

UNITED STATES OF AMERICA NUCLEAR REGULATORY COMMISSION

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1 UNITED STATES OF AMERICA
2 NUCLEAR REGULATORY COMMISSION

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4 BRIEFING ON CERTIFICATION OF RADIOGRAPHERS

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6 PUBLIC MEETING

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8 Nuclear Regulatory Commission

9 One White Flint North

10 Rockville, Maryland

11
12 Wednesday, April 5, 1989

13
14 The Commission met in open session, pursuant to
15 notice, at 2:00 p.m., the Honorable LANDO W. ZECH, JR.,
16 Chairman of the Commission, presiding.

17
18 COMMISSIONERS PRESENT:

19 LANDO W. ZECH, JR., Chairman of the Commission

20 THOMAS M. ROBERTS, Member of the Commission

21 KENNETH M. CARR, Member of the Commission

22 KENNETH C. ROGERS, Member of the Commission

23
24
25 STAFF AND PRESENTERS SEATED AT THE COMMISSION TABLE:

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1 STAFF AND PRESENTERS SEATED AT THE COMMISSION TABLE:

- 2 SAMUEL J. CHILK, Secretary
- 3 WILLIAM C. PARLER, General Counsel
- 4 HUGH L. THOMPSON, JR., DEDO
- 5 ROBERT BERNERO, NMSS
- 6 GLEN SJOBLUM, NMSS
- 7 CARLTON KAMMERER, GPA/SLITP
- 8 VANDY MILLER, GPA/SLITP

9
10 ON BEHALF OF AMERICAN SOCIETY OF NONDESTRUCTIVE TESTING
11 (ASNT)

- 12 ROSS BECKELY, Chairman of the Board, ASNT
- 13 BOB DOGGART, Chairman
- 14 Industrial Radiation Safety Task Group, ASNT
- 15 DUKE DEWEY, Executive Director, ASNT

16
17 ON BEHALF OF TEXAS BUREAU OF RADIATION CONTROL

- 18 DAVID LACKER, CHIEF
- 19 Texas Bureau of Radiation Control

20
21 ON BEHALF OF CONFERENCE OF RADIATION CONTROL PROGRAM
22 DIRECTORS

- 23 CHARLES TEDFORD, Chairman
- 24 CHARLES HARDIN, Executive Secretary
- 25 RON WASCOMB, Louisiana

2:10 p.m.

CHAIRMAN ZECH: Good afternoon, ladies and gentlemen. The subject of today's briefing is the Certification of Radiographers.

For many years the Nuclear Regulatory Commission has been concerned about the number of radiation overexposures among industrial radiographers. A review of overexposure incidents indicates that, among other things, inadequate training may contribute to radiographers' failure to follow safety procedures. The issue of radiographer licensing, or certification has been under evaluation for sometime. The NRC staff has been monitoring industry initiatives in developing a radiographer's certification program, which will be the topic of today's discussion.

This is an information briefing. In addition to the scheduled NRC staff presentation, we received a number of requests from other interested parties to address the Commission on this subject.

First, we will hear from the staff, and then we will hear from representatives of the American Society of Nondestructive Testing, the Texas Bureau of Radiation Control and the Conference of Radiation Control Program Directors.

I understand that copies of the vu-graphs to be

1 used in today's presentation are available as you enter
2 the room.

3 I would ask all of our speakers to please adhere
4 to their allotted time because we do have a number of
5 speakers, and we want to conclude the meeting as
6 reasonably on time as we can.

7 Do any of my fellow Commissioners have any
8 opening comments before we begin?

9 (No response)

10 CHAIRMAN ZECH: If not, Mr. Thompson, you may
11 proceed.

12 MR. THOMPSON: Thank you, Mr. Chairman.

13 As you said, this is a major milestone in a
14 program that we believe is a very important one for the
15 nation's public health and safety with respect to the
16 industrial radiographers.

17 Before I turn it over to Mr. Glen Sjoblom, who
18 will be doing the briefing today, I would just like to say
19 that both Glen and Vandy Miller, who is on my right, have
20 been personally involved in this effort for us. And of
21 course the other members of the groups that are here today
22 have played a key role in reaching this level of agreement
23 on this very important program.

24 We have a program which we believe, if put in
25 place, will achieve a level of safety and improvement in

1 the radiographer program that, if successfully
2 implemented, would be one that we would probably recommend
3 to the Commission down the road, that a rule be put in
4 place making radiographer certification a requirement for
5 all radiographers.

6 This is an important point that I would like the
7 Commission to keep in mind, as we go through the briefing
8 today because, previously, in a previous Commission, an
9 approach similar to this was occurred with another
10 society, and the Commission, after posing a proposed rule,
11 changed its position at the end, between the draft and the
12 final rule requiring certification of laboratories.

13 And at that time the Society had suffered, I
14 guess, some financial burden because the Commission could
15 not reimburse that professional society for the
16 expenditure of resources, and that program did not
17 continue on to success.

18 I am not aware of any concern by any of the
19 Commissioners of the support for this type of program but,
20 if there are any issues that you become aware of and want
21 to make sure the staff is sensitive to, or the other
22 parties should be very sensitive to this program, because
23 that is a key element in the ultimate success of the
24 program, I think, as we view it today.

25 There are a number of parties here. We will

1 probably ask Carl Kammerer, in the Agreement State, to
2 introduce the State of Texas people, as we leave. So we
3 will be departing and I guess with that, Glen, I would
4 like to turn the briefing over to you.

5 MR. SJOBLUM: Yes. The first two slides just
6 are providing an indication of what the briefing, as a
7 whole, will cover. (Slide) The first part will be our
8 briefing here, the staff presentation on what the safety
9 issue is, then a brief background on the current
10 regulatory program in radiography safety, then our
11 thoughts on the benefits, the perspectives that we have
12 that relate to this industry initiative, and then our
13 indication of what we think should be done on down the
14 line, as a matter of implementing this program.

15 The second slide -- (slide) -- again, merely
16 restates that the order of presentation by the other
17 parties, other than the staff, in the same order that the
18 Chairman already mentioned them. The industry group is
19 the American Society of Nondestructive Testing. Texas
20 involvement here is an important one, in that they have
21 one element of that program, namely, an examination which
22 would be folded into the nationwide certification program.
23 And then the Conference of Radiation Control Program
24 Directors, acting as a broker for some of the states,
25 would participate in giving some of the exams.

1 So it is kind of a combined effort. And we want
2 you to hear from each of those three elements. And then,
3 perhaps, if the Commission has any additional questions
4 after hearing all that, for the staff, we would be
5 available to come back up, if you like.

6 Let me turn then to slide three -- (slide). The
7 fundamental problem in radiography is that one needs a
8 very high intensive radiation source in order to expose
9 the film through the object being tested. So, typically,
10 we are talking about 100 curies of Iridium 192. And this
11 is in a device which provides the shielding necessary
12 while the source is not in use, but in order to expose the
13 film, you need to drive the source out of the shield,
14 through a tube to the point where it needs to be located
15 in order to expose the object in question and the film
16 beyond it, to the radiation.

17 So, 100 curies of Iridium 192 at three feet can
18 provide a dose rate of about 50 rads per hour. And this
19 means that if a person were there and the source was out
20 of the shield, if he was there for two minutes, he would
21 exceed a 5 rem in a year dose. And if he were even
22 closer, say a foot, he could exceed that in 10 seconds.

23 So it is very important then that the source be
24 retracted before anyone comes back close to the
25 radiography shield.

1 That then leads to the second bullet then, the
2 basic causes of all of the overexposure events have either
3 to do with the failure of equipment, if the source becomes
4 disconnected from the pigtail that is used to drive it in
5 and out, it can be left there, unbeknownst to the
6 radiographer. The second type of problem results when the
7 staff, the radiographers, don't follow the prescribed
8 procedures. And recognize how these people, the
9 radiographers, are operating out in field sites, many
10 times it is at night. They are not under a lot of
11 management supervision, and they do this often enough that
12 they can become lax. And they can fail to follow
13 procedures.

14 And if you fail to follow the procedure to do a
15 survey, when you are coming back towards the shield to
16 lock it and take it back in your truck, then you can get
17 overexposed very quickly.

18 So one single personnel error, in combination
19 with the source not being back in the shield, can cause a
20 significant problem.

21 Now the fundamental factor that we are trying to
22 work on with the certification program is to ensure the
23 adequacy of the training, not only in the technical
24 aspects, but in the appreciation the radiographers have as
25 to the serious consequences to themselves, if they fail to

1 follow procedures.

2 So we are looking here at increasing the
3 certainty with which they understand what they are doing
4 and really the bottom line is the degree of
5 professionalism that this cadre of workers has. For
6 perspective, there is somewhere in the neighborhood of 10-
7 to 15,000 radiographers throughout the country, in NRC and
8 Agreement States. So that's the body of workers that we
9 are dealing with here.

10 COMMISSIONER ROGERS: Excuse me, what is the
11 potential for the innocent bystander, in a sense, in this
12 kind of a situation?

13 MR. SJOBLUM: There is a potential there, and
14 that is precisely why, when you set up in the field, the
15 radiographers are required to set up a boundary and set up
16 a barrier that is defined, so as the radiation levels at
17 the extent of that boundary will be like 2 millirem in an
18 hour during the time --

19 COMMISSIONER ROGERS: For a radiographer that
20 isn't all that concerned about their own personal safety,
21 would perhaps be even less concerned about public safety,
22 and that's another aspect.

23 MR. SJOBLUM: Another reason for making sure
24 they are all properly trained, yes, sir. But there is
25 procedure whereby they do rope the boundary off and put

1 signs up, and they do post people -- you know, in
2 complicated places where they are shooting, that does
3 require attention. They do have to know what they are
4 doing.

5 COMMISSIONER CARR: Well, if he doesn't secure
6 the truck and if it falls off on the road --

7 MR. SJOBLUM: Okay, again for background, let me
8 run through slide four -- (slide) -- what our current
9 regulatory program is in radiography.

10 First of all, we have a licensing program where
11 to practice and to use the material, they must receive a
12 license either from NRC or an Agreement State. And with
13 regard to the radiography people, they have to provide us
14 information on their training and qualification program.

15 COMMISSIONER ROBERTS: The license goes to the
16 person who holds the source?

17 MR. SJOBLUM: No, the license currently goes to
18 the company --

19 COMMISSIONER ROBERTS: That's what I meant --

20 MR. SJOBLUM: -- not to a radiographer.

21 COMMISSIONER ROBERTS: Yes.

22 MR. SJOBLUM: And it is the company then who has
23 the responsibility to train and sensitize, and check up on
24 each radiographer.

25 We currently, therefore, approve the training

1 programs on paper. And when we are out doing our
2 inspections, which is the next bullet here, we do check up
3 on them. It is on an annual basis, and it is annual,
4 which is our most frequent type of inspection, based on
5 this industry's -- the possibility for this kind of
6 occurrence and the track record that they have had. So,
7 we do inspect them annually.

8 COMMISSIONER CARR: Are we able to get to all of
9 those annually?

10 MR. SJOBLUM: Yes, yes, we do. And we have a
11 requirement that each -- that at least 25 percent of our
12 inspections are in actual field locations, where
13 radiography is being conducted.

14 MR. THOMPSON: But I am not sure that that 25
15 percent actually gets someone conducting the radiography
16 activities at that time. Sometimes they may not be
17 setting up yet, but we certainly recognize the importance
18 of actually inspecting the operations that we are able to
19 do.

20 MR. SJOBLUM: Now, I mentioned that one of the
21 key elements was equipment failures. The Commission does
22 have an ongoing rulemaking in this area. It has been
23 proposed for public comment, and the schedule for bringing
24 that back to the Commission in final form is in May. So,
25 in effect, by this certification action and by the

1 Commission's rulemaking on the equipment performance, we
2 will be attacking -- are attacking both of the problems.

3 Another element of our regulatory program is
4 strong enforcement. There have been many enforcement
5 actions, we have typically run six to 12 enforcement
6 actions a year in the radiography area.

7 COMMISSIONER ROBERTS: But don't you -- not to
8 be critical of the NRC or the people out there, don't you
9 suspect that you may take strong enforcement when you know
10 it, but don't you think more overexposures, many more
11 occur than you have any notion of?

12 MR. SJOBLUM: I think one would be reasonably
13 assured there are some, but we don't know how many that
14 aren't reported.

15 COMMISSIONER ROBERTS: Okay.

16 MR. SJOBLUM: Then we have some additional ways
17 of trying to communicate with licensees, that we have
18 increased in the last few years. We do more information
19 notices in this area. We also have been having workshops
20 with industry groups, and we have had two or three now
21 with the radiography community. And then we have also
22 instituted the NMSS Newsletter. And there is certainly
23 adequate coverage of radiography problems in those media.

24 If I could go back to the licensing piece, in 10
25 CFR 34 there is a sort of requirement defining what the

1 training and qualifications are for radiographers. And
2 that entails a 40-hour, one week fundamentals of radiation
3 protection. And then a three-month, or 520 hours of
4 practical experience, working as a radiographer assistant,
5 where he would get the on-the-job training in the
6 technical aspects of how to run the equipment, how to do
7 the surveys, how to rope the areas off.

8 It is those particular requirements which have
9 not always been, let me say adequately done by the
10 individual licensees. And it is for that reason that a
11 third-party examination and certification process can act
12 as a quality control on the entire nationwide training
13 program. And these inadequacies in training and
14 sensitization is not just a matter that small companies
15 have had problems with. We have also had the US Testing
16 example where a nationwide program -- we found over 100
17 radiographers that were out there performing with
18 inadequate, and without any company certification from
19 time to time, because they did it as short-cuts, they
20 didn't have control.

21 This way, if we have a certification, and once
22 it becomes mandatory, if we find a radiographer out there
23 and he doesn't have his certification card, that is an
24 automatic example where they haven't followed the program.

25 CHAIRMAN ZECH: How does this third-party

1 certification relate to our current regulatory program?

2 MR. SJOBLOM: What, in fact, it would do -- and
3 this would of course be described in more detail by the
4 next set of speakers -- but, basically, they would
5 administer a test, a nationwide test. In other words, we
6 would not be subject to the adequacy of the individual
7 licensee's exam. We would have a nationwide test.

8 The next thing they would do is they would
9 examine the adequacy of the on-the-job training, and they
10 would do a background check.

11 CHAIRMAN ZECH: Is this an amplification of our
12 current regulation, or is it something in addition --

13 MR. SJOBLOM: It is a supplement in addition to,
14 right.

15 CHAIRMAN ZECH: All right.

16 MR. SJOBLOM: Now, once we have a certification,
17 we can accept that in lieu of our approving their
18 individual training program because we have the
19 independent check on their training, namely, the
20 examination.

21 MR. THOMPSON: But it's a program that will
22 ensure that our current regulatory requirements are
23 covered, and then some. But it would encompass all of our
24 current requirements and have some added aspects to it--
25 some enhancements.

26 CHAIRMAN ZECH: All right, thank you.

1 Let's proceed.

2 MR. SJOBLUM: That feeds into slide five then--
3 (slide) -- that provides our perspectives on this
4 certification program. It provides this assurance that we
5 are talking about, the training, knowledge, skills and the
6 hazard appreciation is met in every radiographer, before
7 he is certified. And it provides a certain degree of
8 professionalism in that group of people. They will be
9 carrying a card, only after they are accepted, and not
10 just anybody is going to be able to pass that exam.

11 As you will hear, that ongoing testing in Texas
12 has a certain failure rate. And if you fail the test, you
13 don't make the card, you don't make the certification.

14 COMMISSIONER CARR: It is a written exam, as
15 well as practical?

16 MR. SJOBLUM: There are both parts to the
17 program.

18 MR. THOMPSON: The State of Texas one right now
19 is just a written exam, but the proposal would include
20 both.

21 COMMISSIONER CARR: So it is really going to
22 provide us QC on the training program, per se, then?

23 MR. SJOBLUM: That's right.

24 COMMISSIONER CARR: Okay.

25 MR. SJOBLUM: And another facet of it here is

1 that the individual radiographer will indeed feel more
2 responsibility for his own safety, more than just whether
3 he is going to get hurt or not, or overexposed, but if he
4 doesn't properly carry out his function, then he can lose
5 his certification.

6 And once this program is, indeed, made
7 mandatory, if he loses his certification, he doesn't work.
8 And that is where it will bring a certain degree of--
9 another factor to bear on his performance.

10 And then as I mentioned, a standardized
11 nationwide testing effort.

12 Now, the next slide -- (slide) -- tries to
13 anticipate, in general, what our intentions would be, once
14 the ASNT program is submitted to the agency formally. As
15 you will hear, the ASNT board has just approved that
16 program in its document, and that would be submitted to
17 the agency. If that is then acceptable and we can
18 conceptually agree with that, then the next issues become,
19 well, what will NRC and the Agreement States do to ensure
20 that this program becomes a viable nationwide effort.

21 And we felt that two steps would be required.
22 First of all, we feel we need to recognize the ASNT
23 program as providing the assurance that our basic training
24 and qualification requirements are met. So we would
25 anticipate an initial rulemaking that would insert

1 directly in 10 CFR 34 an NRC statement that we accept an
2 ASNT certification, in lieu of the licensee providing to
3 us all the information about his training program. In
4 other words, that is an initial step that we would --

5 CHAIRMAN ZECH: That would be part of the
6 rulemaking?

7 MR. SJOBLUM: That would be a rule -- a simple
8 one because it would really be adding a very simple
9 statement to an existing rule.

10 I might add there are precedents for this in 10
11 CFR 35. Some of the medical societies have had
12 certification programs ongoing, and those have been
13 recognized by the NRC directly, in 10 CFR 35. So there
14 are precedents for this.

15 Now, the next step, once we get a little bit of
16 experience with this, once ASNT begins to put this in
17 during a one or two year period, and gains some experience
18 with this program, then we will have a basis on which we
19 can proceed to the next logical step.

20 In other words, if this proves to be a viable
21 effort, it would be the staff intention that we would make
22 this a mandatory requirement, to have a third-party
23 certification of all radiographers, so that we will have a
24 nationwide, consistent, compatible effort. So that
25 radiographers that are operating in one state can go to

1 another state, and if they are certified in this national
2 program, everybody can feel a little bit more comfortable
3 that they have been given the proper training and
4 qualifications.

5 COMMISSIONER CARR: I guess I don't understand
6 why you need to do that in two steps.

7 MR. SJOBLUM: We would like to -- let me explain
8 a little bit further. It is going to take a little while
9 for ASNT to get this program going. They can't possibly
10 test everybody instantaneously. There are 10-15,000
11 people, first of all, that's one factor, but we don't have
12 all the information because the program hasn't been
13 started.

14 When the Commission makes the final decision
15 that this will stand the test of a cost-benefit analysis,
16 for example, as required by our rulemaking process, we
17 will have to have more information on the costs and,
18 indeed, on the benefits.

19 Certainly it is our anticipation that that will
20 be the case. But as Hugh Thompson pointed out at the
21 outset, we do have to have the facts when we make a final
22 rule that requires this as a nationwide thing.

23 MR. THOMPSON: The other aspect is that we and
24 the Society believe that grandfathering is not the
25 approach to take with the individuals out there. In other

1 words, anyone who goes through the program to become
2 certified will have met the requirements of the approach
3 setting out, as opposed to an approach where you make it a
4 requirement, but grandfather everybody who is out there.

5 So I think those two, in combination -- that is,
6 it is going to take a while to get the program --

7 CHAIRMAN ZECH: Say that again, you are going to
8 grandfather, or you are not going to grandfather?

9 MR. THOMPSON: Right now the Society does not
10 intend to grandfather them, and that is just to make sure
11 that you are going to have --

12 CHAIRMAN ZECH: So everybody has got to take the
13 training?

14 MR. THOMPSON: They are going to take that
15 training, they are going to pass the exam. And, so,
16 anybody who, in fact, is certified has met the standards
17 that are established by the Society.

18 CHAIRMAN ZECH: Good.

19 MR. THOMPSON: And we think that's the right
20 approach to go, which we want to give full faith and
21 credit to those who have done that, as opposed to --

22 CHAIRMAN ZECH: Right.

23 COMMISSIONER CARR: But you could handle that by
24 making it as of 1991, everybody has to be certified, or
25 whenever you want to -- if you are going to do this in two

1 years, you can just say as of that year, and that takes
2 care of your grandfathering concern, however long it takes
3 to get everybody examined.

4 MR. THOMPSON: That's right, we could do it that
5 way. I guess our --

6 COMMISSIONER CARR: I just hate to see two
7 rulemakings when we could do it in one step. It is hard
8 enough to get one rule passed.

9 MR. THOMPSON: Well, we see the first
10 rulemaking, quite frankly, as a fairly short, easy
11 rulemaking to do, probably taking six months, since we are
12 not establishing a new requirement. The cost-benefit
13 detailed regulatory analysis is not as substantial, and we
14 would anticipate going through the whole process of a very
15 short public notice, and being able to get that done very
16 promptly, once the program is submitted to us for review.

17 So we don't anticipate -- I know our experience
18 in some rulemakings, it would -- may be, you know, five
19 years before you get the other rule out. So, we would see
20 that being done very promptly, and have in place a
21 Commission approved regulation today that would do that.

22 That is not to say if the Commission wants to
23 take the other approach, we could certainly take the other
24 approach. But that may be something that we would be more
25 than happy to discuss with the Commission in more detail.

1 MR. SJOBLOM: ASNT, in fact, in polling all the
2 members, has detected that there isn't total support for
3 this in the industry. And there would be --

4 CHAIRMAN ZECH: There is or there is not?

5 MR. SJOBLOM: There is not total support.

6 COMMISSIONER CARR: We haven't put out a rule
7 yet with total support.

8 (Laughter)

9 MR. SJOBLOM: We would anticipate a certain
10 degree of opposition, once we make a proposed --

11 CHAIRMAN ZECH: We are not running a personality
12 contest, we are involved with public health and safety.
13 And so we are trying to make the right decision. Not
14 everybody agrees with most of the decisions we make, but
15 we are trying to make the right one, and that's what is
16 important.

17 MR. SJOBLOM: What I would want to do is not
18 have a problem developing the cost-benefit information,
19 and thereby delaying our endorsement of this effort. And
20 we think that by doing it in the two-step process, we can
21 endorse it in the first instance and get it on the road--

22 CHAIRMAN ZECH: All right, we understand.

23 COMMISSIONER CARR: Some rules we don't have to
24 have a cost-benefit.

25 MR. PARLER: The backfit rule doesn't apply

1 here, but I am told by one of my colleagues sitting back
2 there that it is not a backfit problem, it's a -- the
3 problem is created by the fact that small businesses are
4 involved.

5 COMMISSIONER CARR: The people who get over 5
6 rem total exposure, over 50 percent of them get it this
7 way, though. That's a public health and safety problem.

8 CHAIRMAN ZECH: Mr. Bernero, do you have a
9 comment?

10 MR. BERNERO: Keep in mind the fundamental
11 difference between the two. The recognition rulemaking,
12 the short, quick rulemaking that can come at the beginning
13 recognizing this as fulfilling regulatory responsibilities
14 is a quick NRC rule. And then the mandatory part of the
15 rule does involve all the Agreement States, as well.

16 So it has a broader scope, and it is necessarily
17 a tougher rulemaking to do. So, that is why the staff has
18 this two-step approach, recognize it immediately and then
19 --

20 CHAIRMAN ZECH: Well, as Commissioner Carr said,
21 could you do it in one step?

22 MR. BERNERO: It would take notably longer.

23 CHAIRMAN ZECH: It would take notably longer,
24 longer to do it in one step than to do it in two steps?

25 MR. THOMPSON: To get a final rule in place, we

1 could get a final rule in place endorsing the program in
2 about six months. If we had to go to the full rulemaking,
3 we would anticipate it would take a minimum of two years.

4 CHAIRMAN ZECH: Well, you are going to
5 eventually go to full rulemaking, are you not?

6 COMMISSIONER CARR: The final rule is still
7 going to take the same length of time, if not longer.

8 MR. THOMPSON: The final final rule would
9 probably take the same length of time.

10 CHAIRMAN ZECH: It would be shorter to do it in
11 one step then, right?

12 MR. THOMPSON: If the information for us to
13 develop the supporting justification for the rule is
14 available.

15 CHAIRMAN ZECH: All right. All right, let's
16 proceed.

17 MR. THOMPSON: Well, I think that kind of
18 concludes where we were with respect to our proposed
19 future actions. We anticipate that the other parties here
20 today will give you a very quick briefing as to where they
21 are with respect to the support of this program. And we,
22 again, will be prepared to respond to any particular
23 questions you may have at the end of the briefing, unless
24 you have some now.

1 COMMISSIONER ROGERS: I just have one question
2 that relates to how much we know about overexposures. Is
3 there any either requirement or at least request from NRC
4 that we be informed of any evidence of radiation exposures
5 by hospitals?

6 MR. SJOBLUM: By hospitals?

7 COMMISSIONER CARR: The same way if the guy
8 turned in to the hospital, like a bullet wound?

9 COMMISSIONER ROGERS: That's right. I mean,
10 there is a gunshot wound requirement of reporting. Is
11 there any -- have we made any requests, or thought of
12 making requests to try to get a handle on this?

13 MR. SJOBLUM: No, but my sense of it is if
14 someone is exposed to that degree and our licensees know
15 about it, they would immediately tell us about it.

16 MR. THOMPSON: Yes, we typically get that
17 information either through the emergency -- the states in
18 their emergency response. If somebody comes in
19 overexposed, we usually hear about it. But I can't say
20 that we get them all because of a reporting requirement.

21 COMMISSIONER ROGERS: I just question whether
22 this might be possibly another way of improving our
23 confidence in --

24 COMMISSIONER CARR: I would say if he got
25 seriously enough exposed he had to go to the hospital, we

1 would know about it. But those guys who only get 5 or
2 10R, we probably wouldn't know about it.

3 MR. THOMPSON: We hear about people who think
4 they saw something radioactive and go to the hospital and,
5 you know, as far as we know there was really no exposure
6 at all.

7 MR. SJOBLUM: We had one call in, just recently,
8 where someone had taken urano acetate, the report is, in
9 trying to hurt himself, trying to commit suicide, perhaps.
10 And we heard about that one right away.

11 CHAIRMAN ZECH: All right, any questions from my
12 colleagues, before we ask the staff to conclude?

13 MR. THOMPSON: I might ask Glen to introduce the
14 next group.

15 (Whereupon, the staff left the table and the
16 representatives of ASNT came to the table.)

17 MR. SJOBLUM: The next set of speakers are--
18 let me move down here, so they can join us -- Mr. Ross
19 Beckely, who is the Chairman of the Board of ASNT; Mr.
20 Duke Dewey, who is the Executive Director of the American
21 Society of Nondestructive Testing, and Mr. Bob Doggart,
22 who is the Chairman of the Task Group that developed the
23 ASNT program.

24 CHAIRMAN ZECH: Welcome, gentlemen.

25 You may proceed.

1 MR. BECKELY: Good afternoon, Mr. Chairman,
2 gentlemen.

3 Our purpose here today is to provide you with a
4 overview of the program provided by the American Society
5 for Nondestructive Testing. We will provide you with a
6 kind of a historical review, some information on the
7 implementation costs, and finally, the summary of the
8 proposal.

9 From an historical perspective, the cause of
10 concern over radiation safety using industrial
11 radiography, is based on number of exposures as a function
12 of percent of licenses; ASNT response to regulatory
13 concerns and potential advance Notice of Proposed
14 Rulemaking; ASNT's experience in certifying NDT
15 professionals; the approval by the ASNT Board of Directors
16 of the program that you have in front of you, in
17 Charlotte, North Carolina, on March 24th of this year; and
18 some information of course on the implementation issues.

19 As an overview of the proposed program, you will
20 see that the proposed program is entitled ASNT
21 Certification Program for Industrial Radiographer
22 Radiation Safety Personnel, consisting of three parts:
23 the Certification Requirements; the Rules of Conduct and
24 the Program Complaint and Hearing Procedures.

25

1 Certification for industrial radiographers would
2 be offered in either or both Isotope Radiation Safety
3 Practices or X-Radiation Safety Practices. Basically, the
4 certification is evidence that an individual satisfies the
5 training and experience requirements, has successfully
6 completed a State of Texas written examination and
7 recognized practical examination and, of course, has
8 agreed to the Rules of Conduct as provided by the Society.

9 As part of the prerequisite qualification
10 requirements to obtain the examination, of course, would
11 be the submittal of application that would be verified and
12 the fee specified by the Society, and meet the following
13 training and experience requirements provided for both X
14 and gamma radiation, which is 40 hours of classroom
15 training provided by a recognized institution, and 520
16 hours of actual experience in each category sought.

17 The examinations provided would be by either the
18 Society ASNT, or the CRCPD proctored State of Texas
19 written exam. Practical examinations administered by a
20 recognized institution at locations and times approved by
21 ASNT or the CRCPD.

22 Certification would then be provided on the
23 basis of both the written and practical examinations being
24 completed and passed within six months of each other,
25 except as granted in this case by the Executive Director.

1 Candidates who fail, of course, would be allowed
2 to resubmit new applications, and candidates who satisfy
3 the requirements would be notified in writing.

4 The fees would be established and approved by
5 the ASNT Executive Committee. The State of Texas/CRCPD
6 fees, in addition to the ASNT fee.

7 Agreement to the ability to take the
8 examination, of course, would also be predicated on the
9 agreement by the candidate, to the Rules of Conduct
10 provided by ASNT and ASNT's right to revoke and/or suspend
11 their privileges; attest that the applications are true
12 and correct, and of course, the hold harmless clause.

13 Certifications would be good for five years.
14 Applications for renewal would meet the original
15 application requirements, renewal of applications would be
16 provided the personnel are active for 24 of the last 36
17 months in radiography, and the category of certification;
18 or active for six of the last 12 months; eight hours of
19 documented training per year by an ASNT recognized
20 institution. Renewals will also be available by
21 examination, plus the eight hours of training per year by
22 an ASNT recognized institution.

23 The program addresses the revocation, suspension
24 and expirations. Certifications would be no longer valid
25 when, naturally, the certification has been expired;

1 certification is suspended by ASNT, or revoked by ASNT or,
2 of course, if the individual by his own request requests
3 to get out to the business.

4 Rules of Conduct, describes Rules of Conduct for
5 not only the candidates, but the personnel who would
6 eventually take the examination and, hopefully,
7 successfully complete it.

8 Rules of Conduct: Maintain the high standard of
9 skills and knowledge; assume the responsibility that is
10 expected; inform proper authorities of deficiencies;
11 minimize the exposures to the ALARA concept; wear and
12 maintain their personnel dosimetry; properly document
13 activities. And some of the others that we would like to
14 hone in on are avoiding conflicts of interest and refusing
15 to accept gratuities or bribes.

16 Also, never to misrepresent the qualifications;
17 stay away from associations with fraudulent or dishonest
18 ventures; refuse to falsify documents, and not operate
19 equipment under the influence of mood altering substances.

20 Sanctions would be provided for violations of
21 the foregoing and would result in sanctions which could be
22 suspension and/or revocation.

23 Part III, the Complaint and Hearing Procedure:
24 We, the Society, believes that it provides for fair notice
25 and hearing; would provide published reports, and made

1 available to the public; annual reports of revocations,
2 and committee responses to the status of the industrial
3 radiographer's safety work.

4 Complaints and investigations could be provided
5 by any person, may submit a complaint. That being the
6 case, the ASNT Executive Director would prepare formal
7 complaints; the Ethics Committee would disposition, and
8 the Ethics Subcommittee would close the file for lack of
9 evidence, or prepare for a formal complaint.

10 The Executive Director would provide the date
11 for the hearings. The respondents would have the
12 opportunity to provide their response within 45-days. And
13 we would allow the Executive Director to modify any of
14 those dates for good cause.

15 Prehearing procedure, prehearing conference with
16 interested parties would be followed by a written report.
17 A prehearing conference may result in proposed ruling and
18 Ethics Subcommittee information; adjudication without
19 formal hearing must be agreed to by both parties.

20 Provides for the panel makeup of three
21 individuals, including the presiding officer appointed by
22 the chairman of the committee; hearings are private,
23 except for unanimous agreement to the contrary. The
24 Society Board of Directors may participate in the
25 hearings. The Ethics Committee members when complainant,

1 shall not be on the panel; respondent may defend self and,
2 basically, then the panel should assure that the following
3 would take place:

4 Full development of the issues; disallow, when
5 appropriate, evidence; protecting the rights of the
6 witnesses; allowing evidence in written form, and all
7 objections to the evidence, of course, would be recorded.

8 The presiding officer would then assist in the
9 appearance of witnesses, enjoin witnesses to tell the
10 truth and control subpoenas and testimony under oath.
11 Witnesses would be subject to cross-examination; hearings
12 would be conducted within a year, or dismissed; and
13 presiding officer would advise respondent of the
14 communications.

15 In order to save the Chairman and the
16 Commissioners time, you have on page 17, the rulings as
17 the panel would adopt them. You will note that the
18 Society has adopted severity levels, Severity Level III
19 being the least significant, II being the level for
20 persons or property are deemed at risk, that would be an
21 automatic suspension for 30 to 180 days. With a Severity
22 Level I, being the most significant, deemed to cause or
23 threaten serious injury, or property damage, which would
24 result in revocation of an individual's license to
25 practice for at least one year.

1 There is an appeals process, and the respondent
2 has the ability to provide his appeal within 60 days.

3 Sanctions against non-certified individuals
4 claiming ASNT national certification, such complaints
5 would be forwarded to the Executive Director of the
6 Society for disposition. The Executive Director would
7 then through our legal, direct the offender to cease, or
8 be subject to court action. And if the offender is an
9 ASNT member, formal complaint and request for forfeiture
10 of his membership would be requested.

11 Implementation Costs. Basically, the
12 implementation costs for this brief is based on about
13 12,000 radiographers from the Level II perspective. We're
14 looking at, currently, having a fee of \$100 per person.
15 There is -- it is recognized that there's other related
16 costs to the industry. For example, wherever these
17 examinations may be given, of course, the cost is borne by
18 industry to get to that particular location -- air fare,
19 hotel, room, board, et cetera.

20 It's been considered that we'll utilize the
21 State of Texas examination that has currently been
22 developed, and that a fee to the State of Texas would be
23 paid, approximately \$30, and you'll note that the \$30 fee
24 is included in the original \$100 fee.

25 COMMISSIONER CARR: Does those costs take into

1 effect the cost of training and the additional eight hours
2 a year -- the initial training of those --

3 MR. BECKELY: No, sir, that's a separate item.

4 COMMISSIONER CARR: Who pays for that, normally?

5 MR. BECKELY: The company.

6 COMMISSIONER CARR: The company does.

7 MR. BECKELY: And/or if the individual is his
8 own license, then he is the person --

9 COMMISSIONER CARR: But that's a current cost,
10 except for the eight hours, I assume?

11 MR. BECKELY: Yes, sir.

12 The CRCPD administrative costs were deemed to be
13 \$10 per applicant, with the total impact on the industry
14 at this point in time predicated to be \$6.02 million.

15 In conclusion -- would you pass these around to
16 the Commissioners -- in conclusion, upon ASNT Board of
17 Directors' approval of the finances, ASNT will institute a
18 national certification program for industrial
19 radiographers, utilizing the State of Texas examination
20 that would be proctored by ASNT or the CRCPD, for those
21 states that are interested.

22 Where states proctor examinations, the CRCPD
23 would broker the tests without ASNT involvement. The
24 remainder of the states will be served by ASNT dealing
25 directly with the State of Texas. Examinations to be

1 offered through cooperation between interested public and
2 private organizations.

3 ASNT agrees to certify individuals examined by
4 states upon receipt and approval of an application and fee
5 from each individual, including those previously examined
6 by the State of Texas.

7 ASNT would be the national certification
8 organization, with states recognizing the certification.
9 ASNTs 13 years of experience in certifying personnel will
10 assist in assuring uniform qualifications of the
11 industrial radiographers.

12 The above proposal is contingent on the concept
13 that the regulatory community will assure the viability
14 and effectiveness of ASNTs program, by developing rules
15 such that ASNT certification would be required in all
16 states.

17 As an aside, the Society believes that what has
18 been presented to you gentlemen this afternoon is
19 consistent with the staff regulatory position regarding
20 the subject matter. Thank you.

21 CHAIRMAN ZECH: Thank you very much, appreciate
22 it. Questions from my fellow Commissioners? Commissioner
23 Roberts?

24 COMMISSIONER ROBERTS: A quick, obvious one, and
25 I know the people in Texas will be here very shortly, but

1 is the Texas test applicable to all the other 49 states?
2 Would it be just as proper for Alaska as Illinois, or
3 Maine?

4 MR. BECKELY: From its technical content, sir,
5 yes.

6 COMMISSIONER ROBERTS: Okay.

7 CHAIRMAN ZECH: Commissioner Carr?

8 COMMISSIONER CARR: Yes. That last paragraph
9 you've got there says that you're assuming we're going to
10 require everybody to do this, to make your program viable.
11 How do you stand on our one rule, two rule proposal there?
12 Wouldn't it solve your problem if we go in one step, a lot
13 easier than if we go in a half-step --

14 MR. BECKELY: I, personally -- and these
15 gentlemen can comment also, if you'd care to -- I don't
16 have any problem with the Commission adopting a rule that
17 would provide the substance to have these people start
18 volunteering to do it on their own, followed by a rule
19 that makes it mandatory.

20 COMMISSIONER CARR: Would that give you enough
21 assurance if we just said that meets our requirements for
22 qualification right now, and then somewhere down the pike,
23 when we get to that second rule, it will require it?

24 MR. BECKELY: Well, we also recognize that if it
25 took too long to have that second rule come in, these

1 things become old hat, and people no longer want to
2 volunteer, and you lose your substance then.

3 COMMISSIONER CARR: Okay.

4 CHAIRMAN ZECH: All right. Commissioner Rogers?

5 COMMISSIONER ROGERS: Well, just, really, the--
6 it is a Texas test. It's just the proctoring would be--
7 could be done by ASNT or CRCPD, is that it? -- the same
8 test, but it's just a question of who would proctor it?

9 MR. BECKELY: Yes.

10 COMMISSIONER ROGERS: No difference in the test.

11 MR. BECKELY: No.

12 COMMISSIONER ROGERS: Just a question on the
13 term of "mood altering" substances. Is that now the
14 accepted term for misuse of controlled substances, or
15 alcohol?

16 MR. BECKELY: Alcohol, drugs.

17 COMMISSIONER ROGERS: Well, what's the status of
18 that characterization? Is that the term of art here now
19 that's being accepted, or isn't it? To me, it was a
20 little bit different from what we've seen in some of the
21 things that we've looked at.

22 MR. PARLER: I don't recall the term being used
23 in our fitness for duty -- in the Commission's Fitness for
24 Duty Rules. So, it was new from that standpoint. I don't
25 think it's new, it's just that --

1 COMMISSIONER CARR: I like it.

2 COMMISSIONER ROGERS: Well, is it -- I guess I'm
3 not so concerned about whether it's new or not because
4 that may just simply be whether I'm familiar with it or
5 not, but whether it has an accepted meaning or not. Is
6 there a certain vagueness to this that creeps in here?

7 MR. BECKELY: It was not our intent to make
8 anything vague. We certainly would have no problem
9 adopting the term that the Commission --

10 COMMISSIONER ROGERS: Well, no, I know it may
11 not be your intent, but how well established is the
12 meaning of what a "mood altering" substance, in fact, is?
13 I mean, have we got a list of them, or how does one know
14 what that is? I mean, we know, maybe.

15 COMMISSIONER CARR: My personal opinion, it's
16 more inclusive than drugs and alcohol. It would take in
17 glue-sniffing, for instance.

18 (Laughter.)

19 CHAIRMAN ZECH: Mr. Doggart, do you want to
20 comment?

21 MR. DOGGART: Yes, sir. We included that
22 definition -- it's a new definition. We left it up to the
23 Ethics Subcommittee to decide what mood altering
24 substances were, based on the due process rules that we've
25 included in the program.

1 Historically, some radiography personnel have
2 been under the influence of alcohol and other drugs, and
3 we feel like that has been part of the reason why some of
4 the accidents have happened.

5 So, it's not clearly defined. We don't have a
6 list. I think when we are forced to deal with the issue,
7 we will develop that list and decide upon it at that
8 point.

9 We do have a field process where, if an
10 individual objects to a decision by the Ethics
11 Subcommittee, the Board of Directors ultimately makes the
12 decision, and that decision is final at that point.

13 CHAIRMAN ZECH: All right. Thank you.

14 COMMISSIONER ROGERS: So, you're going to face
15 it when you have to face it, I guess.

16 MR. DOGGART: Yes.

17 CHAIRMAN ZECH: Anything else?

18 COMMISSIONER ROGERS: No, I guess I have no
19 other questions.

20 COMMISSIONER CARR: Can I have one more
21 question?

22 CHAIRMAN ZECH: Yes, please, go ahead.

23 COMMISSIONER CARR: I was a little bit concerned
24 about automatic renewal. Do you ever plan to retest?

25 MR. BECKELY: Yes.

1 COMMISSIONER CARR: A guy has been an active,
2 practicing guy, he just comes in and applies and says--
3 shows he's got his eight hours of training and --

4 MR. DOGGART: In the certification section, sir,
5 we have some requirements on continued participation in
6 the industry. If an individual meets those requirements,
7 I believe it is 24 of the last 36 months before
8 recertification is viewed --

9 COMMISSIONER CARR: I saw that.

10 MR. DOGGART: -- six of the last 12 -- we feel
11 like he's involved where he doesn't need to go through the
12 examination process again.

13 COMMISSIONER CARR: And you count on the eight
14 hours a year continuing training to keep him up-to-date in
15 case things change then, huh?

16 MR. DOGGART: That's correct.

17 MR. BECKELY: It's not a situation that one
18 should look at and say that it's an automatic renewal,
19 based on just a couple of things happening. One would
20 look also at the industry that these people represent, and
21 look at their applications in detail, et cetera, and
22 obtain additional pieces of information that would lead an
23 individual to the proper conclusion, that the activity has
24 been there, and safe practice --

25 COMMISSIONER CARR: Oh, yes, but I'm just saying

1 as long as the guy's an honest worker, he's been working
2 for the last three years in the business and continuously,
3 then he would expect his application to be renewed when he
4 paid his \$100.

5 MR. DOGGART: Upon verification that the
6 application is correct.

7 COMMISSIONER CARR: Yes.

8 MR. DOGGART: We verify the experience and go
9 through references, the procedure that we've used for 13
10 years in other areas.

11 CHAIRMAN ZECH: Commissioner Roberts?

12 COMMISSIONER ROBERTS: My question is for Bill
13 Parler. Did the agency have any difficulty in
14 establishing within our regulations, one entity to perform
15 this service?

16 MR. PARLER: You mean that would be applicable
17 everywhere?

18 COMMISSIONER ROBERTS: Well, how do we know
19 there's not another -- maybe I'm being too hypothetical--
20 somebody other than the ASNT who is dying to do this?

21 COMMISSIONER CARR: Competing operation.

22 MR. PARLER: Oh, well, that's a kind of a
23 problem such as Mr. Thompson alluded to at the beginning,
24 and the Commission went through that in another context
25 some years ago, so that would be something that would have

1 to be looked at.

2 Normally, if we are dealing with somebody, if
3 there are others that are interested in doing it and we
4 are responsible for the program, you go out and, in
5 effect, solicit entries of proposals, and then make your
6 selection on the basis of applicable criteria. I don't
7 know whether there is other interest or not. I thought
8 the question you were asking me is, once we put the
9 program in effect, could we make it a uniform requirement
10 for everyone, including Agreement States, which is a
11 separate question.

12 COMMISSIONER CARR: But is this any different
13 than buying an ASME standard and buying an ASNT standard?

14 COMMISSIONER ROBERTS: I don't know, I just
15 asked the question.

16 MR. PARLER: What's that?

17 MR. BECKELY: Yes, there is some difference.

18 MR. PARLER: I would say we're talking about an
19 approach by an organization to perform a service for an
20 industry, which is important.

21 COMMISSIONER CARR: Well, I was thinking that
22 they are really providing a standard for the industry.

23 MR. PARLER: Coming up with a program which
24 would satisfy a requirement for training which we now have
25 in the regulations. The question was put to me, whether

1 there was any other organization interested in doing that,
2 and the answer to that is, I do not know. Maybe Mr.
3 Thompson and his colleagues know. I do not know.

4 COMMISSIONER ROBERTS: I want to pursue this.

5 MR. PARLER: And if we don't know, how do we
6 proceed?

7 COMMISSIONER ROBERTS: Thank you.

8 CHAIRMAN ZECH: All right. Anything else?

9 COMMISSIONER ROGERS: Yes. Well, maybe this is
10 the point, but that our staff noted in the March
11 Commission paper, that the ASNT Board of Directors delayed
12 its decision on the certification of the program earlier,
13 due to certain legal concerns raised by your attorneys.
14 Could you share with us what they were, or are they not
15 relevant to what we're looking at now?

16 MR. BECKELY: Mr. Dewey?

17 MR. DEWEY: I don't believe they're relevant.
18 It was a matter of education of our legal department, on
19 how certification programs work, and once we understood
20 how these things work, we felt that in addition to our
21 excellent history with our current program, that we would
22 have minor problems -- minor legal problems with the
23 program.

24 COMMISSIONER ROGERS: All right.

25 CHAIRMAN ZECH: Any other questions?

1 (No response.)

2 All right. Thank you very much, gentlemen, we
3 appreciate it very much.

4 (Whereupon, the representatives of ASNT left the
5 table and representatives of the Texas Bureau of Radiation
6 Control and Conference of Radiation Control Program
7 Directors were seated at the table.)

8 MR. KAMMERER: Chairman Zech, Commissioners
9 Roberts, Carr and Rogers, we're pleased to be here this
10 afternoon. My role is twofold: one, to congratulate Vandy
11 Miller on a superb job on this issue, both on its
12 continued success and, more importantly, since he's become
13 Assistant Director for Agreement States in our office, and
14 to introduce the speakers at the table here.

15 On the left is Lacker, and he'll give what the
16 Texas experience has been on the test and, on right here,
17 Chuck Tedford, whom you know, Mr. Chairman, as the Chief
18 of the Radiation Control Program in Arizona, and also the
19 Chairman of the CRCPD, and he has with him two other
20 individuals who may wish to add answers to questions,
21 Chuck Hardin, the Executive Secretary, and Ronny Wascomb,
22 from Louisiana.

23 CHAIRMAN ZECH: Thank you very much. Who wants
24 to begin?

25 MR. KAMMERER: Mr. Lacker.

1 CHAIRMAN ZECH: Mr. Lacker, welcome. You may
2 proceed.

3 MR. LACKER: It's a pleasure to be here, Mr.
4 Chairman and Commissioners. I'll give you a brief
5 overview of our experience with our testing program.

6 In January of 1987, our Bureau of Radiation
7 Control became the first entity to implement a cohesive
8 testing program for industrial radiographers as a means of
9 improving and verifying knowledge and awareness of
10 radiation safety.

11 This testing program requirement was one of many
12 major changes made to our Texas industrial radiography
13 rules which became effective in October of 1986. The
14 requirements concerning the testing program and
15 radiographer qualifications were adopted in direct
16 response to the radiation safety record of the industrial
17 radiography industry.

18 Investigations by Texas, the Nuclear Regulatory
19 Commission and other Agreement State inspectors have
20 indicated that inadequate training of radiographers may be
21 the significant contributing cause to the reported
22 overexposure incidents, and these are high, as you know.

23 The new Texas rules address this problem in
24 several ways. Now, a radiographer trainee must have
25 completed an agency-approved training course before

1 handling any sources of radiation. Possession of an ID
2 card alone does not mean that an individual is a qualified
3 radiographer.

4 To be recognized as a radiographer by the State
5 of Texas, an individual must complete all the training
6 required, submit the appropriate documentation and pass
7 our exam. The purpose of the Texas industrial radiography
8 safety exam is to assure that each and every individual
9 authorized to work at an industrial radiography site has
10 the basic information and knowledge to work safely.

11 To date, over 2,200 exams have been administered
12 to more than 1800 individuals. These numbers include
13 individuals from 17 states in addition to Texas. All of
14 the agency-administered exams are developed from a bank of
15 validated, safety-related items. The items were created
16 by the Bureau staff members and collected from training
17 courses utilized in industrial radiography, from other
18 regulatory agencies, and from various training materials
19 utilized in radiation safety courses.

20 This is an ongoing process as the agency
21 continues to expand and improve the item bank. Exam items
22 relate only to radiation safety and, thus, all the items
23 in the bank are categorized according to those subjects of
24 instruction outlined in our Texas Regulations for Control
25 of Radiation, the suggested State Regulations for Control

1 of Radiation Part E, and the 10 CFR 34, Appendix A. A
2 portion of the item bank was developed with monetary aid
3 from the NRC, which we appreciate.

4 Now, the current status of our testing program,
5 for each session, three different exams are created, or
6 can be created. One contains safety items related only to
7 the use of radioactive materials, one deals only with
8 safety items related to x-ray machines and the third has
9 items concerning both x-ray and radioactive materials.

10 Each exam consists of 125 four-choice multiple-
11 choice items. Twenty-five items on each exam are
12 provisional. The provisional items are those that have
13 not been validated. They are randomly distributed
14 throughout the exam, and the radiographers are not aware
15 of which ones they are. These provisional items are not
16 graded but are analyzed using psychometric procedures, so
17 in this manner new items may be continually validated and
18 the item bank expanded. Thus, each radiographer's score
19 is based upon 100 active or previously validated items.

20 Exams are now administered in Austin once a
21 month and an average of 50 people attend each session.
22 The overall average failure rate is 18 percent. The
23 overall average score for the radioactive materials exam
24 is 75. The average score for the x-ray machines exam and
25 the exam for both testing devices are 79 and 82,

1 respectively.

2 Changes we've seen due to the testing program.
3 We began testing -- began issuing notices of violations
4 for non-compliance concerning the safety exam in March of
5 1988. There has not been sufficient time elapsed since
6 then to determine any valid correlations between trends in
7 inspection reports and the testing program. However,
8 there have been several situations in which an agency
9 inspector terminated operations at a job site because the
10 individuals did not have ID cards in their possession.

11 Agency inspectors have reported observing
12 individuals studying resource materials on the job site.
13 This is very encouraging in terms of increased knowledge
14 and awareness of radiation safety. The Bureau of
15 Radiation Control has suspended one individual's ID card
16 and is currently considering suspension of two more. In
17 each case, our inspectors have documented a willful intent
18 to violate rules.

19 Similarly, there has not been enough time
20 elapsed since January 1st, '88, which was the date by
21 which all radiographers must have been tested, to
22 determine what impact the testing program has had on
23 overexposure incidents. However -- I've given you two
24 figures -- and Figure 1 shows the number of exposures
25 greater than 3 rem per quarter reported to the agency from

1 1979 to 1987, and Figure 2 shows the reported exposures
2 greater than 25 rem per quarter. The figures include
3 1986, the year in which the training and testing
4 requirements became effective.

5 In both figures, the shaded areas represent
6 exposures to "assistant" radiographers. I now have '88
7 figures and for greater than 3 rem, there were ten total
8 reported overexposures greater than 3 rem per quarter, and
9 zero greater than 25 rem in 1988 and 1987.

10 The agency feels that the downward trend in
11 overexposures is due to two things. With the decline in
12 oil prices, the Texas economy and, therefore, available
13 jobs in the radiography industry also declined. In
14 addition, when the new rules were adopted, individuals
15 began preparing for the state exam. People were being
16 trained and retrained, creating an increased awareness of
17 job safety.

18 The agency also believes that the decrease in
19 the number of exposures to what were then assistant
20 radiographers is directly related to the new rules. We
21 don't have assistant radiographers as a class anymore, we
22 have radiographer trainees. These were previously those
23 as in the regulatory business as helpers or assistants,
24 and these must now pass an agency-approved safety training
25 course before handling sources of radiation.

1 COMMISSIONER ROGERS: Before you leave those
2 graphs, do you have any comments on '83 being so low?

3 MR. LACKER: No, sir, it's sort of an anomaly.
4 The reason I couldn't really -- we don't have a valid data
5 -- a reason for that, but I think it is significant that
6 starting with 1984 there's a continual downward trend, and
7 that was when the industry in Texas first became aware
8 that we were going to have this rule that would require
9 certification, and the trainers, those people providing
10 training in the Appendix A radiation safety thing, started
11 upgrading their training programs, and not really making
12 the answers to their exams available prior to the test.
13 That's our personal opinion, but there has been a steady
14 decline. As I said, we're not really positive how much
15 impact the economy decline due to the oil crisis impacted
16 that but, certainly, in 1988, the economy was beginning to
17 stabilize and, yet, we had no over 25 rem exposures and
18 only a very few -- ten -- greater than 3 rems in a
19 quarter.

20 As I mentioned earlier, the possession of an ID
21 card alone does not mean an individual is a qualified
22 radiographer in Texas or that he or she will not be
23 overexposed. The new Texas rules are meant to correct a
24 lack of knowledge and training, and provide a means of
25 determining compliance with the training requirements.

1 The future of our testing program. We're
2 planning to continue to test industrial radiographers
3 working in Texas. Many other Agreement States have
4 expressed an interest in adopting similar rules, including
5 a testing program. The agency is currently negotiating
6 with the Conference of Radiation Control Program
7 Directors, to provide exam development and administrative
8 services to radiation control regulatory agencies.

9 Those regulatory agencies would, in turn,
10 administer the exams to those radiographers they regulate.
11 With this type of program, all exams would be developed
12 using the same validated item bank. Not only would this
13 provide a nationwide consistency in testing, but
14 reciprocal recognition of radiographers across state lines
15 would be made simpler.

16 We have also received a proposal from the ASNT
17 concerning their administration of an industrial
18 radiography safety exam. The proposal calls for us to be
19 the sole provider to ASNT of exams and grading services.
20 There would also be reciprocal recognition by ASNT of the
21 Texas test and vice versa. We are prepared to proceed
22 toward formalizing the proposal in contract when the
23 Commission approves a National Certification program.

24 The interest in our testing program shown by the
25 Commission and other Agreement state regulatory agencies

1 and the industry itself certainly indicates a nationwide
2 concern over the safety history of industrial radiographic
3 operations and a commitment to improving that record.
4 Thank you.

5 CHAIRMAN ZECH: Thank you very much. Anything
6 else, gentlemen?

7 MR. KAMMERER: We'd be happy to entertain
8 questions of them, or go right to Mr. Tedford.

9 CHAIRMAN ZECH: All right. Fine. Let's go
10 ahead with Mr. Tedford.

11 MR. TEDFORD: First, Chairman Zech, I'd like to
12 thank you, Commissioner Carr, Commissioner Roberts,
13 Commissioner Rogers, for the invitation to attend and
14 brief the Commission today, and it's a pleasure for me to
15 address the role of the Conference of Radiation Control
16 Program Directors, for which the acronym is CRCPD and to
17 which I will refer from now on as the Conference in my
18 short presentation, and to address the role on testing of
19 industrial radiographers of the Conference.

20 The Conference is comprised of the Directors of
21 the Radiation Control Programs of the 50 states, the
22 District of Columbia, New York City, and Puerto Rico. The
23 Conference considers the issue of national certification
24 of radiographers to be of great importance. In large
25 measure, the health and safety of our citizens depend upon

1 the successful resolution of this matter of mutual
2 concern.

3 History has shown that a high percentage of
4 radiation incidents and accidents have occurred in the
5 field of industrial radiography. Many of these incidents
6 and accidents were caused by the lack of proper training
7 by those who actually perform the radiographic procedures.

8 The thrust of this program is to recognize and
9 certify individuals who have demonstrated an understanding
10 of radiation protection principles and practices in the
11 use of radioactive sources. The states and, in
12 particular, those states which have an agreement with the
13 NRC and the NRC have recognized the need for a national
14 program since 1975. Accordingly, the Conference applauds
15 the NRC for the effort to develop a national industrial
16 radiographer certification program.

17 Just a word to the side here, on something that
18 doesn't principally concern this Committee -- that is,
19 it's not in the field of radioactive materials, but it's a
20 vitally important topic and it's been addressed earlier,
21 and that is that machines produce radiation -- that is, x-
22 irradiation is also used for industrial radiography.

23 The Conference is as concerned for proper safety
24 from machine-produced radiation as for radiation produced
25 from radioactive materials, and any national program is

1 encouraged to place equal importance on both types of
2 radiation sources. The certification program should
3 encompass and qualify the individual for machine and
4 radioactive material sources, both.

5 It should be noted that the Texas Radiographer
6 Testing Program has established a positive precedent for
7 this area of concern. They have developed exams for the
8 x-ray and for the radioactive material part of the
9 program.

10 Gentlemen, the Conference is in a unique
11 position relative to this issue, since the Conference
12 represents all states, both Agreement States which
13 currently now number 29, and non-Agreement States.
14 Additionally, the Conference is not restricted to
15 particular radioactive materials covered by the Atomic
16 Energy Act, but can address all radioactive materials,
17 including Naturally Occurring and Accelerator Produced
18 Radioactive Materials, NARM, which you are quite aware of
19 our concern in this area as well, and machine-produced
20 radiation sources.

21 And because of this unique position, the State
22 of Texas has requested the Conference to consider
23 brokering the Texas-developed Industrial Radiographer Test
24 to those states with an interest in administering the
25 test. And the executive board of the conference has

1 approved the pursuit of a brokerage role, and has
2 developed a proposed contract to be executed between the
3 Conference and the State of Texas to accomplish this
4 purpose. In fact, we have sent Mr. Hardin out as our
5 primary negotiator and arbitrator in this area, and so
6 he's sort of on the broad end, and one of the reasons he's
7 here today is because he's done most of the work in this
8 area for us.

9 I want to spend just a minute on the basic
10 concept of how we and the states envision this program
11 would occur. The basic concept of the Conference role is
12 as follows. When a state has an interest in administering
13 the Texas test, the program director of that state, who is
14 also the member of the Conference, will act on behalf of
15 the Conference in administering the test. Texas will
16 train state proctors. The state administering the exam
17 will subsequently establish a testing time and place, and
18 determine the number of individuals to be tested.

19 Then, through the Conference, the interested
20 state will receive the specified number of tests from the
21 State of Texas. The Conference member in the interested
22 state, or designated representative, will administer the
23 test, using this trained proctor. The state will collect
24 the completed tests and mail them to Texas for grading and
25 analysis. The results of the test will then be sent to

1 the national certifying body, the ASNT in this case, with
2 copies of the results provided to the state which
3 administered the test. The state member of the Conference
4 will have responsibility for the security of the tests.

5 Gentlemen, the Conference strongly believes that
6 states who desire to administer the test should be given
7 the opportunity. The use of the Conference as a broker
8 will provide for an expedient procedure in obtaining the
9 test from Texas. With the Conference as the broker, a
10 separate contractual document will not be necessary
11 between Texas and the other states, all the other states
12 desiring to use the test.

13 Again, gentlemen, please accept my sincere
14 appreciation and compliments for the concerted, stellar
15 efforts by the NRC to establish a national certification
16 program for individuals performing industrial radiography.

17 I would be remiss if I did not mention some of
18 those who have been down in the pits, and I think most
19 directly involved for the NRC, and they are Glen Sjoblom,
20 Mr. Kammerer to my left here, and Mr. Vandy Miller. Those
21 people are the ones that where the rubber has met the road
22 with the Conference, and they've done a stellar bit of
23 work, Mr. Chairman.

24 CHAIRMAN ZECH: Thank you, appreciate knowing
25 that.

1 MR. TEDFORD: The establishment of a national
2 certifying/testing program for industrial radiographers
3 has been under consideration for the last several months
4 by the NRC, the State of Texas, the American Society for
5 Nondestructive Testing, ASNT, and the Conference.

6 In summary, Mr. Chairman, the Conference will
7 cooperate in making this national certification effort an
8 effective, workable program.

9 I'll be pleased to entertain any questions that
10 you or the other Commissioners would have, and I have the
11 two individuals with me -- Mr. Wascomb is from the State
12 of Louisiana, I should add. He is also representing the
13 29 Agreement States, and he's also on one of our
14 committees that is principally involved in radiography
15 work.

16 CHAIRMAN ZECH: Thank you very much. Does that
17 conclude the presentations?

18 MR. KAMMERER: That concludes the presentations,
19 Mr. Chairman.

20 CHAIRMAN ZECH: I would ask any questions from
21 my fellow Commissioners? Commissioner Roberts?

22 COMMISSIONER ROBERTS: No.

23 CHAIRMAN ZECH: Commissioner Carr?

24 COMMISSIONER CARR: No.

25 CHAIRMAN ZECH: Commissioner Rogers?

1 COMMISSIONER ROGERS: Well, I don't know. I'm a
2 little confused here as to how this whole thing is
3 supposed to work, with the Conference and the ASNT, or
4 whether it's not supposed to work together with the two,
5 and do you see yourselves in conflict with the point of
6 view presented by the ASNT in terms of how these tests
7 would be administered?

8 MR. TEDFORD: No, sir, I do not believe we're in
9 conflict. I believe that the vote, as I understand it,
10 incurred with ASNT, is that ASNT would get those tests
11 from Texas for the states that did not desire to
12 participate, but that the states that desire to
13 participate, I've just covered the mechanism whereby that
14 could occur, so I think both are covered.

15 COMMISSIONER ROGERS: So, you'd cover the gap of
16 those states that would want to do this themselves?

17 MR. TEDFORD: Yes, sir.

18 COMMISSIONER ROGERS: In other words, you'd be
19 the broker for them.

20 MR. TEDFORD: The Conference would be the
21 broker, yes, sir.

22 COMMISSIONER ROGERS: The Conference would; I
23 see. So, basically, you have three organizations involved
24 in this -- the State of Texas, the ASNT and the
25 Conference.

1 MR. TEDFORD: Yes, sir, you might look at it in
2 that perspective, or there would be two involved the other
3 way, or two each way you would look at it.

4 COMMISSIONER ROGERS: Well, they're linked
5 together in various ways.

6 MR. TEDFORD: Yes, sir.

7 MR. LACKER: Mr. Chairman?

8 CHAIRMAN ZECH: Yes, go ahead.

9 MR. LACKER: If I might address Commissioner
10 Rogers, from Texas' perspective, we have the exam. It's
11 validated using appropriate test methods to validate test
12 questions, and our major input here would be that we're
13 prepared to deal with the Conference, ASNT, to provide
14 that test and the grading and that sort of thing, and our
15 test is a dynamic test that we're continually developing
16 new valid questions, so that it is not just a set of
17 questions. Right now, we have over 600 items in our
18 questions.

19 COMMISSIONER ROGERS: And you'd propose to
20 continue this process of 125 questions with 25 new ones
21 that are unvalidated and a way of validating those.

22 MR. LACKER: We intend to continue to validate
23 new questions, and those questions requiring calculations,
24 we would change the numbers and maybe change -- we do
25 that. This is just a --

1 COMMISSIONER ROGERS: It sounds like a good
2 technique.

3 MR. LACKER: -- just to keep the test from
4 getting stale.

5 COMMISSIONER ROGERS: Yes, of course. Well, it
6 does seem to me that, you know, the initiative shown by
7 the State of Texas here is a very commendable one, and
8 that it's a real leadership effort that you've stepped out
9 and done something in an area that needed something to be
10 done, and I think we really are very much indebted to that
11 kind of a forward look and forward initiative.

12 MR. LACKER: Thank you.

13 COMMISSIONER ROBERTS: And I want to make sure
14 you understand, I wasn't implying any deficiency in your
15 --

16 MR. LACKER: Oh, I understand. I understand.

17 COMMISSIONER ROBERTS: You are obviously the
18 leader.

19 COMMISSIONER CARR: Each state then would have
20 its own practical exam?

21 MR. LACKER: No, sir.

22 COMMISSIONER CARR: Who does -- who --

23 MR. LACKER: The ASNT would take care of the
24 practical exam requirements. All we would be doing, the
25 states, would be -- well, I can only speak for Texas -- we

1 would continue to give the test, but the practical exam
2 requirements for certification would be done by --

3 CHAIRMAN ZECH: You'd give the written test.

4 MR. LACKER: We'd give the written test.

5 COMMISSIONER CARR: By some ASNT-blessed entity
6 in the state.

7 MR. LACKER: Yes.

8 COMMISSIONER CARR: Somebody wouldn't
9 go around to the various states, but they'd
10 have some --

11 MR. LACKER: I'm not sure those details have
12 been worked out, on how they plan to --

13 MR. MILLER: I can answer that.

14 CHAIRMAN ZECH: Go ahead.

15 MR. MILLER: ASNT would put the practical test
16 on by an institution that's been recognized by them. This
17 may be the licensee -- it could be. There are many
18 licensees who have good practical tests already and, if
19 ASNT blesses those, then they would be the ones that would
20 do the practical test for ASNT.

21 CHAIRMAN ZECH: All right. Thank you.

22 How many Agreement and non-Agreement States
23 license radiography operations now?

24 MR. HARDIN: Ted, do you have your list?

25 MR. TEDFORD: The list I have here, Mr.

1 Chairman, may not directly answer that question, but we
2 have conducted a survey and, of those Agreement States,
3 the states that would give a test, 25 would give a test
4 and 20 would use the Texas test and, Mr. Hardin, how many
5 --

6 MR. HARDIN: I think the question was, how many
7 actually are licensed, and this particular number doesn't
8 address that, but those in our inquiry and our survey, we
9 found that 25 of those did have interest in administering
10 a test.

11 CHAIRMAN ZECH: Twenty-five Agreement States?

12 MR. TEDFORD: Of all states.

13 MR. HARDIN: No, sir, of all states.

14 CHAIRMAN ZECH: Total. Total number of states,
15 25 have an interest in administering this test?

16 MR. HARDIN: Yes, sir, 16 of those are Agreement
17 and nine being non-Agreement.

18 CHAIRMAN ZECH: How about the other states?

19 MR. HARDIN: They have either indicated that
20 they had no interest in doing it or, in some cases, they
21 had some qualifications that they wanted to have further
22 consideration before they made a decision.

23 CHAIRMAN ZECH: Well, by saying they have no
24 interest in it, could you speak to that a little bit?

25 MR. HARDIN: Yes. It would be the assumption

1 that for those who did not have the desire to give the
2 test, then the ASNT or --

3 CHAIRMAN ZECH: The ASNT would give it?

4 MR. HARDIN: Would give it in those particular
5 --

6 MR. TEDFORD: It's either/or.

7 CHAIRMAN ZECH: I see. I see. All right.

8 COMMISSIONER ROGERS: Could I just pursue this a
9 little bit --

10 CHAIRMAN ZECH: Please, go ahead.

11 COMMISSIONER ROGERS: -- because when we start
12 talking about tests, there really are two kinds of test.
13 There's the practical examinations and then a written
14 test, and when we're talking about this, I want to make
15 sure I understand the differences between those with
16 respect to the roles of the states, the role of the
17 Conference and ASNT.

18 Now, are you saying that you would be brokering
19 up the use of a test by a state that wanted to give a
20 written exam? And what about a practical exam in that
21 same state?

22 MR. TEDFORD: As I understand it, Commissioner
23 Rogers -- as was covered in the ASNT briefing -- ASNT
24 would give the practical examination in all states, for
25 all states. ASNT would do the background investigation

1 for all states. Those states that desire to broker the
2 exam through the Conference, would administer the exam,
3 and those that did not, ASNT would get this directly from
4 Texas and would administer the exam.

5 COMMISSIONER ROGERS: Okay. I think that helps
6 to clarify the picture.

7 CHAIRMAN ZECH: Could someone address the issue
8 of how do you look to the problem of a radiographer who
9 may have had a license suspended in one state. How is
10 that information transmitted to other states so that you
11 can prevent someone who is not doing a good job in one
12 state, from all of a sudden showing up in another state?

13 MR. TEDFORD: Yes, Mr. Chairman, we have a
14 reciprocity requirement across the states, generally
15 speaking. This was another thing of interest that I had
16 not heard, was the civil penalty that would be levied from
17 the ASNT because civil penalties are also applicable in
18 certain states, if you will.

19 CHAIRMAN ZECH: But you do have a system, and--

20 MR. TEDFORD: Yes, sir.

21 MR. KAMMERER: Texas will have a computer-based
22 information system.

23 MR. LACKER: Our database for this testing
24 program has all that data, and we can --

25 MR. TEDFORD: It will be conveyed.

1 MR. LACKER: -- we can send it to the
2 appropriate authorities.

3 CHAIRMAN ZECH: It will be transmitted to other
4 states.

5 MR. TEDFORD: And we do have a reciprocity
6 program in even industrial radiography licensing.

7 CHAIRMAN ZECH: All right. Thank you very much.

8 MR. MILLER: Mr. Chairman, we have to keep in
9 mind, though, that there's only going to be one national
10 certification, and it's the issuing agency that is the
11 only one that can revoke that certification, so it would
12 be ASNT's record that showed that an individual has had
13 his certification revoked, and that information must be
14 made available to all regulatory bodies. And that's not
15 quite worked out yet, but that will be worked out.

16 CHAIRMAN ZECH: That's intended?

17 MR. MILLER: Yes, sir.

18 CHAIRMAN ZECH: All right. Thank you.

19 MR. TEDFORD: I think, Mr. Chairman, the bottom
20 line is that we haven't worked out all the fine
21 particulars in the case, but I think that the general
22 thrust and the intent is here of what we'd like to do and,
23 if we can sit down at the table and work out the pictures,
24 I think they will come out.

25 COMMISSIONER CARR: We'll be licensing the

1 holder, they'll be licensing the operator, as I understand
2 it.

3 CHAIRMAN ZECH: All right. Any other questions
4 from my fellow Commissioners?

5 COMMISSIONER CARR: I think it's a very
6 commendable approach on all their parts, to get something
7 moving. I wouldn't be surprised that Texas is the only
8 outfit licensing anybody right now, as far as operators.

9 MR. LACKER: Let me clarify one thing. We do
10 not certify the radiographers. We issue a photo ID to
11 each person who has passed our examination, and we have in
12 our rules the right to revoke that and all the appropriate
13 hearing procedures.

14 COMMISSIONER CARR: Is it illegal in Texas, to
15 hire somebody without one of those?

16 MR. LACKER: Now, as of January 1st of 1988, and
17 this, we think it was necessary because, in the past, we
18 could order a company to suspend a radiographer, or he was
19 suspended from doing work because he had a bad safety
20 record, but he could go down the street and get a job.

21 Now, if he loses that ID, under our rules, he
22 would be --

23 COMMISSIONER CARR: He has to go across the
24 border now.

25 MR. LACKER: -- he has to go to some other

1 state.

2 COMMISSIONER CARR: Right.

3 MR. TEDFORD: The follow-on to this, Mr.
4 Chairman, if I might, is that the states do need to get
5 laws on-line and rules to implement this national program
6 that is brought about, and that will be a down-the-road
7 state.

8 COMMISSIONER CARR: Compatibility.

9 MR. TEDFORD: Yes, sir.

10 CHAIRMAN ZECH: All right. Any other questions?
11 (No response.)

12 Does this conclude the briefing this afternoon?

13 MR. KAMMERER: Yes, sir, unless you want the
14 staff to come back.

15 CHAIRMAN ZECH: I don't know there's any need
16 for that, is there? No, I think not.

17 MR. KAMMERER: No.

18 CHAIRMAN ZECH: Well, let me just, on behalf of
19 the Commission, thank all of our presenters here today.
20 It's been a very, very informative briefing on a very
21 important subject.

22 I'd like to especially thank the representatives
23 from the American Society of Nondestructive Testing, the
24 Texas Bureau of Radiation Control, and the Conference of
25 Radiation Control Program Directors, for taking the time

1 to participate today in our meeting.

2 I'd like to thank the staff for their pursuit of
3 this important matter, all of those involved. Radiation
4 safety is an area of concern to the Commission, and one
5 that we are continually seeking ways to improve in.

6 The Commission really recognizes that we have
7 more people injured in the area of nuclear materials than
8 we do in the area of nuclear power reactors. That's facts
9 and shown by --

10 COMMISSIONER CARR: At least radiated. Maybe
11 not injured, but radiated.

12 CHAIRMAN ZECH: -- potentially injured, and
13 occasionally injured, I think, and not very often, we
14 know, but it's certainly -- the potential is there. So,
15 it is a very important area which we want to try to
16 improve in, and this is why the Commission, itself, has
17 been addressing itself in recent months, more aggressively
18 to this area.

19 In the area of radiography certification, I
20 personally believe that a certification program could
21 better assure that individual radiographers meet the
22 minimum training and experience criteria in order to have
23 an acceptable knowledge of radiation safety in order to
24 better protect themselves and the general public.

25 I would like to ask the staff to carefully

1 review the final ASNT certification program and issues
2 we've discussed here today, and provide a recommendation
3 to the Commission at the appropriate time.

4 I'd like to particularly thank the individual
5 presenters here, all of you, from all the societies, who
6 have individually and collectively contributed so much
7 to this important effort. It is, indeed, an important
8 program for our country, and the Commission is grateful
9 for your personal efforts.

10 My personal sense of the Commission is that
11 we've had enough talk in this area. I think the
12 Commission, if I read the sense of the Commission
13 correctly, we generally feel that the time is now for
14 action, and that we should do something about it. So,
15 I'd say, let's get on with it, and move forward in this
16 very important area.

17 I do think that if the staff comes forward
18 with a well thought out presented recommendation, that
19 the Commission would receive it favorably. So, we'd ask
20 you to get on with it.

21 Any other comments?

22 COMMISSIONER CARR: Hear! Hear!

23 CHAIRMAN ZECH: All right. Thank you very
24 much. We stand adjourned.

25 (Whereupon, at 3:38 p.m., the meeting was adjourned.)

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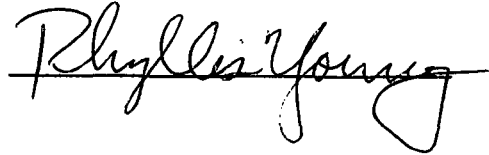
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TITLE OF MEETING: BRIEFING ON CERTIFICATION OF RADIOGRAPHERS

PLACE OF MEETING: ROCKVILLE, MARYLAND

DATE OF MEETING: APRIL 5, 1989

were transcribed by me. I further certify that said transcription
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Reporter's name: Phyllis Young

4/5/89

SCHEDULING NOTES

● LE: BRIEFING ON CERTIFICATION OF RADIOGRAPHERS

SCHEDULED: 2:00 P.M., WEDNESDAY, APRIL 5, 1989 (OPEN)

DURATION: APPROX 1-1/2 HRS

PARTICIPANTS: AMERICAN SOCIETY OF NONDESTRUCTIVE TESTING (ASNT) 20 MINS

- ROSS BECKELY
CHAIRMAN OF THE BOARD, ASNT
- BOB DOGGART, CHAIRMAN
INDUSTRIAL RADIATION SAFETY TASK GROUP, ASNT

TEXAS BUREAU OF RADIATION CONTROL 15 MINS

- DAVID LACKER, CHIEF
TEXAS BUREAU OF RADIATION CONTROL
- RUTH E. MCBURNEY

CONFERENCE OF RADIATION CONTROL PROGRAM DIRECTORS 5 MINS

- CHARLES TEDFORD
CHAIRMAN
- CHARLES HARDIN

NRC 15 MINS

- HUGH L. THOMPSON, JR., DEDO
- ROBERT BERNERO, NMSS
- GLEN SJOBLUM, NMSS
- VANDY MILLER, GPA/SLITP

THIRD PARTY CERTIFICATION OF
RADIOGRAPHERS TO IMPROVE
SAFETY OF RADIOGRAPHY OPERATIONS

BRIEFING OF THE COMMISSION
APRIL 5, 1989

OUTLINE OF BRIEFING

STAFF PRESENTATION

- O RADIOGRAPHY SAFETY ISSUES
- O CURRENT REGULATORY PROGRAM ON
RADIOGRAPHY SAFETY
- O STAFF PERSPECTIVES ON
TESTING/CERTIFICATION
- O PLANNED FUTURE ACTIONS ON
CERTIFICATION

SLIDE 1

OUTLINE OF BRIEFING (CONT'D)

INVITED PRESENTATIONS

- 0 OVERVIEW BY AMERICAN SOCIETY OF
NONDESTRUCTIVE TESTING ON PLANNED
INDUSTRY INITIATIVE FOR
CERTIFICATION
- 0 OVERVIEW BY TEXAS BUREAU OF
RADIATION CONTROL ON RADIOGRAPHER
TESTING
- 0 OVERVIEW BY CONFERENCE OF RADIATION
CONTROL PROGRAM DIRECTORS ON STATE
PLANS

SLIDE 2

RADIOGRAPHY SAFETY ISSUES

- O HIGH RADIATION LEVELS WHEN SOURCE OUT OF SHIELD
- O BASIC CAUSES OF OVEREXPOSURE EVENTS
 - EQUIPMENT FAILURES
 - FAILURE TO ADHERE TO PROCEDURES

SLIDE 3

CURRENT REGULATORY PROGRAM ON
RADIOGRAPHY SAFETY

- O LICENSING
- O ANNUAL INSPECTIONS
- O EQUIPMENT UPGRADES
- O STRONG ENFORCEMENT
- O INFORMATION NOTICES

SLIDE 4

STAFF PERSPECTIVE ON
TESTING/CERTIFICATION

- O PROVIDES NRC ASSURANCE OF
RADIOGRAPHER'S TRAINING,
KNOWLEDGE, SKILLS, AND HAZARD
APPRECIATION
- O IMPROVE PROFESSIONALISM
- O MORE RESPONSIBILITY TO INDIVIDUAL
RADIOGRAPHER
- O STANDARDIZED NATIONWIDE TESTING

SLIDE 5

FUTURE NRC ACTIONS ON CERTIFICATION

- 0 STAFF REVIEW FINAL NATIONAL
CERTIFICATION PROGRAM
- 0 CRUCIAL COMMISSION ACTION:
EARLY RULEMAKING RECOGNIZING
CERTIFICATION AS MEETING PART 34
QUALIFICATION REQUIREMENTS
- 0 LATER RULEMAKING REQUIRING
CERTIFICATION

SLIDE 6

SUMMARY/PROPOSAL

UPON ASNT BOARD OF DIRECTORS APPROVAL
OF FINANCES, ASNT WILL INSTITUTE A
NATIONAL CERTIFICATION PROGRAM FOR IRRSP
UTILIZING THE STATE OF TEXAS EXAMINATION
PROCTORED BY ASNT OR CRCPD FOR THOSE
STATES INTERESTED.

SLIDE 1

WHERE STATES PROCTOR EXAMINATIONS,
THE CRCPD WILL BROKER THE TESTS WITHOUT
ASNT INVOLVEMENT. THE REMAINDER OF THE
STATES WILL BE SERVED BY ASNT DEALING
DIRECTLY WITH THE STATE OF TEXAS.
EXAMINATIONS WILL BE OFFERED THROUGH
COOPERATION BETWEEN INTERESTED PUBLIC
AND PRIVATE ORGANIZATIONS.

ASNT AGREES TO CERTIFY INDIVIDUALS
EXAMINED BY STATES UPON RECEIPT AND
APPROVAL OF AN APPLICATION AND FEE
FROM EACH INDIVIDUAL INCLUDING THOSE
PREVIOUSLY EXAMINED BY TEXAS.

SLIDE 2

ASNT WILL BE THE NATIONAL CERTIFICATION ORGANIZATION, WITH STATES RECOGNIZING THE CERTIFICATION. ASNT'S THIRTEEN YEARS OF EXPERIENCE IN CERTIFYING PERSONNEL WILL ASSIST IN ASSURING UNIFORM QUALIFICATIONS OF INDUSTRIAL RADIOGRAPHERS.

THE ABOVE PROPOSALS ARE CONTINGENT ON THE CONCEPT THAT THE REGULATORY COMMUNITY WILL ASSURE THE VIABILITY AND EFFECTIVENESS OF ASNT'S PROGRAM BY DEVELOPING RULES SUCH THAT ASNT CERTIFICATION IS REQUIRED IN ALL STATES.

SLIDE 3

THE TEXAS EXPERIENCE WITH A RADIOGRAPHER TESTING PROGRAM

David K. Lacker

Texas Department of Health
Bureau of Radiation Control

INTRODUCTION TO THE TESTING PROGRAM

In January 1987, the Texas Bureau of Radiation Control (TBRC) became the first entity to implement a cohesive testing program for industrial radiographers as a means of improving and verifying knowledge and awareness of radiation safety. This testing program requirement was one of many major changes made to the Texas industrial radiography rules which became effective in October 1986. The requirements concerning the testing program and radiographer qualifications were adopted in direct response to the radiation safety record of the industrial radiography industry.

Investigations by Texas, Nuclear Regulatory Commission (NRC) and other Agreement State inspectors have indicated that inadequate training of radiographers may be a significant contributing cause in many reported overexposure incidents. The new Texas rules address this problem in several ways. Now, a radiographer trainee must have completed an Agency-approved training course before handling any sources of radiation. Possession of an I.D. card alone does not mean an individual is a qualified radiographer. To be recognized as a radiographer by the State of Texas an individual must complete all the training required, submit the appropriate documentation and pass the exam. The purpose of the Texas industrial radiography safety exam is to assure that each and every individual authorized to work at an industrial radiography site has the basic information and knowledge to work safely.

To date, over 2200 exams have been administered to more than 1800 individuals. These numbers include individuals from 17 states in addition to Texas. All of the Agency-administered exams are developed from a bank of validated, safety-related items. The items were created by TBRC staff members and collected from training courses utilized in the radiography industry, from other regulatory agencies, and from various training materials utilized in radiation safety courses. This is an on-going process as the Agency continues to expand and improve the item bank. Exam items relate only to radiation safety and thus all the items in the bank are categorized according to those subjects of instruction outlined in Texas Regulations for the Control of Radiation Appendix 31-A (Suggested State Regulations for Control of Radiation Part E, Appendix A and 10 CFR 34, Appendix A). A portion of the item bank was developed with monetary aid from the NRC.

STATUS OF THE TESTING PROGRAM

For each session, three different exams are created. One contains safety items related to radioactive materials, one deals only with safety items related to x-ray machines and the third has items concerning both x-ray machines and radioactive materials. Each exam consists of 125 four-choice multiple-choice items. Twenty-five items on each exam are provisional. Provisional items are those that have not been validated. They are randomly distributed throughout the exam and the radiographers are not aware of which ones they are. Provisional items are not graded but are analyzed using psychometric procedures, so in this manner new items may be continually validated and the item bank expanded. Thus, each radiographer's score is based upon 100 active (previously validated) items.

Exams are now administered in Austin once a month and an average of 50 people attend each session. The overall average failure rate is 18%. The overall average score for the radioactive materials exam is 75. The average score for the x-ray machines exam and the exam for both are 79 and 82, respectively.

CHANGES DUE TO THE TESTING PROGRAM

The TBRC began issuing notices of violations for non-compliance concerning the safety exam in March 1988. There has not been sufficient time elapsed since then to determine any valid correlations between trends in inspection reports and the testing program. However, there have been several situations in which an Agency inspector terminated operations at a job site because the individuals did not have I.D. cards in their possession. Agency inspectors have reported observing individuals studying resource materials on the job site. This is very encouraging in terms of increasing knowledge and awareness of radiation safety. The TBRC has suspended one individual's I.D. card and is currently considering suspension of two more. In each case, Agency inspectors have documented a willful intent to violate the rules.

Similarly, there has not been enough time elapsed since January 1, 1988 (the date by which all radiographers in Texas must have been tested) to determine what impact the testing program has had on overexposure incidents. However, Figure 1 shows the number of exposures greater than three rem per quarter reported to the agency from 1979 to 1987. Figure 2 shows reported exposures greater than 25 rem per quarter. The figures include 1986, the year in which the training and testing requirements became effective. In both figures, the shaded areas represent exposures to "assistant" radiographers. The Agency feels that the downward trend in overexposures is due to two things. With the decline in oil prices, the Texas economy and therefore, available jobs in the radiography industry also declined. In addition, when the new rules were adopted, individuals began preparing for the state exam. People were being trained and retrained, creating an increased awareness of job safety. The Agency also believes that the decrease in the number of exposures to what were then "assistant" radiographers is directly related to the new rules. Radiographer trainees (previously helpers or assistants) must now pass an Agency-approved safety training course before handling sources of radiation.

FIGURE 1

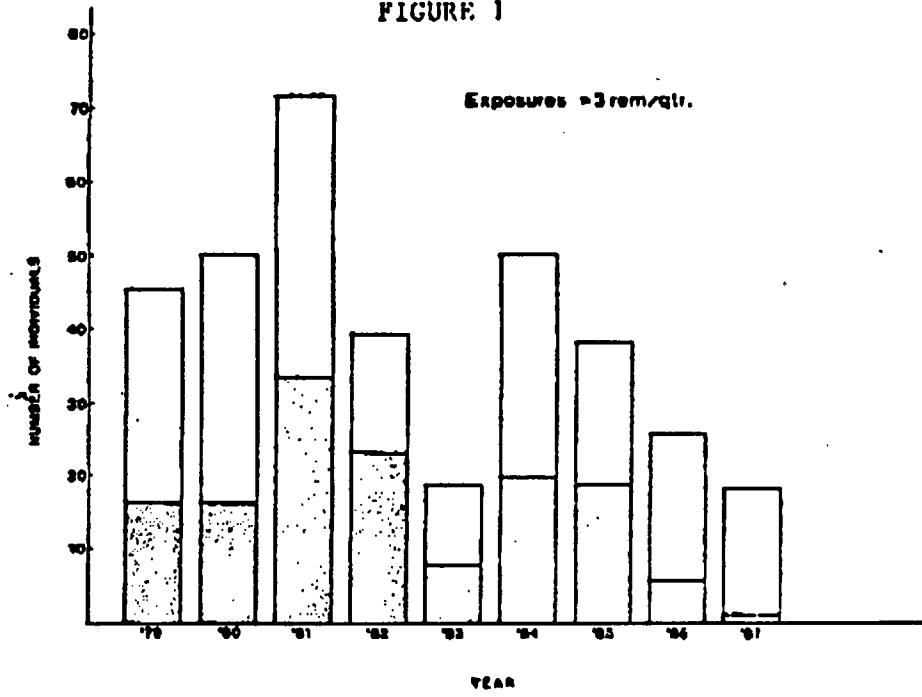
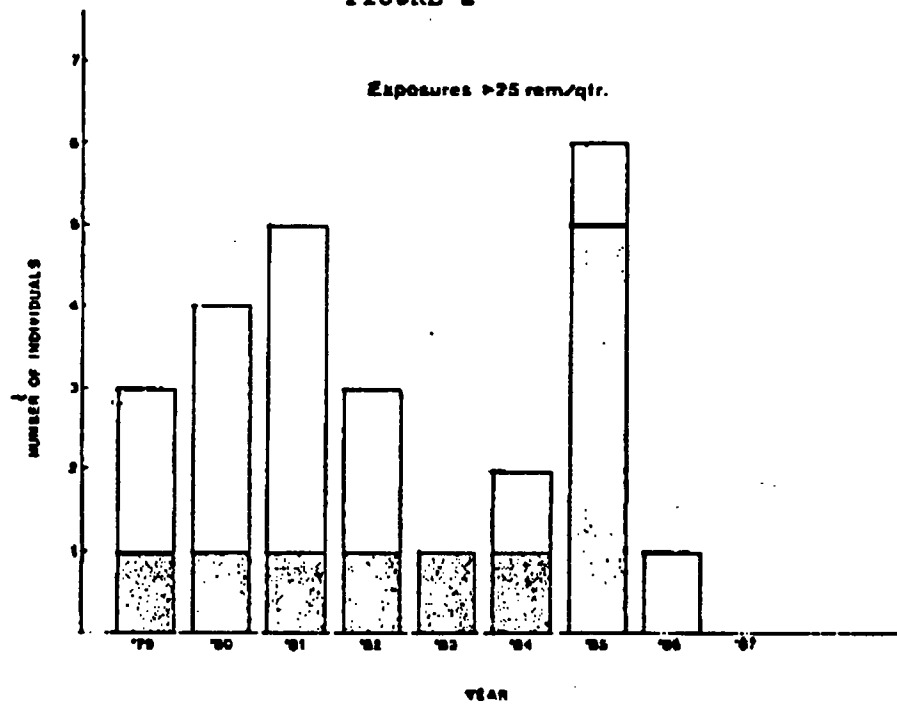


FIGURE 2



As mentioned earlier, possession of an I.D. card alone does not mean an individual is a qualified radiographer in Texas or that he or she will not be overexposed. The new Texas rules are meant to correct a lack of knowledge and training, and provide a means of determining compliance with training requirements.

FUTURE OF THE TESTING PROGRAM

The TBRC will continue to test industrial radiographers working in Texas. Many other Agreement States have expressed an interest in adopting similar rules, including a testing program. The Agency is currently negotiating with the Conference of Radiation Control Program Directors (CRCPD) to provide exam development and administrative services to radiation control regulatory agencies. Those regulatory agencies would, in turn, administer the exams to those radiographers they regulate. With this type of program, all exams would be developed using the same validated item bank. Not only would this provide a nationwide consistency in testing, but reciprocal recognition of radiographers across state lines would be made simpler.

The Agency has also received a proposal from the American Society for Nondestructive Testing (ASNT) concerning ASNT administration of an industrial radiography safety exam. The proposal calls for the TBRC to be the sole provider to ASNT of exams and grading services. There would also be reciprocal recognition by the ASNT of the TBRC test and vice versa. We are prepared to proceed toward formalizing the proposal in contract when the Commission approves a National Certification program.

The interest in our testing program shown by the NRC, other Agreement State regulatory agencies, and the industry certainly indicates a nationwide concern over the safety history of industrial radiographic operations and a commitment to improving that record.

THE ROLE OF
THE CONFERENCE OF RADIATION CONTROL PROGRAM DIRECTORS (CRCPD)
IN THE TESTING OF INDUSTRIAL RADIOGRAPHERS

Briefing before the NRC Commissioners
April 5, 1989

Presented by: Charles F. Tedford, Chairman, CRCPD

Thank you, Chairman Zech, and Commissioners, for the invitation extended to attend this briefing. The Conference of Radiation Control Program Directors, Inc. (CRCPD), whose membership is comprised of the directors of the radiation control programs of the fifty states; the District of Columbia; New York City; and Puerto Rico, considers the issue of national certification of radiographers to be of great importance. In large measure, the health and safety of our citizens depend upon the successful resolution of this matter of mutual concern.

History has shown that a high percentage of radiation incidents and accidents have occurred in the field of industrial radiography. Many of these incidents and accidents were caused by the lack of proper training by those who actually perform the radiographic procedures. The thrust of this program is to recognize and certify individuals who have demonstrated an understanding of radiation protection principles and practices in the use of radioactive sources. The states, and in particular, those states which have an agreement with the NRC, and the NRC have recognized the need for a national program since 1975. Accordingly, the CRCPD applauds the NRC for the effort to develop a national industrial radiographer certification program.

Machine-produced radiation is also used for industrial radiography. The CRCPD is as concerned for proper safety from machine-produced radiation as for radiation produced from radioactive materials (RAM). Any national program is encouraged to place equal importance on both types of radiation sources. The certification program should encompass and qualify the individual for machine and RAM sources.

It should be noted that the Texas Radiographer Testing Program has established a positive precedent for this area of concern.

The CRCPD is in a unique position relative to the issue, since the Conference represents all states - both Agreement States (which now number twenty-nine) and Non-Agreement States. Additionally, the CRCPD is not restricted to particular radioactive materials covered by the Atomic Energy Act, but can address all radioactive materials, including Naturally Occurring and Accelerator Produced Radioactive Materials (NARM), and machine-produced radiation sources.

Because of this unique position, the State of Texas has requested the CRCPD to consider brokering the Texas-developed Industrial Radiographer Test to those states with an interest in administering the test. The executive Board of the CRCPD has approved the pursuit of a brokerage role, and has developed a proposed contract to be executed between the CRCPD and the State of Texas to accomplish this purpose.

The basic concept of the CRCPD role is as follows. When a state has interest in administering the Texas test, the Program Director of that state, who is also the member of the CRCPD, will act on behalf of the CRCPD in administering the test. Texas will train state proctors. The state administering the exam will subsequently establish a testing time and place, and determine the number of individuals to be tested.

Then, through the CRCPD, the interested state will receive the specified number of tests from the State of Texas. The CRCPD member in the interested state, or designed representative, will administer the test, using the trained proctor. The state will collect the completed tests and mail them to Texas for grading and analysis. The results of the test will be sent to the national certifying body, with copies of the results provided to the state which administered the test. The state member of the CRCPD will have responsibility for the security of the tests.

The Conference strongly believes that states who desire to administer the test should be given the opportunity. The use of the CRCPD as a broker will provide for an expedient procedure in obtaining the test from Texas. With CRCPD as the broker, a separate contractual document will not be necessary between Texas and the other states desiring to use the test.

Again, please accept my sincere appreciation and compliments for the concerted, stellar efforts by the NRC to establish a national certification program for individuals performing industrial radiography.

The establishment of a national certifying/testing program for industrial radiographers has been under consideration for the last several months by the NRC, the State of Texas, the American Society for Nondestructive Testing (ASNT), and CRCPD. The CRCPD will cooperate in making this national certification effort an effective, workable program.

I will be pleased to entertain any questions that you may have on the role of the CRCPD. There are two individuals with me today whom I may call on for assistance in responding to your questions. They are Ronnie Wascom, representing the Association of NRC Agreement States, and Charles Hardin, the Executive Secretary of the CRCPD.

AGENDA

PRESENTATION TO THE UNITED STATES NUCLEAR REGULATORY COMMISSION

INDUSTRIAL RADIOGRAPHY RADIATION SAFETY PERSONNEL (IRRSP) CERTIFICATION PROGRAM

APRIL 5, 1989
WASHINGTON, DC

1. HISTORICAL REVIEW
2. OVERVIEW OF PROPOSED PROGRAM
 - A. PART 1, CERTIFICATION REQUIREMENTS
 - B. PART 2, RULES OF CONDUCT
 - C. PART 3, COMPLAINT AND HEARING PROCEDURES
3. IMPLEMENTATION COSTS
4. SUMMARY/PROPOSAL



THE AMERICAN SOCIETY FOR
NONDESTRUCTIVE TESTING, INC.

4153 ARLINGATE PLAZA • CALLER #28518 • COLUMBUS, OHIO 43228-0518
NATIONAL 1-800-222-ASNT • OHIO 1-800-NDT-OHIO • TELEX 245347

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HISTORICAL REVIEW

1. Cause of concern over radiation safety using industrial radiography (No. of overexposures as a function of percent of licensees)
2. ASNT response to NRC concerns/pontential advance notice of proposed rulemaking
3. ASNTs experience in certifying NDT professionals
4. Approval by ASNT Board of Directors on 3-24-89
5. Implementation issues

State of Texas

Conference of Radiation Control Program Directors

Distribution of funds

Communications and interface

Seed money from USNRC

OVERVIEW OF PROPOSED PROGRAM

The proposed program is entitled "ASNT Certification Program for Industrial Radiography Radiation Safety Personnel" or ASNT-CP-IRRSP-1A. It consists of three parts:

ASNT IRRSP Certification Requirements

ASNT IRRSP Rules of Conduct

ASNT IRRSP Program Complaint and
Hearing Procedures

CERTIFICATION REQUIREMENTS

INTRODUCTION

Certification to be offered in either or both of the following categories:

Isotope Radiation Safety Practices

X-Ray Radiation Safety Practices

Certification is evidence that an individual:

Satisfies training and experience requirements

Has successfully completed a State of Texas written examination and recognized practical examination

Has agreed to the IRRSP Rules of Conduct

QUALIFICATION REQUIREMENTS

1. Submittal of application that will be verified and fee specified by ASNT
2. Meet the following training and experience requirements (both for x-ray and isotope):
 - 40 hours classroom training by a recognized institution
 - 520 hours of actual experience in each category sought

EXAMINATIONS

1. ASNT or CRCPD proctored State of Texas written examination
2. Practical examination administered by a recognized institution
3. At locations and times approved by ASNT or CRCPD

CERTIFICATION

1. Both written and practical exams must be passed within 6 months of each other except as granted by the Executive Director
2. Candidates who fail may re-submit new application and fees
3. Candidates who satisfy requirements will be notified in writing
4. Wallet card provided to IRRSP

FEES

1. To be established/approved by the ASNT Executive Committee
2. State of Texas/CRCPD fees in addition to ASNT fee
2. Refunds less administrative fees available for unqualified or unable to attend personnel (15 day notification)

STATEMENT REQUIREMENTS

1. Agreement to Rules of Conduct and ASNT right to revoke
2. Attest that application is true and correct
3. Hold harmless agreement

EXPIRATION AND RENEWAL

1. Certification for 5 years
2. Applications for renewal meet original requirement
3. Renewal by application if:
 - Active for 24 of last 36 months in radiography category of certification
 - Active for 6 of last 12 months
 - 8 hours of documented training per year by ASNT recognized institution
4. Renewal also available by examination plus 8 hours of training per year by ASNT recognized institution

REVOCATION. SUSPENSION. EXPIRATION

Certification no longer valid when:

The certificate has expired

Certification is suspended by ASNT

Certification is revoked by ASNT

Requested by the individual

RULES OF CONDUCT

PURPOSE

Describes the rules of conduct for IRRSP

RULES OF CONDUCT

Maintain high standard of skills and knowledge

Assume responsibility

Inform proper authority of deficiencies

Minimize exposure (ALARA)

Wear and maintain personnel dosimetry

Maintain awareness of personal exposure

Properly document activities

Always comply with safety procedures

Never misuse ASNT IRRSP certification

Avoid conflicts of interest

Refuse to accept gratuities or bribes

RULES OF CONDUCT CONTINUED

Never misrepresent qualifications

No association with fraudulent or dishonest venture

Refuse to falsify documents

Do not testify without adequate knowledge

Never operate equipment under the influence of mood altering substances

SANCTIONS

Violations of the foregoing may result in sanctions by the IRRSP Ethics Subcommittee

COMPLAINT AND HEARING PROCEDURE

Introduction

1. Provides fair notice and hearing
2. Published and made available to public
3. Annual report of revocations
4. Committee responds to status of IRRSP

COMPLAINTS AND INVESTIGATIONS

1. Any person may submit complaint
2. ASNT Executive Director prepares formal complaints
3. Ethics Committee dispositions complaints
3. Ethics Subcommittee may:
 - 3.1 Close file for lack of evidence
 - 3.2 Prepare formal complaint

COMMENCEMENT OF HEARING ACTIONS

1. Executive Director sets date for hearings
2. Respondent has right to answer by mail (45 days)
3. Executive Director may modify date for good cause

PRE-HEARING PROCEDURES

1. Pre-hearing conference with interested parties followed by written report
2. Pre-hearing conference may result in proposed ruling and Ethics Subcommittee may vote
3. Adjudication without formal hearing must be agreed to by both parties

HEARINGS

1. Panel makeup of three including presiding officer appointed by the Chairman
2. Hearings shall be private except for unanimous agreement to contrary
3. BOD may participate in hearings
4. Ethics Committee members when complainant shall not be on panel
5. Respondent may defend self
6. Record of hearing and retention thereof
7. Presiding officer controls hearing
8. Panel shall assure the following:
 - 8.1 Permit full development of issues
 - 8.2 Disallow inappropriate evidence
 - 8.3 Protect rights of witnesses
 - 8.4 Allow evidence in written form
 - 8.5 Copies of original evidence are allowed
 - 8.6 Committee may act on specialized knowledge
 - 8.7 Objections to evidence are recorded

9. Presiding officer shall assist in the appearance of witnesses, enjoin witnesses to tell the truth, and control subpoenas and testimony under oath
10. Witnesses subject to cross-examination
11. Hearing conducted within 1 year or dismissed
12. Presiding officer advises respondent of communications

RULINGS

Panel adopts ruling after procedure.

Presiding officer delivers ruling to Executive Director

REPRIMAND, SUSPENSION, AND REVOCATIONS

Actions shall be based upon one of the following:

Severity Level III - least significant, persons or property not at risk, results in written reprimand

Severity Level II - persons or property are deemed at risk, suspension for 30 to 180 days

Severity Level I - most significant, deemed to cause or threaten serious injury or property damage, results in revocation for at least one year

Petition for good cause to to reinstate may be considered

APPEALS

Respondent may appeal within 60 days

ANCILLARY MATTERS

Ethics Committee may not be advised by other individuals

Witnesses have right to counsel

SANCTIONS AGAINST NON-CERTIFIED INDIVIDUALS CLAIMING ASNT CERTIFICATION

1. Complaints to be sent to Executive Director
2. Executive Director directs offender to cease or be subject to court action
3. If offender is ASNT member, formal complaint and request for forfeiture of membership requested

IMPLEMENTATION COSTS

Fees to applicant circa \$100 times approx.
12000 persons = 1.2 million

Other related cost to industry - \$400 per applicant times approx. 12000 persons =
4.8 million

State of Texas exam fee approximately \$30
(included in fee)

CRCPD administrative cost - \$10 per applicant times approx. 2000 persons = 20 K

Total industry cost = \$6.02 million

SUMMARY/PROPOSAL

UPON ASNT BOARD OF DIRECTOR APPROVAL OF FINANCES, ASNT WILL INSTITUTE A NATIONAL CERTIFICATION PROGRAM FOR IRRSP UTILIZING THE STATE OF TEXAS EXAMINATION PROCTORED BY ASNT, OR THE CRCPD FOR THOSE INTERESTED STATES.

WHERE THOSE INTERESTED STATES PROCTOR EXAMINATIONS, THE CRCPD WILL BROKER THE TESTS WITHOUT ASNT INVOLVMENT. THE REMAINDER OF THE STATES WILL BE SERVED BY ASNT DEALING DIRECTLY WITH THE STATE OF TEXAS. EXAMINATIONS WILL BE OFFERED THROUGH COOPERATION BETWEEN INTERESTED PUBLIC AND PRIVATE ORGANIZATIONS.

ASNT AGREES TO CERTIFY INDIVIDUALS EXAMINED IN THE INTERESTED STATES UPON RECEIPT AND APPROVAL OF AN APPLICATION AND FEE FROM EACH INDIVIDUAL, INCLUDING THOSE PREVIOUSLY EXAMINED BY TEXAS.

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