

NUCLEAR REGULATORY COMMISSION

ORIGINAL

COMMISSION MEETING

In the Matter of: PUBLIC MEETING

BRIEFING ON STAFF PLANS FOR QUALITY ASSURANCE

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400 Virginia Ave., S.W. Washington, D. C. 20024

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BRIEFING ON STAFF PLANS FOR
QUALITY ASSURANCE

PUBLIC MEETING

Nuclear Regulatory Commission
Room 1130
1717 H Street, N. W.
Washington, D. C.

Thursday, July 15, 1982

The Commission met, pursuant to notice, at
10:05 a.m.

BEFORE:

- NUNZIO PALLADINO, Chairman of the Commission
- VICTOR GILINSKY, Commissioner
- JOHN AHEARNE, Commissioner
- THOMAS ROBERTS, Commissioner
- JAMES ASSELSTINE, Commissioner

STAFF AND PRESENTERS SEATED AT COMMISSION TABLE:

- W. DIRCKS
- S. CHILK
- F. REMICK
- E. JORDAN
- R. VOLLMER

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P R O C E E D I N G S

CHAIRMAN PALLADINO: Good morning, ladies and gentlemen.

The Commission meets this morning to receive a briefing on staff plans for quality assurance. As the Commission has indicated on a number of occasions, a strong quality assurance program is essentially for fulfilling NRC's public health and safety responsibilities.

The staff has been working for, I believe, over seven months to develop plans for strengthening quality assurance at nuclear power plants. We have been looking forward to these plans with great anticipation. Therefore, we are very interested in hearing today what the status is of the staff's plans to strengthen quality assurance at such plants.

I have no other opening remarks. If other Commissioners have, this would be a good time.

COMMISSIONER AHEARNE: I can hardly wait to hear the details of this seven-month effort.

CHAIRMAN PALLADINO: I will turn the meeting over to Mr. Dircks.

MR. DIRCKS: From great expectations come great plans.

I want to emphasize a few points. The series

1 of initiatives we will be discussing today have been put
2 together jointly and cooperatively among the various
3 operational elements of the agency. There has been no
4 hesitancy about putting forward ideas. They have all
5 been discussed in a series of meetings.

6 (Commissioner Gilinsky enters the meeting.)

7 MR. DIRCKS: There has been no
8 obstructionism. There has been no feeling that one
9 office is going to suffer and another office is not
10 going to suffer or prosper.

11 I think everybody is concerned about the
12 problem, and it has been a joint effort and a
13 cooperative effort. If there had been delays, I think
14 maybe the delays have been laid at my doorstep more than
15 any others, because all along what we have been trying
16 to do is to define the problem before we come up with a
17 series of solutions.

18 The problem is not that easy to lay our hands
19 on. We have a series of examples back from last fall
20 which I think have moved us along the path that we are
21 on. The initiatives that we have developed will address
22 those problems that we have seen in the fall and last
23 year, and the year before that.

24 Again, I don't think it is a cosmic solution
25 that we have here. I think they are a series of

1 initiatives that if taken together will prove
2 worthwhile.

3 The other thing we want to emphasize is that,
4 again, the responsibility for assuring quality in
5 construction should lie with the owners of those
6 facilities.

7 We cannot put our arm on the entire industry
8 and say, "Build good plants." If the initiatives don't
9 come from that side, we don't nearly have any of the
10 resources necessary to build plants for them. That is
11 where the effort lies.

12 In the things that we will be discussing
13 today, again what we are trying to do is build them
14 around the outside of the problem.

15 We hope that there will be a series of
16 proposals and plans that will come forward from the
17 industry. You have seen a few of them in the INPC
18 presentations. INPC is still moving along the path they
19 have discussed with you in the meetings they have had
20 with you.

21 They will be prepared again, I am sure, when
22 they have got the criteria laid down and the first
23 initial examinations of the plant conducted, to come
24 back and discuss that with the Commission.

25 I see Dennis Wilkinson here today, and I will

1 again relay that message to him.

2 COMMISSIONER AHEARNE: Can I ask you one
3 question, Bill?

4 I certainly agree with your point that the
5 responsibility for assuring that the plants are
6 constructed well lies with the industry. I agree with
7 your points on resources. But at some point we have a
8 responsibility to say that, yes, we believe they have
9 been constructed well; isn't that correct?

10 MR. DIRCKS: That is correct. What you are
11 going to see today is all leading to that end of the
12 responsibility chain. We have the responsibility
13 eventually to say that we have assurance that the plant
14 can be operated and is built to operate satisfactorily.

15 I think that is the series of points we have
16 got today. So it is a mixed bag of initiatives you are
17 getting.

18 One, what more can we be doing to approach
19 that end of our responsibility? What is a different mix
20 of programs that we can apply to this problem.

21 Two, how will this mix of programs interact
22 with what the industry is doing. That is the point I
23 wanted to make. I wanted to emphasize it again by
24 showing that.

25 We have Dick Vollmer here from NRR, who has

1 participated in the development of this package of
2 proposals. I&E has been taking the lead. Ed Jordan has
3 been working more in my agency in this matter than as a
4 representative of any office.

5 I think with those points, I would like Ed to
6 go through the things we want to discuss today. I think
7 it is a good opportunity at least to surface these
8 initiatives, and then get some feedback from the
9 Commission. Then we will come forward with the paper
10 that I know you have been waiting for.

11 MR. JORDAN: May I have the first slide.

12 (Slide.)

13 MR. JORDAN: I think the very first item on
14 there regarding the complexity and extent of the
15 problems, as Mr Dircks indicated, there are serious
16 complexities. It is very hard to put your figure on the
17 exact problems.

18 We did not bring to you a touchstone on a
19 single miraculous cure for quality assurance, but the
20 program, we think, will help us identify and help us
21 improve the quality of plants that are being
22 constructed.

23 COMMISSIONER GILINSKY: Bill said that the
24 difficult part was deciding what the problem was. Are
25 you going to tell us how you came down on that?

1 MR. JORDAN: Yes, I can do that.

2 COMMISSIONER AHEARNE: Since you are going to
3 be addressing how you are going to go about solving it,
4 perhaps you should outline what the problem is, if you
5 have finally reached agreement on that. It would help
6 us, and it would certainly help me understand the rest
7 of what you are going to say.

8 MR. JORDAN: Could I have slide ten, please.

9 (Slide.)

10 COMMISSIONER AHEARNE: Is it missing?

11 MR. JORDAN: I hope not.

12 COMMISSIONER AHEARNE: From our packets?

13 MR. JORDAN: It is missing from your slides.

14 Jerry, could I have back-up slide M.

15 CHAIRMAN PALLADINO: Do you have a hard copy?

16 MR. JORDAN: I will provide you with a hard
17 copy yes.

18 COMMISSIONER AHEARNE: Do you happen to have
19 one now?

20 MR. JORDAN: I do not, I am sorry. We have a
21 package of back-ups, depending on where the discussion
22 goes. So we will mark them and provide you with a copy
23 immediately after the meeting.

24 COMMISSIONER GILINSKY: I hope you will not
25 regard this as too naive, but I wonder if you could

1 start with just a definition of quality assurance, what
2 it is that we are talking about.

3 MR. JORDAN: Various members of the staff, I
4 think, have differing views on what the specific
5 definition is. My view was partially formed by a
6 discussion with the ACRS, which is part of the
7 chronology back in February, after we had the meeting
8 with the Commission.

9 The definition I have is that the product that
10 we want in these plants is a quality constructed
11 facility, and the quality assurance is only a means of
12 helping to gain the necessary quality in the
13 construction or in the operation of the plant. It is
14 not an end in itself.

15 We are not focused specifically on quality
16 insurance. We are focused on improving quality of the
17 plant itself and of the operation of the plant or the
18 construction of the plant.

19 COMMISSIONER GILINSKY: When we talk about
20 quality assurance programs, what are we talking about?

21 MR. JORDAN: We are talking about the things
22 that the utilities have done to implement the
23 requirements in the design criterion and in the Appendix
24 B, which is the explanation or expansion of the design
25 criterion, Appendix A.

1 So that the utilities have laid out a quality
2 assurance program for their facilities. They have
3 implementing procedures, and they have people assigned
4 to plants, whether it is operation or construction, who
5 are specifically labeled quality assurance or quality
6 control. They are a measure for the utility to see that
7 the quality of the activities is done correctly.

8 COMMISSIONER GILINSKY: You are lumping those
9 together, quality control and quality assurance?

10 MR. JORDAN: Yes.

11 COMMISSIONER AHEARNE: There was a definition
12 provided in a recent letter to the Chairman that said,
13 it is the system of management controls necessary to
14 provide adequate confidence that agreed upon
15 requirements are met.

16 MR. JORDAN: Yes, that is a reasonable
17 definition, and in my personal view it should be
18 separated entirely from the other activities of the
19 facility.

20 COMMISSIONER ROBERTS: It may not be important
21 to this discussion, but you make no differentiation
22 between quality assurance and quality control?

23 MR. JORDAN: I make a differentiation, but one
24 is a subset of the other.

25 COMMISSIONER ROBERTS: Good.

1 MR. JORDAN: Quality control is a subset of
2 quality assurance.

3 COMMISSIONER GILINSKY: How would you
4 differentiate those?

5 MR. JORDAN: The quality control is, maybe I
6 will say, the technician level that is assuring that the
7 activity itself -- let's say that it is a weld that is
8 being put in, that the activity itself is being done
9 correctly. He is a non-destructive testing technician,
10 and he does the radiographs or he does a UT of the weld
11 after it is completed or at the proper hold points, and
12 then gives a certification that, yes, this weld meets
13 the necessary requirements.

14 COMMISSIONER GILINSKY: The quality
15 assurance?

16 MR. JORDAN: The quality assurance is the
17 program that is a system of management, and we are back
18 to the executive director of the particular
19 corporation.

20 COMMISSIONER GILINSKY: How do you refer to
21 the persons who audit the system of quality control?

22 MR. JORDAN: There are quality control
23 technicians, and there are quality assurance managers,
24 and those are the labels they get in their respective
25 organizations rather consistently.

1 COMMISSIONER GILINSKY: They are also using
2 quality assurance in two ways there.

3 MR. JORDAN: For the purpose of this paper,
4 the entire set of things that we are describing are
5 quality assurance, and a subset of that is quality
6 control.

7 COMMISSIONER GILINSKY: And another subset of
8 that is quality assurance.

9 MR. JORDAN: No, the major set --

10 COMMISSIONER GILINSKY: I will put this way
11 because the words are used in two different ways. I
12 think a certain element of confusion entered in.

13 MR. VOLLMER: I think, to answer your question
14 directly, the auditing of the quality control activity
15 would be done as a quality assurance function. The
16 quality control function is one of measuring a specific
17 parameter or a product characteristic to demonstrate
18 that it conforms with the design or construction
19 requirements.

20 Quality assurance would be a more, as has been
21 stated, a management umbrella activity which is very
22 broadly defined, and uses quality assurance as a
23 management control measurement activity as a subset.
24 The quality assurance, I think, is the broad envelope,
25 and the quality control is a measurement activity.

1 COMMISSIONER GILINSKY: Why don't you go on.

2 CHAIRMAN PALLADINO: I think it is an
3 important point that quality control also includes the
4 craftsmanship in performing the function, and it
5 includes the procedures that identify what is going to
6 lead to a good product.

7 MR. DIRCKS: I agree.

8 CHAIRMAN PALLADINO: It is different from
9 confirming that it has been done.

10 COMMISSIONER ROBERTS: I am not sure that I
11 would agree with that, but it is a minor point.

12 CHAIRMAN PALLADINO: You don't.

13 COMMISSIONER ROBERTS: I am not sure.

14 MR. JORDAN: The example I would make, to
15 agree with you, Mr. Chairman, in the classical sense, a
16 construction facility that is not a nuclear plant, the
17 foreman has a quality control responsibility for the
18 particular product. He is overseeing the quality of the
19 work that his people are doing.

20 CHAIRMAN PALLADINO: The quality is built in.
21 The machine has the quality in or it doesn't, at least
22 so far as his function is concerned. He either has a
23 background of experience that goes to it, or he has a
24 specific procedure in a very difficult case, and that is
25 different from later checking whether or not it has the

1 quality.

2 COMMISSIONER GILINSKY: I must say, I think
3 that a certain amount of imprecision in using these
4 labels has led to confusion.

5 MR. VOLLMER: I agree with that.

6 COMMISSIONER AHEARNE: Could I ask a
7 question. There is only one of us, I think, who has had
8 extensive experience actually on the manufacturing side,
9 so maybe Tom could say a few words about it.

10 COMMISSIONER ROBERTS: I would disagree with
11 the statement about the foreman, if you want to talk
12 about the real world as I view it.

13 COMMISSIONER AHEARNE: Yes.

14 COMMISSIONER ROBERTS: The foreman has
15 responsibilities for production, and he is to turn out X
16 amount of product. Yes, he has concern about quality,
17 but that is not his driving force, and the QC,
18 on-the-floor inspector, is his policeman. It is an
19 on-going battle.

20 I will not say that all foremen are not
21 interested in quality, and I don't accept that, but that
22 is not what drives them.

23 CHAIRMAN PALLADINO: I think we are confusing
24 driving force and what quality control is, I still
25 maintain, and I have had experience in manufacturing and

1 I do know a little bit about the subject.

2 Let's go on, just so we understand how it
3 would work.

4 MR. JORDAN: We were going to go through the
5 slides not describing the problem, and we ended up
6 redefining quality assurance.

7 COMMISSIONER AHEARNE: Now you are going to.

8 MR. JORDAN: Now we are going to talk about
9 the problem.

10 The source of the problem, we think, is in
11 three areas -- industry, NRC, and allegations. That is
12 not a source of the problem, but that is the way that
13 the NRC and industry become aware of some problem, which
14 fits into our regulatory program.

15 With regard to the industry area, the QA
16 programs that the utilities have designed, and have put
17 together in response to the NRC requirements, contain we
18 think, based on our review right now, the appropriate
19 elements.

20 The problem that we are having is associated
21 with how well those elements are implemented by the
22 utility and by its contractors. Then the problem, in
23 going through the logic, is in most cases or in many
24 cases a lack of a top management commitment to quality.
25 They really have not focused their management on the

1 quality problems.

2 COMMISSIONER GILINSKY: Let me ask you
3 something. We refer to these various problems that came
4 up last fall, and last year. Are these isolated
5 problems, or are these simply the result of having
6 looked harder or someone forcing us to take a look at
7 one or another of these plants, so that they got a great
8 deal more attention and things turned up that otherwise
9 would not have?

10 MR. JORDAN: The best answer I can give you
11 there is that that set of five facilities that we are
12 particularly conscious of now, the subsequent efforts
13 that the NRC has made to evaluate plants that are coming
14 up for license, or the near-term license facilities, and
15 we will talk more about that in detail, we have not
16 found the same kinds of problems with that additional
17 look.

18 COMMISSIONER AHEARNE: Have we looked as hard
19 at those other plants?

20 MR. JORDAN: We have put together a program
21 that we think is appropriate based on the problems.

22 COMMISSIONER AHEARNE: I did not ask that
23 question. I asked whether we looked as hard.

24 My suspicion of the answer to Commissioner
25 Gilinsky's question is, we don't know.

1 MR. DIRCKS: I think the question has been
2 asked time and time again since we started on this
3 effort, and that was the question that I kept asking,
4 the problems that we saw in the five plants, have they
5 been repeated either as extensively or as intensively as
6 we discovered in those five plants. The answer I got
7 back is, we have looked and we don't discover the same
8 problems.

9 COMMISSIONER AHEARNE: Did you ask whether we
10 had looked as hard?

11 MR. DIRCKS: Let's get into the NTOL problem,
12 then we can see. I think we can use that as a possible
13 indicator of whether those problems exist. If you want
14 to get into the NTOL look, we can skip ahead.

15 COMMISSIONER AHEARNE: That is answering the
16 comment. I told you what I think.

17 MR. JORDAN: I think the point is, we looked
18 differently. The final identification that there is a
19 serious problem at a plant is an ascending set of
20 circumstances, putting together previous inspection
21 findings, allegations, subsequent investigations, and
22 then you come to a decision that you have got a real bad
23 problem.

24 The staff has put together efforts that we
25 feel with confidence that we don't have those kinds of

1 problems. Certainly, it is not the same review that was
2 done at those plants that became the focus of our
3 problem.

4 COMMISSIONER GILINSKY: Let me ask this a
5 little differently then. Suppose what you say is
6 correct, at least of the current crop of plants, and
7 these five stand out, I don't know whether that is right
8 or not, but let's assume it is. We are looking harder
9 than we were before.

10 MR. JORDAN: Yes.

11 COMMISSIONER GILINSKY: How do they compare
12 with, or we do know how they compare with plants that
13 were built previously? Are these plants that were
14 simply built according to the old rules? Or has there
15 been a breakdown in the system that was otherwise
16 functioning reasonably?

17 Do we have any sense to what the answer is to
18 that?

19 MR. JORDAN: We have taken the view, and
20 looking back at the operating plants, they have now
21 through their pre-op and start-up testing, their
22 operating programs have achieved some level of
23 confidence that causes us at this point to go back and
24 reexamine their construction under a different set of
25 rules than they were built under for quality assurance.

1 MR. VOLLMER: I think that what Ed said is
2 correct, those things that have undergone preoperational
3 testing, years of operation, surveillance, and tech spec
4 testing, you get confidence in those items.

5 But, I think that some of the, for example,
6 the seismic shutdown plants, going back and looking
7 whether or not pipe-hangers met the design requirements,
8 was indication that those plants suffered perhaps some
9 of the same deficiencies.

10 COMMISSIONER GILINSKY: You say that there has
11 been a certain amount of upgrading.

12 MR. VOLLMER: I think that type of upgrading
13 has occurred when we have found the problem, and we
14 found it significant enough to go back and ask the
15 operating plants to look at it, in some design
16 categories, like taking a look at whether or not the
17 as-built piping supports met our requirements.

18 So I think that would say that, Gee, there are
19 some plants out there that may have some type of
20 deficiencies the same as the ones we have seen out.

21 COMMISSIONER GILINSKY: I will tell you why I
22 raise the question. I believe that at least one
23 official, from at least one of the plants referred to in
24 this category, said: "Look, we are caught up in rapidly
25 changing rules. This thing isn't built any differently

1 than other plants." Is that right, without getting into
2 the specific details.

3 MR. DeYOUNG: Let me say something about the
4 five plants that we keep referring to.

5 One of those, I think, it was pretty clear to
6 anyone that walked onto the site that they had real QA
7 problems. You could have fallen into holes in the
8 concrete, for example. This doesn't happen at very many
9 plants. So that type of problem is an isolated type of
10 problem.

11 At another plant, the structures were tipping,
12 things were going wrong. The support soil had not been
13 done properly. It was pretty clear that things were
14 going wrong. We don't see that at many other plants.

15 So the problems that highlighted the QA
16 deficiencies, most of them were so clear that they are
17 isolated incidents. A very large breakdown of the QA
18 system had occurred in certain areas. I don't think
19 that those problems are very prevalent or we would have
20 noticed them. We have looked and those types of
21 problems are isolated.

22 The other type of problem with one of the
23 other plants that you are talking about --

24 CHAIRMAN PALLADINO: Let me make a
25 suggestion. We can either start questioning and never

1 get to understand what it is that the staff has thought
2 through. I was going to suggest, let's let them do a
3 little more presenting for a little while, and then pick
4 up the questions.

5 I think it is important to understand what the
6 problems are, and I know that this is where you are
7 trying to go. But I hope that they have given thought
8 to it, and can define the problem.

9 MR. DIRCKS: These are exactly the same
10 discussions we have had for the past several months, and
11 that is why we have been delayed in getting down here.
12 We kept asking, what exactly is the problem that can be
13 matched with the solution, or should the solution match
14 that problem. You are experiencing the same difficulty
15 we had.

16 COMMISSIONER GILINSKY: That is fine. I think
17 this is an important thing to talk about. It is fine
18 with me for him to go ahead according to the Chairman's
19 suggestion.

20 CHAIRMAN PALLADINO: Go ahead for a little
21 while.

22 COMMISSIONER GILINSKY: But we do have to know
23 what is the answer to.

24 CHAIRMAN PALLADINO: I agree, and I am
25 interested to know what the problems are.

1 COMMISSIONER GILINSKY: Okay.

2 MR. JORDAN: In industry's case, we feel that
3 there was inadequate detection of problems, inadequate
4 corrective actions. These things continued, and the
5 industry, or the plants that we are talking about, had
6 not detected or corrected their own problems.

7 In the NRC's case, our reviews of plants
8 detected and corrected symptoms individually, but didn't
9 really focus on the overall management problem. We were
10 doing it a piece at a time. We found a problem with
11 concrete, and we would get the concrete fixed. We found
12 a problem with welding, we would get the welding fixed.
13 But perhaps not focusing to the extent that we should
14 have on the overall management problem, which we think
15 is perhaps the one to keep focusing on.

16 The result was that we had a very late
17 understanding of the scope and magnitude with respect to
18 the first indication. When you look back on it as
19 Monday morning quarterbacks, there was in some cases an
20 insufficient effort on design review. We certainly
21 reviewed the conceptual design that is in the safety
22 analysis reports. Then the vendor, we look at the QA
23 plan.

24 For plants that are under construction, we
25 look at the implementation of the construction, but not

1 really at the design actions themselves in detail.
2 There are isolated looks at mechanical design, but not
3 in a focused fashion. So we will talk about that.

4 COMMISSIONER GILINSKY: If you will forgive me
5 one question.

6 Do you see this as a problem that is
7 principally a problem of detailed design, or a problem
8 with construction, or both?

9 MR. JORDAN: The problems, as you look at
10 those plants, include almost all of the elements you
11 list, but it all comes back to the overall management
12 control. These are symptoms of the management control.

13 The reason I put the design review down is
14 because the NRC wasn't spending as much attention in
15 that area as in some other areas. So it was an area in
16 our programs that was not as strongly examined.

17 The SALP program has been beneficial --

18 COMMISSIONER GILINSKY: You are talking about
19 detailed design, because after all that is what NRR
20 does, is do design review.

21 MR. VOLLMER: The design review is one more of
22 criteria and methodology. What he means by detailed
23 design review is looking at a working package, and that
24 we did not do.

25 MR. DIRCKS: There are many calculations, and

1 assumptions, and details.

2 MR. JORDAN: The systematic appraisal of
3 licensing performance has been beneficial in helping us
4 detect the symptoms by looking, after a year's
5 inspection, at the results of inspections. So there are
6 some pluses that coming out of program changes that were
7 occurring before these problems were coming up.

8 COMMISSIONER GILINSKY: You don't mention our
9 review of licensing QA program.

10 MR. JORDAN: I said at the front-end of it --

11 COMMISSIONER GILINSKY: In a number of these
12 cases, there are obvious deficiencies in QA programs.

13 CHAIRMAN PALLADINO: I thought you were going
14 down -- industry, NRC, and allegations.

15 COMMISSIONER GILINSKY: NRC is inspection.

16 CHAIRMAN PALLADINO: I can't read up there,
17 and I was waiting for him to tell me. I thought we were
18 still on industry.

19 MR. JORDAN: No, sir, I am sorry. I am on the
20 NRC.

21 CHAIRMAN PALLADINO: You are going to have to
22 tell me when you change slides.

23 MR. JORDAN: I am sorry.

24 CHAIRMAN PALLADINO: I understand your
25 question, Vic.

1 COMMISSIONER GILINSKY: It seems to me we did
2 not pick up deficiencies in the QA programs.

3 MR. VOLLMER: The programs themselves, all the
4 utilities address the 18 QA criteria backward and
5 forward. They have the paper that stacks this high.
6 They have not implemented that paper.

7 COMMISSIONER AHEARNE: The inspection did not
8 pick up the inadequate implementation.

9 MR. VOLLMER: That is our inability to detect
10 and correct the principal problem, which is the
11 implementation, and management control.

12 COMMISSIONER GILINSKY: But now we go on
13 talking about how they have used the six QA people, the
14 CGD, and they have increased that number, and six were
15 far too few, and so on. We must have known they have
16 known they had six for years and years.

17 MR. DIRCKS: I think what we are pointing out
18 is that we did not pay enough attention to the
19 implementation of QA on these sites. I don't think
20 there is any --

21 COMMISSIONER ROBERTS: But to be fair, if
22 their subcontractors have executed their duties
23 responsibly, it is conceivable that six QA people could
24 have been enough. You can't just pick numbers out of
25 the air.

1 COMMISSIONER GILINSKY: I agree with that.

2 COMMISSIONER ROBERTS: To say that they only
3 had six QA people in and of itself is not a meaningful
4 statement.

5 COMMISSIONER GILINSKY: I do agree with that.
6 But it is also true that a great point has been made of
7 that fact, that it was an insufficient number and the
8 number is now between 100 and 200, or whatever. If we
9 think that that is too few, then that is something we
10 have known about for a long time.

11 In another area, Diablo Canyon, they didn't
12 apply the QA program to certain phases of their
13 activities. We didn't pick that up. I guess what I am
14 saying is, I think there ought to be another board up
15 there.

16 MR. DIRCKS: Corrective actions will address
17 that.

18 CHAIRMAN PALLADINO: I have to come back to a
19 very fundamental point. I was raised, or my initial
20 career was in steam turbines. You know, you can't build
21 steam turbines without great quality, and they don't
22 operate well if they are not built that way.

23 What I was imbued with, and I thought this was
24 something that the organization imbued all the workers
25 with, was a necessity to build the quality in right from

1 the start. If you put it in, six inspectors can do a
2 job, whereas if you don't build it, 120 of them won't do
3 the job.

4 I think part of the problem is that in this
5 construction kind of a mode, we don't build up that
6 concept, that rapport with trying to get the quality
7 built in. Maybe the people are not instructed carefully
8 enough on what it is they are supposed to do, or what is
9 good quality, and I think that is fundamental to the
10 whole issue.

11 I agree with Tom, if we start to talk only
12 about inspectors, whether it is six or 120, we don't
13 necessarily get to the root of the problem.

14 COMMISSIONER AHEARNE: I think when you say,
15 "we," in this sense of "we build in," are you using "we"
16 in a broader sense than NRC?

17 CHAIRMAN PALLADINO: Yes, I mean the whole
18 industry.

19 COMMISSIONER GILINSKY: At least in the United
20 States.

21 CHAIRMAN PALLADINO: I was thinking of the way
22 I was imbued.

23 COMMISSIONER AHEARNE: Because it is the
24 industry that has to build that way.

25 CHAIRMAN PALLADINO: Yes, it is the industry.

1 MR. DIRCKS: That is the point we are making
2 all through this. Again, we have a very extensive
3 series of requirements, and we are applying it to an
4 industry, a construction industry that doesn't have the
5 discipline of a factory or an industrial institution to
6 as far as quality to draw on and quality assurance.

7 COMMISSIONER GILINSKY: We knew that, we
8 collectively and our predecessors. Did we give adequate
9 guidance in Appendix B? A lot of people say we didn't.

10 MR. DIRCKS: Appendix B, I don't think that
11 you can add anymore to Appendix B, and that is what I
12 have been told. I don't think we need anymore
13 requirements. It is a question of whether those
14 requirements have been picked up and implemented at the
15 end.

16 COMMISSIONER GILINSKY: I was told that it was
17 interpreted in a variety of ways, and people weren't
18 sure whether --

19 MR. DIRCKS: Again, the problem is how much do
20 you do here. Is the industry to do only that which we
21 tell them to do, or do they have an obligation to go
22 beyond what we tell them to do to assure that they build
23 a sound facility.

24 COMMISSIONER GILINSKY: Is it clear or was it
25 clear what we wanted them to do.

1 MR. DIRCKS: If you are putting up an addition
2 to your house, I think you will hire a contractor and
3 give that contractor adequate supervision to make sure
4 that you have a good product to live. If you spending
5 \$2 billion for a plant, I think you should have a
6 certain amount of interest as to whether that plant is
7 going to be built correctly.

8 COMMISSIONER GILINSKY: I agree with you. You
9 know, in some cases it didn't work out that way.

10 MR. DIRCKS: Whether we can say that it is our
11 responsibility to guide it completely --

12 COMMISSIONER GILINSKY: I think it is also
13 true that for years inspection on the construction site
14 was pretty light, I think. There was not an enforcement
15 program.

16 MR. VOLLMER: An NRC inspection program?

17 COMMISSIONER GILINSKY: Yes.

18 MR. VOLLMER: It still is.

19 COMMISSIONER GILINSKY: Okay, that is an
20 important point.

21 MR. VOLLMER: It still is.

22 COMMISSIONER GILINSKY: I think there was a
23 feeling that there aren't health and safety problems
24 until the plant is running so, for example, there wasn't
25 an enforcement program.

1 MR. DIRCKS: I think when we come to the
2 series of actions that we would like to take, I think
3 you are going to see that we want to do it.

4 CHAIRMAN PALLADINO: Then we give them enough
5 chance.

6 COMMISSIONER GILINSKY: We are talking about
7 problem sources, and I think that is one of the
8 backgrounds.

9 MR. DIRCKS: I don't think we are making any
10 excuses.

11 COMMISSIONER GILINSKY: I don't think hat it
12 is a matter of excuses, or casting blame. But I think
13 we need to understand how all this came about in order
14 to deal with it.

15 MR. VOLLMER: I think as far as the guidance
16 is concerned, though. There was opportunity for
17 misinterpretation or different interpretation, but I
18 don't think that has led to any of our problems because
19 some of the basic tenets of the QA program and its
20 regulatory guides and the industry standards have
21 oriented themselves toward the type of thing we are
22 talking about, to do a proper design job and check it,
23 and do a quality construction job, and check it. Some
24 of the things we are finding in design are a total lack
25 of any control over that process, and our QA breakdowns

1 are a total lack of control over the quality of building
2 a plant.

3 I don't think those are really interpretation
4 problems, I think they are just gross deficiencies.

5 CHAIRMAN PALLADINO: I am still going to say
6 that we ought to give the staff a little thought. I
7 don't feel that I have gotten much --

8 COMMISSIONER ROBERTS: Are you going to have
9 lunch today?

10 COMMISSIONER GILINSKY: We are.

11 COMMISSIONER ROBERTS: Indeed, I am.

12 COMMISSIONER AHEARNE: It is all right, we had
13 an interesting meeting yesterday after you guys left.

14 (General laughter.)

15 CHAIRMAN PALLADINO: Okay, do you want to do
16 ahead?

17 COMMISSIONER AHEARNE: You are going to still
18 define the problem?

19 MR. JORDAN: Yes, sir.

20 CHAIRMAN PALLADINO: I am waiting for it.

21 MR. JORDAN: The allegations have been, I
22 think, a concern on the part of the staff that this
23 causes to do some self-flagellation that the NRC didn't
24 find the problem before allegers came forth and advised
25 us that there may be a problem.

1 The allegations really are part of the
2 regulatory process. The employees of the facilities are
3 encouraged by the publishing of the NRC's phone numbers,
4 by postings at the facilities, by the Resident
5 Inspection Program, by a number of measures, to provide
6 these allegations.

7 COMMISSIONER ROBERTS: May I ask a question.

8 MR. JORDAN: Yes, sir.

9 COMMISSIONER ROBERTS: I was out at the Supply
10 System -- They don't use that form of acronym anymore --
11 I am talking about Washington State. With the paychecks
12 and posted throughout the job site is a "hot line," so
13 called, for any worker to report anything he thinks is
14 improper. Is this used at any other sites, or do you
15 know? You may not have reason to know.

16 CHAIRMAN PALLADINO: What site was this?

17 COMMISSIONER AHEAPNE: There are various --

18 COMMISSIONER ROBERTS: Washington Public
19 Power.

20 I am not suggesting that we impose that. I am
21 just asking the question, if that is utilized on other
22 sites.

23 MR. JORDAN: I personally know that other
24 sites use drop boxes and post numbers in similar ways.
25 There are plants that encourage employees to come

1 forward and advise them of concerns.

2 I noted that July 14, the final rule was
3 published for the protection of the people who provide
4 allegations, and it becomes effective in October. So
5 there are things that continue to go on that would cause
6 to use the allegations.

7 Let me make one statement. There was a GAO
8 audit of the construction program in about 1977, and in
9 that particular case allegations were solicited by going
10 to employees at construction sites, and that led to a
11 flooding of concerns. When one sorted the ratio of real
12 and not-so-important, it was relatively low. So
13 certainly there is an optimum point that one can go to
14 in seeking allegations.

15 MR. DIRCKS: I think when we come to the point
16 of what we are going to do about certain problems we are
17 facing, we want to start looking at merits by
18 allegations. I think allegations are an extension of
19 the resources we have, and somehow or another we would
20 like to make sure that if people see problems on these
21 sites, they will come to us to get us in the chain of
22 correcting the problem, or go to the company that is
23 building at the site.

24 One way or the other, we have had a tendency
25 to feel embarrassed that others have discovered this

1 problem, and that other groups have to bring it to our
2 attention. I think that it is important that somehow or
3 another we make use or capitalize on some of this chain
4 of information.

5 MR. JORDAN: Could I have slide N please.

6 (Slide.)

7 COMMISSIONER GILINSKY: while he is getting
8 it, let me hazard a question.

9 At the end of my former tour or previous tour
10 at the Atomic Energy Commission, I remember that there
11 was a round of seminars that was started up on quality
12 assurance in various parts of the country. As I recall,
13 I think even the Chairman attended one of them, and the
14 Commissioners attended others, and there was a great to
15 do about it.

16 MR. JORDAN: In 1973, I believe.

17 COMMISSIONER GILINSKY: Did that have an
18 effect or was that helpful?

19 COMMISSIONER AHEARNE: Some of the plant that
20 were not, in fact were initiated right after that.

21 MR. VOLLMER: I think it was helpful in
22 certainly bringing industry awareness as to what the
23 quality assurance requirements were, and that was the
24 objective of those, both the construction round of
25 meetings we had, and the operations round of meetings we

1 had.

2 COMMISSIONER GILINSKY: Were those explaining
3 Appendix B, was that the idea?

4 MR. VOLLMER: It was part of the pep talk to
5 get everybody interested in quality assurance. It was
6 partly explaining the technical requirements. At that
7 time, a lot of more detailed requirements were in the
8 process of development.

9 The ANSI standards that were eventually
10 adopted by our regulatory guides were in large part in
11 the draft form or being developed at that time. But,
12 again, I think the basic requirements and guidance that
13 the Commission felt were appropriate were pretty much in
14 place at that time.

15 I guess it is certainly true that a lot of the
16 plants were already in the design process that we are
17 reviewing now, or just about to start up.

18 I might indicate that it was also a decision
19 made at that time sort of not to backfit those plants
20 that were in the construction process to necessarily --

21 COMMISSIONER GILINSKY: To backfit the
22 programs?

23 MR. VOLLMER: To backfit the programs to meet
24 the ANSI standards that were in part that time. They
25 had to meet Appendix B, but some of the detailed

1 guidance was not backfit into their programs because
2 they were already on-going or in construction.

3 I think that most of the basic requirements
4 and guidance were in place at that time, and I think
5 reasonably well understood by the industry and the
6 people they had there.

7 CHAIRMAN PALLADINO: Why don't you go ahead.

8 MR. JORDAN: All right, sir.

9 This is a backup slide entitled "Summary of
10 Recent Problems." We identify the specific examples
11 that jump out in terms of non-conforming, structural
12 steel welds that were identified at the Zimmer facility
13 and the seismic design areas at Diablo Canyon,
14 inadequate soil compaction in Midland, voids in the
15 concrete structures at Marble Hill, and design
16 deficiencies at South Texas.

17 These are the example issues that led the
18 staff to the view that those problems were really
19 problems in implementing the quality assurance program
20 at those facilities. That it was a lack of management
21 emphasis on quality assurance and on quality at the
22 sites.

23 Those were simply symptoms of further
24 problems, so that when one examines, perhaps, the
25 largest issue at each site, and then applied it to other

1 areas within the site, we found similar areas of loss of
2 control, loss of management control.

3 The contributing factors to the problems
4 included unqualified workers and inspectors,
5 falsification of records, the intimidation of quality
6 control inspectors, inadequate staffing, and inadequate
7 corrective action, identification, and control.

8 With that, I would like to jump to slide 2.

9 (Slide.)

10 COMMISSIONER AHEARNE: You still haven't
11 defined the problem.

12 MR. JORDAN: The problem is defined as the
13 utilities' inadequate attention to the management
14 controls and their application to the quality assurance
15 ethics in the plants.

16 COMMISSIONER AHEARNE: Bill, you mentioned at
17 the beginning that you spent a lot of time in first
18 having to define the problem. Is that the problem?

19 MR. DIRCKS: That is one part of the problem.
20 A second part of the problem is the NRC did not pay
21 enough attention to assuring the interface between the
22 design phase and the construction.

23 Another part of the problem was that we did
24 not take enough of a systematic look at the problem of
25 QA --

1 COMMISSIONER AHEARNE: That is all part of not
2 paying enough attention.

3 MR. DIRCKS: Yes.

4 COMMISSIONER AHEARNE: So you are saying that
5 the management didn't pay enough attention, and you are
6 saying that NRC didn't pay enough attention.

7 MR. DIRCKS: Or we paid attention to the wrong
8 aspects.

9 MR. JORDAN: So what that left us with is that
10 we had questions regarding our basis for finding that
11 the construction had been completed substantially in
12 accordance with the FSAR commitments.

13 So we have identified, certainly for the
14 near-term operating plants, measures which will improve
15 the NRC's confidence in the quality of those plants. So
16 it is an examination of activities that have already
17 been completed, to improve our confidence in that set of
18 facilities.

19 So that is a relatively short-term interim
20 action, and the next area is focusing on the management
21 of quality. We have the incentives grouped into three
22 areas. Those activities that we will be doing, focused
23 on improving our confidence in quality, will also
24 certainly have some upgrades in quality.

25 We have a separate set which are directly

1 being implemented to improve the actual management of
2 quality, to improve the product of the construction and
3 operations activities. We identify that in three
4 areas: training, direction, and management attention.

5 Finally, because there is staff concern that
6 the recently identified problems and the initiatives may
7 not represent the complete set of concerns that exist,
8 that we are focused on these things that are most vivid
9 to us, we recommend initiating a parallel review of the
10 more long-term approach. I will describe how we are
11 going to do that. This would be focusing on the
12 viewpoints that NRC, industry, and the public have on
13 quality and quality assurance.

14 CCOMMISSIONER AHEARNE: You are going to go
15 into detail on these?

16 MR. JORDAN: Yes.

17 If I could have slide 3, please.

18 (Slide.)

19 MR. JORDAN: The first topic on slide 3, under
20 Confidence and Quality, is to indicate that the
21 construction inspection program has really evolved and
22 developed. What has happened is that in most cases
23 there have been additions to the program each time we
24 found a problem, and we are talking several years back.

25 We added an inspection procedure module to

1 solve that particular problem, and so the program had
2 become burdened with more inspection modules than the
3 inspectors could do within their allotted time frame.
4 So there was a construction enhancement program that was
5 initiated to identify those most significant procedures,
6 to prioritize, and then a set of construction assessment
7 team inspections that were done on a trial basis in
8 1981.

9 COMMISSIONER AHEARNE: Did the enhancement
10 program actually lead to dropping any packages?

11 MR. JORDAN: It led to changing some of the
12 packages, to putting priority on the ones that should be
13 done when.

14 COMMISSIONER AHEARNE: You identified at the
15 beginning that because of these additions, you ended up
16 with a set of packages that could not be accomplished by
17 the inspection force we had.

18 MR. JORDAN: In fact, I would say that the
19 enhancements still could not be accomplished within the
20 force that we had. So there was a trial construction
21 assessment team inspection --

22 MR. DIRCKS: There is a little history here.
23 Let me see, I am looking, at least one Commissioner was
24 here back in 1976, or so.

25 COMMISSIONER GILINSKY: What did I do?

1 MR. DIRCKS: I think that the Senate had a
2 review of the program, the Government Operations
3 Committee, Senator Ribicoff, and they issued a report
4 and they advocated more NRC inspectors, more direct
5 observation, more direct testing, generally much more
6 intensive taking charge by the agency.

7 I think we started doing calculations of the
8 staffing requirements, and of course at that time we
9 were looking at a different set of numbers as far as
10 completed reactors, but the numbers of employees got
11 into multiples of thousands in order to carry out such a
12 direct observation, direct testing, direct inspection,
13 and quality control.

14 Then from that point on, we went into various,
15 knowing we couldn't get those resources, what could we
16 do to improve on a more limited basis the attempts. I
17 think the Commission did one or two studies at that time
18 to come down and to focus on, with more limited
19 resources, what can we do with the quality control
20 construction program. I think the construction
21 enhancement program was a product of that effort.

22 COMMISSIONER GILINSKY: Is an important part
23 of the problem the fact that we didn't have enough
24 inspectors in retrospect?

25 MR. DIRCKS: I would say yes.

1 CHAIRMAN PALLADINO: In the construction
2 business, is there any management device for knowing
3 whether you are in quality control or not?

4 I am thinking of the following situation which
5 does not apply to construction. In making fuel
6 elements, there were some automatic processes and you
7 plotted them. You took samples and you plotted them on
8 a Two-Sigma chart and a Three-Sigma chart, and you could
9 see the variations. Now all of a sudden you saw trends
10 that might have said tool wear, or something that is
11 going to bring you out of control, and you did something
12 about it. That I call part of quality control.

13 I don't know what a comparable situation would
14 be in the construction industry. But have there been
15 people who have talked through these kind of things and
16 say, how do you know when you are getting good
17 construction.

18 The answer is not thousands of inspectors.
19 All they can do is find problem if there are problems.
20 The idea is to get it so that you have fewer problems,
21 and that you know when you have the problems, and you
22 have some trigger that says some corrective action is
23 needed.

24 MR. JORDAN: To me that is the management
25 attention, and each facilities has efficiency reports.

1 CHAIRMAN PALLADINO: Have there been studies
2 of management tools for measuring quality in the
3 construction business.

4 MR. JORDAN: The tools are in fact in place in
5 the program.

6 COMMISSIONER ROBERTS: I think the tools are
7 there, it is the implementation.

8 COMMISSIONER AHEARNE: I can remember a
9 synthetic fuel plant --

10 CHAIRMAN PALLADINO: I am not that familiar
11 with them.

12 COMMISSIONER GILINSKY: It is obviously a lot
13 harder than doing it in a factory.

14 CHAIRMAN PALLADINO: Sure.

15 COMMISSIONER AHEARNE: A synthetic fuel plant
16 that I was familiar with, in its construction, did follow
17 something very similar. They kept a running plot of
18 performance reports or deviations, and corrective
19 actions, and they could identify where in this
20 construction when things began to get a little bit out
21 of line. They sent in a special team to focus and find
22 out what was the problem in that area to make the
23 corrections. So it is possible to do that.

24 CHAIRMAN PALLADINO: I am looking to see if
25 maybe I need to get a little more familiar with the

1 management tools that are available in construction.

2 MR. VOLLMER: Those elements that Commissioner
3 Ahearne talked about are really part of our process, and
4 they should be on-going.

5 CHAIRMAN PALLADINO: But I don't hear that
6 when we talk about quality assurance. All I hear about
7 is more inspectors, and there are things going wrong.

8 COMMISSIONER GILINSKY: You hear about it from
9 our end, which is the inspection end.

10 CHAIRMAN PALLADINO: Even inspection ought to
11 have some means for identifying that you have problems
12 or you are getting out of control, and you need to do
13 something.

14 COMMISSIONER GILINSKY: I certainly agree with
15 that.

16 MR. DIRCKS: That is some kind of a periodic
17 summary evaluation to see where the problem
18 identification is leading you. That you are not just
19 fixing the individual problems, but you are
20 understanding that there is a management breakdown
21 overall and you fix that breakdown.

22 COMMISSIONER AHEARNE: That is the SALP
23 program, in a way.

24 MR. DIRCKS: Yes, it helps us.

25 We are relying again on the records that we

1 require to pick up these trends, and that is where a lot
2 of our attention had been placed. We wanted the
3 records, to look at the records to identify trends. You
4 criticized us for looking at papers as opposed to the
5 actual installation of equipment and tracing it back to
6 the design stage.

7 CHAIRMAN PALLADINO: Looking at paper
8 sometimes can tell you a story.

9 MR. DIRCKS: That is part of it.

10 MR. JORDAN: There is now a major revision in
11 process to match the inspection program to the available
12 resources, so that we are applying wisely those
13 resources, understanding the budgetary limitations.
14 That process increases the emphasis on the observation
15 of work, and actually decreases the record review, and
16 increases the emphasis on the inspection of design and
17 the design change process.

18 COMMISSIONER GILINSKY: Let me ask again.
19 Given the situation that we face, are we short of
20 inspectors?

21 MR. JORDAN: The problem would be if we are
22 going to take the responsibility from the utility, there
23 has to be a ratio. The responsibility clearly lies with
24 the utility. We are doing a quality assurance check on
25 the utility, and it is how much measurement we need and

1 we always need more.

2 COMMISSIONER GILINSKY: Obviously, you check
3 the checker.

4 MR. JORDAN: Yes, that is right.

5 COMMISSIONER GILINSKY: We are not building
6 the plant. The responsibility for doing that is theirs,
7 but we also have a responsibility. Sometimes we are a
8 little too fast when we are saying that the
9 responsibility is theirs. We have different kinds of
10 responsibilities.

11 MR. JORDAN: As an inspector, I never had
12 enough time, if that is a good answer for you. There
13 were always things that I would have liked to pursue
14 that I did not have the opportunity to pursue.

15 COMMISSIONER GILINSKY: That does not
16 necessarily mean that the inspection wasn't sufficient
17 from some more general point of view.

18 What is our sense? Obviously, we can't go out
19 and just arbitrarily ask for great wads of money --

20 MR. VOLLMER: Let me add one element to that
21 as well. We have a number of sites where there have
22 been problems that are identified. As I understand it,
23 our involvement and our inspection activities at those
24 sites has substantially increased. Given that fact as
25 well, how does that influence our present situation in

1 terms of the number of inspectors we have and what the
2 need is.

3 MR. JORDAN: It obviously makes it worse if we
4 are putting large resources into a facility that has
5 known problems, and not putting those resources into
6 plants that we are not quite so sure about. One has to
7 make those judgments.

8 COMMISSIONER AHEARNE: Is this, what you are
9 talking about here, confidence in quality initiative,
10 construction inspection program changes, this is a
11 predicate to my question, is this predicated on the
12 belief that these plants under construction do have
13 substantial problems as indicated by that set of
14 examples you gave?

15 MR. JORDAN: It is predicated on the belief
16 that the NRC staff doesn't presently have the confidence
17 that it feels it needs, without embarking on
18 improvements for the licensing process.

19 COMMISSIONER AHEARNE: In other words, is what
20 you are saying that in order for the staff to end up
21 making the approval decision, they feel the need for
22 this revised program?

23 MR. JORDAN: Yes, sir.

24 COMMISSIONER AHEARNE: Can you explain how,
25 since that program didn't exist, you can have confidence

1 in having that are operating continue to operate?

2 MR. JORDAN: We tried that once already, and
3 it was based on the belief that those plants had gone
4 through a pre-op, start-up and operating phase, and they
5 had been subject to upgrades and backfits, through the
6 TMI upgrades, through the bulletin, the circulars,
7 information notice.

8 COMMISSIONER AHEARNE: Yes, but a lot of those
9 are not going to be addressing the types of construction
10 efforts that you are monitoring in this program.

11 COMMISSIONER GILINSKY: This is a problem that
12 you run into every time you up a requirement.

13 COMMISSIONER AHEARNE: I understand, but there
14 is a fundamental question, Vic.

15 MR. JORDAN: I agree, and let me give you the
16 very bottom line, that is why the very long-term study
17 is there. The staff resources are quite limited, and so
18 we provided a set of initiative that we believe are
19 appropriate, based on what we know now, but we are going
20 to have a long-range study, long-range meaning a year,
21 that will either lead us back in the direction of
22 looking at those older plants or lead us in some other
23 direction, however it works out.

24 COMMISSIONER AHEARNE: Right.

25 MR. JORDAN: So we are not discarding that,

1 but here is how we have focused.

2 I guess the last bullet there is that there is
3 now a resident inspector at all of the sites that are
4 greater than 15 percent complete, which certainly gives
5 more presence by the NRC at those sites.

6 COMMISSIONER ASSELSTINE: These people are not
7 necessarily construction only people, are they? They
8 are all construction.

9 MR. JORDAN: Yes.

10 COMMISSIONER ASSELSTINE: They are all
11 construction, not operational types.

12 MR. JORDAN: Yes, they are qualified
13 construction inspectors, nor operations inspectors. So
14 that they have the concrete courses, and familiarization
15 in welding practices, and that kind of thing.

16 COMMISSIONER GILINSKY: Does the presence of
17 the inspector make a lot of difference in what we know
18 about the facility?

19 MR. DIRCKS: Yes, it does.

20 MR. JORDAN: Yes, and by talking to the
21 residents at the construction sites, you do learn a
22 great deal. They are very knowledgeable not only of the
23 mode of construction, but the morale of the construction
24 forces that are there.

25 MR. DIRCKS: Their presence is important,

1 too. Again, the access that they make available to
2 people on the site to come and talk to them, to talk as
3 a person, I think that is an important point. The
4 ability to walk through the plant at frequent intervals
5 and talk to the construction workers, to observe them, I
6 think that is another important step.

7 MR. JORDAN: I think I will rush through the
8 next one, that is construction assessment team
9 inspection. The Commission has had a recent
10 presentation on it. The staff is going to implement
11 this particular initiative.

12 COMMISSIONER AHEARNE: When?

13 MR. JORDAN: The staff is implementing, yes,
14 sir.

15 MR. DeYOUNG: It is being implemented.

16 CHAIRMAN PALLADINO: What does that mean?

17 MR. DeYOUNG: We are beginning to put a staff
18 together. We should have a team, I would hope, in a few
19 months going out to the first facility.

20 MR. JORDAN: The next set is measures at
21 near-term operating license facilities. I will attempt
22 to rush by that one as well.

23 COMMISSIONER ASSELSTINE: Don't rush too fast
24 because I have a couple of questions.

25 MR. JORDAN: I will dwell on it a bit,

1 whatever you say.

2 MR. DIRCKS: Dick, do you want to handle it.
3 I know that Dick has been heavily involved in this.

4 MR. VOLLMER: Let me do my little bit.

5 CHAIRMAN PALLADINO: All right, and then let's
6 see what the questions are.

7 MR. VOLLMER: Then we can get the details if
8 they are necessary.

9 These measures we did describe to you in our
10 presentation last January, and they really haven't
11 changed significantly. We now have some experience with
12 them.

13 They are currently being applied to the
14 near-term operating licenses, and they continue until
15 the NRC initiatives that we are describing or industry
16 action replace them. We don't anticipate that these set
17 of initiatives would continue.

18 The first initiative of self-evaluation, the
19 utilities are doing an assessment of how well they
20 believe their own program has worked by looking back at
21 their quality assurance records, their successes and
22 failures, and providing a description to the NRC in a
23 meeting with regional and NRR personnel, and I&E
24 headquarters personnel present.

25 The region is doing an evaluation which is

1 somewhat like a SALP review of the plants at the time of
2 licensing, and this is an extension of what has been
3 normally done preceding license.

4 The question to raise is whether additional
5 inspection effort is necessary. Is there a void that
6 occurred somewhere in the inspection process in looking
7 back over the construction of the facility? Now, with
8 the background of problems that have been identified, is
9 there an indication that further work should be done by
10 the utility in a given area?

11 The results of those two are applied in
12 whether or not an independent design review should be
13 performed by the utility, or should the utility have an
14 independent design review performed.

15 COMMISSIONER ROBERTS: Now, I want to
16 understand something.

17 MR. VOLLMER: Yes, sir.

18 COMMISSIONER ROBERTS: The independent design
19 review is not a requirement?

20 MR. VOLLMER: That is correct.

21 COMMISSIONER ROBERTS: I am asking the
22 question.

23 MR. VOLLMER: That is correct, it is not a
24 requirement.

25 COMMISSIONER AHEARNE: Is the

1 self-evaluation?

2 MR. VOLLMER: A self-evaluation has been
3 requested of each facility.

4 COMMISSIONER AHEARNE: Is this a specific item
5 --

6 MR. VOLLMER: The self-evaluation, the object
7 of it is for the utility to be able to make the
8 statement by the chief executive officer, or somebody
9 else appointed, that, yes, the facility has been
10 constructed in accordance with the FSAR requirements.
11 The utilities previously didn't make that statement
12 themselves. The NRC made it for them.

13 COMMISSIONER AHEARNE: Is this a very request
14 that we have made? Have we got anything in writing that
15 has asked them to make that self-evaluation?

16 MR. VOLLMER: I am not sure of the exact
17 answer. We have asked them for a meeting to come in and
18 address the particular problem, so we have met with
19 them. In general, they come with a document, sometimes
20 something like that, which they have put together as an
21 assessment of their program.

22 CHAIRMAN PALLADINO: Did any of them ever
23 start a self-evaluation program just on the basis that
24 you now request that the chief executive officer to
25 certify?

1 MR. VOLLMER: Yes. In the earlier days, we
2 asked the question of them: What confidence do you
3 have, or demonstrate your confidence that the facility
4 is built in accordance with the application. That made
5 them go back and take a look at what records they had
6 and so on. This is no different than what they really
7 should have done to begin with. I think it is a
8 confirmation more than anything else.

9 COMMISSIONER AHEARNE: The EDO sent us on
10 March 29 a document on the QA review program for OL
11 applicants, and there was a list of QA meetings, I guess
12 that is the kind of thing you are talking about.

13 MR. VOLLMER: Yes.

14 COMMISSIONER AHEARNE: Let me re-ask my
15 question. Is there anything in writing that we have
16 ever given to the OL applicants that describes what we
17 had in mind for this self-evaluation?

18 MR. VOLLMER: Not to my knowledge. There may
19 be, but not to my knowledge. I think, again, it was
20 pretty well characterized, at least in setting up the
21 meetings, that we wanted them to show with a real
22 demonstration --

23 COMMISSIONER AHEARNE: It is all verbal as to
24 what it is.

25 MR. VOLLMER: There may have been letters. I

1 am not really sure whether or not we did send letters.
2 Certainly, the early ones were set up by meetings and
3 notices.

4 The evaluation, I will take one minute to tell
5 you what we look for. I think it is important what we
6 are looking for in these self-evaluations, since the
7 plans do cover a spectrum of organizations and starting
8 times on the initial start-up, design, and
9 construction.

10 We look for when the QA program itself was
11 initiated, since certain of these were started before
12 Appendix B.

13 What guidance did the licensees utilize in
14 terms of quality assurance along the way.

15 What sort of staffing levels they have, and
16 what reporting relationships quality assurance had in
17 the organization. In some cases, quality assurance has
18 met a very low reporting relationship, and in some
19 cases, relatively high.

20 We look for management actions took place on
21 the project. For example, did they impose a stop work
22 on construction or design activities because they felt
23 there were quality problems. Did licensees do any
24 independent work on their own. Did they take a portion
25 of the design and have it independently verified to give

1 themselves confidence that their design organizations
2 were doing a good job.

3 The two last ones, which I think are the most
4 important ones. Did the licensee have any independent
5 outside organization contract, or something else, other
6 than the NRC, come in to take a look at his
7 design/construction quality program. In some cases,
8 licensees have done that independently on their own, and
9 in most cases they have not.

10 Also, we look for how much attention the
11 licensees paid to resolution of quality problems when
12 they arose, and how much they looked at potential
13 generic implications of the problems. In some cases you
14 find where the licensee found a problem, he solved it in
15 the very narrow sense, and didn't look beyond that, be
16 it a design or construction deficiency, for possible
17 problems in other parts of his facility.

18 Those are the types of things that we
19 concentrate on in the self-evaluation.

20 CHAIRMAN PALLADINO: Jim, you had a question?

21 COMMISSIONER ASSELSTINE: it struck me that
22 these measures, if they were done well, might provide a
23 fairly quick handle on how widespread the problem is in
24 terms of construction. Is that your view?

25 Does it have the capability to do that, to

1 help give some kinds of bounds on whether the quality
2 problems that we have seen at a number of sites are
3 pervasive in this generation of plants, or whether they
4 are fairly isolated instances.

5 MR. DIRCKS: They can give you indications,
6 and we talked about that.

7 Dick, you might want to review the
8 self-evaluation and whatever systems you have looked at
9 in the independent design you have received. You did
10 pick up a need.

11 MR. VOLLMER: The self-evaluations,
12 unfortunately, the licensee comes in and gives a pretty
13 glowing description of why he doesn't have any quality
14 problems, and all the actions he has taken. You really
15 have to probe around a bit, and we work with the regions
16 to try to find out where the soft spots are and hit
17 those.

18 In those cases where we think there are, we
19 would require an independent design review program, and
20 try to fit that where we think may be weaknesses in his
21 overall program. We also try to fit that to what may be
22 undiscoverable problems in the design.

23 Much of the work, of course, as I mentioned
24 before, you have pre-operational testing, you have
25 surveillance testing, and on-line testing to the life of

1 the plant, and the operations and so on. You have a lot
2 of confidence in certain systems, in their performance
3 and their adequacy.

4 There are certain things that you never know
5 about in the design. The seismic design of the
6 facility, things that are static during the life of the
7 plant, and may not be tested. In large measure, you
8 aren't necessarily going to stumble upon design or
9 construction problems unless you look for them.

10 MR. DIRCKS: Do you have some results of what
11 has been done so far? You have gone through at least a
12 couple of the plants.

13 MR. VOLLMER: Yes.

14 MR. DIRCKS: You might be interested to hear
15 what came out of this.

16 COMMISSIONER ASSELSTINE: The other question I
17 had was on the independent design reviews. A couple of
18 the plants I have been to recently, I have gotten a
19 description of the results of those design reviews, as
20 well as at least the utility's impression of how good
21 those reviews were.

22 I would be very interested to hear your
23 assessment of how good, how thorough those reviews were,
24 and to what extent we can get confidence from the
25 independent reviews that in fact the plant has been

1 constructed according to the design.

2 MR. VOLLMER: The two that we have gone
3 through, that they have completed and we have reviewed
4 so far, are the design review for the San Onofre plant
5 and the one for Lasalle.

6 The San Onofre design review was a broader
7 one. It actually was proposed by the licensee, rather
8 than being asked for by the staff, because he felt that
9 he wanted to gain and demonstrate confidence as a result
10 of the Diablo Canyon problems.

11 What he did was to look at broadly the quality
12 controls in place for the design process, both at the
13 Combustion Engineering and Bechtel organizations. He
14 also took several narrow cut of the design and did
15 detailed review of the actual design, checking
16 calculations, doing independent calculations, going down
17 and looking to see that the actual plant piping was hung
18 and installed in conformance the drawings that came out
19 of the design.

20 As you would expect, there were a number of
21 procedural, administrative, and technical errors
22 uncovered by that. None of these were found to have
23 infringed on any margins in the design in terms of the
24 design therefore not meeting regulatory requirements.

25 They looked hard and we looked hard at whether

1 or not any of these errors had generic implications,
2 which is very important to us. We think that one might
3 have had, and that was the cable-tray support problem,
4 we thought might have generic implications and the
5 licensee thought it might, too.

6 So they did a complete review of all
7 cable-tray support, and I think maybe found one instance
8 or a couple of instances where if the tray had been
9 fully loaded, it would not have met the full regulatory
10 seismic requirements.

11 To sum it up, I think the conclusion that the
12 independent contractor, or the reviewer did on that was,
13 he felt as a result of this, if this was a
14 representative sample, that the plant was indeed
15 designed and constructed in conformance with regulatory
16 requirements. I think we agreed with his conclusion
17 based on that.

18 COMMISSIONER AHEARNE: I gather that
19 contractor only looked at San Onofre 2 and 3.

20 MR. VOLLMER: That is correct.

21 COMMISSIONER ROBERTS: Cable-tray supports,
22 how many were found in the plant, and how many were
23 found unacceptable?

24 MR. VOLLMER: Hundreds and hundreds of
25 cable-tray supports. One may not have may not have its

1 seismic loading requirement if it had been fully loaded,
2 which it wasn't.

3 CHAIRMAN PALLADINO: If it what?

4 MR. VOLLMER: It was a matter of the angle
5 bracket supporting the cable-trays were not put in at
6 their proper angle, in some cases they were just hung
7 vertically, probably because there were so many piping
8 supports that they could not get them in.

9 They were truly designed in conformance with
10 the design criteria. So, therefore, it is a deviation.
11 The fact that they did meet requirements was incidental,
12 but that only goes to, I guess, a test of the fact that
13 that we have fair margins in these designs. We do
14 envelope and take a look conceivably of the situation,
15 and the design reflects that.

16 COMMISSIONER GILINSKY: Part of the answer to
17 the question, though, is that these reviews vary by
18 probably from six to ten in size.

19 MR. VOLLMER: I will get to that. That is a
20 rather big scope.

21 COMMISSIONER ASSELSTINE: At least on that
22 one, you are fairly satisfied with the scope of the
23 design review, and the scope of the review gives you
24 confidence in the conclusions that were reached.

25 MR. VOLLMER: Yes, it does.

1 COMMISSIONER ASSELSTINE: Okay.

2 MR. VOLLMER: The Lasalle review was much
3 narrower. It focused on a change in design that had
4 taken place in the middle of the design construction
5 process, when the staff and the licensee refined the
6 hydro-dynamic loads because of LOCA blowdowns.

7 So this was an opportunity, we felt, when the
8 design had been pretty well finalized, and then a change
9 came in, to see how the system accommodated that change
10 and transferred it into another appropriate design and
11 construction.

12 It was fairly narrow, but a fairly detailed
13 look. They checked calculations. They looked at the QA
14 program, the design controls, and so on. Again, they
15 found a few things. In this case Teledyne did this
16 job. We and Teledyne both agreed that these were not
17 safety deficiencies, but they did not appear to be
18 generic deficiencies. Overall, the design had
19 adequately met regulatory requirements.

20 At both of those utilities, I did not find
21 strong supporters of this kind of a design review, an
22 independent review. Incidentally, voluntarily agreed to
23 do these.

24 COMMISSIONER AHEARNE: You say, voluntarily
25 agreed. It was their view that they were voluntarily

1 agreeing to something. It has been described to us as --

2 MR. VOLLMER: That is not it. They did
3 voluntarily propose.

4 COMMISSIONER AHEARNE: It was described to us,
5 certainly in the San Onofre case, that this was the
6 utility.

7 COMMISSIONER GILINSKY: I think there have
8 been discussions of these things.

9 MR. VOLLMER: You could say that the
10 handwriting was there somewhere.

11 COMMISSIONER GILINSKY: The utility is anxious
12 for the staff to support them.

13 COMMISSIONER AHEARNE: You see, my problem all
14 along with this approach has been, this is all very
15 informal. We hold meetings and we sit down and we
16 talk, but we are not going to put down in writing what
17 we want. We are just going to talk about it. Then, if
18 they come up with something, we are going to look at
19 it.

20 Uneasy as I am at that first, at that
21 self-evaluation that we are not laying out, here is what
22 we really want, if in these informal discussions, we are
23 leading to large studies being done also, then I think
24 we have passed the line --

25 COMMISSIONER GILINSKY: I suppose what is

1 happening is that NRR is saying to the utility, at a
2 minimum, if the utility is not willing to say that the
3 plant has been built in accordance with the
4 requirements, and the NRR is not willing to say that the
5 plants were in accordance with the requirements. It
6 seems to me fair enough.

7 COMMISSIONER AHEARNE: I don't know, Vic. I
8 am just uneasy about the fact.

9 COMMISSIONER GILINSKY: It doesn't make that a
10 requirement, a legal requirement.

11 COMMISSIONER AHEARNE: But I cannot pin down
12 what it is that we are asking for.

13 COMMISSIONER GILINSKY: I think you are right,
14 we ought to be clearer about what we think and what
15 ought to be done.

16 COMMISSIONER ASSELSTINE: I agree.

17 CHAIRMAN PALLADINO: I gather what we are
18 asking is a certification by the chief executive officer
19 that everything was built properly, and now that leads to
20 self-evaluation.

21 COMMISSIONER AHEARNE: It appears that it is
22 leading to self-evaluation. As Dick just said, the
23 handwriting on the wall, some might be seeing it as
24 leading to fairly big studies. I would just be a lot
25 more comfortable if I could at least see something.

1 CHAIRMAN PALLADINO: On the other hand, I
2 think the biggest strength is for that chief executive
3 officer to sign, and in whatever way he decides he wants
4 to be assured.

5 MR. DIRCKS: It is that balance that we are
6 treading: Do we specify in great detail what we want
7 that chief executive officer to look at; on the other
8 hand, we ask that chief executive officer, it is your
9 investment, how do you feel reasonably assured that you
10 are getting a plant that you wanted and that you are
11 paying for. I think that this is the approach that we
12 have taken thus far.

13 There is a certain point in this whole
14 regulatory game where they will do just what we ask for
15 and no more. It would be good to see --

16 COMMISSIONER ASSELSTINE: I gather you are
17 also looking beyond just that certification to see what
18 he uses to back it up.

19 MR. VOLLMER: Yes.

20 MR. DIRCKS: We want to see why that person
21 can certify.

22 MR. VOLLMER: Again, based on the
23 self-evaluation and the meeting, we, in some cases, have
24 felt that we needed additional confirmation on the
25 design. In those cases, I don't want to say that we

1 just sat around the table and waited until they
2 volunteered. We discussed what would be a reasonable
3 program to demonstrate that.

4 There have been some of the larger independent
5 design verification studies that the licensee came in,
6 even at the time of the meeting or before the meeting,
7 and said, "We are going to do the job. We think it is a
8 good idea. We know it is important. We want to have
9 that confidence."

10 When I was characterizing the handwriting on
11 the wall, I did not mean that it was just our
12 handwriting, but I think their handwriting, too. I
13 think in some cases, the licensees have had no
14 independent verification of design adequacy. They have
15 entrusted, as well as maybe they feel they could, the
16 total process to their contractors.

17 I think it has been rewarding on both sides.
18 Some of the people that I have talked to, maybe they are
19 giving me lip-service, have felt that it was a valuable
20 service.

21 COMMISSIONER AHEARNE: Let me read some of the
22 typewriting, it is not on the wall, but some of the
23 typewriting. This is a letter from Chairman Palladino
24 to Congressman Moorhead of April 19th.

25 "The staff is proposing to extend an approach

1 already being implemented for those plants nearest
2 completion. Although not yet required by the Commission
3 and still in the conceptual stage, this extended
4 proposal would require a utility to perform a rigorous
5 self-appraisal of the effectiveness of its quality
6 assurance program."

7 COMMISSIONER GILINSKY: You can always be --

8 COMMISSIONER AHEARNE: I am still trying --

9 CHAIRMAN PALLADINO: You are trying to find
10 out.

11 COMMISSIONER AHEARNE: I gather that so far my
12 colleagues don't share my interest, I still would like
13 to see some writing as to what you are laying out in
14 implicit requirements on the licensees.

15 MR. DIRCKS: I think, if you --

16 COMMISSIONER AHEARNE: Let me just point out
17 that at some stage, if there is no problem out there in
18 the plants, that you guys are all home free. If there
19 really are problems, at some point you are going to be
20 asked, "What did you do about it. What did you ask the
21 licensees to do." So far, you have nothing that you
22 have really asked them, it is all this informal. Maybe
23 this is adequate. Maybe this is what you want.

24 Another piece of it that at some point someone
25 is going to raise, "How come these utilities are doing

1 these \$200,000, \$500,000, maybe a couple of million
2 dollar studies." We asked for them, what did we ask.
3 Why did we did ask for them? What is that we have
4 asked? Is this adequate?

5 MR. DIRCKS: I don't mean to be coy on this
6 one, but they know what is required of them in terms of
7 Appendix B requirements, in terms of the QA program they
8 are supposed to have been following. I don't think that
9 there is any lack of knowledge of requirements that they
10 were supposed to be following during the course of the
11 construction of that plant.

12 What is required? Look in the regulations,
13 and look in the guidance, and look in the communications
14 that they have.

15 COMMISSIONER AHEARNE: So they have to do a
16 study.

17 MR. DIRCKS: We are talking about a series of
18 plants coming up for licensing within a limited period
19 of time. It is an interim period before we come in with
20 more firm and more formal activities. We were concerned
21 about these NTOL plants as a result of the turmoil back
22 last fall. What we wanted to do was to get a quick
23 handle on those plants.

24 Then we said to the Commission, after these
25 NTOLs come up, we will be coming up with more firm

1 requirements and other programs. I think Ed is going to
2 come in into sort of the follow-on of this NTOL list.

3 CHAIRMAN PALLADINO: We have set forth to the
4 Congress a number of statements such as the one that
5 Commissioner Ahearne read. We ought to be taking them
6 seriously.

7 COMMISSIONER GILINSKY: Without independent
8 review.

9 CHAIRMAN PALLADINO: Whatever we have said
10 along the way.

11 COMMISSIONER ROBERTS: What do you mean by
12 independent review?

13 CHAIRMAN PALLADINO: I said, whatever we
14 said. I didn't say anything else.

15 COMMISSIONER ROBERTS: I didn't hear anything
16 about independent review in what John just read.

17 MR. DeYOUNG: It was about self-evaluation.

18 COMMISSIONER ROBERTS: Yes, self-evaluation.

19 MR. JORDAN: Could I have slide four.

20 CHAIRMAN PALLADINO: Tom, did you have any
21 more questions in this area?

22 COMMISSIONER ROBERTS: No.

23 COMMISSIONER GILINSKY: We certainly have
24 talked about independent review and suggested the
25 analogy of the CPA, and so on.

1 COMMISSIONER ROBERTS: I will ask the question
2 I asked Bill Dircks earlier. Is independent review a
3 requirement?

4 COMMISSIONER GILINSKY: No, it is not a
5 requirement at this point, but we have talked about it
6 becoming a requirement.

7 COMMISSIONER ROBERTS: But have not made that
8 determination.

9 COMMISSIONER GILINSKY: But have not made that
10 determination.

11 CHAIRMAN PALLADINO: I think that gets to what
12 John Ahearne was saying. We ought to write down and be
13 clear on what it is we are requiring, and what we are
14 not. We certainly ought to be trying to implement some
15 of the things we told Congress we were going to
16 implement.

17 Okay, what slide number?

18 MR. JORDAN: Slide four.

19 (Slide.)

20 MR. JORDAN: These split easily on the page.
21 These are initiatives that we think will replace, for
22 instance, the measures at the near term facilities.

23 COMMISSIONER GILINSKY: Let me ask you a
24 question.

25 Whatever units, manhours, or whatever, is the

1 total NRC inspection effort on one of these plants from
2 beginning to end of construction.

3 MR. JORDAN: It is about about a manyear per
4 year per site. If you assume an eight year
5 construction, it is eight man-years.

6 CHAIRMAN PALLADINO: That is not all of it.

7 COMMISSIONER AHEARNE: It has to be larger.

8 MR. DIRCKS: It has to be larger.

9 CHAIRMAN PALLADINO: I would think so.

10 COMMISSIONER GILINSKY: In fact, you usually
11 have two.

12 MR. DeYOUNG: Not at construction.

13 COMMISSIONER GILINSKY: Not at construction,
14 that is right.

15 MR. DeYOUNG: One resident is the direct
16 manpower for inspection is not one. He has training,
17 and he has some other duties to do, so we don't count
18 him as one manyear just because he is a man.

19 COMMISSIONER AHEARNE: It is the fact that he
20 is assigned to it, I see. You are talking about actual
21 physical presence.

22 MR. JORDAN: The integrated design inspection
23 is an initiative that combines a number of things that
24 the staff has been doing not in an integrated fashion,
25 but in a fragmented fashion, between the vendor

1 inspection program, by the quality assurance program by
2 the vendors, the architect engineer, the contractors,
3 the design reviews that NRR has been doing in limited
4 areas, the reviews that the regions have been doing in
5 design, which have been admittedly very small. Then
6 adding to that, supplementing it with I&E headquarters
7 people and contractor people.

8 COMMISSIONER GILINSKY: Could I just pursue
9 that point?

10 MR. JORDAN: Yes.

11 COMMISSIONER GILINSKY: I am sorry to
12 interrupt, but I think it is important.

13 We have said that you are not inspecting
14 quality and all that stuff, and I think that is
15 basically right. But I think a little inspection
16 constitutes something like less than a tenth of a
17 percent of the effort that goes into building the
18 plant.

19 MR. DIRCKS: Much less.

20 COMMISSIONER GILINSKY: At that level, there
21 is no danger of --

22 CHAIRMAN PALLADINO: We are not the basic
23 quality assurance group. If we were, then we would have
24 to be bigger.

25 COMMISSIONER GILINSKY: Right, but we are

1 trying to make sure that that quality assurance system
2 works.

3 CHAIRMAN PALLADINO: That is right, that is
4 what we do.

5 COMMISSIONER GILINSKY: It is on the whole a
6 pretty slender effort. It wouldn't be necessarily if we
7 were dealing with one management system throughout the
8 country. Then if you found a flaw, you could shake a
9 stick at one group of managers, and say, "These things
10 have got to get fixed up all around."

11 But we are dealing with dozens of managements,
12 60 or 70 managements, not to speak of contractors and so
13 on, with different styles and habits, and backgrounds,
14 and capabilities and everything else.

15 MR. JORDAN: These are only enhancements in
16 terms of the inspection program. What we are trying to
17 fill with this integrated design inspection a void in
18 our program that has existed to date by looking at a
19 slice, and really a very narrow slice from the
20 architect-engineering office and their design, whatever
21 contractors they are using to provide information, the
22 interface between the contractor, let's say, and the
23 architect-engineering firm, and then interface to the
24 site. Doing sample calculations looking at the as-built
25 configuration. Taking, for instance, a system and doing

1 this in-depth slice with experts in each of the various
2 areas.

3 It would be a relatively small team, a narrow
4 slice, integrating some of the activities we have been
5 doing separately, so that we then have a picture. We
6 have a report at the end of that process that says,
7 okay, for this slice, here is what we found, and here is
8 the statement we can make about the process, the
9 management controls that were applied in the design
10 area.

11 COMMISSIONER AHEARNE: But do you think that
12 this is still enough to give you confidence that you
13 really understand what has happened, or is it an attempt
14 to restress the Internal Review Service approach that we
15 are looking more carefully in the hopes that, therefore,
16 the management will handle it much better.

17 MR. JORDAN: That is an interesting analogy.
18 The thing that we are doing in this particular case is
19 trying to improve the staff's confidence. This is after
20 this work has already been done, generally. At least,
21 the plants that we are applying this to are essentially
22 constructed or pretty far along, certainly in the
23 design.

24 So there won't be a lot of benefit to those
25 plants for the on-going work because they have so much

1 completed already.

2 MR. VOLLMER: Let me answer the question, if I
3 can.

4 I think if we design the process reasonably
5 well, we won't get confidence in the design process
6 perhaps in the first plant, but after we see a number of
7 architect-engineers, a number of vendors, and different
8 slices, I think we will have a very good feeling of what
9 is going on in the design area. I think we will achieve
10 pretty high confidence, or lack of it.

11 (General laughter.)

12 MR. VOLLMER: High confidence that we know
13 what is going on.

14 COMMISSIONER AHEARNE: Improved confidence.

15 CHAIRMAN PALLADINO: I hope that that
16 eventually we get to quality assurance regarding matters
17 other than construction.

18 MR. JORDAN: In the long-term review, we did,
19 yes. In fact, it was an industry initiative.

20 The next criterion or the next initiative is
21 evaluation of reported information, and the staff is
22 embarking on efforts to provide a systematic review of
23 50.55(3) reports and Part 21 reports, with computerized
24 diagnosis.

25 We are receiving something like 4,000

1 construction deficiency reports under 50.55(E) and a
2 couple of hundred Part 21 reports a year. We are
3 manually reviewing them. We have them stored in the
4 document control system, but we don't really have a way
5 of sorting the information and identify trends. So that
6 is this particular initiative is.

7 Enforcement, there is a policy in force, and
8 we are applying more stress at construction sites, so
9 that breakdowns in quality programs will be met with
10 strong enforcement actions. By the same token, problems
11 at the construction facilities that are being identified
12 in a timely manner and fixed would not be.

13 COMMISSIONER ROBERTS: Repeat that last
14 sentence.

15 MR. JORDAN: Self-identified breakdowns in the
16 quality program that are being found and corrected by
17 the utilities would not be met with strong enforcement
18 action.

19 CHAIRMAN PALLADINO: Would not be what, I
20 missed the last part?

21 MR. JORDAN: Would not be met with strong
22 enforcement action.

23 MR. DIRCKS: We try to build in incentives to
24 self-correct problems.

25 MR. JORDAN: The industry has taken

1 initiatives. They met with the Commission in February
2 and identified actions that they were taking with INPO
3 developing a set of criteria to be applied to
4 construction facilities. The staff is aware that they
5 have developed a set of draft criteria that they are
6 testing at three construction facilities.

7 They plan to provide their criteria to
8 industry to use for self-evaluation and subsequently
9 make a decision on whether INPO should do the
10 independent evaluations in addition or instead of the
11 self-evaluation. That decision, we understand, is
12 somewhere around the first of the year that they will be
13 making it.

14 COMMISSIONER AHEARNE: When they briefed us in
15 February, they indicated as a schedule that the pilot
16 evaluations would be completed at the end of July.

17 MR. JORDAN: That is on schedule.

18 COMMISSIONER AHEARNE: That is on schedule.

19 Then they would hope to publish their criteria
20 at the beginning of September.

21 MR. JORDAN: Yes, they are on schedule at this
22 time.

23 Could I have slide 5 please.

24 (Slide.)

25 MR. JORDAN: This one is entitled Management

1 of Quality. A previous set of criteria were aimed at
2 the staff improving their confidence in the utilities'
3 quality assurance and subsequent quality of the plant.
4 This set of initiatives is aimed at actually improving
5 quality.

6 The first element is management seminars.
7 This would be --

8 COMMISSIONER GILINSKY: Is this something we
9 are going to run?

10 MR. JORDAN: Yes, sir. This would be
11 something like the road-show that was done in 1973, to
12 go to the utilities and advise them that all along
13 Appendix B is required, a regular review, and the
14 adequacy of their own programs.

15 CHAIRMAN PALLADINO: What level of management
16 is this?

17 MR. JORDAN: This would be upper level
18 management.

19 CHAIRMAN PALLADINO: INPO is running
20 management seminars. As a matter of fact, I just got
21 letter inviting me to be a participant, and all the
22 other Commissioners.

23 COMMISSIONER GILINSKY: They are reviewing our
24 management?

25 (General laughter.)

1 COMMISSIONER ROBERTS: Would you sign on for
2 an independent review of our management?

3 COMMISSIONER AHEARNE: We would give it to
4 them.

5 COMMISSIONER GILINSKY: We will talk about
6 that later.

7 CHAIRMAN PALLADINO: By definition, they are
8 assigning us to the category of experts because they are
9 asking for us to speak.

10 How do you dovetail with those seminars?

11 MR. DIRCKS: I think that this is something we
12 will be working out. I think that it could be possible,
13 depending on how INPO comes out.

14 CHAIRMAN PALLADINO: If they do a good job of
15 reviewing the management there, I wouldn't mind they
16 coming to review our management.

17 COMMISSIONER GILINSKY: I wonder whether we
18 oughtn't to be concentrating on audits, and letting INPO
19 run seminars.

20 MR. DIRCKS: That is the point, what this is,
21 whether we call them seminars, or somehow or another
22 sessions in which we would like to see whether they are
23 picking up this learning experience.

24 My own thought is that it might be worthwhile
25 to have some of the executives of some of the firms that

1 were caught in the problem of last year, come in and
2 explain the financial incentive for good QA programs,
3 because that is the one lesson that came out of all
4 this.

5 CHAIRMAN PALLADINO: That is not a bad idea.

6 COMMISSIONER AHEARNE: Whether we do it, or
7 whether INPO does it, and I tend to agree with Vic on
8 what we ought to do. Let me just share with you a
9 couple of comments that I have received in private from
10 senior utility people, and that was, they don't believe
11 there are any QA problems.

12 They believe that it is the NRC, with its
13 overregulation, again, throwing out of proportion some
14 standard, acceptable, and understandable practices. It
15 is our zealous desire to have every piece of paper filed
16 and every calculation checked. There never was anything
17 found that was serious. That is the attitude of many,
18 or at least some very senior people.

19 COMMISSIONER ROBERTS: Is there any truth in
20 what you just reiterated?

21 MR. DIRCKS: I think it varies. It varies,
22 first of all, among those utilities that say that.

23 COMMISSIONER AHEARNE: I think Tom is asking --

24 COMMISSIONER GILINSKY: Are they right?

25 COMMISSIONER AHEARNE: Yes.

1 COMMISSIONER ROBERTS: Yes, that is the basic
2 question.

3 MR. DIRCKS: Then, you will talk to others
4 that I think in our experience --

5 COMMISSIONER AHEARNE: Tom is asking, is that
6 description accurate, not whether some people believe
7 that.

8 COMMISSIONER ROBERTS: Is that an accurate
9 presentation?

10 COMMISSIONER ASSELSTINE: Including the
11 element about there really weren't any major problems.

12 COMMISSIONER GILINSKY: Wait a minute. If the
13 quality assurance system is not working, you don't have
14 the papertrail, that is what it is --

15 COMMISSIONER ROBERTS: What is our concern, a
16 papertrail, or whether we have safe plants?

17 COMMISSIONER GILINSKY: That is the way we
18 tell whether the plant was built in accordance with the
19 requirements.

20 MR. DIRCKS: It is an indicator.

21 COMMISSIONER ROBERTS: I understand that.

22 COMMISSIONER GILINSKY: If you don't have that
23 confirmation, then you just don't know.

24 Now, in some cases, I would say fairly serious
25 problems have turned up. But in any case, whether they

1 have or not, if that system is broken down, you just
2 don't know how that plant was built. If you don't know
3 how that plant was built, you can't tell whether it is a
4 safe plant.

5 COMMISSIONER AHEARNE: That is undoubtedly
6 true, and I think from the standpoint of our regulatory
7 responsibility, we have to make some kind of a seal of
8 approval. But I would argue that it is critical to the
9 message that one is trying to get across to the
10 utilities, to know whether or not our primary concern is
11 that the NRC can't put a seal of approval on something,
12 or whether the plants really are not being built
13 correctly.

14 COMMISSIONER GILINSKY: That is the way we
15 tell.

16 COMMISSIONER AHEARNE: But there is a big
17 difference between the message.

18 COMMISSIONER GILINSKY: We have a system for
19 telling whether the plants were properly built.

20 MR. DIRCKS: If you look at Appendix B and go
21 through it, I don't think that it is an unreasonable set
22 of requirements in there.

23 COMMISSIONER ROBERTS: Nor does it leave you
24 much to one's imagination.

25 MR. DIRCKS: It does not leave much.

1 COMMISSICNER ROBERTS: It does not.

2 MR. DIRCKS: Neither does it when you are
3 called before an IRS auditor and asked to show how your
4 exemptions are, and how your income went. There is no
5 way for him to understand whether you are telling the
6 truth or not until he takes a look at your records. I
7 think it is the same thing with us.

8 COMMISSIONER AHEARNE: Bill, you are talking
9 to the chief executive officer of the company, two
10 different messages. One message, "You are putting \$2
11 billion into that plant, I would think you would really
12 want to be confident that that plant was built
13 correctly."

14 MR. VOLLMER: That is right.

15 COMMISSIONER AHEARNE: The second message,
16 "You are putting \$2 billion into that plant, and you
17 can't operate it unless the NRC licenses it. I would
18 think you would want to be confident that the NRC
19 licenses it."

20 The net result may be the same, but I think
21 there is a different message.

22 COMMISSIONER GILINSKY: They are both messages
23 that need to be transferred.

24 MR. DIRCKS: It may come out, let's look at
25 the criteria that the industry is developing to see

1 whether their plants are well constructed. If it varies
2 greatly from the criteria we laid down, I think that may
3 lead us to another set of conclusions.

4 If it tracks us fairly carefully, and if we
5 believe what they are telling us, that is an effort to
6 instill their own confidence that they have sound
7 plants, then we have another set of conclusions.

8 COMMISSIONER GILINSKY: That is just good
9 informal advice we give them, that they ought to have
10 that confidence because they have a big investment. But
11 we are not there as their management consultant.

12 MR. DIRCKS: That is right.

13 COMMISSIONER GILINSKY: We have health and
14 safety responsibilities.

15 CHAIRMAN PALLADINO: I think they have to
16 answer both questions.

17 COMMISSIONER ASSELSTINE: I think so, too. I
18 think so, too.

19 CHAIRMAN PALLADINO: Can we go on?

20 MR. JORDAN: Yes, sir.

21 The next initiative is craftsmanship, and that
22 was mentioned earlier in the discussions. The staff has
23 a concern that the regulatory and management activities
24 really don't reach the craftsmen. Therefore, we are
25 taking some actions by meeting with major trade unions,

1 investigating ways in which quality assurance/quality
2 control perfect understanding can reach the craftsmen,
3 whether it be through the utility and the contractor.

4 COMMISSIONER GILINSKY: I wonder whether this
5 is our role here. Are you thinking of NRC people
6 talking to craftsmen.

7 MR. JORDAN: No. We are investigating ways in
8 which the message can get to the craftsmen through the
9 channels of either the utility and its contractors, or
10 through the trade unions. There is an interest on the
11 part of the trade unions to improve quality.

12 For instance, in the auto industry, that is a
13 very serious concern that because of their own quality
14 control problems, foreign cars are overtaking the
15 American auto industry.

16 COMMISSIONER AHEARNE: Probably there are a
17 few other factors involved.

18 MR. JORDAN: A few other factors. But quality
19 becomes important economically, and certainly it is
20 here. So it is simply an area that we are investigating
21 which we think will be of benefit.

22 COMMISSIONER GILINSKY: Let's see, you are
23 investigating with what in mind?

24 MR. JORDAN: We are investigating with the
25 goal of getting a message to the craftsmen, and we are

1 going to get it there, we think, through at least two
2 ways.

3 Through the management seminars quality
4 improvement program, the utilities would hold sort of
5 training programs for their craftsmen. If you go to the
6 site and talk to the craftsman and ask him what it is he
7 is building, I will give you a personal example of a
8 couple of weeks ago --

9 COMMISSIONER GILINSKY: You don't have to
10 convince me, I am for it, because it all starts right
11 there with the guy who is working on the plant. But it
12 seems to me that there is a bit of confusion of
13 responsibility.

14 MR. DIRCKS: You are saying where the
15 responsibility is. I think these last two items we
16 discussed, mainly, they would be of some benefit if
17 someone took on these goals. I don't think we are
18 advocating that we go out --

19 COMMISSIONER AHEARNE: You don't want to get
20 between, and particularly between the contractor and the
21 union.

22 CHAIRMAN PALLADINO: The building contractors
23 would be looking into the plant.

24 MR. DIRCKS: It is worth an effort.

25 MR. JORDAN: We are trying to encourage the

1 communication to the craftsmen, and we are exploring the
2 avenues to get at that.

3 CHAIRMAN PALLADINO: That is one of the
4 contributing factors, some contractors do a good job and
5 some don't.

6 MR. JORDAN: Yes, precisely.

7 Could I have slide 5 please.

8 (Slide.)

9 COMMISSIONER GILINSKY: Some of these
10 activities you outline wouldn't be inappropriate for the
11 Department of Energy.

12 MR. JORDAN: We have not had the question in
13 that fashion before.

14 CHAIRMAN PALLADINO: I think, again, you have
15 got to get it to those people, the contractors that are
16 doing the work, get them to do their job. That is
17 really part of their job, to get to the craftsmanship.

18 MR. DIRCKS: Yes.

19 CHAIRMAN PALLADINO: That is why you hired
20 them basically.

21 MR. JORDAN: Yes. So we are trying to be
22 motivators in that respect. I don't feel that we are
23 going to go out and do it, but we are going to motivate
24 the utilities, and hopefully the trade unions, to do
25 it.

1 The long-term review --

2 COMMISSIONER GILINSKY: How are you going to
3 motivate them?

4 CHAIRMAN PALLADINO: That is what they are
5 studying now.

6 COMMISSIONER GILINSKY: I am just worried
7 about getting into it.

8 MR. DIRCKS: I don't think that we are going
9 to spend a lot of effort in this area. I think that it
10 is more of an indication that if they pick it up, we
11 would like to see it carried out. We would encourage it
12 in any way they want. But we are not going to put
13 effort and resources.

14 COMMISSIONER GILINSKY: This is the kind of
15 thing that one observes about Japanese ministries doing,
16 the Ministry of International Trade and Industry. Maybe
17 DOE could pick that up.

18 MR. DIRCKS: This was discussed back in 1973
19 or so. There was an effort on the part of FEA, I think,
20 to move in and set up, improve and expedite
21 construction, review union practices, encourage and
22 exort people to do better and make things better. That
23 went away with a lot of those programs.

24 All we are saying is, it is an indicator that
25 we would like to see that people are interested in

1 quality a an approach.

2 COMMISSIONER GILINSKY: I am not sure it is a
3 government function, but I am not sure that it is not
4 our job.

5 MR. JORDAN: The long-term review, the purpose
6 is to examine --

7 CHAIRMAN PALLADINO: It does impact on QA.

8 COMMISSIONER GILINSKY: It does, yes. I think
9 it is good.

10 CHAIRMAN PALLADINO: I am sorry.

11 MR. JORDAN: The purpose of the review is to
12 examine the experience in detail, including operating
13 plant experience. This is where we get back to the
14 operating plants in terms of potential upgrades.

15 The review will be conducted by the NRC
16 staff. We would establish an advisory panel to provide
17 recommendations on the scope and direction of the
18 review. The panel would be selected from government,
19 industry, and special interest groups. We would have a
20 contractor perform the data gathering for us, but the
21 actual review would be the responsibility of the staff.

22 COMMISSIONER GILINSKY: What is the question
23 they are going to answer?

24 MR. JORDAN: The question they are going to
25 answer is whether the problems that we are looking are

1 the right set of problems. We have identified, based on
2 these five plants that we talked about earlier, a set of
3 problems and a set of initiatives to try to address
4 them. The staff is not certain that that is really the
5 specific set, or if it is all inclusive or not. So we
6 are going to step back a little bit --

7 MR. DIRCKS: It is more of a feedback
8 mechanism.

9 COMMISSIONER GILINSKY: I will tell you, if we
10 are not clear that this is the right set, then I think
11 we ought to sit down and think more about it, and come
12 to the right set. I would not push this off on some
13 outside group.

14 MR. JORDAN: We are not pushing it off, and
15 that is why I emphasized that the staff is going to do
16 the review. We are going to have an advisory panel.

17 COMMISSIONER GILINSKY: I am becoming more and
18 more suspicious of the reviews.

19 COMMISSIONER ROBERTS: You are.

20 MR. DIRCKS: All we are saying is that the
21 main part of the effort is in the front end, the things
22 that we want to do and how we want to do them. The
23 middle part is, let's see what else can be done. This
24 part is really feedback, to get some feedback with a
25 system, and look at it comprehensively. Whether we do

1 it outside with advisory groups or inside with advisory
2 groups, we have not come down on.

3 The main thing is, it closes the loop
4 somehow.

5 COMMISSIONER ASSELSTINE: There is a provision
6 in the Senate-passed version of the authorization bill
7 that calls for a somewhat similar study. Are you
8 keeping an eye on that, so that we don't have to do
9 another one later on?

10 MR. JORDAN: This is tied to that.

11 We can skip slide 7.

12 COMMISSIONER ROBERTS: No, I have a question
13 on slide 7.

14 MR. JORDAN: Okay.

15 COMMISSIONER ROBERTS: Independent design
16 reviews are in progress at other plants with the
17 exception of Watts Bar. Are you telling me that all of
18 these NTOL facilities have an independent review going
19 on except Watts Bar?

20 CHAIRMAN PALLADINO: All those on that page?

21 MR. JORDAN: That is my understanding, yes.

22 MR. VOLLMER: That is right.

23 COMMISSIONER ROBERTS: Is that an NRC
24 requirement?

25 MR. JORDAN: No, sir, this is like the army.

1 COMMISSIONER ROBERTS: It is what?

2 COMMISSIONER GILINSKY: He said that it is
3 like the army.

4 MR. JORDAN: My response is like the army, it
5 is not.

6 COMMISSIONER AHEARNE: That proves my point.

7 COMMISSIONER ASSELSTINE: It would be a good
8 idea to require independent design reviews for these
9 near-term plants until we have the information available
10 from the longer-term study.

11 COMMISSIONER ROBERTS: Certainly, in my
12 judgment, it would not be appropriate to categorically,
13 maybe on a case-by-case basis. It has happened, but I
14 don't think we have ever determined that all of these
15 plants were going to have an independent review.

16 MR. VOLLMER: This has happened on a
17 case-by-case basis. Also, Shoreham does not have one
18 required. I am not sure why that is on there.

19 COMMISSIONER AHEARNE: Excuse me, did you say,
20 "Also, Shoreham does not have one required"?

21 MR. VOLLMER: Yes. Also, Shoreham has not met
22 with the staff on this issue, nor is it involved in the
23 IDVP process. The rest, I think, are correct.

24 COMMISSIONER GILINSKY: By not having it
25 referred like that keeps it away from Vic Stello?

1 (General laughter.)

2 COMMISSIONER GILINSKY: They have a little
3 more flexibility this way to suit the review to fit the
4 situation.

5 COMMISSIONER AHEARNE: It would still be nice
6 to see what it is that they are being asked to do.

7 COMMISSIONER ASSELSTINE: I agree with what
8 John is saying. If, in fact, these are becoming de
9 facto requirements, or the encouragement is so strong
10 that they are doing it, I really think we ought to think
11 about whether it is a good idea, particularly when it
12 gets to the larger scale.

13 One of the concerns that I have heard is that
14 when you are doing one or two of these things, it is not
15 so difficult. If it gets to be a large scale
16 requirement, there are very limited capabilities to do
17 design reviews, particularly if you are talking about
18 like General Atomic did for San Onofre.

19 MR. VOLLMER: There is a great difference
20 between the amount of effort being put into these.

21 COMMISSIONER ASSELSTINE: Yes.

22 MR. VOLLMER: My personal view, after seeing
23 what we have seen to date, I don't personally believe
24 that it should be made a requirement. When the staff
25 looks at a couple more, I think we will have a better

1 understanding of whether or not there are generic design
2 deficiencies out there.

3 I think the ones we have discussed with the
4 licensees and have asked for them, without regard to the
5 ones that come in on their own, I think we have asked
6 for a fairly limited scope and I think they have been
7 appropriate for a number of reasons.

8 CHAIRMAN PALLADINO: When you do require
9 something, you have to define what it is that you are
10 requiring.

11 MR. VOLLMER: Yes.

12 CHAIRMAN PALLADINO: I expect that that is
13 going to take a lot more thought than perhaps we are
14 giving to it.

15 MR. VOLLMER: In truth, when we embarked on
16 these, we felt that we would be back to the Commission
17 long before this to discuss this issue anyway.

18 CHAIRMAN PALLADINO: You have one more slide.

19 MR. JORDAN: Yes, sir.

20 Slide 8 please.

21 (Slide.)

22 MR. JORDAN: This is probably the most
23 controversial slide, so maybe it will not attract the
24 lightning.

25 We have laid the resources and the body counts

1 depending on the definitions. The industry, for
2 instance, existing many years devoted to quality
3 assurance/quality control were based on those 35 or so
4 plants under active construction, and data that we
5 obtained through the regional offices, something like an
6 average of 215 people per site with that kind of a label
7 attached to them.

8 CHAIRMAN PALLADINO: Are these people in
9 quality assurance, or are these people in quality
10 control?

11 MR. JORDAN: Both.

12 CHAIRMAN PALLADINO: I would hope that there
13 are more people than this in quality assurance, I
14 include the workers.

15 MR. JORDAN: That was the argument I was
16 trying to avoid.

17 CHAIRMAN PALLADINO: That comes back to what
18 is meant by quality assurance.

19 MR. JORDAN: Yes. Certainly the argument may
20 be even stronger with regard to the NRC staff.

21 COMMISSIONER AHEARNE: The staff, who is
22 represented in that?

23 MR. JORDAN: For the NRC staff, it would be
24 those regional inspectors who are doing quality
25 assurance modules directly, and portions of vendor

1 inspection program, the construction inspection
2 assessment team.

3 CHAIRMAN PALLADINO: These are the people who
4 are writing specs, procedures, and manuals, and the
5 like?

6 MR. JORDAN: In the area of quality assurance,
7 and the construction inspectors are not included in
8 that, as far as the disciplines of welding, or concrete
9 pouring, or those kinds of things, which clearly their
10 role is one of quality assurance of the product that the
11 utility is providing.

12 COMMISSIONER AHEARNE: NRR?

13 MR. JORDAN: NRR people that are doing the
14 license reviews directly of the quality assurance
15 programs, and research.

16 CHAIRMAN PALLADINO: They are in here?

17 MR. JORDAN: They are in here, yes.

18 COMMISSIONER ASSELSTINE: How about the
19 residents, you are not counting the residents?

20 MR. JORDAN: No.

21 COMMISSIONER ASSELSTINE: You are not counting
22 resident inspectors.

23 CHAIRMAN PALLADINO: Why don't you count
24 them?

25 MR. JORDAN: Because we narrowly defined it

1 for this purpose as those people that were directly
2 involved in the quality assurance.

3 CHAIRMAN PALLADINO: I think if you are going
4 to put together tables like this, the definitions ought
5 to be clear and they ought to be consistent. I am not
6 sure --

7 COMMISSIONER AHEARNE: Perhaps the easiest way
8 to do that is just to say what is listed.

9 MR. JORDAN: Yes.

10 Once again, the NRC has something like
11 \$400,000 under contract for FY-83 related to quality
12 assurance research. There are certainly contract
13 dollars related to evaluation of the quality assurance
14 measures at sites.

15 The cost of the initiatives --

16 CHAIRMAN PALLADINO: What do you mean by that,
17 is that 422 manyears?

18 MR. JORDAN: No, that is \$400,000.

19 MR. DeYOUNG: It is 422 manyears.

20 MR. JORDAN: I am sorry.

21 CHAIRMAN PALLADINO: I got that one.

22 MR. JORDAN: The cost of the initiatives to
23 industry we think is on the order of 422 manyears
24 additional, and this would be --

25 CHAIRMAN PALLADINO: The cost of the initiatives

1 you are proposing to make?

2 MR. JORDAN: Yes. We would cause them to
3 reprogram somehow that kind of a resource based on the
4 assumptions that we have made.

5 COMMISSIONER GILINSKY: You are talking about
6 422.

7 COMMISSIONER AHEARNE: It must be fairly
8 accurate.

9 CHAIRMAN PALLADINO: It is highly precise, it
10 is 16 as opposed to 15 or 20.

11 MR. JORDAN: I think it is the product of a
12 digital calculator, when you make assumptions and then
13 you crank it through a little digital calculator.

14 MR. DIRCKS: I think that all of this is very
15 rough estimates.

16 CHAIRMAN PALLADINO: We don't know whether it
17 is 400 or 500, but if it is 400, it is 422.

18 MR. JORDAN: Right.

19 COMMISSIONER AHEARNE: Notice what the dollar
20 additions are going to be.

21 CHAIRMAN PALLADINO: Yes, \$1.905 million.

22 MR. JORDAN: Call it \$2 million.

23 MR. DIRCKS: This is a series of things that
24 have been put together very quickly. It is not an
25 estimate that we are confident with. We are not here

1 for budgeting purposes.

2 MR. JORDAN: This is to convey the relative
3 sizes of manpower. The additional resources that the
4 NRC would spend directly for quality assurance is
5 something like 16 staff years above the 44, and that is
6 reprogrammed by the various offices.

7 (Commissioner Roberts left the meeting.)

8 COMMISSIONER AHEARNE: Is that 16 distributed,
9 or does that represent the corps.

10 MR. JORDAN: Distributed.

11 CHAIRMAN PALLADINO: We have to break up and I
12 hate to see Victor Gilinsky leave before I make my
13 comments.

14 I guess I start out with the question, I hope
15 there is more to a quality assurance plan than this. I
16 don't sense this being the finished product. Where do
17 we go from here on this?

18 I also don't know how this is going to be
19 implemented within the NRC. I gather from reading the
20 press that there are questions to be addressed in that
21 area as well.

22 COMMISSIONER AHEARNE: Could I piggyback with
23 additional questions on that?

24 I think we recognized that this was not going
25 to be a finished product because you had pointed out,

1 Bill, that you were not ready, but we said that we
2 wanted to see it anyway. I guess what I had expected
3 was a little bit more sense of a disagreement.

4 I thought the problem was that there were
5 several possible approaches and you had not been able to
6 resolve which one. But this seems to be the outline
7 schedule and here is the approach. That puzzles me why.
8 if you are that settled on the approach, can you then
9 give us some more fleshed out product?

10 Then, the same question that the Chairman
11 asked, this doesn't say where the control is going to
12 be. On your right, you have a gentleman from NRR. Two
13 over on your left, you have a gentleman from I&E. Ed,
14 you have mentioned, was working for you on this.

15 MR. DIRCKS: You are asking a series of
16 questions, and the Chairman is, too. Let me go back to
17 the difficulties of all of this.

18 We have heard about QA problems. We have
19 heard about the pervasiveness. I don't mean to minimize
20 it, but we have seen the examples of the five plants.
21 We haven't a pervasiveness in the NTOL reviews. Whether
22 or not we have revolutionary proposals to make is the
23 thing that has been bothering me, we don't.

24 We can do more of the same, or we can readjust
25 what we have been doing, but we don't have any

1 revolutionary proposals here.

2 We can talk about organization realignment,
3 and that has been a subject.

4 CHAIRMAN PALLADINO: That is a part of it, how
5 you are going to approach what you propose.

6 MR. DIRCKS: But I don't think that offers any
7 earthshaking solutions.

8 CHAIRMAN PALLADINO: But there is something
9 else. This is more like a smorgasborg. You have laid
10 out a whole table and it is full of good food.

11 COMMISSIONER GILINSKY: What a time to bring
12 this up.

13 (General laughter.)

14 CHAIRMAN PALLADINO: Are we going to prescribe
15 a menu?

16 MR. DIRCKS: We believe that these are all
17 worthwhile efforts, especially the front end, and it is
18 our determination that we should move forward with
19 that. We don't want to pick and choose. We think that
20 we should move forward on this broad front.

21 The tail-end about the seminars, and things
22 like that, we would like to see some effort going, but
23 that is not part of our initiative.

24 We do think we should take the integrated
25 design approach. We think we should readjust our

1 inspection modules. We think we need more of a
2 systematic view of the QA problem.

3 One of the benefits I had hoped of a meeting
4 such as this -- You are saying exactly what I have said
5 for the past couple of months, this all looks very nice,
6 but what major problem is all this directed to. I have
7 to cope with that answer.

8 CHAIRMAN PALLADINO: There are some problems
9 out there, and that is clear.

10 What I was getting at is, what is your next
11 step? Do you feel that this is done, or are you going
12 to give us a plan that is written up?

13 MR. DIRCKS: We are going to formalize this.
14 We are going to come and say: We want to do it. We can
15 do it within the resources we have available.

16 COMMISSIONER AHEARNE: How are you going to
17 formalize it?

18 MR. DIRCKS: In a Commission paper.

19 COMMISSIONER AHEARNE: When?

20 MR. DIRCKS: Right after this meeting.

21 COMMISSIONER AHEARNE: For myself, I -- say,
22 I asked in December, I asked in January, I asked in
23 February.

24 MR. DIRCKS: Maybe what we should have done is
25 say, there are problems out there, but does it require a

1 major revolutionary change in the way we do business? I
2 have not seen it.

3 COMMISSIONER AHEARNE: Okay, if you haven't
4 seen it. But give us a paper that says that you believe
5 what we are doing is correct, or what we are doing is
6 correct, except here is an exploratory effort that is
7 necessary, and here is how to go about it.

8 The problem, I know for myself, this is an
9 issue which I think the Commission ought to address, and
10 we have been many months into it and there is just
11 nothing in concrete that we can address.

12 MR. DIRCKS: That is my problem, too.

13 COMMISSIONER GILINSKY: Let's see, you seem to
14 be saying that there isn't much of a problem aside from
15 the five plants that we are talking about, at least I
16 get that impression.

17 MR. DIRCKS: There are problems in the
18 implementation of the requirements. There is a design
19 interface. How do we cope with that; I think we have
20 come up with some suggested solutions here.

21 Does it require a major readjustment in the
22 organization?

23 COMMISSIONER GILINSKY: Let me ask this. What
24 you are hung up on -- Let me back up here. Is there a
25 difference in view on the seriousness of all this?

1 MR. DIRCKS: We have been dealing with the
2 material you have seen now for the past couple of
3 months. I was sort of underwhelmed by it all. I would
4 say, "I think the Commission is expecting much more out
5 of the organization than what they are getting, because
6 they have developed a sense of the problem that we don't
7 have right now.

8 CHAIRMAN PALLADINO: I guess, in a sense,
9 there could be more, and I can cite an example, but it
10 is only an example.

11 We are getting allegations at the end of a
12 plant construction period. Are we really taking
13 advantage of the other opportunities we have along the
14 way to get those people to come forward? That is an
15 example.

16 Have we thought through the problem, so that
17 we can improve the operation and make sure that we catch
18 the problems as early as reasonably possible?

19 We have a lot of people, or a lot more people
20 working on QA than I believe this chart shows. Are we
21 using them as effectively as we can?

22 What is the next step? You are continuing to
23 develop this and will come up with a formal --

24 MR. DIRCKS: First of all, we would like
25 comments such as we are getting. Your concept of the

1 problem would be helpful. I said that we would get into
2 this business of making use of this chain of
3 communication through allegations, and we did touch on
4 it.

5 There are several things that we have talked
6 about already. The notification of the availability of the
7 resident, the distribution of material showing that we
8 want to be in on this chain of allegations. We want to
9 hear concepts like that. We don't want to be all
10 one-way coming up.

11 I have to admit, I don't know what more we
12 have in the package to give you. What we want to do is
13 put this together now based on the comments we have, and
14 we are going to do it this way.

15 CHAIRMAN PALLADINO: Are you going to address
16 the organization aspects?

17 MR. DIRCKS: We will address the
18 organizational aspects.

19 COMMISSIONER ASSELSTINE: I hope the paper,
20 too, will try and address in somewhat more concrete
21 terms the nature of the problem, the scope of it, how
22 confident we are now that we understand what the problem
23 is, or what we think we have to do to simply understand
24 how widespread or how narrow, or what the elements of
25 the problem are, because that is the part that we are

1 most uncomfortable about.

2 MR. DIRCKS: That is the starting point of all
3 this.

4 COMMISSIONER ASSELSTINE: It also seems to me
5 that it drives your decision on a lot of the other
6 things, which is a nice package of initiatives.

7 MR. DIRCKS: That is where our major
8 difficulty was. If we could have come up with a clear,
9 concise definition of what the problem is, or state the
10 problem.

11 COMMISSIONER ASSELSTINE: I would almost go
12 for that and have a discussion of that first, and then
13 go on to the discuss the initiatives.

14 CHAIRMAN PALLADINO: I was going to ask them.
15 We have two points. One, among the things you ought to
16 examine are the letters we wrote to Congress in response
17 to the questions they raised. At least at that point in
18 time, when we wrote those letters, we had something in
19 mind.

20 The other is, I think that during the course
21 of the next week, we ought to get a plan of action on
22 this, including some dates.

23 MR. JORDAN: We can provide that.

24 COMMISSIONER AHEARNE: You were asking for the
25 sense of the problem. My own sense of the problem is, I

1 don't know if there is a problem. The difficulty I have
2 is that there were a series of plants, some of those
3 were real problems. For example, Midland and South
4 Texas, those are real problems.

5 MR. DIRCKS: Yes.

6 COMMISSIONER AHEARNE: You mentioned we should
7 have, and I have a set of data points that indicate that
8 there were at least isolated difficulties. Now, you
9 say, we have some confidence through these other
10 reviews. You mentioned two reviews, San Onofre and
11 Lasalle.

12 San Onofre 2 and 3 may be just great. We have
13 enough information on San Onofre 1, and it has a lot of
14 problems, and a lot of those problems, you might say,
15 come under this bailiwick of QA/QC.

16 Lasalle, Lasalle may be just fine also. On
17 the other hand, if we were that confident Lasalle was so
18 fine, then we should have been very quickly able to
19 resolve these other charges that came up.

20 So the data set is sufficiently disturbing
21 that it leads me to reach the conclusion that I don't
22 know whether those other plants are good or bad. I
23 can't come out confident one way or the other, and that
24 is what I was looking for in your plan, at some way to
25 lead -- Ed kept on stressing this slide, it isa need to

1 get the staff confident, and I would also like to have
2 the confidence.

3 That is what I was looking for the plan, and
4 whether it is a step at a time, which is of this type
5 that you go this far, and if there is nothing there,
6 then you can close it down, or you go another step, a
7 big step or a little step, but just somewhere, rather
8 than months of nothing.

9 At some point, you are going to have to turn
10 around and say that if you do find enough problems with
11 the plants you are looking at under construction, then
12 you have got to seriously think about, what about those
13 plants that have already finished construction.

14 MR. DIRCKS: I think we have a message here,
15 but I am not quite sure that we have transmitted the
16 message back to you.

17 It depends on how you define QA, and the
18 extent you want to spread it across the whole regulatory
19 picture. If you are saying you have problems in
20 operating plants, and that is an indicating of poor QA,
21 sure, then we have problems.

22 COMMISSIONER AHEARNE: But I was trying to
23 say, let's just take a very narrow piece, if you find
24 enough instances that you believe that the welds in the
25 fundamental construction are done very poorly in the

1 large subset of the plants that are under construction,
2 then it has got to raise in your mind a question: how
3 about the plants that are already finished. I am not
4 saying the operational procedures, I am talking about
5 the construction.

6 MR. VOLLMER: I don't want to get into the
7 detail, but that kind of thing, we are learning, for
8 instance, through the ISI program at the operating
9 plants, that those critical welds are reexamined
10 periodically. So we have confidence that that set of
11 welds is acceptable. That is how it builds.

12 MR. DeYOUNG: One point, so that we are sure
13 we have not misled you. We don't think that all the
14 other plants are acceptable. We have some strong doubts
15 in our mind about a few of them. I hope we haven't
16 misled you to say that we don't think that there is any
17 problem.

18 MR. DIRCKS: We are looking for a common
19 thread on which you can make broad policy.

20 CHAIRMAN PALLADINO: You don't need a common
21 thread in the faults that are being introduced. There
22 is a common thread in the faults that have been
23 introduced, and I think we have to have a vehicle for
24 addressing that.

25 COMMISSIONER ASSELSTINE: There may or may not

1 be a common thread. There may well be a fundamental
2 lack of commitment on the part of various management
3 levels in the organization.

4 COMMISSIONER AHEARNE: That would be a common
5 thread.

6 MR. DeYOUNG: That is the common thread.

7 COMMISSIONER ASSELSTINE: There may be, but
8 again there may not be.

9 MR. VOLLMER: The staff believes that is the
10 common thread.

11 CHAIRMAN PALLADINO: I think there are two
12 aspects of this. One, I believe the Commission would
13 like to receive from you what your next steps are, and
14 then time-tables for them. I have a feeling that during
15 the course of that, the Commission is going to want to
16 meet again on this subject at least once.

17 COMMISSIONER ASSELSTINE: Yes.

18 CHAIRMAN PALLADINO: Is there anything more
19 that we should touch at this time before we adjourn?

20 (No response.)

21 CHAIRMAN PALLADINO: Thank you, and the
22 meeting will stand adjourned.

23 (Whereupon, at 12:20 p.m., the meeting
24 adjourned.)

25

NUCLEAR REGULATORY COMMISSION

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

in the matter of: PUBLIC MEETING - Briefing on Staff Plans for Quality
Assurance

Date of Proceeding: July 15, 1982

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.

Patricia A. Minson

Official Reporter (Typed)

Patricia A. Minson

Official Reporter (Signature)

SLIDES FOR

COMMISSION BRIEFING

ON

QUALITY ASSURANCE INITIATIVES

JULY 15, 1982

QUALITY ASSURANCE

INTRODUCTION

THE COMPLEXITY AND EXTENT OF THE QA PROBLEMS IDENTIFIED AT SEVERAL NUCLEAR POWER PLANTS UNDER CONSTRUCTION HAVE CAUSED WIDESPREAD CONCERN

CONGRESSIONAL OVERSIGHT HEARINGS ON QA HAVE BEEN HELD IN THE HOUSE OF REPRESENTATIVES:

- ° SUBCOMMITTEE ON ENERGY AND ENVIRONMENT; COMMITTEE ON INTERIOR AND INSULAR AFFAIRS - NOVEMBER 19, 1981
- ° SUBCOMMITTEE ON ENVIRONMENT, ENERGY, AND NATURAL RESOURCES; COMMITTEE ON GOVERNMENT OPERATIONS - DECEMBER 14, 1981

NOVEMBER 27, 1981 - CHAIRMAN DIRECTED STAFF TO ASSEMBLE APPROACHES TO STRENGTHEN QA

DECEMBER 1, 1981 - CHAIRMAN PALLADINO, IN A SPEECH TO AIF, CHALLENGED THE NUCLEAR INDUSTRY TO REEXAMINE AND UPGRADE ITS QUALITY ASSURANCE PROGRAMS

JANUARY 29, 1982 - NRC STAFF BRIEFED COMMISSION ON PRELIMINARY EVALUATIONS OF VARIOUS QA INITIATIVES

FEBRUARY 4, 1982 - INPO BRIEFED COMMISSION ON INDUSTRY ACTIONS

FEBRUARY 10, 1982 - STAFF DIRECTED TO PREPARE MORE DEFINITIVE PLAN, INCLUDING SCHEDULE AND RESOURCES

MARCH 4, 1982 - QA PRESENTATION TO ACRS

APRIL 12, 1982 - MEETING WITH INPO TO EXCHANGE QUALITY ASSURANCE INFORMATION

MAY 19, 1982 - SENIOR AGENCY MANAGEMENT MEETING TO DISCUSS QA STRATEGY

CATEGORIES OF INITIATIVES

I. CONFIDENCE IN QUALITY

- FREQUENCY AND SEVERITY OF QA BREAKDOWNS
- DELAYS IN NRC RECOGNITION OF SCOPE AND EXTENT OF BREAKDOWNS
- PAST NRC EFFORTS EMPHASIZED PROGRAM CONTENT, FORMAT AND STRUCTURE
- POTENTIAL FAILURE OF QA TO PRODUCE INTENDED RESULT

II. MANAGEMENT OF QUALITY

- INADEQUATE TRAINING
- INADEQUATE DIRECTION
- INADEQUATE ATTENTION

III. LONG-TERM REVIEW

- REVIEW PROGRAM TO GO BEYOND SHORT-TERM EFFORTS
- NEED TO FOCUS ON VIEWPOINTS OF NRC, INDUSTRY AND THE PUBLIC

INITIATIVE DETAILS

I. CONFIDENCE IN QUALITY

A. CONSTRUCTION INSPECTION PROGRAM DEVELOPMENTS

- ° PROGRAM HAS CHANGED OVER YEARS (MOSTLY ADDITIONS)
- ° CONSTRUCTION ENHANCEMENT PROGRAM 1979-1980
- ° CONSTRUCTION ASSESSMENT TEAM INSPECTIONS (TRIAL) 1981
- ° FOLLOWUP OF ALLEGATIONS
- ° MAJOR REVISION IN PROGRESS TO MATCH PROGRAM TO AVAILABLE RESOURCES
 - INCREASE EMPHASIS ON OBSERVATION OF WORK
 - DECREASE RECORDS REVIEW
 - INCREASE EMPHASIS ON INSPECTION OF DESIGN AND DESIGN CHANGES
- ° RESIDENT INSPECTOR NOW AT ALL SITES \geq 15% COMPLETE

B. CONSTRUCTION ASSESSMENT TEAM INSPECTION

- ° PAT TYPE INSPECTIONS AT SELECTED CONSTRUCTION SITES
- ° COMPREHENSIVE LOOK AT LICENSEE MANAGEMENT
- ° INDEPENDENT REVIEW OF REGIONS
- ° INDEPENDENT REVIEW OF INPO

C. MEASURES AT NEAR-TERM OPERATING LICENSE FACILITIES

- ° SELF EVALUATION
- ° REGIONAL EVALUATION
- ° INDEPENDENT DESIGN REVIEW

INITIATIVE DETAILS (cont'd)

D. INTEGRATED DESIGN INSPECTION

- ° REVIEW SELECTED SYSTEM AND/OR STRUCTURE
- ° SAMPLE CALCULATION CHECKS
- ° AS-BUILT VERIFICATION
- ° REVIEW DESIGN INTERFACES
- ° MANAGEMENT OF TOTAL DESIGN

E. EVALUATION OF REPORTED INFORMATION

- ° IMPROVED SYSTEMATIC REVIEW OF 50.55(E) AND PART 21 REPORTS
- ° COMPUTERIZED DIAGNOSIS

F. ENFORCEMENT

- ° STRONG ENFORCEMENT ACTIONS FOR QA BREAKDOWNS

G. INDUSTRY INITIATIVE

- ° INPO DEVELOP CRITERIA
- ° SELF EVALUATIONS
- ° DECISION ON INPO EVALUATIONS

INITIATIVE DETAILS (cont'd)

II. MANAGEMENT OF QUALITY

A. MANAGEMENT SEMINARS AND LICENSEE QUALITY IMPROVEMENT PROGRAM

- IMPROVE ATTITUDE AND PERFORMANCE
- PERSONAL COMMITMENT OF SENIOR MANAGERS
- CONTINUING SERIES OF SEMINARS
- PROVIDE FEEDBACK ON ACHIEVEMENTS
- UPGRADE QUALITY AND CERTIFICATION OF QA/QC PERSONNEL
- COMMUNICATION SYSTEM TO MANAGEMENT FOR SUGGESTING QUALITY IMPROVEMENTS AND FOR COMMUNICATING ALLEGATIONS TO NRC

B. CRAFTSMANSHIP

- DISCUSS IMPROVEMENTS WITH MAJOR TRADE UNIONS
- QA/QC ACTIVITIES MUST REACH THE CRAFTSMAN
- ASSURE GOOD CRAFTSMANSHIP

INITIATIVE DETAILS (cont'd)

III. LONG-TERM REVIEW

- ° REVIEW EXISTING AND CONTINUING QA PROBLEMS
- ° EXAMINE RESULTS OF EARLIER INITIATIVES
- ° EXAMINE SUCCESSFUL PROGRAMS
- ° CONTRACTOR ASSISTANCE
- ° ADVISORY PANEL

NTOL FACILITIES

PLANTS MET WITH TO DATE

- DIABLO CANYON
- SAN ONOFRE
- SUSQUEHANNA
- SUMMER
- GRAND GULF
- LASALLE
- SHOREHAM
- WATTS BAR
- ST. LUCIE
- PALO VERDE
- WATERFORD

MEASURES AT NTOL FACILITIES

- SELF EVALUATION
 - COMPREHENSIVE SELF EVALUATION OF EFFECTIVENESS OF QA PROGRAM FOR DESIGN AND CONSTRUCTION
 - CERTIFICATION BY LICENSEE THAT FACILITY DESIGNED, CONSTRUCTED AND TESTED IN ACCORDANCE WITH FSAR AND OTHER LICENSING COMMITMENTS
- REGIONAL EVALUATION
 - EXPANDED PRE-LICENSING REVIEW BY REGIONS
 - REGION PARTICIPATES WITH NRR, IN EACH NTOL MEETING WITH APPLICANT
- INDEPENDENT DESIGN REVIEW
 - EVALUATION OF QUALITY OF DESIGN BASED ON DETAILED EXAMINATION OF SAMPLE
 - COMPLETED FOR LASALLE AND SAN ONOFRE
 - IN PROGRESS AT OTHER PLANTS WITH EXCEPTION OF WATTS BAR

ESTIMATED RESOURCES INVOLVED IN QA FOR

POWER REACTORS UNDER CONSTRUCTION

	INDUSTRY (MAN YR)	NRC STAFF (STAFF YR)	NRC CONTRACT (\$ THOU)
EXISTING	7500	44	400
COST OF INITIATIVES	422	16	1905