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NUCLEAR REGULATORY COMMISSION

IN THE MATTER OF:

PUBLIC MEETING

BRIEFING ON SECY-79-330E - REPORT ON CURRENT NRC
REQUIREMENTS AND GUIDANCE TO LICENSEES FOR QUALIFICATION
OF REACTOR OPERATORS

(See also SECY-79-330F)

Place - Washington, D. C.

Date - Thursday, 13 September 1979

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

PUBLIC MEETING

BRIEFING ON SECY-79-330E - REPORT ON CURRENT NRC REQUIREMENTS
AND GUIDANCE TO LICENSEES FOR QUALIFICATION OF REACTOR OPERATORS

(See also SECY-79-330F)

- - -

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

Thursday, 13 September 1979

The Commission met, pursuant to notice, at 2:10 p.m.

BEFORE:

VICTOR GILINSKY, Commissioner

PETER A. BRADFORD, Commissioner

JOHN F. AHEARNE, Commissioner

PRESENT:

Messrs. Engelhardt, Case, Snyder, Bickwit, Chilk, Gossick,
and Malsch.

* * *

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1 COMMISSIONER GILINSKY: The Chairman will be
2 delayed for a little while and asked me to start the
3 meeting. Mr. Bradford will be in very soon.

4 So the subject is qualification of reactor
5 operators. So Mr. Case, let's proceed.

6 MR. CASE: Yes, Dr. Gilinsky.

7 We are here today to discuss the staff
8 recommendations in SECY 79-330(E) and the implementation
9 schedule related to those recommendations in 330(F). As you
10 know, as background information we prepared a number of
11 Commission papers on the subject and they are covered in the
12 other SECY series on this same number.

13 The first point I would like to make today is,
14 what we are recommending here are the first steps in
15 long-term programming. We do not represent that these are
16 the only things that ought to be done to upgrade reactor
17 training and qualifications, but we do represent that these
18 are reasonable first steps, and we hope that you will agree
19 with us that they ought to be approved and implemented
20 promptly.

21 COMMISSIONER AHEARNE: In other words, to use a
22 phrase made famous, you believe these are not necessary and
23 sufficient.

24 (Laughter.)

25 MR. CASE: We believe they're necessary, but not

MM mte 1 necessarily sufficient.

2 Further studies in this area are expected to be
3 conducted. As Commissioner Ahearne knows, we are working
4 with his staff on the scope of some studies on Navy
5 comparisons.

6 We have other recommendations in this area that
7 have been received and are under consideration by the staff
8 now. For example, the Director of Standards provided us a
9 memoranda, I believe yesterday or the day before, with some
10 further recommendations. I do have and recently received a
11 recommendation from a reactor inspector at Region II, which
12 I personally think his recommendations have considerable
13 bearing. Those are under consideration.

14 Other recommendations are expected in this area.
15 The lessons learned long-term studies will have something in
16 this area.

17 COMMISSIONER GILINSKY: Whatever happened to the
18 suggestion that the representative of the Navy program tell
19 us —

20 MR. CASE: My understanding of that, Commissioner
21 Gilinsky, was that Admiral Rickover was awaiting a call from
22 some Commissioner on the subject if there was that much
23 interest.

24 COMMISSIONER GILINSKY: Well, we'll give him a
25 call.

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1 COMMISSIONER AHEARNE: I think it was a specific
2 Commissioner he was interested in.

3 MR. CASE: Obviously, I think the Presidential
4 Commission may have some recommendations here on the special
5 inquiry. Also, there are some possible Congressional
6 studies that may have to be conducted. In the Hart
7 Committee's version of the appropriation bill, there is a
8 requirement for a six-month study on operator training,
9 retraining and licensing.

10 All this to point out that this is the first step.

11 COMMISSIONER AHEARNE: Vic, we did get a paper.

12 MR. CASE: Yes.

13 COMMISSIONER AHEARNE: On the Navy system.

14 MR. CASE: With that background, I'll turn it over
15 to Paul, who will go over the recommendations one by one and
16 the implementation schedule for your benefit. Any
17 questions, he will be glad to answer.

18 MR. COLLINS: In the SECY 79-330(E), we discuss 23
19 options, and of the 23 options we recommended, we made 16
20 recommendations.

21 May I have the first slide, please?

22 (Slide.)

23 In my discussion with you on April 20, we talked
24 about requirements to sit for the examination and we
25 reviewed these, and we think that for the reactor

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1 operator there need be no changes, but for the senior
2 reactor operator we thought that we had to increase the
3 requirements to four years of operating experience, two
4 years of which should be nuclear, and six months of this
5 experience should be gained at the site that seeks the
6 licensing.

7 We define "operating experience" as a nuclear
8 plant staff engineer or control room operator, and we'll
9 give two years of credit for academic work.

10 (At 2:12 p.m., Commissioner Bradford entered the
11 room.)

12 COMMISSIONER AHEARNE: Could you comment on how
13 you believe that contrasts with the Navy's requirements for
14 its selection of people?

15 MR. COLLINS: If you would indicate -- if you
16 would equate the senior operator --

17 COMMISSIONER AHEARNE: The basic operator.

18 MR. COLLINS: The basic operator, I would have to
19 refer to the paper on it. I'm not sure, since we are
20 talking about a senior operator and we left the other
21 operator out --

22 COMMISSIONER AHEARNE: I know, but you reached a
23 conclusion that you wouldn't make any changes in the
24 qualifications of the operators. So I am asking you,
25 because I want to ask you what -- for what reasons you

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1 chose not to provide more qualifications for the basic
2 operator?

3 MR. COLLINS: In the Navy program, the operators
4 would go through a pre-nuclear training program and then
5 they would go through academic instruction and operational
6 training on the DOE Army-Navy reactor prototypes.

7 COMMISSIONER AHEARNE: How would they be chosen
8 originally?

9 MR. COLLINS: They take the top ten percent, I
10 believe, out of the craft schools or the rating schools that
11 these people attend.

12 MR. CASE: I think the basic requirement is high
13 school or equivalent.

14 COMMISSIONER AHEARNE: They do have a screening
15 where they take a certain selected subset, and I wondered,
16 in our review, what were the arguments that convinced us
17 that we shouldn't place some similar type of quality
18 screening.

19 MR. COLLINS: We didn't — we didn't even consider
20 getting into the screening of people to enter into training
21 programs.

22 COMMISSIONER AHEARNE: Why?

23 MR. COLLINS: We felt this was the responsibility
24 of the utilities, to select and hire people and bring them
25 along in the selection procedures.

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2 COMMISSIONER AHEARNE: So we concluded there was
3 no reason for us to place any kind of requirement as to who
4 might be eligible for the training?

5 MR. COLLINS: No -- yes. We felt that there was
6 no need to get that deeply involved in the selection of
7 people.

8 COMMISSIONER AHEARNE: I see.

9 TVA, when they were here, mentioned and their
10 report mentioned that they were considering placing on some
11 additional screening requirements, for example, using an IQ
12 test. And I don't know if they also were going to go into
13 any other kind of skill test.

14 Did we consider doing anything like that?

15 MR. COLLINS: No, we didn't.

16 COMMISSIONER AHEARNE: Any particular reason?

17 MR. COLLINS: The main reason is our regulations
18 at present address the final product, rather than go back
19 into the selection of the initial people. Many utilities do
20 use selection procedures right now. They do give IQ tests,
21 mechanical aptitude tests, and I'm not sure whether they
22 give psychological tests or personality testing or not, but
23 they do have selection.

24 COMMISSIONER AHEARNE: But we concluded it was not
25 something that we thought necessary?

 MR. COLLINS: Yes, sir.

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1 COMMISSIONER AHEARNE: Now, we are also going to
2 contrast these senior operator requirements?

3 MR. COLLINS: Yes. All right, the senior operator
4 Versus the officers from aboard ship. The officers aboard
5 ship are normally college graduates, and then they proceed
6 through training programs that are similar in scope to the
7 training programs that the senior operators have to have.

8 I think that we are different in that we have four
9 years of operating experience, whereas the officers or the
10 junior officers, at least, they come out of the Academy
11 right into the training program, and then aboard nuclear
12 subs.

13 COMMISSIONER AHEARNE: And your arguments as to
14 why our approach is better?

15 MR. COLLINS: Well, in our recommendations in SECY
16 330(E), we were not attempting to benchmark that paper
17 against the 330(E), the Navy paper.

18 COMMISSIONER AHEARNE: I recognize that. But in
19 some sense, I think you were saying that you have evaluated
20 the requirements we placed on operators.

21 MR. COLLINS: But not from the focus of how does
22 the Navy do it.

23 COMMISSIONER AHEARNE: I understand that. But
24 there is an organization that has had at least some
25 reasonable amount of success with its system. And I'm not

MM mte 1 saying it should be used as a benchmark, but it certainly is
2 a system that ought to be examined to see whether or not
3 there are facets of it which we ought to be following. I'm
4 not saying we should be following in this particular one.
5 I'm just merely raising the question: Have you considered
6 it?

7 MR. COLLINS: No, we did not. When we went
8 through our recommendations in 330(E), we took a look at
9 present practices and saw where we thought there were
10 weaknesses and said, here are the areas where we can improve
11 the practices. We did not benchmark it to any degree
12 against any other government agency or any other plans and
13 programs.

14 COMMISSIONER AHEARNE: When you say you looked at
15 and found weaknesses, against what were you determining you
16 have weaknesses? When you mentioned the Navy program as a
17 benchmark, was it then a subjective evaluation?

18 MR. COLLINS: We took a look at the applicants
19 being put up for senior operator and we took a look at the
20 requirements for senior operator, and we felt that some of
21 the applicants just were not measuring up to these
22 responsibilities, and that in a good many cases utilities
23 were putting up people for senior licenses as a matter of
24 convenience, so they could meet certain portions of the
25 regulation. But they really weren't going to use them in a

MM mte 1 full senior capacity.

2 So we decided that, since the senior operator was
3 going to take on and should indeed have this command
4 responsibility, and since our examination should be geared
5 in that direction, then we felt that indeed the requirements
6 that would allow these other people to sit for an
7 examination were too weak. And so we decided that requiring
8 four years of operating experience, two nuclear, as this
9 indicates, that this would give us this assurance that
10 people that were put up for senior operator would be the
11 command-type person we're looking for.

12 COMMISSIONER AHEARNE: Did you give any thought to
13 changing the current requirement that has high school
14 graduate or equivalent?

15 MR. COLLINS: No, we didn't. We have no evidence
16 that indicates that these people, based on their education,
17 were not able to assume this command responsibility.

18 COMMISSIONER AHEARNE: I was really focused more
19 upon the equivalent.

20 MR. COLLINS: We have changed the equivalent to
21 require the state certification in lieu of or th Army-Navy
22 certifications in lieu of the high school education, but
23 nothing else. One or the other.

24 COMMISSIONER AHEARNE: The Army-Navy, about three
25 years ago, three and a half years ago, dropped the

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1 equivalent of high school.

2 MR. COLLINS: I was unaware of that.

3 MR. CASE: For enlistees or —

4 COMMISSIONER AHEARNE: Well, where they used to
5 have a requirement of high school diploma or equivalent for
6 their better program, they shifted to high school diploma.
7 It was just past evidence indicating that — it wasn't if
8 you don't get a diploma it means there's something wrong.
9 It more means that the discipline required to get the
10 diploma was another added attribute to the screening.

11 And I just wondered whether we had —

12 MR. COLLINS: About 70 percent of the senior
13 operators do have some college. 35 or 40 percent are
14 college graduates.

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gsh 1 MR. COLLINS: Next slide, please.

2 (Slide.)

3 Now the second recommendation also involves the
4 senior operators. With the exception of those applicants that
5 make initial application for the cold examinations, the
6 initial crew, we felt it would be best if in addition to
7 previous experience we showed that before they applied for
8 a senior operator license, they have six months as an
9 operator.

10 So, in effect, after a plant becomes operational,
11 we will no longer administer instant senior examinations.

12 COMMISSIONER GILINSKY: I don't understand how that
13 relates to the first recommendation, where you're talking
14 about two years' nuclear experience.

15 That would not have to be as an operator. Is that
16 the idea?

17 MR. COLLINS: That's correct. We indicate that that
18 could be gained solely as a nuclear plant staff engineer.

19 COMMISSIONER GILINSKY: I see. Is it a good idea
20 for someone to go cold into a position of senior operator?

21 MR. COLLINS: Yes, it's an absolute essential.

22 COMMISSIONER GILINSKY: Why is it essential?

23 MR. COLLINS: There's no way you can load fuel at
24 a new power plant unless you have senior operators present.
25 So it's necessary for them when they sit at that plant —

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1 COMMISSIONER GILINSKY: A senior operator for that
2 plant. But you could have a senior operator who is --

3 COMMISSIONER AHEARNE: Had operating experience.

4 COMMISSIONER GILINSKY: Has had operating experience,
5 has had senior operating experience.

6 MR. COLLINS: We feel the cold training program
7 they go through are designed to give them this type of
8 experience -- the simulator, the three-months simulator
9 training program, the basics, design lectures, the simulator
10 program.

11 COMMISSIONER GILINSKY: Is it possible to go to the
12 senior operator status without ever having operated a plant
13 before?

14 MR. COLLINS: The cold status?

15 COMMISSIONER GILINSKY: Yes.

16 MR. COLLINS: A person could go through our training
17 program and now he's going -- he's still going to have to
18 meet the four years of operating experience, one year nuclear
19 experience, will be given credit for this particular training
20 that he goes through, and the other year nuclear power plant
21 experience can come during the first year of power plant --
22 during the last year of power plant construction when he's
23 checking out the equipment.

24 COMMISSIONER AHEARNE: What would be the problem if
25 we also required 12 months of actual holding operator

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1 licensing?

2 MR. COLLINS: Number one, you would have to get the
3 sister utilities that are operating these power plants to
4 agree to take on all these trainees.

5 That was one of the prime reasons why we developed
6 the cold training programs used in the simulator, was that
7 there were no -- that the utilities did not want to use the
8 power plants as training facilities.

9 COMMISSIONER GILINSKY: But you can't go to -- you
10 can't become a captain of a 747 without ever having flown an
11 airplane. It sounds to me like there's something wrong with
12 this approach, to tell you the truth.

13 COMMISSIONER AHEARNE: Is that the principal reason
14 that the other utilities were --

15 MR. COLLINS: Yes, I'd say it is, that a one thousand
16 megawatt plant is designed to be base-loaded, produce a
17 thousand megawatts of electricity, and to put trainees into
18 that atmosphere.

19 COMMISSIONER AHEARNE: Why is it necessarily a
20 trainee? If a person is an operator and if the requirement is
21 to be a senior operator, you must have been an operator for
22 a year. I would think --

23 MR. COLLINS: Then you would be encouraging pirating
24 from other utilities, wouldn't you?

25 COMMISSIONER AHEARNE: Or promotion.

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1 COMMISSIONER GILINSKY: What you are saying is the
2 way the utilities are organized has made it difficult to
3 train operators in a way that we might otherwise have trained
4 them.

5 MR. SNYDER: Paul, I just wonder, have you taken
6 into account the recent EPRI organizational moves?

7 MR. COLLINS: No.

8 MR. SNYDER: There is a proposal before their
9 organization now to establish a training organization which
10 would be across-the-board for utilities and could very well
11 solve the —

12 MR. COLLINS: We have curriculum and items of that.
13 I have not heard anything that would lead me to believe that
14 they're going to establish a school.

15 MR. SNYDER: I wasn't saying that. I was saying that
16 it seems to me from what I have seen on the subject, at
17 least a more cooperative atmosphere, and I'm not sure that
18 we're taking advantage of that.

19 COMMISSIONER AHEARNE: I think the question we have
20 to ask ourselves is whether or not this would be the
21 appropriate thing to do. And that should be independent of
22 whether or not the utilities feel cooperative about it.

23 MR. COLLINS: Well, we used to at the very first of
24 our certification programs, we used to use Saxton facilities,
25 which was a small BWR facility. Westinghouse used it for their

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1 training program, and then they went into the simulator
2 training program for the same accomplishment.

3 The thing you run into when a man goes into an
4 operating plant to do all of his training is that they are
5 sitting there base-loaded in a steady state and a man just
6 doesn't learn as much.

7 We still, in our cold training program, require
8 a person to participate and be an observer at a nuclear power
9 plant for two months.

10 COMMISSIONER AHEARNE: I guess I'm going to have to
11 think more about it, but I tend to believe that having the
12 person actually be an operator for something like a year
13 seems to be a reasonable requirement.

14 COMMISSIONER GILINSKY: It seems like that to me. I
15 have to say it.

16 MR. CASE: Before he becomes a senior?

17 COMMISSIONER AHEARNE: Yes.

18 COMMISSIONER GILINSKY: We'll have to get our
19 chairman back if we're going to get him qualified under
20 a simulator.

21 MR. CASE: This would not be in lieu of or a change
22 to one of the other requirements.

23 COMMISSIONER AHEARNE: Oh, no, it would be in
24 addition to.

25 MR. COLLINS: Chart 3, please.

1 (Slide.)

2 The third recommendation that involves the training
3 programs is to be more specific on training requirements for
4 the hot license applicants.

5 For the operator presently under our regulations --

6 COMMISSIONER GILINSKY: A hot license applicant is --

7 MR. COLLINS: After the plant is operational. Sorry.

8 Three months on shift as an extra man in the control room
9 learning how to be an operator.

10 This is for the -- this is to prevent a man being
11 an auxiliary operator on shift doing his normal job and then
12 on a catch-as-catch-can basis, trying to get the requirements
13 to be an operator.

14 COMMISSIONER GILINSKY: Let me just take you back to
15 Recommendation 2.

16 You seem to think that a senior operator ought to
17 have some operator experience.

18 MR. COLLINS: Yes.

19 COMMISSIONER GILINSKY: Because for those other than,
20 what is the right terminology?

21 MR. COLLINS: The cold or pre-critical operator.

22 COMMISSIONER GILINSKY: The ones who get training
23 before the plant comes into operation. For those other than
24 that first group, you would require holding an operator license
25 for six months.

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1 Now could you go over again the difference
2 between the training that this person receives as opposed to
3 the training that is received by the group which is trained
4 before the reactor goes critical?

5 MR. COLLINS: The previous group receives two years.
6 It goes through a training program of approximately two years.
7 The post-critical, or the hot applicants, go through a
8 training program that lasts somewhere between 6 and 9 months.

9 So it's an abbreviated training program. And this
10 is based on the man more than likely having worked at that
11 particular plant as an auxiliary operator or in some capacity
12 to where he is getting familiar with the plant. And he
13 doesn't come in as a neophyte, if you would, as some of the
14 people do in the cold training programs as far as nuclear
15 power goes.

16 So it's a shorter training program.

17 MR. CASE: Are your prerequisites any higher for
18 the cold operators in terms of needed experience and
19 education?

20 MR. COLLINS: No. Normally, most of the people that
21 go through the cold programs are senior operators, shift
22 supervisors, the watch foremen and so forth.

23 So we are saying on the training program for the
24 operators after the plant becomes operational, three months
25 on shift as an extra man so that we are assured that he is

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1 going to be trained in the control room in a formalized
2 manner.

3 Based on recommendation 2, where we required the
4 senior operator to hold an operator's license, he would get
5 three months of training on shift as an extra man. And his
6 principal job at that time would be to accompany the present
7 shift supervisor on his rounds and find out how that shift
8 should be run.

9 This is after he has his operator's license and now
10 he is in training for a senior operator's license.

11 COMMISSIONER GILINSKY: You know what concerns me a
12 little bit just listening to you? I get the feeling that
13 you have taken the present requirements and sort of cranked
14 them up a few turns in the various categories rather than
15 saying, what is it that a man ought to know and what sort
16 of experience ought he to have before he gets control of
17 one of these plants?

18 MR. COLLINS: We have already pretty much established
19 that the training programs -- the training program is going
20 to have to be altered, but we're not recreating the training
21 programs. When we see these areas where the training is
22 not formalized, people are being put up without the necessary
23 experience and we are trying to make the corrections in those
24 areas on these first three recommendations --

25 COMMISSIONER AHEARNE: Let me ask a question which

gsh 1 relates somewhat to that.

2 If you were to be asked, would you expect 10 percent
3 of the applicants who try to go through this to make it,
4 20 percent, 50 percent, 80 percent, what would your answer
5 be? Have you looked at it from that point of view?

6 MR. COLLINS: I would expect once the requirements
7 are known, once the new training is placed in effect, that
8 when we see the individual, we should get about the same
9 pass/fail rate as we had in the past.

10 COMMISSIONER AHEARNE: Do you think it's appropriate?

11 MR. COLLINS: There may be some recycling of people
12 before they take our examination.

13 COMMISSIONER AHEARNE: Do you think that's an
14 appropriate pass/fail rate?

15 MR. COLLINS: Yes, I do.

16 COMMISSIONER AHEARNE: Why?

17 MR. COLLINS: Before the facility management must,
18 as part of the application, certify to the competence of
19 this individual. And if he certifies and we go to his
20 facility and fail a good number of applicants, we go after
21 him and question the means used to certify these people.

22 COMMISSIONER AHEARNE: Maybe I asked the wrong
23 question. Of the number of people that start in the
24 licensee's program, what percentage would you expect to
25 actually make it all the way through?

gsh 1 MR. COLLINS: That start in the program? I would
2 say about 80 percent.

3 COMMISSIONER AHEARNE: Do you think that that's
4 appropriate?

5 MR. COLLINS: Yes.

6 COMMISSIONER AHEARNE: It seems pretty high for a
7 demanding program. If you are constructing a program to end
8 up with someone that you would expect to be placed in a
9 very responsible position over something that you feel
10 requires a reasonably close amount of supervision, I would
11 think 80 percent would be a high percentage.

12 MR. COLLINS: I have no statistics on other training
13 programs to benchmark this against.

14 MR. CASE: John, isn't the answer to your question
15 more how stable are the requirements?

16 COMMISSIONER AHEARNE: No. What I was thinking, in
17 another location I spent a fair amount of time looking at
18 training programs and screening out individuals and raising
19 and lowering the thresholds to try to get certain categories,
20 and in some cases, to try to fill blocks of people. In other
21 cases, to try to squeeze down to make sure that you had
22 individuals who could pass a fairly significant skill
23 requirement.

24 And it always -- at least the people there that I
25 was working with -- always started out with an estimate of

gsh 1 now approximately what percentage were they going to be
2 satisfied with getting through?

3 That was their way of benchmarking whether they
4 would be tough enough or too tough. And on this kind of an
5 operation, I guess offhand I would guess somewhere around
6 50 percent would be the number that you would expect.

7 MR. CASE: Where they comparable type things in
8 length of training and things like that?

9 COMMISSIONER AHEARNE: Some of them were two- to
10 three-year long programs and that was even with a threshold
11 filter at the beginning.

12 I would have expected without a threshold filter
13 at the beginning, which we don't have -- in other words, we
14 don't really have that tight a cutoff at the beginning -- I
15 would have expected a much higher percentage.

16 MR. CASE: Were the qualifications objective versus
17 subjective?

18 COMMISSIONER AHEARNE: A combination. Variety of
19 programs --

20 MR. COLLINS: Any more specific questions on this
21 particular slide?

22 (No response.)

23 MR. COLLINS: These recommendations 1, 2 and 3, we
24 would expect to be implemented for applicants who file their
25 application six months from the decision date to adopt them

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1 so changes can be made in the training programs.

2 May I have the next slide, please?

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2 COMMISSIONER GILINSKY: Let's see. Why would you
3 insert the six-month period there?

4 MR. COLLINS: Well, there are people right now in
5 the mill training, in various stages of the training
6 program, and we feel that we should allow them to complete
7 the training program, administer our examinations to them,
8 because later on you will be seeing the new criteria on the
9 examination, which we are going to make immediate, which we
10 are recommending be made immediately.

11 COMMISSIONER GILINSKY: So when you say file
12 applications for a license, that comes at the end of the
13 training program?

14 MR. COLLINS: Yes, it does. We feel now the
15 utilities we know are hearing new requirements, they can go
16 out and select different people and start them out in a
17 different training program.

18 MR. SNYDER: Paul, would there be any attempt to
19 look back at those people who already have been qualified
20 under some of these new requirements?

21 MR. COLLINS: In our recommendations, we are
22 recommending that we administer some of the requalification
23 examinations.

24 MR. SNYDER: Periodic requalifications?

25 MR. COLLINS: Yes. They requalify every year now.

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MR. SNYDER: I understand.

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MR. COLLINS: But facility management administers the examination.

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COMMISSIONER GILINSKY: Every year or every other year?

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MR. COLLINS: Every year.

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COMMISSIONER GILINSKY: For all operators?

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MR. COLLINS: Yes, sir. There are annual requalification examinations.

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MR. SNYDER: At that point, would you pick up any more stringent requirements? Would that be the point at which you would do this?

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MR. COLLINS: Yes.

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MR. CASE: I'm not sure you two are communicating.

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MR. COLLINS: Grade requirements. We wouldn't go back and say, you don't have four years of experience, you only had three, and therefore you can't be a shift supervisor.

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MR. SNYDER: There are some of these requirements -- maybe there are later on recommendations -- that lend themselves more logically to be backfitted, if you want to use that term, as I recall. Is there any intent to do that with a whole batch of operators out there?

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MR. COLLINS: No, I don't know --

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2 COMMISSIONER GILINSKY: Let's take them one at a
time, as we take up the individual recommendations.

3 COMMISSIONER AHEARNE: Bernie, why don't you raise
4 them when we get to the specifics?

5 MR. SNYDER: Okay.

6 MR. COLLINS: On the next three recommendations,
7 4, 7, and 11, they all involve the same subject, and that is
8 required use of simulators. We're going to require the use
9 of simulators in the hot training programs.

10 COMMISSIONER GILINSKY: To what extent?

11 MR. COLLINS: To at least a week program, one-week
12 program.

13 COMMISSIONER GILINSKY: What would be the training
14 that persons who are getting trained before the reactor goes
15 critical --

16 MR. COLLINS: They go to the simulator training
17 program for a three-month period, two to three months on the
18 simulator and one to two months at an actual operating
19 plant.

20 COMMISSIONER GILINSKY: And you regard one week in
21 the hot training program a satisfactory?

22 MR. COLLINS: These people have six months at
23 their plant, three months in the control room as a trainee
24 as a minimum, and then they go to simulator for a week.
25 While they are at their plant, they're doing whatever

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1 manipulations that are taking place at the plant.

2 COMMISSIONER GILINSKY: What would they be doing
3 during that week?

4 MR. COLLINS: At the simulator?

5 COMMISSIONER GILINSKY: Yes.

6 MR. COLLINS: We address that later on. We are
7 going to develop specific criteria and training programs
8 fore those simulator sessions.

9 COMMISSIONER GILINSKY: And you regard a week as
10 sufficient?

11 MR. COLLINS: I'm not going to lock in on a week.
12 We are thinking of a week. When we get through looking at
13 all the exercises and the items we want to do, then we will
14 come down on a time.

15 MR. CASE: It might be a week or two.

16 MR. COLLINS: Something of that nature, yes.

17 COMMISSIONER AHEARNE: You mention in your paper
18 that there are a few of the older plants for which
19 simulators wouldn't be available. How many are there?

20 MR. COLLINS: About four, I would say: Big Rock,
21 Lacrosse, Humboldt Bay, Yankee. These are -- I don't know
22 if we'll ever see Humboldt Bay again, but it's one of the
23 older plants. These are the type of thing.

24 COMMISSIONER AHEARNE: A very small number.

25 MR. COLLINS: Yes, a very small number, extremely

MM mte 1 small. Right now about 90 percent of the utilities are
2 sending these hot applicants to training programs, so we're
3 not really imposing too much --

4 COMMISSIONER GILINSKY: Are you constrained by
5 resistance to go to simulator sites on the part of
6 employees?

7 MR. COLLINS: No. We have a program now that sort
8 of fosters and encourages the use of simulators, and most of
9 the utilities have opted to use that program.

10 MR. CASE: Basically, we're changing into a
11 requirement. This is the step that's being taken.

12 COMMISSIONER GILINSKY: How would you use the
13 simulators in requalification programs?

14 MR. COLLINS: Once again, we would make them
15 mandatory. We would do the same thing on the
16 requalification program. We are developing a list of
17 exercises. We are going to insist that each licensee
18 perform them while he's at the simulator.

19 COMMISSIONER GILINSKY: So every year, an operator
20 would return to the simulator for some period?

21 MR. COLLINS: For some period of training, yes.

22 Once again, I have got to go down the list of
23 exercises and work it out with my staff as to what is a
24 reasonable time for a man to perform these, not only to
25 perform, but to learn what's happening, too.

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1 COMMISSIONER GILINSKY: Presumably, there would be
2 new exercises each year, as we learn new things.

3 MR. COLLINS: We're looking at a combination of a
4 certain standard number that we want them to be able to cope
5 with, plus, as you say, each year there would be some
6 different ones, also.

7 COMMISSIONER GILINSKY: How would you use these
8 simulators for administering NRC examinations? This is for
9 the initial examination?

10 MR. COLLINS: This is for the initial
11 examination.

12 Yes, we would probably go to the simulator. And
13 we haven't thought out all the details on this, but we would
14 probably go to the simulator, administer that part of the
15 exam that we could, and then that would be a separate exam,
16 and then the balance of the exam would be administered at
17 the man's facility, probably two to three weeks later.

18 COMMISSIONER AHEARNE: Do we currently certify
19 that a simulator is an adequate --

20 MR. COLLINS: Yes, without any specific criteria
21 and without any specific mandate in the regulations to do
22 so.

23 COMMISSIONER AHEARNE: Do we review the particular
24 software programs that are written for the simulator?

25 MR. COLLINS: No, we do not review the programs.

MM mte 1 We do, as a final check on the simulator, have the startup
2 test data from the plant after which the simulator is
3 modeled, and we reproduce the startup tests on the simulator
4 to verify the accuracy.

5 COMMISSIONER AHEARNE: Do we do a test run of
6 accident frequencies to see whether the simulator responds
7 in a way -- the software responds in some way that we feel
8 is satisfactory?

9 MR. COLLINS: Yes, we do. We observe that.

10 COMMISSIONER AHEARNE: So we do have some test
11 runs.

12 MR. COLLINS: We do get involved with
13 simulators with the original specifications. Then, as the
14 simulator is being constructed, we visit the facilities
15 being constructed and participate in acceptance tests. We
16 participate in the acceptance test at the site, and then we
17 make a final check on the simulator against the startup
18 tests of the plant after which it is modeled.

19 All of these recommendations are going to require
20 rulemaking to implement.

21 MR. ENGELHARDT: I think that statement may be
22 slightly overly broad. But where there are requirements,
23 specific requirements mandating that an individual must meet
24 a standard or a standard is set that must be a required
25 qualification, those would be necessary to include in

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1 R-55, so that the rules would be set in place.

2 There are some of these procedures, however, that
3 have been mentioned in the paper, in 330(F), which will not
4 require a rulemaking and can be established as a matter of
5 procedure and policy.

6 We, of course, as attorneys would prefer that, to
7 the maximum extent, the requirements and the standards be
8 set forth in regulations, because that is always the
9 conservative, safe approach. There are, however, a number
10 of things that can be done without the necessity of
11 rulemaking. But rulemaking is essential where requirements
12 are levied on what a person must do in order to establish
13 qualifications for a license, and that is what we're doing.

14 Part 55 says what is required now. Some of the
15 current or proposed requirements were, if anything,
16 improved. And a licensing program must, of course, also be
17 reflected in these regulations.

18 COMMISSIONER BRADFORD: You were talking about
19 just 4, 7 and 11, Paul?

20 MR. COLLINS: Yes, so far. I have these
21 recommendations grouped, or I had them grouped at one time,
22 based on the implementation, recommended implementation.
23 Some has changed since talking —

24 MR. CASE: But there are others that require
25 rulemaking?

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1 MR. COLLINS: Yes, there are others that require
2 rulemaking besides these three.

3 COMMISSIONER BRADFORD: 1 and 2, though, in your
4 view do not?

5 MR. COLLINS: No, they did not.

6 MR. CASE: I assume OELD agrees?

7 MR. ENGELHARDT: Yes.

8 COMMISSIONER BRADFORD: Could these be put into
9 place before you are in a rulemaking?

10 MR. COLLINS: Well, I indicated that the use of
11 the training programs, simulators in the hot training
12 program, about 90 percent of the utilities are doing it
13 now. About 85 percent of the utilities are using
14 requalification programs. So it's not too serious a
15 situation in saying that they are not going, because they
16 are going to the simulator.

17 COMMISSIONER BRADFORD: What I would like to
18 understand, though, is what the time scale for putting these
19 recommendations into effect here is. How long will it take?

20 MR. COLLINS: I will have to defer.

21 MR. CASE: I have heard this many times, and I
22 think you have. Normal rulemaking is two years.

23

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1 COMMISSIONER BRADFORD: Do we consider these
2 requirements can be put into place before the rulemaking? I
3 know you find a high percentage are doing them anyway.

4 MR. COLLINS: What I have from ELD right now is
5 that rulemaking will be required.

6 COMMISSIONER GILINSKY: We cannot make these
7 requirements immediately effective?

8 MR. COLLINS: No, I can't say.

9 COMMISSIONER BRADFORD: Would you like to make
10 them immediately effective, if you could?

11 MR. COLLINS: I would like to be able to start
12 administering the NRC examination on the simulator. This is
13 going to take time also, because it's going to require a
14 larger staff. That's one area.

15 COMMISSIONER AHEARNE: Do we have some other legal
16 opinion?

17 (Laughter.)

18 MR. ENGELHARDT: The problem here is the
19 requirements for health and safety. I mean, that's the core
20 of this whole thing. If these requirements are considered
21 essential to health and safety and they must be mandated now
22 to be done now so we are sure health and safety is
23 protected, we can do that. We can find the mechanism for
24 doing that.

25 We're saying rulemaking is the preferred course of

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1 action to assure that we don't run into the procedural
2 complications. If you don't have rules established that you
3 can meet. But there is always a decision to be made by the
4 administration as to whether or not there is a health and
5 safety prevailing and prevalent, an overwhelming requirement
6 in the interest of health and safety that has got to be done
7 now, in which case it can be ordered to be done now and
8 could be done in the sense that is being done.

9 Apparently, a number of operators are already in
10 the process, and the others could be encouraged to follow
11 that process while we go through a formal rulemaking. If
12 that isn't good enough, then we just order it and have it
13 done in the sense of -- in the interest of public health and
14 safety.

15 MR. COLLINS: We also have the problem of how many
16 simulators are available. We have made some very
17 preliminary estimates of their availability, and we see some
18 problems, if we extend our programs more than what the
19 programs are now. And I really believe the programs are
20 going to be extended. So, we're going to run up against the
21 construction of new simulators in full implementation of
22 using the simulators for everybody.

23 COMMISSIONER AHEARNE: That's 24-hour operation?

24 MR. COLLINS: Yes. We know we are definitely
25 having problems on BWRs. We think -- we think we look

NY MM 1 fairly good on the PWR simulators, but we haven't made a
2 total analysis having called in the people who own the
3 simulators to see what they would make it available for.

4 So, even if we come right out with an immediately
5 effective rule, we are still going to be possibly stopped by
6 the hardware. I checked with people --

7 COMMISSIONER GILINSKY: Wait a minute. Stopped in
8 what sense?

9 MR. COLLINS: In that there isn't the
10 availability, the time available --

11 COMMISSIONER GILINSKY: It may just take longer to
12 qualify some of the operators.

13 MR. COLLINS: Well, they have their programs --
14 well, I would think probably the requalification programs
15 would be the ones that suffer. You have got to keep a
16 supply of operators going. We have technical specifications
17 that require people, a certain number of licensed people, at
18 every plant. We can't stop the process.

19 COMMISSIONER AHEARNE: You don't have timely
20 renewal for operators?

21 MR. CASE: I suppose that applies, timely renewal.

22 MR. COLLINS: Yes. But they leave the job, and
23 they have to get replacement of people.

24 COMMISSIONER GILINSKY: In the extreme, if we
25 believe there are not qualified operators, sufficiently

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1 trained operators, then the plant just can't operate.

2 MR. COLLINS: We would have to make that finding,
3 yes.

4 COMMISSIONER AHEARNE: I think that's what Tom
5 meant when he talked about health and safety.

6 MR. CASE: What is the finding you have to make to
7 make a rule immediately effective?

8 MR. MALSCH: Public health, safety requirements
9 are required. It's a fairly strong finding. You really
10 have to find the advantage of getting full participation
11 outweighed by the need to have the regulation replaced right
12 away.

13 COMMISSIONER AHEARNE: Somebody will probably ask
14 if we believe it's absolutely essential for simulators.
15 Why, it may be.

16 MR. MALSCH: The problem that agencies frequently
17 run across in putting out regulations in effect immediately,
18 there's been a debate for a year and they put it out right
19 away, suddenly, assuming the problem is recognized and there
20 is prompt action, I think there wouldn't be any problem
21 with immediately effective regulation.

22 MR. COLLINS: The next slide, please.

23 (Slide.)

24 Recommendations 5 and 9 at one time I thought
25 could be implemented immediately. It turns out that audit

1 of the training programs can be immediately implemented --

2 COMMISSIONER GILINSKY: This is NRC audit?

3 MR. COLLINS: NRC audit of training programs,
4 particularly the cold training programs, including
5 administration of certification programs, some of the
6 certification exams.

7 COMMISSIONER GILINSKY: Certification exams are
8 which ones?

9 MR. COLLINS: They are the examinations given to t
10 cold applicants at the completion of their off-site training
11 programs. That certifies they have extensive actual
12 operating experience. At the conclusion of the off-site
13 training program, they then go on site where they go through
14 the on-site training program, construction check-out,
15 writing of procedures, technical specifications; and about a
16 year to two years after they receive this certification
17 exam, we give them an NRC exam.

18 Now, we are recommending that we do some of the
19 certification examination as a benchmark against the
20 training programs that are going on.

21 COMMISSIONER AHEARNE: Why shouldn't we do all of
22 them?

23 MR. COLLINS: We feel if we make our presence
24 known and we have a good auditing program, we can accomplish
25 just as much, pick up weaknesses in the training program in

1 as good a manner or almost as good a manner as a hundred
2 percent of the students.

3 The purpose of us going there is to audit the
4 training programs, not to certify the individual.

5 MR. CASE: I would more put it I would start out
6 this way and if it turned out that we're doing 10 percent
7 determines you can do a lot better by doing 15 or 20, I
8 would progress that way, rather than start out at 100. In
9 other words, I'm not sure that 10 percent is the best
10 direction, but I think it would be worthwhile to start out
11 that way, rather than starting at 100 percent. We do have
12 manpower problems, too.

13 COMMISSIONER AHEARNE: Oh, yes, it would
14 definitely be a switch. It wouldn't be audit. It would be
15 certification. My question really is why shouldn't we be
16 the ones doing certification?

17 COMMISSIONER GILINSKY: You're talking about NRC
18 administrator requalification exams?

19 MR. COLLINS: Yes, we are, NRC administration of
20 some of the requalification exams.

21 COMMISSIONER AHEARNE: And I am really saying why
22 don't we.

23 COMMISSIONER GILINSKY: I have the same question.
24 I want to ask you another question. Let me take you back to
25 the B&W examinations that we gave -- we did not give -- we

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1 required be given to the operators at the B&W plants.

2 I am informed -- in fact, during my deposition by
3 the President's Commission -- that you recommended that the
4 NRC administer all these examinations. But, were overruled,
5 and the result was we simply audit the process. Is that
6 correct?

7 MR. COLLINS: I don't want to use as harsh a word
8 as we were "overruled." I did make the recommendation that
9 we administer the examinations. It was felt that we would
10 accomplish just as much by conducting this audit program on
11 them.

12 COMMISSIONER AHEARNE: What made that different
13 than the question I just asked?

14 MR. COLLINS: Because the certification
15 examination -- well, mainly, because the man's training
16 program on the certification programs is not complete, and
17 he's not ready for an NRC examination. The difference here
18 on the Oconee exams at B&W is that their training program
19 was complete, but this man, he's only about halfway through
20 his training program.

21 COMMISSIONER AHEARNE: How about when he's
22 finished with his training program, should we then do a
23 hundred percent of them?

24 MR. COLLINS: We do. We give the NRC examination,
25 and the man gets his license.

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1 COMMISSIONER AHEARNE: Independent of any
2 licensing --

3 MR. COLLINS: Independent of how many initial
4 examinations.

5 COMMISSIONER AHEARNE: How about the
6 requalification examinations?

7 MR. COLLINS: On requalification, the programs
8 were and are in the regulations set up to be
9 facility-administered.

10 COMMISSIONER AHEARNE: Why shouldn't we? I mean,
11 wasn't the B&W a form of requalification?

12 MR. COLLINS: No. I think it was learning
13 new materials.

14 COMMISSIONER AHEARNE: And therefore requalifying
15 somebody who was already qualified, there were new things
16 learned, you wanted to make sure. Isn't that, to some
17 extent, what a requalification does, is to make sure not
18 only that you knew what you used to know, but anything new?

19 MR. COLLINS: That you've kept your knowledge up
20 to date with new exchanges.

21 COMMISSIONER AHEARNE: Right. So, why shouldn't
22 we do everybody's requalification?

23 MR. COLLINS: Once again, we were looking at it
24 from the standpoint of auditing the program, rather than
25 looking at each individual.

1 COMMISSIONER AHEARNE: What I am really asking,
2 Paul, if it was appropriate in that recent B&W case, why
3 isn't it then appropriate in the requalification?

4 MR. COLLINS: I can't correlate the two.

5 COMMISSIONER GILINSKY: I was going to make a
6 different point, which is, A, I am surprised we were not
7 informed of that recommendation; and I am also curious as to
8 what led to the decision not to have NRC administer all of
9 the examinations. Is there an explanation for that?

10 MR. CASE: I have tried to recall my involvement,
11 if any, in the situation that Paul described, before the
12 presidential commission. I talked to Denny Ross about it,
13 too.

14 First, with regard to your question, and your
15 surprise that the Commission wasn't informed. I don't think
16 it was of that character or caliber of difference of opinion
17 between the recommender and the resolver, if you will. It
18 was one of the hundreds of decisions that are made in the
19 course of something like that returning part of the B&W
20 reactors. In any event, as I remember the situation -- and
21 Paul can correct me if I am wrong -- he was in the midst of
22 a discussion with Dr. Ross in Dr. Ross' office, and I
23 believe that representatives of I&E were there, and we were
24 contrasting the situation then with the previous situation
25 on B&W plants, when, you will recall, we issued a number of

1 instructions via bulletin, and the I&E resident inspector
2 performed the function of determining whether the people
3 were adequately trained in their new procedures.

4 COMMISSIONER GILINSKY: You're talking about early
5 April?

6 MR. CASE: Early April. We felt at this stage we
7 would ratchet, if you will, those requirements a bit to do
8 better verification by having the operator licensing branch
9 audit, as distinguished from having the on-site inspector do
10 it, because they were more qualified in this area. Having
11 the reactor inspector check the rest of the people. So, it
12 was a ratchet over what we previously had done.

13 The question was how far should you go in such an
14 audit. And I think the answer, our feeling at the time, was
15 let's try 10 percent or whatever, the few that we audited
16 were to see how the thing came out to determine whether 100
17 percent audit was necessary. And if I remember, there
18 wasn't a strong disagreement or strong recommendation. It
19 was just one of those things that you consider and make a
20 decision on. I believe I was called on the telephone, and
21 in the midst of the discussion, said, "What do you think?"

22 COMMISSIONER GILINSKY: I raise this, not because
23 the Commission should be informed of every difference
24 between a branch chief and assistant director. Obviously,
25 the answer is not. But this happened to be a particularly

1 crucial element in our program of assuring the safety of
2 those plants. And therefore, if Mr. Collins thought he had
3 the resources and thought it was appropriate to have NRC
4 administer these examinations, I think that's of sufficient
5 importance that the Commissioners ought to know about.

6 MR. CASE: Well, a large part of tha,
7 Commissioner Gilinsky, depends on the feeling of the
8 recommender after he has made such a recommendation and it
9 doesn't carry. And I can only gather that Paul didn't feel
10 too strongly about it, because in time I didn't hear any
11 strong outcry or reverberations, and if there were we
12 certainly would have brought it to the Commission's
13 attention. I think Paul was here and we discussed it.

14 MR. COLLINS: I will agree. I made the
15 recommendations, but the audit was a very comprehensive
16 audit, and it fit in.

17 COMMISSIONER GILINSKY: So, you were satisfied
18 with that kind of approach, the alternative approach?

19 MR. COLLINS: Yes.

20 COMMISSIONER AHEARNE: I will have to say that
21 that was the conclusion, certainly I reached when the same
22 gentleman raised the same point to me, that I felt that Paul
23 was here, and if he really felt strongly he would have
24 raised it at that point and the issue would have been
25 raised, it seemed to me.

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It seemed to be a very consistent approach, very
frankly, with the previous way.

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1 MR. COLLINS: On the requalification examination,
2 some or all, and we are recommending we administer some.
3 Once again, rulemaking has been recommended. It's my
4 understanding that the regulation presently does not
5 interject NRC into the requalification examinations without
6 cause, and therefore rulemaking would be needed to put us
7 into the qualification programs.

8 COMMISSIONER AHEARNE: Did you end up choosing
9 your option 12 instead of option 11?

10 MR. COLLINS: Yes.

11 COMMISSIONER AHEARNE: Could you explain why?

12 MR. COLLINS: The main reason is, we look at the
13 requalification program, although indeed it is an individual
14 certification, we want to look to see that the program
15 itself is being administered properly, rather than honing in
16 on each individual. Once again, I think you can detect
17 weaknesses in programs, and in this case, since there are so
18 many plants being operated and so many audits to be
19 conducted, probably come up with problem areas a lot faster
20 by conducting audits than you would if you had to schedule
21 in 100 percent of the examinations.

22 COMMISSIONER AHEARNE: But in the arguments you
23 give in your paper on the for and against, the arguments for
24 seem to be that the NRC's concern -- you would assure NRC's
25 concerns were addressed, this would serve as a measure of

1 the training programs' effectiveness as well as individual
2 competency.

3 And the only argument against it is it would
4 require some additional Licensing Branch personnel. That's
5 page 28.

6 MR. COLLINS: Thank you.

7 Not necessarily. We find in our audit
8 requalification programs right now that individuals that
9 have a grade 80 or above, when we grade those exams we find
10 that we come down fairly close to the facility's grading.
11 When we get below 80 and we are heading towards the present
12 cutoff point of 70, where a man would have to go into
13 accelerated training, we find a tendency for the grader to
14 be a little more generous than he should, than we are when
15 we grade the examinations.

16 So if we go to a facility --

17 COMMISSIONER AHEARNE: All the more reason to do
18 it.

19 MR. COLLINS: So if we go to a facility and select
20 for our sampling the lower grade, I think we are
21 accomplishing just as much as had we gone in and done 100
22 percent.

23 COMMISSIONER AHEARNE: Or if you audit every lower
24 grade.

25 MR. COLLINS: In any audit procedure you start

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1 off. If you're satisfied with the audit you stop. If
2 you're not, you continue on. You can always continue on.

3 COMMISSIONER AHEARNE: Could I ask you, Paul,
4 about a question which I admit I completely missed the
5 previous time you discussed the licensing examinations? On
6 page 29 you say:

7 "The examination is designed so the average
8 applicant can complete the examination in eight hours.
9 However, no time limit is imposed."

10 Is that really correct? There's no time limit on
11 how long it takes the individual to take the exam?

12 MR. COLLINS: With one exception. If you have a
13 couple of people sitting there for a considerably long time
14 past the class average, then it's common practice for the
15 examiner to say, all right, you have one more hour to
16 complete the examination.

17 But we feel that -- we have felt in the past that
18 imposing a time limit really doesn't accomplish that much.
19 And most people get through in eight -- I guess some people
20 take ten. There was no time -- there is no time limit.

21 COMMISSIONER AHEARNE: And then, similarly, on the
22 next page, where you talk about the exam, it is designed to
23 be completed in five hours, but no time limit is imposed.
24 Is that right?

25 MR. COLLINS: This is correct. We do not say, you

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1 have five hours for this examination.

2 COMMISSIONER AHEARNE: That somewhat reduces the
3 significance of the grade, I guess.

4 COMMISSIONER BRADFORD: These also go to
5 rulemaking?

6 MR. COLLINS: The second one, for NRC to
7 administer the requalification exam. The auditing of the
8 training program, including the administration of
9 certification examinations, we have always had that right to
10 go in and audit the programs, and then to administer the
11 certification exam. We have done it with the first few
12 groups of applicants at all these training centers, but we
13 have not done it on a continuous basis such as this
14 suggests.

15 COMMISSIONER BRADFORD: But on the ones that go to
16 rulemaking, then, full implementation would be two years
17 plus with rulemaking, as the normal course?

18 MR. COLLINS: Yes.

19 MR. CASE: I must say, I'm really speaking for Bob
20 Minogue, but I have heard him answer that question enough
21 times that way that I think he would give that answer.

22 MR. COLLINS: Next slide, please.

23 (Slide.)

24 Recommendation 6, require instructors to hold
25 senior operator licenses as a first step in establishing

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1 instructor qualifications.

2 COMMISSIONER GILINSKY: Which instructors are you
3 speaking of?

4 MR. COLLINS: We presently are attempting to zero
5 in on which ones we want. Certainly, the training
6 coordinator at the site, who is responsible for all of the
7 training. We don't envision, for example, requiring the
8 chemists and health physics supervisor who might give
9 lectures on that subject to also hold a senior operator
10 license.

11 But we are trying to select which ones, as a first
12 step to establish technical competence. We are going to
13 work, also, closely with ANS-3 and the Institute of Nuclear
14 Power Operation on the development of comprehensive
15 requirements.

16 COMMISSIONER BRADFORD: But again, this first step
17 is two years, though?

18 MR. COLLINS: Yes, to fully implement it and to
19 make it a requirement -- many of these instructors do own
20 senior licenses. To make it a requirement would be
21 rulemaking, because it's not addressed at all in the
22 regulations.

23 Next slide, please.

24 (Slide.)

25 COMMISSIONER AHEARNE: Paul, you did raise a

MIA mte

1 question about whether or not you shouldn't have more than a
2 yearly re-examination, and you concluded that you did not
3 need to do that?

4 MR. COLLINS: More frequent.

5 COMMISSIONER AHEARNE: More frequent.

6 There, I gather, is a balancing at some point.
7 You feel there isn't enough new information, a person has
8 not become stale enough; but on the other hand, when you
9 stretch it out further, you could actually have more NRC
10 giving the exam rather than the licensee.

11 What ends up having you conclude that a year, with
12 an audit, is the best? Is this more subjective feel?

13 MR. COLLINS: Yes, it is a subjective feel.

14 Individuals that don't do too well in a particular area of
15 the examination go to lecture series during the yearly
16 period. In order to get out of the lecture series classes,
17 they have to exhibit that they have picked up the knowledge
18 in those areas. A year is a a reasonably short period of
19 time.

20 The recommendations 8 and 15 involve simulators.
21 I refer to the establishment of the explicit exercises
22 earlier. We plan to start on these exercises immediately
23 and to be complete within three months. No rulemaking is
24 required.

25 I might add that ANS-3 is also working on a

MM mte

1 similar listing of exercises. We also want to review and
2 revise the ANSI/ANS Standard 3.5 that addresses nuclear
3 power plant simulators and develop a regulatory guide along
4 the same lines.

5 Once again, we can start this review immediately.
6 If the ANS review is going slowly, we will just come out
7 with our own regulatory guide on the matter. Neither of
8 those require any rulemaking.

9 Next slide, please.

10 (Slide.)

11 Recommendations 10, 12, 13 and 14 all involve the
12 examinations, the NRC examinations. None of these require
13 rulemaking to implement. The notification of results does
14 require a change to Part 9 of our regulations, simply
15 publishing in the Federal Register that one of the routine
16 uses of exam results will be to notify the facility
17 management of the results.

18 COMMISSIONER GILINSKY: Would you make those
19 results public?

20 MR. COLLINS: I don't see any --

21 COMMISSIONER GILINSKY: Without the names?

22 MR. COLLINS: Yes, we can, without the names.

23 COMMISSIONER GILINSKY: You have done it in the
24 past?

25 MR. COLLINS: Yes, we have. On the April 20th

MM mte

1 meeting we did.

2 The recommendations include increasing the scope
3 of examination. Presently -- on this second option,
4 presently an operator who applies for a senior operator
5 license requests waiver of the operator written portion and
6 waiver of the oral examination. And to date, unless we have
7 seen cause in the man's docket, we granted the waiver of
8 both the written examination and the oral examination.

9 We feel we have been too generous with the waiver
10 provisions and are recommending that the senior operator
11 applicants also take an oral examination.

12 COMMISSIONER AHEARNE: I notice in your
13 description of the discussion of the material question, how
14 much material should be provided, whether or not this isn't
15 going to be an overemphasis -- I was a little disturbed, I
16 guess, by part of the flavor. It seemed to me at least
17 there might be some concern perhaps the technical material
18 might be a little bit more than what the operator would ever
19 need to know. And it would seem to me that you want to make
20 sure the operator does have more technical information than
21 he will ever need to know, because you want to make sure
22 that it isn't stretched beyond his knowledge, I would think.

23 MR. COLLINS: There are certain divisions between
24 the operator and the senior operator. The requirements of
25 the senior are more demanding.

MM mte 1 COMMISSIONER AHEARNE: Yes.

2 MR. COLLINS: Also, we're recommending increasing
3 the passing grade on the written examination to 80 percent
4 overall and 70 percent the first time, establishing a
5 minimum grade in each category in the exam of 70 percent.

6 COMMISSIONER AHEARNE: Only one other line down
7 there, and that is fixed time of the exam.

8 MR. COLLINS: I think that's the only one.

9 MR. CASE: Paul, how much -- if we made this
10 change, how many people in the past would --

11 MR. COLLINS: If this criteria had been in effect
12 over the last three years, 49 percent of the operators would
13 not have received licenses on the first examination, and 40
14 percent of the senior operators would not have received
15 licenses.

16 I can't give you a breakdown on whether that was
17 because their overall grade was under 80 or because they had
18 failed a particular category or had received less than 70 in
19 a category.

20 COMMISSIONER AHEARNE: There was also an
21 interesting comment in your paper. You say if you had
22 required a grade of 70 percent in every category, 32 would
23 have passed the senior portion of the examination, but would
24 have failed the operator portion.

25 MR. COLLINS: Yes. There were categories in that

MM mte 1 group.

2 And, of course, the notification of results.

3 MR. SNYDER: Paul, the question I had earlier was,
4 which of these requirements would be backfit. I don't know
5 if that's quite the right term in this context.

6 MR. COLLINS: We would --

7 MR. SNYDER: It looks to me possibly the first and
8 the third on that list are candidates for that.

9 MR. COLLINS: We have the requalification program
10 going, and it would be our intention that when a passing
11 grade was approved, a new passing grade on the NRC
12 examination, we would make this the new passing grade on
13 requalification examination.

14 COMMISSIONER GILINSKY: Let me ask you: What
15 opportunity does an operator have to take another exam if he
16 fails a requalification exam?

17 MR. COLLINS: The programs call for putting him
18 into an accelerated training program on the areas that he
19 has exhibited weaknesses, and administering another exam to
20 him. We didn't delve into the length of these training
21 programs because of the various combinations that would
22 result in a man getting less than 70 percent on the
23 examination.

24 COMMISSIONER GILINSKY: How many operators have
25 ever been dropped out through failure to meet the

MM mte

1 requalification requirements?

2 MR. COLLINS: I think they're based on four-year
3 statistics. There are 25 operators and 28 senior
4 operators, out of about 2,000 total, 1400 seniors and 1100
5 operators.

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1 COMMISSIONER AHEARNE: About 2 percent.

2 COMMISSIONER GILINSKY: Now you said before that
3 about half the applicants would have failed the examination
4 if these requirements were in force?

5 MR. COLLINS: Yes.

6 COMMISSIONER GILINSKY: What opportunity do they
7 then have to take another examination, the initial examination?

8 MR. COLLINS: The initial examination, they may
9 make an application for second examination two months after
10 they failed the first exam. If they fail the re-examination,
11 then they must -- there's a six-months waiting period. If
12 they fail that examination, there's a two-year waiting
13 period.

14 COMMISSIONER GILINSKY: Now are we going to pay
15 special attention to the requalification exams that are going
16 to be -- it seems to me the initial group of requalification
17 exams is the most important because you have operators out
18 there with present requirements but have not made it.

19 MR. COLLINS: We would intend to do the same thing
20 that we did when we initiated the requalification program.
21 We did go to every plant within the first year and audit
22 the requalification exam to make sure that the program was
23 being implemented, as it was our intention that they be
24 implemented.

25 We would do the same thing with this new passing

gsh 1 grade, a much closer audit than normally.

2 COMMISSIONER GILINSKY: It seems to me you've really
3 got to be very firm because while the utilities, on the one
4 hand, want to have qualified operators, on the other hand,
5 don't want to lose their operators.

6 MR. COLLINS: As I indicated, we do notice them get
7 more generous as the grades start getting between 80 and
8 70 percent.

9 COMMISSIONER AHEARNE: And when you come out with this
10 new, tougher requirement, they may even get more generous.

11 MR. COLLINS: Possible, very possible.

12 COMMISSIONER AHEARNE: You have to really watch them.

13 MR. COLLINS: The next slide, please.

14 COMMISSIONER GILINSKY: Well, in fact, it raises the
15 question whether the entire requalification program ought not
16 to be NRC-administered.

17 MR. CASE: At least until you get it rolling.

18 COMMISSIONER GILINSKY: That's right.

19 MR. COLLINS: In what —

20 MR. CASE: Until you're assured that everybody could
21 pass this new standard. Your opportunity to find that is in
22 the requalification.

23 COMMISSIONER GILINSKY: Not necessarily administered
24 by NRC employees, but certainly NRC-run.

25 MR. COLLINS: The examination?

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1 COMMISSIONER GILINSKY: Yes, and not run by the
2 utilities themselves.

3 MR. COLLINS: When you say NRC-run --

4 COMMISSIONER GILINSKY: Well, we may be using
5 part-time persons for various other locations. But it seems
6 to me that to leave it entirely to the utility even with an
7 audit is questionable.

8 MR. COLLINS: But if you audit -- when we audit, we
9 audit each and every plant. I'm not talking about selecting
10 half a dozen utilities. We're going to go to each and every
11 facility and select certain tests to review.

12 Now we will review the scope of the examination to
13 make sure it is up to our new standards. And we will review
14 the answers to the examination to make sure that they are
15 expecting decent answers from the licensees.

16 Then we will select half a dozen or so examinations
17 and actually grade them ourselves. And we intend to do this
18 in a rapid manner at the conclusion of the administration of
19 their next annual exam after the new criteria is in
20 effect.

21 MR. CASE: If you're not satisfied with half a
22 dozen --

23 MR. COLLINS: If we're not satisfied with what we
24 see on the half dozen based on what we see, we could take
25 any action we wanted at that time. And I'm trying to indicate

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1 that if we use the audit approach, if we run into a problem
2 area, I can concentrate the manpower onto that problem area;
3 whereas, if you say, do it 100 percent, I'm spread thin
4 already and there is no way to really zero in on a problem
5 area.

6 (Slide.)

7 The final recommendation we made was to develop
8 training programs for the present part-time NRC examiners
9 and also to explore the use of utility personnel as part-time
10 examiners or similar to the manner that the FAA users,
11 commercial airline pilots, to assist them on making their
12 pilot check-out program.

13 COMMISSIONER GILINSKY: Will you be setting specific
14 requirements for NRC examiners?

15 MR. COLLINS: Yes, we would. We would be saying that
16 they would have to give us X-amount of time for training and,
17 of course, if we are going to go to that length to train them,
18 then we would expect X-more amount of time for examining.

19 COMMISSIONER GILINSKY: Would you expect them to
20 pass the examination?

21 MR. COLLINS: We weren't contemplating an examination.

22 COMMISSIONER AHEARNE: Would you expect them?

23 MR. COLLINS: I think they could. I would expect
24 a part-time examination. —

25 COMMISSIONER GILINSKY: Why not have them —

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1 MR. COLLINS: We hadn't thought out the total training
2 program. I have no fears about them passing the examination.

3 COMMISSIONER GILINSKY: Don't let them make up the
4 questions.

5 (Laughter.)

6 MR. COLLINS: We'd be satisfied with an audit.

7 (Laughter.)

8 MR. COLLINS: I believe you raised the point last
9 Thursday, Commissioner Ahearne, that in this study we will
10 address no part-time examiners.

11 This recommendation really is to conduct feasibility
12 studies to see, number one, can the part-time examiners we
13 have now give us the time we need from them; and two, what are
14 the problems, particularly conflict of interest, in using
15 utility personnel.

16 COMMISSIONER AHEARNE: In your consideration of
17 using utility personnel, even there, that would be on a
18 different utility.

19 MR. COLLINS: Oh, yes. They wouldn't be examining
20 their own people. And that concludes my prepared remarks.

21 COMMISSIONER AHEARNE: Could you say a few words
22 about the subject you brought up at the end of the paper;
23 namely, the question of placing requirements on more than
24 just the operator? For example, the maintenance personnel,
25 the facility operator?

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1 MR. COLLINS: This is being studied right now by
2 the Lessons Learned group. I talked with a couple of members
3 on the team. And what they are proposing at this time is
4 that each utility furnish NRC with the tasks list for each
5 auxiliary operator and support personnel at the facility.
6 And then after this task list is developed, to indicate to
7 NRC what training is done to assure themselves that task is
8 going to be accomplished.

9 The Congress, in our appropriation legislation, I
10 believe, is going to ask for a study or report from the
11 commission on the feasibility of licensing other people in
12 nuclear power plants.

13 So this is where we stand right now on that area.

14 COMMISSIONER AHEARNE: Have you read the report on
15 Three Mile Island?

16 MR. COLLINS: The NUREG 600? I read through it one
17 time as rapidly as I could. I haven't had a chance to really
18 get to it.

19 COMMISSIONER AHEARNE: I thought Vic Stello, when
20 he was introducing it, indicated that to a large extent,
21 there was significant operator error.

22 MR. COLLINS: Yes.

23 COMMISSIONER AHEARNE: Now given that, what
24 conclusions would you in charge of the licensing branch,
25 operator licensing branch, conclude?

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1 MR. COLLINS: Based on the items that I read, some
2 of the more important areas that we should be covering are
3 areas that really are not associated with knowledge of the
4 reactor as much as knowledge of how you conduct yourself
5 around the reactor; namely, how do you take shift turnover?
6 How do you use your logs? How do you recognize if something
7 is off-normal when you walk into the control room on shift?

8 I think there are an awful lot of precursors to this
9 accident that maybe any one of them could have prevented
10 performing -- well, the shift supervisor performing maintenance
11 or having trouble on the feedwater system and not working up
12 some sort of a job plan on how to attack it.

13 And certainly, not even to the extent of checking
14 that the auxiliary feedwater would come on if you lost main
15 feedwater, areas of this as well as technical knowledge.

16 COMMISSIONER AHEARNE: Given those kinds of things,
17 do you believe that these revisions that you recommended
18 address those issues?

19 MR. COLLINS: Yes, to some extent, and perhaps in
20 the categories and not addressed here specifically. But we
21 do have these types of questions readily available to use in
22 the existing categories of the exam and in the make-up of the
23 examination.

24 I'm thinking of normal emergency operating procedure
25 section, the administrative controls during the conduct of

gsh 1 the operating tests. We have a section on our checklist for
2 responsibilities.

3 So all of these areas can be covered to more of
4 a degree than we have been covering.

5 COMMISSIONER AHEARNE: But you would — I don't want
6 to put words into your mouth. Would you say that this paper,
7 330(e), represents from your standpoint the lessons to be
8 learned as far as changes in operator licensing?

9 MR. COLLINS: Not all of the lessons to be learned.
10 This is our first cut to you and there will probably be
11 others.

12 COMMISSIONER AHEARNE: As far as you know at the
13 present time?

14 MR. COLLINS: Yes. I think this addresses several
15 weaknesses that were in our program. I think we are going
16 to have a much better program with these recommendations put
17 into effect.

18 COMMISSIONER BRADFORD: To the extent that you have
19 had to study NUREG 0600, were you comfortable with the
20 allusions regarding operator error?

21 MR. COLLINS: That the operators played a substantial
22 role, yes?

23 COMMISSIONER BRADFORD: And with the individual
24 designations of operator error?

25 MR. COLLINS: I can't go down each and every one of

gsh

1 them, but, yes, the operators contributed to the accident.
2 No doubt about that.

3 COMMISSIONER GILINSKY: Well, the commission will
4 review this paper and get back to you on this.

5 MR. COLLINS: Thank you.

6 COMMISSIONER AHEARNE: I will provide a number of
7 questions to you. On one set there, Admiral Rickover has
8 recently gone through some recommendations as to what he
9 thinks might be possibly appropriate. And I'd be interested
10 in hearing your comments on it.

11 MR. COLLINS: Yes, sir.

12 (Whereupon, at 3:30 p.m., the hearing on the
13 matter was concluded.)

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