

**UNITED STATES OF AMERICA**  
**NUCLEAR REGULATORY COMMISSION**

**Title:            BRIEFING ON OPERATOR LICENSING**  
**PROGRAMS - PUBLIC MEETING**

**Location:        Rockville, Maryland**

**Date:            Thursday, May 25, 1995**

**Pages:          1 - 53**

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1 UNITED STATES OF AMERICA  
2 NUCLEAR REGULATORY COMMISSION

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4 BRIEFING ON OPERATOR LICENSING PROGRAMS - PUBLIC MEETING

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6  
7 White Flint Building One  
8 Commissioners Conference Room  
9 Room 1-F-16  
10 11555 Rockville Pike  
11 Rockville, Maryland  
12

13 Thursday, May 25, 1995  
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15 The Commission met in open session, pursuant to  
16 notice, at 10:00 A.m., Ivan Selin, Chairman, presiding.  
17

18 COMMISSIONERS PRESENT:  
19

20 IVAN SELIN, Chairman of the Commission  
21 KENNETH C. ROGERS, Commissioner  
22 E. GAIL DE PLANQUE, Commissioner  
23 SHIRLEY A. JACKSON, Commissioner  
24  
25

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1 STAFF SEATED AT THE COMMISSION TABLE:

2 KENNETH R. HART, Office of the Secretary

3 KAREN D. CYR, General Counsel

4 WILLIAM RUSSELL, NRR

5 JAMES MILHOAN, NRR

6 BRUCE BOGER, NRR

7 STUART RICHARDS, NRR

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

[10:00 a.m.]

CHAIRMAN SELIN: Good morning, ladies and gentlemen. We have a very important presentation this morning.

As you are well aware, that operator effectiveness and specifically operator licensing is a function by which, by statute, the NRC has more responsibility than -- or must take more responsibility than might be taken in other areas and over and over we see that operator errors are probably the largest single source of trip safety system actuations, et cetera. So this whole question of operator performance, personnel performance is critical to everything that goes on in the industry.

On the other hand, we have systematic -- gone about in a systematic attempt to have clear lines about what we are responsible for and what the industry is responsible for, going into our operations to make sure that we have clean lines, as you folks do your job, which is to train, equip and operate the plant, and we do our job, which is to be on top of the functions in detail to know just where things stand.

So we have had a number of steps taken in this whole question of license, operator licensing and recertification or at least announced in the last few months

1 and here is our opportunity for the staff to come and put  
2 these together in an integrated fashion to discuss how these  
3 affect the statutory responsibilities of the agency with the  
4 well established division of responsibility between a  
5 regulatory agency and its licensees and to put some more  
6 flesh on the bones about how these programs will be carried  
7 out in the next few years.

8 Mr. Milhoan.

9 MR. MILHOAN: Thank you, Mr. Chairman.

10 The purpose of this morning's briefing is to  
11 update the Commission on the status of the operator  
12 licensing activities, as you have said. This morning at the  
13 table is Bill Russell, Bruce Boger and Stu Richards, who is  
14 chief of the operator licensing branch.

15 We intend to address three areas of operator  
16 licensing activities this morning. First, we will discuss  
17 the process by which the operators are presently licensed by  
18 the NRC. Second, we will discuss the licensed operator  
19 requalification process and, lastly, we will describe the  
20 effort now under way to identify methods to improve  
21 efficiency of the manner in which the NRC licenses  
22 operators.

23 Our intention is to revise the operator licensing  
24 process previously described in workpaper SECY 95-075 dated  
25 March 24 of this year. This effort is part of the larger

1     NRR effort to streamline their organization and to increase  
2     the efficiency of performing our regulatory function.

3             At this point, I would like Bill to provide some  
4     opening comments.

5             MR. RUSSELL: Thank you, Jim.

6             In the context of the efficiency activities  
7     related to initial licensing, I would like to emphasize this  
8     is a developmental process, that we are seeking comments  
9     from the staff, from the industry and that we have quite a  
10    bit of work to accomplish before we will be able to in fact  
11    implement some processes and procedures related to initial  
12    licensing of operators. I thought I would discuss what the  
13    concept is and give a little bit of background first.

14            Approximately a year-and-a-half ago, we identified  
15    a change to approach for requalification examinations.  
16    Requalification examinations in the past required at least  
17    once in six years an examination by NRC as a basis for  
18    renewing an operator's license. We would administer both a  
19    written examination and an operating test for the candidates  
20    at least once in that six-year period and we would use that  
21    for two purposes, one, to renew the license of the operator  
22    and, two, to evaluate the effectiveness of the utility's  
23    requalification programs.

24            We shifted that approach after a lot of dialogue  
25    to one of our inspecting those activities, putting the

1 responsibility for the requalification program squarely on  
2 the licensee's shoulders with us performing inspections but  
3 preserving the ability to conduct an examination for cause  
4 if we deemed that was necessary. We have successfully  
5 implemented that program over the last year and I think that  
6 this has improved the crew performance and team performance  
7 which we wanted to emphasize with the rule changes that  
8 required simulators be used as a part of the operating test,  
9 which goes back several years.

10 CHAIRMAN SELIN: Before you come off that, would  
11 you say a few words about just how we do this inspection,  
12 what's our involvement in the scenarios?

13 MR. RUSSELL: Yes, we are going to do that in some  
14 detail. I wanted to set the stage with an overview first,  
15 but we will be discussing each of the phases; that is, the  
16 current process for initial licensing, the requalification  
17 program and how we have changed that and what our experience  
18 has been and what are the directions we are going to improve  
19 efficiency with respect to initial licensing.

20 I only wanted to emphasize what we are doing in  
21 requalification in the inspection activities because in that  
22 area we look at crew performance carefully and we want to  
23 emphasize both crew performance and response to events in  
24 real time. Those were the two major areas of the operating  
25 test.



1           CHAIRMAN SELIN: I think that is appropriate  
2 because the original concept of a license was an individual  
3 could carry this license from plant to plant and the  
4 emphasis was on the original. But since licenses are really  
5 to operate a particular unit within a -- although they are  
6 not limited to a crew, the effectiveness of the individuals  
7 tied to the crew and it is appropriate, I believe, that the  
8 emphasis be on the performance of the crew rather than -- it  
9 is a team effort and the qualification of the individuals  
10 are essentially superceded by the performance of the crew.

11           MR. RUSSELL: I agree and that is one we felt was  
12 important to emphasize that we had seen some weaknesses in  
13 crew performance on earlier examinations.

14           COMMISSIONER ROGERS: Excuse me, on that point I  
15 think -- I don't have any question about how important it is  
16 that the team be examined and so on but I don't think people  
17 have every carried licenses from one plant to another.

18           MR. RUSSELL: No.

19           MR. MILHOAN: No.

20           MR. RUSSELL: No, that's correct. They have not.  
21 They are licensed on an individual plant but they --

22           COMMISSIONER ROGERS: And only that plant.

23           MR. MILHOAN: That's correct.

24           COMMISSIONER ROGERS: And only that reactor at  
25 that plant, I believe.

1           MR. MILHOAN: That is correct and the licensees  
2 have to show that there is a continuing need for that  
3 license at that plant.

4           MR. RUSSELL: The point I was leading up to is the  
5 point that the typical experience has been with initial  
6 licensing, after a person gets a license, they are  
7 integrated into a crew. You don't form crews of all initial  
8 licensed operators and in fact there are differences between  
9 how we examine for initial licensing from how we examine for  
10 requalification. While there is an operating test and there  
11 are still aspects, we would not expect to see operators  
12 going into a control room with a crew of entirely new  
13 operators. They would be integrated into an ongoing crew  
14 and they would be expected to be trained as a part of that  
15 crew in real time.

16           So I think what we are looking at is trying to get  
17 more of a congruence between what we are doing for  
18 requalification and what we are doing for initial licensing.  
19 The concept being to move the NRC from one of writing and  
20 administering an exam to one of the NRC inspecting to  
21 confirm that the activity is properly conducted by the  
22 licensee.

23           The last related point, and then I will turn it  
24 over, is that by rulemaking we have incorporated into our  
25 regulations a systems approach to training. One of the

1 elements of that systems approach to training is the ability  
2 of the facility to evaluate candidates upon completion of  
3 training and, based upon those evaluations, to feed it back  
4 in and revise the process. But that is an important element  
5 and it is one we expect the licensees to carry out. So by  
6 shifting to an inspection mode of overseeing their activity,  
7 we are actually reinforcing that element of the rule.

8 With that general introduction, I would like to  
9 turn it over now to Bruce who will continue to brief.

10 [Slide.]

11 MR. BOGER: Okay, I will start on slide number 2.

12 Basically, as we have indicated earlier, in my  
13 presentation this morning I will provide some background  
14 information on the initial operator examination process and  
15 also a little information on the requalification process to  
16 serve as background for potential changes to the initial  
17 program.

18 The next slide, please.

19 [Slide.]

20 MR. BOGER: 10 CFR Part 55 establishes the  
21 criteria for reactor operator and senior operator licenses  
22 and also prescribes a six-year term for that license. The  
23 basic process is for an individual to work at a power plant  
24 and make application to the NRC, submit medical  
25 certification that he or she is fit for duty and also it

1 would come with a certification from the facility licensee  
2 that the individual has successfully completed a training  
3 program.

4 This training program typically lasts for several  
5 years and includes classroom training, includes on-the-job  
6 training, it includes simulator training and also a series  
7 of quizzes and exams administered by the facility licensee  
8 including typically a practice exam before the NRC would  
9 come and give its exam.

10 The examinations are specified within Part 55 to  
11 include a written examination and an operating test. Part  
12 55 identifies the content of those examinations.

13 Part 55 also establishes conditions for the  
14 licenses which would require that a holder of a license  
15 participate in the requalification program and also maintain  
16 certain proficiency by standing a certain number of watches  
17 each calendar quarter. Part 55 also specifies how licenses  
18 will be renewed. Basically it requires that a candidate or  
19 that holder of a license participate in the requalification  
20 program and maintain his medical fitness.

21 Next slide, please.

22 [Slide.]

23 MR. BOGER: I would like to move on to the details  
24 of the examination process itself. There are two elements  
25 to the program implementation I feel that are important.

1 One of them is the examiner's standards and the examiner  
2 handbook. These are the documents that provide the guidance  
3 to the examiners and the policies and procedures of the  
4 agency to administer examinations. We set the criteria for  
5 exam content and also exam administration.

6 The second element of that is examiner training.  
7 We put examiners through an extensive training process.  
8 They are all required to either go through the technical  
9 training full course series or have equivalent experience  
10 from a power plant. We require that they attend examination  
11 techniques training which would provide them criteria on how  
12 to conduct exams. In addition, they are observed by a  
13 certified examiner before they are allowed to examine by  
14 themselves. We also include refresher training every two  
15 years and also a yearly check by their supervisor to  
16 maintain their proficiency.

17 We do prepare, at the present time, conduct and  
18 grade examinations. I need to note to you that at the  
19 present time about 50 percent of the resources that go into  
20 this process are provided by contractors. I will go into  
21 the details of the various elements of the examination in a  
22 few slides.

23 We also make extensive use of the facility  
24 licensees at this point in time to support the exams. The  
25 facilities provide us reference material, they provide us

1 the exam room, the simulator and they also serve a function  
2 to, as a pre-exam review course.

3 Next slide, please.

4 [Slide.]

5 MR. BOGER: The first component of the exam  
6 process is the generic fundamentals examination. This is a  
7 100-question, multiple choice exam that must be passed prior  
8 to taking a site specific examination. We have a version  
9 for a boiling water reactor and pressurized water reactors  
10 that cover topics such as components, pumps, valves, motors,  
11 reactor theory and also thermodynamics, heat transfer, fluid  
12 flow.

13 The exam is developed for us by a contractor using  
14 questions from INPO catalogs. We mail the exams to the  
15 facilities, the facilities conduct the exam at the same time  
16 across the country. It is earlier in one part of the  
17 country than another but they all see it at the same time.

18 COMMISSIONER JACKSON: All of the questions are  
19 from the INPO catalog?

20 MR. BOGER: About 50 percent of the questions are  
21 questions that had been used in the past, 40 percent are new  
22 questions from their catalog that have been revised or  
23 altered somewhat and then 10 percent of the questions are  
24 created by the NRC, so it is a mix of old and new.

25 COMMISSIONER JACKSON: What I is the required

1 passing grade?

2 MR. BOGER: It is an 80 percent pass.

3 We examine about 350 candidates per year and as  
4 you can see the pass rates are fairly high, they score over  
5 90 percent on the exams.

6 COMMISSIONER ROGERS: What do you really mean by  
7 "administered by the facilities"? It is providing the  
8 space, the simulator --

9 MR. BOGER: For the generic fundamentals  
10 examination, they provide the space and they proctor the  
11 exam, you know, they take what we mail them and administer  
12 it, package it back up, send it to us, we grade it and  
13 evaluate the results.

14 [Slide.]

15 MR. BOGER: The next slide speaks to the second  
16 component of the exam process and that is the written  
17 examination. This is also a 100-question exam but it has  
18 multiple choice and matching type questions. It covers  
19 site-specific emergency, abnormal plant evolutions, system  
20 design and operations and general operation topics of an  
21 administrative nature. Passing grade on this exam is 80  
22 percent and again the average pass rates are well over 90  
23 percent.

24 [Slide.]

25 MR. BOGER: Move on to the next slide which is the

1 third component of the exam process and that is the  
2 operating test. The operating test is the phase of the  
3 examination where we assess operator performance in the job  
4 setting.

5 The first part of that, of the operating test,  
6 takes place in the dynamic simulator and we test operator  
7 candidates on normal, abnormal and emergency procedures in  
8 what we refer to as scenarios. A typical scenario would  
9 last an hour to an hour-and-a-half and would include a  
10 combination of normal operations, control board operations,  
11 component malfunctions and also minor and major transients.

12 We examine three-member crews and basically there  
13 would be a reactor operator candidate that was responsible  
14 for the primary site of the plant, we would have another  
15 reactor operator candidate that was responsible for the  
16 secondary and electrical systems and then a senior operator  
17 candidate that was responsible for the crew integration,  
18 command and control functions. We would typically have  
19 three examiners participate in that exam, one for each  
20 candidate.

21 COMMISSIONER JACKSON: Do the crews pass or fail  
22 together?

23 MR. BOGER: It is an individual-based exam and so  
24 the crews are not evaluated at this point. They are  
25 evaluated as individuals to get initial license.



1 MR. MILHOAN: We will characterize the difference  
2 between this and the recall examination in a minute, where  
3 we are looking at crews, typically in the normal way that  
4 they would stand the watches.

5 MR. BOGER: At this point in time we are trying to  
6 make sure that the individuals have the competencies that we  
7 would like to see them have. Basically, the competencies  
8 range from response to alarm, ability to use procedures,  
9 control board operations, ability to communicate. A senior  
10 operator would be required to have the same competencies  
11 plus an ability to use technical specifications and an  
12 ability to direct operations.

13 COMMISSIONER ROGERS: Just before we go on and it  
14 is sort of a question that could apply later on as well, you  
15 told us what the average pass rates were and they are high.  
16 What information do you have and can you learn anything from  
17 it for the distribution of the failure, the scores of the  
18 failed candidates? In other words, how bad are they when  
19 they fail? Do they just barely fail, do they fail -- I  
20 mean, do you get numbers like 40 percent of correct answers  
21 on a 100-question exam? How long is that tail at the low  
22 end?

23 MR. RICHARDS: I think that usually when somebody  
24 fails they -- on the written, they are down in the 70s. I  
25 don't think we see too many people that just flat out fail

1 below 50 mark and the reason is, before somebody comes up  
2 for one of our exams, the facilities have already tested  
3 them typically and they have some confidence they are going  
4 to pass. They sign a form certifying they have completed  
5 their training and they expect them to pass so we will see  
6 before a test is given, sometimes the licensee will say they  
7 need tests for 10 candidates but when you go to give the  
8 test maybe the number has fallen to eight or seven. That is  
9 part of their process of judging whether their people are  
10 ready or not.

11 COMMISSIONER ROGERS: Well, I'd be interested in  
12 the same and I think it is more important in the recall  
13 exams how low those tails are when people fail because that  
14 could be scary if you are having people take recall exams  
15 and coming in with very, very low scores.

16 MR. MILHOAN: Because if we see increasing failure  
17 rates on the exams, we certainly are asking about the  
18 quality of the training program itself which would lead to  
19 additional question. We expect them to do the screening  
20 exams before they come up to the NRC exam if they do that.

21 COMMISSIONER ROGERS: On the initial exam.

22 MR. MILHOAN: On the initial exams, yes.

23 COMMISSIONER ROGERS: Again, I don't want to  
24 belabor the point but it does seem to me that you have some  
25 very important information about individuals if their scores

1 are low on the recall.

2 MR. RUSSELL: I think we are going to have to get  
3 back to you with some more current information on that. I  
4 can characterize it from my past experience with it and that  
5 is most cases the scores when they fail are in the 70 to 80  
6 range on the written test. We have had a few cases where  
7 the scores were quite low and what we found was that there  
8 were problems with the quality of the written test. There  
9 were test questions or other things that were not as  
10 objective and this is typically not occurring any longer.  
11 We are seeing much better examination results. From the  
12 standpoint of the workup prior to, involving the facility  
13 and reviewing the exam so the information I am describing  
14 now has somewhat an historical perspective in that at one  
15 point in time NRC was administering exams without having the  
16 exams reviewed in advance by the utility and so we may have  
17 a problem with the quality of the exam, which results in  
18 lower scores.

19 Now we have some people that are separated from  
20 the training process so that there is not a feedback from  
21 participating with us and ensuring a content-valid exam on a  
22 site specific basis and that provides a review. We do the  
23 same thing on the simulator exam. At one point in time we  
24 were having difficulty with simulator exams. There were  
25 questions about the scenarios being too difficult,

1 impossible to pass, et cetera.

2 What we do now, during the exam week, is we run  
3 those scenarios in advance, they are observed by the  
4 facility when that is done and they have the opportunity to  
5 raise questions about the content. We have also issued some  
6 fairly specific guidance as it relates to degree of  
7 difficulty, what we call some benchmarks. We have actually  
8 got some standards that we use for judging them so that we  
9 are not creating an examination which is extreme that you  
10 would have high failure rates on.

11 So I don't believe that we are seeing the kinds of  
12 results that would indicate extremely low scores on the  
13 written exam or very high failure rates. That has not been  
14 our experience for the last three or four years.

15 COMMISSIONER ROGERS: On the simulator exams,  
16 typically what are the reasons for a failure there of an  
17 individual, on the simulator?

18 MR. RICHARDS: Excuse me. Usually it is because  
19 they've made some significant error in handling one of the  
20 tasks that they are required to perform. The passing grade  
21 on the simulator is not 80 percent, there is a grading sheet  
22 where these competencies that Bruce had mentioned are each  
23 graded, either a 1, a 2 or a 3 and, without belaboring it,  
24 there is a math formula to go through to come up with the  
25 overall grading. But, typically, when somebody fails an

1 operating test it is because they have either made a  
2 significant error in handling one of their responsibilities  
3 or they have made a number of errors in a given area, that  
4 the combination of that causes you to lose confidence in  
5 their ability to do the job.

6 MR. BOGER: A senior operator may fail because he  
7 was unable to adequately use the procedures and control the  
8 crew. Operators may not have diagnosed an event properly or  
9 may not have looked at the right instrumentations. On a  
10 fine level, that is what it may be.

11 MR. RUSSELL: There is a process that you probably  
12 ought to be aware of also and that is we are very careful  
13 about documenting the basis for our findings and there is an  
14 appeal process that can be used in the event that the  
15 candidate feels that they have been unfairly judged  
16 regarding the examination. So there is a rigorous process  
17 which is laid out which provides for an appeal and the  
18 appeal is based then upon the record and the information  
19 that was put together from the observations in the simulator  
20 examination at the time the examination was going on, what  
21 were the particular critical tasks that may not have been  
22 performed, what happened with the scenario, et cetera. So  
23 that has helped.

24 In the requalification area, of course, you have a  
25 facility examiner and an NRC examiner at the same time

1 conducting those activities and making the observation so --  
2 and we will get to that in more detail. But there is a  
3 formal process where, if there is a concern about the  
4 fairness of the grading, that can be appealed to get the  
5 facts and then make the facts in an impartial way as to  
6 whether the candidate did or did not adequately perform.

7 Then, of course, there are capabilities for  
8 reexamination which could be a partial examination if they  
9 only failed the written or it could be an operating test if  
10 they only failed the operating test.

11 MR. BOGER: Go to slide 8.

12 [Slide.]

13 MR. BOGER: The second portion of the site-  
14 specific operating test is what we call the walkthrough and  
15 this includes examination both in the simulator and also in  
16 the actual control room and in the plant. This would  
17 include an evaluation of a candidate's ability to perform  
18 job performance measures. These are evaluate the  
19 proficiency of a candidate in conducting specific tasks such  
20 as starting and loading an emergency diesel generator.

21 Again, the average combined pass rates for the  
22 past two years are well over 90 percent, and that is in the  
23 combined walkthrough and simulator examination.

24 That is the basic overview of the initial  
25 examination process. I would like to turn now into the

1 slide 9 and the requalification program.

2 [Slide.]

3 MR. BOGER: As indicated, the Part 55 does  
4 establish a requirement for continuous training and  
5 requalification training and it lasts about 24 months. As  
6 we indicated, the training is crew based. We encourage the  
7 facilities to work their people together as a crew and also  
8 train them together as a crew. When we say that, that would  
9 include people like a shift technical advisor that would be  
10 a normal part of the crew.

11 The typical training cycle for a utility that has  
12 six shifts of personnel would be for it to be in training  
13 for one week out of the six. In this instance, as Bill  
14 Russell indicated, the facility is preparing and conducting  
15 the exams, the operating tests and written exams. He  
16 indicated that the accreditation process establishes  
17 requirements or criteria for licensees to have  
18 qualifications for their instructors, qualifications for  
19 their evaluators and also that the process include  
20 evaluation criteria.

21 We need to note that the operating test that is  
22 conducted in requalification is done on a crew basis. The  
23 crew critical tasks are identified that are important for  
24 the crew to handle, so we don't really look at individuals  
25 at this point in time but we are really looking at how a

1 crew performs.

2 I have to say, though, that if individual  
3 weaknesses are identified, they are to be addressed by the  
4 facility as part of the systems approach to training. This  
5 is the feedback that goes to shore up an individual  
6 weakness.

7 COMMISSIONER DE PLANQUE: How long does a crew  
8 typically stay together as a crew? Do you have any idea?

9 MR. BOGER: I am afraid I am not sure.

10 MR. RICHARDS: I can speak from my experience as a  
11 resident and I was a Trojan for three years, the crews  
12 tended to stay together. You know, people would move on as  
13 part of the normal process of getting a day shift job or  
14 doing something different, but I don't recollect the company  
15 making a conscious decision to shuffle the deck. So,  
16 typically, unless jobs came up or something, they would stay  
17 the same.

18 MR. RUSSELL: We have some facilities that are  
19 unique that do not rotate the crews together. In fact, in  
20 some instances the bargaining unit employees are in a  
21 different rotation than the supervisory SRO candidates and  
22 through the process of bargaining they have come up with  
23 different approaches to their crew rotations, in some  
24 instances where they actually bid each year based upon a  
25 seniority basis as to which crew they wish to be on so they



1 get better days off with respect to holidays for example.

2 We have raised this issue with some of those  
3 licensees because it does cause you to have different  
4 supervisors on as frequent a schedule as 12 to 18 week  
5 schedule because of the differences in a rotation and it  
6 makes it very difficult to develop the crew performance.

7 However, when we look at these crews as they are  
8 performing in recall and we evaluate them basically the same  
9 way they stand in watch, their performance on the  
10 requalification examinations have been satisfactory.

11 COMMISSIONER DE PLANQUE: You didn't see any  
12 difference?

13 MR. RUSSELL: We did not see a significant  
14 difference. So while it is an issue that has come up from  
15 time to time, we have not seen a significant difference.  
16 Some facilities perform quite well under this process and  
17 others have a great deal of difficulty under basically the  
18 same process and agreements.

19 MR. BOGER: As Bill indicated, we did revise Part  
20 55 in February 1994 to no longer require that an individual  
21 licensee pass an NRC conducted examination in order to get a  
22 license renewal and we did move into an inspection based  
23 process at that time.

24 The next slide, please, number 10.

25 [Slide.]

1           MR. BOGER: Although we moved to an inspection  
2 type process, we retained the authority to conduct  
3 examinations or training inspections if we lost confidence  
4 in the licensee's ability to conduct that training and  
5 evaluation. As Bill indicated, we felt the transition was  
6 successful.

7           In FY '94 we evaluated 43 programs and in FY '95  
8 to date we have looked at 42 programs and found all of them  
9 to be satisfactory. We found no instances where we had to  
10 conduct an examination for cause, however we have seen some  
11 deficiencies in the programs as a result of our inspections  
12 and we notified the industry of that in Information Notes  
13 95-24.

14           We had some instances where exam difficulty wasn't  
15 quite up to what we thought NRC standards were. Some  
16 instances where licensees were not maintaining the  
17 conditions of their licenses with respect to medical  
18 certifications or watch proficiency. So they were minor  
19 issues but there were still things that we wanted industry  
20 to pay attention to.

21           COMMISSIONER DE PLANQUE: From the programs you  
22 have looked at so far, have you looked at the scoring and is  
23 the scoring similar to what you found in the previous  
24 program?

25           MR. BOGER: I have not.

1           MR. RICHARDS: We don't keep track anymore, pass  
2 failure rates in the Commission paper we said you, I think  
3 it just stays "establish." That means we didn't do a for-  
4 cause recall so we don't really have numbers anymore to say  
5 how many people passed or failed. But one of the things  
6 that the inspection does look at is it evaluates how the  
7 licensee's trainee staff is doing in evaluating the  
8 trainees. So we are looking to see if they are making  
9 reasonable judgments in the performance of the operators  
10 during the recall exam.

11           As far as data goes, I don't have specific  
12 numbers.

13           COMMISSIONER JACKSON: So you don't feel that  
14 failure rates, to do some minor trending of that is of any  
15 utility because as long as you are convinced that those who  
16 pass have the knowledge base they need, is that the point?

17           MR. RICHARDS: I think what we are primarily  
18 concerned about and what I told the industry when I got a  
19 chance to express it is when the rule change was made I  
20 think one of the expectations was that the industry would  
21 maintain a relatively rigorous program of testing with the  
22 standard being what we had done in the past. What we were  
23 concerned with is that for whatever reason the industry may  
24 slack off and get in a position where people who would not  
25 have previously passed are now passing, so we are looking

1 for instances where people -- everyone is passing all the  
2 time, so to speak, and maybe they don't deserve to.

3 What we are seeing is that in number of cases the  
4 utilities are willing to say people didn't do well and they  
5 need remedial training and they are giving that training, so  
6 we are really looking forward. The indications that  
7 everybody is passing all the time, that would cause us to  
8 question. You can rethink the idea of the numbers.

9 MR. RUSSELL: Let me give a couple of comments to  
10 put it in perspective. First off, the NRC has other options  
11 in addition to administering examinations. You recall we  
12 have a training procedure to go in and conduct an inspection  
13 program for cause where we see that there are weaknesses in  
14 recall and that has been exercised.

15 The other point is that we did run parallel  
16 grading for a long period of time where we got the facts  
17 from the facility as to how the facility rated a candidate  
18 and how the comparison was to the NRC grading. What we  
19 found was that there were really not a lot of disputes.  
20 That is, candidates that performed poorly were evaluated by  
21 the facility as performing poorly and similarly the NRC  
22 identified that. So we didn't see a lot of disputes as it  
23 related to candidate evaluation.

24 I think it is very important that we keep in focus  
25 the requirements that we have imposed on the facility for

1 the facility to perform that evaluation and based upon the  
2 evaluation not only on an individual candidate but  
3 periodically on the program to feed back and make revisions  
4 to their program. So we look for that to be happening both  
5 on individual weaknesses where the individual will be  
6 evaluated for continued watch standing and removed from  
7 watch if necessary and be remediated before being put back  
8 on watch and also for the program so that when they do the  
9 program each two years they look at what the results have  
10 been, they factor that back in and they revise the program.

11 This, we think, has been quite successful. This  
12 has been a real success for the accreditation process and  
13 what has been going on with industry. We have, in fact,  
14 provided that many of the very specific requirements which  
15 are relatively narrowly defined in sections of the  
16 regulation related to Part 55 and requalification program  
17 may be -- what's the right word? -- you may substitute an  
18 accredited training program in lieu of the very prescriptive  
19 requirements that the NRC has proposed in a number of areas  
20 so that you can get this feedback and we do see that  
21 happening.

22 The intent was to identify areas of weaknesses,  
23 alert the industry to it and have them factor that back into  
24 their training programs. And I can tell you from comments I  
25 have had from some utility executives and some who are on

1 the INPO accrediting board, that they are looking at that  
2 seriously. They don't want to slip and have the NRC move  
3 back in. This is one where we have given them the  
4 responsibility and they want to keep the standards high so  
5 that there is not a need for NRC to become back involved.

6 MR. MILHOAN: Go ahead.

7 MR. BOGER: Okay, if I could move to slide 11.

8 [Slide.]

9 MR. BOGER: Because of the success we felt we had  
10 in the requalification program area and the inspection of  
11 that program, we felt that we could take a look at improving  
12 the efficiency of the operator licensing process by modeling  
13 the initial process after that. In this manner, we would  
14 shift the responsibility more directly to licensees for the  
15 conduct of the examinations while still maintaining NRC  
16 involvement in the examination process through inspection.

17 We believe that we can obtain a resource savings  
18 of about \$3- to \$4 million per year through the elimination  
19 of contractor resources.

20 COMMISSIONER JACKSON: Is your inspection 100  
21 percent or is it a sampling?

22 MR. BOGER: Can we wait until we get to that  
23 slide? Maybe I can address that more fully when --

24 MR. RUSSELL: Each candidate would be observed.  
25 For power reactors, we would expect to have two NRC

1 examiners present in the simulator while the exam is being  
2 conducted so we would not be relying on one. For nonpower  
3 reactors, test and research reactors, we believe that can be  
4 done with one NRC examiner but we will get into the details  
5 of that. But we would expect each candidate would be  
6 observed through an inspection activity by someone from the  
7 NRC and that is why we want to go to an NRC employee rather  
8 than a contractor employee performing that activity.

9 MR. BOGER: My hesitation is that we wouldn't  
10 observe all of the process. For instance, the  
11 administration of the written examination or maybe not all  
12 parts of the job performance measures of the facility  
13 walkthrough. But we would, at some point in time, see every  
14 candidate.

15 Can we move to slide 12, please?

16 [Slide.]

17 MR. BOGER: We feel that the proposed approach is  
18 consistent with the Atomic Energy Act and Part 55. We  
19 recognize that it will require us to make changes to our  
20 implementing guidance, changes to the examiner's standards  
21 and examiner handbook to make them useful to the facility  
22 licensees and also to make sure that we achieve the exam  
23 consistency that we desire. We envision a transition period  
24 over the next year-and-a-half with the full implementation  
25 in October of 1996.

1           CHAIRMAN SELIN: Here is the slide we have been  
2 waiting for.

3           MR. BOGER: Chairman Selin, I am sorry that I am  
4 not going to put a lot of flesh on the bones.

5           [Laughter.]

6           MR. BOGER: I have to acknowledge that we are  
7 still early in the process, we have developed a basic  
8 framework that we can discuss this morning but I think we  
9 still have some work to do, we have a lot of interfaces with  
10 the regional examiners and industry to make sure we come up  
11 with a process that we feel gives us the confidence that we  
12 need to move into an inspection-based process.

13           Basically under the proposal, we would have  
14 facility licensees prepare the exams based on a written  
15 exam, written guidance, and submit those exams to the NRC.  
16 We would be in a position to review and approve the exams or  
17 modify them or suggest modifications prior to  
18 administration. We would review the grading of the written  
19 exams, we would be present during the conduct of the  
20 operating tests by the facility personnel and we would make  
21 decisions based upon the evidence before us and then issue  
22 the licenses.

23           CHAIRMAN SELIN: But the exams that the facilities  
24 will prepare will include the scenarios for the operating --

25           MR. BOGER: Yes, sir, they would include the same



1 elements that were required by Part 55 in the written and  
2 the operating tests.

3 CHAIRMAN SELIN: So the proposal is basically to  
4 have three levels of audit and inspection. One is the  
5 overall process that we can say a particular plant seems to  
6 be doing a good job in operating exams. The second is to  
7 see the individual documents, whether they are scenarios or  
8 written exams, before they use and have a chance to review  
9 these pieces and then the third, at least for the operating  
10 centers, is to witness the execution of these exams.

11 MR. BOGER: Yes.

12 CHAIRMAN SELIN: Recognizing that there are still  
13 a lot of details to be laid out, are you willing to make a  
14 comparison about how you think this -- well, I think it  
15 would be useful to compare this with what we do today and  
16 other than questions of resources and who is responsible for  
17 what, do you see any practical difference in the degree of  
18 knowledge that we have at the end of this program or will  
19 have at the end of this program?

20 Before you answer that, what do you expect to have  
21 in the way of contractor content compared to today in  
22 carrying out --

23 MR. BOGER: There would be no contractor  
24 assistance at all.

25 CHAIRMAN SELIN: So whatever we know, we know with

1 our own people as opposed to --

2 MR. BOGER: That's right.

3 MR. RUSSELL: We think that's important also.

4 There have been questions that have come up in the past as  
5 to whether this is essentially a government function or not.  
6 We responded to those, we had very prescriptive requirements  
7 and essentially we had an NRC employee in parallel with  
8 contractor employees performing exams.

9 What we are now talking about is a process where  
10 we would be overseeing the licensee conducting the  
11 activities, making judgments on the qualify of the  
12 examinations before administration, including observing the  
13 particular scenario on the simulator during what we call  
14 workup week prior to the exams being administered, so that  
15 you know how the scenario would unfold and what would be the  
16 expected actions, what are the critical tasks to be  
17 performed.

18 Then actually observing the administration exam.  
19 We think that should be done by NRC employees because of the  
20 emphasis that we are putting on the inspection activity  
21 which is essentially I think a government functions.

22 MR. MILHOAN: I think you also made a very  
23 important point. For the person taking the exam, the  
24 content of the exam does not change. The technical content  
25 doesn't change, the format of the exam for the person taking

1 the exam does not change. We would require the same level  
2 of knowledge and the same exam; it is just who prepares it  
3 from that standpoint.

4 MR. RUSSELL: It is leveraging more of the  
5 industry resources in lieu of our resources is the area  
6 where we are getting the efficiency.

7 COMMISSIONER DE PLANQUE: In this process, I don't  
8 know if this was what you were after, is this where you  
9 would expect to do 100 percent or just an audit?

10 MR. RUSSELL: No, we would expect, on the  
11 operating test, to have at least two NRC examiners present  
12 in the simulator as the operating test is being  
13 administered.

14 COMMISSIONER DE PLANQUE: Every time?

15 MR. RUSSELL: Each time, to have a portion of the  
16 job performance measures be observed for each candidate and  
17 to look at the written examination, the answer key prior to  
18 administration and then be able to review the actual  
19 candidate exam from a grading standpoint. That would likely  
20 be an audit because the exams are objective with answer keys  
21 so unless there is some question where there was something  
22 appealed, there is probably not a need to get into a lot of  
23 detailed review on the written examination.

24 But these are areas in the process of developing  
25 this we need to complete the guidance, identify what our

1 expectations are when a licensee is conducting this activity  
2 and how we would oversee that, and that is the area of  
3 development that needs to go on. We would probably be doing  
4 pilot examinations under this concept, one or two in each  
5 region, develop draft guidance, get comments on that draft  
6 guidance. We would expect to issue it six months prior to  
7 it going into effect so that people have an opportunity to  
8 develop their internal tools and techniques to be able to be  
9 consistent with the guidance. And we would probably make  
10 that available on a voluntary basis for those that wanted to  
11 do it in less time than six months after the guidance was  
12 made available. We would expect to develop this and keep  
13 the Commission informed as we go through this process, as  
14 well as obtaining comments from our own examiners as to  
15 their views, comments from the utilities and others  
16 throughout the proces.

17 MR. MILHOAN: You're about to cover Bruce's next  
18 slide. Bruce, why don't you go ahead.

19 MR. BOGER: I will try and put some time frames on  
20 the elements of the milestones that Bill just went through.

21 Today we have convened a working group of  
22 headquarters and regional examiners to do a little  
23 brainstorming on where the process may go and we have made  
24 preliminary contact with the industry.

25 This summer, we expect to continue our interface

1 with the regions and industry and develop draft  
2 implementation guidelines. Later this year, we hope to be  
3 in a position to issue those guidelines for industry and  
4 public comment and also conduct workshops to further refine  
5 the process.

6 [Slide.]

7 MR. BOGER: The next slide indicates during the  
8 winter we would like to be in a position to conduct several  
9 pilot examinations if we could get some utilities to  
10 volunteer for us and then we would incorporate what we  
11 learned from that into the process. We expect to come back  
12 to the Commission in about a year to obtain Commission  
13 approval on the final process and then, based upon the  
14 Commission decision, issue final guidance and implement the  
15 program fully in October of 1996.

16 CHAIRMAN SELIN: I have two types of questions for  
17 you. the first has to do with the legal or the documentary  
18 version.

19 What do we need to do to implement this? Do we  
20 need rule changes, guidance changes? What is the form --

21 MR. RUSSELL: No. Those issues were both  
22 addressed at the time we did the revised approach to  
23 requalification. We do not need a change to the law or a  
24 change to the regulations in Part 55 to implement this. We  
25 do need to go through a public process as it relates to the

1 examiners' standards and we have had a practice of doing  
2 that that is about a 12 to 18-month effort obtaining  
3 comments and making sure that that is well understood. So  
4 this is more in the context of regulatory guidance rather  
5 than changes to regulatory requirements.

6 CHAIRMAN SELIN: The second is would you care to  
7 characterize the degree of support or the lack of support  
8 that there is throughout the staff for this approach? Is  
9 this something that people feel comfortable with? Are there  
10 big divisions of opinion on that?

11 MR. BOGER: Let me try to address that.

12 I think among the examiners, I haven't talked to  
13 all of them but I have gotten feedback from many, there is  
14 no doubt that they understand the fiscal realities that we  
15 face. We have to phase out contract support as our  
16 resources dwindle. I think that most of them have been  
17 examiners for a while, they know it is a well established  
18 process, feel very comfortable with that process and so we  
19 are now proposing to do things a little differently.

20 That I think initially undermines the confidence  
21 that one has. Since we are early in the process, we really  
22 don't know what the details look like, we are not really  
23 sure how we can shore up our confidence based on elements  
24 that we place into the program. We know that basically  
25 about five percent of the candidates that are placed before

1 the NRC fail. We are not sure whether they fail because  
2 they had a bad day or were too stressed or whether the exam  
3 was improper or maybe just didn't have the knowledge that  
4 day. So that is kind of in the minds of the back of the  
5 examiners and they would like to be assured that the process  
6 that we come up with will still capture that 5 percent or  
7 those marginal performers.

8 The 5 percent is not a magic number, we are not  
9 looking for a target, but certainly try to make sure that  
10 the marginal folks are picked up in this process and aren't  
11 allowed to get a license. So in our interactions with the  
12 examiners we have to make sure that we have a process that  
13 does that and that is why it is going to take a while for us  
14 to gain that confidence but we feel that we can do it.

15 COMMISSIONER ROGERS: Just sort of a follow on  
16 there, the concerns that I have relate to the for cause, the  
17 basis of making a for cause decision. How are you going to  
18 make that decision that you have to administer -- that NRC  
19 has to give, prepare and give an exam itself because of a  
20 for cause failure of the program in some way? Have you --  
21 can you give me any examples of how that would work, where  
22 you would -- that are just fairly specific rather than too  
23 general? How would you go about that?

24 MR. RUSSELL: If for example we were to go in  
25 because of concerns and do a training program, inspection,

1 evaluation, we conclude that the training program is not  
2 adequate for developing candidates, that we don't have the  
3 confidence in that program, then we would probably want to  
4 substitute our own evaluation of candidates.

5 Another way it could occur is that when they  
6 submit the examination for us to review and we look at the  
7 written examination we find it is not consistent with our  
8 examinations as they are described in the examiner's  
9 standards and that, in fact, the examination is not an  
10 appropriate level or degree of difficulty and that could be  
11 either for the operating test or the written test. We would  
12 see the simulator scenarios and have an opportunity to  
13 observe it.

14 Those are some of the kinds of things that could  
15 trigger it but these are clearly areas that we would want to  
16 develop within the examiner standard so there is an  
17 understanding both within the staff and the industry as to  
18 what would be the kinds of things that would trigger a for  
19 cause examination by the NRC.

20 Another one, since our regulations are, in the  
21 training area, are premised on a systems approach to  
22 training and we have accepted INPO accreditation as one way  
23 of having a systems approach to training, if accreditation  
24 were withdrawn as compared to a situation where it is on  
25 probation such that there is no longer an accredited



1 training program, we would then need to go in and perform  
2 inspections to make determinations as to whether they were  
3 still in conformance with the rules or not as relates to a  
4 systems approach to training and we may conclude that we  
5 would need to examine candidates in that context to see  
6 whether it is appropriate to continue to operate or not  
7 while the training program is remediated.

8           So those are some of the kinds of examples that  
9 could cause us to go into a for cause examination. They are  
10 not different from the kinds of things that would cause us  
11 to do a for cause examination for requalification. Recall,  
12 we have those already reasonably defined. We have not had  
13 to do it yet because the success with the program has not  
14 required that. But I think the industry understands that  
15 our going in on a for cause basis is an indication that  
16 either on a facility specific basis or potentially more  
17 broadly that the expectations and the standards have not  
18 been met.

19           COMMISSIONER ROGERS: Just to follow through on  
20 that, if we expect that we might have to give exams on a for  
21 cause basis, what provisions do you have in mind to maintain  
22 our in-house capability to administer exams? I fear that  
23 with the overall program going quite well that our ability  
24 and skills and exam preparation, so on and so forth,  
25 actually the full process, may start to atrophy and that

1 with no contractor support it is very important that we  
2 maintain that in-house capability and that there is some  
3 clear way that you are providing for that, that you just  
4 can't wait until you need it and then try to gather up  
5 whatever bits and pieces you have of people's skills in this  
6 area and put them together to do a for cause exam.

7 So it seems to me you need a fire department that  
8 is staffed at a reasonable level and maintained in its  
9 capability to move in when you do have a need for a for  
10 cause exam or be prepared to go to an adequate contractor, I  
11 mean, but there has got to be some provision to do that.

12 MR. RUSSELL: But you still have the same issue  
13 with the contractor maintaining proficiency if the  
14 contractor is conducting the exams.

15 COMMISSIONER ROGERS: Right.

16 MR. BOGER: We recognize that we have two training  
17 needs that need to be addressed. One is the one you  
18 addressed about maintaining proficiency but we also need to  
19 make sure that the examiners move into the inspection mode  
20 in their new role of observing people give exams. That is a  
21 slightly different role for us and we need training for  
22 that. So, again, we are early in the process and haven't  
23 fully developed things but those are two issues in the  
24 training area that we know we have to address.

25 MR. RUSSELL: I would like to point out two other

1 areas that we are going to have dialogue on later in July,  
2 or is it now august?

3 MR. MILHOAN: August.

4 MR. RUSSELL: We are expecting a meeting at a  
5 management level to discuss some issues with INPO regarding  
6 to potential for them picking up and handling the generic  
7 fundamentals examination where they would develop the  
8 examination, we would review it and then it would be  
9 administered in the same way it is now, instead of using  
10 contractor resources.

11 We could continue that process or we could  
12 continue it using a contractor extracting from the INPO exam  
13 catalogs and other information as we are doing now, as was  
14 described earlier.

15 The second area is that the NRC maintains an exam  
16 bank that is used by the examiners in developing questions.  
17 Facilities also maintain exam banks. This may be an area  
18 where INPO could also, through their accreditation process,  
19 provide assistance to facilities if they are developing  
20 examinations.

21 A third option would be for the industry to come  
22 forward and propose how this would be done with they  
23 proposing particular guidance as to how they would handle  
24 initial licensing activities by way of preparing candidates,  
25 et cetera. And this may be able to be done through industry

1 guidance that we would be able to endorse as compared to  
2 just the option of modifying our existing guidance to  
3 accommodate this process.

4 So those are all the types of things that we need  
5 to look into over the course of the next 12 to 15 months as  
6 we develop this proposal more fully.

7 COMMISSIONER ROGERS: Well, it does seem to me  
8 that the danger of sticking on this one point that the --  
9 when you are talking about the initial exam versus  
10 requalification exam, that that is a more challenging kind  
11 of exam to administer by NRC than a requal exam. I would  
12 imagine that when you know you are dealing with people who  
13 have already gotten through the process and who have been  
14 running reactors and so on and so forth, the way you look at  
15 them is probably somewhat different from the way you ought  
16 to look at a fresh candidate for a licensing exam, an  
17 operator's license, and so I am particularly concerned that  
18 we maintain that capability if we move into this through a  
19 very thoughtful program. I think that is the challenge  
20 here.

21 The other question is, have you considered as part  
22 of that just the random administration of some exams, in  
23 other words just to make sure that we have something to keep  
24 our teeth sharp on that we actually give some exams each  
25 year, even though there is not a for cause? Otherwise, I

1 don't know how you are going to exercise your people to feel  
2 comfortable that they are maintaining their skills.

3 MR. RUSSELL: We will look at those issues.

4 MR. MILHOAN: We can look at that.

5 COMMISSIONER ROGERS: It is an issue that has come  
6 up before. It is a sensitive one. There is a sensitivity  
7 on it, I know. We have discussed it in the past a little  
8 bit but I still think there is some merit to considering  
9 that.

10 MR. RUSSELL: We may be able to put that in the  
11 context of performance based and where we see weaknesses in  
12 performance and other areas, use that as a basis for  
13 administering some initial exams. We need to look at it and  
14 come back.

15 COMMISSIONER ROGERS: The other area that I am a  
16 little concerned about is the nonpower reactor area. The  
17 power reactors have INPO accredited training programs and  
18 nonpower reactors don't and I am just a little curious as to  
19 how you are going to deal with that. You mentioned  
20 something about the nonpower reactor area but it seems to me  
21 that it is a very mixed bag, all kinds of different systems,  
22 small to fairly large, almost as big as a power reactor and  
23 how are we going to deal with those?

24 MR. RUSSELL: Right now the nonpower reactor  
25 examining activities is about three examiners in

1     headquarters, has been centralized in headquarters and we do  
2     rely quite a bit on the facility preparing materials which  
3     are then used in the course of the examination process.

4             From a safety standpoint, there are only a few  
5     nonpower reactors that you can even get core damage, that is  
6     from the standpoint of melting a core. It is really more of  
7     a concern with respect to pulling beams out, conducting  
8     experiments, et cetera, from an actual health risk  
9     standpoint.

10            The source terms are much smaller and so we  
11     clearly need to have somewhat of a graded approach based on  
12     what the significance of the activity is. We believe that  
13     we can obtain some efficiencies in this area but it is one  
14     we want to work in parallel. We do have standards for  
15     conducting exams for nonpower reactors and we would use a  
16     parallel activity over this same time frame to identify what  
17     the approach would be in these areas.

18            But that is one that is totally done out of  
19     headquarters. We would want to interact with TRTR in a  
20     community and there have recently been some cases where  
21     there has been industry assistance to other research  
22     reactors where a research reactor is having difficulty and  
23     there may be an opportunity to encourage that or maybe to  
24     get some involvement from TRTR in the examining process. We  
25     have not explored those completely but we would like to look

1 at those issues.

2 MR. MILHOAN: But I think that is a follow on,  
3 separate effort here. We would continue to conduct the TRTR  
4 exams the same way we are doing it now until we came --

5 COMMISSIONER ROGERS: Yes.

6 MR. RUSSELL: Until we can develop this and come  
7 back.

8 COMMISSIONER ROGERS: That's on a separate track?

9 MR. RUSSELL: That's a separate issue and we are  
10 looking at some things separately in the nonpower reactor  
11 area as a part of streamlining but separate from this  
12 activity.

13 MR. MILHOAN: Right.

14 MR. RUSSELL: And those exams are being conducted  
15 totally in house. We have eliminated contractor assistance  
16 on that already.

17 MR. MILHOAN: And we'd continue doing that until  
18 we came back to you on a later proposal.

19 COMMISSIONER DE PLANQUE: Information Notice 95-  
20 024, of course, pointed out some of the deficiencies that  
21 you have observed and I recognize that is the reason for the  
22 information notice, to make licensees aware of those.

23 On the other hand, in looking at the program so  
24 far, have you seen any particular positive aspects or  
25 benefits that -- of doing it this way that you didn't

1 necessarily expect? Or is it too early to tell?

2 MR. MILHOAN: Take a shot at it.

3 MR. BOGER: I guess the -- when we look at things  
4 in an inspection mode, we usually look for the bad things,  
5 we don't usually look for the positive. I think the absence  
6 of major problems is probably a very positive aspect. A lot  
7 of the -- we have seen 80 programs and I think the  
8 information notice indicates that in a few cases at one  
9 facility, so it is really a small number of deficiencies  
10 that we found. But, like you say, we just can't go without  
11 letting industry know about our concerns and as Stu said, we  
12 can't let them backslide.

13 MR. RUSSELL: I think the biggest positive has  
14 been one in resource savings.

15 COMMISSIONER DE PLANQUE: For us?

16 MR. RUSSELL: A few years ago, we were spending on  
17 the order of seven-and-a-half million dollars a year in  
18 contractor support for examination activity and we were  
19 conducting close to 1,000 requal examinations a year. We  
20 can certainly leverage our resources a lot more effectively  
21 and we have seen that now for two years, so that is really  
22 what caused us to look at extending the experience that we  
23 were having with the requalification program into initial  
24 licensing and to see -- you know, given that we need to  
25 question some of our past current approaches where we could



1 obtain some efficiencies and still meet our regulatory  
2 obligations.

3 MR. MILHOAN: I think from an historical  
4 perspective, also, from my past involvement, the standpoint  
5 of the crew examining crew performance, the standpoint of  
6 improvement there, examining them the way that they are  
7 trained and the normal training weeks is a big positive from  
8 the standpoint of looking at the training and the crew  
9 performance and the increase in crew performance.

10 MR. RUSSELL: That's also the way they stay in the  
11 watch, so that is consistent where they used to be  
12 different.

13 COMMISSIONER DE PLANQUE: On the efficiency angle,  
14 is this just an efficiency for us and the burden is just  
15 passed off to the licensees to do it or is it an overall  
16 efficiency improvement?

17 MR. RUSSELL: I think it can also be efficient for  
18 them because as we are aware they conduct their own  
19 examinations anyway to evaluate their candidates and decide  
20 who they are putting up and so there is the potential that  
21 they can facilitate that process.

22 I think it is also important because it puts them  
23 back where they are in fact making the judgments with our  
24 oversight of those activities so it really puts the burden  
25 back on them squarely as it relates to safety of their

1 activities.

2 I think it is going to be, in the short term, an  
3 increase in resources for them.

4 COMMISSIONER DE PLANQUE: Yes.

5 MR. RUSSELL: Because we are going to expect that  
6 they develop examinations comparable in scope and  
7 difficulties to what we have been administering.

8 MR. MILHOAN: But I think at the same time, the  
9 present time, they spend a lot of time, I think, reviewing  
10 our exams we prepare so there is a sort of a tradeoff there  
11 also.

12 COMMISSIONER DE PLANQUE: Okay, that's all I have.

13 COMMISSIONER JACKSON: So would you argue that,  
14 following up on your answer to Commissioner De Planque, that  
15 putting the burden on the licensees to see that their  
16 operators perform well, that they are tested at a certain  
17 level, is also effective oversight as opposed to just  
18 efficient oversight?

19 MR. RUSSELL: Yes. I think it is also effective  
20 and I think there is also a great deal of peer pressure in  
21 the industry from the standpoint of the accreditation  
22 process, the accreditation boards, the number of utility  
23 executives that sit in and review other utility training  
24 programs and how they are performing.

25 That creates a positive peer pressure to keep the

1 programs up and in fact the comments I have had back on the  
2 information notice, particularly from some members of the  
3 accrediting board who are also utility executives is that  
4 are we trying to send a message that things may be slipping  
5 and they need to be tightened up a bit as we moved into an  
6 inspection activity? I said, yes, you've got exactly the  
7 right message and it is time to make sure you keep that up  
8 on the step so that is effective also.

9 COMMISSIONER JACKSON: Am I clear in  
10 understanding -- this SECY came out before I was here -- am  
11 I clear in understanding that the pilot program you are  
12 implementing is site specific, is for the site specific part  
13 of the exam at this stage of the game?

14 MR. RUSSELL: Yes, that's correct. We are looking  
15 at discussions as it relates to the generic fundamentals but  
16 we have not proceeded in that area yet.

17 COMMISSIONER JACKSON: Am I further to understand  
18 that INPO or some other accreditation, recognized  
19 accreditation is not required for the licensee to give own  
20 exam?

21 MR. RUSSELL: That's correct. It is not required  
22 by regulation but they would need to submit a training  
23 program to us for review that is a systems approach to  
24 training. We have accepted accreditation as being a systems  
25 approach to training and meeting our regulations and we do

1 that through our observation of accrediting boards and also  
2 our oversight activity of what happens at the licensee  
3 facilities. But it is not a requirement that they be  
4 accredited but if they lose accreditation, that would cause  
5 us to have to go in and do some things to confirm that they  
6 did in fact have a training program that meets our  
7 regulations, one element of which is candidate evaluation.

8 COMMISSIONER JACKSON: My only other comment is I  
9 think it is important as we go along that effectiveness and  
10 efficiency go together.

11 MR. MILHOAN: I agree.

12 CHAIRMAN SELIN: I agree with the various  
13 comments.

14 I am very, very encouraged by this. I realize it  
15 is in quite an early stage and there is a lot more detail to  
16 be put on.

17 I would like to make a couple of general comments  
18 and then come back to this. Number one, there are too many  
19 personnel errors at plants and we shouldn't loose track that  
20 the main thing is not to give an exam to see if people have  
21 paper qualifications; it is to improve the -- it is to see  
22 that personnel performance improves.

23 So whatever you do, don't just say we have a  
24 process of licensing operators and then six years later --  
25 there is a continuous process of licensing, training,

1     recertifying, et cetera. As you go into these pieces, I  
2     think the real -- well, we must do what we are statutorily  
3     responsible for doing. But the real measure is, are these  
4     steps toward improving personnel performance and in that  
5     sense if you don't mess it up, to put it simply, this has to  
6     be a step in the right direction.

7             You are putting more responsibility on the  
8     licensees. I hope that they will use these exams not only  
9     for a pass/fail but to be feedback on the training and on  
10    the status of the individual operators. Eighty percent is  
11    not a terrific score, you know, if I live next to a power  
12    plant, to know that folks out there got 80 and 82 and 85 on  
13    an exam. So it is not just a pass or fail thing that we are  
14    looking for, it is feedback on how to improve performance.

15            My guess is that, you know, one out of 20 families  
16    is almost an inevitable thing that just people have bad  
17    days, but you have to organize the operation so that you are  
18    not depending on some individual being, you know, up to  
19    stuff more than 19 out of 20 times.

20            When that comes down to the test, not only do I  
21    see this as almost an unallied good item if it is done  
22    correctly, when I say if it is done correctly, to make sure  
23    that we don't inadvertently drop the standards as we are  
24    turning things over. I think that you can probably go  
25    further over time and you are going to start getting some

1 performance base in the tests and you may find out that  
2 there are different amounts of responsibility that you will  
3 give to those licensees who consistently have shown not just  
4 95 percent acceptance rates but average scores that are  
5 going up.

6 And I hope you will monitor the average scores and  
7 not just the pass/fail rate because in many ways the average  
8 scores and the median scores are more indicative than the  
9 pass/fail rate. That is just the specific threshold.

10 The objective is to get personnel errors down. I  
11 think we can also reduce our costs. I never have understood  
12 what benefit it is having NRC -- you know, you have three  
13 units. You have the folks who run the power plants who are  
14 ultimately responsible for the safety, you have us who are  
15 regulating them, and have the NRC contractors and, although  
16 they are fine contractors, they have the least  
17 responsibility. So I have never seen that there is a health  
18 and safety benefit for having more work in the hands of the  
19 contractors to the degree that both the licensees and the  
20 regulators can take this on.

21 This has to be a positive step from the point of  
22 view of organizational motivation and the cautious stuff is  
23 fine but if anything I would just say, don't worry so much  
24 about whether we are spending -- saving as much money as we  
25 can. I think that is important but I think you can actually

1 do the thing that all bureaucrats look for, which is more  
2 effectiveness at lower cost if you do it right and if you  
3 embed it in the concept, in the overall context of personnel  
4 errors.

5 This is probably too hard to do, but someplace  
6 down the road you should be looking at trends in personnel  
7 errors in plants. You know, if personnel errors are going  
8 down in plants over time, then that has to be an indication  
9 not that the testing program but that the overall training  
10 programs are improving and that should affect the testing.

11 Conversely, if personnel errors are going up,  
12 you've got to look at all of the program that deals with  
13 personnel, not just the testing, say, you know, are we  
14 letting our standards down. That is the ultimate  
15 performance specification or performance feedback.

16 Thank you very much.

17 MR. MILHOAN: Okay, thank you.

18 [Whereupon, at 11:09 a.m., the meeting was  
19 concluded.]

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CERTIFICATE

This is to certify that the attached description of a meeting of the U.S. Nuclear Regulatory Commission entitled:

TITLE OF MEETING: BRIEFING ON OPERATOR LICENSING  
PROGRAMS - PUBLIC MEETING

PLACE OF MEETING: Rockville, Maryland

DATE OF MEETING: Thursday, May 25, 1995

was held as herein appears, is a true and accurate record of the meeting, and that this is the original transcript thereof taken stenographically by me, thereafter reduced to typewriting by me or under the direction of the court reporting company

Transcriber: Christopher Cutchall

Reporter: Mark Mahoney



# **BRIEFING ON OPERATOR LICENSING PROGRAMS**

**William T. Russell, Director  
Office of Nuclear Reactor Regulation**

**Bruce A. Boger, Director  
Division of Reactor Controls and Human Factors**

**May 25, 1995**

# **OPERATOR LICENSING ACTIVITIES**

- **Operator Licensing Program Overview**
- **Licensed Operator Requalification Program Status**
- **Improving Efficiency of Initial Operator Licensing**

# **OPERATOR LICENSING PROGRAM OVERVIEW**

- **10 CFR 55, "Operators' Licenses"**
- **Applications**
- **Examinations**
- **Conditions of Licenses**
- **Renewal of Licenses**

# **OPERATOR LICENSING EXAMINATION PROCESS**

- **Implementation**
  - **Examiner Standards and Handbook**
  - **Examiner Training**
- **NRC Prepares, Conducts, and Grades Examinations**
  - **Generic Fundamentals**
  - **Site-specific Written Exam**
  - **Site-specific Operating Test**
- **Facility Licensees Provide Support**

# **GENERIC FUNDAMENTALS EXAMINATION**

- **Prerequisite for Site-specific Examination**
- **BWR & PWR Versions**
- **New Questions from INPO Catalogs**
- **Administered by Facilities**
- **Average Pass Rates for FY 93 - 94**
  - **BWR - 91.5%**
  - **PWR - 96.3%**

## **SITE-SPECIFIC WRITTEN EXAMINATION**

- **Covers Emergency / Abnormal Plant Evolutions, Systems, and General Operator Knowledge**
- **Passing Grade is 80%**
- **Average Pass Rates for FY 93 - 94**
  - **RO - 91.9%**
  - **SRO - 97.3%**

# **SITE-SPECIFIC OPERATING TEST - DYNAMIC SIMULATOR -**

- **Tests Normal, Abnormal, and Emergency Procedures in a Multiple Scenario Format**
- **Nominal, Three-operator Crews**
- **Individual, Competency-based Evaluations**

# **SITE-SPECIFIC OPERATING TEST - WALK-THROUGH -**

- **Control Room/In-plant Systems and Admin Topics**
- **Based Primarily on Job Performance Measures With Follow-up Questions**
- **Average Combined Pass Rates for FY 93 - 94**
  - **RO - 94.5%**
  - **SRO - 93.9%**



# **LICENSED OPERATOR REQUALIFICATION PROGRAM STATUS**

- **10 CFR 55 Requires Continuous Training Cycles Lasting up to 24 Months**
- **Training is Crew-based**
- **Facility Licensees Prepare and Conduct Operating Tests and Written Examinations**
- **10 CFR 55 Revised in February 1994 to Permit Inspection-based Oversight Process**

# **LICENSED OPERATOR REQUALIFICATION PROGRAM STATUS**

- **NRC Can Conduct Examinations and Training Program Inspections "For Cause"**
- **43/42 Programs Inspected in FY 94/95**
- **No "For Cause" NRC Examinations Required Since the Rule Change**
- **IN 95-24, "Summary of Licensed Operator Requalification Inspection Program Findings"**

# **IMPROVING EFFICIENCY OF INITIAL OPERATOR LICENSING**

## **Intent of Change**

- **Model Initial Exam Process After Requalification Inspection Process**
- **Shift Responsibility to Licensees**
- **NRC Inspect and Approve Result for Licensing**
- **Resource Savings of \$3-\$4M Per Year**

# **IMPROVING EFFICIENCY OF INITIAL OPERATOR LICENSING**

- **Proposed Approach Consistent with Atomic Energy Act and Current Rules**
- **Will Require revision to Implementing Guidance**
- **Transition Period with Pilot Exams in FY 95 - FY 96**
- **Full Implementation by FY 97**

# **IMPROVING EFFICIENCY OF INITIAL OPERATOR LICENSING**

## **Proposal**

- **Facilities Will Prepare the Exams Based on NRC Written Guidance**
- **NRC to -**
  - **Review and Approve Exams Before Administration**
  - **Review Grading of Written Exams by Facility**
  - **Observe Operating Tests in Parallel With Facility Examiners**
  - **Make Licensing Decisions and Issue Licenses**

# **PLANNING MILESTONES**

- **April - May 1995**
  - **Convened HQ/Regional Working Group**
  - **Made Preliminary Contact with Industry**
  
- **Summer 1995**
  - **Continue Interface with Regions and Industry**
  - **Develop Draft Implementation Guidelines**
  
- **Fall 1995**
  - **Issue Guidelines for Industry and Public Comment**
  - **Conduct Workshops**

# **PLANNING MILESTONES**

- **Winter 1995 - 1996**
  - **Conduct Pilot Examinations**
  - **Incorporate Feedback**
- **Spring - Summer 1996**
  - **Obtain Commission Approval of Revised Process**
  - **Prepare and Issue Final Implementation Guidelines**
  - **Fully Implement Program by October 1996**