenda
24 says, and it is our intent to be finished in an hour and a
25 half.

1 CHAIRMAN AHEARNE: Fine.

2 MR. THORNBURG: Slide Number 6, please.

3 (Slide.)

4 Well, here we're talking about areas in our own
5 program that we think IE can control more, or areas that we
6 think that we should upgrade our program in.

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eb1 1 The first area was upgrade design review. I
2 addressed that a bit in response to one of Commissioner
3 Kennedy's questions.

4 We believe design played a role in TMI and other
5 recent experiences indicate problems in this area, the pipe
6 hanger business and some of the seismic calculations. We did
7 go back and review ECCS calculations and we think we ought to
8 change our tack in design review to do more of a technical
9 review, do more review of as-built systems, review design,
10 field design, and this sort of thing.

11 We are looking at upgrading our construction in-
12 spection program based on Lessons Learned at TMI and based on
13 other problems that have arisen recently. I have a group of
14 section chiefs and branch chiefs in the regions working with
15 my staff and we've got a program. We hope by the end of the
16 year we'll make some short-term changes and focus on the
17 longer-term changes that should be made, and we believe we are
18 making real progress.

19 COMMISSIONER KENNEDY: What's the nature of the
20 changes?

21 MR. THORNBURG: Well, we're talking about how we
22 can change some of our strategies to make every attempt possi-
23 ble to do more hands-on inspection, more independent verifi-
24 cation, more independent measurement, and to the extent we
25 can do away with paper reviews and this sort of thing, to

1 look at some areas that we haven't devoted attention to in the
2 past that maybe we should have.

3 Maybe we should look more at foundations and
4 structures in several areas that we cut back a few years ago
5 when we were in a manpower crunch in the construction program.

6 A look at how we might -- well, look at making sure
7 that our resident inspectors do as much independent verifica-
8 tion as possible. Our construction residents, it appears in
9 the beginning of the program at least, are doing a lot of
10 other things. We've got to cut that down.

11 COMMISSIONER KENNEDY: What are the other things?

12 MR. THORNBURG: Well, some of it has been paper
13 work.

14 COMMISSIONER KENNEDY: Let's see what we can do
15 about that.

16 MR. THORNBURG: We're working on that.

17 COMMISSIONER KENNEDY: We have more reports than
18 we can use. We aren't getting as much inspection as we can
19 use.

20 MR. THORNBURG: We realize that. That's an area
21 we're working in that appears early in some of our looks at
22 the resident program.

23 COMMISSIONER KENNEDY: Let me just note, in case
24 there is any question in anybody's mind, I don't believe you
25 can operate a reactor safely if you haven't built it right,

1 and safety in this business begins with building, and you
2 don't fix it later all that well.

3 I think we ought to be putting a great deal more
4 emphasis on construction inspection.

5 MR. THORNBURG: We're looking at putting residents
6 out on the sites earlier.

7 Now we've had some studies done of inspection
8 strategies at the construction stage, and we compared paper
9 work inspections to construction inspections where you watched
10 the installation of things and compared it to testing. The
11 test, the right test is probably worth more than watching
12 construction if you don't watch it all and if you can't con-
13 trol every bit of what happens, every stage of what happens.

14 We're looking at that sort of thing and examining
15 our program looking at some of the alternatives.

16 Here you see several continues in a row. We say
17 we believe we should continue with licensee performance
18 evaluation. We're working on a program there.

19 We have been requested to brief you folks, maybe
20 next week, and we're prepared to do that.

21 Continue the resident inspection program. Con-
22 tinue to emphasize independent measurements and independent
23 verification. We are doing more and more as time passes in
24 the independent measurements area.

25 We want to continue with our independent audits.

Now we have some upgrades, upgrade the enforcement program. That is consistent with Dr. Kemeny.

Upgrade quality assurance. Our approach here is saying we ought to concentrate more on making sure the program works, the licensee's program works, rather than looking at the form of it.

And some other approaches are to get more requirements and change the program or the procedures. I think we've just got to simply concentrate on making sure it works and that it's effective.

And we believe we should pay more attention to quality assurance during the preoperational test and startup stages.

We want to upgrade our inspection of outage and maintenance and system modifications. TM speaks eloquently about that.

We want to upgrade onsite safety reviews. We want to make sure that the people onsite are really doing a technical review of our operations and their maintenance and their modifications, and that these things are being thought of and done in a technically acceptable and systematic fashion.

We think attention ought to be given in the IE organization to assure --

CHAIRMAN AHEARNE: Before you go into that, all these upgrade words that you used, does that carry with it--

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1 Does "upgrade" mean refocus attention, or does it mean add
2 additional personnel?

3 MR. THORNBURG: Probably upgrade outage and main-
4 tenance inspection-- Where you're going to do more inspec-
5 tion it is going to cost people directly.

6 Onsite safety reviews. In that case that means
7 you'll ask the resident to go sit with them. He won't be
8 an active member but he ought to hear what's going on, making
9 sure the system works. That probably won't cost us too much,
10 at least just off the top of my head.

11 Upgrade QA. That may cost us some more in watching
12 work that goes on but I don't see that it is a tremendous
13 cost.

14 CHAIRMAN AHEARNE: Continue, please.

15 MR. THORNBURG: What we're saying here is the I&E
16 organization should be configured to make sure that pending
17 changes are carried out effectively and efficiently, and that
18 the resident inspection program can be carried out and ad-
19 ministered and managed effectively.

20 Then we think we ought to rethink our approach to
21 procedures and administrative controls. There are some ad-
22 ministrative controls that are very, very important and we
23 just think maybe some of those probably ought to be bird-dogged.
24 When it comes to testing ECCS systems and core cooling systems
25 and this sort of thing I think it is not a bad idea to go

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1 behind them and check the breakers and the valves and this
2 sort of thing.

3 The approach on procedures. We have always looked
4 at procedures in terms of, you know, is the format all right,
5 and sometimes we have looked more at the form than the sub-
6 stance. We want to make sure they will work. We want to make
7 sure people can understand them, that they are a set of in-
8 structions that can be carried out successfully, and this
9 sort of thing.

10 Slide 8, please.

11 (Slide.)

12 Here we looked at ourselves in the response area.
13 We believe essentially the lines of authority and responsi-
14 bility in the responsive area ought to be clarified within the
15 agency, within I&E and among the agencies.

16 We believe that-- There are several areas, policy
17 areas in an emergency that we think ought to be clarified:
18 the applicability of license and regulations during emergency
19 situations; how far would you compromise security in terms
20 of safety and vice versa; regulation versus assistance in
21 the emergency situation; and then direction of licensees and
22 that sort of thing.

23 CHAIRMAN AHEARNE: On these clarifications of
24 policy, are these things that you will be proposing clarifi-
25 cations or are you requesting?

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1 MR. STELLO: We are already doing that. A substan-
2 tial part of that is underway.
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4 WRB/wbl

1 COMMISSIONER KENNEDY: And the rest of it pre-
2 sumably is in the Task Action Plan?

3 MR. STELLO: It's under way, too.

4 MR. THORNBURG: I traced these things at one point
5 to the Task Action Plan to make sure we referenced the recom-
6 mendation.

7 We believe that the emergency plan requirements
8 ought to be tightened. Appendix A ought to be made a requirement.
9 Any changes in emergency plans should be equivalent to un-
10 reviewed safety questions and, therefore, eligible for con-
11 sideration under 50.59. --10 CFR 50.59.

12 We recommend upgrading preparedness both on the
13 part of the Licensee and the NRC in terms of plans and
14 procedures and training and qualification and facilities and
15 equipment and communications and periodic drills, and this
16 sort of thing.

17 That's it.

18 CHAIRMAN AHEARNE: Vic, do you have any further
19 comments?

20 MR. STELLO: In closing, let me go back to my
21 earlier statement. We are in the process of preparing to go
22 from the recommendations of the group that studied I&E and
23 decided that things might be productive in improving the
24 process to looking at their recommendations and a variety of
25 others, incorporating them into the Task Action Plans. There's

RR/wb2

1 a substantial amount of work that has to be done for the Task
2 Action Plans, and I think maybe I'll have a lot more to say
3 about that when we talk about the Task Action Plans this
4 afternoon. It is a very, very large job to examine ourselves,
5 the recommendations that are made, and set the priorities and
6 recommendations. And, if you will, I think we're going to be
7 setting the way in which the agency will be conducting it-
8 self for the next five years. And we're doing that in a
9 fairly short time. It is a very big job.

10 I guess, with that, I'll wait until this after-
11 noon to expand on it.

12 CHAIRMAN AHEARNE: Let me ask one question:

13 After having gone through that report, and having
14 obviously talked to (inaudible) -- Harry and you, and so forth --
15 how would you characterize the general flavor of what I&E's
16 report says ought to be done? And let me give you one
17 possible interpretation, and then see whether or not you have
18 an additional one.

19 One possible interpretation might be, the general
20 flavor is that we ought to increase the amount of regulation
21 and increase the number of people doing the inspections.

22 MR. STELLO: Those are the two conclusions. Given
23 that you implement what's here, in one form or another, it
24 will be to come up with more requirements, one way or the
25 other. And that's the natural outfall of the I&E process,

NRC/wb3

1 because there's a natural tendency to want to inspect and
2 enforce against the requirements that are clear to the in-
3 spectors. So there is a tendency to want to go in the direc-
4 tion of making more of what's available available in a check-
5 list fashion, so that the individuals doing the inspection
6 truly know what's required. That tries to evolve more and
7 more in the way of requirements.

8 CHAIRMAN AHEARNE: But then there isn't -- at least
9 I didn't get the flavor, and I did not read it in detail, but
10 I didn't get the flavor of -- and I'm not saying that it
11 should be there: I'm just asking. I didn't get the flavor
12 that there would be a recommendation for a fundamental
13 change in the way I&E goes about its business, or a fundamental
14 change that NRC lays on its requirements which I&E would
15 then enforce.

16 MR. STELLO: I think Harry covered that, if I
17 remember, in the first or second slide. The general conclu-
18 sion is that the general business of IE as it is structured
19 is sound, just: let's do more. And it has identified the
20 areas where the "more" in their judgment would be best served.

21 Now I don't like to use the collection of the recom-
22 mendations to go beyond even Three Mile Island. But it's
23 those things that are the integrated thinking. And I tried
24 not to distill that out but to go even beyond Three Mile
25 Island to make the I&E effort a better effort. And I think it

IRB/wb4

1 is good to have that. It's in that sense that it's kind of a
2 wish list of a lot of things that are nice to do. And now
3 the task is to decide from those which really are the issues
4 that now we need to speak to.

5 CHAIRMAN AHEARNE: Well certainly it would be
6 valuable to I&E since you now have the opportunity to have
7 some of your people, as Harry just said, spend a concentrated
8 length of time looking at their own organization, reaching
9 conclusions on things that ought to be upgraded, concentrated,
10 and so forth. That obviously is a refocusing of a lot of
11 effort within I&E. So it clearly will have that kind of a
12 payoff.

13 MR. STELLO: Yes, sir.

14 CHAIRMAN AHEARNE: Thank you all.

15 (Whereupon, at 10:45 a.m., the Commission meeting
16 was concluded.)
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1658 102



SRG FINDINGS

BACKGROUND

1658 103

- . STELLO MEMO JULY, 1979
- . SCOPE AND OBJECTIVE
 - IMPROVE IE CONTRIBUTION TO PUBLIC SAFETY
 - LESSONS LEARNED FROM TMI

SRG COMPOSITION

1658 104

- . SIX (6) FIELD INSPECTORS
- . FOUR (4) FIELD SECTION CHIEFS
- . THREE (3) HEADQUARTERS MANAGERS
- . MIX OF EXPERIENCE, ASSIGNMENTS, PERSPECTIVE

LEVEL OF EFFORT

- . 12 WEEKS - ALL HOURS
- . REGIONAL PEOPLE AWAY FROM HOME

1658 105

TIMING

- . IE INVESTIGATION REPORT AVAILABLE
- . NRR LESSONS LEARNED REPORT AVAILABLE
- . REPORT OF PRESIDENTIAL COMMISSION NOT AVAILABLE

1658 106

RESULTS

1658 107

- . ~ 200 GENERAL AND SPECIFIC RECOMMENDATIONS
- . RANGE IN IMPORTANCE

"SRG HAS PERFORMED THIS REVIEW AND HAS MADE ITS RELATIVELY LARGE NUMBER OF RECOMMENDATIONS WITH CANDOR. THE SRG BELIEVES WITH EQUAL CANDOR THAT THE IE PROGRAM IS, IN GENERAL, SOUNDLY BASED AND HAS BEEN TO A LARGE EXTENT, ADEQUATELY IMPLEMENTED. HOWEVER IT RECOGNIZES THAT DEFICIENCIES EXIST THAT NEED CORRECTION. IT IS WITH THIS IN MIND THAT THE MANY SPECIFIC AND GENERAL RECOMMENDATIONS ARE MADE."

SUMMARY OF RECOMMENDATIONS

1658 108

NRC POLICY

- . DEFINITION OF SAFETY-RELATED
- . RECONSIDER SHARED SYSTEMS
- . UPGRADE RADIATION PROTECTION
- . RECOGNIZE OTHER CODES AND STANDARDS
- . UNDERSTAND HUMAN FACTORS
- . COMPONENT QUALIFICATION
- . EXTEND NRC AUTHORITY TO NSSS AND AE'S
- . EXPERIENCE EVALUATION
- . OFFICE INTERACTION/RESOLUTION OF SAFETY ISSUES
- . UPGRADE TRAINING AND QUALIFICATIONS OF LICENSED AND UNLICENSED PERSONNEL/NRC PERSONNEL
- . MINIMUM STAFFING REQUIREMENTS FOR LICENSEES

IE PROGRAM

- . UPGRADE DESIGN REVIEW
- . UPGRADE CONSTRUCTION INSPECTION PROGRAM
- . CONTINUE WITH LICENSEE PERFORMANCE EVALUATION
- . CONTINUE RESIDENT INSPECTION PROGRAM
- . CONTINUE TO EMPHASIZE INDEPENDENT MEASUREMENTS/INDEPENDENT VERIFICATION
- . CONTINUE INTERNAL AUDITS
- . UPGRADE ENFORCEMENT
- . UPGRADE QA
- . UPGRADE OUTAGE AND MAINTENANCE INSPECTION
- . UPGRADE ONSITE SAFETY REVIEWS
- . IE ORGANIZATION
- . RETHINK PROCEDURES AND ADMINISTRATIVE CONTROLS

RESPONSIVE

- . CLARIFY LINES OF AUTHORITY AND RESPONSIBILITY
- . CLARIFY EMERGENCY POLICY
- . TIGHTEN REQUIREMENTS
- . UPGRADE PREPAREDNESS (LICENSEES AND NRC)

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