NUCLEAR REGULATORY COMMISSION

ORIGINAL

COMMISSION MEETING

In the Matter of: DISCUSSION OF SECY-80-491 - PROPOSED RULEMAKING, "QUALIFICATION OF REACTOR OPERATOR"

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NUCLEAR REGULATORY COMMISSION

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DISCUSSION OF SECY-80-491 - PROPOSED RULEMAKING,

"QUALIFICATION OF REACTOR OPERATOR"

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Nuclear Regulatory Commission,
Commissioners' Conference Room,
1717 H Street, Northwest,
Washington, D.C.

Thursday, 11 December 1980.

The meeting was convened, pursuant to notice, at 2:04 p.m.,

BEFORE:

JOHN F. AHEARNE, Chairman
VICTOR GILINSKY, Commissioner
PETER A. BRADFORD, Commissioner
JOSEPH M. HENDRIE, Commissioner

ALSO PRESENT:

Samuel J. Chilk, Edward Hanrahan, William Dircks, Stephen H. Hanauer, Edward C. Wenzinger, Paul F. Collins, Guy A. Arlotto, and Steve Richardson.

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P R O C E E D I N G S

(2:04 p.m.)

CHAIRMAN AHEARNE: The Commission meets this afternoon to hear at least a discussion on the paper which has come before us. It regards the qualifications of operators. This is a series of actions that flowed from reexamination of one area of the Commission's responsibility. That is: Who ought to, and what level ought they to have of capabilities who ought to be allowed to operate nuclear power plants in the sense of operators.

Shortly after the Three Mile Island accident, the Commission made some preliminary decision with respect to upgrading that. Certainly many of the reviews of the accident concentrated on the federal regulatory side and the management side, but they also mentioned the, in many cases, weaknesses that existed in the development of requirements and the training of operators.

We have established a new organization in the structure of NRR which focuses upon such things relating to the human factors, and this afternoon we will hear from some of the people in that group and will discuss some of the issues relating to this.

I don't expect us to reach a vote on this this afternoon, but I thought it was essential that we at least try to get a little clearer picture of some of the issues.

William?

MR. DIRCKS: As you pointed out, it is a discussion of the proposed rule. I think you will see, as we get into it, there are still spots that at least I have some feelings on, but I have more feelings of insecurity than I do have feelings of answers that I can provide.

As Steve will point out, this is a beginning and a response to many of the Commissioners' suggestions and approvals over the past year or so, and the proposed rule serves as a handy vehicle to get into many of these points.

When we get into the qualifications and the prequalifications of reactor operators, and so on, that's I think where we can stand some discussion on that one issue.

Steve, would you pick up from that point?

MR. HANAUER: There's hardly anything left.

Mr. Chairman, to Mr. Dircks' right is Mr. Wenzinger, head of the Reactor Systems Standards Branch -- this is a Standards' paper. To his right is Paul Collins, head of Operator Licensing Branch, well known at this table.

This, as people have said, is a snapshot of a moving target. You made some decisions roughly a year ago which are being implemented now -- some of them already in force, and many of them being phased in at a schedule consistent with the availability of people, and the requirements of safety.

The proposed rule, with some minor additions, codifies

the decisions that have already been made. So that instead of somebody's letter, we have the rules which say what our requirements are.

Since those decisions were made, we are a year older and a year smarter. There have been a number of discussions that show that --

CHAIRMAN AHEARNE: I certainly agree on the first one.

MR. HANAUER: Yes.

(Laughter.)

MR. HANAUER: I don't know how much smarter a year is.

There are a number of soft places in the proposed rule as it is now drawn. We have had some discussions in the staff and with you, and I think some of them are rather highly controversial and deserve the rulemaking process to resolve them.

The thing we would urge is that sufficient decisions be made to get on with -- namely, the publish "a" proposed rule and find out what kind of public considerations there are, either the ones that we know about, or even more importantly the ones that we don't yet fully understand.

Mr. Wenzinger will present the content of the rule, and in accordance with the Commission's request Mr. Collins has put together some second-hand knowledge about what is going

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on in other countries, which you can have at whatever depth we can provide.

MR. WENZINGER: Good afternoon, gentlemen. My name is Edward Wenzinger, and I am Chief of Reactor Systems Standards Branch in the Office of Standards Development.

I will be talking to you today on the subject of nuclear power plant operator licensing covering education, experience, training, and other qualification requirements.

Our proposals are in the form of a number of proposed revisions to Title 10, Part 55, and one small change to Part 50.

Mr. Collins, to my right, will speak on the subject of what people are doing in other countries.

The proposals that I will talk to you about today are as a result of the Commission's actions in SECY-79-330E and the implementing memorandum from Mr. Chilk, which gave direction to the staff regarding the recommendations in SECY-79-330E.

A number of the Commission's recommendations in this regard have already been implemented by letter from Mr. Denton to all nuclear plant licensees. This was done in March of this year.

SECY Paper 80-491, which is the one that is before you now, was submitted to you and gives you our specific proposals for the proposed rule changes to Part 50 and

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55, to implement the direction you've given to us on operator qualifications.

Could I have slide number one, please?

(Slide.)

The proposals staff has made cover nuclear power plant operator qualification requirements in the areas of education, experience, and training. It covers these areas for both senior reactor operators, abbreviated "SRO," and reactor operators, abbreviated "ROs."

Requirements on the use of simulators in operator training and requalification, and restrictions on the type of simulators to be used are also included in the rule change.

There are also requirements on periodic requalification of both reactor operators and senior reactor operators. Not only have we made specific proposals for codifying specific Commission decisions, but we have also made some additional related proposals which staff believes are necessary in order to specify adequately reactor operator and senior reactor operator qualifications.

CHAIRMAN AHEARNE: And you are going to --

MR. WENZINGER: I'll go through those.

CHAIRMAN AHEARNE: -- highlight that.

MR. WENZINGER: I will briefly cover those provisions -- those previous decisions, and I will also specify what additional things that we are proposing separately in

subsequent slides.

The proposals we have made to you in SECY-80-491 also include one change to Part 50. I would just mention what that is, now. It requires that a condition of the facility license be that administrative procedures be developed by the licensee in order to ensure the reactor operators and senior reactor operators are familiar with current plant conditions. The reason that is a separate item is because the licensee provisions are in Part 50, and the operators are in Part 55.

We are requesting your approval to issue the staff's proposal of SECY-80-491 for public comment at this time, as Steve mentioned.

Could I have slide two, please?

(Slide.)

This slide covers in summary form the principal items in the proposed rule change which the Commission has previously requested. Included are: Operator and senior reactor operator experience requirements -- that's the first two major items on the slide; mandatory use of simulators for three items: initial training, annual requalification; and for recertification of operators after they've had a period of inactivity.

The third item on the slide is NRC administration of the requalification examinations to be given annually.

The fourth item --

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CHAIRMAN AHEARNE: Could you -- I guess I had forgotten the second part of that. Refresh my memorny on the "unless facility licensee is directed to do so"?

MR. HANAUER: That is a hedge. We have resource troubles, and we don't see them magically vanishing on the effective date of this rule. We see a situation at some future time when we simply don't get there, and want an escape valve.

CHAIRMAN AHEARNE: I guess what I am trying to understand, then, is that -- This is a codification of the previous Commission decision. Was the previous Commission decision --

MR. HANAUER: It wasn't in that much detail. It said, we should give them; and we're getting ready to.

CHAIRMAN AHEARNE: All right. I guess it --

MR. HANAUER: But we could see -- we could see a situation where --

CHAIRMAN AHEARNE: Steve, I don't argue with the escape valve, the "hedge" need; what I was trying to refresh my memory on was I didn't recall that in the previous Commission decision, which is the title of that chart.

MR. HANAUER: You are correct.

CHAIRMAN AHEARNE: Thank you.

MR. WENZINGER: The last item on the slide has to do with the scope of examinations, and expanding these examinations to include thermodynamics and hydraulics.

Could I have the next slide, please?

(Slide.)

I will summarize the additional proposals that we have made on this slide, and then I can discuss each of them if you like. Other than that, if you like, we could then go on to Mr. Collins' presentation; or we can go through the details of this.

Let me first give you an overall look at it. The items we have added include: education requirements for senior operators; education and experience requirements for reactor operators; specifications on the type of simulators that are to be used for operator training and testing; and requirements regarding operator knowledge of plant conditions. That is the item in Part 50.

We would like -- Would you like me now to go on to the details of these? Or would you like to hear from Mr. Collins?

CHAIRMAN AHEARNE: Why don't you cover the details of what you have.

MR. WENZINGER: Okay.

CHAIRMAN AHEARNE: And I gather what Paul is going to do is then contrast that with it.

MR. COLLINS: Yes.

MR. WENZINGER: Sure.

CHAIRMAN AHEARNE: So why don't we hear you, first.

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MR. WENZINGER: Be glad to. Okay, could I have slide number four, then, please?

(Slide.)

Education requirements for senior reactor operators include 60 semester hours of college-level courses, which is the same educational requirements that we have imposed for the shift technical advisors, and the subjects are listed on the slide.

Regulatory Guide 1.8, which has just been completed and out for public comment -- in fact, the public comment period finished on the 5th of December-- covers the details of operator selection and training.

In Reg Guide 1.8, the staff has recommended that a BS degree that includes 60 semester hours of training as a minimum educational requirement for a plant shift supervisor. I might note that a plant shift supervisor is required to have a senior reactor operator's license.

CHAIRMAN AHEARNE: Now, 1.8 would, in addition to the degree, it also covers this kind of background and degree?

MR. WENZINGER: Yes, it does. That's correct.

Could I have the next slide, please?

(Slide.)

MR. DIRCKS: Could I -- I think yesterday I received a letter from Admiral Wilkinson saying that INPO was reviewing 1.8, and they wanted more time to work on that subject, and

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they were asking for an extension of some sort. I have not looked into this matter.

Steve, I don't know whether you've -- You got the same letter I got?

MR. HANAUER: I got the same letter. INPO made a very strong representation to the President's Oversight Committee that training requirements were disorganized, and have formed a committee to organize them. I am an NRC observer on this Committee. I will know after the first --

COMMISSIONER GILINSKY: These are our training requirements?

MR. HANAUER: Yes, our training requirements.

I don't have any particulars from them. They complain loudly, but so far not specifically. We are meeting on the 18th, and I will know whether they want a one-month or a one-year delay, and make a recommendation at that time.

MR. WENZINGER: In fact, they have --

MR. HANAUER: Maybe I will get some specifics.

MR. WENZINGER: They have not commented on the Guide itself at all. They have simply asked that we delay issuing the Guide until they have had time to make specific proposals to us.

CHAIRMAN AHEARNE: Is part of their specific proposal, do you know, that they would like to be proposing that we certify them?

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MR. HANAUER: I have heard nothing along those, or any other specific lines.

(Slide.)

MR. WENZINGER: On the next slide, which is on the screen now, we note that reactor operators will be required to have a high school diploma, or a General Educational Development Certificate.

COMMISSIONER GILINSKY: What is that?

CHAIRMAN AHEARNE: It is what I hope to get them to strike. But go ahead and explain what it is.

MR. WENZINGER: Okay, it is an examination given to people who have not completed the normal high school curriculum and received a diploma from an ordinary high school at any place in the United States. It is an examination which is given that, if passed, is considered to be the equivalent of a high school diploma.

CHAIRMAN AHEARNE: In some cases is considered.

MR. WENZINGER: Yes.

COMMISSIONER GILINSKY: These are state exams?

MR. WENZINGER: Yes.

CHAIRMAN AHEARNE: The reason I would like to have us strike that is that -- and one can always find cases to say, well, I know X, or I know Y, or I'm Z -- but at least when I know the Defense Department, and particularly the Army, went through what ought they to require in order to address

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problems they were having with respect to getting people to go through their training program and stay in and perform adequately, they dropped the General Educational Development Certificate as equivalent to a high school diploma, and now just have "high school degree graduates."

The argument really was that they had found, through the experience of going through their data, that having gotten the diploma indicates a certain ability to discipline oneself, to stick with something, to be able to work in a set of environments with regulations. And I think, just as in their environment it turned out to be a valuable discriminator, I think in what we're going for it also ought to be.

So I don't think it is equivalent.

COMMISSIONER HENDRIE: What do you do with the operators who are presently licensed and serving satisfactorily who do not have high school diplomas? Have you now removed their livelihoods?

CHAIRMAN AHEARNE: Well, (a) I don't think we've at least, certainly in the briefing we haven't yet addressed the backfit questions. But just as with respect to a reactor, I think also with respect to a reactor operator, we have to try to decide what we think are the appropriate requirements, and then address to what extent, or how do we take into consideration either plants or people who don't meet that requirement.

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MR. WENZINGER: In the proposed rule, we did intend that the requirements spelled out would be backfit. That would include of course if a GED were acceptable, an alternative for an individual who had not yet achieved a high school diploma. Removing that would clearly create a problem.

CHAIRMAN AHEARNE: Or one obvious solution would be that for anyone who currently holds the license and does not have a diploma, then they would have to get the GED. I would point out to you that if a person doesn't have a GED right now, that he would still have to, under your proposal, have to go and get it.

MR. WENZINGER: That's correct.

CHAIRMAN AHEARNE: I don't think the backfit issue is an unworkable problem. I just would -- at least I would intend to propose striking that.

MR. WENZINGER: Well, it would seem to me, if the GED alternative were to be deleted, the backfit problem would be created.

CHAIRMAN AHEARNE: The backfit problem, unless you can verify that everyone who is now an operator has either a GED or a high school diploma, there is some backfit problem automatically.

MR. WENZINGER: "Some," yes. But you create --

CHAIRMAN AHEARNE: How many of the current operators don't have high school diplomas?

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MR. COLLINS: A small number. I cannot recall the last time I saw an application that indicated lack of a high school education.

CHAIRMAN AHEARNE: So I'm not saying that it is not a problem, but I am saying it is a workable problem.

MR. WENZINGER: Okay?

COMMISSIONER GILINSKY: What are the standards for pilots?

MR. DIRCKS: You mean a commercial airline pilot?

COMMISSIONER GILINSKY: Yes.

MR. COLLINS: A high school education is the maximum formal education they could require.

COMMISSIONER GILINSKY: But is it --

MR. COLLINS: They couldn't justify to the EEO Commission that a college degree was necessary.

MR. DIRCKS: Right now, I would wager that most of the commercial airline pilots come out of the military programs, and I don't think you get into the pilot training school without a college degree.

CHAIRMAN AHEARNE: Right now, that's right. You need a college education, a batchelor's degree to get into military pilot training.

MR. COLLINS: But the federal standards still accepts a high school education, the FAA Standards on requirements.

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COMMISSIONER GILINSKY: Does it accept less than a high school education?

MR. COLLINS: No.

MR. WENZINGER: The rest of the slide shows the experience requirements both at ordinary power plants, at a facility for which a license is sought, and experience as an unlicensed operator at the facility --

COMMISSIONER GILINSKY: What can an unlicensed operator do? What is he permitted to do?

MR. WENZINGER: It depends on whether he is being supervised or not supervised. If he is being supervised by a licensed operator, then he's permitted to do the things that a licensed operator is permitted to do.

If he is not being supervised by a licensed operator, then he may do those other things.

MR. COLLINS: Let me qualify that. That's as he is being trained. You can't take an unlicensed man and say: All right, become an operator -- just because there is another operator in the room.

What we are saying is, he has to manipulate controls. He has to do the operator's job in part of his training program, and this must be done under the direct supervision of a licensed man.

MR. WENZINGER: Correct.

MR. COLLINS: I didn't want to give a wrong

impression that unlicensed people can do anything an operator can do, just because there is another operator present.

COMMISSIONER HENDRIE: Every shift has what are called "auxiliary operators," or whatever, that don't normally step to the console to manipulate reactor controls, but do all sorts of useful jobs in the plant associated with the shift.

MR. COLLINS: Operate equipment locally outside of the control room.

COMMISSIONER HENDRIE: Yes.

MR. COLLINS: Perform surveillance tests; check the local guages on oil levels, and jobs of that nature; operate the rad waste system. The auxiliary operators operate the rad waste systems.

MR. WENZINGER: But as part of his training, he is required to do some of the things that the licensed operator would do. The first time he operates as a "licensed operator" is not the first time he touches the controls.

Could I have the next slide, please?

(Slide.)

On the las. slide that I have, it covers the subject of simulator applicability. In the proposed rule, simulators are required to be used in operator training, in operator requalification, and for recertification of operators after periods of inactivity.

The proposed rule would require that the simulator

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used for these purposes have the characteristics listed on this slide. That is, the same plant, same type control room, same type steam generator, and so on.

I should note that these requirements may well change, perhaps, as a result of public comments, and perhaps by further study of the NRC staff. It is possible in the future that simulators duplicate the plant for which training is sought might be required. At the present time, the proposed rule does not call for that.

This concludes my prepared portion of the presentation. Mr. Paul Collins of the Operator Licensing Branch, will now discuss with you a comparison of U.S. and foreign practices -- unless you have other questions.

COMMISSIONER HENDRIE: Before you get to that, Ed, does this leave anybody without a simulator? How about Fort St. Vrain?

MR. COLLINS: I was just going to mention --

MR. HANAUER: Fort St. Vrain, Big Rock, Humboldt Bay, LaCrosse, don't have available simulators which --

COMMISSIONER HENDRIE: Meet these --

MR. HANAUER: -- meet these requirements in any realistic way. There are so-called "generic simulators," which may be the answer for some of those small plants. I don't think anyone has looked very hard. It is my personal view that those operators have got to train on some simulator and

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get a level of competence, but that it might not be necessary to build an $8 million machine to do it. I think they will have to come to us with some kind of a proposal on how they plan to do a better job on simulator training.

MR. COLLINS: In the case of Fort St. Vrain, I was informed the other day by people at the plant that it would be a $13 million simulator for their facility. Since they were a one-of-the-kind, all the models would have to be remade.

COMMISSIONER HENDRIE: What about the --

CHAIRMAN AHEARNE: You have told us that it's a safer plant, so --

COMMISSIONER HENDRIE: Well, it's a smaller plant and, at the moment, and for some time probably, one of a kind, and I think some particular form of exemption from this general regulation could be necessary for them, and for the other small ones.

MR. COLLINS: They did address in this conversation with me that they were coming up with a plan for more manipulation of controls at the facility requiring the men to perform specific exercises each year, as an alternative to a simulator. I told them I couldn't do anything; that they should really wait until they see this rule change, or this proposed rule change, and make their comments in conjunction with that.

COMMISSIONER HENDRIE: Is there any comment in the supplementary information directed to these guys?

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MR. WENZINGER: No. No, there's not.

COMMISSIONER HENDRIE: I would suggest that there might be some indication of the intent with regard to these plants.

I also wanted to ask about the two-loop BWRs. Is there a two-loop simulator?

MR. COLLINS: No, sir.

COMMISSIONER HENDRIE: So there a series of those Westinghouse two-loops that --

MR. COLLINS: Three plants, I believe: Genoea --

COMMISSIONER HENDRIE: Robinson --

MR. HANAUER: That's three.

MR. COLLINS: That's a three. Robinson is a three-loop.

MR. HANAUER: Point Beach --

COMMISSIONER HENDRIE: Genoea, Point Beach, and Kewaunee. I believe those are the three.

MR. HANAUER: I think it is our view that they ought to get a two-loop simulator. There are five units; they ought to manage.

CHAIRMAN AHEARNE: I would think so.

Go ahead, Paul.

MR. COLLINS: Yes. We made a review of a paper submitted to Commissioner Gilinsky and Commissioner Bradford by James Shea of the Office of International Programs that had

two enclosures, one from Nuclear Engineering International, and another enclosure from a paper presented at the Stockholm meeting on how foreign countries -- the requirements for operators, and what I'll have to term "senior operators," although there's many different terminologies used among the countries -- compare with our particular requirements.

I had forwarded down to the Commission a matrix of the comparisons, and I was planning on showing a few of the comparisons on formal education, job-related experience, and examinations, to get a flavor of how the various programs are going, because I will be able to show you all the slides if you would want a total comparison.

May I have the first slide, please?

(Slide.)

The first area that has been of concern is the formal education for reactor operators. We can look across and we find that in all of the industrial countries, they do accept a secondary school grad --

CHAIRMAN AHEARNE: Now, wait. This is not "all" of the industrial countries.

MR. COLLINS: In these four -- excuse me.

(Laughter.)

MR. COLLINS: In these four countries, secondary school graduate is the entry level for reactor operators, with the exception of the proposed rule which provides for a

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GED Certificate.

COMMISSIONER GILINSKY: Let's see. Do the British require both?

MR. COLLINS: Excuse me. I'm sorry. That's "either/or." They have professional engineers who are reactor operators; and they have secondary school graduates who are reactor operators.

COMMISSIONER GILINSKY: So they've got professional engineers who aren't secondary school graduates?

MR. COLLINS: Yes. They accept -- They recruit from both areas.

COMMISSIONER GILINSKY: Are all these secondary schools equivalent? Because I suspect German secondary schools -- you know, it depends upon when you're talking about a Technische Hochschule, or something. It's kind of a different --

MR. COLLINS: In this case, I would say "yes," because when we get to the senior, the requirements for a formal education of the senior, you will see the words, "technical high schools," and "technical colleges" --

CHAIRMAN AHEARNE: Are these drawn from those two papers? Or have you had --

MR. COLLINS: Yes --

CHAIRMAN AHEARNE: -- discussions with --

MR. COLLINS: -- they're drawn from the two papers, and we did make some telephone calls with Canada; and we made

a telephone call with the British Embassy to determine that we were interpreting this formal education requirement.

CHAIRMAN AHEARNE: But you have not actually, yourself, spoken with any of the people from these countries?

MR. COLLINS: We didn't; no. Just the Embassy.

COMMISSIONER HENDRIE: Paul --

MR. COLLINS: We did speak to people in Canada. Steve Richardson made the contact with the Canadians.

COMMISSIONER HENDRIE: The British professional engineers, the term that is used here, is that an "engineer" the way --

MR. COLLINS: Yes, I would consider it a four-year graduate.

COMMISSIONER HENDRIE: -- my New York garbage man is a "sanitary engineer"?

MR. COLLINS: No, no, sir.

COMMISSIONER HENDRIE: Or in the sense of --

MR. COLLINS: That would be the equivalent of a college-degreed engineer.

The next slide, please?

(Slide.)

One of the other items that we investigated was the job-related experience. Once again, under Great Britain we make a distinction between the experience required between a "special engineer" and a "secondary school graduate." The

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more formal education you have, the less training, or the less experience.

CHAIRMAN AHEARNE: Where you have the 4-1/2 years of post-graduate training for the secondary school, what kind of --

MR. COLLINS: I'm talking about a combination of on-the-job training and academic training for these people.

CHAIRMAN AHEARNE: I see.

MR. COLLINS: It's difficult to break out from the papers how much academic training they were receiving, and how much on-the-job in this area.

CHAIRMAN AHEARNE: But it is theoretically possible to make contact with someone in their --

MR. COLLINS: Oh, yes. Yes. Yes.

CHAIRMAN AHEARNE: What is a "craftman"?

MR. COLLINS: This would be, under the West German? This would be a man who --

COMMISSIONER HENDRIE: A "craftsman" with only one skill.

(Laughter.)

MR. COLLINS: Yes -- Well, not really. Just like our maintenance type people, and they can come from conventional operations, or a private business, or from nuclear power plants. But they accept these people --

MR. DIRCKS: You have to realize that in country like Germany that you have a different set of requirements to

be a craftsman. There you have to serve an apprenticeship over a number of years; you move to journeyman; and then you move to the Master Craftsman. So it is a slightly different, more formal requirement than craftsman.

CHAIRMAN AHEARNE: And I guess because the papers didn't address Japan, we didn't have Japan?

MR. COLLINS: No. I've seen -- Well, I've seen the Japanese training programs. I can address those. They are a carbon copy of our --

CHAIRMAN AHEARNE: Ours?

MR. COLLINS: -- American training program; yes. I spent a lot of money translating the Japanese techs into English, and found out I could have used the Westinghouse Manual and read it in English to begin with.

(Laughter.)

MR. COLLINS: They had taken it from Westinghouse to Japan and translated it into Japanese, and --

CHAIRMAN AHEARNE: Maybe a brief discussion with some of the Japanese would have saved the translation.

MR. COLLINS: They were brought back to me from a conference over there.

The next slide, please?

(Slide.)

I thought it would be of interest to take a look at the licensing procedures, and the involvement of the regulatory

bodies in the various programs. We are intimately involved with the examinations. We administer them, grade them, and prepare them.

In Canada, it is slightly different. The facility administers the examination, and there is no oral examination. These licensing people make up one of the examinations when the utility tells them the man is ready for that section of the exam. They mail it to the facility. The man takes it, and mails it back to the licensing board.

In Great Britain, they have no external licensing program. The men take periodic exams throughout their training program. These results are reported to the station management, and they then in turn certify these men to the governing body.

The German program is more comparable to ours than the others, except the utility does administer the examination based on the federal guidelines which are very comparable to 10 CFR 55, the "Scope of Examinations" sections.

COMMISSIONER GILINSKY: Well, it is understandable that Canada and Britain might handle it differently, because they are not dealing with 60-odd utilities the way we are.

CHAIRMAN AHEARNE: It's a semi-government body.

MR. COLLINS: May I see the next slide, please?

(Slide.)

I would like to review the same three subjects, as far as the senior operator is concerned. Once again, two paths

are offered in the other countries.

CHAIRMAN AHEARNE: Is the "senior reactor operator" in concept similar to these various countries?

MR. COLLINS: Yes. And they seem to be using the same three categories we do, "operator," "senior operator" -- which is turning into "control room supervisor" -- and the "shift supervisor." And all of the shift supervisors must be licensed as a "senior."

In our proposed revision, we presently have a high school education or the GED, but we do plan to require operators to have technical training at the college level by 1986. I believe that's the correct date there.

In Canada and Great Britain, and West Germany, they recognize -- either take "graduate engineers," or "secondary school graduates," or in the case of Germany, an operator may advance to the senior operator position.

CHAIRMAN AHEARNE: What is a "kraftwerker"?

MR. COLLINS: That's their title for the "operator." I should have put that in. A "reactor operator" is called a "kraftwerker."

CHAIRMAN AHEARNE: So that their qualification to be a senior reactor operator --

MR. COLLINS: First, as an operator.

CHAIRMAN AHEARNE: And then you have to be a graduate of the technical high school?

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MR. WENZINGER: "Either/or," isn't it?

MR. COLLINS: Beg your pardon?

CHAIRMAN AHEARNE: A technical high school?

COMMISSIONER HENDRIE: A secondary school.

MR. WENZINGER: It's "either/or," isn't it?

MR. COLLINS: "Either/or." Either/or, excuse me. I'm sorry. One and two are "either/or."

CHAIRMAN AHEARNE: Right. You could be --

MR. COLLINS: You could come from the operator ranks.

CHAIRMAN AHEARNE: You could be a graduate of a technical high school, and then become a senior reactor operator.

MR. COLLINS: Instantly; right. Go into the training program for a senior operator; not serve time as an operator.

Next slide, please?

(Slide.)

Once again we see the comparison of the education. The numbers preceding it in each case, we see more experience required -- that is, for the people with the lesser formal education. The most experience required is in Canada with the ten years' relevant experience for a secondary school graduate to become a senior operator.

The next slide, please?

(Slide.)

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This is the examinations. An interesting --

CHAIRMAN AHEARNE: Paul, let me just recall something on your previous -- you don't have to go back to the slide -- but in a number of places there you had a footnote and said "Navy Equivalent."

MR. COLLINS: "Navy Equivalent," us, yes, for our program. We accept Navy experience as a reactor operator, or as an engineering officer of the watch, as being equivalent of X number of years of power plant experience on a one-for-one basis.

CHAIRMAN AHEARNE: I see. If a man were to come from another power plant, and you are now -- I gather that going from say a Commonwealth Edison to a Consolidated Edison, experience is satisfied by being at another plant? Is that correct?

MR. COLLINS: Not all of it. We have a minimum amount of time at that facility.

CHAIRMAN AHEARNE: But as far as the basic background experience, it is satisfied?

MR. COLLINS: Yes.

CHAIRMAN AHEARNE: Is there anything that would enable you to disqualify the person if he had not performed well at that previous plant? Or is "good experience" just no more valuable than "bad experience"?

MR. COLLINS: We have a means of keeping a record

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on poor performance of the operator. Now he -- If he was out of the field for four years or more, that record would be destroyed.

CHAIRMAN AHEARNE: But if he was coming directly?

MR. COLLINS: But if he went directly and made an application for a record, we would go back to his previous docket and be able to review this information.

CHAIRMAN AHEARNE: But how would we use that information?

MR. COLLINS: Depending upon the severity of the incident, or the actions that he was involved in --

CHAIRMAN AHEARNE: Subjectively?

MR. COLLINS: Yes. We haven't got a firm criteria of --

CHAIRMAN AHEARNE: Okay, do we, when a person quotes a Navy experience, do we ask the Navy for their background information?

MR. COLLINS: No, sir; we never have, no.

CHAIRMAN AHEARNE: Why?

MR. COLLINS: No, we haven't. No, I have no answer to the "why," we just never have made an investigation of previous Navy experience.

CHAIRMAN AHEARNE: So that we automatically assume that's good?

MR. COLLINS: Yes.

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CHAIRMAN AHEARNE: Okay.

MR. COLLINS: On the examinations, it is an interesting item. It doesn't show on the chart, but an operator can become -- in Canada, an operator can become a senior operator without taking an additional examination. He can move, if you will, from the "operator" in the control room, to the "control room supervisor," and not take another examination.

The time he is subject to an examination is if he becomes a shift supervisor. Then he must take this six-part written examination at a higher level similar to our senior examination.

Once again, the British do not get involved with examining; it's left up to the station manager.

Once again, the West German program is very similar to ours as far as the examination is concerned.

Those were the three areas that I planned to talk about. If you want to talk about other items on these charts, I would be glad to expand on them.

CHAIRMAN AHEARNE: Did anybody else want to ask about those comparisons?

COMMISSIONER BRADFORD: Let's see. Did I miss something? Why was France not up there?

CHAIRMAN AHEARNE: It's not in the report.

MR. COLLINS: It's not in the report.

CHAIRMAN AHEARNE: For the same reason that Japan is

not up there.

COMMISSIONER GILINSKY: Japan's not there, either, and Switzerland is not there.

CHAIRMAN AHEARNE: It's a limited subset of industrialized nations.

COMMISSIONER GILINSKY: Actually, this strikes me as a useful subject for an investigation in our Research program --

CHAIRMAN AHEARNE: Well, some branch --

COMMISSIONER GILINSKY: -- or some part of our --

MR. COLLINS: I'll go.

(Laughter.)

COMMISSIONER GILINSKY: -- of our enterprise. It seems it would be useful to know more about what others are doing.

CHAIRMAN AHEARNE: Well, I thought I was trying to get at that when I asked that question, but I didn't quite get there.

MR. DIRCKS: I think, too, you have to look beyond what is a "secondary school graduate" in Germany, compared to a secondary school graduate here.

COMMISSIONER GILINSKY: In fact, it might be a useful subject for a meeting, rather than letting a contract and having people go all over the place, and we could just invite people --

CHAIRMAN AHEARNE: I was thinking of sending

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Hanrahan on a world tour.

(Laughter.)

MR. HANRAHAN: That sounds like a good idea.

CHAIRMAN AHEARNE: However, we do have to get that information.

COMMISSIONER GILINSKY: Well, we can do both.

MR. DIRCKS: Is that --

CHAIRMAN AHEARNE: Well, I have a bunch of questions.

MR. DIRCKS: I'm sure you do.

(Laughter.)

MR. DIRCKS: I guess I just have to re-emphasize at the beginning of it, I think this is just the beginning of looking at this problem. I think I share many of your own questions.

CHAIRMAN AHEARNE: Do you, Steve, or Paul, or Bill, address this question of certification? That is, we are laying out a series of requirements which include a number of requirements on education. To what extent do you see, in years to come, us transferring the certification of, "yes, that person has met at least the educational portions," to some other organization, or schools?

MR. HANAUER: I would think that as we accredit programs, that with the proper kinds of accreditation audits, we could delegate that.

CHAIRMAN AHEARNE: Do you see that delegation being for the whole thing? In other words, the accreditation being, "yes, that person is now an accredited operator"?

MR. HANAUER: Gee, you sort of changed the subject. There will be --

CHAIRMAN AHEARNE: No, no, I --

MR. HANAUER: There will be education and training institutions, and we are developing ways to assure that they have the adequate quality and standards. And that is an accreditation process of an educational institution, an institution of power reactor operators and senior operators.

CHAIRMAN AHEARNE: You would then --

MR. HANAUER: I thought we were -- we could talk about two things.

One is --

CHAIRMAN AHEARNE: I was just wondering how far down that path you were.

MR. HANAUER: Yes. Well, we have -- there are two paths being followed. We have an advisory group who has met with us a few time who includes some educators and some nuclear plant people, who have been advising us on some of the requirements and factors in accreditation.

INPO has been pursuing a similar program, and these have now been harmonized. We have a draft which is a set of methods and requirements for accrediting operator training

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institutions. I thought you were asking about entrance requirements. Presumably an accredited institution could --

CHAIRMAN AHEARNE: I was going to get to that.

MR. HANAUER: -- be delegated the authority, and would have to be audited in some way, to do its own looking into its entrance requirements.

CHAIRMAN AHEARNE: But then you would see that a graduate of this -- or the person, whatever you want to call it -- who has successfully completed those courses would not yet have met -- get our stamp of approval as an operator. They would still have to go through our examinations, our simulator approval?

MR. HANAUER: We would have to decide. But my present thinking is that at some point -- and that seems to be a good point -- that we should still impose an examination. They do it for the Bar, and I don't guess they still have teacher certification exams in most states --

CHAIRMAN AHEARNE: I think they are going back to it.

MR. HANAUER: Yes, they are.

CHAIRMAN AHEARNE: At some point, the NRC, I would think, would give its own exam.

CHAIRMAN AHEARNE: Now I noticed, I guess you had earlier called our attention to the Memphis State presentation to the Nuclear Safety Oversight Committee. Have we been working

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with them? They say they've been developing a program for six years and are now about to put in place at nine reactors --

MR. HANAUER: There were two things there. There is at Memphis State an educational program for the education and training of nuclear power plant operators and senior operators. Their graduates have taken and passed our examinations.

They have been asked to devise education and training programs to be given at nuclear power plant sites, and I don't know -- Do you know the present status of those? Have we seen any of their graduates, yet?

MR. COLLINS: No, no.

MR. HANAUER: I didn't think so.

MR. COLLINS: They've just started offering these programs.

CHAIRMAN AHEARNE: But have they been developing independently of us?

MR. COLLINS: Dr. Jones has been in and out of my office continuously throughout the development of this.

CHAIRMAN AHEARNE: Okay So at least to the --

MR. COLLINS: I have been giving them informal comments on it, yes.

CHAIRMAN AHEARNE: Okay. So this, at least in the direction it was going, it was going to -- it was in track with the educational requirements?

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MR. COLLINS: Yes.

MR. HANAUER: The obvious candidate for accreditation are, first of all, the schools run by the vendors -- GE and Westinghouse, and so on; and secondly, some schools run by some of the larger utilities. And thirdly, such programs as the Memphis State.

MR. COLLINS: The Memphis State program, I might add, goes along with the thinking of the consultant examiners and our university professors that are on my staff. They look at the 60 credit hours' requirements, and I saw a shudder.

They have visions of people going to a college catalogue and grabbing this, and grabbing that. They feel that the program for the shift supervisors, and for the senior operators, should be a structured program; and it shouldn't just be a hodgepodge of 60 credit hours.

But Dr. Jones indicates, I believe in his paper, or at least he has to me, that he couldn't use the standard university text; that he had to rewrite them to direct them towards the operation of an operator. This was an impressive part of his program.

CHAIRMAN AHEARNE: Now in that, the way you've got the rule structured, you would be imposing this kind of educational requirements over a graduated time period. Why don't you make it immediately effective for all new applicants?

MR. COLLINS: The pipeline, I guess, is quite a few

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years long.

MR. WENZINGER: Yes. The implementation section isn't ready.

MR. HANAUER: The basic reason is that the new applicants who are ready don't have this; and there was a desire not to completely disrupt the flow of new applicants.

MR. WENZINGER: It does call for new applicants to meet the requirements by December '81 for ordinary reactor operators. And for seniors, by '84. For renewals for ordinary operators, by December '81 --

CHAIRMAN AHEARNE: And your concern is that if you made it any sooner, you would be turning off the flow? Or is it a concern that you would be unfair to people that are in the system?

MR. HANAUER: Both.

CHAIRMAN AHEARNE: I guess I am -- it would sound very callous, obviously -- I am much less concerned about being fair to people who are in the pipeline, as I am to making sure the plants are operated correctly.

MR. COLLINS: We have tried to take this into consideration by having the shift technical advisor, who is a college-trained individual, on the shift.

CHAIRMAN AHEARNE: Yes, I just heard at length about that; yes.

MR. COLLINS: But this was one tack that we had

taken.

CHAIRMAN AHEARNE: Could you speak anything to your thoughts about -- and this gets back to something that you mentioned, Steve -- the screening that might go into those who would be allowed to become entrants into the training program?

MR. HANAUER: The companies screen them. I think most of the companies screen them for something that is not in our rules that is very important. Namely, temperamental suitability for this kind of stressful work.

They give them -- it varies -- batteries of tests --

MR. COLLINS: Mechanical apptitude tests --

CHAIRMAN AHEARNE: Now is that for entrants into the training program, or --

MR. COLLINS: Entrants into the utility.

CHAIRMAN AHEARNE: -- training program.

MR. COLLINS: Yes.

CHAIRMAN AHEARNE: Why don't we require that?

MR. HANAUER: It is more than just not having gotten around to it, although that is part of it.

(Laughter.)

MR. HANAUER: There is a difficulty in -- there has so far been a difficulty in deciding what to specify. The idea has been that we are going to test these people very rigorously after they have completed a rigorous education and training requirement, and we rather left it to the companies

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to decide how economical they should be with their training resources with regard to things like mechanical apptitude.

Now with regard to stress, there was a terrible struggle over this when we got out the regulatory guide. It went back and forth to various parts of the Commission, and what survived was what I will characterize as a very feeble idea that the medical examinatioN should include some thought on the doctor's part about emotional stability, but in fact I think very little of the screening that's applied.

CHAIRMAN AHEARNE: I see.

Is that because you personally don't believe that it is necessary to test for stress? Or that you are not clear on how it could be effectively done?

MR. HANAUER: We didn't have, at the time we had this latest struggle -- which was what? about two years ago?

MR. COLLINS: On the medical regulatory guide?

MR. HANAUER: Yes.

MR. COLLINS: No, that was about four years ago. The background on that was the physicians on the panel that were drawing up the medical standards all indicated that the most difficult psychological screening to do is on the initial physical examination. And it's much easier, after several years of getting behavioral reports from a man's supervision and so forth.

CHAIRMAN AHEARNE: Are they saying -- Well, first,

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that was four years ago.

But second, is the issue that you can't be sure that you are being fair to everybody? Or that you can't be sure you actually let people through who really would react well under stress?

MR. COLLINS: I think it's the latter, because of the depth of testing you would have to do, according to these physicians.

MR. HANAUER: It is worth another look, in my opinion, to see whether there are validated tests that have any use in predicting this.

CHAIRMAN AHEARNE: You don't have, then, any fundamental objection to doing prescreening?

MR. HANAUER: My personal view is that I would be much more severe on postscreening, and more lenient on prescreening. This is a prejudice of mine. What you pay for this is training resources, rather than the safety of the public.

CHAIRMAN AHEARNE: In an ideal world, in a world in which the fact -- I guess an analogous situation is: Once it is built, it may be harder to find that it's not appropriate.

MR. HANAUER: Yes.

CHAIRMAN AHEARNE: Once the guy has gone through the whole training program, it may be harder to find that it is not appropriate.

MR. HANAUER: I would presume we were adequately

tough.

CHAIRMAN AHEARNE: The last question I have -- and I see way back in the back of the room the General Counsel, so I will ask this question --

(Laughter.)

CHAIRMAN AHEARNE: He had raised a comment on, I guess, how do we actually reach operators? And, Bill, you had responded. Do you want to expand on that at all?

MR. DIRCKS: No. No, I would have to do -- I keep saying we need to do more work here, which is obviously the direction, so I will have to get something back to you on that.

MR. HANAUER: I didn't understand the question.

CHAIRMAN AHEARNE: Well, OGC had drafted --

MR. DIRCKS: It's a memorandum from the OCG of November 13th.

CHAIRMAN AHEARNE: Right, and you got back -- What you said is: You have no objection to the comments. And I'm not sure if you agree with the second comment. Do you feel that that has adequately been handled from the questions you raised?

MR. HANAUER: I'm sorry, sir; I haven't seen the document.

CHAIRMAN AHEARNE: Oh.

MR. COLLINS: No, I haven't, either.

CHAIRMAN AHEARNE: All right, then maybe we can

share the document.

MR. DIRCKS: We'll have to get back to you.

CHAIRMAN AHEARNE: I see. I was responded to by ELD, so I guess this cycle --

(Laughter.)

MR. HANAUER: Yes, we do.

CHAIRMAN AHEARNE: Well, you guys can take a look at it back and forth.

Joe? Peter?

(No response.)

CHAIRMAN AHEARNE: All right, I am sure we will be providing you with some comments on this rule, and we will hopefully be able to get it out.

Thank you.

(Whereupon, at 3:02 p.m., the meeting was recessed to other business.)

* * *

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NUCLEAR REGULATORY COMMISSION

This is to certify that the attached proceedings before the

COMMISSION MEETING

in the matter of: Discussion of SECY-80-491 - PROPOSED RULEMAKING, "Qualification of Reactor Operator"

Date of Proceeding: December 11, 1980

Docket Number:

Place of Proceeding: Washington, D. C.

were held as herein appears, and that this is the original transcript thereof for the file of the Commission.

Jane Beach

Official Reporter (Typed)

Jane M. Beach

Official Reporter (Signature)

November 4, 1980

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

SECY-80-491

CONSENT CALENDAR ITEM

For: The Commissioners

From: Robert B. Minogue, Director
Office of Standards Development

Thru: W. J. Dircks, Executive Director for Operations

Subject: PROPOSED RULEMAKING, "QUALIFICATION OF REACTOR OPERATORS"

Purpose: To obtain Commission approval of a notice of proposed rulemaking to improve the operator licensing program in the areas of (1) experience, education, and training of operators and senior operators, (2) use of simulators in training programs, and (3) requalification of licensed operators and senior operators. Also included are several editorial changes to the present regulations that support or are related to the above areas.

Issue: The implementation of the Commissioners' action on SECY-79-330E dated July 30, 1979 and SECY-79-330F dated September 11, 1979.

Alternatives: Since the Commissioners in their response to SECY-79-330E/F have directed that specific amendments to the regulations be prepared, no alternatives are given to those amendments resulting from previous Commission action. The staff is recommending additional requirements in some areas to provide consistency within the regulations, to reflect recommendations of various reviews of the TMI accident such as the Lessons Learned Task Force, and to reflect work done in these areas for other documents such as Regulatory Guide 1.8, "Personnel Qualification and Training." Where significant technical issues are raised, alternatives for the additional amendments are given in Enclosure "B".

Discussion: In SECY-79-330E, dated July 30, 1979, the staff documented a detailed review of the Operator Licensing Program and presented several recommendations for Commission consideration. In SECY-79-330F, dated September 11, 1979, NRR proposed a method for implementation of the recommendations. The memorandum from S. J. Chilk to L. V. Gossick, dated November 27, 1979, presented the Commissioners' approval of the recommendations as modified by their comments. The above documents were used as a basis for preparing the proposed amendments to the regulations. Also used were the December 6, 1979 draft revision of standard Training of Personnel for [illegible]-2 Lessons Learned Task Force [illegible] Register Notice of Proposed [illegible]e "A" to identify the purpose [illegible]und and discussion is necessar[illegible] [illegible]closure "B", "Background

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