

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

Title: BRIEFING ON INTERIM REPORT ON ACCIDENT STUDY FOR
PLUTONIUM AIR TRANSPORT PACKAGES

Location: ROCKVILLE, MARYLAND

Date: MAY 15, 1989

Pages: 40 PAGES

SECRETARIAL RECORD COPY

NEAL R. GROSS AND CO., INC.
COURT REPORTERS AND TRANSCRIBERS
1323 Rhode Island Avenue, Northwest
Washington, D.C. 20005
(202) 234-4433

DISCLAIMER

This is an unofficial transcript of a meeting of the United States Nuclear Regulatory Commission held on May 15, 1989 in the Commission's office at One White Flint North, Rockville, Maryland. The meeting was open to public attendance and observation. This transcript has not been reviewed, corrected or edited, and it may contain inaccuracies.

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

NEAL R. GROSS
COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVENUE, N.W.
WASHINGTON, D.C. 20005

1 UNITED STATES OF AMERICA
2 NUCLEAR REGULATORY COMMISSION

3 * * *

4 BRIEFING ON INTERIM REPORT ON ACCIDENT STUDY
5 FOR PLUTONIUM AIR TRANSPORT PACKAGES

6 * * *

7 PUBLIC MEETING

8 * * *

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

12
13 Monday, May 15, 1989
14

15 The Commission met in open session, pursuant to
16 notice, at 2:00 p.m., the Honorable LANDO W. ZECH, JR.,
17 Chairman of the Commission, presiding.
18

19 COMMISSIONERS PRESENT:

20 LANDO W. ZECH, JR., Chairman of the Commission
21 THOMAS M. ROBERTS, Member of the Commission
22 JAMES R. CURTISS, Member of the Commission
23
24
25

NEAL R. GROSS
COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVENUE, N.W.
WASHINGTON, D.C. 20005

1 STAFF AND PRESENTERS SEATED AT THE COMMISSION TABLE:

2 SAMUEL J. CHILK, Secretary

3 STUART TREBY, General Counsel's Office

4 HUGH THOMPSON, DED, NMSS, OS

5 ROBERT BURNETT, NMSS

6 ROBERT BERNERO, Office Director, NMSS

7 CHARLES MacDONALD, Chief, Transportation Branch

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

NEAL R. GROSS
COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVENUE, N.W.
WASHINGTON, D.C. 20005

P R O C E E D I N G S

(2:02 p.m.)

1
2
3 CHAIRMAN ZECH: Good afternoon, ladies and
4 gentlemen.

5 Commissioner Carr and Commissioner Rogers will
6 not be with us this afternoon.

7 The purpose of the briefing this afternoon is
8 to discuss the accident study for plutonium air transport
9 packages. This is an information briefing.

10 I understand that copies of the slides are
11 available as you enter the room.

12 As most of you know, the Nuclear Regulatory
13 Commission is responsible for assuring that standards,
14 rules, and regulations provide for adequate protection of
15 public health and safety and maintenance of the national
16 defense and security, during the transport of radioactive
17 materials. Consequently, the Commission continuously
18 monitors activities in the nuclear materials
19 transportation area.

20 The topic for discussion today will focus
21 specifically on cask certification for plutonium air
22 shipments. The Murkowski Amendment, as many of you
23 recall, imposed several additional requirements affecting
24 plutonium air shipments. Among other things, it requires
25 NRC certification that the container used is safe.

NEAL R. GROSS
COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVENUE, N.W.
WASHINGTON, D.C. 20005

1 The Commission will hear more about the staff's
2 efforts to meet the requirements under the Murkowski
3 Amendment here this afternoon.

4 The Office of Nuclear Materials Safety and
5 Safeguards will brief the Commission today on the ongoing
6 events in this area.

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

9 (No response.)

10 If not, Mr. Thompson, you may proceed.

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

12 Bob Burnett will be doing the briefing today.

13 With us is Bob Bernero, who is the Office Director, and
14 Chuck MacDonald, who is the Chief of the Transportation
15 Branch. As you know, this is a status briefing, and we
16 want to let you know where we are in the schedule, what
17 the next steps are, and we have some briefing slides and
18 a picture, too, that we will use in today's briefing.

19 Bob?

20 CHAIRMAN ZECH: All right. Thank you very
21 much. You may begin, Mr. Burnett.

22 MR. BURNETT: Thank you. Before I get into the
23 main part of the briefing, I would like to let the
24 Commission know that Lawrence Livermore's National
25 Laboratory has two representatives here, Mr. C.K. Chou

1 and Mr. Carl Walter, who are seated directly behind me.

2 CHAIRMAN ZECH: Would you stand up, please.

3 (Whereupon, Mr. Chou and Mr. Walter stood as
4 requested.)

5 Thank you. We appreciate your being with us
6 today.

7 MR. BURNETT: They are members on the team that
8 are pursuing this under contract from the NRC.

9 Slide 2, please. (Slide) I would like to just
10 go over some of the areas we will be hitting in detail--
11 the background, consisting of the Murkowski Amendment
12 specifically; selection of the worst-case crash, which
13 was required by the Murkowski Amendment; the various
14 tests that are required in that law; and then, lastly,
15 talking about other phases to be addressed in the total
16 program. The package you'll be briefed on today only
17 addresses Phase I.

18 Slide 2 -- I mean, 3. (Slide) The Murkowski
19 Amendment itself has some technical parameters which must
20 be satisfied. Call your attention to the first set of
21 bullets.

22 An actual package must be dropped from an
23 airplane, to simulate a free-fall condition -- should two
24 planes collide in the air and so that a package is thrown
25 free of the cargo area.

1 In addition to that, one of two other tests are
2 required. One would be to actually crash a fully
3 operational, fully loaded aircraft or, in lieu of that,
4 setting up worst-case parameters or simulation tests,
5 which would then be approved by an expert panel reviewing
6 those tests.

7 So, just to make it clear, we have two tests,
8 either way, with the drop test being the first one.

9 Also, call your attention to the last bullet as
10 that the receiving country, receiving the plutonium that
11 flies through United States airspace, is to pay all
12 licensing and related charges.

13 Slide 4. (Slide) To satisfy the Murkowski
14 Amendment and since Japan had shown an interest in that
15 type of transport, we entered into a Memorandum of
16 Understanding with PNC, or the Power Reactor Nuclear Fuel
17 Development Corporation, in Japan.

18 They have been nominated by the Japanese
19 Government to be their representative to the NRC. That
20 document was forwarded to the Commission in December of
21 '89. That document covers only Phase I.

22 CHAIRMAN ZECH: December of '88, I think you
23 mean.

24 MR. BURNETT: Oh, I'm sorry. December of '88.
25 That document covers Phase I, as I mentioned earlier, but

1 the whole program that we have outlined which contains
2 three other phases, if the Japanese Government decides to
3 go forth, would be a public comment and panel review that
4 I related to earlier, conduct the actual testing, and the
5 last phase, certification and report to Congress.

6 Phase I will be completed in September of '89,
7 however, as part of Phase I, in slide 5 -- (slide)--
8 Lawrence Livermore will be delivering to the NRC a
9 interim report that, in turn, will be forwarded to the
10 Japanese Government in mid-July.

11 It is staff's intention at this point, to
12 deliver back to the Commission via a Commission paper,
13 that actual interim report. It will most likely be
14 forwarded up to the Commission late in June, allowing
15 then two to three weeks for Commission review and final
16 delivery to the Japanese Government.

17 That document will cover the interim or early
18 identification for the drop test, the criteria for that
19 test, and also the criteria required to wreck or actually
20 crash an actual aircraft.

21 The remaining year that is necessary to work on
22 the Phase I would be dedicated to creating the panel part
23 test criteria, and would not become deliverable until
24 September of 1990.

25 Could I have slide 6, please. (Slide) As part

1 of one of the early efforts that had to be pursued, this
2 agency had to identify the worst-case accident on record.
3 The staff did that in December, informed the Commission
4 December of 1988 that it had selected the PSA flight 1771
5 crash of December the 7th, 1987.

6 If you all remember, that was a crash that took
7 place out in California. It was an aircraft that was
8 involved in routine transport of people. It was involved
9 in a highjacking, where it is believed that a disgruntled,
10 employee shot both the pilot and the co-pilot, who then
11 slumped up against the controls of the aircraft, and the
12 aircraft made a high-speed, full-power dive into a small
13 mountain range.

14 It hit at about 80 to 90 degrees vertical--
15 or, in other words, almost vertical. Its velocity at
16 impact has been calculated to be approximately 650 to 670
17 miles per hour.

18 To give you some sort of a reference, 750 miles
19 per hour is the approximate speed of sound at sea level.
20 So, it approached the speed of sound at impact.

21 Could I have picture number 1, please. (Slide)
22 This is a photograph of the actual type of airplane
23 involved in the aircraft accident. It's made by British
24 Aerospace. It's type is a 146-200.

25 Could I have picture number 2, please. (Slide)

1 The damage that was sustained by the airplane was
2 massive. It hit in -- yes -- could you back it up just a
3 little? I'd like to call your attention to the middle of
4 the picture and back to the left. Those small, silver
5 fragments are the airplane, in total.

6 The aircraft struck the ground at such a high
7 velocity that it is believed that a shock wave came
8 through the fuselage and literally shattered the plane.
9 So, it's a rather severe accident to try to simulate.

10 MR. THOMPSON: It might be helpful if -- this
11 is the blown up picture. You can see here where the
12 impact of the plane kind of came in from that angle right
13 there.

14 MR. BURNETT: About dead center and a little
15 bit to the right and the top, you will notice a small
16 crater. That crater is 12 feet wide and 45 feet long.
17 The width of the crater was created by the wing-span of
18 the airplane and, as I say, is about 12 feet deep.

19 It crashed into turf that was about one-foot
20 deep, of what you might call normal California dirt,
21 followed by a soft sandstone. It proved to be quite
22 effective at complete destruction of the aircraft. There
23 were minor fires reported, but no sustained burning.

24 Call your attention to the third bullet on the
25 Vu-graph. The flight data recorders -- could I go back

1 to the Vu-graph 6, please, now. (Slide) The flight
2 recorders that are required to be on all U.S. aircraft
3 were completely destroyed in the accident, and there are
4 two of them.

5 That particular device was selected to be
6 studied, to try to figure out the amount of G-forces that
7 may have been demonstrated at the particular airplane.
8 That device was picked because we know a great deal about
9 that particular structure because it is specified by the
10 FAA to very fine details.

11 It's believed, by looking at the damage of
12 those two devices, that the plane sustained a 5000G force
13 impact, well and above anything that's in our current
14 regulations. So, from this, we believe that the
15 resulting test criteria will be very, very difficult to
16 meet.

17 Number 7, please. (Slide) To kind of let you
18 know where we are in this program, one, the aerial survey
19 of the crash site has been completed, and this allowed
20 the licensee to computerize it, to get better
21 understanding of the crash impacts.

22 Also, several core samples have been taken from
23 the crash vicinity, to get the depth and the hardness of
24 the rock. We have completed preliminary shear-
25 compression wave testing which, again, allows us to

1 characterize the hardness of the soil. All of that data
2 is back at the laboratory right now, for sampling.

3 One final test will be accomplished in the next
4 two or three weeks, and this, again, will allow us to
5 make cursory estimates on the hardness of the soil, so
6 that in selecting some test site we can more quickly
7 separate the good sites from the bad sites.

8 Slide 8. (Slide) I would like to call the
9 Commission's attention to the fact that we have two
10 possible bases for staff consideration. One, we could go
11 with the parameters of the actual PSA flight 1771 -- in
12 other words, take the angle of impact, the crash
13 velocity, and the hardness of the soil -- however, we
14 believe that it may not be possible to meet all of that
15 criteria for a selected test site. In other words, the
16 airplane that is selected by the Japanese Government for
17 transport, may or may not be able to achieve the actual
18 velocities that this particular airplane achieved.

19 Secondly, the test site may or may not have
20 exactly the same hardness of soil. And, thirdly, test
21 range conditions have to be met. Whenever an airplane or
22 a staging of a test like this is pursued, it must be
23 presented to the range officer for safety considerations.
24 They might put certain restrictions on that test. We
25 don't know yet. It is possible.

NEAL R. GROSS
COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVENUE, N.W.
WASHINGTON, D.C. 20005

1 Therefore, the test or the staging of the
2 actual test will be as close to the actual accident that
3 I briefed you on, but not necessarily exactly the same,
4 and the Murkowski Amendment allows for this variance. In
5 the law, they do refer to setting up the test to the
6 extent practicable. So, this type of problem was
7 anticipated in the law.

8 Slide 9, please. (Slide) Now to talk about
9 the first item that I briefed you on, on the interim test
10 that would drop the plane from cruise altitude. It's
11 assumed at this point that the Japanese Government would
12 probably select a large cargo-type aircraft. The reason
13 for this is, it would have to take the weights involved,
14 and it would have to be able to fly from France to Japan,
15 which is estimated to be at about an 18-hour flight.
16 There are only several airplanes available, or even on
17 the drawing boards, to do that, and they are all of the
18 large 747 type.

19 Assuming that they would use an aircraft of
20 that type, they cruise at 43,000 feet. The law requires
21 that this drop test be accomplished at cruise altitude
22 and in soil conditions similar to those that went along
23 with the PSA 1771 data. However, looking at the
24 technical data associated with such a test, it's been
25 determined that terminal velocity of the task itself

1 would probably be achieved, or it would be achieved,
2 dropping it from 23,000 feet. So, going above that
3 serves no technical purpose.

4 Also, the horizontal velocity parameter is
5 essentially nullified from 23,000 feet, and it's falling
6 completely vertical at that point. So, for safety
7 reasons, it might be better to use a helicopter, or maybe
8 even a C-130, and drop it from 23,000. That would meet
9 the technical parameters of the law, we believe.

10 So, I guess what I'm trying to say is that, at
11 this point, we have identified the technical parameters
12 of the accident that the PSA airplane experienced, and
13 there are ways to satisfy the law, at this point.

14 Slide 10, please.

15 MR. THOMPSON: Let me make sure, when you say
16 that, Bob, there is one aspect of the test that we really
17 are still exploring, and that's the hardness of the
18 impact surface. And we've gotten data that will allow us
19 to complete that particular analysis, and that's what our
20 contractor is doing for us, but for the other aspects of
21 the velocity, the impact angle, that one is still -- we
22 do have that data, as well as the drop test altitude, so
23 we do have that one other test.

24 CHAIRMAN ZECH: All right. Thank you.

25 MR. BURNETT: Okay. Slide 10, please. (Slide)

1 You remember that I covered in the Murkowski Amendment,
2 that in lieu of an actual aircraft test, the law did
3 allow for the staff to identify some technical tests to
4 be applied on the packaging -- in other words, maybe
5 using a rocket sled and sending it into a concrete
6 abutment, or things like that, similar to what is done in
7 the NUREG-360 requirements for the current packaging.
8 However, if the Commission elected to go that route, or
9 if the Japanese Government requested that route, that set
10 of testing criteria would have to go before an expert
11 panel, as required by the law.

12 Those parameters will not be contained in the
13 interim report to be delivered in mid-July, but would be
14 contained in the final report that would be brought to
15 the attention of the Commission in September of 1990.

16 So, what we intend to do at that point is,
17 probably in early September, we would be forwarding up to
18 the Commission the final report of Phase I. That would
19 include all the data contained in the interim report,
20 plus this final bit of test criteria to cover the use of
21 an expert panel.

22 CHAIRMAN ZECH: So, in June, we won't expect to
23 get in your report, anything on that actual test. The
24 only thing we will get is the aircraft crash itself --

25 MR. BURNETT: Yes, sir, and the drop test.

1 CHAIRMAN ZECH: -- phase, and the drop test.

2 MR. BURNETT: Yes, sir.

3 CHAIRMAN ZECH: All right.

4 MR. BURNETT: You can expect to see in that
5 report, at what altitude and at what method the staff
6 would recommend that the drop be made, and at what
7 velocities, vertical impacts and hardness of the soil of
8 an actual aircraft crash.

9 CHAIRMAN ZECH: All right. Thank you.

10 MR. BERNERO: Excuse me, Bob. I wonder if I
11 could take the Commission's attention back to the point
12 Bob made earlier in slide 8 that, really, in the interim
13 crash test, there are two possible bases for that test.
14 One is this PSA flight 1771 itself. The other is the
15 parameters of some credible transport aircraft -- and the
16 picture you saw, that's not really a credible transport
17 aircraft for this 18-hour flight from France to Japan.

18 The July 15th interim report will specify, here
19 is the first basis, the parameters of PSA flight 1771.
20 There remains the applicant, or the agent in question,
21 the Japanese Government, can choose and identify a
22 credible aircraft and, subsequently, identify the
23 parameters that are associated with that aircraft and, of
24 course, later, when, and if, that were pursued, with a
25 test range in the implementation that could be different.

1 And the law recognizes that possibility.

2 CHAIRMAN ZECH: Well, what kind of review or
3 recommendation are we going to get on that here in June?

4 MR. BERNERO: Oh, you won't. In the July 15th
5 report, you'll get the --

6 CHAIRMAN ZECH: Wait a minute. Are we talking
7 the June report, or July now?

8 MR. BERNERO: July 15th.

9 MR. BURNETT: You'll see it in June.

10 CHAIRMAN ZECH: We'll see it in June, but it's
11 due out in July. I understand.

12 MR. BERNERO: Right.

13 MR. BURNETT: Correct.

14 CHAIRMAN ZECH: It's the same report.

15 MR. BERNERO: Yes.

16 MR. BURNETT: Right.

17 CHAIRMAN ZECH: All right. Now, go ahead.

18 MR. BERNERO: You will see the basis associated
19 with PSA flight 1771, that aircraft in the picture, which
20 is the limiting case, by the law --

21 CHAIRMAN ZECH: Yes, I understand that.

22 MR. BERNERO: -- and you'll see the drop test
23 requirements, but you won't see an alternative aircraft
24 design because it hasn't -- we think we know what it will
25 probably be because of the limited availability of such

1 aircraft --

2 CHAIRMAN ZECH: But you will not be giving us
3 any recommendation on that until --

4 MR. BERNERO: Until the agent chooses what they
5 want to do.

6 CHAIRMAN ZECH: -- and then you'll not come
7 back to the Commission until late in 1990, is that
8 correct?

9 MR. BERNERO: Well, the end of the summer.

10 CHAIRMAN ZECH: Depending on what they choose.
11 We won't get anything before then. Why can't you come
12 back to us after we find out what the Japanese government
13 desires --

14 MR. BERNERO: Oh, we would, certainly --

15 CHAIRMAN ZECH: -- and then come back to us
16 with an --

17 MR. BURNETT: Absolutely.

18 MR. BERNERO: Yes. We would certainly come
19 back to you with an interim report.

20 CHAIRMAN ZECH: -- interim report so you'll be
21 involved in it.

22 MR. BERNERO: We'll undoubtedly give you a
23 briefing at key points, as the information is --

24 CHAIRMAN ZECH: Well, just make sure we do
25 that. I think that's important.

1 MR. BERNERO: Yes.

2 MR. THOMPSON: Just so that you clearly
3 understand, we won't necessarily know what the credible
4 aircraft is --

5 CHAIRMAN ZECH: Oh, I understand that, but --

6 MR. THOMPSON: -- before the test, or its
7 limitations.

8 CHAIRMAN ZECH: -- you will perhaps later this
9 summer, and then you can come back to the Commission when
10 you have that under your consideration, and give the
11 Commission a further briefing at that time.

12 MR. BERNERO: Yes. As criteria are identified,
13 the Japanese Government has some choices put before them
14 --

15 CHAIRMAN ZECH: I understand.

16 MR. BERNERO: -- and their choices then affect
17 the subsequent action.

18 CHAIRMAN ZECH: I understand. The Commission
19 just wants to be informed, though, when you have that
20 kind of information, is my point.

21 MR. BURNETT: Yes, sir. Now, if they select
22 like a 747, which there is one on the drawing boards that
23 could carry this weight over that distance, although it's
24 not currently available, it could, most likely, dive at
25 the same angle that the PSA airplane did, and at the same

1 velocity.

2 So, the only problem that could affect their
3 test are any test range considerations required by the
4 safety officer, which we wouldn't know even at the point
5 of them selecting the airplane.

6 CHAIRMAN ZECH: Say that again. The only point
7 you wouldn't know is, what?

8 MR. BURNETT: All right. At a particular test
9 site, if the test range officer says, "Okay, but looking
10 at the size of my site and looking at the degree of
11 uncertainty in the test, I will only allow you to dive at
12 70 degrees" -- all right -- the actual impact angle of
13 the PSA airplane was 77 degrees, but if that is their
14 requirement, as I say, the law would allow us to go along
15 with the 70-degree impact.

16 So, even with the selected aircraft, the test
17 site could further, shall I say, inhibit, possibly, some
18 of the technical parameters.

19 CHAIRMAN ZECH: Well, would that preclude the
20 finality of the test itself, to the extent where we
21 couldn't make a final decision, or would it?

22 MR. BURNETT: No, sir, and the law allowed for
23 that.

24 CHAIRMAN ZECH: Well, all right. Fine. Let's
25 proceed.

1 MR. BURNETT: Ten(a), please. (Slide) We
2 presented this slide for comparison purposes only.
3 Currently, the IAEA, through their Part 71, has
4 requirements that affect plutonium air transport, and
5 their test parameters are shown underneath that first
6 column. Impact of 30 feet per second, onto an unyielding
7 surface; velocities of 44 feet per second, and target
8 hardness, as I said, of unyielding.

9 Now, following to the right, NUREG-360 is -- we
10 actually had the impact test at 422 feet per second on
11 the same unyielding surface. The test results, if driven
12 by the PSA accident, would be around 985 feet per second.
13 That has actually been fine-tuned a little bit, and is
14 coming in at 930 feet per second, but it's approximately
15 650 miles an hour.

16 So, you can see the impact velocity, at least
17 under the Murkowski Amendment, would require a much
18 faster impact. However, for the target hardness, it is
19 that that has actually happened, so it -- most likely it
20 will be much, much less than the unyielding surface.

21 The other parameters, which we've shown as dash
22 lines, are the parameters that will result from the rest
23 of the study, which we will then come back and deliver to
24 the Commission in September of 1990.

25 Slide 11. (Slide) Addressing the further data

1 that must be pursued to satisfy the rest of the Murkowski
2 Amendment, the contractor is reviewing now, and will
3 continue to review, the National Transportation Safety
4 Board data, looking at all the accidents in America, and
5 the International Civil Aviation Organization data,
6 looking at the accidents worldwide.

7 They will be evaluating that accident data and
8 presenting to us the data to go into the final report,
9 and that will be accomplished during the next year.

10 Slide 12 -- (slide) -- which is our summary
11 slide, is as we stated, the interim report -- and I show
12 the July date because that's the date it is to be
13 delivered to the Japanese Government -- will include both
14 the drop and the actual aircraft parameters.

15 In addition to that, which I have not mentioned
16 up to this point, we will have a costing for the
17 remaining three phases of the program, so that they can
18 evaluate that at that point. And then all of this will
19 be tidied up in September of 1990 and delivered to them
20 in final form.

21 We are on schedule on the interim report, and
22 are on schedule on the September 1990 final drafting. We
23 are within budget, and so this was really just to make
24 you aware of what will be coming in July.

25 CHAIRMAN ZECH: All right. Fine.

1 MR. THOMPSON: I think that completes our
2 briefing, Mr. Chairman. We'd be delighted to answer--
3 respond to any questions.

4 CHAIRMAN ZECH: All right. Thank you very
5 much. Questions from my fellow Commissioners?
6 Commissioner Roberts?

7 COMMISSIONER ROBERTS: No.

8 CHAIRMAN ZECH: Commissioner Curtiss?

9 COMMISSIONER CURTISS: In the interest of time,
10 just a couple of quick ones. With respect to the budget,
11 what is your total budget estimate for the program?

12 MR. BURNETT: For all phases?

13 COMMISSIONER CURTISS: Uh-huh.

14 MR. BURNETT: It's a little hard to answer that
15 directly because it depends upon two big variables. If
16 it was decided to crash a real airplane, and if that
17 airplane was a 747, the used airplane market price for
18 that is around \$35 million.

19 If it was elected to go through an expert
20 panel, then that's a completely different figure.

21 COMMISSIONER CURTISS: All right.

22 MR. BURNETT: So, I --

23 MR. THOMPSON: Just a minute. Commissioner
24 Curtiss, was your question addressed to our budget, what
25 we were doing with the contractor, or with the whole --

1 COMMISSIONER CURTISS: Let me just break it
2 down. What's the budget estimate for our effort on Phase
3 I?

4 MR. BURNETT: Phase I was cost out at \$3.5
5 million, and understand that that is not any NRC money.
6 That was provided by the Japanese Government.

7 I have some preliminary costings on Phase II,
8 III and IV but, again, they are highly dependent upon
9 what direction the Japanese Government elects to go.

10 COMMISSIONER CURTISS: All right. With respect
11 to Phase I, we have \$2.3 million already from the
12 Japanese?

13 MR. BURNETT: Yes, sir.

14 COMMISSIONER CURTISS: And the additional \$1.2
15 comes in when?

16 MR. BURNETT: It's supposed to come in this
17 month, and Japanese Government has indicated that they
18 see no problem in delivering that. They asked for -- no.
19 They explored with us the possibility of some delay in
20 delivering it, just due to getting into step with their
21 budget cycle, but no problems with the total amount of
22 money.

23 COMMISSIONER CURTISS: Would that have any
24 impact on the schedule for our program or the
25 requirements?

1 MR. BURNETT: No, sir, we have checked on that,
2 and the delay, if they desire to pursue it, would not
3 impact our program or the delivery of the product.

4 COMMISSIONER CURTISS: Okay.

5 MR. BERNERO: Excuse me, Commissioner Curtiss.
6 You are aware that there are no appropriated funds here?

7 COMMISSIONER CURTISS: I understand that. I
8 understand that. I guess I have a more general question.
9 Based upon the work that you've done to-date, and the
10 various SECY papers that have been sent up to the
11 Commission, now that we've focused on what's actually
12 required to meet the requirements of the Murkowski
13 Amendment, do you have a feel yet for whether this option
14 will continue to be seriously pursued by the Japanese, or
15 whether at this point the option of sea transport might
16 be under greater consideration?

17 MR. BURNETT: I and Mr. MacDonald and a member
18 of Lawrence Livermore did go over and meet with the
19 Japanese Government. They are very seriously exploring
20 this approach. They have a great many people dedicated
21 to the cask design effort now, and looking at the various
22 types of airplanes that are available. However, we were
23 briefed that they are also looking at other modes, too,
24 but there's been no decision that we are aware of, or
25 that we were briefed of, that they've made on this issue

1 and, in fact, they requested the interim report to help
2 them in those deliberations.

3 CHAIRMAN ZECH: That's the report that's due
4 here in -- this summer?

5 MR. BURNETT: Yes, sir.

6 COMMISSIONER CURTISS: In recent reports -- the
7 reason I raise that question, I guess I've seen in recent
8 reports, increased activity in the maritime safety agency
9 within Japan, focusing on the possible design and
10 construction of a sea-going vessel that would accommodate
11 shipments of this nature. Is that -- could you fill us
12 in on the status of that?

13 MR. BURNETT: Well, when we were there, they
14 did brief us that they were doing preliminary thoughts on
15 that. Now, the reason that they needed the interim
16 report in mid-July is to get in step with their funding
17 cycle, so that if their final decision was to pursue sea
18 transport and then notify America of that selection, they
19 would have to accomplish all of that in late summer but,
20 according to the briefing we got, they haven't made that
21 decision yet. It's a possible option.

22 COMMISSIONER CURTISS: Okay. That's all I
23 have. Thank you.

24 CHAIRMAN ZECH: Well, so the schedule that you
25 have that you're telling us about here, as far as the air

1 shipment proposal is that you'll come to us here in June
2 with your recommendation, and give the Commission some
3 time to review it, and put out that report in July, is
4 that correct? That's on the air shipment?

5 MR. BURNETT: Yes, sir.

6 CHAIRMAN ZECH: And I understand that will only
7 have the aircraft crash test as well as the drop test,
8 and will not have the proposed actual full-blown test
9 that would substitute for the crash test, is that
10 correct?

11 MR. BURNETT: That is correct.

12 CHAIRMAN ZECH: And then you'll have the final
13 report -- and then before that, you'll negotiate with the
14 Japanese Government and get their views on it, as far as
15 they are concerned, and they will then perhaps make some
16 decision on the type of aircraft, in which case you'd
17 have to review that proposition to see whether it fit in
18 with your -- the interim report you'd come up with, and
19 then you'll come back to the Commission and inform the
20 Commission at that time, as to any developments that
21 might arise from that Japanese decision on the type of
22 aircraft, for example, or other considerations they may
23 bring forth, is that correct?

24 MR. BURNETT: Yes, sir.

25 CHAIRMAN ZECH: Could you tell me a little bit

1 about the Japanese level of involvement in the project,
2 and how you're working with the Japanese, the PNC group
3 and other Japanese officials.

4 MR. BURNETT: Yes. We went over there and met,
5 I would estimate -- I wasn't told exactly how many people
6 were working on it -- Chuck, ten to 15 people, full-time?

7 MR. MacDONALD: Probably.

8 MR. BURNETT: I would say that's a realistic
9 estimate. Many millions of dollars, and they are in
10 several iterations of the design of the actual cask.
11 They are looking at technical trade-offs between the
12 size, the weight, and how much material can be contained
13 in the casks. So, they are, I would say, pursuing it
14 with all diligence.

15 As for the relationship between the NRC and the
16 PNC, no difficulties at all with that relationship. They
17 understand our regulatory position and posture, and we're
18 working any small problems that come out very, I think,
19 mutually.

20 CHAIRMAN ZECH: Now, is the cask itself one
21 that we have approved previously, or is this a new cask
22 that we would have to license and approve?

23 MR. BURNETT: This is a whole, new cask.

24 CHAIRMAN ZECH: Well, it's not only a new test
25 itself, according to the Murkowski Amendment, air crash

1 test, but also a new cask.

2 MR. BURNETT: Yes, sir.

3 CHAIRMAN ZECH: So we have, really, two
4 evolutions before us, is that a correct way to look at
5 it?

6 MR. BURNETT: Yes, sir. We have actually
7 approved two casks in the past. We call them PAT 1 and
8 2, for plutonium air transport, is what the PAT stands
9 for.

10 CHAIRMAN ZECH: Right, because I understand
11 this could be a new design that we would have to approve
12 also.

13 MR. BURNETT: Yes, sir. And it holds quite a
14 bit more material compared to the first two. The largest
15 of the first two only holds approximately 2 kilograms.
16 The designs that are being reviewed by the Japanese
17 Government now are in the area of 7 kilograms. So, it's
18 about a tripling of the capacity. And, of course, they
19 want to do that, to get as much material in the cask and
20 as many casks on an airplane at one time, to limit the
21 number of flights.

22 CHAIRMAN ZECH: Well, is the design of the cask
23 itself -- do you know, Mr. Thompson or Mr. Bernero -- is
24 the design of the cask itself, as far as we know, going
25 to present any significant problems to us, as far as

1 licensing that cask? Are we aware of that or not?

2 MR. THOMPSON: I'd prefer Mr. MacDonald to
3 respond to that since he is the nuclear review expert.

4 CHAIRMAN ZECH: All right, Mr. MacDonald,
5 you're on.

6 MR. MacDONALD: Well, the prerequisite for the
7 design of the package will met the criteria of NUREG-360,
8 and that would be the same criteria that we have for the
9 PAT 1 and PAT 2.

10 CHAIRMAN ZECH: The Japanese are aware of that,
11 and they're working with those requirements?

12 MR. MacDONALD: Yes, yes, they are aware of
13 that criteria, and to meet it.

14 MR. BURNETT: But it is a challenging effort,
15 sir.

16 MR. BERNERO: That's the floor.

17 MR. MacDONALD: It's very difficult.

18 MR. BERNERO: That's the floor.

19 MR. MacDONALD: That's baseline, yes.

20 MR. BURNETT: Yes, the base.

21 MR. BERNERO: We're in a peculiar relationship
22 here, a sensitive one, in that this is not merely a
23 package certification cycle, where you would have an
24 applicant saying, here is the package, here is the test,
25 look at how I did it, and now certify the package.

1 What we have here is, this Phase I is a
2 regulatory development where we're developing criteria--
3 the law already specifies that the existing criteria that
4 the PAT packages are designed to, the NUREG-0360
5 criteria, are a minimum standard -- it must meet them--
6 but, moreover, it must meet these things about the worst-
7 case crash, and so forth.

8 And, so, we are developing, through this Phase
9 I, regulatory requirements, and then depending on what
10 the choice is -- of course, if the Japanese Government
11 chooses to abandon air transport and goes for ship
12 transport, then the whole thing is moot, but if they
13 choose to pursue air transport further, then it goes into
14 the phase where they have a wholly new package design,
15 and we are reviewing that package design and the tests
16 against the criteria that already exist and these special
17 criteria, and we will ultimately -- I guess it's called
18 Phase IV -- we would certify that package, formally
19 certify it as having satisfied the existing criteria and
20 the new criteria of the Murkowski Amendment.

21 CHAIRMAN ZECH: Yes, I understand if they
22 pursue this course to go for air shipments, we have
23 before us then two regulatory challenges. One is to
24 approve the design of the cask itself, and that has not
25 only got to meet our regulations but perhaps go beyond

1 that to meet the test requirements, that's what you're
2 telling me, I believe.

3 MR. BERNERO: Yes.

4 CHAIRMAN ZECH: And the second challenge, of
5 course, is to approve the test itself, to make sure it
6 would comply with the Murkowski Amendment.

7 MR. BERNERO: Right.

8 CHAIRMAN ZECH: And you're telling me that you
9 are working closely with the Japanese Government on all
10 these matters, and you're making progress, as you see
11 fit, to meet the schedule that you've given us.

12 MR. BURNETT: Yes, sir. We've had a very good
13 relationship. I would have to say that, you know, as
14 regulators, and those as government who has provided the
15 funds, certain questions come up from time to time, where
16 we've got to protect our position from the regulator, but
17 we're working those out.

18 CHAIRMAN ZECH: All right. Fine.

19 COMMISSIONER CURTISS: One other quick question
20 --

21 CHAIRMAN ZECH: Go ahead.

22 COMMISSIONER CURTISS: -- on that same point,
23 before you move on. Is my understanding correct, that
24 the Murkowski Amendment exempts from its requirements,
25 any previously certified containers, so that the two that

1 the Commission has certified to-date would not be
2 affected in any way by the process that you have
3 underway, or the requirements of the Murkowski Amendment?

4 MR. BURNETT: That is absolutely correct.

5 MR. THOMPSON: I think there is a colloquy on
6 the Floor, about what that exemption was intended to
7 permit which, I believe -- and maybe counsel can correct
8 me if I'm not correct -- that that was probably meant as
9 a capability of some shipment of a small amount, not to
10 be the full campaign-type of shipments of those packages.
11 So, I don't believe it was intended to exclude the PAT 1
12 and the PAT 2 packages, but I think that question has not
13 been address right en point as to whether the statute
14 prohibits it. I think it's the colloquy on the Floor.

15 COMMISSIONER CURTISS: Our current
16 understanding of the statute is that the two containers
17 that we have certified for shipment could, in the future,
18 be used for transport from foreign nation to foreign
19 nation, over the airspace of the United States.

20 MR. THOMPSON: That's correct.

21 MR. BURNETT: That is correct, sir.

22 COMMISSIONER CURTISS: Okay.

23 MR. TREBY: That is our view. There was some
24 colloquy on the Floor, as Mr. Thompson said, however, our
25 view is that the statute is plain on its face, and that

1 we don't necessarily need to look at that colloquy in
2 that.

3 COMMISSIONER CURTISS: Okay. Thank you.

4 CHAIRMAN ZECH: All right. Thank you.

5 MR. BERNERO: There are further addition--
6 there are practical considerations that sort of militate
7 against using such a small package for this kind of
8 shipment campaign.

9 COMMISSIONER CURTISS: Okay. For commercial
10 use.

11 MR. BERNERO: Yes, for the intended use here.

12 MR. BURNETT: In fact, by the year 2000, which
13 is just a convenient date to program, it is estimated
14 there will be 30,000 kilograms of plutonium to be
15 transported from France to Japan.

16 So, even at the 7 kilogram quantity per cask,
17 and figuring about 12 casks per airplane, it would take
18 approximately 16 -- 600 flights to transport that amount
19 of material. And then if you wanted to figure maybe 100
20 flights a year, which is figuring two or three days for
21 turnaround, it would take you ten or twelve years.

22 CHAIRMAN ZECH: For the smaller casks.

23 MR. BURNETT: No, for the 7 kilograms, the
24 larger ones, and then if you consider --

25 CHAIRMAN ZECH: How about the ones that the

1 Japanese Government is designing?

2 MR. BURNETT: That's the time period necessary
3 for those.

4 CHAIRMAN ZECH: Say it again.

5 MR. BURNETT: Okay. Each cask contains
6 approximately 7 kilograms of material.

7 CHAIRMAN ZECH: The new ones they are
8 designing.

9 MR. BURNETT: The new ones.

10 CHAIRMAN ZECH: That will go in the airplane
11 we're talking about.

12 MR. BURNETT: Yes, sir.

13 CHAIRMAN ZECH: All right.

14 MR. BURNETT: The most that has been
15 anticipated that an aircraft could carry, would be 12 of
16 those casks. Therefore, it would take 600 airplane trips
17 to transport the complete complement of plutonium
18 anticipated to be on-hand by the year 2000, in France.
19 And then --

20 CHAIRMAN ZECH: That's between now and the year
21 2000.

22 MR. BURNETT: They've got a sizable quantity
23 on-hand right now, but they are continuing to recover
24 plutonium from spent fuel in France.

25 CHAIRMAN ZECH: France, right.

1 MR. BURNETT: So, the 30,000 kilograms is the
2 estimated amount involved in the total transaction, to be
3 in the long run, transported from France to Japan.

4 CHAIRMAN ZECH: Between now and the year 2000.

5 MR. THOMPSON: Assuming we didn't transfer any
6 until the year 2000, while we were going through the
7 tests and developing the aircraft and developing the
8 packages, and started in the year 2000, it would take
9 about six years, on the schedule that Bob had talked
10 about, to transport all of that material that would be in
11 France at the year 2000.

12 CHAIRMAN ZECH: Assuming you haven't done
13 anything in the meantime.

14 MR. THOMPSON: That's correct, assuming it all
15 just stays over there.

16 CHAIRMAN ZECH: Yes, I understand. All right.

17 MR. BURNETT: Now, assuming a different flight
18 schedule, instead of assuming a hundred shipments a year
19 and utilizing more aircraft, then they could do it
20 faster, but with the current figuring, 600 flights -- if
21 you just wanted to estimate no more than 200 flights a
22 year, you're looking at five or six years right there.

23 CHAIRMAN ZECH: All right. Could you talk to
24 us for a few minutes about the security aspects? We've
25 talked about the technical side, the cask itself. We've

1 talked about the crash test. We've talked about our
2 regulations and requirements as far as the cask is
3 concerned. How about from the security standpoint of
4 non-proliferation concerns? Could you mention that
5 briefly, please.

6 MR. BURNETT: Yes, sir. Built into the
7 Japanese Bilateral, there are requirements for transport
8 via either mode, by transport by sea or by transport by
9 air, and they must be presented to the State Department
10 who, in turn, would ask for DOE and NRC opinions on it--

11 CHAIRMAN ZECH: Either mode of transportation,
12 by sea or by air?

13 MR. BURNETT: Yes, sir.

14 CHAIRMAN ZECH: All right. Go ahead.

15 MR. BURNETT: And it would address emergency
16 landing facilities, how the flight is supposed to be
17 accompanied, how often it has to call in to indicate its
18 location and status and, of course, for shipboard that is
19 of particular interest because the anticipated time for
20 the trip is probably something in excess of 40 days.

21 So, then, the Japanese Bilateral specifically
22 --

23 CHAIRMAN ZECH: You can carry a lot more of it
24 by ship than you can by air.

25 MR. BURNETT: Absolutely. In fact, depending

1 on how much they put on one ship, the number of shipments
2 could go anywhere from just a few to, say, tens. And in
3 the Japanese Bilateral, there is a specific section
4 addressing the aircraft security and the shipboard, but
5 for the shipboard particularly, it does require that an
6 armed escort be provided.

7 It does have a small proviso in it, except
8 where it can be proved that you have equal protection in
9 the absence of that. And we would have to explore in
10 very close detail, the actual meaning of that, but in all
11 of our minds it was proximity to other armed vessels, or
12 some other oversight, or something that would give you
13 equal detection and response times to an armed transport.

14 CHAIRMAN ZECH: Whether it's by air or by sea,
15 there are security provisions that we must be satisfied
16 with, is that correct?

17 MR. BURNETT: Yes, sir, extensive security
18 precautions.

19 CHAIRMAN ZECH: Either air or by sea, that's my
20 point. Yes, Mr. Bernero?

21 MR. BERNERO: Yes. That's wearing our hat of
22 the U.S. NRC and the U.S. Government interacting on the
23 bilateral agreement.

24 CHAIRMAN ZECH: I understand that. This would
25 be coordinated by our State Department, as I understand,

1 with the Department of Energy, but we would be involved
2 in that process, too, as I understand it, and -- but it's
3 a large consideration there, but --

4 MR. BERNERO: Very important.

5 CHAIRMAN ZECH: -- I hope that you have in mind
6 also, Mr. Thompson, and your people, because we would
7 have a responsibility, as part of our government, to make
8 some kind of a decision in that regard, whether it's by
9 air or by sea.

10 MR. THOMPSON: Yes, sir.

11 MR. BURNETT: I might just call your attention
12 that there was one previous shipment that went from
13 France to Japan, and this agency was contacted and was
14 deeply involved in the precautions that surrounded that
15 shipment.

16 CHAIRMAN ZECH: I remember the other shipment
17 very well. It wasn't too many years ago, as I recall.

18 Well, I only mention this because that's an
19 aspect we didn't discuss this morning -- this afternoon.
20 I know it was not part of our presentation, but I'd just
21 like to remind the staff that those are important
22 considerations. And I fully recognize the agreement
23 that you referred to we have with the Japanese
24 Government, and the Japanese Government's prerogative in
25 making those decisions and recommendations but, also, we

1 have to, as I understand it, be satisfied that the
2 security aspects would be satisfactory.

3 MR. THOMPSON: Yes, sir.

4 CHAIRMAN ZECH: Are there any other questions
5 from my colleagues?

6 (No response.)

7 Well, then, let me just thank all of you very
8 much for a very informative briefing, and to tell you
9 that I think this is an important and very challenging
10 undertaking. I think your briefing shows that you have
11 been coordinating well within our government, as I
12 understand, is that correct? I didn't hear you say
13 anything other than that.

14 Are there any other problems you see within our
15 arrangements with the Japanese, as far as our government
16 is concerned? Are you working well within the parts of
17 the government that would be involved in this kind of an
18 issue?

19 MR. BURNETT: Yes, sir.

20 CHAIRMAN ZECH: Okay. Then it seems to me that
21 I'd encourage you to continue that, and continue working
22 closely with the Japanese Government, to make sure that
23 we can satisfy our own regulatory responsibilities, and
24 we look forward to your interim report here next month.

25 I think, also, the possibility of this having

1 even a farther reaching impact on future transportation
2 of any kind is very clear, that it is something that you
3 do want to make larger packages for air shipment, that is
4 something that is coming out in this issue. And, so, we
5 do have, again, important responsibilities in this
6 regard.

7 So, I would commend you to continue the
8 cooperative work you are involved in within our own
9 government and with the Japanese Government, to make sure
10 you bring forth to the Commission solid recommendations
11 based on the best scientific and engineering facts that
12 we can be provided.

13 I also thank those of you who are assisting the
14 staff in this regard, from the laboratories and other
15 parts of our country, because it is an issue that we want
16 to be satisfied with when we finally make a decision.

17 So, with that, let me thank you very much for
18 an excellent presentation.

19 We stand adjourned.

20 (Whereupon, at 2:53 p.m., the meeting was
21 adjourned.)

22

23

24

25

CERTIFICATE OF TRANSCRIBER

This is to certify that the attached events of a meeting
of the United States Nuclear Regulatory Commission entitled:

TITLE OF MEETING: BRIEFING ON INTERIM REPORT ON ACCIDENT STUDY
FOR PLUTONIUM AIR TRANSPORT PACKAGES

PLACE OF MEETING: ROCKVILLE, MARYLAND

DATE OF MEETING: MAY 15, 1989

were transcribed by me. I further certify that said transcription
is accurate and complete, to the best of my ability, and that the
transcript is a true and accurate record of the foregoing events.



Reporter's name: Phyllis Young

NEAL R. GROSS
COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVENUE, N.W.
WASHINGTON, D.C. 20005

COMMISSION BRIEFING
ON
ACCIDENT STUDY
FOR PLUTONIUM AIR
TRANSPORT PACKAGES

MAY 15, 1989

OUTLINE

- o BACKGROUND
- o WORST CASE CRASH EVALUATION
- o DROP/CRASH TEST REQUIREMENTS
- o CONTROLLED TEST CRITERIA
- o SUMMARY

MURKOWSKI AMENDMENT REQUIREMENTS
(Pub. L. 100-203, Dec. 1987)*

- O SAFETY DETERMINATION BASED ON:
 - ACTUAL PACKAGE DROP TEST AND;
 - ACTUAL AIRCRAFT CRASH TEST WITH PACKAGE TO WORST-CASE ACCIDENT TO MAXIMUM EXTENT PRACTICABLE OR PACKAGE DESIGN TESTS MORE SEVERE THAN WORST-CASE ACCIDENT AND REVIEW BY EXPERT PANEL
 - NO RUPTURE OR RELEASE OF CONTENTS

O FOREIGN COUNTRY TO BEAR ALL COSTS

*SECY 88-302

AGREEMENT

- BETWEEN NRC AND POWER REACTOR AND
NUCLEAR FUEL DEVELOPMENT
CORPORATION (PNC) SIGNED ON
DECEMBER 16, 1988*
- DETAILS OF RESPONSIBILITIES
- REIMBURSEMENT TO NRC
- AGREEMENT COVERS CRITERIA
DEVELOPMENT, PHASE I ONLY
OF FOUR PHASE PROGRAM

*SECY 88-329

PHASE I ACTIVITIES

- o LAWRENCE LIVERMORE SELECTED AS CONTRACTOR
- o REQUIREMENTS:
 - DESCRIBE WORST CASE ACCIDENT
 - DEFINE DROP AND CRASH TEST REQUIREMENTS; INTERIM REPORT DUE JULY 15, 1989
 - DEVELOP CONTROLLED TEST CRITERIA; FINAL REPORT DUE SEPTEMBER 1990

WORST CASE ACCIDENT INVESTIGATION

- o PSA FLIGHT 1771, DEC. 7, 1987*
- o HIGH SPEED POWER DIVE FROM CRUISING ALTITUDE
- o NOSE-ON IMPACT AT ABOUT 90° TO GROUND SURFACE
- o IMPACT VELOCITY NEAR 300 M/SEC (670 MPH)
- o FLIGHT DATA RECORDER DAMAGE LEVEL SUGGESTS ~ 5000G FORCE
- o WEATHERED ROCK UNDERLYING THIN (0.3M) TOP SOIL LAYER

*SEC 88-344

IMPACT SURFACE ACTIVITIES

- | | | |
|---|---|-------------|
| 0 | AERIAL TOPOGRAPHICAL SURVEY | COMPLETE |
| 0 | COPE SAMPLES | COMPLETE |
| 0 | SHEAR/COMPRESSION WAVE
VELOCITY MEASUREMENTS | COMPLETE |
| 0 | LABORATORY CORE SAMPLE
TESTS | IN-PROGRESS |
| 0 | DYNAMIC PENETRATOR TESTS
FOR COMPARISON STANDARD
IN CHOOSING AIRCRAFT
CRASH TEST RANGE | PLANNED |

INTERIM AIRCRAFT CRASH TEST
REQUIREMENTS

- C TWO POSSIBLE BASES
 - PARAMETERS OF PSA FLIGHT 1771
 - PARAMETERS OF CREDIBLE AIRCRAFT
- O TEST RANGE SAFETY CONSIDERATIONS MAY CONTROL ACTUAL TEST CONDITIONS

INTERIM DROP TEST REQUIREMENTS

- 0 DROP FROM "MAXIMUM CRUISING ALTITUDE"
- 0 PACKAGE ATTITUDE NOT CONTROLLED
- 0 IMPACT SURFACE PROPERTIES SAME AS
FOR AIRCRAFT CRASH TEST

CONTROLLED TEST CRITERIA
DUE SEPTEMBER 1990

- 0 CONTROLLED TESTS IN LIEU OF AIRCRAFT
CRASH TESTS
- 0 STRESSES RELATED TO WORST-CASE
ACCIDENT PARAMETERS FOR SELECTED
AIRCRAFT
- 0 REVIEW BY INDEPENDENT SCIENTIFIC
REVIEW PANEL IN PHASE II

COMPARISONS

<u>TEST</u>	<u>IAEA-PART 71</u>	<u>NUREG-0360 CRITERIA</u>	<u>RESULTS OF PSA 1771</u>
IMPACT	30 FT	-	
- VELOCITY, FPS	44	422	985
- TARGET HARDNESS	UNYIELDING	UNYIELDING	UNDER DEVELOPMENT
COMPRESSION	-	70,000 POUNDS	-
PUNCTURE	1 M DROP ON 6-IN DIA. PIN	10 FT DROP ON CONE	-
RIP/TEAR	-	2 DROPS OF ANGLE IRON (100 LBS) FROM 150 FT.	-
THERMAL	30 MIN AT 800° C	EXPOSURE TO FLAMES OF JP-4 OR JP-5 FOR 60 MIN (≥800° C)	-
IMMERSION	21 PSI - 50 FT	600 PSI - 1385 FT	-

STATUS OF
CONTROLLED TEST CRITERIA

- G COLLECTED ACCIDENT DATA
 - NTSB (> 100 U.S. ACCIDENT REPORTS)
 - ICAO (341 ACCIDENT REPORTS)
- C EVALUATING ACCIDENT DATA
- O DEVELOPING ANALYTIC MODELS (IMPACT,
FIRE SIMULATION)
- O PERFORMED INITIAL CALCULATIONS
OF IMPACT DYNAMICS

SUMMARY

- o INTERIM REPORT - JULY 1989
 - DROP/CRASH TEST REQUIREMENTS
 - COST AND SCHEDULE FOR CONTINUATION
- o FINAL REPORT - SEPTEMBER 1990
 - CONTROLLED TEST CRITERIA

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

Title: PRESS CONFERENCE

Location: ROCKVILLE, MARYLAND

Date: MAY 18, 1989

Pages: 8 PAGES

SECRETARIAT RECORD COPY

NEAL R. GROSS AND CO., INC.

COURT REPORTERS AND TRANSCRIBERS
1323 Rhode Island Avenue, Northwest
Washington, D.C. 20005
(202) 234-4433

DISCLAIMER

This is an unofficial transcript of a meeting of the United States Nuclear Regulatory Commission held on May 18, 1989 in the Commission's office at One White Flint North, Rockville, Maryland. The meeting was open to public attendance and observation. This transcript has not been reviewed, corrected or edited, and it may contain inaccuracies.

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

NEAL R. GROSS
COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVENUE, N.W.
WASHINGTON, D.C. 20005

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

- - - - -
PRESS CONFERENCE

- - - - -
PUBLIC MEETING

Nuclear Regulatory Commission
One White Flint North
Rockville, Maryland

Thursday, May 18, 1989

The Commission met in open session, pursuant to notice, at 3:35 p.m., Lando W. Zech, Jr., Chairman, presiding.

COMMISSIONERS PRESENT:

Lando W. Zech, Jr., Chairman of the Commission

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

3:35 p.m.

1
2
3 MR. FOUCHARD: Do you have any questions or
4 do you need the Chairman to summarize what we've done?

5 QUESTION: Yes, if he could summarize first,
6 that would be great.

7 MR. FOUCHARD: For Seabrook?

8 QUESTION: Right.

9 CHAIRMAN ZECH: Well, the action the
10 Commission took today was essentially to deny the
11 petitions for motions to stay the low-power license
12 for Seabrook. The Commission denied those motions and
13 in doing so granted a one week provision for the Court
14 of Appeals of the D.C. Circuit to act on the appeals
15 that might come before it as a result of our decision
16 here today.

17 So, in any case, a low-power license will,
18 for Seabrook, would not issue until a week from today.
19 After that time, it could be issued.

20 The Commission took no action today
21 concerning full power action for Seabrook.

22 QUESTION: How far in the future do you see
23 that coming?

24 CHAIRMAN ZECH: The plan for that is, if it
25 goes according to the schedule, it looks possible for

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVENUE, N.W.

WASHINGTON, D.C. 20005

1 those licensing hearings to take place during the
2 summer. I would estimate at the earliest, perhaps, if
3 they go successfully and are concluded satisfactorily,
4 the Commission could decide on a full power license
5 for Seabrook perhaps as early as late September.

6 QUESTION: Mr. Chairman, the Commission has
7 been siding toward getting at least a low-power
8 license in at Seabrook for about two years. Well,
9 more than two years. Almost since its inception. We
10 saw with the vote today it's basically now in the
11 Court's hands, but it looks pretty good for a low-
12 power license. Is all the work that's done over the
13 last two years in vain? Was this something that you
14 guys had intended from the beginning?

15 CHAIRMAN ZECH: No, no. We didn't intend
16 from the beginning at all, as you well know. This is
17 a very different process we're going through here now
18 with the low-power license itself, as well as the full
19 power license, having been contested really by the
20 State of Massachusetts, not cooperating in the
21 planning process for emergency planning. It's
22 complicated our process and made it very difficult.

23 What we've gone through has been necessary,
24 in my judgment. We've had to meet our statutory
25 responsibilities and we've done so. So, it's taken a

1 long time because of the unusual circumstances, but I
2 think the Commission has acted very responsibly.

3 QUESTION: The concerns that the people of
4 Massachusetts had they obviously still hold. What
5 comments or what words of wisdom could you tell them
6 on why you feel safe at this point to go ahead and
7 give it a low-power license?

8 CHAIRMAN ZECH: We feel that the low-power
9 license is a proper action to take at this regard. We
10 have reviewed the concerns of those who have expressed
11 them to us in the course of our proceedings. We have
12 determined at this stage that low-power license is
13 appropriate for the Seabrook Power Plant. We believe
14 that we have accommodated the possibility that the
15 plant will not operate at full power by our financial
16 qualifications determination, which you're probably
17 well aware we required that a sum of about \$72 million
18 be set aside in order for the plant to be dismantled,
19 decommissioned, cleaned up if low-power license is
20 issued and if the plant is never authorized for full-
21 power license.

22 So, we've addressed that and we feel that
23 we've done the proper thing.

24 QUESTION: What happens on May 25th? Are
25 there any further regulatory actions the NRC has to

1 take or will the full license be automatically issued
2 if the Court doesn't --

3 CHAIRMAN ZECH: Well, it's never
4 automatically issued. We always review at that time
5 the status of the plant. Right now we've concluded
6 that the low-power license could be issued on the 25th
7 if the Court does not uphold the stays that have been
8 requested. On the other hand, on the 25th, the staff
9 will then review the situation at Seabrook. The
10 Commission has essentially given the staff the
11 authorization to authorize that five percent low-power
12 license on the 25th if the staff is satisfied that all
13 of our regulations are being met and if it's
14 appropriate to issue the five percent low-power
15 license.

16 Again, the staff will make such a review and
17 if it's determined, for any reason or other, that it's
18 not appropriate at that time, they will not do so. On
19 the other hand, if they determine that it is
20 permissible and they've met our regulations for low-
21 power, the license could issue as soon as next week.

22 QUESTION: Are there certain stipulations
23 you're looking for in order to give them that?

24 CHAIRMAN ZECH: Not as far as I know at the
25 present time. As far as I know at this time, the

1 license could issue on the 25th.

2 QUESTION: Hasn't the staff already said
3 that it believes the license should be issued?

4 CHAIRMAN ZECH: Yes, they have.

5 QUESTION: So there's really no other
6 issue --

7 CHAIRMAN ZECH: Oh, no, there's always--
8 it's one week. Things can happen in a week. The
9 plant, for example, could change their mind. I'm sure
10 they'll want to have a last minute review. We never
11 say that things are ready until we are actually
12 confident and satisfied that our regulations have been
13 met.

14 QUESTION: Which way do you think the Court
15 will go?

16 CHAIRMAN ZECH: I have no idea what the
17 Court will do. That's their responsibility, not mine.

18 QUESTION: The May 25th deadline kicks in
19 even if the Court doesn't --

20 CHAIRMAN ZECH: No, no. If the Court acts
21 ahead of time to dismiss the stays, it could happen
22 before the 25th.

23 QUESTION: And if it doesn't act within that
24 one week time frame?

25 CHAIRMAN ZECH: We have given the Court

1 until the 25th to make their decision.

2 QUESTION: Any idea when the Court will take
3 the matter up?

4 CHAIRMAN ZECH: I honestly have no idea. We
5 would hope they'd do it soon. I'm sure the
6 petitioners would too.

7 QUESTION: But the Commission does not have
8 to meet again on this?

9 CHAIRMAN ZECH: That's right. For a low-
10 power license, we should not have to meet again as far
11 as I can tell at this time.

12 QUESTION: I'm sorry, could you repeat this
13 one more time? Very suddenly, on the 25th, if the
14 Court denies the stay motions, it will be operative?

15 CHAIRMAN ZECH: That's correct, the five
16 percent low-power license.

17 QUESTION: And if they hold on to the stay
18 motions, you'll meet again at that point?

19 CHAIRMAN ZECH: No. No. The Commission
20 need not meet again. We would expect the Court would
21 act by the 25th.

22 QUESTION: But I mean if they decide to hold
23 on to the stay motion, what --

24 CHAIRMAN ZECH: We'll have that when we come
25 to it.

1 QUESTION: Thank you very much.

2 CHAIRMAN ZECH: You're welcome.

3 QUESTION: Mr. Chairman, if you could just,
4 as you began, summarize what you did. We had a bit of
5 a mike problem.

6 CHAIRMAN ZECH: Well, the action we took
7 today was to deny the petitions before us for a stay
8 of the low-power license for the Seabrook plant. That
9 means that we also, in addition to denying the
10 petitions, we granted a one week stay for the Court,
11 D.C. Circuit Court, to act on the petitions that
12 have been also filed before that Court to give the
13 Court time to review the petitions the same as we
14 have.

15 So, that's what we've done here today.

16 MR. FOUCHARD: Thank you, Mr. Chairman, very
17 much.

18 CHAIRMAN ZECH: All right. Thank you.

19 (Whereupon, the above-entitled matter was
20 concluded.)

21

22

23

24

25

CERTIFICATE OF TRANSCRIBER

This is to certify that the attached events of a meeting
of the United States Nuclear Regulatory Commission entitled:

TITLE OF MEETING: Press Conference

PLACE OF MEETING: Rockville, Maryland

DATE OF MEETING: May 18, 1989

were transcribed by me. I further certify that said transcription
is accurate and complete, to the best of my ability, and that the
transcript is a true and accurate record of the foregoing events.



Reporter's name: Peter Lynch