

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

**Title: BRIEFING ON NRC'S TECHNICAL TRAINING
PROGRAM - PUBLIC MEETING**

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2 NUCLEAR REGULATORY COMMISSION

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4 BRIEFING ON NRC'S TECHNICAL TRAINING PROGRAM

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6 PUBLIC MEETING

7
8 Nuclear Regulatory Commission
9 One White Flint North
10 Rockville, Maryland

11
12 Tuesday, October 10, 1995
13

14 The Commission met in open session, pursuant to
15 notice, at 10:00 a.m., Shirley A. Jackson, Chairman,
16 presiding.
17

18 COMMISSIONERS PRESENT:

19 SHIRLEY A. JACKSON, Chairman of the Commission
20 KENNETH C. ROGERS, Commissioner
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1 STAFF AND PRESENTERS SEATED AT THE COMMISSION TABLE:

2 JOHN C. HOYLE, Secretary of the Commission

3 KAREN D. CYR, General Counsel

4 JAMES TAYLOR, EDO

5 EDWARD JORDAN, Director, AEOD

6 KENNETH RAGLIN, Director, TTD, AEOD

7 PAUL BIRD, Director, Office of Personnel

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P R O C E E D I N G S

CHAIRMAN JACKSON: Good morning, ladies and gentlemen.

The purpose of this morning's meeting is to inform the Commission on the status of the Technical Training Program. I understand the Commission was last briefed on the program in 1991. I understand that you will provide not just an overview but an update on changes that are being made to the program as well as the bases for the changes.

Copies of the presentation slides, I am told, are available at the entrance.

Commissioner Rogers, do you have any comments you would like to make at this time?

COMMISSIONER ROGERS: Not right now. Thank you.

CHAIRMAN JACKSON: Mr. Taylor.

MR. TAYLOR: Good morning. Since that 1991 briefing on the Technical Training Program discussions of elements of technical training have been contained in briefings such as the PRA program plan and the maintenance rule implementation. Those examples are representative of a shift in training towards skill enhancement or new skill areas responsive to technology changes.

The purpose of today's briefing is to give you an overview of the program and current initiatives the staff is taking.

1 With me at the table are Paul Bird, Director of
2 Office of Personnel; Ed Jordan, Director of AEOD; and Ken
3 Raglin, Division Director for Technical Training at the
4 Chattanooga Center.

5 Ed has a few opening comments, while Paul will
6 respond to interface issues in some of the programs that
7 interface with the Office of Personnel.

8 Ed.

9 MR. JORDAN: Thank you. I would like to comment
10 further on the changing nature of NRC training. In 1969,
11 when I came to the AEC Region III Office of Compliance,
12 training for a new inspector was a shelf of professional
13 size videotapes, Westinghouse and GE plants, a stack of
14 regulations, codes and standards, and a couple of patient
15 senior inspectors who tutored me during on-the-job training
16 for a couple of months.

17 Today we have a formalized training and
18 qualification program for many reactor and materials
19 positions in the regions and at headquarters with a syllabus
20 of courses, including skills enhancement courses that are
21 regularly scheduled at the Chattanooga Training Center and
22 NRC regional office or headquarters or at a contractor's
23 facility.

24 We have a highly motivated and professional
25 training staff, a set of contract courses, and a modern

1 training facility with representative simulators and
2 training aids.

3 We have instituted measures to identify and
4 project program office needs in order to provide the right
5 courses. The staff of the Office of Personnel, IRM and AEOD
6 with the assistance of a contractor are developing a
7 computerized system of records to help manage the
8 administrative burden of matching courses and assuring staff
9 have taken appropriate courses.

10 Our goal is to provide a seamless approach to
11 training that anticipates and rapidly responds to change as
12 the agency itself undergoes change.

13 During the past year the Technical Training
14 Program has benefited from ACRS reviews through a training
15 subcommittee.

16 Although training is every manager's
17 responsibility, it is important to have clearly assigned
18 roles, responsibility and authority. AEOD, the Office of
19 Personnel and the program offices have specific
20 responsibilities for training that Ken will cover on the
21 first slide.

22 Ken.

23 [Slide.]

24 MR. RAGLIN: There are a number of training
25 programs within the NRC, as shown on this first slide.

1 These include technical training provided by the Technical
2 Training division of AEOD, incident response training
3 provided by the Emergency Response Division of AEOD,
4 computer management and administrative training provided by
5 the Office of Personnel, and training provided in the
6 regions, by NRR and NMSS. This briefing will focus on the
7 formal Technical Training Program

8 CHAIRMAN JACKSON: I hate to be asking you right
9 at the beginning, but is there a focal point somewhere that
10 looks at all of these various training programs, and is
11 there a coordination?

12 MR. RAGLIN: I think we are heavily involved with
13 that. I hope to show on some of the subsequent slides the
14 coordination that is taking place. From the context of a
15 provider of training there are several different providers,
16 but we certainly feel we are working in the same direction.
17 As Mr. Jordan mentioned earlier, we are headed to a more
18 integrated interface from the standpoint of the user offices
19 and the standpoint of the individual staff users of
20 training.

21 CHAIRMAN JACKSON: As a former educator, it is an
22 issue that is of particular interest to me. You might wish
23 to comment as you go along or in a follow-up session,
24 because as we deal with resource issues as well as changing
25 needs it is important that the Commission understand how

1 training in one area interfaces with or feeds that, that we
2 are covering the bases we need to cover without excessive
3 duplication.

4 COMMISSIONER ROGERS: I have somewhat the same
5 concerns. I don't know whether we are going to hear much
6 about this today, but if we are not, I think we probably
7 both would be very interested in it, which is how all the
8 training programs fit together, just exactly how they are
9 integrated.

10 For example, how do you make decisions as to what
11 is to be available at the training center, at headquarters,
12 and are there any training programs available in the
13 regional offices? I don't know whether we do that or not.

14 What is the overview towards training so that
15 every individual who works for NRC has some way to improve
16 their own ability to contribute to the work of the agency no
17 matter where they are, whether they are in headquarters, out
18 in the regions or in the plants?

19 At some point I certainly, and I am sure the
20 Chairman also feels this way, would like to see a
21 comprehensive view of how we see training and how the
22 different commitments that we make to training are
23 integrated together. There are things that are done here at
24 headquarters, a lot of training courses here, and then, of
25 course, the programs at the training center, which are very

1 powerful.

2 CHAIRMAN JACKSON: How do we insure coherence and
3 consistency of content? That is all part of what I think
4 Commissioner Rogers is saying.

5 COMMISSIONER ROGERS: Yes.

6 MR. JORDAN: Maybe I could answer partially and
7 then the presentation would answer the rest of it, I think.

8 As this first slide identifies, we have
9 articulated where various aspects of training are done.
10 Between the Office of Personnel and AEOD the formal training
11 through the way of courses is provided and very closely
12 coordinated so that there is no duplication between the
13 offices in terms of formal classes or training. Some of the
14 resources come from different pockets, but there is no
15 redundancy overlap in terms of the training programs. In
16 terms of qualifications of the staff, there are manual
17 chapters, directives that all of the program offices have
18 contributed to that identify what training is necessary for
19 various positions, and then we develop courses to satisfy
20 those needs from the technical training side of it.

21 CHAIRMAN JACKSON: Why don't we got on. Then
22 maybe we will come back to this.

23 [Slide.]

24 MR. RAGLIN: The Technical Training Division
25 coordinates with the program offices and the regions in

1 policy development and implementation of the formal staff
2 qualification and training programs. Some subsequent slides
3 will illustrate this coordination process.

4 Based on these identified needs and other
5 perceived needs, technical training is provided to best meet
6 the integrated agency needs.

7 In addition to training of the NRC staff, which is
8 by far most of the training, technical training is also
9 provided for agreement state personnel and, on a limited
10 basis, for regulatory counterparts in other countries.

11 Courses are developed and modified as necessary
12 and as the resources allow to meet new and changing agency
13 needs as they come up.

14 The Technical Training Division also manages the
15 Technical Training Center, the TTC facility, which provides
16 infrastructure support for the Technical Training Program.

17 In addition to the training functions, the
18 training staff is involved with technical assistance to
19 primarily NRR, Research and AEOD in areas of expertise.
20 That is, areas of expertise that our staff has or areas in
21 which the facilities, for example, simulators, would be of
22 great value.

23 We also provide technical assistance to regulatory
24 counterparts in Russia and Ukraine in establishment of
25 regulatory training programs.

1 [Slide.]

2 MR. RAGLIN: The technical training resources are
3 those that are assigned and managed by the Technical
4 Training Division and others who support the agency's
5 Technical Training Program.

6 The TTD staff consists of 31 FTE, 29 of which are
7 technical. These FTE are organized into three branches
8 which provide reactor technology training, specialized
9 technical training, and training support functions.

10 The program support budget for the Technical
11 Training Division for FY 1995 was approximately \$4.3
12 million. This includes money for reactor technology,
13 information technology activities, and this is primarily
14 infrastructure support having to do with simulators, reactor
15 technology training and non-reactor training.

16 The training center facility has four large
17 classrooms, three smaller ones, five full scope training
18 simulators and a variety of high technology and hardware
19 training aids.

20 The staff resources include instructors, program
21 managers, simulator engineers, and support assistance.

22 The fiscal resources also provide funding for some
23 contracted simulator support activities which are necessary.

24 The resources on this slide do not include those
25 of the other NRC staff who support the Technical Training

1 Program in a number of ways, such as serving as guest
2 instructors, providing NRC perspectives at contractor
3 delivered courses, assisting with contract support
4 activities such as serving on source evaluation panels, and
5 course module development.

6 [Slide.]

7 MR. RAGLIN: The principal internal impacts on the
8 agency's Technical Training Program are the formal
9 qualification programs and the formal development or
10 training programs. These basically determine the curriculum
11 areas that we have and most of the courses that are
12 developed and presented in these curriculum areas.

13 Formal qualifications programs have been in place
14 for inspectors for a number of years. These have been
15 defined in NRC Inspection Manual Chapter 1245, commonly
16 referred to as Manual Chapter 1245. That document has
17 historically defined the formal requirements for all of the
18 agency's inspectors.

19 As will be discussed later in this briefing, that
20 manual chapter and a related manual chapter are being
21 revised at this time. That document defines most of the
22 training requirements. It covers all of the inspectors.

23 There are other technical positions for which
24 formal requirements exist. These include operator license
25 examiners, headquarters operations officers, and training

1 instructors.

2 Formal development programs established over the
3 last few years, and in fact some recently, also have a large
4 bearing on what is done within the technical training
5 curriculum.

6 The specific programs of which I speak are the
7 Reactor Engineer Intern Development Program, the Senior
8 Reactor Analyst Development Program, and the Senior Resident
9 Inspector/Resident Inspector Development Program.

10 Generic training plans and office letters, many of
11 which were developed following a 1988 look at headquarters
12 positions, also have some impact. These are typically
13 somewhat softer needs, though, in that they are
14 recommendations in many cases rather than requirements.

15 Additionally, technical training identified in
16 individual development plans also represents a source of
17 students for regularly scheduled courses.

18 COMMISSIONER ROGERS: Excuse me. Maybe this is
19 really a question for the EDO. When you put together a team
20 to do an inspection, an augmented inspection team or
21 something like that, have all the people on that team met
22 inspector qualifications? Do they have to have inspector
23 qualification credentials?

24 MR. TAYLOR: There are inspectors on that team.
25 If it involves a specific reactor component such as a steam

1 generator, we might send a steam generator specialist from
2 the technical divisions, or an electrical specialist.

3 COMMISSIONER ROGERS: But it isn't a requirement
4 to have met these inspector qualifications to be assigned to
5 one of those teams. Is that what you are saying?

6 MR. RAGLIN: Not as a technical expert.

7 MR. TAYLOR: Not as a technical expert.

8 MR. RAGLIN: Typically, any staff member with
9 inspector in his or her position title is covered by formal
10 qualification requirements. Different positions have
11 different requirements or recommendations. I think if you
12 looked at a team inspection, certainly all the inspectors
13 have the requirements and experts in a particular area may
14 not have as rigorous formal requirements as we see for the
15 inspectors.

16 MR. TAYLOR: They come from the technical branches
17 usually.

18 [Slide.]

19 MR. RAGLIN: A variety of methods are used to
20 provide technical training for the NRC staff.

21 When there are sufficient numbers of personnel who
22 need a particular course or curriculum area, it's generally
23 more cost-effective to develop customized courses either
24 using in-house FTE resources or using contract support funds
25 for contractors. These are typically more effective than

1 off-the-shelf courses in that they can be customized to
2 provide regulatory perspectives to focus on areas that are
3 more important to the regulator than they would be to other
4 parts of the population.

5 In some cases it is possible to find other
6 government agencies who have courses that fit NRC's needs,
7 and we have had very good results here, particularly in the
8 safeguards area, using courses that the DOE Central Training
9 Academy offers.

10 Frequently there is a need for specialized courses
11 but there is a relatively small population of personnel who
12 require the training. In that case it is generally not
13 cost-effective to develop an in-house course to customize
14 the course. In cases such as that we use what is referred
15 to as the NRC Form 368 process, which allows for individual
16 training opportunities.

17 In this case individuals can request this training
18 which is provided by universities or other private
19 institutions, and they can go on an individual basis. That
20 NRC Form 368 process is managed by the Office of Personnel
21 and is an integral part of solving the agency's overall
22 technical training needs.

23 COMMISSIONER ROGERS: How often is that used and
24 what do we see for the future with contracting resources?

25 MR. BIRD: I think the commitment of this agency

1 has always been very strong in this area. A lot of this
2 training, of course, is offered through the university
3 systems, and it is training for which you might not have a
4 whole class of people at one time available. That is
5 ongoing. There are many, I would say hundreds of courses in
6 a year that would be of a technical nature that these
7 different people throughout the organization attend.

8 COMMISSIONER ROGERS: You mean there would be
9 hundreds of NRC people attending courses?

10 MR. BIRD: Yes. I don't have the exact numbers,
11 but there is a very large number of technical courses that
12 are taken through these contracts.

13 COMMISSIONER ROGERS: Under this program?

14 MR. BIRD: Yes.

15 CHAIRMAN JACKSON: Where people use the Form 368
16 process, are these specific to the individual's job
17 function, or are they part of an ongoing degree program?

18 MR. BIRD: They're both. In some cases they
19 support both our graduate fellows program and our senior
20 fellows program. In other cases they are individual courses
21 of a particular nature. Digital instrumentation is an
22 example. It is one course at a time. The individual
23 generally will be in an area where the immediate job is
24 associated with the training. There is some latitude in
25 that regard, but generally it is focused on the immediate

1 job of the individual.

2 MR. RAGLIN: In fact there are some of these
3 courses that are attended through the 368 process that are
4 indeed formal training requirements of the formal
5 qualification programs. For example, respiratory protection
6 is one that we carry in our course catalogue and we carry a
7 description from a couple of different vendors who offer it.
8 Students who must complete that qualification program must
9 attend that particular course through the 368 process
10 because it isn't offered in house.

11 CHAIRMAN JACKSON: When you say vendors, you mean
12 other than universities?

13 MR. RAGLIN: Yes. Private training companies,
14 universities. Basically anybody that is non-government that
15 provides training to somebody. As Paul Bird mentioned,
16 digital I&C is an emerging area in which we are going to
17 make heavy use of training that is available to the public
18 in general.

19 CHAIRMAN JACKSON: Do we have a qualification or
20 accreditation process when we use other than university
21 vendors?

22 MR. RAGLIN: Not a formal one. We typically ask
23 for employee and supervisor comments on the 368 form as part
24 of the follow-up for someone who has gone to the training.
25 We try to catalog these and keep track of outside courses

1 that work really well to solve agency needs. We also track
2 ones that are not perceived as too advantageous in terms of
3 the cost-effectiveness. We really don't have a formal
4 program of doing that.

5 I would like to also mention that in the context
6 of formal qualification programs the formal technical
7 training part represents about 25 percent of the total
8 effort. The other 75 percent is in the form of on-the-job
9 training, self-study and informal training, much of which is
10 done in regional offices. In some ways this gets to your
11 earlier question as to how these pieces fit together. What
12 I am describing today has more to do with the formal
13 training than the informal training, of which there is a
14 great deal.

15 CHAIRMAN JACKSON: Let me ask you one last
16 question on your last bullet here. You mentioned self-
17 study. I take it that is not part of the 25 percent that
18 you are speaking of today.

19 MR. RAGLIN: Right.

20 CHAIRMAN JACKSON: With respect to that, are there
21 self-study modules that the Technical Training Division
22 develops for individuals who might want to do that and need
23 to do that?

24 MR. RAGLIN: There are some. These are typically
25 tied to the qualification programs. When I speak of Manual

1 Chapter 1245, that is an all-encompassing document for
2 qualification, meaning that it lists the formal
3 qualification program, the specific formal courses. It also
4 has appendices called qualification journals which are much
5 thicker documents that detail these self-study items, these
6 informal training items, and on-the-job training that
7 inspectors in qualification must complete.

8 There are some formal parts of that. For example,
9 there are self-study quizzes for the Code of Federal
10 Regulations, different parts that we update periodically and
11 make available within the regions. That's a good example.

12 CHAIRMAN JACKSON: Relative to that, for instance,
13 there are no modules that you develop to prepare the
14 individual for those quizzes, as it were. Or do you? I
15 guess that's all I'm really trying to understand.

16 MR. RAGLIN: Yes. In the case of the self-study
17 quizzes for the Code of Federal Regulations that is done.
18 It is not universally done. There is a lot of on-the-job
19 and self-study that is done strictly internal to the
20 regions.

21 CHAIRMAN JACKSON: I guess I am trying to get at
22 as we go forward whether there are areas where there is that
23 kind of approach on a more formalized basis in terms of
24 development of modules that would then include some kind of
25 exam at the end; whether there areas that could be good

1 candidates for that kind of approach as opposed to the
2 bodies sitting in a class. I leave that with you more as a
3 question and a challenge.

4 MR. JORDAN: I would comment and say that that is
5 aimed at new employees. The work load that we have now is
6 generally existing employees. Our emphasis now is trying to
7 meet the changing skill needs as opposed to qualification of
8 new employees.

9 COMMISSIONER ROGERS: If I can delay matters a
10 little bit by putting in my two cents. I had some
11 experience some years ago with self-paced education and
12 found it to be extremely powerful for certain individuals
13 but not for everybody. There are some people who do very
14 well under that, who can move very quickly and really master
15 a great deal of material. Others need the discipline of the
16 classroom. They just have to have it.

17 I think self-paced instruction is a very powerful
18 technique. However, it's an expensive one, because there
19 you have to develop modules. The whole philosophy is you
20 can't move from one module to another until you pass the
21 exam on that module. The exam doesn't come at the end;
22 exams come as you progress through the system.

23 I think it's something you might look at for some
24 purposes. It is very powerful, but it isn't for everybody.

25 CHAIRMAN JACKSON: I agree. I think there are

1 subjects that are more amenable to that coupled with the
2 individual. The real expense typically is in the up-front
3 development of those.

4 MR. RAGLIN: As one example of that, for the last
5 couple of years we have had computer-based site access
6 refresher training. Right now we are internally trying to
7 upgrade that to reflect the fairly recent Part 20 changes.
8 That is where we have our most experience so far. It is a
9 challenge.

10 CHAIRMAN JACKSON: You had better go on.
11 Otherwise we will never let you get through.

12 [Slide.]

13 MR. RAGLIN: I would like to touch on course
14 locations for a moment.

15 Courses are presented at the location that makes
16 sense, quite simply, taking into consideration the location
17 of the majority of the students, the necessity and location
18 of training aids such as reactor simulators, the necessity
19 of special facilities such as contractor facilities, and the
20 effectiveness of the course.

21 For FY 1995 more than 25 percent of all of the
22 courses were given here in headquarters or in regional
23 offices. This reflects a trend of making more training
24 available locally to agency students if effectiveness can be
25 maintained.

1 Effectiveness is a function of both the ability to
2 convey the information and the degree to which students are
3 free to attend all of the sessions and study the material.
4 Our experience is that students are typically able to spend
5 more time when they are at remote locations.

6 I would also like to mention that as part of the
7 White Flint restacking plan the staff is planning to create
8 a technical training classroom which will be not unlike the
9 large classrooms at the Technical Training Center and will
10 have the same sort of special equipment inside them. So we
11 project being able to give even more courses locally, which
12 should save travel dollars.

13 [Slide.]

14 MR. RAGLIN: The next graph shows the historical
15 perspective of agency technical training FTE since the last
16 major reorganization in 1987. At the bottom of the graph
17 are the Technical Training Center or Division FTE, which has
18 ranged from a low of about 28, a high of 34, presently at
19 31.

20 The upper part represents all of the student
21 instructional hours. This is class room or simulator time
22 converted to FTE. It shows the level of effort on the part
23 of the students to receive the technical training that is
24 being provided. This has peaked at a little over 50 FTE in
25 FY 1992, when we were at the height of the training for the

1 Reactor Engineer Intern Program. Right now it's about 35
2 FTE, which is about where it was back in 1987.

3 These totals do not take into consideration
4 technical training overhead external to the Technical
5 Training Center, nor do they take into consideration the
6 other agency support that we get for the Technical Training
7 Program. We just don't have any way to measure that.

8 COMMISSIONER ROGERS: What is a student FTE?

9 MR. RAGLIN: It's the instructional hours divided
10 by some number of hours. I used 1800 hours as roughly
11 equivalent to one FTE, which takes into account vacation
12 time, holidays and all that.

13 COMMISSIONER ROGERS: I see. These are not
14 students.

15 MR. RAGLIN: No.

16 COMMISSIONER ROGERS: How do you translate those
17 numbers into students? It's not a uniform situation.

18 MR. TAYLOR: How many have been through the
19 center?

20 COMMISSIONER ROGERS: Yes. Also on an annual
21 basis, how many people go through the center.

22 MR. RAGLIN: For reactor technology training there
23 were 469 students for the last fiscal year. There could be
24 multiple counts here. A student might typically attend
25 three or four courses. So that counts four into that

1 number. For specialized technical training it was 1561.
2 The same thing goes there.

3 COMMISSIONER ROGERS: It would be interesting to
4 see that breakdown.

5 MR. TAYLOR: We can put some of those statistics
6 together for you.

7 COMMISSIONER ROGERS: When you do it on a student
8 FTE basis, it compresses the numbers very much. It doesn't
9 really give you a measure of how broad the number of people
10 are that are being served by the center.

11 MR. TAYLOR: We did mention that people take
12 training at the universities and other places. I would like
13 to pull some of those statistics together. It has been the
14 policy to strongly support outside courses.

15 MR. BIRD: Yes. We can certainly show you the
16 instances of training and then we can break that down with
17 regard to what type of training was offered, whether it was
18 at the TTC, whether it was here, or whether it was external.

19 COMMISSIONER ROGERS: I would like to see the
20 breakout of those folks who are taking educational programs
21 outside that are not required for their work. In other
22 words, for personal advancement in some way.

23 CHAIRMAN JACKSON: I am interested in how the time
24 migration has gone in terms of the distribution among the
25 categories that we are talking about. I am also interested

1 in having a broad subject area overlay to see the course
2 offerings and what the students are taking as a function of
3 the areas of regulatory concern.

4 MR. BIRD: I believe we can break that down. We
5 can certainly get the statistical data, and I think we can
6 translate that back to courses. We are going to have to do
7 a little homework on categories of courses, but I think that
8 can be done.

9 CHAIRMAN JACKSON: In the end, the reason for that
10 is that we want to be sure that our regulatory agenda and
11 what we are offering are in synch. I'm sure that is the
12 case. Then the question becomes to understand how we are
13 covering that in terms of internal versus external, et
14 cetera.

15 MR. RAGLIN: The next two slides give an overview
16 of the technical training curriculum, one on reactor
17 technology and one on specialized technical training.

18 [Slide.]

19 MR. RAGLIN: In the interest of time, let me just
20 mention that reactor technology covers the four vendor
21 designs. It has a spectrum of courses and it is typically
22 provided for formal programs. It includes both initial and
23 refresher training.

24 [Slide.]

25 MR. RAGLIN: The specialized technical training

1 curriculum is six areas: probabilistic risk assessment,
2 engineering support, radiation protection, fuel cycle,
3 safeguards, and an area we call regulatory skills.

4 COMMISSIONER ROGERS: What's that?

5 MR. RAGLIN: We used to call it inspection or
6 examination techniques. It's an area that cuts across
7 multiple technical disciplines. For example, radiation
8 protection training is obviously for health physicists,
9 radiation protection inspectors, and so forth.

10 Regulatory skills is an area that is appropriate
11 for all of them. It includes such courses as fundamentals
12 of inspection, inspecting for performance, fundamentals of
13 inspection refresher, incident investigation team training,
14 and some new initiatives that we will hit later in the
15 presentation.

16 COMMISSIONER ROGERS: I don't see anything that
17 particularly relates to waste issues as such. There is
18 radiation protection, of course, and engineering support,
19 but I would imagine engineering support is probably mostly
20 directed towards the reactors.

21 MR. RAGLIN: That's correct.

22 COMMISSIONER ROGERS: Do we have programs that
23 address waste issues?

24 MR. RAGLIN: There is one course, radwaste
25 management, that is covered within the radiation protection

1 curriculum that does that to some degree. I think there
2 would be some that would be picked up in fuel cycle courses
3 which would be carried in the fuel cycle area. Then I think
4 realistically we can look forward to more in the future.

5 [Slide.]

6 MR. RAGLIN: Slide 11 is a donut graph that gives
7 one indication of students that attended courses in each of
8 the curriculum areas. In this context, all of the reactor
9 technology training is listed as one. You can see the
10 relative proportions there.

11 Since this is based on students, one must remember
12 that a student to a one day course counts the same as a
13 student to a three week course. So it is just one measure
14 of the data, but it does give an indication of which areas
15 are being attended by students.

16 MR. JORDAN: I guess I would make one point there.
17 If you compare the PRA current 20 percent with PRA last year
18 or the year before, it certainly is showing an increase.
19 That is the kind of thing one gets from trending this data.

20 MR. RAGLIN: In fact we have got a later graph
21 that specifically shows that for the PRA.

22 [Slide.]

23 MR. RAGLIN: The next two slides show donut
24 graphs. This time it's instructional hours, which is time
25 in the classroom or time in the simulator converted to FTE

1 using that 1800 hours per FTE estimate for each of the major
2 organizational units that use either reactor technology
3 training or specialized technical training.

4 In the case of reactor technology training, what
5 the analysis of this meant was that Region III and NRR, for
6 example, used about 2.5 FTE. Then we compared this level of
7 student attendance effort with the FTE totals for the
8 organizational unit, and you can get some measure of the
9 percent of the total organizational time that was spent on
10 reactor technology training or specialized technical
11 training.

12 [Slide.]

13 MR. RAGLIN: The graph on specialized technical
14 training shows much the same thing, although in this case
15 there are some different user organizations. The largest
16 NRC organizational user for specialized technical training
17 is again NRR, but the single largest portion of student time
18 is clearly that with Office of State Programs, and this is
19 exclusively attributable to the NRC training of agreement
20 state personnel. So that is a significant portion of the
21 overall specialized technical training student attendance.

22 [Slide.]

23 MR. RAGLIN: There have been and continue to be a
24 number of influences on the technical training
25 implementation and administrative processes. For example,

1 two recent audits by the Office of Inspector General have
2 reviewed technical training processes as applied to
3 inspector training.

4 The first audit noted implementation problems for
5 post-qualification training of inspectors.

6 The second noted some communication and
7 coordination impacts on the implementation of the training
8 program.

9 In recognition of the post-qualification
10 implementation problem, considerable agency effort has taken
11 place over the last several months to schedule, present and
12 attend courses to achieve compliance.

13 As a result of these efforts, we project that
14 about 95 percent of the NRC staff members who were not in
15 compliance previously with formal post-qualification
16 requirements will be back in compliance by the end of the
17 year.

18 In recognition of the communication and
19 coordination problems noted in the second audit, we are
20 headed toward integration of training administration within
21 the revised automated training system being developed by
22 IRM. The intent here is to provide agency users, both the
23 organizations and the individuals, with seamless process
24 tools and information.

25 COMMISSIONER ROGERS: What is the status of that

1 program and when do you expect it to be ready?

2 MR. RAGLIN: It's in progress. There are some
3 fixed commitments in the agency's response to both the first
4 and the second Inspector General audit. The first of those
5 timed commitments is December 31 of this year. There are
6 some others for subsequent phases of the revised automated
7 training system that are roughly about the middle of 1996.
8 There is a good ways to go.

9 The next two slides address changes that are
10 underway with Manual Chapter 1245 and 1246.

11 [Slide.]

12 MR. RAGLIN: Manual Chapter 1245 has historically
13 addressed the qualification requirements of all inspectors,
14 be they regional or headquarters, NRR, or NMSS program
15 areas.

16 The last major revision of this document was
17 September of 1991. Revisions to both of these manual
18 chapters are underway. NMSS program elements are being
19 pulled from Manual Chapter 1245 and consolidated in 1246;
20 1245 will become a reactor program document; 1246 will
21 become a nuclear materials program document.

22 CHAIRMAN JACKSON: Let me ask a question related
23 to the Commissioner's previous question. Where will waste
24 issues be explicitly treated?

25 MR. RAGLIN: Those will be in 1246. In fact one

1 of the changes that is in progress for Manual Chapter 1246
2 is to add more headquarters personnel, which include
3 Division of Waste Management inspectors and license
4 reviewers. So when this next iteration of 1246 has been
5 completed, realistically we could look at a section in there
6 that would have a defined program for Division of Waste
7 Management personnel that would be on parallel with that
8 which has historically existed for inspectors in the reactor
9 area.

10 COMMISSIONER ROGERS: Before you leave 1245, will
11 there be a module for research and training reactor
12 inspectors? Will there be anything special for those folks?

13 MR. RAGLIN: Will there be a module within 1245?

14 COMMISSIONER ROGERS: Yes. As part of the reactor
15 program document, will there be anything special for those
16 inspectors who will now be at headquarters who are to do the
17 inspections for research and training reactors?

18 MR. RAGLIN: There is one section that exists
19 within Manual Chapter 1245 for non-power reactors, and it is
20 a formal program the same as the other programs.

21 COMMISSIONER ROGERS: So one exists?

22 MR. RAGLIN: It already exists, yes.

23 COMMISSIONER ROGERS: I see. All right.

24 MR. RAGLIN: These planned revisions to 1245 and
25 1246 are currently being reviewed by NRR and NMSS. We

1 anticipate, generally speaking, that this iteration will
2 unify the requirements for inspectors between regions and
3 headquarters and that some additional headquarters positions
4 will be picked up in both cases.

5 We are projecting that the 1245 document will be
6 done more or less at the end of the year and that the 1246
7 document will be issued before the end of the year.

8 [Slide.]

9 MR. RAGLIN: With regard to 1246, requirements for
10 fuel facility inspectors have been significantly expanded to
11 include the additional responsibilities that the agency now
12 has under Part 76.

13 In addition to the Division of Waste Management
14 inspectors and license reviewers, there are some other NMSS
15 positions that will be added: headquarters transportation,
16 packaging and dry storage supplier, safety inspectors, fuel
17 cycle safety inspectors up here; fuel cycle license
18 reviewers will also be picked up.

19 [Slide.]

20 MR. RAGLIN: Over the last year AEOD has had
21 significant interaction with the ACRS on technical training
22 programs. Lengthy briefings on the programs were provided
23 to ACRS in December of 1994 and in July of 1995.
24 Additionally, some ACRS members have visited the Technical
25 Training Center.

1 In support of these interactions, ACRS has formed
2 a new Subcommittee on Technical Training. The charter as
3 established by ACRS is shown on the slide.

4 The role of this subcommittee is essentially the
5 same that a curriculum review committee at a university
6 would have in evaluating the program and making suggestions
7 for improvement.

8 The primary focus of our collaboration with ACRS
9 has been in new areas where the agency has identified the
10 need to expand the expertise of staff to meet new
11 challenges. The discussions have focused primarily on the
12 PRA area and digital instrumentation and control, and we
13 will have a little more to say about that later.

14 COMMISSIONER ROGERS: It might also pay to try to
15 invite ACNW to participate in that as well.

16 MR. JORDAN: I would comment. We have initiated
17 that through a briefing of ACNW. We had less success
18 getting support and interest in that case. We have not
19 given up.

20 COMMISSIONER ROGERS: Don't give up.

21 CHAIRMAN JACKSON: Don't give up. You've told me.
22 There may be more interest.

23 COMMISSIONER ROGERS: There may be a change. More
24 interest.

25 [Slide.]

1 MR. RAGLIN: The Program Office and the Technical
2 Training Division have worked together in formal development
3 and training programs as they have been established and
4 implemented. In this case I am speaking about the intern
5 program, the senior reactor analyst training program, and
6 the senior resident inspector/resident inspector development
7 programs.

8 In support of these programs we have set aside
9 slots for the various courses and have made them available
10 on the same priority as those for students attending formal
11 qualification programs.

12 We have also scheduled groups of courses that will
13 be presented to allow the senior reactor analyst selectees
14 to progress through the formal training requirements as
15 quickly as possible. We also have development in progress
16 for a new course for the resident inspector development
17 program, which we will highlight later.

18 [Slide.]

19 MR. RAGLIN: Needs identification and feedback are
20 extremely important to the success and effectiveness of the
21 Technical Training Program. We use a variety of methods to
22 determine how best to use the resources that are available
23 to meet the integrated agency needs.

24 Even with the reduced outside hiring, the reactor
25 engineer intern program, the resident inspector development

1 program, and routine resident inspector rotations
2 necessitate the continued need for a reasonable baseline of
3 reactor technology training. So intuitively we know that we
4 have to do certain things on a certain frequency just to
5 meet that need.

6 The number of courses that we must schedule are
7 changing somewhat. We can't rely as much on historical data
8 because things are changing so rapidly both agency-wide and
9 government-wide.

10 In light of the limited outside hiring capability,
11 there is increased emphasis on retraining, cross training or
12 enhancement of skills of existing staff.

13 There are a number of ways that we attempt to
14 identify these needs or these necessary changes. One is
15 through participation in division director counterpart
16 meetings for DRP, DRS and DRSS. Another is through
17 participation in various other technical counterpart
18 meetings, both face to face and calls. Another is through
19 the use of specially assembled work groups to deal with
20 specific skill or expertise areas. Of course there is
21 always feedback from students who have attended courses who
22 frequently have very good suggestions.

23 CHAIRMAN JACKSON: Do you have any formal
24 methodology for reviewing and do you have metrics for
25 evaluating the effectiveness of the training in a formal

1 way? You mentioned that there is feedback from students who
2 have taken the courses, but I didn't get the impression that
3 this was a systematic feedback.

4 MR. RAGLIN: It is a systematic feedback from the
5 standpoint of the Training Division. For each course all
6 students have the opportunity of providing comments. The
7 forms are passed out. Most do provide comments.

8 CHAIRMAN JACKSON: That is at the conclusion of
9 the course.

10 MR. RAGLIN: That is at the conclusion of the
11 course.

12 CHAIRMAN JACKSON: I'm talking about once the
13 person has gone out into their job assignments in terms of
14 the effectiveness of the course, in terms of knowing that
15 they have gotten what they needed and are able to apply it
16 in their jobs.

17 MR. RAGLIN: We also do that on a fairly limited
18 basis right now. Some number of months subsequent to
19 attending the full course series in reactor technology a
20 post-course survey is sent out to students and they are
21 asked to fill it out. It is also done for students who have
22 attended the power plant engineering courses and some of the
23 radiation protection courses. That is formalized and we do
24 get these second feedback messages. This is done about a
25 year after the students have attended the courses. We get

1 some information through that process.

2 Quite honestly, that has been of less value to us
3 than the immediate feedback that we have gotten right at the
4 end of the course.

5 MR. JORDAN: I would respond that that was also a
6 recommendation the ACRS made. So we are looking at
7 instituting it in a more effective way. In developing needs
8 from the agencies the program offices have managers that are
9 involved in the development and also regional
10 representation, and we look to them to get feedback and
11 where course areas need to be strengthened as well. So
12 there is a periodic meeting with regional and headquarters
13 program offices to try to ascertain that.

14 [Slide.]

15 MR. RAGLIN: There are several new initiatives
16 associated with the Technical Training Program that I would
17 like to highlight in the areas of reactor technology, PRA,
18 digital instrumentation and controls, and in regulatory
19 skills. Each of these is covered by subsequent slides.

20 [Slide.]

21 MR. RAGLIN: Within the reactor technology area
22 there have been several things that have been going on.

23 The Shoreham simulator installation was completed
24 in August of 1994. Conversion of the course materials to
25 the BWR/4 design has been completed and the first sets of

1 courses were completed this year using this technology as a
2 base.

3 Similarly, installation of the Trojan simulator is
4 projected for November of 1995. Conversion of the
5 curriculum to this baseline will allow more continuity
6 within the Westinghouse curriculum. First use of the new
7 materials and the simulator is currently projected for
8 February of 1996.

9 Combustion Engineering and Babcock & Wilcox cross
10 training courses will be presented beginning next week in
11 recognition that the majority of the NRC staff who needs CE
12 and B&W training these days are experienced people who have
13 previously completed the full course series in Westinghouse.
14 So the focus is going to be on differences in cross training
15 rather than covering the same material in the same level of
16 detail as would have previously been done.

17 We are making use of information technology to
18 enhance the reactor technology training programs. In
19 particularly, I am speaking here for work station-based
20 simulations that are being integrated within classroom
21 presentations.

22 Finally, we are upgrading the capabilities of the
23 training instruction staff, particularly in the area of PRA
24 and in the area of what will be done for maintenance rule
25 training. All of the reactor technology instructors have

1 been trained with the sequence of courses that would achieve
2 basic user PRA knowledge, skills and abilities, and we have
3 singled out a couple to receive the same training that
4 senior reactor analysts are going to receive as part of that
5 development program.

6 CHAIRMAN JACKSON: Do you anticipate going beyond
7 a level 1 PRA in terms of your training and also
8 incorporating external events like earthquakes, floods, et
9 cetera?

10 MR. RAGLIN: We certainly are going to incorporate
11 external events. There is one course -- I believe it's
12 called an external events course -- that is going to take
13 advantage of some material that previously existed on
14 seismic events, but it is going to add to it weather-
15 related events, tornados, hurricanes, and other external
16 things like transportation accidents. It's a definite yes
17 for that one.

18 CHAIRMAN JACKSON: I notice that the ACRS
19 questioned the adequacy of a single course covering external
20 events because some of those events are frequently found to
21 contribute significantly to risk. So the question is, do
22 you anticipate going beyond a single course offering and
23 trying to develop more sophistication in the students in
24 these particular areas?

25 MR. RAGLIN: Right now I would say it's too early

1 to tell. I think we want to work to incorporate those ACRS
2 comments and discuss with them what we plan to do on this
3 subject, and then based on further dialogue, I think we will
4 be able to tell whether that's enough or whether we need to
5 forge ahead beyond what we are planning to do. It is still
6 in the development process right now.

7 CHAIRMAN JACKSON: But you intend to have
8 discussions with the ACRS subcommittee to systematically go
9 through their concerns; is that what you are telling me?

10 MR. RAGLIN: Yes. We intend to use this ACRS
11 subcommittee in the context of a curriculum review
12 committee, and if that committee is unhappy with the
13 curriculum, we intend to address that.

14 [Slide.]

15 MR. RAGLIN: Slide 22 shows the general approach
16 that is being taken for new areas of expertise. These would
17 be major new areas of expertise. The two areas I would like
18 to point to are PRA and digital instrumentation and control.

19 Once the new area has been identified, the
20 strategy has been to determine the agency experts, whoever
21 they are in this particular area, to establish a work group
22 or focus group that can leverage the best available
23 knowledge or expertise to the advantage of those who need
24 it.

25 The work group would be convened and it would

1 evaluate the applicability of the expertise to
2 implementation of agency programs, determine the appropriate
3 training, education and experience necessary to achieve the
4 skills in the particular area.

5 We then anticipate that the work group would
6 formalize its recommendations. We are currently looking at
7 a NUREG/BR format for that. We anticipate that these
8 formalized recommendations would then be given careful
9 consideration by the program offices and the regional
10 management as they are determining the formal staff
11 qualification, development and training programs for their
12 staff members.

13 COMMISSIONER ROGERS: I wonder if somebody could
14 say just a little bit about how you actually determine
15 existing agency expertise in an area that now you have
16 identified as something where additional training is needed.
17 How do you find out who knows something about some of these
18 things within the agency?

19 MR. JORDAN: I would comment on it. We try to
20 work in parallel with what the agency is developing already.
21 For instance, in the PRA area there was a PRA group who were
22 developing the program plan and policy statement for the
23 agency. Those were the targets, obviously. So we go to the
24 program office. We ask for their advice on who their office
25 experts are and then work directly with them with the

1 support of the office in a focus group.

2 COMMISSIONER ROGERS: Suppose there is somebody
3 who knows something about this that isn't that office?

4 MR. JORDAN: We approach all the program offices.

5 COMMISSIONER ROGERS: All the program offices?

6 MR. JORDAN: Yes.

7 COMMISSIONER ROGERS: Not just the one that is
8 charged with the particular responsibility?

9 MR. JORDAN: No. All.

10 COMMISSIONER ROGERS: With PRA I can understand
11 where it might not be too hard to pin down who knows
12 something about it and who doesn't, but in the general area
13 of digital instrumentation and control I would imagine that
14 that might be more broadly submerged within the agency.

15 MR. JORDAN: It is, but going to the managers of
16 instrumentation and controls for Research and NRR and
17 polling of regions is the best way we know at this point.

18 MR. BIRD: Basically, we are using the known
19 experts to identify others who have a field of knowledge.
20 There is a survey document that we are putting together with
21 AEOD to go out to the agency and to try to capture this
22 eventually into a database. Certainly that would have to be
23 updated and continued, but I think the fundamental part of
24 the initial identification of some of these skill areas is
25 there. We are working toward that objective.

1 [Slide.]

2 MR. RAGLIN: PRA training development has been a
3 major activity during the last year.

4 As described by the PRA working group, the group
5 that Mr. Jordan just mentioned, in its final report, we
6 consider there to be three broad levels of PRA knowledge,
7 skills and abilities. These have been classified as basic
8 user, advanced user, and expert practitioner. This is the
9 philosophy under which the PRA training program is being
10 designed right now.

11 As a carry-on of that work done by the PRA working
12 group, a PRA training focus group has been established to
13 provide guidance and recommendations to ensure that the
14 agency PRA training program supports the PRA implementation
15 plan. That group is chaired by the Technical Training
16 Division director but includes the chiefs of the branches
17 within NRR, NMSS, Research, and AEOD that have PRA
18 implementation program responsibilities. In that case we
19 are trying to take advantage of the most expertise that the
20 agency has in this particular area right on the focus group.

21 In addition to those branch chiefs we have a
22 number of other principal staff from each of these offices
23 that participate actively in these focus group meetings.

24 [Slide.]

25 MR. RAGLIN: This PRA training focus group has

1 made a number of recommendations that are being carried out
2 right now.

3 A couple of recommendations they had were to
4 develop new modules that would appear in multiple PRA
5 courses. One of these is called risk implications of
6 configuration management. The intent here is to provide PRA
7 course students with the knowledge, skills and abilities
8 which can be used to implement the maintenance rule. The
9 focus would be on introduction to configuration management,
10 applications of configuration management, and methods of
11 analyzing risk due to plant configuration.

12 A second module is implications of uncertainty,
13 which also would be added to several of the courses. It
14 would include sources of uncertainty, measuring uncertainty,
15 characteristics of uncertainty, role of sensitivity
16 analysis, expert judgment, and uncertainty in the regulatory
17 environment.

18 Another recommendation from the group was that a
19 new PRA for technical managers course be developed and
20 provided to provide NRC technical managers with an overview
21 of PRA techniques and applications.

22 Another recommendation was that a new external
23 events course be developed. That is the effort that you
24 mentioned based on the ACRS comment. That would include
25 additional material dealing with fires, flooding, tornados,

1 hurricanes, transportation accidents, and so forth, in
2 addition to seismic events.

3 MR. JORDAN: I would add that there was excellent
4 coherence between the PRA training focus group and ACRS
5 comments. For instance, uncertainty analysis was a heavy
6 issue that the ACRS advised us to work on. So these things
7 are feeding together.

8 MR. RAGLIN: This PRA training focus group also
9 recommended that testing be initiated within appropriate
10 courses of the PRA curriculum. That was done beginning last
11 week.

12 As recommended, a NUREG document is under
13 development to formalize some of the focus group
14 recommendations. Particularly, this will include the
15 sequence of courses that are considered necessary to get a
16 typical student to the basic user knowledge, skills and
17 abilities and a similar sequence to get a student to the
18 advanced level of knowledge, skills and abilities.

19 [Slide.]

20 MR. RAGLIN: Within the last year there have been
21 several PRA courses that were developed and presented.

22 Four were developed based on job and task analyses
23 that were done. There were some job and task analysis
24 efforts within the Office of Research, within NRR, and
25 recently within NMSS.

1 Additionally, two courses were developed as a
2 result of feedback. Once again, at the end of each course
3 students have an opportunity and usually choose to exercise
4 it to comment on the course content. That frequently
5 results in changes to the program. In particular, it was
6 something that led to two new courses this time.

7 Then one special seminar was developed to meet a
8 special need.

9 [Slide.]

10 MR. RAGLIN: Slide 26 is a bar graph that shows
11 PRA course students and shows the trend from FY 1993 to
12 1995. What we have seen in FY 1995 is a significant
13 increase, about 400 students. Most of this is attributable
14 to one particular new course, the PRA insights into an IPE
15 course. Once the course was developed we originally
16 scheduled five presentations for it. Course demand was so
17 high that we had to schedule another five. So it doubled.

18 Additionally, there were some other courses that
19 were new this year which had significant student attendance.
20 Those included an advanced IRRAS courses, system modeling
21 techniques, and risk assessment and event evaluation
22 courses.

23 COMMISSIONER ROGERS: Do you have any idea how
24 many resident inspectors have been involved in PRA courses?

25 MR. RAGLIN: It's not too many. I don't have

1 specific details.

2 Which courses did you say?

3 COMMISSIONER ROGERS: PRA.

4 MR. RAGLIN: They have taken the ones that are
5 required by Manual Chapter 1245 and there is one in there,
6 PRA basics for inspection applications. That has been a
7 requirement for a few years. They have all taken that. By
8 and large, most of the students attending these new courses
9 that have been developed over the last year have been
10 headquarters personnel.

11 CHAIRMAN JACKSON: That is an interesting question
12 and an interesting response. A number of the utilities have
13 talked about using "risk monitors" and to do online risk
14 analyses and use them in things ranging from maintenance
15 activities to planning refueling outages.

16 I guess that then adds extra urgency to this
17 question of whether the training is tailored to the needs of
18 the people who need it in the field, and related to that is,
19 are we keeping up with the changes that are going on in
20 industry in a way that we are staying ahead of the curve,
21 that our people who are there, who are our eyes and ears are
22 really in a position to understand the methodology well
23 enough so that they can make judgments and understand the
24 risks and the risk judgments that are made?

25 That's a question I have. This idea of people

1 using these risk monitors, and so on, and yet the fact that
2 it's mainly headquarters personnel taking the courses as
3 opposed to the inspectors raises that question for me.

4 MR. RAGLIN: I misspoke. I need to correct
5 something. When you asked the question about who had
6 attended these courses I forgot the single most important
7 contributor to this peak in FY 1995, and that is that
8 insights into a PRA course. That course was exported to the
9 regions. So there would be several of these students who
10 attended that particular course.

11 CHAIRMAN JACKSON: To some extent the question is
12 not even just addressed to you. It really is more a
13 question perhaps to Mr. Taylor or Mr. Bird. The question
14 really becomes, when you see these rapidly evolving changes
15 in terms of things the licensees are actually going to be
16 doing, and now you look back at what we offer, there is the
17 issue of what is in the course: is the course content what
18 it needs to be? But the issue is the people getting the
19 training in a manner that allowed them to keep up with it so
20 that things don't outrun them.

21 MR. TAYLOR: We started those risk insights for
22 inspectors particularly related to trying to take the
23 plant-specific IPEs or PRA and to try to get the inspectors
24 to concentrate on what those risk documents were saying.
25 You have gone a bit beyond it with talking about online risk

1 monitors, which isn't quite there yet. I think we will come
2 back to you with what we could do if any of those are
3 actually --

4 CHAIRMAN JACKSON: Fully implemented.

5 MR. TAYLOR: Right. We have tried to keep our
6 inspectors up with the PRAs. Some of this goes beyond,
7 because this will then get into the decision-making process
8 specifically by operators, which is another big step which
9 isn't yet implemented.

10 CHAIRMAN JACKSON: But they are going to build on
11 the IPES.

12 MR. TAYLOR: They are. We need to be able to be
13 sure we understand exactly what they are going to do and how
14 they are going to use it. That's the big issue.

15 CHAIRMAN JACKSON: That's right.

16 MR. TAYLOR: I think between NRR, regions and you
17 folks we can come back with some further information on our
18 plans on that.

19 CHAIRMAN JACKSON: It would be very helpful to the
20 Commission to see what you are planning in that area.

21 Since I am on this jag, you haven't gotten to it
22 yet, but I think it's your next slide. I had noted that the
23 ACRS in the digital I&C area had a concern in terms of our
24 being ahead of the curve, as it were. As you are talking
25 through you might want to mention what initiatives are there

1 to be sure that we are at least on the curve if not ahead of
2 the curve in that area. Because, again, that is something
3 that is changing as we speak and that the industry is doing
4 more and more of.

5 MR. JORDAN: The theme of our presentation is that
6 we perceive that the needs are changing for that agency and
7 at a rate that seems to be increasing. So we picked these
8 two as the leading technology areas that we are trying to
9 catch up, I'll say, and then have a process so that we are
10 at least even and not behind. In PRA the agency is actually
11 a little ahead of the industry overall. The average staffer
12 in the industry is not as well informed as the average NRC
13 staffer is at this point.

14 CHAIRMAN JACKSON: What would you say in the
15 digital I&C area?

16 MR. JORDAN: That's a pretty narrow field for
17 industry and the NRC. We are a little further behind
18 because the utilities have implemented digital
19 instrumentation and control systems in the last five years
20 that we are not very conversant with. So we are further
21 behind in that area than we are in the PRA.

22 MR. TAYLOR: Some of that has come over in the
23 balance of plant in the feed control. A number of utilities
24 are making that shift. I think I agree with Ed. This is an
25 area that is going to continue to have very high priority,

1 both what we are able to hire in expertise as well as
2 training our people.

3 CHAIRMAN JACKSON: Go on, Mr. Raglin.

4 [Slide.]

5 MR. RAGLIN: There has also been considerable
6 effort in the area of digital instrumentation and controls
7 training. As was the case with PRA, a work group has been
8 established. It includes personnel from NRR, each region,
9 and the Technical Training Division. The representatives
10 include supervisory as well as inspection personnel.

11 The work group was tasked to determine the
12 training needs in this area and the logical target audience
13 for the training. It has defined a recommended curriculum
14 for appropriate NRC personnel to obtain the necessary skills
15 to conduct effective inspections in the digital area, and it
16 has tried to proceed cautiously so that the training would
17 not drive the policy.

18 During several meetings the work group has
19 reviewed agency technical positions that might need the
20 training and has agreed that the group most urgently in need
21 of the training in digital instrumentation and control are
22 region-based inspectors. These would be the experts used to
23 inspect and evaluate the adequacy of installed modifications
24 to plant equipment.

25 The work group concluded that the next group is a

1 segment within headquarters, and that the third group is
2 resident inspectors in general.

3 [Slide.]

4 MR. RAGLIN: Slide 28 shows the approach that is
5 being taken to satisfy the digital I&C training needs.

6 First of all, there is only a limited number of
7 regional and headquarters personnel who right now are
8 considered in this category of needing in-depth training.
9 This is a number somewhere between 15 and 20. These people
10 have wide variances in their experience and training.
11 Consequently, development of customized courses was not seen
12 as cost-effective in this particular case.

13 A number of off-the-shelf commercial courses were
14 found and looked at. There are in fact a number of courses
15 that are provided by university and industry vendors that
16 appear to address our technical needs in these areas.

17 These potential courses were reviewed and a group
18 of commercially available courses that would provide these
19 inspectors with the technical basis to address digital
20 instrumentation and controls issues was identified. This
21 slide shows examples of some of these off-the-shelf, what we
22 call foundation courses, and some examples of the sources of
23 those courses.

24 All of these courses would be attended by
25 individual employees using that Form 368 process. The

1 significant thing here is that there is no correct path that
2 fits all because these particular people have different
3 backgrounds and different ones needs different parts.

4 So we see as one part of the approach to digital
5 I&C is to get everybody to some technical foundation through
6 the use of these off-the-shelf courses.

7 The second part is a new course that will be in
8 the form of a regulatory perspectives course.

9 Digital instrumentation and controls training is
10 one area among many that was recently commented on by the
11 National Academy of Sciences. Further dialogue with the
12 Academy on this and other issues will take place next week.

13 [Slide.]

14 MR. RAGLIN: Slide 29 shows the overall plan for
15 this digital instrumentation and control regulatory
16 perspectives course. This is a collaborative effort that
17 involves NRR, the Regions, the Training Division.

18 It will provide NRC aspects of digital issues and
19 serve as a method to disseminate current industry lessons
20 learned so that inspections can be conducted effectively and
21 resources can be used prudently.

22 It will cover reference materials such as
23 appropriate NUREGs, NRC documents and EPRI instructions on
24 digital modifications. It will include regulatory policies,
25 such as generic letters, temporary instructions, regulatory

1 guides, standard review plans, branch technical positions,
2 inspection manual chapters.

3 A modification package will be used to allow
4 inspection planning practice during the course. As part of
5 the workshop exercises students will work on development of
6 final inspection reports and open item lists.

7 Current plans are to include presentations by one
8 or two licensees to discuss lessons they learned from recent
9 digital modifications.

10 That is one example where we are trying to involve
11 recent insights that the industry might have into some of
12 our courses. I think everybody would consider that a
13 relatively new initiative.

14 There has been strong coordination and
15 participation with ACRS on digital instrumentation and
16 control training in general and on this course in
17 particular.

18 Dr. Don Miller of ACRS recently visited the
19 Training Center for detailed discussions about this
20 particular workshop. He is assisting us in the effort and
21 plans to participate in the first workshop, which is
22 scheduled for December 5 and 6, 1995, if his schedule will
23 permit. It is possible that this workshop will become an
24 annual event to maintain staff awareness of emerging digital
25 issues.

1 [Slide.]

2 MR. RAGLIN: Slide 30 deals with maintenance rule
3 training. NRR is preparing to provide one day and three day
4 training sessions regarding the maintenance rule. This will
5 cover the objective and scope of the rule, NRC guidance with
6 rule implementation, industry guidance associated with rule
7 implementation, and inspection guidance.

8 It will consist of lectures and workshop
9 exercises. We will have the one day version presented on a
10 pilot basis to the training instructors in November of 1995.
11 The three day course will be piloted with training
12 instructors in April. Current plans are for NRR to begin
13 training of regional and headquarters personnel in May of
14 1996.

15 CHAIRMAN JACKSON: Some utilities have raised
16 concerns about the potential for inconsistent application or
17 enforcement of the maintenance rule. Are you addressing and
18 how will you address those concerns in the training
19 curriculum in this area?

20 MR. JORDAN: I would answer and say that the idea
21 that the training is being provided in a consistent way to
22 all of the regions from NRR and then the Training Center is
23 embracing it is the leveler.

24 CHAIRMAN JACKSON: With the input that you
25 mentioned from industry?

1 MR. JORDAN: Yes.

2 CHAIRMAN JACKSON: But it is something you are
3 going to focus on?

4 MR. TAYLOR: We have to be very concerned about
5 that.

6 MR. RAGLIN: That is probably one reason why it's
7 a good idea to do a dry run of this. I think most who have
8 done this in the past would agree that there are fewer more
9 hostile groups than a group of instructors to listen to a
10 presentation.

11 CHAIRMAN JACKSON: It has to do with reinforcing
12 with the training the consistency of application, and it
13 obviously then ties into actually some of your previous
14 slides that deal with other aspects of the training, i.e.,
15 PRA, since those sorts of risk insights are going to be part
16 of looking at these safety-significant systems, structures,
17 and components.

18 There is a lot of room for inconsistency. Not
19 just on our part, but even in looking at how the different
20 PRAs and IPEs are done and what impact that might have as a
21 feedback on how our people go about doing their jobs. I'm
22 sure you are thinking about it, but it is an area that I
23 would like to reinforce as a sensitivity area.

24 [Slide.]

25 MR. RAGLIN: Slide 31 discusses a new technical

1 overview course that has been developed and presented a
2 couple of times. It has its origins with the Office of
3 Inspector General request made back in October of 1994 for
4 an overview course suitable for the OIG staff.

5 As we worked with OIG management in establishing
6 the course we decided to take elements from several other
7 stand-alone courses, including fundamentals of inspection,
8 power plant engineering, various reactor technology courses
9 and various radiation protection courses.

10 The course topics provided a discussion of NRC
11 inspectors, source and location of regulations, overviews in
12 reactor technology, and a number of issues in the radiation
13 protection area.

14 We feel that we achieved the objectives here of
15 developing a course that would broaden OIG staff knowledge
16 of agency activities and technical topics. Based on the
17 success of this, we are exploring formalizing this course
18 because it may have a wider audience within the agency.

19 COMMISSIONER ROGERS: You have given it twice now,
20 in May and September. What kind of feedback did you get
21 from the students?

22 MR. RAGLIN: Very positive. Probably three
23 quarters of the attendees were staff from the OIG. There
24 were also about ten people from the Office of
25 Investigations. Student comments strongly suggest that we

1 make this available to other agency personnel, and they
2 suggest that there may be some other nontechnical agency
3 personnel who would benefit from such a course. Right now
4 that is not a defined need, but we intend to do a little
5 marketing research to see if that really is the case.

6 [Slide.]

7 MR. RAGLIN: There is a field techniques and
8 regulatory processes course that is a new initiative. It is
9 in direct support of the resident inspector development
10 program.

11 It will be developed and presented using a
12 workshop/case study approach. Modules will be introduced
13 from a technical standpoint related to technical aspects of
14 power plants in general and address relationship among
15 licensing documents, inspection modules and utility
16 practices in the field.

17 The class will be divided into small groups to
18 research and resolve issues. Students will have independent
19 assignments of the case study to resolve, document in
20 writing, and possibly address in front of the class. A
21 library of reference materials will be developed and made
22 available to support the course.

23 Individual students may be required to conduct
24 interviews, research completed operator logs, review
25 surveillance or maintenance documents, or evaluate licensee

1 commitments, and present their findings in a variety of
2 formats.

3 Following this, NRC policy issues, inspection
4 results and class questions will be addressed.

5 We are presently working on award of a task order
6 for development of this course, and we anticipate that it
7 will take about a year to do because it's very complex.

8 We expect this certainly to be an aid to the
9 resident inspector development program and anticipate that
10 it will have a larger audience beyond that.

11 COMMISSIONER ROGERS: This is something you are
12 going to use contractor assistance in developing?

13 MR. RAGLIN: Yes.

14 COMMISSIONER ROGERS: Because this is really quite
15 a different approach. I don't think we have had a lot of
16 experience with this as a training tool, and it does seem to
17 me that it is advisable to get as much help as you can in
18 launching it.

19 MR. RAGLIN: Yes. It has got to be a
20 collaborative effort. We certainly can't just turn it over
21 to the contractor to develop, but clearly there is more work
22 that needs to be done to develop the course materials and
23 modules than we can do within our staff.

24 MR. JORDAN: It is the methodology we use for the
25 incident investigation team training. That is an annual

1 course that we put on with the assistance of a contractor.
2 We found it to be extremely effective.

3 [Slide.]

4 MR. RAGLIN: In summary, the technical training
5 process is a very dynamic one. In order to be responsive,
6 the program must continue to evolve as the agency undergoes
7 significant changes.

8 We are well aware that streamlining initiatives
9 and budget and FTE reductions will leave us with continuing
10 attrition of highly skilled agency employees and we will be
11 left with limited outside hiring opportunities for the next
12 few years.

13 There will be continued emphasis on retraining of
14 existing agency employees to enhance their skills to meet
15 new challenges that come up for the agency and to allow
16 matching overall skills with overall needs.

17 We are moving forward in the area of integration
18 of training administration. Once again the goal is to
19 develop a seamless process and information tools from the
20 standpoint of the individual and organizational users, and
21 we really believe that once this is done this will allow
22 better scheduling and use of agency resources.

23 Finally, as the agency copes with its reduced
24 fiscal resources over time it's likely that we will have to
25 lean more and more on in-house agency expertise in the

1 development and implementation of new specialized courses to
2 meet needs as they are identified.

3 CHAIRMAN JACKSON: Thank you. I have a couple of
4 other comments. These are more generic.

5 Based on the challenges that the power industry is
6 currently facing in areas like dry cask storage where we
7 have some efforts, reactor pressure vessel annealing, steam
8 generator tube integrity, kind of aging materials issues,
9 you spoke in your remarks that related to, for instance, the
10 maintenance rule, but reactor pressure vessel annealing is a
11 new one. Are there any other training program changes or
12 initiatives that are being considered to deal with this
13 evolving plate of issues? It strikes me that there are some
14 potential concerns there.

15 In addition to new missions, you did mention fuel
16 cycle issues. It has been explicitly mentioned to me, for
17 instance, and some of this may have to do with hiring as
18 well as possible training, that in one area, for instance,
19 criticality, that there is some softness and that we could
20 use some beefing up. And that relates to some of the new
21 issues as well as potentially with some of the waste issues.

22 You are about to show me that in the catalog we
23 have this covered; is that it?

24 MR. RAGLIN: We have some coverage. I'm not
25 declaring victory here at all.

1 MR. TAYLOR: Criticality. We are looking for
2 expertise in that area. General criticality training. Our
3 needs have centered on trying to obtain people with
4 experience in that area.

5 CHAIRMAN JACKSON: So you think that's an area
6 that is more where we need to hire the people?

7 MR. TAYLOR: Yes. We have hired and we have lost
8 a few people in that area through the past several years.
9 There is a demand for them. Your point is still valid. I'm
10 just saying there are sort of two different levels.

11 CHAIRMAN JACKSON: Two different elements of that.

12 MR. TAYLOR: The expertise has been very important
13 for us to have in house. I can number on one hand the
14 number of people who are in house with that type of
15 expertise.

16 COMMISSIONER ROGERS: And probably out of house
17 also.

18 MR. TAYLOR: Right, but some of that expertise
19 still exists in the national laboratories. In fact people
20 we have had here have had experience in the national labs.

21 MR. BIRD: And some of our longer term training
22 graduate fellows and senior fellows are directed to these
23 areas, criticality being one of those where we are trying to
24 identify people and then affiliate them with a university to
25 get advanced degrees and things of that nature in those

1 particular skill areas. So I think in the long term we may
2 be able to make some headway there.

3 CHAIRMAN JACKSON: Commissioner Rogers, do you
4 have any questions?

5 COMMISSIONER ROGERS: What is the status of
6 satellite up and down links to the center and headquarters
7 and regional offices?

8 MR. JORDAN: It's still a plan and a goal that
9 both Paul and I subscribe to. For the Training Center we
10 look forward to having the ability to transmit course
11 material directly.

12 MR. BIRD: I think we made some recent progress in
13 that regard. We were a little concerned about the budgetary
14 implications and the money availability and the contracting
15 associated with that, and apparently at the end of this last
16 fiscal year, in my opinion the last major hurdle to getting
17 that technology in place, we were able to accomplish that.
18 We are working now to make that technology work, and it will
19 provide linkage from the TTC to the headquarters as well as
20 from universities.

21 MR. TAYLOR: You're really asking when. Let us
22 get back to you with that. That is being worked but I don't
23 have a date. We will get that date back to the Commission.

24 COMMISSIONER ROGERS: The other general comment is
25 I thought this was a really first-rate review of your whole

1 program. The visits I've had to the Technical Training
2 Center have always impressed me with what you are doing and
3 how you are doing it and what a really fine facility and
4 excellent leadership it has. I have no reason to change
5 that point of view from today's meeting.

6 CHAIRMAN JACKSON: I would like to thank you.
7 This was very comprehensive. Since I fairly recently went
8 through the Technical Training Center Program, I can say
9 that I'm a satisfied student. You helped me. I may even
10 come back again for some other things.

11 As you are all aware, one of the most important
12 challenges that we as an agency face is maintaining the
13 technical capabilities of our people, and that has been
14 woven through all of our questions, including supplementing
15 critical skills when needed and providing adequate training
16 and long-term educational programs to accomplish our
17 missions.

18 Clearly during a time when there are many changes
19 in the industries that we regulate there have to be changes
20 in the NRC. So we have to constantly -- that was the thrust
21 of a number of my questions -- be examining the future to be
22 prepared for the challenges of being proactive.

23 We have talked about risk informed regulation and
24 the use of probabilistic risk assessment as important areas
25 in which to focus our efforts, but I would also urge that we

1 keep a focus on those relating to in the power sector the
2 aging of the plants and new rules and regulatory initiatives
3 -- I mentioned thermal annealing -- as well as what
4 requirements there may be in new mission areas. So needless
5 to say, the Commission will continue to follow the training
6 and the development of the staff and how it all integrates,
7 and the integrated look is very important, and how it
8 integrates with the hiring we do.

9 We look forward to future briefings. Unless there
10 are further comments, we stand adjourned.

11 [Whereupon, at 11:35 a.m., the meeting was
12 adjourned.]

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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 NRC'S TECHNICAL TRAINING
PROGRAM - PUBLIC MEETING

PLACE OF MEETING: Rockville, Maryland

DATE OF MEETING: Tuesday, October 10, 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: Michael Paulus

Reporter: Michael Paulus



TECHNICAL TRAINING PROGRAM

October 10, 1995

**Edward L. Jordan
Kenneth A. Raglin**

NRC TRAINING PROGRAMS

- **Technical Training (AEOD:TTD)**
- **Incident Response Training (AEOD:ERD)**
- **Computer Training (OP)**
- **Management Training (OP)**
- **Communications, Acquisition, Financial Management, & General Interest Training (OP)**
- **Program Office Training (NRR and NMSS)**
- **Briefing Will Focus on Technical Training**

TECHNICAL TRAINING DIVISION MISSION

- **Coordinate with Offices and Regions in Policy Development and Implementation of Formal NRC Staff Qualification and Training Programs**
- **Provide Technical Training to Meet NRC Integrated Needs**
- **Provide Technical Training to Agreement States and to Foreign Regulatory Counterparts (Limited Basis)**
- **Develop New Courses and Modify Existing Courses to Meet New or Changing Needs**
- **Manage the Technical Training Center Facility and Assets (Infrastructure Support)**
- **Provide Technical Assistance in Areas of Expertise**
- **Provide Lisbon Initiative Technical Assistance to Russia and Ukraine in Establishment of Regulatory Training Programs**

TECHNICAL TRAINING RESOURCES

- **Technical Training Division Staff (31 FTE)**
- **TTD Contract Support (\$4,354K for FY 1995)**
- **Technical Training Center Facility (Simulators, Classrooms, Training Aids)**
- **Infrastructure Support (Simulator Engineers, Reactor Technology Instructors, Administrative Support, Contracted Simulator Support)**
- **Other NRC Staff Support (Guest Instructors, NRC Perspectives, Contract Support Activities, Development)**

PRINCIPAL INTERNAL IMPACTS

- **Formal Qualification Programs**
 - **IMC 1245, Inspector Qualifications**
 - **IMC 1246, Materials License Reviewer Qualification**
 - **LOLB-MC-170, Examiner Qualification and Refresher Training**
 - **AEOD Policy Documents**
- **Formal Development or Training Programs**
 - **Reactor Engineer Intern Development Program**
 - **Senior Reactor Analyst Training Program**
 - **SRI/RI Development Programs**
- **Other Recommended Training (Softer Needs)**
 - **Generic Training Plans or Office Letters**
 - **Individual Development Plans**

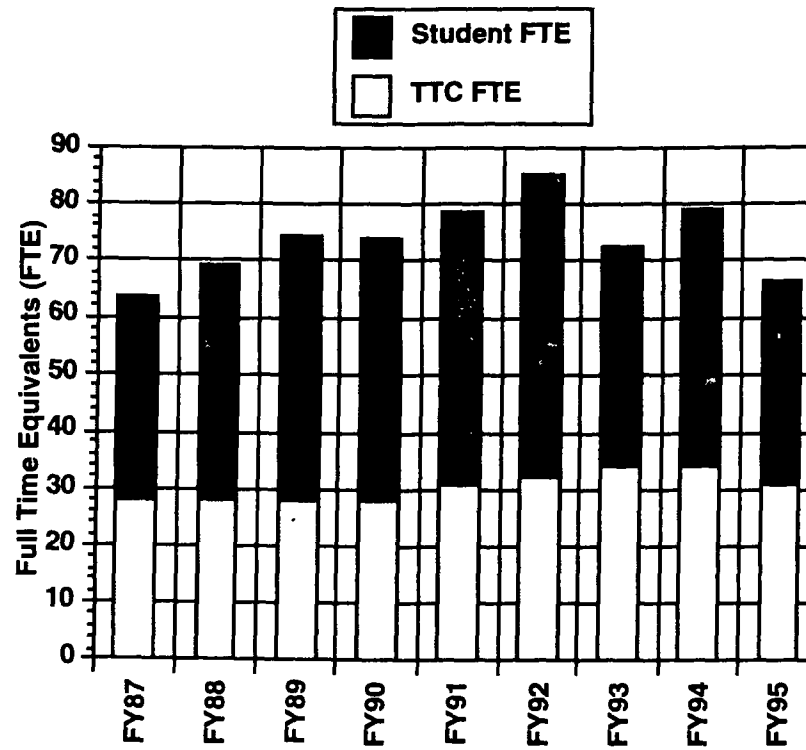
METHODS OF PROVIDING TECHNICAL TRAINING

- **Custom Courses Using In-House Resources**
- **Custom Courses Using Contractors (Commercial or DOE Labs)**
- **Use of Courses by Other Agencies**
- **Individual Opportunities in Open Enrollment Courses (NRC Form 368 Process)**
 - **Used When Needs Are Insufficient To Justify Customized Courses**
 - **Used To Allow Staff To Receive University and Private Sector Training**
- **On-The-Job Training, Self-Study, and Informal Training**

COURSE LOCATIONS

- **FY 1994 Data**
 - **Courses at TTC: 35% (53 Courses)**
 - **Courses in HQ or Regions: 19% (28 Courses)**
 - **Courses at Other Locations: 46% (69 Courses)**
- **FY 1995 Data**
 - **Courses at TTC: 39% (61 Courses)**
 - **Courses in HQ or Regions: 26% (41 Courses)**
 - **Courses at Other Locations: 35% (55 Courses)**
- **Future Technical Training Classroom in OWFN/TWFN Complex**

HISTORICAL AGENCY FTE FOR TECHNICAL TRAINING



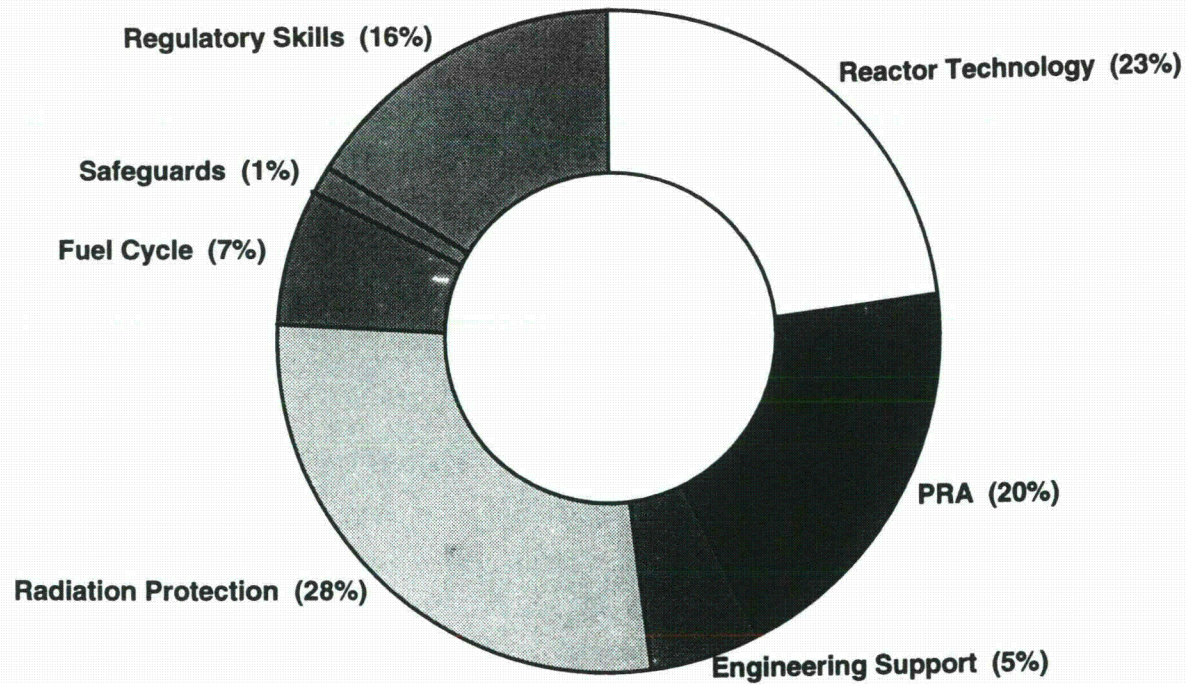
REACTOR TECHNOLOGY CURRICULUM OVERVIEW

- **Covers all 4 U.S. Light Water Reactor Designs**
- **Classroom and Simulator courses**
- **Typical Students**
 - **Resident Inspectors**
 - **Regional Reactor Inspectors**
 - **Headquarters Operations Officers**
 - **Operator Licensing Examiners**
 - **Participants in Formal Development Programs**
- **Representative Courses**
 - **Full Course Series (Initial Training)**
 - **EOP Simulator (Refresher Training)**

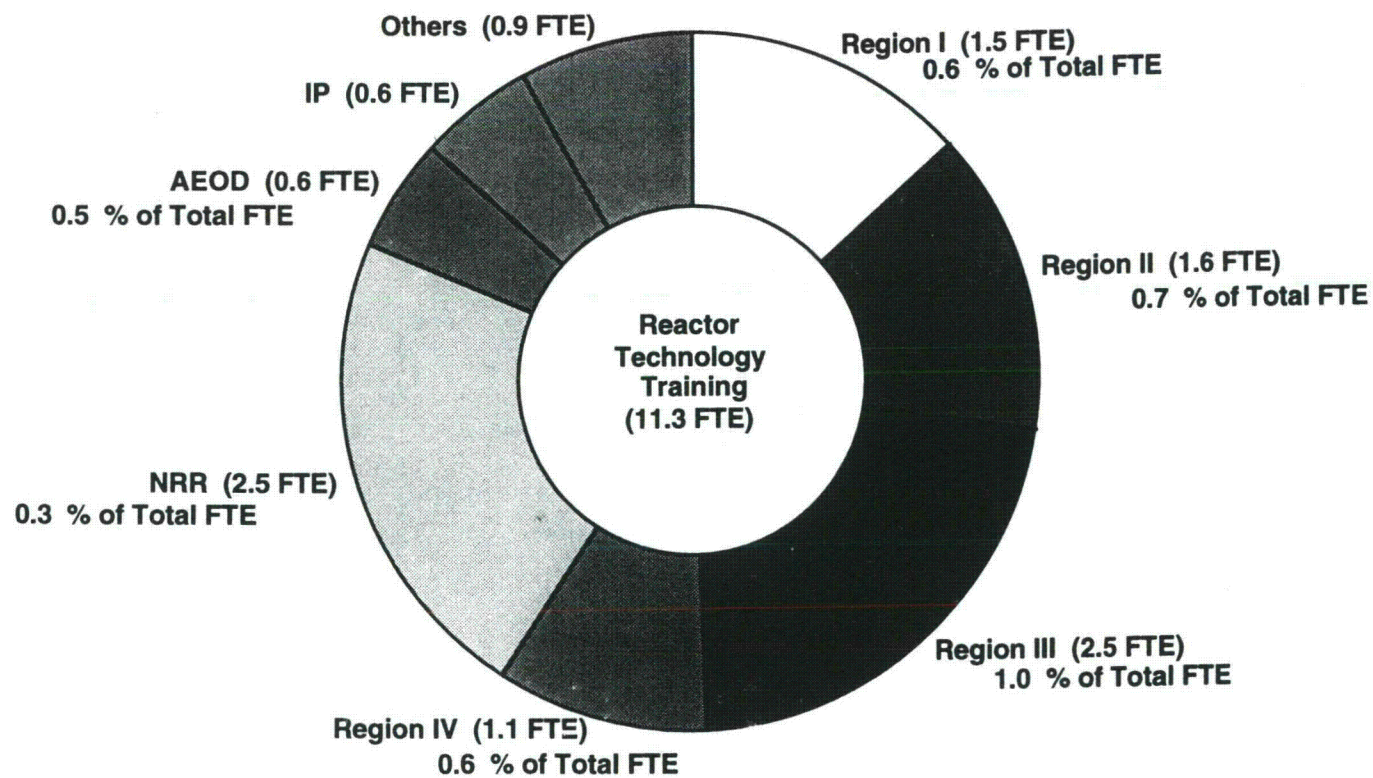
SPECIALIZED TECHNICAL TRAINING CURRICULUM OVERVIEW

- **Probabilistic Risk Assessment**
- **Engineering Support**
- **Radiation Protection**
- **Fuel Cycle**
- **Safeguards**
- **Regulatory Skills**

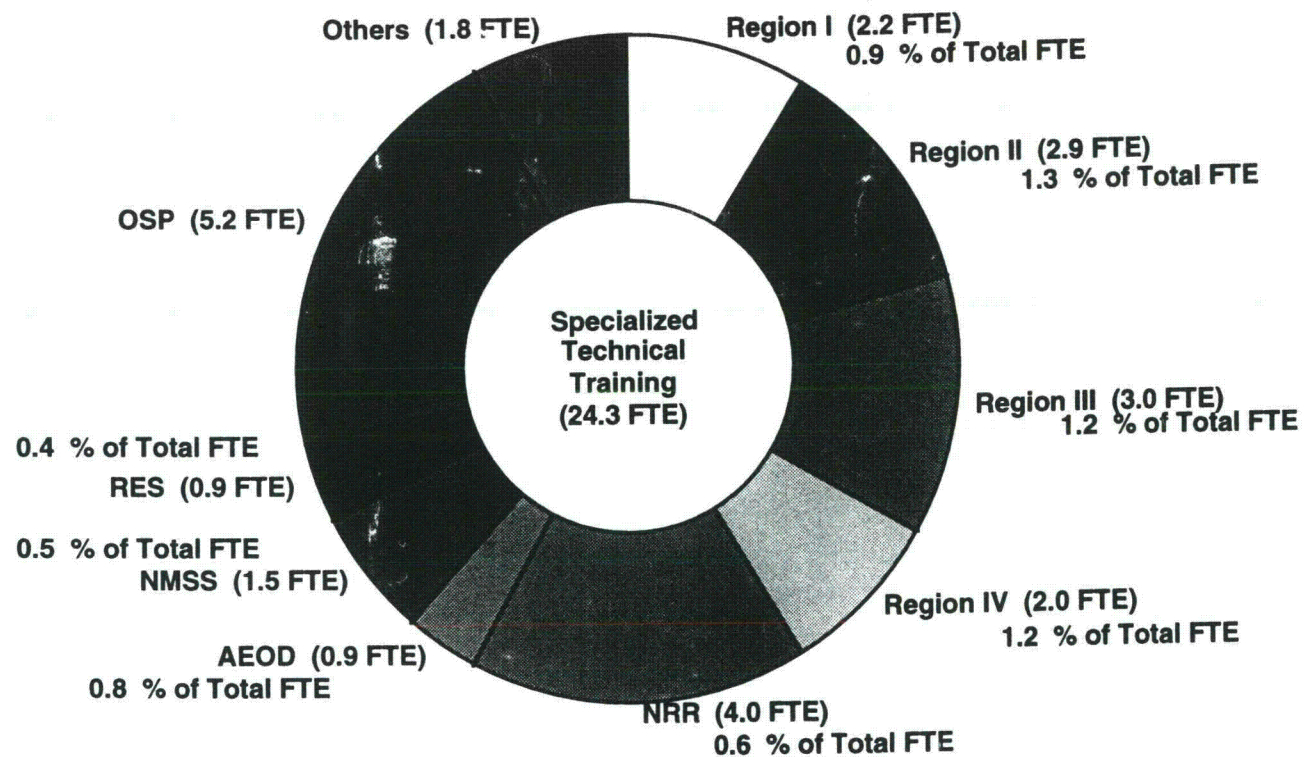
STUDENTS BY CURRICULUM AREAS



DISTRIBUTION OF REACTOR TECHNOLOGY STUDENT FTE FOR FY 1995



DISTRIBUTION OF SPECIALIZED TECHNICAL TRAINING STUDENT FTE FOR FY 1995



TRAINING IMPLEMENTATION AND PROCESS

- **Recent Audits of Technical Training Processes and Implementation**
- **Problem Noted with Post Qualification Training for Inspectors**
- **Communication and Coordination Impacts on Training Implementation**
- **Agency Emphasis on Post-Qualification Training**
- **Desire for Users of Training to Have Seamless Process Tools and Information**
- **Headed Toward Integration of Training Administration within Revised Automated Training System Being Developed by IRM**

IMC 1245 REVISIONS

- **Currently Provides Training Requirements for All Inspectors**
- **Will Become a Reactor Program Document**
- **Revision Underway**
 - **Will Likely Include More Headquarters Personnel**
 - **Will Address Comments Noted in Recent OIG Audits**
 - **Will Provide Compatibility with Revised ATS**
 - **Starting to Revise Qualification Journals**
 - **Projected Revised Document in December 1995 or January 1996**

IMC 1246 REVISIONS

- **Currently Addresses Training Requirements for Materials Licensing Personnel**
- **Will Expand to Become an NMSS Program Document Covering Inspector As Well As Licensing Personnel**
- **Intensive Revision Efforts Underway**
 - **NMSS Programs Will Be Addressed in Single Document**
 - **New Positions Being Added to Recognize New Enrichment Facility Responsibilities**
 - **Will Include More Headquarters Personnel**
 - **Will Address Weaknesses Noted in Recent OIG Audit**
 - **Will Provide Compatibility with Revised Agency Training System**
 - **Starting to Revise Qualification Journals**
 - **Projected Revised Document in December 1995**

INTERACTIONS WITH ACRS

- **Briefings on Technical Training 12/94 and 7/95**
- **ACRS Subcommittee on Technical Training Charter**
 - **Review TTC Course Curriculum and Changes Thereto**
 - **Consider the Need for New Technical Training Courses in Areas of Increasing Importance to the NRC Mission Related to Nuclear Power Plants and the Nuclear Fuel Cycle**
 - **Review NRC Technical Training Course Materials for Content and Emphasis As Needed**
 - **Interface with AEOD on Issues Involving the NRC Technical Training Center**

FORMAL DEVELOPMENT AND TRAINING PROGRAMS

- **TTD Involved with Program Office**
- **Reactor Engineer Intern Development Program**
- **Senior Reactor Analyst Training Program**
- **Senior Resident Inspector/Resident Inspector Development Program**
- **Training Slots with Priority**
- **Scheduling of Groups of Courses to Meet Senior Reactor Analyst Training Schedule**
- **New Development to Meet the Needs**

NEEDS IDENTIFICATION AND FEEDBACK

- **Must Provide Minimum Numbers of Courses to Meet Qualification Program Demands**
- **Mix of New Hires and Retraining of Existing Staff is Changing**
- **Participation in Division Director Counterpart Meetings**
- **User Needs from Individual Offices or Regions**
- **Counterpart Meetings and Calls**
- **Work Groups and Training Focus Groups**
- **Course Feedback**

NEW INITIATIVES

- **Reactor Technology**
- **PRA**
- **Digital I&C**
- **Maintenance Rule Training**
- **Technical Overview Course**
- **Field Techniques and Regulatory Processes Course**

REACTOR TECHNOLOGY INITIATIVES

- **GE Technology**
 - **Installation and Implementation of Shoreham Simulator**
 - **Conversion of GE Baseline from BWR/6 to BWR/4**
- **Westinghouse Technology**
 - **Installation and Implementation of Trojan Simulator**
 - **Conversion of Course Materials to Trojan**
- **CE and B&W Cross Training Courses**
- **Use of Information Technology to Enhance Learning**
- **PRA and Maintenance Rule Integration**
 - **Instructors Trained as PRA Basic Users**
 - **2 Instructors Being Training As PRA Advanced Users (FY 1996)**
 - **Maintenance Rule Training Being Piloted by NRR for TTD Instructors.**
 - **Configuration Management Module and PRA Software Integration**

GENERAL APPROACH FOR NEW AREAS OF EXPERTISE

- **Identification of New Areas Needed by NRC Staff**
- **Determination of Existing Agency Expertise**
- **Establishment of Work Group or Focus Group**
- **Determination of Applicability of Expertise to Agency Programs**
- **Determination of Appropriate Training, Education, and Experience to Achieve Needed Skills**
- **Formalization of Recommendations**
- **Use of Recommendations by Line Management When Establishing Formal Qualification, Training, or Development Programs**

PRA TRAINING DEVELOPMENTAL EFFORTS

- **Quantification of Training Needs**
 - **Basic User: Staff Who Use PRA Results and Require Information on How PRAs Are Performed and The Results Obtained**
 - **Advanced User: Staff Who Work with PRA Models or Manage Contractor Efforts To Work with PRA Models Require More Extensive Knowledge**
 - **Expert Practitioner: Staff Who Perform Quality Assurance and Expert Advisory Functions As Well As Develop New Methods Require Very Extensive Knowledge**
- **PRA Training Focus Group**

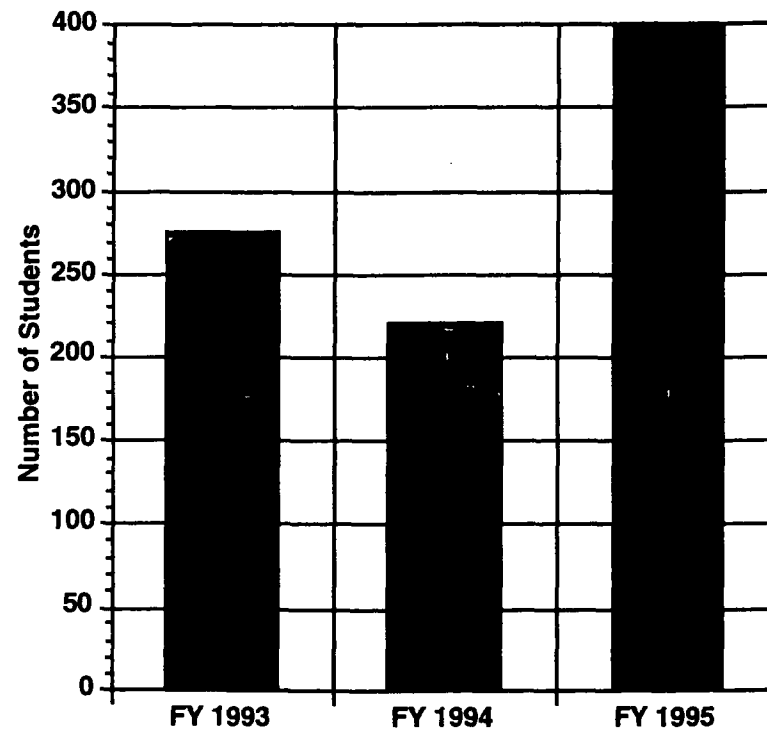
PRA TRAINING FOCUS GROUP RECOMMENDATIONS

- **Levels of PRA Knowledge, Skills, and Abilities**
- **Risk Implications of Configuration Management Module**
- **Implications of Uncertainty Module**
- **PRA for Technical Managers Course**
- **External Events Course**
- **PRA Course Testing**
- **Future NUREG/BR for Guidance**
- **Consolidation of PRA Courses**

NEW PRA COURSE DEVELOPMENT

- **As A Result of Job Task Analyses**
 - **Accident Progression Analysis - (Advanced User Level)**
 - **Accident Consequences Analysis - (Advanced User Level)**
 - **System Modeling Techniques - (Advanced User Level)**
 - **Risk Assessment In Event Evaluation - (Advanced User Level)**
- **As A Result of Feedback**
 - **Advanced Integrated Reliability and Risk Analysis System (Advanced IRRAS) - (Advanced User Level)**
 - **PRA Insights into An IPE - (Basic User Level)**
- **As A Result of Special Needs**
 - **Seminar on Poisson and Binomial Updating - (Advanced User Level)**

STUDENTS ATTENDING PRA COURSES



DIGITAL I&C TRAINING DEVELOPMENTAL EFFORTS

- **Digital I&C Work Group**
 - **Determine Training Needs in Digital I&C and Related Areas**
 - **Define Target Audiences for Training**
 - **Identify Courses To Be Developed and Course Objectives**
 - **Review Course Materials As They Are Developed**
 - **Recommend Changes to Curriculum**
- **Quantification of Training Needs**
 - **Most Important Group Needing Training Is Region-Based Inspectors**
 - **Next Group Is Headquarters Personnel**
 - **Third Group Is Resident Inspectors**

DIGITAL I&C TRAINING APPROACH

- **Relatively Small Target Group of Region-Based Inspectors and HQ Personnel**
- **Part 1: Off-the-Shelf Commercial Courses (Examples)**
 - **Instrumentation and Control Fundamentals**
 - **Digital Electronics for Industrial Instrumentation**
 - **Basic Course for Programmable Logic Controllers**
 - **Principles of Software Engineering**
- **Some Sources of Off-the-Shelf Courses**
 - **Instrument Society of America**
 - **Rockwell Automation -- Allen Bradley**
 - **Instrumentation Data Communication, Inc.**
 - **University of Wisconsin**
- **Part 2: Regulatory Perspectives Course**

DIGITAL I&C REGULATORY PERSPECTIVES COURSE

- **Cooperative Effort with NRR As NRC Policy Is Established**
- **Will Provide Needed NRC Aspects of Digital Issues, Industry Weaknesses, and Lessons Learned**
- **Being Designed to Allow Conduct of Effective Inspections with Prudent Use of Limited Resources**
- **Practical Approach to Inspection Issues**
- **Proposed Topics**
 - **Introduction and Reference Materials**
 - **Regulatory Policy**
 - **Inspection Planning Workshop**
 - **Inspection Report Preparation**
 - **Recent Plant Problems and Lessons Learned**
- **Strong Coordination and Participation Involving ACRS**

MAINTENANCE RULE TRAINING

- **Developed by Quality Assurance and Maintenance Branch (HQMB/NRR)**
- **1 Day Course for Resident Inspectors/Senior Resident Inspectors Will Be Piloted with TTD Instructors in November 1995**
- **3 Day Course for Inspectors Participating in the Baseline Inspections Will Be Piloted with TTD Instructors in April 1996**
- **Training in Regions and HQ Will Begin in May 1996**
- **Will Be Integrated into Overall Training Program**

TECHNICAL OVERVIEW COURSE

- **Developed Based on OIG Request**
- **Course Presented in May 1995 and September 1995**
- **Widely Attended by OIG and OI Staffs**
- **Course Topics Include:**
 - **Training of NRC Inspectors**
 - **Sources and Location of Regulations**
 - **Overview of Boiling Water and Pressurized Water Reactors**
 - **Regulatory Environment**
 - **Professionalism**
 - **Reactor and Materials Inspection and Licensing Programs**
 - **Reactor and Materials Radiation Protection Issues**
- **Potential Applicability for Wider NRC Audience**

FIELD TECHNIQUES AND REGULATORY PROCESSES COURSE

- **Support for RI Development Program**
- **Course Will Use Workshop/Case Study Approach**
 - **Small Groups Will Research and Resolve Issues Associated with Case Study**
 - **Each Student Will Be Assigned An Independent Aspect of Case Study To Resolve, Document, and Possibly Present**
 - **Library of Supporting Material Will Be Developed To Support Case Studies**
 - **Instructors Will Role-Play Personnel To Be Interviewed by Students**
 - **Students May Be Required To Make Class Presentations or Reports**
 - **Course Instructors Will Provide Constructive Criticism and NRC Course Director Will Address Policy and Regulatory Issues**
- **Anticipate about 1 Year for Course Development**
- **Expect Course To Be Valuable Asset with Broad Applicability**

SUMMARY

- **Dynamic Nature of Technical Training Process**
- **Technical Training Program Evolving with Agency Changes**
- **Changing Needs from Streamlining Initiatives**
- **Continuing Attrition with Limited Outside Hiring Projected for Next Few Years**
- **Increased Emphasis on Retraining to Enhance Skills and Match Skills with Needs**
- **Integration of Agency Training Administration**
- **Increased Use of NRC Expertise for Course Development and Implementation**

**UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION**

**TITLE: AFFIRMATION SESSION
 (PUBLIC MEETING)**

LOCATION: ROCKVILLE, MARYLAND

DATE: THURSDAY, OCTOBER 12, 1995

PAGES: 1-6

SECRETARIAT RECORDS ONLY

DISCLAIMER

This is an unofficial transcript of a meeting of the United States Nuclear Regulatory Commission on October 12, 1995 in the Commission's office at One White Flint North, Rockville, Maryland. The meeting was open to public attendance and observation. This transcript has not been reviewed, corrected or edited, and it may contain inaccuracies.

The transcript is intended solely for general information purposes. As provided by 10 CFR 9.103, it is not part of the formal or informal record of decision of the matters discussed. Expressions of opinion in this transcript do not necessarily reflect final determination or beliefs. No pleading or other paper may be filed with the Commission in any proceeding as the result of, or addressed to, any statement or argument contained herein, except as the Commission may authorize.

1 UNITED STATES OF AMERICA
2 NUCLEAR REGULATORY COMMISSION
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6 AFFIRMATION SESSION
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10 PUBLIC MEETING
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12 Nuclear Regulatory Commission
13 One White Flint North
14 Rockville, Maryland
15

16 Thursday, October 12, 1995
17

18 The Commission met in open session, pursuant to notice,
19 at 3:30 p.m., Shirley Ann Jackson, Chairman, presiding.
20

21 COMMISSIONERS PRESENT:

22 SHIRLEY A. JACKSON, Chairman of the Commission

23 KENNETH C. ROGERS, Commissioner
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1 STAFF SEATED AT THE COMMISSION TABLE:

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3 KAREN D. CYR, General Counsel

4 JOHN C. HOYLE, Secretary

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P R O C E E D I N G S

[3:30 p.m]

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CHAIRMAN JACKSON: Good afternoon ladies and gentlemen. This is an affirmation session, I understand we have three items to come before us this afternoon.

MR. HOYLE: That's right, Chairman Jackson.

CHAIRMAN JACKSON: Before I ask the Secretary to lead us through the items for affirmation, does my fellow Commissioner have any comments he would like to make.

COMMISSIONER ROGERS: No, thank you.

CHAIRMAN JACKSON: If not, you may proceed.

MR. HOYLE: Thank you. The first affirmation item deals with revisions to regulatory requirements for reactor pressure vessel integrity. In this item the Commission is being asked to approve for publication in the Federal Register, final revisions to the requirements in 10 CFR Part 50 for reactor pressure vessel integrity and adding a new rule on thermal annealing of reactor pressure vessels. These changes will become effective 30 days after publication. These rule changes are being approved today by the Chairman, under delegated authority voted by the Commission as authorized by the NRC Reorganization Plan No. 1 of 1980, and after consultation with Commissioner Rogers. Chairman Jackson has stated her approval of the final rule with certain additional changes. Commissioner Rogers has

1 stated his agreement with the rule and with those changes.
2 The changes will codify the role of public participation in
3 the regulatory process covered by the rule and requires the
4 documentation of the NRC staff review of licensee's
5 annealing report and implementation. You have both approved
6 the publication and implementation of this final rule with
7 the changes attached to my memo of earlier today. Please
8 affirm your votes.

9 CHAIRMAN JACKSON: Aye.

10 COMMISSIONER ROGERS: Aye.

11 MR. HOYLE: Thank you. The second item deals with
12 Georgia Institute of Technology appeal of a licensing board
13 issuance. The Commission is being asked to issue an order
14 which denies appeals by the NRC staff and Georgia Institute
15 of Technology and affirms the Atomic Safety and Licensing
16 Board's order LBP-95-6, which granted the Georgians Against
17 Nuclear Energy's petition for hearing and request for
18 intervention. This decision to issue the order is being
19 made by the Chairman under delegated authority voted by the
20 Commission as authorized by NRC Reorganization Plan No. 1 of
21 1980, the decision was made after consultation with
22 Commissioner Rogers. You both have approved the order as
23 attached to my memo of earlier today and I ask you to affirm
24 your votes.

25 CHAIRMAN JACKSON: Aye.

1 COMMISSIONER ROGERS: Aye.

2 MR. HOYLE: The final item deals with application of
3 CAN v. NRC to decommissioning activities at the Trojan and
4 Yankee facilities. The Commission is being asked to issue
5 orders regarding the decommissioning activities of Portland
6 General Electric Company and Yankee Atomic Electric Company.
7 The orders state that further major dismantling actions are
8 impermissible in light of the decision in the CAN v. NRC
9 lawsuit. While allowing Portland General Electric to
10 complete the nearly completed large component removal
11 project, all further major decommissioning activities must
12 be halted. The orders announce that the Commission will
13 provide an opportunity for a hearing on the respective
14 decommissioning plans prior to further dismantling
15 activities. The orders being issued today are approved by
16 the Chairman under delegated authority voted by the
17 Commission as authorized by NRC Reorganization Plan No. 1 of
18 1980. The decisions were made after consultation with
19 Commissioner Rogers. You have approved the orders, may I
20 ask you to affirm your votes.

21 CHAIRMAN JACKSON: Aye.

22 COMMISSIONER ROGERS: Aye.

23 MR. HOYLE: Thank you.

24 CHAIRMAN JACKSON: Mr. Secretary is there anything else
25 to come before us this afternoon?

1 MR. HOYLE: I have nothing further.

2 CHAIRMAN JACKSON: Commissioner Rogers?

3 COMMISSIONER ROGERS: No.

4 CHAIRMAN JACKSON: We're adjourned.

5 [Whereupon, at 3:35 p.m., the meeting was adjourned.]

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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: Affirmation Session

(PUBLIC MEETING)

PLACE OF MEETING: Rockville, Maryland

DATE OF MEETING: Thursday, October 12, 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: Georgia Thomas

Reporter: (TAPE RECORDING)