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NUCLEAR REGULATORY COMMISSION  
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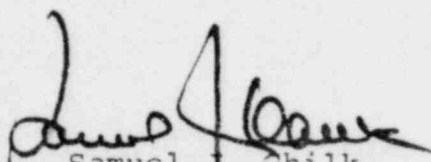
OFFICE OF THE  
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Transcript of Task Force on NRC Safeguards Policy  
Thursday, May 31, 1979

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4/14		4/25	10 CFR 9.104(a)(1)
5/1		7/25	10 CFR 9.104(a)(1)

  
Samuel J. Chilk  
Secretary of the Commission

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# Transcript of Proceedings

## NUCLEAR REGULATORY COMMISSION

TASK FORCE ON NRC SAFEGUARDS POLICY

(Closed to Public Attendance)

Thursday, May 31, 1979

Pages 1-40

Prepared by:  
C. H. Brown  
Office of the Secretary

1 UNITED STATES OF AMERICA  
2 NUCLEAR REGULATORY COMMISSION

3  
4 DISCUSSION OF TASK FORCE ON NRC SAFEGUARDS POLICY  
5 SECY 79-188 and SECY 79-187 UPGRADE RULE  
6

7 (Closed to Public Attendance)  
8

9  
10 Commissioners' Conference Room  
11 1717 H Street, N.W.  
12 Washington, D. C.

13 Thursday, May 31, 1979

14 The Commission met, pursuant to notice at 1:35 p.m.,  
15 Joseph Hendrie, Chairman of the Commission, presiding.

16 PRESENT:

- 17 Chairman Hendrie  
18 Commissioner Gilikey  
19 Commissioner Kennedy  
20 Commissioner Bradford

21 ALSO PRESENT:

- 22 L. Gossick  
23 H. Shapar  
24 R. Burnett  
25 S. Mullen  
B. Snyder  
M. Nordlinger  
J. Miller  
J. Hoyle  
C. Kessler  
L. Evans

P R O C E E D I N G S

1  
2 CHAIRMAN HENDRIE: The Commission will come to  
3 order.

4 Actually, this is not too untimely for the regularly  
5 scheduled 1:30 starting time. It is a bit off the mark from  
6 1:00 o'clock which had been set in order that Commissioners  
7 could get out a bit earlier this afternoon.

8 COMMISSIONER KENNEDY: Let's look at it this way,  
9 those of us who were ready at 1:00 o'clock have the opportunity  
10 to work even longer today.

11 CHAIRMAN HENDRIE: Now, the subject for this  
12 afternoon is a discussion of the papers of the Task Force  
13 on NRC Safeguards Policy and the related matter, the  
14 upgrade rule and so forth.

15 In view of the complexity of this subject, the fact  
16 that we have not a full Commission in attendance and won't  
17 have and some of the other business going on this afternoon,  
18 it may very well turn out that this afternoon's session will  
19 stand more by way of introduction to the subject than a  
20 definitive decision meeting on it, and, in fact, I'm pretty  
21 sure it will, in fact, be a first round discussion on the  
22 matter, but nevertheless, one has to begin the longest  
23 journey by putting one foot out in front of the other, and  
24 I guess this gets us started.

25 Three Mile Island has caused this subject to be bumped

1 off the agenda a number of times, in the past couple of  
2 months, so maybe even if we can't turn out a crowd of  
3 Commissioners, it is just as well to get on with the thing.

4 I make these remarks just so that those of you  
5 who have come to make the presentation will not feel too  
6 badly, nor be too surprised when you find yourselves making  
7 precisely the same presentation or portions of it at subsequent  
8 meetings.

9 Please go ahead.

10 MR. GOSSICK: Thank you, Mr. Chairman.

11 As you recall, when we were finalizing the safe-  
12 guards report, the Annual Safeguards Report for the Fiscal  
13 Year '78 we became more vividly aware of some problems that  
14 existed with regard to the definition of adequacy of safeguards  
15 and other problems that involved the somewhat different  
16 approaches between safeguards as applied to the fuel cycle  
17 facilities and safeguards applied to reactors.

18 In January, I established a Task Force to look  
19 at a number of these questions and to come up with  
20 recommendations with regard to a single integrated approach  
21 to our safeguards regulations. This, as you say, is coupled  
22 very closely with the Upgrades Rule, which was briefed to you,  
23 I believe on April 18th and the briefing this afternoon will  
24 address the results of this Task Force study and the findings  
25 that are being made and the recommendations that came out of

1 it.

2 Bob, go ahead.

3 MR. BURNETT: Yes, sir.

4 Okay, well, I will be discussing today -- First I'd  
5 better get a couple of small announcements that I have to make  
6 off.

7 First, seated to my left is Sally <sup>ie</sup> Mullen of the SG  
8 Staff. She supported the Task Force in threat-related matters.  
9 Also, the Task Force is present today, with the exception of  
10 the I&E member, but an I&E alternate is here, so he can  
11 answer any detailed questions that might come up.

12 During the deliberation of this Task Force, a State  
13 Department letter was received concerning their review of the  
14 Upgrade Rule that was provided to them.

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COMMISSIONER KENNEDY:

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MR. BURNETT:

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CHAIRMAN HENDRIE:

MR. BURNETT:

COMMISSIONER KENNEDY:

MR. BURNETT:

COMMISSIONER KENNEDY:

MR. BURNETT:

MR. SNYDER:

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MR. BURNETT:

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MR. SNYDER:

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MR. BURNETT:

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MR. SNYDER:

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MR. BURNETT:

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MR. SNYDER:

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MR. BURNETT:

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COMMISSIONER KENNEDY:

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MR. BURNETT:

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CHAIRMAN HENDRIE:

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COMMISSIONER KENNEDY:

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MR. BURNETT:

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MR. SNYDER:

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MR. BURNETT:

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COMMISSIONER KENNEDY:

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CHAIRMAN HENDRIE:

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COMMISSIONER KENNEDY:

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CHAIRMAN HENDRIE:

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COMMISSIONER KENNEDY:

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MR. BURNETT:

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CHAIRMAN HENDRIE:

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MR. EVANS:

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MR. BURNETT:

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MR. EVANS:

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CHAIRMAN HENDRIE:

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MR. BURNETT:

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CHAIRMAN HENDRIE:

1 MR. BURNETT: The second point, there has been a  
2 slight change.

3 On April 18th we briefed this Commission as to the  
4 Upgrade Rule. During that presentation, non-power reactors  
5 were discussed. It was indicated at that time that six non-  
6 power reactors could be affected by that rule, but certain  
7 avenues were being explored to get a reduced number from six  
8 to something less. Avenues like the 100 rad radiation being  
9 reached, lowering the enrichment or lowering the quantity, were  
10 all being explored.

11 (Commissioner Gilinsky arrived at the meeting, 1:45.)

12 MR. BURNETT: I was informed this morning by NRR  
13 that six is no longer correct, that they have experienced that  
14 the non-power reactors are incapable of sustaining the 100 rad  
15 at three foot radiation requirement and that it appears that  
16 27 non-power reactors will now be affected by the Upgrade Rule.

17 I just wanted to bring that to your attention.

18 COMMISSIONER KENNEDY: How many?

19 MR. BURNETT: Twenty seven. Mr. Miller from NRR is  
20 here to discuss any more relative questions.

21 COMMISSIONER GILINSKY: Sorry for coming in late,  
22 but how does that relate to the 100 rad per hour, three feet?

23 MR. BURNETT: The non-power reactors in certain  
24 environments are being unable to maintain that radiation  
25 level. And if they cannot qualify as being over the 100 rad,

1 which would put it into an exempt category, then they fall  
2 into category one, because they do have over formula  
3 quantities.

4 CHAIRMAN HENDRIE: It's a combination of power  
5 level and operating cycle. If you have got a research machine,  
6 typically they have the excess reactivity to over-ride  
7 xenon, so they crank it up and run it for four hours this  
8 morning then shut it down, and maybe a day and a half for it  
9 to make another short run, and in those circumstances, you may  
10 not maintain the fresh fission product inventory in the fuel.  
11 What you need for 100 rad at three feet, or something like that.  
12 That's the game, is it? What is it, peripheral elements, the  
13 lower power density elements in this course.

14 MR. MILLER: Dr. Hendrie, it is any machine which  
15 runs at 100 kilowatts or less.

16 CHAIRMAN HENDRIE: At 100 kilowatts, what kind of  
17 duty cycle do you have to have in order to get all of the  
18 elements up? Or when you talk about the 100 ---

19 MR. MILLER: You have to have a duty cycle where  
20 you run most of the time, which most of them do not.

21 CHAIRMAN HENDRIE: Yes.

22 Is this on an element, some attempt to make a  
23 calculation of the fission product inventory in the radiation  
24 from each element if it were removed or from the core or what?

25 MR. MILLER: No, sir. We have -- the program we

1 have on-going is the actual measurement of the elements pulled  
2 from the reactor. It's a function of decay time.

3 CHAIRMAN HENDRIE: So that what we are talking about  
4 are measurements on individual elements, and of course, the  
5 ones that are critical then are the perimeter elements, the  
6 lower power elements.

7 MR. MILLER: That's right. And it is the fuel that's  
8 actually in the core.

9 CHAIRMAN HENDRIE: Yes.

10 COMMISSIONER GILINSKY: We are also reexamining this  
11 100-r per hour ---

12 MR. BURNETT: Yes, sir.

13 COMMISSIONER GILINSKY: -- number in another context?

14 MR. BURNETT: That Task Force is still running, and  
15 it could say that the 100 is not ample or not self-protecting  
16 and it could, indeed, specify a greater number which would  
17 intensify our problem here.

18 So ---

19 COMMISSIONER GILINSKY: Now, to what extent can these  
20 machines get shifted over to lower enrichment fuel?

21 MR. BURNETT: I asked the same question.

22 MR. MILLER: What?

23 MR. BURNETT: To what extent could it possibly be  
24 shifted to a lower enrichment fuel at these facilities?

25 MR. MILLER: DOE now has a program where they are

1 looking at reducing the enrichment to somewhere around 40  
2 percent.

3 COMMISSIONER GILINSKY: To 40 percent?

4 MR. MILLER: To about 40 percent.

5 COMMISSIONER KENNEDY: That doesn't help very much.

6 CHAIRMAN HENDRIE: That doesn't do it, will it.

7 MR. MILLER: That will help some, but not that much.

8 MR. BURNETT: In combination with that other Commission  
9 paper that has been up for a couple months, and basing the  
10 safeguards on the percentage, more closely on the percentage  
11 of enrichment, that would help also.

12 COMMISSIONER GILINSKY: They may have to buy French  
13 fuel.

14 COMMISSIONER KENNEDY: They won't have any difficulty  
15 in doing that.

16 CHAIRMAN HENDRIE: They are just importing it.

17 But what are the prospects for the lower power  
18 machines, either or most all pool reactors, I would imagine,  
19 plate element pool reactors.

20 MR. MILLER: Yes, sir, 98 percent.

21 CHAIRMAN HENDRIE: And what are the prospects of  
22 getting down to just under 20 percent enriched fuel?

23 MR. MILLER: Well ---

24 COMMISSIONER GILINSKY: Didn't they start out that  
25 way?

MR. MILLER: The TRIGAs started out that way. The

1 problems that we have heard from the industry are ones of  
2 specific flux, as you know, some of the machines in the  
3 one or two megawatt range run at 10 to the 13th, for example,  
4 and ---

5 COMMISSIONER KENNEDY: We can't hear you, Jim.

6 MR. MILLER: Oh. It's a matter of the flux  
7 density in the irradiation spaces in the reactor. They are  
8 telling us that if they reduce from the enrichment when they  
9 are not, it -- they cannot go to the 20 percent and hold  
10 that flux in that particular area.

11 (Commissioner Kennedy nods in agreement.)

12 CHAIRMAN HENDRIE: Well, certainly, for irradiation  
13 facilities, if you drop the enrichment of the fuel, you have  
14 got to put more gross uranium into the same space in order to  
15 have the same number of fissionable nuclei per cubic centimeter.  
16 In fact, you need a few more nuclei -- fissionable nuclei per  
17 cubic centimeter because you are putting in more inert material.

18 What happens then is the macroscopic absorption  
19 cross-section simply goes up substantially, because of the  
20 increased  $^{238}\text{U}$  in the fuel area, and the competition for  
21 neutrons between the sample, the absorbing sample for research  
22 purposes and the inert material in the fuel is slanted more and  
23 more toward -- in the unfavorable direction for research. This  
24 is an inevitable circumstance of the way in which the universe  
25 has been constructed for us.

1 I'm not sure what to do about it, but it seems to  
2 me that there is a major problem, then, in dealing with a  
3 non-power reactor.

4 MR. BURNETT: Yes, sir. If I could just for a  
5 moment now relate Mr. Dircks' opinion in this area. He  
6 would like very much to proceed on with the Upgrade Rule.  
7 NRR is working on a paper right now, exploring options or  
8 alternatives in this arena. And I'm told, it should be up --  
9 Jim, 30 days, a couple of weeks? I don't have a solution  
10 yet --

11 MR. MILLER: Yes.

12 MR. BURNETT: -- so that's really all I can say on  
13 the matter, other than let you know about it.

14 COMMISSIONER GILINSKY: Let me understand the  
15 problem a little better. If they are not achieving 100-r  
16 per hour in the fuel that they are using now, then, are  
17 they meeting the current requirements on safeguards ---

18 (Commissioner Bradford arrived at the meeting, 1:50.)

19 MR. BURNETT: Yes.

20 COMMISSIONER GILINSKY: -- we impose on material  
21 which -- where the radioactivity is lower than that?

22 MR. MILLER: No. But see, the rules as now written,  
23 I think it is 73.50, exempt fuel in a reactor core or that  
24 has been irradiated. There is no limit on the number.

25 COMMISSIONER GILINSKY: I see, so if it is in the

1 reactor core it is exempt, period.

2 MR. MILLER: Today.

3 COMMISSIONER GILINSKY: No matter what the amount?

4 MR. MILLER: Today.

5 COMMISSIONER GILINSKY: No matter how many kilograms  
6 of highly enriched uranium is involved?

7 MR. MILLER: That's right.

8 COMMISSIONER GILINSKY: Well, that doesn't sound like  
9 a very good rule.

10 MR. MILLER: That's right. That's the way the  
11 rule is today.

12 VOICE: That's why we are changing it.

13 COMMISSIONER GILINSKY: Okay, I think I understand  
14 the problem.

15 COMMISSIONER KENNEDY: That's why we are here.

16 MR. BURNETT: I think it only fair to say that NMSS  
17 is looking to this up-coming paper with a great deal of  
18 interest.

19 Okay, if I can now get back into this Task Force  
20 presentation. I will be discussing the Findings and Recommen-  
21 dations of the Task Force appointed by Mr. Gossick to develop  
22 an integrated approach to NRC regulation.

23 This proved to be a somewhat controversial  
24 undertaking, and two letters have been received from staff  
25 raising possible concerns. Mr. Brightsen, who is seated with



1 us today raised some concerns in the "threat" area. I will  
2 again, relate to his concerns when we get into the threat  
3 area, which is slated in the last section of this presentation.

4 A second letter expressed concern about the apparent  
5 logic difference in the protection requirements against natural  
6 hazards, that is, earthquakes or worse case natural hazards,  
7 and not designing safeguard precautions to worse case safeguard  
8 experiences.

9 The individual expressed some doubt that there was  
10 a consistent logic line in the rule mechanism. That paper  
11 was forwarded to NRR for comment. They have been unable to  
12 write a written comment due to the TMI workload, but they are  
13 here today to discuss it if any Commissioner has any interest  
14 along those lines.

15 The next slide, please.

16 (Slide)

17 As Mr. Gossick has already informed you, the Task  
18 Force was established in January, because of problems expressed  
19 in the Annual Report. That Report made the following  
20 statements, and I think it would be well worth while to read  
21 them verbatim.

22 "It should be noted that in this Report, more than  
23 one basis exists for describing the level of assurance and its  
24 relationship to adequacy of safeguards for continuing operations."

25 In another paragraph it said: "Fuel cycle facilities

1 recognize that conditions may exist where full implementation  
2 is not continuously achieved, and assurances may be less  
3 than high, but still adequate."

4 In yet another paragraph, it said: "For power  
5 reactors, adequacy and high assurance has been equated.  
6 Consequently if an inspection of a power reactor reveals  
7 deficiencies in implementation, for example, several infractions,  
8 a degree that lowers the assurance level below high, the  
9 reactor is, by definition, inadequate."

10 I think that pretty well outlines the problem that  
11 Mr. Gossick assigned to the Task Force.

12 He requested that senior members from the cognizant  
13 offices be identified. They were, myself, to chair the Task  
14 force; Jim Miller from NRR; Morris Howard from I&E; Karl  
15 Goller from SD, and Bill Parlor from ELD.

16 Next slide, please.

17 (Slide)

18 Specifically, the Task Force was assigned to achieve  
19 consistent policy in the first of the four areas shown in  
20 the slide. Additionally, we were asked to recommend any  
21 revised rules that may be required to achieve a consistent  
22 policy.

23 Next slide, please?

24 (Slide)

25 First, the Task Force decided to define safeguards

*adequacy*

^

Sam

1 which was the first assignment. It was decided to use  
2 the Atomic Energy Act of 1954 as a starting place. In that  
3 Act, it defines "adequacy" as being a system that protects  
4 the public from unreasonable risk and is not inimical to the  
5 common defense.

6 COMMISSIONER GILINSKY: Wait a minute. I'm having  
7 a little trouble with that slide.

8 MR. BURNETT: All right.

9 The "as" appears to be wrong, doesn't it.

10 COMMISSIONER GILINSKY: Defines "adequacy"?

11 MR. BURNETT: It speaks ---

12 COMMISSIONER GILINSKY: Oh, "safeguards adequacy".

13 MR. BURNETT: -- safeguards adequacy as being  
14 a system that provides that defensive posture.

15 A system can be deemed adequate if it provides those  
16 two major entities. Now, I know that that definition seems  
17 somewhat simplistic, but the Task Force felt that the major  
18 important item here was how adequacy was determined, not  
19 really in the definition of the word, "adequacy", and that  
20 how it is determined should be consistent throughout NRC  
21 safeguard elements. So the Task Force aligned itself into  
22 that arena.

23 Next slide, please.

24 (Slide)

25 In the relatively short period of time given the

1 Task Force, it was recognized at the onset that it would  
2 be impossible to identify the actual criteria for specifications  
3 to be employed by the various safeguard offices, but that it  
4 was essential that these methods would be consistent.  
5 Therefore, the offices agreed, in this Task Force, to develop  
6 a consistent set of specifications for the determination of  
7 adequacy between I&E, NRR and NMSS.

8 I&E and NRR are already working on a possible  
9 approach and NMSS has started work on a new evaluation plan  
10 to replace the comprehensive evaluation technique presently  
11 utilized. All of the techniques will be subject to yet another  
12 review, to assure overall consistency.

13 Next slide, please.

14 (Slide)

15 The third area proved to be the most controversial,  
16 but it was agreed that the term "high assurance" as presently  
17 used, should be removed from Part 73 and replaced with a  
18 reasonable statement shown on the slide. This not only  
19 reduces the ambiguities ---

20 COMMISSIONER KENNEDY: You mean a statement using  
21 the word "reasonable". Not necessarily a reasonable statement.

22 MR. BURNETT: Correct. We often close in ourselves  
23 when we use this term "reasonable".

24 Okay. As it exists in 73.55, but it also ties in  
25 the definition as we have now defined it and it is consistent

1 with past NRC actions. I will speak to that presently.

2 COMMISSIONER GILINSKY: Let me ask you -- a little  
3 discussion at this point, whether such a change is just a  
4 change in words or a change in the way ---

5 MR. BURNETT: I have that on the very next slide,  
6 Mr. Commissioner.

7 COMMISSIONER GILINSKY: Okay.

8 MR. BURNETT: Next slide, please, John?

9 (Slide)

10 It is important to recognize that no change in  
11 protection levels are contemplated at any facility by any  
12 element within NRC.

13 COMMISSIONER GILINSKY: Then why do you attach any  
14 importance to the terminology?

15 MR. BURNETT: There are benefits, which I will  
16 illuminate later as I progress, they appear to be to more  
17 towards the reasonable, but it is a debatable point, and we  
18 are prepared to discuss it.

19 COMMISSIONER GILINSKY: I will be interested in it.

20 MR. BURNETT: Okay.

21 -- And that safety and safeguard requirements  
22 connote the same level of protection.

23 I know that many people may be tempted to say that  
24 we are reducing the perceived level of protection, but the  
25 actual level will be unchanged.

1                   COMMISSIONER GILINSKY: I don't see how you can say  
2 that. If someone is asked to make a finding that something is  
3 true with high assurance, it is obviously more difficult to make  
4 than if he is asked to make a finding that he has reasonable  
5 assurance of something or other.

6                   MR. BURNETT: Well, I guess it was the Task Force  
7 opinion that it depends upon the criteria that is used to  
8 support either of those words. And if the criteria is the  
9 same, then the protection level remains unaltered, even though  
10 the name may change.

11                   MR. GOSSICK: This is a problem that we found in  
12 cutting across the staff on this is that using one terminology,  
13 looking at identically the same situation, I think the same  
14 facility, ended up with a different rationale to get as to  
15 whether it was a little less than adequate using the NMSS  
16 approach where then things either had to be fixed very promptly  
17 or some other length of time, but they were still okay to  
18 operate. The NRR approach used -- it had to be high  
19 assurance, but yet there were other ways, well, it's high  
20 assurance, but, you know, and there were problems that  
21 caused our inspectors to look at both of these kinds of things,  
22 very, very real difficulties in trying to carry out their  
23 jobs. So ---

24                   COMMISSIONER GILINSKY: Well, I understand, Lee, some  
25 of the difficulties, but it seems to me it is harder to get

1 somebody to sign a piece of paper that he has got high  
2 assurance of something, than it is to get him to sign a  
3 piece of paper that he has got reasonable assurance.

4 MR. BURNETT: Well, Mr. Commissioner, in your  
5 eyes is safety or safety requirements and rules, do they  
6 require a lesser degree of protection than do safeguards?  
7 I would hope the answer is "no".

8 COMMISSIONER GILINSKY: I think it is not easy to  
9 compare them with the answer, but I think that we have  
10 adopted and committed ourselves to others, the Congress, to  
11 a level of a standard of high assurance. Now, it is not  
12 going to be an easy thing to explain that we now have got a  
13 standard of reasonable assurance, but it is really the same  
14 standard. But you know, if you can do it, I'm interested in  
15 hearing how it is done.

16 MR. BURNETT: Well, we hoped we could do it by  
17 saying that the criteria is unchanged, and that "reasonable"  
18 was mandated to us in the Reorganization Act, that is the  
19 terminology that they use, that "high" was a creation in the  
20 safeguards world only ---

21 COMMISSIONER GILINSKY: I think that's right.

22 MR. BURNETT: -- And it is, apparently out of step  
23 with both the mandate and the safety side of the house. And  
24 that if we do not change our criteria for establishing an  
25 adequate system ---

1                   COMMISSIONER GILINSKY: Well, I think in part, at  
2 least for myself, it is because I think the dangers of  
3 somebody running off with this material and making bombs out  
4 of it and exploding them, probably transcend any other  
5 dangers that we are concerned with in our line of work, and  
6 that's one reason why I would like to see the "high" label  
7 stick.

8                   CHAIRMAN HENDRIE: That sounded like you were  
9 summarizing something, could you give me the front end of that?

10                  COMMISSIONER GILINSKY: I'm not sure I can repeat it.

11                  Well, we were going over this question of if you  
12 change the labels you are really changing the standards for  
13 safeguards. And I just felt that it is true that the way  
14 we handle fuel cycle safeguards is different than we handled  
15 our safety responsibilities, at least the labels that we  
16 have attached to the standards are different, and --

17                  CHAIRMAN HENDRIE: I think that's a ---

18                  COMMISSIONER GILINSKY: -- Well, we have done that  
19 and we have committed ourselves to Congressional committees  
20 to uphold this standard, and I, for one, think there is a  
21 reason for singling out that area for different treatments.  
22 Now, in effect, you are saying that the treatment is going  
23 to be the same, but the label is going to revert to ---

24                  MR. BURNETT: That is exactly what I'm trying to  
25 communicate.



1                   COMMISSIONER GILINSKY: -- They will be the same  
2 as the other labels. I must say, I find that hard to swallow.

3                   MR. BURNETT: Well, there could be a perceived  
4 difference, but I think that we can demonstrate to interested  
5 parties that our regulations have not changed, our inspection  
6 techniques have not changed, nor have the comprehensive  
7 evaluations. The criteria stays the same.

8                   I think that in the long run, if we could make this  
9 change, it would make life easier down the road, but in the  
10 initial aspect, there are going to be some perception  
11 problems.

12                   COMMISSIONER GILINSKY: Well, maybe you can explain  
13 that or rather I suppose you are planning to.

14                   CHAIRMAN HENDRIE: I think there are some perception  
15 problems now, and it is one of the reasons that I have encouraged  
16 this examination of the difference between the regulatory  
17 language in the two areas.

18                   COMMISSIONER GILINSKY: Yes.

19                   CHAIRMAN HENDRIE: I think, you know, we have a  
20 very substantial practice and tradition on the reactor safety  
21 side under a "reasonable assurance" language that creates, it  
22 seems to me, both within the agency for our staff and outside  
23 the agency for people to try to see what we are doing and  
24 understand it. It creates a certain image and a certain  
25 impression as to the level of conservatism and the general

1 attack and so on.

2 You come to the safeguards thing in 73.55 and have  
3 inserted the words "high assurance", and I think it creates  
4 the unfortunate impression, certainly on the outside, and  
5 perhaps to some extent on the staff part, that there is a  
6 standard of infallibility in "absolute assurance" or closer  
7 to "absolute assurance" which far transcends the safety --  
8 reactor safety standard, and it just ain't so, and furthermore,  
9 not only ain't it so, but it can't be so. I doubt very much  
10 if you can do much better than the same -- reach toward the  
11 same sort of safety standard in safeguards that you have in  
12 reactor safety.

13 You know, if you are trying to establish a standard  
14 in which we say we are absolutely confident nobody can steal  
15 anything or sabotage anything, I'm sorry, you know, humanity  
16 and society, we just can't establish those kinds of things.

17 COMMISSIONER GILINSKY: Well, of course, we are not  
18 saying that, though. We are talking about the difference  
19 between "high" and "reasonable".

20 Let's see, 73.55 is the reactor rule?

21 MR. BURNETT: Yes, sir. It says that it must be  
22 maintained at "high" at all time, whereas in the <sup>Comprehensive</sup> Upgrade  
*Evaluations of fuel cycle facilities,* Rule, "high" is a goal. <sup>1</sup>

23  
24 COMMISSIONER GILINSKY: I'm sorry, I want -- I was  
25 thinking of the fuel cycle facilities, the facilities that have,

1 strategic quantities of SNM, and that's the place where I want  
2 to keep the word "high".

3 MR. BURNETT: Well, is the Commissioner aware that  
Be 4 in that area, it is only a goal, *in the Comprehensive Evaluations?*

5 COMMISSIONER GILINSKY: Well, it is our standard, and  
6 it is not the standard which determines whether a facility  
7 runs or operates, but it is the standard to which we say we  
8 are holding these facilities. And if they are not at that  
9 standard, they are supposed to get to that standard.

10 MR. BURNETT: Correct. That is correct.

11 COMMISSIONER GILINSKY: Well, I think that's very  
12 important.

13 MR. BURNETT: Well, hopefully it wouldn't change  
14 the standard, but only the name.

15 COMMISSIONER GILINSKY: I guess I would put the question  
16 of "sabotage of reactors" protection against that, on a more  
17 comparable basis to our protection of safety ---

18 CHAIRMAN HENDRIE: Factor it to reactor safety  
19 matters in general ---

20 COMMISSIONER GILINSKY: That's right.

21 CHAIRMAN HENDRIE: -- That seems to me, only too  
22 rational to do so.

23 COMMISSIONER GILINSKY: But I think it is  
24 important to maintain the high assurance standard that we  
25 are dealing with potential bomb material.

1 MR. BURNETT: If I could go on just a little ---

2 CHAIRMAN HENDRIE: Let me -- since we are started  
3 on a discussion, let me continue a little bit.

4 In many ways I agree, it has always seemed to me  
5 that there is a hierarchy of risk in terms of these things,  
6 and that reactor sabotage matters are not in the same category  
7 as a plant that is dealing with large quantities of highly  
8 enriched material or plutonium in forms of which, if diverted,  
9 could be reasonably, easily made into a weapon or an explosive  
10 device. And, at least, in the exchanges that I can recall  
11 having various committees in the Congress, why it seems to me  
12 that that recognition is fairly widespread.

13 Now, let's talk a little bit about the use of a  
14 high assurance goal. You see, he is saying it is a goal in  
15 *Comprehensive Evaluations*  
*Be* the <sup>1</sup>~~Upgrade Rule~~, and you are saying, I think, very much the  
16 same. You are saying it is the standard to which we are  
17 forcing these people.

18 COMMISSIONER GILINSKY: Yes.

19 CHAIRMAN HENDRIE: Ah ---

20 COMMISSIONER KENNEDY: Isn't that a goal?

21 CHAIRMAN HENDRIE: Well, it sounds to me like it, but  
22 having high assurance as a goal is a little bit different than  
23 establishing high assurance as a flat requirement of the  
24 Commission, which makes it a law, so that any time any  
25 facility in this category fell the least bit under high

1 assurance, it fails to meet the regulations, and at least in,  
2 principle has to be shut down.

3 *Sam* Now, that wasn't <sup>it</sup> were, you seemed to me, to be  
4 going.

5 COMMISSIONER GILINSKY: No, but I guess I'd put it  
6 a little more strongly than "goal" because "goal" sounds  
7 like something you strive for and the world being what it is,  
8 you may or may not reach.

9 It is a standard to which these facilities ought to  
10 be held, and if they fall below it, they ought to get back ---

11 MR. BURNETT: They are bootstrapped up to it.

12 COMMISSIONER GILINSKY: -- and they can't operate  
13 indefinitely below it.

14 MR. BURNETT: And that is how our current guidelines  
15 are.

16 *Sam* COMMISSIONER KENNEDY: What <sup>are</sup> of the objection<sup>ve</sup>  
17 description<sup>s</sup> of the elements of the standard; high assurance?

18 *Sam* MR. BURNETT: Okay, I have that. I doubt that I  
19 have it in a paper with me.

20 In the comprehensive reports is where it is strived  
21 for, where a rating is given to a facility. And in the "high"  
22 it says that it has been tested and can withstand the threat  
23 on a repeated basis ---

24 CHAIRMAN HENDRIE: With high assurance.

25 MR. BURNETT: -- with high assurance.

CHAIRMAN HENDRIE: Or good assurance or whatever.

1                   COMMISSIONER KENNEDY: What kind of testing it?  
2 Who does it? How often?

3                   MR. BURNETT: Okay, the testing is not a total test,  
4 Mr. Commissioner. We do not scamper across the fence and  
5 get shot at and call in the local law enforcement.

6                   I&E does, however, exercise the system or is  
7 scheduled to exercise the system just short of calling in the  
8 local law enforcement, that is, checking the onsite response  
9 forces and training. So to that degree of exercise. And in  
10 my comprehensives, we actually visit the site and take a  
11 multi-day evaluation of it. And it is a judgment call.

12                  COMMISSIONER KENNEDY: From what you have just said,  
13 is that the same thing you are saying when you talk about  
14 reasonable assurance?

15                  MR. BURNETT: Yes, sir.

16                  COMMISSIONER KENNEDY: Yesterday I remarked about  
17 the windmills, we keep erecting in order that we can tilt at  
18 them. As a theologian, I begin to think we do more of that  
19 than most anything else.

20                  MR. BURNETT: If I could go to the next slide, John.

21                  CHAIRMAN HENDRIE: Excuse me, I was going to continue  
22 the discussion, but I'm going to let you go to the next slide,  
23 because I think ---

24                  MR. BURNETT: Well, it will not curtail the  
25 discussion a great deal.

(Slide)

1 CHAIRMAN HENDRIE: I've got a point I want to make,  
2 but I'll go along, okay.

3 MR. BURNETT: In the next slide, I did want to put  
4 out that there has been two previous Commission actions, which  
5 support the reasonable criteria.

6 The first being used in the safety world, I don't  
7 see a whole lot in discussing that. That was a case in 1961.  
8 The latest, the answer to the NRDC petition, and if I could  
9 quote from that answer, just for a moment: "That existing  
10 safeguard programs are adequate to provide a reasonable  
11 assurance that the current SSNM activities of NRC's licensees  
12 are not inimical to the common defense and security and do  
13 not constitute an unreasonable risk to public health and  
14 safety."

15 So when pushed to the wall, this organization has  
16 responded with use of the "reasonable" criteria, as opposed  
17 to "high". So that precedent has already been set.

18 CHAIRMAN HENDRIE: I guess the language simply went  
19 back to the statutory standards.

20 MR. BURNETT: Yes, sir.

21 MR. SHAPAR: No. The "reasonable assurance" is not  
22 in the statute, not inimical to the common defense and  
23 security, nor inimical to the public health and safety, is in  
24 the statute. Reasonable assurance was not in the statute.

25 COMMISSIONER KENNEDY: Unreasonable risk to the health  
and safety of the public is in the statute.

1 MR. BURNETT: Correct, but not "reasonable assurance."

2 MR. SHAPAR: It's not the <sup>Statutory</sup> preparatory language,  
3 because generally the statute does not make a distinction  
4 between common defense and security and public health and  
5 safety. And I might also add that safeguards is not a term of  
6 art as such, and it embraces elements of both public health and  
7 safety and common defense and security. If you steal it  
8 and you throw it in the reservoir, that's health and safety,  
9 if you sabotage the facility or you steal it and you send it  
10 abroad, that's presumably common defense and security.

11 CHAIRMAN HENDRIE: Okay.

12 MR. BURNETT: Next slide, please.

13 (Slide)

14 CHAIRMAN HENDRIE: Let's see, before you get on  
15 to the recommendations and the threat statements and the  
16 upgrade rule and so on, let me raise the following --  
17 enunciate the following difficulty which I pointed out to you  
18 and the staff in Safeguards and see if I can make it clear  
19 enough for the Commissioners.

20 Let me talk now about the facilities handling  
21 formula quantities, the fuel cycle facilities so that it is  
22 in a form where you are worried about it in order to come  
23 away from the reactor sabotage area. To talk about an area  
24 where you might, indeed, want the language to be a little  
25 different than the classical standard.



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Sam

For these facilities there is a comprehensive evaluation program that has gone on, which teams of experts in one area or another go out and examine a facility. They look at various phases of the safeguards and there is a grading scale that is built into that program. And for better or worse, it has been going on for two years and it uses the terminology "high", "high assurance" that <sup>a</sup>given ~~a~~ set of features will work. Good assurance, fair, and I guess poor.

Now, if you write high assurance into the regulation as the standard, and you then have a grading mechanism which goes, high, good, fair and poor, you are going to have a hell of a time keeping any facility in operation, for which, on any inspection, any phase rates less than high on the grading scale. There is just too much of a coincidence of these words. Now, I don't know what the solution is. I think the intent of the staff and the way they have been treating it is, here they have this grading scale and you might come back from a facility and say there are six things we rated on the facility. Two of them are high and three of them are good and one of them is fair, or fair to poor, and sort of forming a reasonable balance of this, we conclude this meets the overall requirement. But if the overall requirement is phrased in terms of high assurance, you just can't -- you know, you have created a trap for yourself in which you are going to be, in effect, asking your inspectors to go out and make a high

1 assurance finding on every phase of every facility at every  
2 inspection, with the alternative of shutting a facility flat  
3 down if you can't do that. I just don't think it is worth  
4 it.

5 Now, I don't know whether one of the ways to deal  
6 with this is to take the regulatory standard and use some other  
7 words than high assurance. The other thing to do is to take  
8 the grading scale and have it go, poor, fair, good, excellent  
9 and then you could explain that if a facility that has six  
10 factors that you rated that gets two excellents, three goods  
11 and a fair, meets it. And I don't know how you are treating  
12 that correctly in the Upgrade Rule and I would be interested  
13 to know.

14 MR. BURNETT: In the Upgrade Rule itself? It's not  
15 treated.

16 MR. GOSSICK: What you are searching for, though,  
17 is exactly what NRR has used in their approach. They are  
18 searching whether high assurance has been met on reactor  
19 facilities.

20 Jim, can you outline what the inspectors will do  
21 when faced with the situation the Chairman has outlined?

22 MR. MILLER: Well, we use the same type of criteria  
23 that is used in the Safety side in that if it is <sup>4</sup> ~~that~~ "go"  
24 "no-go" situation, if an inspector goes out and sees, for  
25 example, unimpeded access in the containment, we consider that

1 a very bad thing, and the inspector considers that a very bad  
2 thing and that's a no-go. That is the scale that you used,  
3 I guess that's a poor.

4 If we go out and see the fence washed out ---

5 COMMISSIONER KENNEDY: Excuse me, Jim, do these  
6 things have relative weights? You are <sup>implying</sup> applying that to me  
7 and I want to be sure I understand what you are saying.

8 MR. MILLER: Not really, it is more in the judgment  
9 of the inspector. As Bob mentioned, we are working on a system  
10 of ---

11 COMMISSIONER KENNEDY: If it is in a judgmental  
12 area, there must be some relative weights that he gets out  
13 of these, he says this one is a three and that one is a two  
14 when he multiplies the poorest.

15 MR. MILLER: We are working on a system to do just  
16 exactly that. We don't have it quantified at this point.

17 For example, if the fence is washed, that's maybe  
18 something wrong, but it is not really as bad as unimpeded  
19 access into the containment. It is the same type of rating  
20 system, if you will, as done in safety.

21 CHAIRMAN HENDRIE: But you don't normally come back  
22 and have an evaluation team write a report that says we looked  
23 at the XYZ reactor and there are 22 elements in the security  
24 plan and we rated this many, give high assurance and this many  
25 are good and this many are fair, and this many are poor,

1 overall it adds up as follows.

2 MR. MILLER: No.

3 CHAIRMAN HENDRIE: What I'm saying is we have  
4 constructed that kind of pattern for the fuel cycle facilities,  
5 and I just see very significant difficulties in having the  
6 grading system which uses the word "high" at the top category  
7 and then a regulatory standard that has precisely the same  
8 language. I think you are going to have a whale of a time  
9 arguing that high assurance, under the regulations corresponds  
10 to an evaluation in which you have less than all high grades  
11 coming back out of the evaluation report. I'd hate to take  
12 that one to court, although maybe Steve would ---

13 MR. BURNETT: Also, as I mentioned, NMSS is revamping  
14 its Comprehensive Evaluation Plan, and we are starting to go  
15 more on a line, to move away from high, good, fair and poor.

16 I have asked for criteria to be generated which would,  
17 which you might call "closedown" criteria or "emergency  
18 deficiency" criteria, in that in the new rounds, what I will  
19 be presenting to the Commission, I will have three levels  
20 fully adequate, conditional operations and inadequate. And I  
21 think each of those are self-explanatory, which I think would  
22 be a much more realistic way to go.

23 CHAIRMAN HENDRIE: Yes.

24 MR. GOSSICK: And in either case, assuming not a  
25 shutdown, then whatever standards you want to say is our

1 standard, it's going to be immaterial.

2 CHAIRMAN HENDRIE: Yes.

3 MS. MULLEN: Which avoids the use of the word  
4 "high assurance" entirely.

5 MR. BURNETT: And it gets us out of this problem  
6 here. If we rate it conditional ---

7 CHAIRMAN HENDRIE: Actually, that corresponds very  
8 much to what you do under your present grade, why high  
9 assurance is okay, some good and fair are sort of conditional,  
10 depending on how much good and how much fair, and poor is,  
11 for pitty sake, get in there and do something about it.

12 MR. BURNETT: I mean, it is just common sense and  
13 that's what NMSS will be presenting.

14 CHAIRMAN HENDRIE: So in effect then, you have a way  
15 of dealing with what I have seen as the difficulty with the  
16 use of a regulatory high assurance standard for the fuel  
17 cycle facilities.

18 MR. BURNETT: We could, yes, sir.

19 CHAIRMAN HENDRIE: And it would flow it in this way.

20 MR. SHAPAR: You still have to make your statutory  
21 finding, though, before you issued a license. If it was not  
22 inimical to the common defense and security, and it did not  
23 create an unreasonable risk to the public health and safety.

24 MS. MULLEN: Without any use of the term "assurance"  
25 at all.

1 CHAIRMAN HENDRIE: Yes.

2 I'm not quite sure why the regulations couldn't go  
3 ahead and use the statutory standard, as a matter of fact.

4 MR. LAPAR: Of course there are similar standards  
5 for reactors, and of course, there, the Commission for historical  
6 reasons with which you are acquainted, saw fit to introduce  
7 the <sup>prefatory</sup> ~~preferatory~~ word "reasonable assurance". So you would be,  
8 I guess, introducing somewhat of a, let's say, illogical  
9 imbalance, which is little.

10 CHAIRMAN HENDRIE: Well, at least it wouldn't have  
11 been done in identically the same way as was done on a reactor  
12 site. Okay.

13 Can you tell me a little bit more. Did you say  
14 "goal" or did I say "goal" with regard to the regulatory  
15 standard?

16 MR. BURNETT: In the Upgrade as it is written now,  
17 is a "goal". Mr. Gilinsky referred to that that is really the  
18 standard that the licensees march to, but in the actual wording  
19 of the rule ---

20 CHAIRMAN HENDRIE: Against which they are judged or --  
21 Let's see, I'm not sure that's the right word to use ---

22 MR. BURNETT: -- The goal will be high.

23 CHAIRMAN HENDRIE: At least that's the way it is  
24 written at the moment.

25 MR. BURNETT: Yes, sir.

1 CHAIRMAN HENDRIE: Could you just point to me in the  
2 Upgrade Rule ---

3 MR. BURNETT: Where 't says that?

4 MS. MULLEN: 320A, age 35 on the old one.

5 CHAIRMAN HENDRIE: Let's see, I've got the 187 paper,  
6 can you find it in there and give me a page number?

7 MR. BURNETT: We'll dig it up.

8 MS. MULLEN: Page 19 and 20.

9 CHAIRMAN HENDRIE: Page 20.

10 MS. MULLEN: Underlined at the top of page 20.

11 CHAIRMAN HENDRIE: Under General Performance  
12 Requirements, right?

13 MS. MULLEN: Right.

14 CHAIRMAN HENDRIE: "Shall establish and maintain or  
15 make arrangements for a physical protection system which will  
16 provide reasonable assurance that activities involving..." --  
17 Ah, but this is the proposed words.

18 MR. BURNETT: This paper was modified on the Task  
19 Force finding and presented to you in that format.

20 CHAIRMAN HENDRIE: I see, gotcha.

21 So I don't know what the -- I guess I don't have the---

22 MR. BURNETT: Wording on the "high".

23 Bud, do you have one of the old copies?

24 MR. EVANS: I don't have it with me, no sir.

25 MR. BURNETT: Do you remember how it was worded?

1 MR. EVANS: I don't have the exact words, Bob, but  
2 that's something we can very easily get up here. Do you  
3 need it right at this point?

4 CHAIRMAN HENDRIE: No, I don't think so, because I  
5 think for other reasons I'm going to have to adjourn this  
6 discussion to a later time, but when we come back, it would be  
7 useful to have that previous wording.

8 Commissioner Gilinsky thinks he would like to see  
9 "high assurance" in here, at least for fuel cycle facilities  
10 and I intend to see if I can argue him in to being more  
11 reasonable about the reactors. So we would like to see how  
12 the "high assurance" looks. What I would like to try to  
13 understand is the way in which that phrasing goes, and how  
14 it presents that high assurance as a goal, rather than a --  
15 and your reducible minimum standard at every moment and every  
16 phase, you see. And there might be ---

17 MR. BURNETT: It might be in the Annual Report, and  
18 we are checking that.

19 CHAIRMAN HENDRIE: What one might want to, in fact,  
20 work on that wording some and the previous phrasing would be  
21 a useful place to start.

22 MR. BURNETT: I am at a breaking point in the  
23 presentation. Threat is next, so it would be a good time  
24 to terminate.

25 CHAIRMAN HENDRIE: I'm going to suggest, because



1 I don't want to gather the Commissioners on another subject.

2 I think this would be a good time to break. When  
3 we come back to this subject, why, what I will look for is a  
4 brief recapping of a sort of discussion and arguments we have  
5 had here, have at hand in format form the high assurance  
6 language.

7 MR. SNYDER: It is in your Task Force paper on page  
8 18.

9 CHAIRMAN HENDRIE: Well, good try Bernie.

10 MR. BURNETT: It is there, however. "Will provide  
11 protection with high assurance."

12 CHAIRMAN HENDRIE: I declare the matter moot for  
13 the afternoon.

14 Well, I thank you very much for this discussion, and  
15 as I commented at the beginning, I think it is one in which  
16 we will hack at several times, I think, before we come to any  
17 conclusions. Among other things, I'd like to see a full  
18 array of Commissioners on hand.

19 COMMISSIONER KENNEDY: Can somebody find me a  
20 definition of "reasonable"?

21 COMMISSIONER BRADFORD: In this context, it is  
22 probably synonymous with high.

23 MS. MULLEN: It is exactly.

24 COMMISSIONER KENNEDY: I keep saying about these  
25 windmills.

1 MR. BURNETT: We will have these answers for you,  
2 Mr. Chairman, and also will complete the presentation on the  
3 "Threat" side of the Task Force.

4 CHAIRMAN HENDRIE: Yes, right.

5 (Whereupon, the meeting was adjourned at 2:30 p.m.  
6 and the Commission moved on to other business.)  
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