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Meeting Title: Brief on Reactor Operator
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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

Title: BRIEFING ON REACTOR OPERATOR REQUALIFICATION PROGRAM

Location: ROCKVILLE, MARYLAND

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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BRIEFING ON REACTOR OPERATOR
REQUALIFICATION PROGRAM

- - - -

PUBLIC MEETING

Nuclear Regulatory Commission
One White Flint North
Rockville, Maryland

Friday, February 15, 1991

The Commission met in open session,
pursuant to notice, at 10:00 a.m., Kenneth M. Carr,
Chairman, presiding.

COMMISSIONERS PRESENT:

KENNETH M. CARR, Chairman of the Commission
KENNETH C. ROGERS, Commissioner
JAMES R. CURTISS, Commissioner
FORREST J. REMICK, Commissioner

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STAFF SEATED AT THE COMMISSION TABLE:

SAMUEL J. CHILK, Secretary

ANDREW BATES, Office of the Secretary

JOE SCINTO, Office of the General Counsel

DR. THOMAS MURLEY, Director, NRR

JAMES SNIEZEK, Deputy ED for NRR, Regions & RES

WILLIAM RUSSELL, Associate Director for Inspection and
Technology Assessment, NRR

JACK ROE, Director, Division of Lic. Perf. & Qual.
Eval., NRR

ROBERT GALLO, Chief, Operator Licensing Branch. (OPQ),
NRR

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

10:02 a.m.

CHAIRMAN CARR: Good morning, ladies and gentlemen.

Today the NRC staff will brief the Commission on the status of the NRC Reactor Operator Requalification Program. The NRC requalification program evaluates the effectiveness of a facility's licensed operators requalification training program to maintain the competency and currency of licensed operators. The NRC staff continues to evaluate this program to ensure that the examinations are performance-based oriented operations and valid assessments of the knowledge and abilities of licensed operators.

The Commission encourages feedback on this program, including that from groups such as NUMARC and INPO, as well as individual operators at the sites. Recent feedback has focused on such industry concerns as examination and due stress, the use of critical steps to determine operator performance, and the stability of the requalification program which may impact the licensee's examination preparations.

I understand that copies of the briefing slides to be used during the staff presentation are

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1 available at the entrances to the meeting room.

2 Do my fellow Commissioners have any
3 opening remarks?

4 If not, Mr. Sniezek, please proceed.

5 MR. SNIEZEK: Okay. Good morning, Mr.
6 Chairman, Commissioners.

7 In addition to briefing the Commission
8 today on the status of the operator requalification
9 program, we'd like to discuss with the Commission some
10 of the initiatives the staff is taking to ameliorate
11 some of the undesirable program impacts that both the
12 nuclear industry and the staff has seen during the
13 conduct of this program. A special note is a pilot
14 program to evaluate crew performance instead of
15 individual operator performance during the dynamic
16 simulator portion of the operating test.

17 With me today, on my left, are Doctor
18 Murley, the Director of NRR, Bill Russell, Associate
19 Director, NRR, and on my right, Jack Roe, the
20 cognizant division director, and Bob Gallo, the
21 Operator Licensing Branch Chief. I should note that
22 Mr. Gallo has just recently been assigned to that
23 position.

24 With that, I'd like to turn the meeting
25 over to Mr. Russell.

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1 MR. RUSSELL: I'd like to just identify
2 what is going to be the flow of the presentation to
3 the Commission. We intend to cover background of the
4 program, some of the history. We did indeed have some
5 problems with the initial start-up of this program.
6 We feel that the bulk of those problems have been
7 addressed, that we have a viable program, but we also
8 see that there is clearly a need for some further
9 improvement in refinement. I'll ask Jack Roe to cover
10 some of that background.

11 Following that we'll have a discussion of
12 what the program is today, what we have found from the
13 examination results, and some of the interactions that
14 we've had with the test, research and training reactor
15 community.

16 Following that information to set the
17 stage, we'll then go into the initiatives and what
18 I'll characterize as current issues, and I'll be
19 covering those.

20 Jack?

21 MR. ROE: Thank you, Bill.

22 I'd first like to talk about our pre-1987
23 licensing program.

24 (Slide) I'd like to have the first
25 narrative slide.

1 Point of background, prior to 1987 we
2 conducted requalification examinations. We were
3 primarily focused on solely evaluations. They were
4 often administered in conjunction with initial
5 examinations at the facilities. The exams were
6 developed by NRC examiners based upon facility
7 reference materials. These exams consisted of
8 written, simulator and walk-through evaluations
9 generally in accordance with the methodology for
10 initial examinations. Written exams were developed
11 from a subset, approximately 60 percent of the
12 questions developed for the initial examination and
13 were administered in a shorter period of time.

14 In 1987, there was a rule change that made
15 some regulatory requirement changes to the process.
16 First is that each licensee was required to develop a
17 requalification program that was to go on a continuous
18 period not to exceed 24 months. Each operator was
19 required to successfully complete that requalification
20 program. Part of that requalification program was a
21 written examination, generally at the end, and an
22 annual operating test.

23 COMMISSIONER REMICK: Excuse me, Jack.
24 How many of the licensees follow the 24 month cycle
25 versus 12 month cycle on that? Is there -- have they

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1 all gone to the 24 month cycle?

2 MR. ROE: To the best of our knowledge.
3 They've all gone to the 24 month cycle with the annual
4 operating test.

5 COMMISSIONER REMICK: Yes.

6 MR. ROE: Another important change to the
7 regulations was the requirement that to relicense a
8 current operator they had to have successfully
9 completed an NRC-administered requalification
10 examination. So, that put us into the program of
11 examining individuals versus our focus that had been
12 previously at the evaluation of facilities using the
13 results from the individuals.

14 COMMISSIONER REMICK: Question there. The
15 regulations don't require that though, is that right?

16 MR. ROE: No, the regulations specifically
17 require that an individual to be relicensed for their
18 next term must pass an NRC-administered
19 requalification examination.

20 COMMISSIONER REMICK: I thought it was
21 conditional.

22 CHAIRMAN CARR: No, the interval is not to
23 exceed six years.

24 COMMISSIONER REMICK: No, the six years I
25 understand, but --

1 MR. RUSSELL: Plus pass an examination
2 administered by the NRC at some point in the course of
3 the six year license for the license to be renewed.

4 COMMISSIONER REMICK: Well, as I read
5 55.59 -- now, maybe there's a later section I
6 missed -- I was a little surprised to see that it
7 says, "In lieu of the Commission accepting a
8 certification by the facility licensee that the
9 licensee has passed written examinations and operating
10 tests administered by the facility licensee within its
11 Commission-approved program," and then it goes on,
12 "The Commission may administer a comprehensive
13 requal."

14 MR. ROE: That's right. But if we look
15 further in the citations, I think 57(b)(2), number 4,
16 it does state that to be relicensed you have to pass
17 an NRC-administered exam.

18 COMMISSIONER REMICK: Okay. Well, that's
19 what I thought it was and yesterday when I pulled it
20 out I was surprised to read what I did. So, it's
21 later, you say?

22 MR. ROE: Yes.

23 We commenced to give examinations in
24 accordance with the rule after it was implemented.
25 Very soon thereafter, using the process that I

1 described as pre-'87, we received a lot of complaints
2 from the licensed industry. In September of '87, the
3 industry requested a meeting with the staff, which we
4 held, and they presented to us a range of problems
5 they had with the examination, primarily focused in
6 two particular areas, operator stress and the fact
7 that they did not believe that the methodology we were
8 using was based on job performance. They wanted a
9 requalification program that would look at the current
10 responsibilities of the operator, not one that was
11 based on an initial type of examination.

12 We concluded at that meeting, or right
13 after that meeting, that the existing methodology was
14 having a negative influence on -- or was possibly
15 having a negative influence on plant safety and that
16 one of the key issues was operator stress and another
17 one was the fact that the methodology should be used
18 in a systematic approach to determine what was
19 required as far as continuing training for these
20 licensed operators.

21 The requalification exams at that time
22 were immediately suspended until we could evaluate the
23 situation and develop a new examination methodology
24 that met their concerns.

25 (Slide) Next slide, please.

1 We developed a new methodology. We used a
2 team approach working with our Headquarters-based
3 certified examiners and our region-based certified
4 examiners. We developed a draft methodology and we
5 took the approach in that methodology that we should
6 accomplish two tasks, to evaluate the facility's
7 effectiveness of providing requalification training in
8 accordance with the regulations, and also we should
9 make a determination of the individual's capability by
10 administering the NRC examination so that we could
11 relicense in accordance with the regulations.

12 Our approach was derived on the same lines
13 as the systematic approach to training that we have
14 endorsed with the INPO accreditation process. The
15 exams in this case would be developed with the
16 facility. Previously, we would acquire the facility
17 information and develop the exams ourselves. So, we
18 took out a methodology, took out upon a methodology
19 where we co-developed and co-evaluated the licensed
20 operators.

21 In this particular methodology, we endorse
22 and encourage the facility providing to the NRC the
23 exam that they think is appropriate. We also request
24 that they provide a senior reactor operator who is
25 generally from the operations department to be part of

1 the evaluation team and also we encourage an
2 individual from the training department to be part of
3 the team so that we can have greater assurance that
4 the examination is relevant as far as job performance
5 and that the lessons learned from the examination
6 process get fed back into the training program.

7 We conducted pilot examinations in late
8 1987 and early 1988 at five facilities, one at each
9 region across the country. They were Salem, H.B.
10 Robinson, Perry, Fort Calhoun and San Onofre. We
11 learned a great deal from these pilot examinations and
12 we refined the methodology after each one. We also
13 worked closely with NUMARC and INPO on this particular
14 methodology. They co-sponsored an operator
15 requalification workshop during the summer of 1988
16 that was very useful.

17 We started our program to -- we started up
18 our program out of the pilot phase with what we call
19 the Revision 5 to our examination standard. That was
20 really the culmination of our pilot program. We
21 implemented that in October of 1988. The regions
22 commenced to conduct the requalification examinations
23 of individuals and also to evaluate facilities as they
24 did the individual evaluations. Overall, the program
25 appeared to be effective and well received by the

1 industry. However, over time, we find that there were
2 still some changes, some improvements needed to be
3 done with that particular program.

4 The Duke Power Company raised the issue of
5 examination stress as a concern in a February 16th,
6 1990 letter. They had some very relevant parts to
7 that. We had been concerned about stress that we had
8 been seeing in the examinations conducted across the
9 country. To determine other changes that were needed
10 in the process, we also continued to work closely with
11 NUMARC and INPO to identify and resolve any of the
12 concerns that we saw from the industry. Meetings were
13 held with NUMARC Working Group on Operator Licensing
14 Issues. Public meetings were held in Dallas in
15 February of 1990 and Rockville in May of 1990 and
16 again Rockville in February of 1991.

17 We looked at the lessons to be learned and
18 decided that we would have a subsequent revision to
19 the examiner standards and we called that Revision 6.
20 It's the one that's currently in place. Revision 6
21 was issued in June of 1990, after discussions with the
22 working groups that we had previous relationships
23 with. The implementation, however, was delayed until
24 the 1st of January 1990. One of the lessons that we
25 had learned is to try to provide some stability to the

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1 program, to allow the people to absorb, review and
2 analyze the changes in the examination process and
3 have the time to evolve their own training programs
4 where it was necessary.

5 COMMISSIONER CURTISS: You say that it was
6 issued in June of '90 and implementation delayed?

7 MR. ROE: Until the 1st of this year.

8 COMMISSIONER CURTISS: '91?

9 MR. ROE: Yes, until January of '91.

10 We addressed many of the industry's
11 concerns and measures in this particular revision were
12 taken to mitigate undue examination stress. In our
13 previous method, we had common job performance
14 measures that we gave to all the candidates for
15 relicensing. Because of the commonality, we required
16 basically sort of a security situation so that people
17 would not know what others were getting. This caused
18 undue stress. Therefore, we determined that it was
19 not necessary for the effectiveness of our program.
20 We dropped the common JPMS. Therefore, the operators
21 could be in a normal situation as they went through
22 the examination.

23 We previously in the old methodology and
24 the Revision 5 methodology, spent some significant
25 amount of time, after the crew had gone through one of

1 their scenarios in the simulator and was waiting for
2 another scenario, spent a lot of time talking about
3 what the performance was and to details. This caused
4 undue stress because of the wait when they had nothing
5 substantial to do and knew that they were going to be
6 tested again in another simulator scenario. So, we've
7 streamlined those and they are now just briefings.
8 They're very, very short and then we get on with the
9 next evaluation.

10 We also have encouraged licensees to
11 modify work crew schedules to avoid bringing in, say,
12 the second crew that we are going to evaluate at the
13 time that they bring in the first crew we're going to
14 evaluate, therefore having them sit around for awhile
15 just waiting for the NRC. So, we've been able to
16 accommodate that and endorse that with the utilities.

17 Lastly, I'd like to bring up is that we
18 have reduced the number of examiners for the facility.
19 We've gone to what we call alternative B. Alternative
20 A essentially is there is one examiner for each
21 candidate to be relicensed and our alternative B,
22 which we had proposed to the Commission and we
23 received approval, was to go where we had one examiner
24 for every two candidates, so essentially cutting about
25 in half the number. That has reduced stress a great

1 deal, especially when you consider that there is the
2 candidate, there's the NRC evaluator and there's a
3 facility evaluator and then there are observers in the
4 process. It becomes quite congested. This has
5 reduced that congestion and reduced the stress.

6 As I discussed earlier, in February of
7 this year, on February 6th, we continued our dialogue
8 with NUMARC to describe some of the issues that we
9 need to be aware of and look towards changes we would
10 make in a program. We also have established a new
11 relationship. Last week we met with the President and
12 the Vice President of the PROS organization and have
13 determined that it would be very useful for the NRC to
14 get views from that organization and very important
15 for the organization to understand firsthand the views
16 of the NRC in the operator licensing arena. We plan
17 to meet with them again in the near future and then on
18 a periodic probably at least twice a year basis.

19 That summarizes my overview of the
20 background. I'd like to turn it to Bob Gallo who will
21 now give you a discussion of the current program.

22 COMMISSIONER REMICK: I have a question,
23 Jack, for you. In your pre-1987 history, am I correct
24 though that prior to 1983 licensees administered the
25 requalification examination?

1 MR. ROE: That's correct.

2 MR. GALLO: Mr. Chairman, Commissioners, I
3 will discuss the program overview and it starts on the
4 fourth slide.

5 (Slide) The facility program evaluation
6 we do now is, what we're looking at, is a facility's
7 ability to prepare written examinations, job
8 performance measures which are tasks performed either
9 in the control room or in the plant, submit our
10 scenarios and the facility's ability to properly train
11 and evaluate their licensed operators. A minimum
12 sample size of 12 operators is required for a program
13 evaluation.

14 To be evaluated as a satisfactory program,
15 we have three basic numerical criteria. One is an
16 operator pass rate of 75 percent, crew failure rate on
17 the simulator of no higher than one-third, and be at
18 least as conservative on 90 percent or more of its
19 pass-fail decisions per examination section.

20 The actions that are considered in
21 response to an unsatisfactory requal program are
22 discussed in the examiner standards and they would
23 include such things as operational evaluations of
24 additional crews or reconstituted crews and they
25 include follow-up facility training program

1 inspections.

2 The individual operator proficiency is
3 measured by an examination generated by a team
4 consisting of NRC examiners and facility training and
5 operations representatives from the facility-developed
6 examination materials. They are based on the
7 facility's job task analysis and what we've asked the
8 facilities to develop a sample plan for the material
9 that they've trained on over the last year or two.
10 The NRC may substitute up to 20 percent of the
11 examination. All parts of the examination, however,
12 are ultimately reviewed by the facility
13 representatives. The NRC does have the final say in
14 the exam material itself. Each part of the
15 examination is administered in greater than parallel
16 by the NRC and the facility.

17 The first section of the examination is
18 the written examination. It's a two section open
19 reference written exam and the minimum overall passing
20 grade is 80 percent. The first part is a static
21 simulator and in the static simulator we're evaluating
22 knowledge of plant systems, instrument and control
23 activities. What we have in the program right now is
24 that the facility will develop two frozen simulator
25 set-ups, approximately one hour each.

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1 Now, why we've gone to the static
2 simulator is that it provides an operationally
3 oriented written exam, it places the operator in a
4 normal operational environment, and provides at least
5 some realistic visual information via the control
6 panels for them to respond to in the questions that
7 they're responding to. We still do also have a
8 classroom open reference examination which evaluates
9 knowledge and use of plant procedures, tech specs,
10 administrative controls in that area.

11 COMMISSIONER REMICK: The static simulator
12 exam which I thought was a good idea, but hasn't there
13 been some recent criticism of that? You come in and
14 look at something frozen that without knowing what
15 preceded that that sometimes it's difficult, that the
16 frozen situation might indicate a couple possible
17 scenarios. Is that the criticism? I know I've
18 recently read or heard some criticism of the
19 difficulty of the static exam from some aspect like
20 that, but I don't remember details.

21 MR. GALLO: I think right now there's kind
22 of a split decision. Some facilities -- in our
23 feedback from the NUMARC organization, there's
24 probably about a 60 to 40 percent in favor of the
25 static simulator, from their estimates anyway. But

1 yes, there have been. I think that was an original
2 criticism and we've tried to steer away from the
3 "guess what the transient was" type of question and
4 more into the how and why the instrument or controls
5 or facility got into the condition it's in now.

6 COMMISSIONER REMICK: When that's
7 administered, I assume they have the chart showing
8 what the previous history was.

9 MR. GALLO: Yes. That's part of the
10 development of the scenario.

11 COMMISSIONER REMICK: Do they have access
12 to the process computer if they wanted to see any
13 printout from that? I'm just curious.

14 MR. GALLO: I believe they have access to
15 the computer. Now, how much history it has in it --

16 COMMISSIONER REMICK: Yes. Okay.

17 MR. GALLO: -- may be limited by the
18 simulator.

19 COMMISSIONER REMICK: Yes. Is the
20 simulator run up to that point and then frozen or is
21 it initiated at that frozen position?

22 MR. GALLO: It's run as part of the
23 preparation week.

24 COMMISSIONER REMICK: I see.

25 MR. GALLO: And graphs are developed --

1 COMMISSIONER REMICK: I see.

2 MR. GALLO: -- and have to get back to
3 that point in the computer's memory so that it matches
4 where the exam was --

5 CHAIRMAN CARR: Can you give us an example
6 of what might be one of those static simulator
7 problems?

8 MR. GALLO: I may have to ask for help
9 from the staff.

10 CHAIRMAN CARR: Okay.

11 MR. GALLO: Bill, do you have a --

12 MR. DEAN: An example would be --

13 CHAIRMAN CARR: Would you identify
14 yourself for the recorder, please?

15 MR. DEAN: Excuse me?

16 CHAIRMAN CARR: Identify yourself, please.

17 MR. DEAN: My name is Bill Dean. I'm a
18 Section Chief for Regional Support and Oversight in
19 the Operator Licensing Branch.

20 An example of a frozen scenario would be,
21 for example, if we were to initiate a tube rupture in
22 a dynamic scenario, let the tube rupture proceed and
23 we would have facility training staff take the actions
24 that the operators normally would take in the
25 procedure and then at a certain point we would freeze

1 the simulator so that all the graphs would trend what
2 had happen. It would have the enunciators indicate
3 the status of the plant, all the controls and valves
4 would be in the right positions, and then we would set
5 up for the candidates or for the operators, tell them,
6 "Here's the event that happened. You had a tube
7 rupture and maybe you lost this vital instrument panel
8 or something. The plant is now at this part of the
9 procedure. We have implemented all the steps up to
10 step 13 of EOP-3," and then we provide the questions,
11 why did this happen, why did this system respond like
12 this and so on.

13 COMMISSIONER REMICK: So, it's not
14 guessing at the scenario?

15 MR. GALLO: No.

16 MR. DEAN: No. That was something that we
17 had to clarify. We had to clarify for everybody--
18 the intent was not name that transient, but identify
19 what the transient was and just talk about system
20 response.

21 CHAIRMAN CARR: And give me an example of
22 some of those questions that you ask once you're
23 looking at the board.

24 MR. DEAN: Let's say, for example, one of
25 the pumps -- let's say a safety injection pump failed

1 to start. We may ask a question like, did all the
2 safety systems respond as they should have for this
3 event. Another example maybe would be along the lines
4 of -- let's say we had this tube rupture. Let's say a
5 certain component failed in the implementation of this
6 procedure. What would be the system response to that
7 failure? Those would be examples.

8 CHAIRMAN CARR: If it had failed.

9 MR. DEAN: If it had failed.

10 MR. RUSSELL: Mr. Chairman, we can provide
11 you some recent --

12 CHAIRMAN CARR: Okay. That might help.

13 MR. RUSSELL: -- submissions which would
14 help to indicate the types of questions that are being
15 asked during the free simulator portion of the
16 examination. I suggest we supplement that with that
17 information.

18 CHAIRMAN CARR: Okay.

19 MR. SNIEZEK: Commissioner Remick, let me
20 mention something. I was recently out on one of the
21 West Coast facilities that has a pretty good
22 reputation for their training department and a very
23 good record as far as their operators passing the
24 examinations. I pursued this question with the head
25 of the training department because I had heard the

1 same feedback. The response I got from him, he said
2 initially some of the people, the operators, weren't
3 familiar enough with that type of a situation, the
4 static simulator, and it was difficult for them. He
5 had the same problem with his crew. But as he
6 incorporated more into their training and understand
7 what's coming, they responded very well to it and
8 thought it was worthwhile.

9 CHAIRMAN CARR: Yes, but that just helps
10 them pass the exam. Does it make them better
11 operators?

12 MR. SNIEZEK: Well, hopefully everything
13 we do helps make them better operators in judgment.

14 CHAIRMAN CARR: Okay. Let's proceed.

15 MR. GALLO: On the operating test, the
16 operating test has two parts. The first part is a
17 walk-through where we do job performance measures. In
18 alternative A we had been doing ten job performance
19 measures per candidate. Now we're doing, for
20 alternative B, doing five job performance measures per
21 operator. Each job performance measure has two or
22 more prescribed questions that go with it. The job
23 performance measures are done in the mix of either in
24 the plant or the control room or in the simulator. We
25 try to maximize use of the simulator so that we can

1 get actual feedback from the equipment that's being
2 manipulated.

3 The alternative B is being implemented now
4 where we are doing one examiner and two operators,
5 each operator doing five JPMS, as was mentioned.

6 COMMISSIONER REMICK: So, in the walk-
7 around you have two operators, one examiner and he
8 keeps asking questions?

9 MR. GALLO: Normally what happens is the
10 first operator performs the task and the other
11 operator responds to the questions on that task, but
12 not on the first operator's performance. He's not
13 grading or judging the first operator's performance,
14 he's answering independent questions on the system or
15 the task.

16 Okay. The dynamic simulator normally
17 consists of two scenarios of approximately 50 minutes
18 each that evaluate individual operator competency and
19 crew performance in operating the plant in abnormal
20 and emergency conditions. Both crew competency
21 evaluations and individual critical task evaluations
22 are conducted and alternative B, of course, is now
23 being used, as has been mentioned, for previously
24 examined satisfactory programs where we'd normally
25 have two NRC examiners on the floor.

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1 The most recent revision of the examiner
2 standards clarify the definition of a critical task
3 and provide additional guidance on their
4 identification. Mr. Russell will address that later
5 under current issues, a little more on critical tasks

6 COMMISSIONER REMICK: Bob, could you tell
7 me, those things you just talked about, where do our
8 examiners actually perform the evaluation --

9 MR. GALLO: Perform their work?

10 COMMISSIONER REMICK: -- and where do we
11 observe a licensee's representative?

12 MR. GALLO: We're observing the licensed
13 operator and the facility evaluator, both on-the-job
14 performance measure, who is actually --

15 COMMISSIONER REMICK: So, on the walk-
16 around?

17 MR. GALLO: On the walk-around.

18 COMMISSIONER REMICK: We're observing.

19 MR. GALLO: The evaluator is asking -- is
20 giving the cues for the JPM and actually asking the
21 questions. The NRC examiner is doing a parallel
22 evaluation of the operator's response and performance
23 and of the evaluator's performance.

24 COMMISSIONER REMICK: Okay.

25 MR. GALLO: And the same pretty much on

1 the dynamic simulator. We normally see the operating
2 crew on control boards, the facility evaluators fairly
3 close behind them and the NRC examiners a step or two
4 behind.

5 COMMISSIONER REMICK: How about the static
6 simulator portion?

7 MR. GALLO: Static simulator is generally
8 just proctored by the NRC. We allow the operators
9 pretty much free rein to walk around the control room
10 during the static exam and it's just proctored. So,
11 there's not --

12 CHAIRMAN CARR: So, on the static
13 simulator they're given a written set of questions --

14 MR. GALLO: Right.

15 CHAIRMAN CARR: -- and they walk in and
16 they can wander around and figure out what the answers
17 are.

18 MR. GALLO: Yes, sir.

19 COMMISSIONER REMICK: So, my impression I
20 get from what you said in essentially all the cases
21 we're observing?

22 MR. GALLO: Yes, sir.

23 CHAIRMAN CARR: So, the facility actually
24 administers the exam, we evaluate it.

25 MR. GALLO: It's a jointly prepared exam.

1 CHAIRMAN CARR: Yes, I understand that.

2 MR. GALLO: The facility is doing the
3 reading of the questions and the reading of the JPMs
4 and the NRC is normally a passive observer. They may
5 ask questions.

6 COMMISSIONER REMICK: Yes. I hadn't
7 realized you'd gone that far in allowing the facility
8 to administer. That is somewhat of a change over the
9 last couple years, isn't it?

10 MR. ROE: That's a -- we went from
11 basically --

12 CHAIRMAN CARR: Migrated.

13 MR. ROE: -- migrated to Revision 6.

14 MR. SNIEZEK: I think it's important
15 though that we actually administer the exam through
16 observation or our grading of it and that the
17 regulations require we administer it. We believe what
18 we're doing can be classified as we administer the
19 exam.

20 CHAIRMAN CARR: Well, that's a mechanical
21 term, but --

22 MR. SNIEZEK: I understand.

23 CHAIRMAN CARR: It's their simulator.
24 They run it and we agree on the examining process.

25 MR. GALLO: But, again, we're doing an

1 independent parallel grading.

2 CHAIRMAN CARR: Well, but we're also
3 evaluating their evaluators.

4 MR. GALLO: That's correct.

5 COMMISSIONER REMICK: But are we asking
6 the questions on the walk-around and so forth? Are
7 we --

8 MR. GALLO: Not normally, not unless the
9 examiner has an additional question or clarifications.

10 CHAIRMAN CARR: But we may.

11 MR. GALLO: Yes, sir, they may ask
12 questions as necessary.

13 COMMISSIONER ROGERS: Before you leave
14 this topic, the dynamic simulator scenarios, have
15 you -- what guides you in -- or what guides the
16 production of those scenarios? What are you trying to
17 test in those scenarios?

18 MR. GALLO: Well, obviously, we're trying
19 to test the individual operator's integrated knowledge
20 of the facility and the response to abnormal and
21 emergency activities. That's one of our main goals.
22 We're also looking at the overall crew performance,
23 crew teamwork. We do have -- there's two methods of
24 grading, as I mentioned. Very quickly, there's crew
25 competency evaluations, which has, I think, six or

1 seven different factors that are measured, one being
2 communications, another being control board
3 operations, procedure use is a third one. I'd have to
4 think awhile to think of the other three, but they are
5 actually --

6 COMMISSIONER ROGERS: Well, what I'm
7 getting at is the --

8 MR. GALLO: That's what they're being
9 graded on.

10 COMMISSIONER ROGERS: -- almost uniformly
11 criticism I've heard of the scenarios in that they
12 seem to be directed towards such extreme situations
13 that are very, very unlikely to ever actually
14 occur --

15 CHAIRMAN CARR: I've cautioned them to --

16 COMMISSIONER ROGERS: -- that the training
17 on the simulator of the operators in preparing them
18 for these tests is directed very much by the choice of
19 those scenarios and therefore there's not much time
20 left to deal with more garden variety scenarios that
21 are more likely to occur.

22 CHAIRMAN CARR: I'll let him answer your
23 question, but I caution them to only use actual
24 events. That way you prevent those operators from
25 saying, "Hey, that's unrealistic," and there's plenty

1 of actual events out there that will test the
2 operators. There's no doubt about that.

3 COMMISSIONER ROGERS: Is that true? Are
4 you using only actual events?

5 MR. RUSSELL: If we could come back to
6 that in a moment, I'm going to cover that in some
7 detail as to what we're doing to look at simulator
8 examinations that have been administered both from the
9 standpoint of consistency, individual critical tasks
10 and how we're going to be shifting or we propose to
11 shift to crew critical tasks rather than individual
12 and look at the degree of complexity of the scenarios
13 and whether they're realistic or not.

14 But we'll be coming to that during my
15 portion of the discussion.

16 COMMISSIONER REMICK: I agree with
17 Commissioner Rogers. That's one of the biggest
18 criticisms I've heard, that basically people saying
19 that we're evaluating the EOPs rather than examining
20 the ability of the operator to operate. So, it will
21 be interesting to hear what you have to say.

22 MR. KOE: We will address that in the
23 current issues.

24 CHAIRMAN CARR: You've got plenty of
25 actual scenarios to choose from. You don't have to go

1 around searching.

2 MR. GALLO: (Slide) Okay. The next slide
3 is facility results, discuss briefly all operational
4 facilities have had requal examinations. As we noted
5 in the Commission paper and on the slide, H.R.
6 Robinson participated way back in 1987 in a pilot
7 examination program and we haven't gotten back to them
8 yet. They're going to be the last program to get a
9 complete evaluation of a sample size of 12. It's
10 scheduled for April.

11 The facility evaluations completed of the
12 100 done discussed through November 30th, 11 of the
13 evaluations resulted in unsatisfactory identification.
14 Only four of those are still considered to be
15 unsatisfactory. It's Limerick, Brunswick, Duane
16 Arnold and Wolf Creek.

17 We have noted significant improvement in
18 facility requalification training programs, in
19 particular development of testing materials, facility
20 staff preparation, selection and development of the
21 test items, facility evaluators and their own
22 evaluation, and communications between the training
23 and operations department. However, some areas still
24 appear to need additional improvement, at some
25 facilities at least, identification of simulator

1 critical tasks, and Mr. Russell will address that from
2 our perspective, and operations training interface
3 still, I believe in some facilities, needs additional
4 scrutiny.

5 NRC evaluation methods, we believe,
6 accurately evaluate the facility requalification
7 training programs and we believe or I believe
8 certainly that the requalification evaluation program
9 has contributed to improved license operator training
10 and performance. I think there is an improved
11 operator awareness of safety systems, safety
12 procedures and safety tasks that they did.

13 COMMISSIONER ROGERS: I've got a question.

14 MR. GALLO: Yes, sir.

15 COMMISSIONER ROGERS: You didn't say much
16 about individual results.

17 MR. GALLO: That was my next slide.

18 COMMISSIONER ROGERS: Oh, that's your next
19 one? Okay.

20 MR. GALLO: (Slide) The individual
21 results, the pass-fail rating is indicated on the
22 slide. Since restarting the program, they've
23 catalogued them basically by fiscal year. The
24 principle areas where weaknesses have been identified
25 were discussed in the information notice that was

1 issued in August of 1990. Those areas for individuals
2 are SRO command and control, use of emergency
3 operating procedures, tech spec interpretation usage,
4 operation of emergency core cooling systems, emergency
5 action level classifications, and for the crew, crew
6 communications is identified as a problem in several
7 cases.

8 COMMISSIONER REMICK: That slide shows
9 operators and SROs combined, I assume. Is that right?

10 MR. GALLO: Yes, sir.

11 COMMISSIONER REMICK: Do you just happen
12 to have the breakout of operators versus SROs?

13 MR. GALLO: We have it, but I don't have
14 it with me.

15 COMMISSIONER REMICK: Okay. All right.
16 If you'd just send it to me, I'd appreciate seeing it.

17 COMMISSIONER ROGERS: There's been a
18 complaint from the industry people that something of
19 the order of ten percent failure rate is very high. I
20 don't really have a basis for judging that or not. I
21 wonder -- their point is that the plant is running
22 well, performance is going up, so on and so forth, and
23 that a ten percent fail rate on a requal exam is a
24 very high -- and I think they've used the term
25 "unacceptably high" or a term like that -- number.

1 Would you comment on that? I don't have a
2 strong feeling about whether --

3 MR. ROE: I can comment on that.

4 COMMISSIONER ROGERS: -- that's a very
5 high number or not a very high number.

6 MR. ROE: I think people have focused on
7 the number. They haven't focused on the process. One
8 part of the process we have indicated to you is right
9 now this is basically a utility developed, a utility
10 administered and co-evaluated by the NRC exam process.
11 That utility also makes calls on whether these people
12 are satisfactory or unsatisfactory. We have seen a
13 large consistency between the NRC's call on the
14 evaluation of the individual and the utility's. So,
15 the utilities are indeed finding fault with their own
16 operators where they show that they need remedial
17 training and before they're put back on shift.

18 So, I would look at the process since the
19 process is probably highlighting where people have
20 need for remedial training.

21 CHAIRMAN CARR: I've talked to some
22 operators that have failed and I haven't yet found one
23 who said he shouldn't have passed the exam. The
24 things he failed he should have known. But as far as
25 your number, on one of my previous incarnations I

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1 administered exams.

2 COMMISSIONER ROGERS: So did I. A ten
3 percent fail rate was not a high number.

4 CHAIRMAN CARR: And about 100 a year, we
5 examined the crews, and originally the fail rate was
6 higher, but it settled out somewhere around six
7 percent. But the input of new trainees was in the
8 neighborhood of 30 percent. So, you always had a new
9 input of people who had to be trained and who may not
10 have met the required training area and that finally
11 worked its way down to about three percent after
12 enough experience. But there will be failures in the
13 exam process, I think.

14 COMMISSIONER ROGERS: Yes.

15 CHAIRMAN CARR: And I think a lot of this,
16 as you can see, was the -- if you will, was the new
17 exam process was different. It was more operationally
18 oriented. But much of this is, as you remember, Mr.
19 Burkhardt came in and said we had a lot of licensees
20 out there who weren't operating. They carried their
21 license and they were in the staff and when they came
22 in to take their exam they weren't familiar with the
23 operational requirements of the boards and they
24 flunked. I would expect that to happen because my
25 opinion is if you're not standing watch daily, you're

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1 not as safe an operator as you would be if you were
2 standing watch daily.

3 So, much of this, they've now realized,
4 many of those people are turning in their license
5 because they can't keep them up. My personal opinion
6 is that's somewhat healthy because when they do go
7 over there and stand a watch, I don't think they're
8 quite as safe as they might be.

9 COMMISSIONER ROGERS: No, I agree with
10 you. I think that's right. That's why it would be
11 very interesting to know what the breakdown is of SROs
12 versus ROs on the requals, because the SRO group
13 contains a lot of those hobbyist licensed ones.

14 MR. RUSSELL. If I could just add one
15 additional perspective. Recall that the
16 requalification program as a program to be accredited
17 has only recently been underway. I don't know what
18 the exact number is of programs that have been now
19 accredited, but it's on the order of half. This was
20 an issue that we had at the time of the rulemaking on
21 Part 55. The early accreditation process addressed a
22 systems approach to training for initial watch
23 standers, initial licensees. So, they were getting
24 the improved training.

25 In many cases, there was a conflict

1 between requirements imposed by NRC regulation for
2 facility requalification programs with a systems
3 approach to training. We actually had lesson plans
4 that required certain information be trained, et
5 cetera, that had evolved with time through facility
6 programs. It wasn't until after the rulemaking where
7 we allowed a systems approach to training to be
8 applied to requalification. Then subsequently that
9 program was added to the accreditation process. So,
10 what we're seeing is we're seeing improvements in the
11 training, improvements in the exam evaluation process,
12 and we're seeing a program that is evolving with time.

13 I do not know where we're going to reach
14 an equilibrium. I would just observe that the number
15 of unsatisfactory programs with time is declining and
16 the failure rate with time is declining. That's why
17 when I commented earlier, I think we have a healthy
18 program that's getting good information, but there are
19 some areas that we need to refine and address and I'll
20 be covering those in just a moment.

21 DOCTOR MURLEY: I'd like to add one point
22 that speaks to the comment that came in that,
23 Commissioner Rogers, you're referring to. It seems to
24 me a curious logic that there's a feeling that the
25 plants are running well, therefore the failure rate

1 should not be as high as ten percent, I don't
2 necessary follow that logic.

3 COMMISSIONER ROGERS: Yes.

4 DOCTOR MURLEY: First of all, all the
5 plants are not running well. We've got nine plants on
6 our watch list. Second, I think the question really
7 ought to be why is the failure rate still as high as
8 ten percent, and I think Jack answered it exactly
9 right. We look at our system and our process and it
10 looks to us to be a valid test. If they don't pass
11 it, the question ought to be why aren't they passing
12 it. So, that's how we go about it. To me, it's
13 invalid.

14 COMMISSIONER ROGERS: Yes. I think those
15 two observations of the size of the failure rate and
16 the fact that many plants are running well is there's
17 no direct connection.

18 MR. ROE: We receive letters occasionally
19 from operators, letters of criticism, letters that
20 recommend changes. We were quite surprised when we
21 received a letter from an operator that started off
22 and said, "I failed my requalification examination."
23 He said, "It was a good exam. I should have failed
24 it." So, we feel that we do have a good examination
25 process out there and that things are improving.

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1 MR. GALLO: Okay. We're ready to discuss
2 the test research program. As previously mentioned,
3 we have kind of put on hold the non-power test and
4 research training reactor organization on
5 requalification exams. Last year, in May of 1990 and
6 August of 1990, we met with TRTR, is their
7 organization name, met with their representatives to
8 discuss a proposed examiner standard based on--
9 somewhat based on, but quite a bit more simple than
10 the examiner standard being used for power reactors
11 for requal exams.

12 January 31st of this year, we also met
13 with Doctor Bernard from MIT, who is this year's
14 Chairman of the TRTR, to discuss requal exam concerns.
15 We are addressing his concerns and I think we're being
16 responsive to his concerns.

17 The examiner standard we have developed
18 right now is fairly straightforward. It parallels
19 quite a bit the initial exams that are given to non-
20 power facilities. The two major differences are the
21 exams that are developed right now, the two that have
22 been done, have been developed by a team of facility
23 and NRC representatives using principally the
24 facility's training and examination material.

25 The facility NRC reps are also doing

1 parallel grading similar to what we do in the power
2 reactor exams. There is a written exam and there is a
3 walk-through type exam. We haven't called the JPMs.
4 We just called the operational tasks for the test and
5 research community.

6 In December of 1990, we performed the
7 first requalification exam under our current standard
8 at AFRI, right down the road from us, and all four
9 operators that took the exam passed. There were no
10 significant program weaknesses. In January of 1991,
11 we performed a second exam at University of Michigan's
12 Ford reactor and again all four operators passed.
13 There were no program weaknesses identified at the
14 University of Michigan. In the future, we're looking
15 for -- trying to get one more "volunteer" to do
16 another pilot exam, perhaps a smaller university
17 reactor, and then from there decide on the future,
18 whether to go ahead with the program in that from
19 where we are now.

20 COMMISSIONER REMICK: As Bill Russell
21 pointed out, those requal exams or requal programs,
22 excuse me, were developed under the old Part 55 which
23 was quite prescriptive, and the new Part 55 does not
24 mandate that for research reactors. But is there any
25 way of characterizing to what extent have they

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1 modified their requal programs as might be appropriate
2 to make them more performance based for their
3 facilities, realizing that it's difficult for them to
4 go through the job and task analysis?

5 MR. GALLO: They have done modifications
6 and submitted them to the NRC for review.

7 COMMISSIONER REMICK: There have been?

8 MR. GALLO: And that's done in a different
9 branch. It's not in Operator Licensing Branch. But
10 there is a review of the programs as they change.

11 MR. RUSSELL: You have to recognize that
12 the systems approach to training which we've endorsed
13 is essentially the accreditation process. The test
14 and research reactor community does not have the
15 similar accreditation process. So, the test and
16 research reactor community is submitting program
17 changes to us for our review and approval, which is
18 similar to the mechanisms that we used prior to the
19 revisions of Part 55.

20 COMMISSIONER REMICK: Yes. I'm not
21 suggesting that they have accredited programs and so
22 forth, but it seems to me that some aspects of
23 systematic approach to training and performance-based
24 training does make some sense. I'm just wondering to
25 what extent as they modify their requal programs that

1 were previously approved by the NRC, to what extent
2 does this incorporate some of those considerations,
3 realizing it's not mandatory?

4 MR. RUSSELL: We believe we're seeing
5 some, but I think based upon the discussions I've had
6 recently with TRTR community, some of the issues that
7 we have, what constitutes a critical task. For
8 example, clearly there are concerns with respect to
9 health physics, when you're pulling beam ports out for
10 exposure, how you're handling materials that may have
11 been irradiated. But from a safety standpoint, you
12 don't have the same degree of concern that you would
13 have with a power reactor. So, we're working with the
14 community to attempt to identify those so that we do
15 have a performance-based valid examination and that's
16 the purpose of the pilots that we're conducting now.
17 Once we have learned from those pilot requalification
18 exams, we intend to proceed with the development of an
19 examiner standard which we would then use.

20 A more fundamental question, I think, is
21 whether we can go to program evaluation for the test
22 and research reactor community where we would evaluate
23 the programs, their content and oversee audit as
24 compared to NRC administering examinations of
25 individual operators. I will come to that as a part

1 of our current issues. But we feel that applies
2 equally as well to the test and research reactor
3 community as it does to the power reactor community.

4 (Slide) Could I have the first current
5 issue slide?

6 We talked a little bit about operator
7 stress and I've just summarized our view. Sort of a
8 direction we're leaning in the overall program is to
9 look more toward program evaluation. In the
10 discussion on the examination process, you've heard
11 that we are indeed overseeing and reviewing the
12 activities of the facility licensee and we're seeing
13 substantial improvement in their capability to
14 administer meaningful evaluations of their operators.

15 But at the same time during this process
16 we've had quite a bit of unnecessary stress involved,
17 too many evaluators in the simulator. Clearly, if you
18 have one NRC evaluator for one candidate, you may have
19 five candidates in the control area. You have five
20 facility evaluators, five NRC evaluators, including
21 observers and we've had some pretty extreme cases
22 where essentially the operators run into people and
23 are not able to move around. It creates an
24 environment which is very different from the
25 environment that they'd actually be operating the

1 facility.

2 There's been too much emphasis on what we
3 call individual simulator critical tasks. In
4 attempting to develop the simulator scenarios, you
5 want to make sure that you have one or two or more
6 critical tasks per position, if you have four licensed
7 operators participating in the examination. This may
8 overly --

9 CHAIRMAN CARR: How do you define a
10 critical task?

11 MR. RUSSELL: Critical task is a task
12 which has to be cued. That is there has to be an
13 alarm or an indication that clearly indicates a task
14 is to be performed. It has to have safety
15 significance as it relates to the facility itself.
16 There has to be a procedure that describes what is to
17 be done and then the individual either has to
18 successfully perform that or if he fails to perform it
19 at all or does it wrong, that would be considered to
20 be a failure of a critical task.

21 CHAIRMAN CARR: But does he do that
22 without direction or does he get direction? Can you
23 flunk two guys on the same critical task? If the
24 operator gets the alarm and doesn't take action and
25 the SRO says, "Do something," and the guy does it,

1 have both of them flunked or neither of them or one of
2 them?

3 MR. RUSSELL: That's a very good lead-in
4 to the issue of the team-dependent behavior. We
5 believe that we ought to shift to crew critical tasks
6 and that there should be assistance between operators
7 prompting each other and that we should not evaluate
8 individuals in that context when you're looking at a
9 dynamic simulator scenario. In fact, if the
10 Commission recalls, the basis for requiring simulators
11 in the elements of the examination process which we
12 added were for two basic reasons. One was to evaluate
13 time-dependent behavior in the conduct of the
14 activity, that is in manipulations of the controls and
15 doing things in real time.

16 The second was to evaluate the team's
17 performance, command and control communications,
18 ability to execute procedures, and you typically in a
19 situation have a senior reactor operator reading the
20 procedure and giving the directions and you have
21 licensed operators out on the panels that are
22 executing those, providing feedback. That's the
23 portion that we think is most critical. That's the
24 reason that we feel in the pilot program, which I'll
25 discuss later, is the right direction to go, to

1 evaluate crew performance using crew critical task
2 concepts with the other portions of the examination we
3 have now for evaluating crew characteristics, and to
4 not continue with the individual critical tasks which
5 we believe may have been making the scenarios overly
6 complex.

7 COMMISSIONER ROGERS: Can I just see if I
8 understand what you're proposing? You're proposing to
9 eliminate the situation now in which a single operator
10 can by not carrying out a critical task fail his exam
11 totally, but would allow, say, another operator to
12 assist him, perhaps intervene, before he made a
13 mistake or didn't carry it out.

14 in other words, my understanding of the
15 present situation is that if an operator does not
16 carry out a critical task in quite the right way, and
17 I think time is involved in this to some extent -- but
18 I may be wrong there, but if I'm wrong stop me -- and
19 that he is to do this unassisted by another operator,
20 that you would now allow another operator to say, "Do
21 that," or "Move on it," or something. If the task is
22 carried out within the context of the total team
23 operation, that would be all right and you would not
24 focus so sharply on the performance of each individual
25 operator. Is that what I hear you saying?

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1 MR. RUSSELL: Let me give an example. We
2 have had cases where the crew has performed the task
3 successfully, but an individual member did not
4 identify, for example based upon his plant conditions,
5 that, for instance, depressurization of a boiling
6 water reactor was required. Maybe the panel operator
7 had indications that it was required, his procedures
8 would call for it and he did not identify that this
9 was required and report it to the shift supervisor and
10 take the appropriate action. It may be that someone
11 else recognizes that, backs him up in and in that
12 context the crew was successful but the individual
13 would be failed --

14 COMMISSIONER ROGERS: Yes, that's the kind
15 of situation I'm thinking of.

16 MR. RUSSELL: -- based upon not taking an
17 appropriate action or responding to an alarm
18 indication or identifying that a condition exists that
19 requires entry into an EOP.

20 COMMISSIONER ROGERS: Yes.

21 MR. RUSSELL: We're proposing instead to
22 use the crew critical tasks, look at the crew
23 performance, and not to focus on individuals. We
24 think that that will do a number of things. One, it
25 will foster teamwork. It will create peer pressure so

1 that you don't have an individual that is able to
2 perform on a crew that might bring the whole crew down
3 because we're going to be shifting now toward a crew
4 evaluation. We have seen instances where an
5 individual performing poorly has resulted in a crew
6 failure. So, we think that this would build teamwork
7 and it's the proper direction to go and we'd like to
8 do this for a pilot evaluation.

9 CHAIRMAN CARR: Let me make a suggestion
10 to you on that. I concur with the way you're going,
11 but my suggestion is that you orient your exam to do
12 the dynamic simulator first and then when you see that
13 guy who doesn't do it right, you're worried about him
14 but you don't flunk the crew nor him. But then that
15 gives you a chance to further look at that guy in the
16 written and the walk-through exams and wherever else
17 you look at him to decide if, yes, that operator is
18 not only not carrying his load in the crew, he really
19 doesn't know what he's doing. I think it will give
20 you -- you'll get a feel as you go through the dynamic
21 exam for operators who might not be as strong as you'd
22 like them, and then it gives you a follow-up
23 opportunity to really probe the guy. So, I throw that
24 out as a suggestion because I have seen it work that
25 way.

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1 MR. RUSSELL: Yes, sir.

2 COMMISSIONER ROGERS: That sounds like a
3 very good idea. The other thing is, of course, I
4 concur that it seems to me that this is a positive way
5 to go. It would eliminate some problems and perhaps
6 achieve some of the team-building objectives that
7 you're interested in. I think we have to be a little
8 careful though that somehow we're not losing
9 individual accountability in the process. That still
10 has to be there. I'm not suggesting you shouldn't do
11 this, but I think one has to keep in mind always that
12 as individuals those operators have to be sound and
13 they have to have a sense that they are individually
14 responsible even though they can help each other and
15 that that isn't lost somehow or diminished in the
16 process.

17 CHAIRMAN CARR: Let me add one more --

18 MR. RUSSELL: I started talking about
19 stress, but I think we're into the pilot program.

20 CHAIRMAN CARR: I think you'll find that
21 the dynamic simulator is the most stressful piece of
22 the exam. So, if you get that out of the way first,
23 you'll find that a lot of that stress is reduced
24 because when you're given the other parts of the exam
25 and they've still got to look forward to that dynamic

1 simulator, the stress is over a lot longer period of
2 time than it needs to.

3 MR. RUSSELL: I will come back to the
4 pilot program because we feel at least the reason for
5 proposing it is that we feel we can give a valid
6 examination to be able to both judge the crew
7 performance and with other portions of the
8 examination, the simulator portion, the JPMS, which we
9 can do with a walk-through to follow up on areas that
10 may have been observed to be weaknesses during the
11 dynamic simulator, and the written, that that process
12 in total will allow us to identify and discriminate
13 individual performance as well as crew performance.
14 We think that there's some benefits of that.

15 CHAIRMAN CARR: Before you leave stress,
16 how do you all define abnormal stress? I never took
17 an exam where there wasn't stress and I've been on
18 both ends of this examining deal.

19 MR. RUSSELL: Clearly, there is --

20 CHAIRMAN CARR: Some exams cause me more
21 stress that I was giving than I was taking, I might
22 add.

23 MR. RUSSELL: I think an example was the
24 earlier one I gave with the number of evaluators doing
25 the evaluation. If you have three --

1 CHAIRMAN CARR: That's interference. You
2 can see that kind of thing.

3 MR. RUSSELL: That's interference.

4 CHAIRMAN CARR: But what we're talking
5 about is individual stress. I mean that's what
6 they're worried about. Some people are going to
7 respond to it different than others. I'm just trying
8 to figure out when you say -- how much stress do you
9 think is tolerable for the guy undergoing the exam?

10 MR. RUSSELL: I think clearly there is
11 always going to be some stress. I think there's
12 stress when the plant behaves in an event. You go
13 from a calm state to a highly charged state. So, I
14 think some degree of sweaty palms while you're going
15 through it is healthy. The issue is to not have
16 stress that's created by the process unnecessarily.
17 What we're interested in is testing knowledge and
18 abilities. That's going to be stressful. Extra
19 people there and what we did by way of --

20 CHAIRMAN CARR: Okay.

21 MR. RUSSELL: -- one case, we actually had
22 an instant replay. Some facilities tape the
23 examinations. We permit that. If they wish to use
24 that in the appeal process when they conclude that the
25 behavior was correct and we disagree, that's also

1 appropriate. But we have given guidance that we do
2 not want examiners using tapes to review afterward,
3 particularly off-site by sending the video tapes to
4 the region to judge, to overturn a decision. So, we
5 have eliminated that process.

6 DOCTOR MURLEY: That's an example, we
7 think, of unnecessary stress. Also, it's an unusual--
8 I mean it's a stress that the operator really wouldn't
9 be under, I don't think, in a real event.

10 MR. RUSSELL: Timeliness of feedback, for
11 example. If he has passed the examination and we feel
12 that there aren't any questions that require
13 additional review, we ought to be able to say that by
14 the time of the exit meeting rather than having him
15 anxious and waiting for the next three or four weeks.

16 COMMISSIONER ROGERS: Well, there's two
17 considerations. One is just being decent and not
18 introducing an element of stress that isn't necessary
19 by prolonging a period of uncertainty. That's one
20 aspect. I'm certainly in favor of trying to reduce
21 that. The other is though that unnecessary stress may
22 actually interfere with the result that you're trying
23 to measure.

24 MR. RUSSELL: Yes.

25 COMMISSIONER ROGERS: And that's a

1 different consideration and that one I think is really
2 one that you've got to pay attention to because you
3 don't want stress to mask the result, a valid result,
4 nor do we want to introduce unnecessary pain over a
5 long period of time because we haven't gotten our act
6 together in making a decision on somebody's exam.
7 That's a different kind of stress though, in my view.

8 MR. RUSSELL: Clearly, this is an
9 important topic and we have initiated a review
10 independent of the examining process that's being
11 conducted by the Human Factors Branch to actually look
12 into what are the factors which contribute to stress.
13 We're doing a study at this point and we expect to
14 have the results in June.

15 There are three parts to that study. One
16 is an observation of the examination process for an
17 NRC examination, for a utility examination. Another
18 element is a structured interview questionnaire to
19 obtain feedback from the evaluators, from the
20 candidates themselves. The third is a questionnaire
21 to go out with a broad-based voluntary survey to
22 gather information back from operators who have
23 experienced this. We then have plans to evaluate that
24 information and we'll provide the results of that
25 evaluation to the Commission and we would hope to have

1 that late this summer.

2 COMMISSIONER REMICK: Have you thought how
3 you might implement such findings or is that
4 impossible without knowing what the findings are?

5 MR. RUSSELL: In some cases we're already
6 leaning forward in the trenches. We think that the
7 issue of reducing examiners from one on one to one on
8 two is moving in the right direction. We are, with a
9 separate activity, looking at the examination scenario
10 that's being administered. We have a review going on
11 of the examinations administered over the last six
12 months by a team of examiners looking for consistency,
13 the degree of difficulty, the number of critical
14 tasks, et cetera, to determine whether additional
15 guidance is needed from the program office to ensure
16 uniformity and consistency across the regions.

17 So, we have a number of activities that
18 we're taking action on now based upon judgment as to
19 what we think are factors that may contribute to
20 stress, but we need to complete the study before we'll
21 know whether all of those are effective or not.

22 Another current issue is program
23 stability. We've talked about what was in Revision 5,
24 the start-up program, after the pause in
25 requalification examinations by NRC and Revision 6 of

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1 the examiner standards and how we're providing six
2 months notice before they go into place. That six
3 months provides three months for the utility even
4 before they get an exam letter and then we have a 90
5 day exam letter when we send it out and say. "We're
6 coming, provide us your materials." So, that will
7 help.

8 In addition, we have delineated
9 responsibility internally for revisions to the
10 examiner standards. I am now responsible for
11 reviewing those revisions, making a determination that
12 they're consistent with Commission policy as regards
13 to backfit consideration. We have developed a review
14 process, so internally we give a high degree of
15 visibility to revisions.

16 In addition, we do interact with NUMARC,
17 with PROS, with industry, on areas to be revised. So,
18 we, in fact, obtain comments on those revisions before
19 we proceed. We are looking at some revisions for
20 Revision 7, but I would not expect that to be out for
21 on the order of nine months to a year from now.

22 I mentioned the interregional consistency.
23 We've talked a little bit also about the crew versus
24 individual evaluations. We are going to proceed with
25 this pilot program. We need to coordinate that

1 program closely with the Office of General Counsel
2 because of the requirements in the regulations today
3 to evaluate individuals for the purpose of renewing a
4 license. We think that this pilot program will give
5 us information that will help us in deciding whether
6 to make a recommendation to the Commission to modify
7 the regulations to eliminate individual examination as
8 a basis for the program, for license renewal that is,
9 and instead to focus on an evaluation of the facility
10 program. Where the facility program is deemed to be
11 satisfactory, renew a license based upon the finding
12 that the facility program is satisfactory. In the
13 event a facility program is deemed to be
14 unsatisfactory, we would have the ability to use NRC
15 examination to renew the license of an individual
16 during the period of time that the program is
17 unsatisfactory, should that occur.

18 That's kind of the future that we're
19 looking to. We have a lot of work to do to evaluate
20 stress, to evaluate interregional consistency, to
21 conduct the pilot program and we would propose to come
22 back to the Commission in late summer to early fall
23 with the results of those evaluations and the results
24 of the pilot program with the recommendation as to
25 whether we would proceed to modify the regulations to

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1 put this in place on a longer term.

2 CHAIRMAN CARR: On your interregional
3 consistency, I was perturbed by the INPO comment that
4 some utilities are changing their training programs to
5 reflect specific requests of examiners. Are you
6 taking care of the interregional variances in
7 examinations? Want some unsolicited advice? Go
8 ahead.

9 MR. RUSSELL: We are aware of the regional
10 inconsistencies. In fact, at the most recent senior
11 management meeting we spent some time on that and
12 there was quite a healthy self-assessment on the part
13 of the region where they identified inconsistencies
14 between how they were administering the program and
15 how it was being done in other regions. That
16 evaluation by the region was consistent with the
17 evaluation that was done independently by the Program
18 Office, looking at some of the problems that were
19 identified. I think that this is an area that's going
20 to take continued management attention to make sure
21 that the programs are consistent. That's why we're
22 embarking on some of the activities, evaluating
23 examinations that have been administered.

24 In addition, we are getting more involved
25 in direct oversight of activities in the field, the

1 actual administration of examinations as a part of our
2 program office reviews. It's going to take attention.

3 CHAIRMAN CARR: Yes. Let me suggest that
4 you consider interregional team exchanges, pieces of
5 the team.

6 MR. RUSSELL: We do now exchange examiners
7 and have examiners from other regions as well as our
8 contract examiners who examine in all the regions have
9 just been on program reviews at both Idaho and at
10 Pacific Northwest Laboratories and we did have
11 discussions and we are interested in feedback as well
12 from our contract examiners since they see activities
13 in all regions. So, we are trying to solicit that
14 information, exchange examiners and get feedback. But
15 it's clearly going to take additional management
16 attention because we have had in the past instances
17 where there were differences, in some cases quite
18 significant. Those have been identified and we're
19 working on them now.

20 The last item I wanted to mention was a
21 question that Commissioner Remick passed on to the
22 staff. It relates to the concept of a check operator.
23 I'd like to submit that the program that we are
24 implementing now where we have a facility evaluator
25 that actually is administering the examination while

1 the NRC is reviewing it, is close to the concept of a
2 check operator. If, in fact, the results of the pilot
3 program are successful and we propose a rule change
4 which would eliminate the need for an NRC examination
5 as the basis of license renewal, that a check operator
6 program and some of the concerns that we expressed in
7 the earlier Commission paper could be implemented and
8 there could be an evaluation done by facility trainers
9 as well as peer operators and the NRC could then be in
10 a position to observe that and evaluate the program.

11 We do have some concerns with respect to
12 use of a check operator concept alone as it relates to
13 the regulations, the way they stand now for the
14 purpose of license renewal.

15 CHAIRMAN CARR: As I read the PROS paper,
16 the check operator program was in addition to
17 everything else that was going on.

18 COMMISSIONER REMICK: Well, there are two.
19 One is the PROS proposal which is not the same
20 proposal that was being considered back in the '84
21 time frame. It is different. So, I was going to ask
22 you the question what do you think of the PROS
23 position paper, but that's independent of what you're
24 talking of.

25 MR. RUSSELL: That's correct.

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1 COMMISSIONER REMICK: Now, at one time, of
2 course, the licensee did administer requal exams. We
3 did not have any specific statutory authority to do
4 that, but we were able to do it. The reason that
5 you're suggesting a rule change is because it now says
6 that the NRC will administer. Is that right? And so,
7 that's my --

8 MR. RUSSELL: The regulations today do
9 indeed require the facility to administer an operating
10 test six times in the course of a six year license and
11 a written examination three times in the course of
12 that same six year license. So, we already have in
13 the regulations a requirement for the facility to
14 examine the operators. We also have a requirement
15 that once in the course of a six year license the NRC
16 independently examine an individual in order to be
17 able to renew his license.

18 Given that requirement, we would not be
19 able to use a simple certification through a check
20 operator concept. But other elements, as has been
21 described, could be done in addition to the facility
22 evaluation. They can have operators who have special
23 qualification to administer an evaluation from the
24 operating department participate with the training
25 department to give that examination now. Other than

1 the requirement that once in six years the NRC --

2 CHAIRMAN CARR: I guess I ought to say
3 that I favored that six year requirement for us.

4 COMMISSIONER REMICK: I know you did.

5 CHAIRMAN CARR: The reason I did was
6 because I tried to put myself in the position of if we
7 have an accident and the operator on watch is the
8 cause of the accident and they come to me and say,
9 "How long has it been since you looked at this
10 operator?" under our original regulations we may never
11 have looked at him since his original qualification.
12 That left me somewhat uneasy that we had not assured
13 ourselves that the operators were keeping some kind of
14 an efficiency requirement up.

15 Now, I realize that causes a problem which
16 I don't know a way out of, what I call the double
17 jeopardy problem where you don't want to examine--
18 you examine operator A today and he's in a crew where
19 operator B needs to be examined tomorrow and so he
20 gets another examination while operator B is being
21 looked at. So, it's kind of -- I don't know a way out
22 of that, but I'm going to leave it up to this smart
23 staff to figure that out.

24 COMMISSIONER REMICK: Well, I think
25 they're heading in the right direction here, Ken. I

1 shouldn't be characterized as somebody that is
2 necessarily a proponent of the check operator. Hiding
3 behind the AC/S hat, the position of ACRS always was
4 that it's worthy of consideration in face of the
5 problems we have. Where I come out is very much, I
6 think, where you indicate that you're looking at. I
7 think ultimately for several different reasons that we
8 should return to the licensee's administering but with
9 the staff very heavily involved from the standpoint of
10 monitoring and making sure of the process.

11 I just see the check operator as something
12 that has worked for FAA and it's worthy of looking at,
13 at least. But I don't want to be characterized as
14 somebody that thinks that that's something we
15 necessarily should move in and that there aren't
16 serious considerations.

17 Along that line though, and one of the
18 reasons that I think that it's worthy of
19 consideration, is the fact about our ultimate resource
20 is our ability to get people who are really
21 experienced operators. I see recently where the staff
22 has asked, I think, the Comptroller General on the
23 question of can we use consultants and what is the
24 impact if we get back the answer no. To what extent
25 are we dependent on contract resources to do this?

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1 MR. RUSSELL: Heavily. It's approximately
2 half the program. If we were to get an answer back
3 that said we cannot continue to use contract examiners
4 in the way we have been using them and described in
5 that paper, we're talking between 40 and 50 full-time
6 equivalent employees worth of work. Clearly, going
7 toward a program evaluation rather than evaluating
8 each individual would have significant reduction in
9 resources for the NRC staff.

10 MR. SCINTO: It is unlikely that you'd get
11 an answer from Comptroller General that said no, you
12 could not use contract personnel. It would be in the
13 nature of modifications of the way in which they're
14 used rather than --

15 COMMISSIONER REMICK: No, I understand
16 that. I understand that.

17 MR. RUSSELL: That completes the staff's
18 presentation. If there are any other questions, we'd
19 be --

20 COMMISSIONER REMICK: Do you have any
21 reaction to what PROS is suggesting, which is
22 different than what you just talked about? You talked
23 to PROS recently, I guess?

24 MR. RUSSELL: Yes. The three of us met
25 with PROS two weeks ago approximately, with the

1 President and the Vice President of the organization.
2 I would say that it's not clear to me that there is a
3 consensus view within PROS as to the right approach to
4 take. We did discuss it with them. We felt it was a
5 very good dialogue. We're going to continue the
6 dialogue with them and on an individual utility basis
7 I think it would be useful for the operations
8 department to have some number of individuals who are
9 licensed operators or licensed senior operators to
10 participate in the facility evaluation program as
11 check operators rather than just having the training
12 department administer. We've seen conflict between
13 trainers and operators and I think that kind of a
14 concept will help bridge that.

15 CHAIRMAN CARR: My guess is most of them
16 have those individuals in place that they're using,
17 whether they use them that way or not. You go to any
18 plant and ask them who their best three operators are
19 and they'll all come up with the same names. So, they
20 know who their good operators are and they do go to
21 them before they qualify one of their not to good
22 operators and say, "How is this guy doing?" So, the
23 process is not completely not being used now, but it's
24 not being used so formally.

25 MR. ROE: I think it's important to note

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1 that in the current program there is a thread of the
2 check operator in that and that we request a senior
3 reactor operator from the operations department to be
4 part of the evaluation team. We don't call him a
5 check operator, but obviously the same attributes that
6 they have in the PROS proposal for a check operator
7 and our desire to have that person as part of the
8 team.

9 COMMISSIONER REMICK: Do you feel the
10 thing that's driving PROS is primarily the use of
11 trainers that aren't necessarily experienced
12 operators? I read in that too that perhaps some
13 utility might be hiring consultants to come in and the
14 consultant is doing it and they were complaining about
15 that also.

16 MR. RUSSELL: That's correct. I think
17 that PROS is looking for someone who is competent and
18 understands operations of the facility participating
19 in the evaluation process rather than someone who may
20 never have been licensed to be totally in control of
21 the evaluation process.

22 COMMISSIONER REMICK: Of course, that
23 applies to our use of consultants also, I assume.

24 CHAIRMAN CARR: Yes.

25 MR. RUSSELL: Oh, it certainly does.

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1 CHAIRMAN CARR: In fact, on my visits
2 around I tell the operators when they retire, "Apply
3 for a job here because we need operators to do
4 examinations," and some of those people are getting to
5 the point where they are eligible for retirement and
6 look for another work. So, it's not beyond the realm
7 of possibility that we could get some of those people.

8 MR. ROE: It's already occurring.

9 MR. GALLO: A really substantial number of
10 our examiners are ex-licensed operators.

11 CHAIRMAN CARR: I always was a good
12 recruiter.

13 COMMISSIONER REMICK: Thank you.

14 CHAIRMAN CARR: Might not help them that
15 much.

16 Commissioner Remick?

17 COMMISSIONER REMICK: That's all. Thank
18 you.

19 CHAIRMAN CARR: Commissioner Curtiss?

20 COMMISSIONER CURTISS: I have a number of
21 specific questions, but let me make a general
22 observation first and get the staff's reaction.

23 I think we all believe, at least I
24 certainly do and I think the Commission as a whole
25 does, that the operator requal program is a critically

1 important one and perhaps more so than anything else
2 we've done has brought about the improvement in safety
3 that we've seen over the last several years. A lot of
4 the things that you've described here, the programs
5 that you have in mind, that you've laid out in the
6 SECY paper in terms of refining the program it does
7 seem to me constitute positive steps that move in the
8 right direction.

9 I guess as I look at the comments that
10 we've talked about here and that I think each of us
11 individually has heard from the various sites that
12 we've visited, they collectively suggest to me in the
13 aggregate a common theme that in turn points to what I
14 think is the biggest challenge that we're going to
15 face in the program over the next several years.

16 If you take a look at the issues of the
17 scenario complexity and critical tasks and operator
18 stress and JPMs and simulator fidelity, the kinds of
19 things that we've talked about here today, I guess the
20 question that I would raise and a concern that I'd
21 like to talk about is that it does seem to me that
22 it's important now that we've gotten to this critical
23 point in the program to be able to have a high degree
24 of confidence, that we know what it is that we're
25 testing for, that we know what the knowledge base is

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1 that we're seeking to have the operators demonstrate.

2 If you look at a lot of these questions
3 about scenario complexity and the ones that I've
4 mentioned, in many respects they have as a common
5 thread, I guess, if you pull on it, the question of
6 how far out in the envelope the test needs to go, how
7 much fidelity in terms of degraded core conditions
8 does the scenario have to have to the real reactor.

9 I guess the question that I would have in
10 terms of that very issue, we've seen situations in my
11 judgment where as you respond to what's laid out at
12 the front end of a program and as you do that
13 effectively the program has a tendency to expand and
14 as we look back at the program perhaps to the point
15 where we all say that assumption or that approach or
16 that hypothetical may have gone too far.

17 One area in particular that I guess I have
18 in mind is the security area, where as you look back
19 at the process it does seem to me, primarily through
20 the RER inspections, that one could make the case that
21 we have in this country assembled a security program
22 that in retrospect or certainly by comparison to what
23 other countries do has really expanded the envelope
24 based upon having addressed the principal concern you
25 get into scenarios or hypotheticals that may

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1 individually be logical but in the aggregate you look
2 at that and you, I think, scratch your head, or at
3 least I do, as to how far to extend that.

4 I guess, as I say, I think the kinds of
5 things that you proposed here to do today in terms of
6 refining the program are important steps and I
7 certainly support the operator stress initiative that
8 you have underway and the pilot program on crew versus
9 individual, your work with PROS and the study that
10 you're going to do on the recent experience. And I
11 think the examiner standards also provide a degree of
12 discipline to the process in terms of focusing on
13 what's tested, what's the knowledge base that we're
14 looking for. But we all know, and I think we've all
15 heard it as we've gone around to the sites, that those
16 examiner standards have a great deal of latitude built
17 into them. Half of the program, as you've indicated
18 here, is run by the contractor's outside people
19 reporting, of course, to the Commission.

20 I guess the question that I put to you in
21 a general way, how do you, at your level, the
22 management with the Agency overseeing this very
23 important program, intend to ensure that the core
24 knowledge that we're attempting to address doesn't
25 continue to get expanded because everybody is getting

1 the right answers? I mean ideally that's the
2 situation I'd like to have, define what they need to
3 know and everybody gets the right answer. There may
4 be a tendency that once everybody gets the right
5 answer to ask the tougher question. In retrospect, we
6 may find ourselves facing a situation that I think
7 we've seen in other areas.

8 Can you expand on that?

9 MR. RUSSELL: Let me address what has been
10 done and what we are doing.

11 We have developed knowledge and ability
12 catalogues based upon input that included licensed
13 operators and others to identify certain knowledge,
14 skills and abilities that are appropriate to the jobs.
15 Then we went through a second time and we identified
16 importance measures for those to the tasks. Those are
17 the root information that's used to then develop an
18 examination, to then use a sampling technique to go
19 through and test areas and then you decide what is the
20 appropriate vehicle. Is it a simulator examination,
21 is it a written examination, et cetera. So, there's
22 actually a model that is used to develop an
23 examination.

24 The fundamental information that's being
25 evaluated comes from the facility. That is, they can

1 correlate their facility learning objectives and their
2 materials, including their examination materials to
3 those same knowledges and abilities which are generic
4 for pressurized water reactors and boiling water
5 reactors. They understand the process that we use to
6 develop that examination and we are indeed using
7 facility materials.

8 Now, if there is a tendency within the
9 facility to get tougher and tougher and further out in
10 the knowledge domain, I'm not aware of that. I would
11 think that there would be an interest in balance
12 between the information they expect the operators to
13 handle and what may be ultimately handled by the
14 technical support center or through an accident
15 management concept when you start getting into severe
16 accidents or degraded core cooling. While we have
17 some knowledge requirements in those areas for
18 licensed operators and it's built into their training
19 program, we do not take them into that regime. In
20 fact, the simulators through the certification are not
21 able to replicate with accuracy when you get into that
22 domain.

23 So, we're looking at trying to put a
24 reasonable base in place that identifies generically
25 what are the knowledges, skills, and abilities that

1 are appropriate for testing. We've identified
2 importance measures for those and we use that as a
3 standard to build our examinations, and then we use
4 the plant-specific materials to assess that and that's
5 the process that's followed for initial licensing. We
6 consider some of those same elements when we look at
7 the examination material presented by the facility.
8 That is, is this a comprehensive exam? Is it one that
9 samples the required knowledge areas? Do they have
10 the right importance factors?

11 So, those are the methods that we're using
12 to attempt to control the examination content which
13 focuses on the knowledges that are being tested.

14 COMMISSIONER ROGERS: Could I just break
15 in here for a second on the scenarios? Because,
16 that's the one I'm still waiting to hear a little bit
17 more on.

18 CHAIRMAN CARR: You didn't talk about
19 that. We reserved your time for that.

20 COMMISSIONER ROGERS: Are you going to say
21 more about the -- how the scenarios are developed?

22 MR. RUSSELL: If you want. I could have
23 one of the examiners address it as to how it's
24 developed now.

25 COMMISSIONER ROGERS: Well, what the

1 gentleman said is that we use actuals.

2 CHAIRMAN CARR: No. He said I cautioned
3 them to use actuals. I don't know what they're using.

4 COMMISSIONER ROGERS: I see. Okay.
5 Because, I'd like to know how those are developed,
6 whether they are actuals or whether they're based upon
7 actuals. You know, you can take an actual and you can
8 say, well, we can make it a little bit better. You
9 know? And, I just would like to understand how those
10 scenarios are developed and I think we must be very
11 sensitive to the driving effect of those scenarios on
12 the training programs.

13 Right now, my sense is that the most
14 difficult scenarios are driving the training programs
15 and that there just isn't enough time on the simulator
16 in the training programs to deal with what I would
17 call the garden variety of incidents that are much
18 more likely to happen. The focus tends to be on the
19 crash and burn scenario they've been called.
20 Everything goes wrong. And I have a feeling that
21 somehow this is not giving us the safest situation for
22 training because the operators are not sufficiently
23 prepared or may not be sufficiently prepared to deal
24 with events which may happen once every couple of
25 years, but may happen, whereas the so-called crash and

1 burn scenarios are things which may never have
2 happened. Now, if we're using actuals, then that
3 argument I think evaporates, that concern evaporates.

4 MR. RUSSELL: For example, we have not had
5 actual ATWS' where people have had to lower water
6 levels to control power and demonstrate the ability to
7 remove decay heat, but at the same time the emphasis
8 is clearly more on the emergency procedures. We are
9 not examining operators in the requalification program
10 on their ability to start up and shut down the
11 facility or handle simple failures. We do that for
12 initial licensing.

13 CHAIRMAN CARR: Which, I might add, I
14 think is somewhat of a mistake because that's one of
15 the things that very few operators get to do is start
16 up and shut down, and many of the problems occur in
17 that switch-over as they're starting up through those
18 low power levels. You don't want to overlook that
19 scenario as a good training scenario.

20 MR. RUSSELL: We may have some insights
21 from the activities we have ongoing that are looking
22 at shut-down events in modes other than up to mode 2.
23 That is, as you're changing modes and starting up.
24 And, there may be appropriate training that's
25 provided. Clearly the rate of shut-downs and start-

1 ups has been decreasing.

2 Plant performance has been improving and
3 that may need to be factored into the training
4 program. Whether we want to spend time in the
5 examination on these areas, I think we need to look
6 at. Presently, we are using that typically to set the
7 stage where you have some type of relatively normal
8 operation going on and then you provide a failure and
9 that failure leads into -- and they do get fairly
10 complex in the issue of numbers of equipment failures
11 that are occurring, the degree of complexity of the
12 scenario. That's an area that we are looking at,
13 because we feel that they may have gotten overly
14 complex with multiple failures in order to get enough
15 critical tasks for each individual in a crew to have
16 one or two critical tasks. In that context, we are
17 explicitly looking at that as a part of the study,
18 looking at simulator scenarios administered over the
19 last six months.

20 COMMISSIONER REMICK: I think, though, you
21 do have to separate out the question on conducting
22 requal exams. Are you checking on the qualification
23 of the operator or are you checking on EOPs? They can
24 be different, and I agree with both Commissioners that
25 if we go too far out we drive the training program on

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1 things that are also important.

2 CHAIRMAN CARR: There's also what I call
3 the exam mentality, that they'll handle it different
4 on the exam day than they handle it on a normal day.
5 I used to see, examining crews, if you walked aboard
6 and you were on board as an examining team, the first
7 salinity alarm that went off they completely shut the
8 plant down. And if you weren't on board, they didn't
9 do that at all. They just went down and sampled to
10 see if it was a true alarm or not. And while that
11 doesn't happen in the simulator, probably, I would bet
12 that you could walk into the simulator and the first
13 alarm you give them they'll go into what they've been
14 trained to do on the simulator for the exam, and so
15 you've got to guard against that kind of an
16 examination where they are conditioned to be Pavlov's
17 dog. So, once in a while you let them win one. If
18 they whip the simulator, great, and you mark them --

19 MR. RUSSELL: We will clearly look at
20 those areas. We are continuing, however, to see
21 problems in the generic problems related to what I
22 will characterize as emergency operations in the
23 control room in crew --

24 CHAIRMAN CARR: Well, for instance, I'm
25 sure that most of those training exams out there right

1 now probably rupture a tube sometime, and that's
2 extremely valuable training because we have those
3 enough. Everybody out to be able to wrap one up
4 pretty quick. And I'll wager the Japanese train that
5 way too. But in real life when it happened they
6 thought the instrument was screwed up. from what I
7 read in the press, instead of doing what they'd been
8 trained to do, wrap the plant up and then check the
9 instrument out. So, we've got to make sure we get
10 realistic training.

11 Excuse me. Who's question are we on?

12 COMMISSIONER CURTISS: The general point,
13 I guess, that I'd like to leave you with on these
14 various questions, it does seem to me that while it
15 may be too early to tell that these problems that
16 we've talked about may be symptoms of a larger
17 problem. That is to say, as the exam pushes out to
18 test people who do well in the outer reaches and as
19 the simulator gets adjusted -- and in fact I have seen
20 simulators with licensees pressing out into degraded
21 core and the abilities that would support that -- it
22 does seem to me that from a manager level within the
23 Agency it's important to keep an eye on the larger
24 perspective of what it is that we're trying to test
25 for so that -- I mean, institutionally, I don't think

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1 we're capable as a Commission of following the
2 substantive evolution of this program in terms of the
3 things that are being tested, but I think there are
4 instances where we can look back after the fact and
5 perhaps reflect in the aggregate on instances where we
6 may have gone too far, and that's the general
7 observation that I'd leave you.

8 I do have just a handful of specific
9 questions on a variety of different subjects that I
10 want to go through quickly. On the question of inter-
11 regional consistency, can you tell me where we stand
12 on the question of constitution of the crew for the
13 simulator and whether we are allowing utilities to use
14 the full complement or insisting that they use tech
15 spec minimum?

16 MR. ROE: We have a policy that we have
17 published that we will allow for a utility to use up
18 to five licensed operators plus the STA in a dynamic
19 simulator. That's more than the typical --

20 CHAIRMAN CARR: Suppose they normally use
21 six?

22 MR. GALLO: They usually don't use six for
23 training.

24 CHAIRMAN CARR: But, suppose they did.

25 MR. ROE: Well, no, no. My concern --

1 CHAIRMAN CARR: I mean if they stood
2 watches normally with six operators.

3 MR. GALLO: The only place that would
4 happen is if there's a dual unit control room, a
5 single control room for two units.

6 CHAIRMAN CARR: Well, but if they did, why
7 wouldn't you let them be examined on the way they
8 normally run their plant? It's unrealistic not to.

9 MR. GALLO: The examination becomes very
10 difficult to --

11 COMMISSIONER CURTISS: For us or for them?

12 MR. GALLO: -- to conduct an exam.

13 MR. ROE: For both of us. It becomes
14 one -- we've --

15 MR. SNIEZEK: I think as you go to what we
16 were talking, the pilot program, where we're
17 evaluating crew performance, it especially makes an
18 awful lot of sense.

19 CHAIRMAN CARR: We ought to examine them
20 on what they're standing watch with.

21 COMMISSIONER CURTISS: This is a
22 particular sore point with me because I've been to
23 plants and, in fact, plants in the last two weeks
24 where I've gone around and asked, "Are you allowed to
25 put up crews that reflect what you actually run your

1 plant with? One unit, two unit, whatever your actual
2 crew is?" As recently as the past couple of weeks,
3 I've gotten indications from licensees that they are
4 of the view that we require tech spec minimum or that
5 we discourage anything but tech sp/c minimum.

6 MR. RUSSELL: That is not correct.

7 COMMISSIONER CURTISS: We need to -- I
8 guess my point here is we need to get that clarified,
9 I think, between and among the regions and get that
10 message sent out.

11 DOCTOR MURLEY: If your perception is
12 that, then I think we need to do some work to clear it
13 up.

14 COMMISSIONER CURTISS: Yes. I do think it
15 because I still hear from licensees that are under the
16 impressions, and the regions for that matter, that
17 tech spec minimum crews are highly desirable and that
18 anything other than that is discouraged or prohibited.
19 I just pass that on for you.

20 MR. ROE: But what you said there is a
21 piece of history. That was an approach early in the
22 program and we have evolved to going further than the
23 tech specs with some constraints to be sure that we
24 can conduct an effective evaluation and in the crew
25 concept --

1 COMMISSIONER CURTISS: Okay.

2 CHAIRMAN CARR: But if we're examining a
3 team concept and we're not allowing them to put their
4 team in, then that's unrealistic.

5 COMMISSIONER CURTISS: On simulator
6 certification, can you just give us a brief report on
7 where things stand on the May date and how many people
8 have been granted exemptions and what the overall
9 picture is?

10 MR. RUSSELL: The statistics thus far,
11 total certification forms received, we have received
12 45. We expect to get an additional 53 before May of
13 '91, which would be on time. We have a number of
14 exemptions that have been requested. Sixteen schedule
15 exemptions have been requested and we expect to get
16 one additional one in.

17 COMMISSIONER CURTISS: Do you anticipate
18 granting all those or are those problems with the
19 manufacturer of the simulator that you're seeing
20 generally?

21 MR. RUSSELL: Some of them are relatively
22 short scheduler exemptions. Some are longer. The
23 regulation itself provided the standards for judging
24 whether an exemption should be granted or not, or the
25 statement of considerations, I'm not sure which. But

1 it basically looked at whether there was a good faith
2 effort made on the part of the licensee to get a
3 simulator, whether there were conditions that were
4 beyond its control, for example, that caused the
5 delay, et cetera. We are looking at each of those.

6 We have processed a number internally
7 where we have completed the reviews and they're in the
8 process of review, going out the door to be issued.
9 Thus far, for operating facilities, looking down the
10 list, we have not completed action on any facility
11 that's operating. We have on some of the facilities
12 that are shut down, Rancho Seco, for example, Brown's
13 Ferry 1, 2 and 3. Big Rock Point is a unique
14 situation with its rather small control room.

15 We have a number under review. They just
16 have not completed and got all the way through the
17 process. But we expect to complete those prior to May
18 when the rule requires that they have a certified
19 simulator or an exemption to continue the process.

20 COMMISSIONER CURTISS: Okay. On the
21 question that Commissioner Rogers raised about the
22 pass-fail rate, are we generally finding now that as
23 the licensees understand the program, that we see less
24 of the situation where the licensees use the requal
25 process to weed out the candidates? In other words,

1 we weed them out rather than the licensees?

2 MR. RUSSELL: I don't think that we have
3 seen significant differences throughout the program
4 between the evaluations done by facilities and the
5 evaluations done by NRC. That has not been a major
6 contributor. The process that we've used has resulted
7 in quite consistent evaluations. So, generally, the
8 facility itself is identifying when the program is
9 unsatisfactory as a result of their evaluations.

10 COMMISSIONER CURTISS: I guess that means
11 the performance for the pipeline coming into the
12 process.

13 MR. RUSSELL: Well, it's only licensed
14 operators that are in the requalification program.
15 So, the pass rate on initial examinations is quite
16 high. So, I would say that the answer to your
17 question is that the facilities do quite a good job of
18 determining which candidates to put up for initial
19 licensing.

20 MR. GALLO: I think we're seeing a
21 somewhat lower failure rate on the initial exams, but
22 I think the screening tool right now is the generic
23 fundamentals exam that the NRC is giving. We're
24 allowing people to take that repeatedly if they do
25 fail, but they don't go beyond the generic

1 fundamentals exam until they are successful.

2 COMMISSIONER CURTISS: Okay. Will all
3 your examiner standard modifications go to CRGR from
4 here on out?

5 MR. RUSSELL: The process that we have in
6 place is that there's an internal screening and I will
7 make a determination as to whether the examiner
8 standard does contain a backfit and we'll follow the
9 procedures in the manual chapter for consideration of
10 backfits. If there is a backfit which we feel is
11 appropriate, we would clearly take it through CRGR.
12 Where it is a matter of procedure as to how we are
13 implementing carrying out the program, we would not.

14 We did have one backfit slip through
15 inappropriately and that's the basis for that change.
16 We had a change in eligibility requirements that was
17 expressed in Revision 6 of the examiner standards as
18 they related to how you give credit for prior
19 experience that was a change. We have withdrawn that.
20 We've gotten word out and it's based upon that
21 experience where we did have one slip through. So,
22 there is a much more rigorous review internally and
23 NRR to make a judgment as to whether a review by CRGR
24 is required or not.

25 COMMISSIONER CURTISS: You'll make a

1 threshold determination as to whether it's a backfit,
2 for instance?

3 MR. RUSSELL: Yes. Doctor Murley has
4 specifically assigned that responsibility to me to
5 make that judgment.

6 COMMISSIONER CURTISS: Okay. Two other
7 quick questions.

8 On the stress question, can you explain
9 what you do now in terms of sequestering people to
10 protect the integrity of the exam? One of the
11 comments that I've heard, not as much recently, is
12 that the process of sequestration to ensure that the
13 exam doesn't -- the questions don't get out has
14 induced a great deal of stress. How do you approach
15 that now?

16 MR. RUSSELL: We commented on that
17 particularly as it related to the job performance
18 measures where you would give basically the same walk-
19 through to all the individuals who are taking the
20 walk-through portion. That creates a lot of stress
21 because there's a lot of dead time in waiting. We are
22 now developing tailored exams for each group that goes
23 through. That's put a greater burden on the NRC or
24 the facility to develop more walk-through examination
25 material. The written examination is controlled. If

1 they're given at different times, they're different
2 exams. So, we are trying to minimize the amount of
3 sequestration and the amount of stress that that has
4 resulted in. It is more labor intensive for the
5 facility examiners in the NRC to do that.

6 COMMISSIONER CURTISS: All right. On the
7 pilot program, one final question, maybe a legal
8 question. Can you do the pilot program on the crew
9 versus the individual under the current regulations?

10 MR. SCINTO: Let me check that one. That
11 was a discussion we had and it's not clear yet on the
12 details of exactly how the question is going to be
13 asked as to whether or not they may run afoul of one
14 of the particular provisions for the license renewal.
15 We don't think so. We think we can probably
16 accommodate it under the present regulations, but
17 that's one of the reasons we will be working with Bill
18 on that.

19 CHAIRMAN CARR: I guess it would depend on
20 the records you keep of who was in the crew you
21 examined.

22 MR. RUSSELL: Well, it's also -- the
23 pivotal issue is whether you must make a judgment on
24 an individual in the dynamic portion of the simulator
25 as to how he performed on crew characteristics. We

1 think we need to run the pilot to get that
2 information. If we have a present regulation problem,
3 we would be leaning toward using an exemption for
4 those individuals that participated in a pilot. We
5 need to get the information first to judge where we're
6 going and then make a recommendation. That's why I
7 said clearly at the completion of the pilot, if it's
8 successful, we're going to be back making
9 recommendations for changes to the regulations.

10 CHAIRMAN CARR: But if the examinee was a
11 member of a crew that we examined, then I would say
12 we've looked at that guy.

13 MR. RUSSELL: If we follow your scenario,
14 Mr. Chairman, that is we evaluate them and if the crew
15 passes but you have a weak individual and then you
16 follow up on those weaknesses during the free
17 simulator portion or through -- not the free
18 simulator, through the control room portion of the
19 walk-through examination, and then use that as an
20 input from one examining process to the other such
21 that you could make an individual judgment on his
22 ability to perform, that may resolve some of the
23 discussion.

24 CHAIRMAN CARR: Well, he'd also get a
25 written exam.

1 MR. RUSSELL: And he clearly has a written
2 exam. The staff's view is that the examination taken
3 as a whole we believe would provide a sufficient
4 basis, but there are some issues we have to work out.

5 CHAIRMAN CARR: I think you've got
6 sufficient legal leeway there.

7 MR. SNIEZEK: The more difficult side is
8 if the crew fails, what does that mean regarding
9 individual failure? That's the more difficult
10 question.

11 MR. RUSSELL: Yes.

12 CHAIRMAN CARR: Well, you're worried more
13 about the training program for the plant then.

14 MR. RUSSELL: True, but there are rights
15 that the individual has if we propose to deny his
16 license and he may have done well on the crew where
17 the crew failed and that raises some questions. So,
18 it is an issue we have to address. We're working with
19 OGC on it. And as I indicated, if necessary we're
20 contemplating exemptions to those individuals who
21 participate in the pilot, to allow us to get the
22 necessary information. This renewal also does not
23 come up for approximately another three years. You'll
24 recall we start issuing licenses two years ago for six
25 year licenses, so we've still got some time.

1 MR. SCINTO: I think if we work closely,
2 legal issues will not interfere in the way we conduct
3 the program.

4 MR. RUSSELL: That's why we will work
5 closely.

6 COMMISSIONER CURTISS: That's all I have.
7 Thank you.

8 CHAIRMAN CARR: Commissioner Rogers?

9 COMMISSIONER ROGERS: Yes. Just a couple
10 of things.

11 This question of program stability, it
12 seems to me, is a little tricky one. Everything I'm
13 hearing about what you're doing is very encouraging.
14 I hate to say stop, don't do it. But I do think that
15 it is very important to, at some point, ask yourself
16 what the benefits are from change versus possible
17 negatives from change. We can all think of lots of
18 good things to improve systems, but nothing happens
19 because it's in the state of improvement all the time.

20 The effect of changes in our examination
21 procedures and expectations, and so on and so forth,
22 do have very big impacts on the training programs.
23 They sometimes have a lot of trouble trying to catch
24 up to something that we are introducing in the way of
25 a change. So, it's just really an admonition more

1 than anything, that you do very -- try to decide when
2 you've really more or less gotten there. And all of
3 the things that you're doing now, it seems to me, are
4 probably worth doing and changes worth making. But at
5 some point it's probably important to freeze the
6 process and say, "No more changes. Even though we
7 have a lot of good ideas, we want the thing to
8 stabilize for awhile before we start a new cycle of
9 changes."

10 It's only -- you're the ones who have to
11 make that judgment as to what that might be, but I
12 certainly think it's important to look at the question
13 of what are the drawbacks as well as the positive
14 benefits from making any change and perhaps gather
15 these altogether and decide you won't make any for
16 awhile, but then you'll make them more than one time
17 like an outage.

18 So, I think that's an important point
19 because the systems that don't stabilize really give a
20 lot of extraordinary grief that just doesn't have to
21 be there. So, I would say look at the mechanism for
22 change, how you would try to see -- how you'd achieve
23 something more in the way of stability. I think right
24 now we're in the start-up phase still of this program.
25 It's not that old. But at some point it does have to

1 stabilize.

2 I'd like to just simply say that this
3 whole new effort since 1987 seems to me to be a very
4 excellent one. I think you took the bull by the
5 horns, you stopped the process and really gave a hard
6 look to it, introduced a great deal of professionalism
7 in it. But be careful now that you're not just
8 adjusting, continually adjusting it. It should
9 stabilize.

10 The other comment is really a question.
11 How do you feel about this -- in the non-power reactor
12 area, this complaint that the non-power reactor people
13 have that we are expecting a non-power reactor staff
14 member to absent himself or herself from the
15 facilities training program for about 90 days to help
16 prepare the requal exams and to ensure independent
17 assessment of the licensee's capabilities? That 90
18 day period seems to be a great big problem for some of
19 the smaller sites.

20 MR. RUSSELL: Let me address that
21 specifically because I talked to the TRTR chairman
22 about that explicitly. We are going to be changing
23 our process. We don't think it's necessary for them
24 to absent themselves. Clearly, they have small
25 staffs, maybe two or three people, a few number of

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1 individuals. They have other duties, not only the
2 training portion of the continuing training program
3 that they have, but as well the teaching activities
4 and other responsibilities. So, we have eliminated
5 that.

6 We are instead looking at an agreement
7 with the individual who participates in the
8 development, that he or she would not disclose
9 information that is being considered for the
10 examination and use that as a vehicle to ensure
11 examination integrity. That is, certification that
12 they would so agree --

13 COMMISSIONER ROGERS: Yes.

14 MR. RUSSELL: -- rather than an exclusion.
15 Universities and colleges examine students at the end
16 of the semester and they know the material, so that
17 would have to be covered and we don't see that this is
18 a significantly different process.

19 COMMISSIONER ROGERS: Okay. Very good.

20 Well, I just want to say that I've found
21 this a very useful and very helpful briefing. Many of
22 the questions which I've heard and complaints I've
23 heard about are being addressed in your thinking and I
24 just want to commend you all on your progress so far.

25 CHAIRMAN CARR: How many pre-exam failures

1 have you had? Say on the programs that failed, next
2 time you went back and looked, how many failed a
3 second time?

4 MR. GALLO: For programs?

5 MR. RUSSELL: Yes. For programs, none.

6 CHAIRMAN CARR: So that would indicate
7 that there's maybe not anything wrong with the
8 process. Maybe perhaps that improved the training or
9 they didn't understand it. How about personnel,
10 people? How many people have failed the second time
11 around?

12 MR. GALLO: There have been some. I don't
13 know the statistics right now.

14 MR. RUSSELL: In the examiner standards,
15 our procedures for dealing with multiple
16 requalification examination failures are laid out.
17 Essentially, for a program that's satisfactory if the
18 individual fails, we allow the facility to reexamine
19 and return the individual to watch standing duties and
20 then we would come back with the next examination to
21 relook at that individual.

22 CHAIRMAN CARR: It seems to me I heard
23 some complaint about the guy being in limbo for six
24 months because we didn't come back and reexamine him.
25 Was that --

1 MR. RUSSELL: That may be as it relates to
2 his ability to have his license renewed in the future
3 because it would not be until he was reexamined by
4 NRC. But he would be returned to watch standing
5 duties when he's been remediated by the facility.

6 If the program is unsatisfactory, that is
7 if we find an unsatisfactory program, then the
8 mechanism for returning the individual to license
9 duties could either be an NRC examination or an
10 operational evaluation and that would be laid out in
11 the CAL which is issued, which is negotiated between
12 the utility and the NRC as to what action should you
13 take based upon the unsatisfactory program. So, there
14 are a number of permutations, but the basic issue is
15 that the individual be eligible for examining by the
16 NRC and we would not propose to take action against
17 his license until the third failure of an NRC
18 requalification exam.

19 CHAIRMAN CARF: Have we pulled any
20 licenses yet?

21 MR. RUSSELL: We've just had the first
22 third failure occur and we are dealing with OGC now on
23 the procedures to implement the policy that we've
24 broadly laid out because this individual does clearly
25 have hearing rights if we propose to take action

1 against his license.

2 CHAIRMAN CARR: Well, I would think that
3 that might help your stress problem if you say of all
4 the thousands of people you've examined only one guy
5 so far has come up to the point where he may lose his
6 license. I'm sure it's a current worry in their mind.

7 DOCTOR MURLEY: Can I comment on that, Mr.
8 Chairman? We've only recently -- well, relatively
9 recently, changed to the third failure. It used to be
10 that we would consider pulling a license after two
11 failures. That meant that -- and I -- it came home to
12 me when I was on the regulatory impact survey a little
13 over a year ago where we talked with operators at all
14 these plants that we visited and it was brought home
15 to me that after the first failure we were sending out
16 a letter which was highly legalistic, but it was very
17 threatening.

18 CHAIRMAN CARR: It scared the guy to
19 death.

20 DOCTOR MURLEY: It scared him to death and
21 he was living in this limbo with a very heavy cloud
22 over him after the first failure. So, that meant ten
23 percent of all the operators in the country basically.

24 CHAIRMAN CARR: That's a complaint I'd
25 remember.

1 DOCTOR MURLEY: So, I came back and I
2 talked with Jack and the staff and that has been
3 changed. So, I think some of this cloud that you've
4 heard is due to past history. But we probably haven't
5 gotten the message out enough, like you say, that we
6 really haven't yanked any licenses yet.

7 MR. RUSSELL: But we do have an impact
8 from the standpoint of the peer pressure. That is, an
9 individual fails the exam, he is removed, he is
10 remediated before he goes back to license duties and
11 his peers understand that. So, there is that pressure
12 as well. But we don't propose at this point to take
13 formal action against an individual license until
14 after the third failure.

15 COMMISSIONER ROGERS: Just on this point,
16 we may not have taken anybody's license away, but my
17 understanding is that some of the licensees have
18 actually pulled people off of shift work when they
19 felt that they were not quite up to snuff. Even
20 though we haven't taken action, they have removed them
21 from the control room.

22 MR. RUSSELL: That's correct. The
23 regulations provide a very --

24 CHAIRMAN CARR: I reserve their right to
25 do that, yes.

1 COMMISSIONER ROGERS: Oh, absolutely. But
2 I'm just saying that it is happening. It's not
3 just -- it isn't that this is a locked in situation,
4 that they are taking initiatives on their own to take
5 people out of control room operations where they feel
6 that they're somehow -- even though they have passed
7 the exams, that they are not as comfortable with them
8 as they'd like to be.

9 MR. RUSSELL: They make those decisions
10 for a number of reasons. It could be that they don't
11 want to continue to expend the resources to have that
12 person in requalification training which is about 16
13 to 18 percent of his time, or it might be as a result
14 of their own evaluations because recall they're
15 evaluating in parallel. If they conclude that the
16 individual has failed, then they independently
17 determine they no longer have a need for his license
18 and the regulations provide that a very simple letter
19 to the regions saying, "We no longer have a need for
20 license number," then that license terminates.

21 That makes it a very interesting
22 situation. If the individual wants to retain his
23 license but has had three failures, if the utility
24 determines they don't have a need, that individual
25 still may have some rights as it relates to appealing

1 whether it was a failure or not. That's what we're
2 dealing with OGC on right now on this third failure
3 situation.

4 COMMISSIONER REMICK: Just let me add a
5 point. It's obvious from some of the things you've
6 said today -- and I agree with Commission Rogers, I
7 applaud many of the things that you're looking at and
8 doing, but it's obvious you've made some changes that
9 I know I did not know about. That's not necessarily a
10 problem, but it's probably apparent also that the
11 individual operators don't know about some of these
12 changes. We communicate with the Part 50 licensees
13 primarily, I assume. Have you thought about using the
14 PROS newsletter as a means of getting some of these
15 things across to a wider audience of the actual
16 operators? Since your now meeting with them and so
17 forth, they do have a newsletter.

18 MR. RUSSELL: Yes, we are. In fact, we
19 discussed with them that we will send generic
20 communications to them and they can publish it in the
21 newsletter. We've agreed to participate in their
22 annual meetings and provide other vehicles for them to
23 feed back because we do find that while training
24 departments are slow getting the word, it's even
25 slower getting it to the operators.

1 CHAIRMAN CARR: I got a complaint that we
2 used to communicate with our licensed operators more
3 than we do. We sent missives to our licensed
4 operators. That's always an option to take care of
5 it, of keeping them informed.

6 Any other comments?

7 Well, I'd like to thank the staff for this
8 informative briefing. It's my belief that the NRC
9 requalification program is an important instrument to
10 ensure operational safety at nuclear power plants.
11 This is because the manner in which the operators are
12 trained and examined has a direct bearing in the
13 manner in which they approach their job
14 responsibilities.

15 The NRC requalification program will be
16 most effective by emphasizing fair examination of
17 realistic operational functions of licensed operators.

18 It's unrealistic to believe that
19 examination stress can be eliminated. It's an inherent
20 part of a licensed operator job. But I believe the
21 staff should do what it can to eliminate unnecessary
22 examination stress, particularly by establishing
23 stability in the requalification program.

24 I also request that the staff continue to
25 provide to the Commission periodic reports, perhaps

NEAL R. GROSS
1323 Rhode Island Avenue, N.W.
Washington, D.C. 20005
(202) 234-4433

1 semi-annual, on the status of the requalification
2 program until such time as the staff is satisfied with
3 the stability of the program, if my fellow
4 Commissioners agree.

5 COMMISSIONER CURTISS: I agree.

6 COMMISSIONER ROGERS: Fine.

7 CHAIRMAN CARR: Do any of my fellow
8 Commissioners have additional comments?

9 If not, we stand adjourned.

10 (Whereupon, at 11:59 a.m., the above-
11 entitled matter was adjourned.)

CERTIFICATE OF TRANSCRIBER

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

TITLE OF MEETING: BRIEFING ON REACTOR OPERATOR REQUALIFICATION PROGRAM

PLACE OF MEETING: ROCKVILLE, MARYLAND

DATE OF MEETING: FEBRUARY 15, 1991

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

Carol Lynch

Reporter's name: Peter Lynch

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Licensed Operator Requalification

February 15, 1991

BACKGROUND

Pre-1987 Examination Program

- Rule Requirements

- Continuing Training Programs
- Facility-Administered Examinations
- NRC-Administered Examination Once During 6-Year License Term
- Applies To Power And Test/Research Reactors

- Examinations Suspended September 1987

BACKGROUND

(continued)

- New Program Developed For Power Reactors
- Test/Research Reactor Program Separated and Deferred
- Pilot Examinations Late 1987 - Mid 1988
- Examiner Standards Revision 5
 - New Program Implemented October 1988
- Examiner Standards Revision 6
 - Issued June 1990
 - Implemented January 1991

PROGRAM OVERVIEW

- Facility Program Evaluation

- Operator Proficiency

- Written Exam: Classroom
Static Simulator

- Operating Test: Dynamic Simulator
Walk-through (JPMs)

INDIVIDUAL RESULTS

Operators Evaluated

FY	Total	Failed
1989	574	100 / 17%
1990	1063	123 / 12%
1991	158	14 / 9%

FACILITY RESULTS

All Operational Facilities (Except Robinson) Have Been Evaluated

Facility Evaluations Completed

FY	Total	Unsat
1989	36	7
1990	57	3
1991	7	1

CURRENT ISSUES

- Operator Stress
 - Human Factors Branch Study
- Program Stability
- Inter-Regional Consistency
 - Simulator Scenario Study
- Crew vs. Individual Examinations
 - Pilot Program

TEST/RESEARCH REACTOR PROGRAM

- Non-Power Reactor Requalification
- Meetings with TRTR Organization
- Developed Draft Examiner Standard
- Pilot Examination Program in Progress