



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

To TMI-2 Advisory Panel Transcript Distribution List (see attached):

Enclosed is a short summary of the meeting of the Advisory Panel for the Decontamination of the TMI-2 held on November 19, 1985 from 10:15 a.m. to 11:00 a.m. at 1717 H Street, Washington, DC 20555.

Sincerely,

A handwritten signature in cursive script, reading "Michael T. Masnik", is written above the typed name.

Michael T. Masnik, Liaison
Advisory Panel for the Decontamination
of TMI-2
TMI Cleanup Program Directorate

Enclosure:
As stated

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SUMMARY OF THE MEETING OF THE
ADVISORY PANEL FOR THE DECONTAMINATION
OF THREE MILE ISLAND UNIT 2 HELD ON
NOVEMBER 19, 1985 FROM 10:15 TO 11:00 AM
AT 1717 H STREET, WASHINGTON, DC 20555

- I. On November 19, 1985, the Advisory Panel for the Decontamination of Three Mile Island Unit 2 met from 10:15 AM to 11:00 AM at 1717 H Street, Washington, DC 20555.
- II. The Chairman of the Panel, A. Morris, briefly listed the agenda items contained in a letter from NRC Chairman Palladino to Chairman Morris, dated November 6, 1985 (Attachment). These items were the subject of discussion at the November 19, 1985 Panel Meeting with the NRC Commissioners that began at 11:00 AM.
 - A. Advisory Panel Members expressed satisfaction with the licensee's plans for the defueling.
 - B. The Advisory Panel decided to have G. Robinson, Panel member, address the Commission on the potential for recriticality of the damaged TMI-2 core. The panel members were satisfied with G. Robinson's statement that the licensee's "actions were prudent, and reasonable steps have been taken to prevent recriticality."

- C. The Chairman of the Panel, A. Morris, expressed his concern about the recent slip in the scheduled commencement of defueling. Although a majority of panel members were of the opinion that the schedule slip was not of great significance, A. Morris felt that the Commission should be asked if there was some NRC action, short of the compliance order imposing a schedule on the licensee, that might prevent future delays in the cleanup.
- D. Advisory Panel member, T. Smithgall, agreed to present the Panel's experience to date under the new Charter on the issue of human health effects associated with the TMI-2 accident. There was general agreement among the Panel members that the Panel was adhering to the new Charter and that the discussions have been beneficial to the public.
- E. The Advisory Panel introduced a fifth topic for discussion at the 11:00 AM Commission meeting that was not included in the November 6, 1985 letter from Chairman Palladino. The topic pertained to the disposition of the Processed Accident Water (PAW) stored at the TMI site. The Panel agreed to pass on to the Commission the information provided to the Panel by the licensee at the September 11, 1985 panel meeting in Annapolis, Md.

F. Chairman A. Morris listed a number of topics for discussion at future Advisory Panel meetings. There was general agreement among Panel members on the topics listed. The same topics were provided to the Commission at the 11:00 AM meeting.

The meeting adjourned at 11:00 AM. Panel Members present were: A. Morris, E. Marshall, T. Smithgall, J. DiNunno, K. Miller, N. Wald, T. Gerusky, G. Robinson, and T. Cochran.

A handwritten signature in cursive script, reading "Michael T. Masnik".

Michael T. Masnik
NRC Liaison
Advisory Panel for the Decontamination
of TMI-2

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TO THE ADVISORY PANEL FOR THE
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THREE MILE ISLAND UNIT 2

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OFFICE OF THE
CHAIRMAN

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

(Attachment)

November 6, 1985

The Honorable Arthur E. Morris, Chairman
The Advisory Panel for the Decontamination
of Three Mile Island Unit 2
Mayor of Lancaster
120 N. Duke Street
Lancaster, PA 17603

Dear Mayor Morris:

The following is a list of topics that I propose for discussion at the Commission Meeting with the TMI-2 Advisory Panel, scheduled for 11:00 AM, Tuesday, November 19, 1985.

1. Advisory Panel comments on the technical aspects of the licensee's defueling program. I understand that in July the Advisory Panel received a presentation on this topic.
2. Advisory Panel comments on the potential for recriticality of the damaged TMI-2 core during defueling.
3. Discussion of GPUNC's schedule for fuel removal.
4. Advisory Panel comments on the results of health studies conducted in the vicinity of TMI-2 in response to the accident. I understand you received presentations by NRC staff and the Pennsylvania Department of Health on these studies. Please discuss your assessment of public concern on this as well.
5. A listing of the Advisory Panel's activities for the next six months, or items the Panel believes are important to consider during the next six months.

I request that any additional topics that the Advisory Panel would like to discuss at the November meeting be sent to me as far in advance of the meeting as possible so that we can consider them for the agenda. I am looking forward to seeing you and the rest of the Panel Members at the November 19 meeting.

Sincerely,

Nunzio J. Palladino
Chairman

85-11-90572

ORIGINAL

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the matter of:

COMMISSION MEETING

Periodic Meeting with
Advisory Panel on
Decontamination of TMI-2

(Public Meeting)

Docket No.



Location: Washington, D. C.

Date: Tuesday, November 19, 1985

Pages: 1 - 30

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1 UNITED STATES OF AMERICA
2 NUCLEAR REGULATORY COMMISSION
3 - - -
4 PERIODIC MEETING WITH ADVISORY
5 PANEL ON DECONTAMINATION OF TMI-2
6 - - -

7 PUBLIC MEETING
8 - - -

9 Nuclear Regulatory Commission
10 Room 1130
11 1717 "H" Street, N.W.
12 Washington, D.C.
13

14 Tuesday, November 19, 1985
15

16 The Commission met in open session, pursuant to
17 notice, at 11:09 o'clock p.m., NUNZIO J. PALLADINO, Chairman
18 of the Commission, presiding.

19 COMMISSIONERS PRESENT:

20 NUNZIO J. PALLADINO, Chairman of the Commission
21 THOMAS M. ROBERTS, Member of the Commission
22 JAMES K. ASSELSTINE, Member of the Commission
23 FREDERICK M. BERNTHAL, Member of the Commission
24 LANDO W. ZECH, JR., Member of the Commission
25

1 STAFF AND PRESENTERS SEATED AT COMMISSION TABLE.

2 A. MORRIS

3 E. MARSHALL

4 T. SMITHGALL

5 J. DINUNNO

6 K. MILLER

7 N. WALD

8 T. GERUSKY

9 G. ROBINSON

10 T. COCHRAN

11

12 AUDIENCE SPEAKERS:

13 W. TRAVERS

14 F. MIRAGLIA

15

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P R O C E E D I N G S

CHAIRMAN PALLADINO: Good morning, ladies and gentlemen. Commissioner Asselstine is detained for a short while but he will be joining us later.

This morning the Commission is meeting with the advisory panel for the decontamination of TMI-2 to discuss the topics outlined in the November 6th letter to Mayor Morris.

We are pleased to welcome the members of the committee and pleased to see such an excellent representation.

The topics on the agenda cover the panel's views on technical aspects of the TMI-2 defueling programs, potential for recriticality during defueling, the licensee's schedule for fuel removal, results of recent health studies near TMI-2 and panel activities planned for the next six months.

Before we begin I would like to point out that Dr. William Travers has been appointed project director for NRC's TMI-2 cleanup project directorate within the Office of Nuclear Reactor Regulation. He will manage NRC's activities at TMI-2 and report to Mr. Frank Miraglia in NRR at headquarters. This is consistent with NRR's planned overall reorganization.

I want to assure you that the organization will maintain active NRC interest in the TMI-2 cleanup program and should help to strengthen it by shifting the focus from headquarters to the site.

1 Do any of my fellow Commissioners have any opening
2 comments at this time?

3 (No response.)

4 CHAIRMAN PALLADINO: If not, let me turn the meeting
5 over to Mayor Morris.

6 MR. MORRIS: Mr. Chairman, it is a pleasure to
7 return to Washington and to meet with the Commission and we
8 thank you for this opportunity. The panel continues to meet
9 on a regular basis and I want to tell you work very hard and
10 spend a great deal of hours not only prior to the meeting but
11 at the meetings.

12 I do want to congratulate you on your fine win on
13 Saturday. That is one of the complaints I have gotten from
14 one of our panel members is that it is very unbalanced, not an
15 unbalanced line, but very unbalanced in the favor of Penn
16 State versus Pitt and we certainly hope that that continues
17 through this weekend.

18 (Laughter.)

19 COMMISSIONER BERNTHAL: Joe, are those guys still
20 winning up there?

21 CHAIRMAN PALLADINO: That is the information I have.

22 MR. MORRIS: The complainer is Neil Wald and I don't
23 know if you want to do anything in regard to that complaint.
24 I would suggest that you do not.

25 (Laughter.)

1 MR. MORRIS: As to item one on the defueling program,
2 the panel did receive a presentation and has received
3 information from time to time from GPU on this and the plans
4 seem reasonable. We have not yet gotten a report on the first
5 two weeks of the defueling operation and so we will have to
6 wait until we receive an update at the next meeting for us to
7 provide you additional comment.

8 But we have been briefed and I think we feel
9 comfortable at this time with the way they are going to
10 proceed with the fuel removal.

11 CHAIRMAN PALLADINO: It had been reported to me that
12 Mr. Smithgall had expressed concerns over the use of
13 long-handled tools. Was that resolved?

14 MR. SMITHGALL: I just basically asked the question
15 as to what type of tools were going to be used, how they were
16 going to be trained to use them and so forth. I guess they
17 are using them so we will see. The proof is in the pudding on
18 that one, I guess.

19 CHAIRMAN PALLADINO: All right. I wanted to make
20 sure that any concerns that you had were properly addressed.
21 Thank you.

22 MR. MORRIS: That would be it on item one,
23 Mr. Chairman.

24 CHAIRMAN PALLADINO: All right. Do any other
25 members of the panel have comments on that topic or

1 Commissioner questions?

2 COMMISSIONER ZECH: No.

3 CHAIRMAN PALLADINO: All right. Why don't you go on
4 to the next topic?

5 MR. MORRIS: Fine. The panel members, we have
6 discussed this, and as we go through here I will either refer
7 an item to another panel member or I will make a statement but
8 they will feel free to jump in at the appropriate time to make
9 their own comment if they so desire.

10 On item two, advisory panel comments on the potential
11 for recriticality of the damaged TMI-2 core during defueling,
12 this is definitely a concern of ours and is an area that GPU
13 should not relax their focus of attention.

14 One of the individuals particularly that has been
15 concerned and raised this on several occasions is Gordon
16 Robinson and I believe that Gordon has a statement that he
17 would like to read for the record if there are any other panel
18 members who would like to comment, I am sure they will do
19 that.

20 So I would turn it over to Gordon at this time.

21 CHAIRMAN PALLADINO: I am very interested in this
22 topic because it is one that I have had concern about and I am
23 very interested in whatever comments you have.

24 MR. ROBINSON: These comments are from the July 18th
25 meeting that we had in the evening and also concern a meeting

1 that Joe DiNunno and I had earlier in the day with GPU people.

2 The people who were involved with this meeting were
3 Dr. Ray Murray, consultant for GPU, Dick Killman, GPU, Dan
4 Williams, Bechtel, Pat Smith, GPU and Frank Standerfer who was
5 also there for part of the meeting.

6 The major reason for this meeting was to go over
7 some of the previous considerations for preventing possible
8 criticality, what GPU and the various consultants had looked
9 into and why they had decided on the system that is now in
10 place.

11 We reviewed the shutdown assurance of the heavy
12 borated core. We reviewed the various reactivity monitoring
13 systems that were considered over the last several years and
14 why they were not considered feasible. We reviewed the
15 present system that will be used as far as monitoring the
16 boron is concerned. We talked about neutron monitoring for
17 worker safety.

18 The net result of these conversations is that our
19 concerns have been satisfied. We believe that prudent and
20 reasonable steps have been taken to prevent recriticality.

21 CHAIRMAN PALLADINO: All right. Are there any other
22 panel comments?

23 (No response.)

24 CHAIRMAN PALLADINO: Let me express my concern.
25 Since I have been in this business one of the points that has

1 been very strongly ingrained in me has been that one should
2 always monitor criticality when working with fuel
3 notwithstanding other protective means such as boron in the
4 water because one could postulate that maybe an error was
5 made.

6 I was interested and perhaps I should have this
7 background in what criticality monitoring we do have aside
8 from just monitoring the boron concentration.

9 I don't know if you are prepared or one of the staff
10 could respond to that.

11 MR. TRAVERS: My name is Bill Travers and I am
12 acting director of the Three Mile Island program office. What
13 they do have in place of course is a first line against
14 recriticality is a large amount of boron in the reactor
15 coolant system.

16 The criticality monitors that are available
17 essentially are the nuclear instrumentation, two start-up
18 count rate monitors, BF-3 tubes.

19 CHAIRMAN PALLADINO: Are these outside the pressure
20 vessel?

21

22 MR. TRAVERS: Located on the wall of the pressure
23 vessel outside, that is correct.

24 Additionally to detect criticality during movements
25 of fuel, there are three sets of two redundant BF-3 tube

1 monitors on the deck inside the reactor building near the fuel
2 transfer canal, inside the "A" pool where the fuel will be
3 moved and stored and near the truck bay where the fuel will be
4 moved into a shipping cask for ultimate shipment to Idaho

5 CHAIRMAN PALLADINO: Do you feel that this provides
6 adequate monitoring on the possibility of criticality?

7 MR. TRAVERS: The existing instrumentation, the
8 nuclear instrumentation, two start-up count rate monitors
9 should give an indication if you have a criticality event. I
10 don't think they are going to give you much information on an
11 approach to criticality however.

12 There is not really and perhaps Dr. Robinson can
13 speak to it because he took at it in detail and we have looked
14 at it as well and we think that the likelihood of a
15 overwhelming criticality across the core is very small as a
16 result of the boron and the measures they have taken to
17 continuously monitor it and periodically sample for it.

18 The analyses that we have reviewed assumed the most
19 highly enriched fuel and several other conservative assumptions
20 relative to the possibility of recriticality, the maximum
21 configuration of those kinds of things.

22 CHAIRMAN PALLADINO: Has the recriticality question
23 been reviewed by recriticality experts on the staff?

24 MR. TRAVERS: Yes, they have. We have been assisted
25 by members of the staff in the Office of Nuclear Materials

1 Safety and Safeguards and we have run independent calculations
2 to confirm the hypothesis proffered by GPU that criticality is
3 an incredible event.

4 CHAIRMAN PALLADINO: All I am looking for is
5 assurance that it is so.

6 COMMISSIONER ZECH: Has the ACRS been consulted?

7 MR. TRAVERS: No, they have not.

8 COMMISSIONER ZECH: They might be.

9 CHAIRMAN PALLADINO: What is that?

10 COMMISSIONER ZECH: It might be appropriate.

11 MR. TRAVERS: Periodically, Commissioner, we do
12 brief them at their request on significant activities but I
13 don't believe this particular subject has been addressed.

14 COMMISSIONER ZECH: I think it might be appropriate
15 just to ask them their views. It seems to me that would be
16 the appropriate thing to do.

17 COMMISSIONER BERNTHAL: I agree. I think that is an
18 area where they clearly have considerable expertise and I
19 would certainly concur in that comment.

20 COMMISSIONER ZECH: It certainly seems appropriate
21 to ask their advice.

22 CHAIRMAN PALLADINO: Of course, they are proceeding
23 and I don't know what this would do to the schedule. I am not
24 against getting their opinion. As a matter of fact that is
25 what I am looking for.

1 COMMISSIONER ZECH: I just think that it is a
2 prudent thing to do.

3 MR. TRAVERS: We have reviewed and prepared a safety
4 evaluation in response to GPU's request to begin the defueling
5 effort. In fact, it has begun beginning on October 30. It
6 began to move about some of the debris to clear space for
7 installation of additional equipment.

8 CHAIRMAN PALLADINO: But nevertheless this is going
9 to be a long term operation.

10 MR. TRAVERS: It sure will.

11 CHAIRMAN PALLADINO: So I think additional input
12 would be appropriate. This is one area where I just don't
13 feel as comfortable as I might but that is mainly because I
14 haven't participated in it.

15 If I get the assurance of all the experts that
16 proper precautionary measures have been taken, I guess it is
17 as far as we could go.

18 MR. TRAVERS: We have gone into evaluating this
19 question in some detail. I don't have it all with me. I can
20 certainly provide that to members of your staffs if that
21 sounds reasonable in addition to following up on your
22 suggestion regarding the ACRS.

23 CHAIRMAN PALLADINO: Yes. I think you should follow
24 up on getting the ACRS comments on this. Meanwhile I don't
25 gather that we should stop what is going on.

1 COMMISSIONER ZECH: No.

2 CHAIRMAN PALLADINO: But it is a long term operation
3 and there are many other actions that are going to take place.

4 COMMISSIONER ZECH: If the panel is satisfied I see
5 no reason to change the schedule. I just think it would be
6 well to consult the ACRS and to get their views, too.

7 CHAIRMAN PALLADINO: That is a good suggestion.

8 MR. COCHRAN: With regard to the fuel in the core,
9 there are really only two good solutions. One is to remove
10 the fuel and the other is to put boron in the water. Both of
11 those are being done. It is an argument for not stopping
12 removal of the fuel.

13 CHAIRMAN PALLADINO: Yes.

14 COMMISSIONER ZECH: Sure, I agree. I don't see any
15 reason for changing the schedule at all. It is just a matter
16 of additional assurance from somebody who has the expertise.
17 It is a first time event that we are doing and I don't think
18 there is any reason we shouldn't be as prudent as possible.

19 MR. ROBINSON: I would like to reiterate that I
20 would like to see the ACRS take a look at it, too. We had
21 suggested that about six months ago and were told that the
22 ACRS schedule was such that they probably would not be able to
23 look at it prior to the start of the defueling process. So we
24 sort of dropped that. But I would still like to see it done.

25 COMMISSIONER ZECH: Good.

1 CHAIRMAN PALLADINO: We will follow up on that. Any
2 other comments on this topic?

3 COMMISSIONER BERNTHAL: Could I just ask the broad
4 question, when you say that criticality is an incredible
5 event, can you give me some sense of what the margin is in the
6 calculations? Are we talking two orders of magnitude or one
7 order of magnitude or what?

8 MR. TRAVERS: Several orders of magnitude.

9 COMMISSIONER BERNTHAL: Several orders of magnitude.

10 MR. TRAVERS: They are keeping right now procedurally
11 and by their tech spec license requirements 5,200 or so parts
12 per million boron in the reactor coolant system.

13 They also have very detailed requirements for the
14 sampling frequency. They have boronometers in line at several
15 different locations so you are all right in pointing out the
16 very significant issue that criticality is in this evolution.

17 It is something that we have been looking hard at as
18 well in the course of reviewing their proposal.

19 As I mentioned the assumption that criticality is an
20 incredible event is based on conservative estimates of
21 configuring the most highly enriched fuel.

22 COMMISSIONER BERNTHAL: That's right. That is
23 really what I was referring to.

24 MR. TRAVERS: Taking no credit for any of the poison
25 materials that are associated with the normal core and that in

1 fact are in the debris bed and a number of things like that.

2 CHAIRMAN PALLADINO: We will still be interested in
3 ACRS comments. Are you ready to go on to the next topic?

4 MR. MORRIS: Yes. Item three, discussion of GPU's
5 schedule for fuel removal.

6 (Commissioner Asselstine enters the meeting.)

7 MR. MORRIS: Let me say as I begin comment on this
8 that fuel removal has begun I believe in late October.
9 However, prior to that date GPU did get further behind on
10 their schedule that they had established last year and again
11 earlier this year.

12 They revised their schedule on several occasions.
13 They went from a July date to a September date and then
14 slipped that to a late October date.

15 I am going to try to paraphrase here what I think is
16 the sense of where the panel stands on this. I think it is
17 fair to say that it is one of concern for potential future
18 slippage and that we are most certainly concerned that the
19 cleanup and fuel removal continue in a very safe fashion and
20 that we not rush ahead without regard for safety.

21 But having said that, I think it is also fair to say
22 that there is concern of the panel that the slippage may
23 continue into the future and that there needs to be some kind
24 of mechanism if one can be established short of a compliance
25 schedule that would keep the pressure on with safety in mind

1 to keep on schedule and make sure that we don't fall further
2 and further behind because there is not a schedule established
3 that the incentive is not there to stay on a schedule.

4 I would ask that while you do not consider a
5 compliance schedule at this time whether there is something
6 sort of that that can be done with more teeth in it than
7 presently exists with GPU establishing a schedule.

8 I hope from the panel members because there were
9 several comments that were made when we have talked about this
10 that I have fairly shared your comments with the Commission.
11 If not, please feel free to offer them yourselves.

12 CHAIRMAN PALLADINO: Is there any feeling about
13 whether or not GPU is proceeding with due diligence? I can
14 understand that they may have difficulty in designing and
15 procuring special equipment but do you have any feel as to
16 whether or not they are pursuing that aggressively?

17 MR. MORRIS: That is part of the problem in that as
18 panel members meeting once a month and even though we spend a
19 great deal of time, three or four hours at the meetings, it
20 may be on other issues that there needs to be at least some
21 kind of evaluation on slippage for that very thing.

22 Is it because of things beyond their control or did
23 they just not order something early enough, they did not look
24 ahead and consequently slipped and that is the type of thing
25 that they should be cautioned against or having their hand

1 slapped for?

2 That is the concern that the panel expressed when I
3 brought this subject up because it is a concern that I have
4 and the panel members feel that there are things beyond the
5 control of the utility company and we need to have somebody
6 really paying attention to each slippage. Why did it happen?
7 Was it something that the utility company could have avoided
8 and if so, what is the penalty not necessarily financial at
9 this point but is there something that can be done to make
10 them more accountable and to study those issues as they come
11 along?

12 That is something that personally I would be looking
13 at. I don't have an answer. It is just a concern that when
14 we meet with you again a year from now we might be again
15 another six months behind in addition to what has happened
16 already and that is about a four or five months slippage.

17 It is a cloud on the horizon and I think we all want
18 to see the cleanup completed in a safe fashion and it is a
19 caution at this point.

20 CHAIRMAN PALLADINO: Does the staff have any comment
21 on this? Bill.

22 MR. TRAVERS: I think from all our perspectives we
23 would agree that getting the cleanup under way as expeditiously
24 as it can be is an important goal. I have had about a year and
25 a half of experience on site and in that time based on a review

1 of the record and my first hand view of what has transpired
2 over that year and a half, I think the GPU has made a great
3 deal of progress in the time that I have been there.

4 From my vantage point, there have been problems,
5 technical problems, in procuring equipment but for the most
6 part I think the licensee has been committed to getting the
7 cleanup going as expeditiously as they can.

8 I think there is a good mechanism for keeping in
9 touch with the panel when we view items that may result or at
10 least have the potential of resulting in slips and we have the
11 advantage of interacting with them on a periodic basis and I
12 would propose that we make that a focus in future meetings
13 with the panel.

14 CHAIRMAN PALLADINO: What has been the slippage? I
15 am not sure I am recalling correctly. Sometime this summer,
16 early this summer, they predicted getting on with defueling in
17 September. Is that correct?

18 MR. TRAVERS: The original target --

19 COMMISSIONER ASSELSTINE: Wasn't it July?

20 MR. TRAVERS: -- at least as it existed for about a
21 year was to begin in April, even earlier than that. So for
22 about a year starting say sometime in April of 1984, there was
23 a target of beginning in April of 1985. In April an
24 announcement was made that it was going to start -- I am
25 sorry. The target was July.

1 In April they announced a slip to September and in
2 July an announcement was made that the schedule would further
3 slip one month into October.

4 The reasons for the slip were related to procurement
5 of the equipment essential to beginning the cleanup, certain
6 canisters that the fuel would be placed into for shipment,
7 handling devices and fuel storage racks as well.

8 COMMISSIONER ASSELSTINE: Does the staff do a
9 rigorous analysis of the reasons for these schedule slips when
10 they occur and particularly focusing on whether they occur
11 despite the best efforts by the licensee and were really
12 matters beyond the licensee's control?

13 For example, when it appears that this equipment is
14 not going to be available when it was needed did they order it
15 early enough? Did they do everything that they could to
16 obtain this equipment so that they would be able to meet
17 their original schedule and such that it is purely a matter of
18 their suppliers not giving them the kind of reliable service
19 that they need?

20 Do you do that kind of analysis?

21 MR. TRAVERS: No. We didn't do a very formal
22 analysis of that kind of thing. We are on site. The majority
23 of my office is located on the site. So we have daily
24 interaction with all levels of GPU staff.

25 MR. MORRIS: I think something like that would be

1 helpful though. That might be the kind of interim thing that
2 would be very useful to give us all a feeling for why the
3 slippage happened and at least staff's summary as to what
4 they think happened.

5 MR. TRAVERS: I was going to mention that we don't
6 do a formal analysis but informally we get a good feel for
7 efforts being placed on procuring equipment and the reasons
8 behind any slips that may result in acquiring it.

9 COMMISSIONER ASSELSTINE: Maybe it would be useful
10 to get the staff to do an analysis and to document it, write
11 up a little report that evaluates the slips that have occurred
12 over the past year or so and the adequacy of the licensee's
13 efforts to obtain and procure the necessary equipment and
14 components early on and why in fact those efforts turned out
15 to be unsuccessful.

16 MR. TRAVERS: We do that indirectly, Commissioner.
17 For example, in the case of the equipment that we are speaking
18 about, canisters I will focus on, we did a special inspection
19 at the fabricator to see how the QA program was being
20 implemented there.

21 What we found is that it was not being implemented
22 very well. An inspection report documented these facts. GPU
23 noted the same kinds of problems about the same time we did in
24 an independent inspection.

25 But once you have those problems inherent even in

1 finding them reasonably early on is some delay. In this case
2 it was a delay of several months.

3 CHAIRMAN PALLADINO: To what extent did the fact
4 that development had to go on in deciding what equipment you
5 needed, to what extent did that impact on the schedule? Was
6 that a major item?

7 MR. TRAVERS: No, not in this case, Mr. Chairman.
8 It really was focused on problems at the fabricator dealing
9 with how well or how not very well they were implementing the
10 QA program required by the licensee.

11 COMMISSIONER ASSELSTINE: So you said that really
12 the root cause for the failures or the failures to meet the
13 schedule were really the licensee's failure to insure that its
14 contractors put in place, carried out and maintained an
15 adequate quality assurance program.

16 MR. TRAVERS: That is partially true. There are
17 two steps to it. One of them is has the licensee laid on an
18 adequate quality assurance program required of its
19 fabricators. That was the first thing we looked at. Our
20 conclusion in that regard was in fact they had.

21 The next thing we did is we went to the fabricator
22 and looked at how well they were implementing that program.
23 At about the same time we went down there GPU was finding out
24 that in fact their QA program was not being very well
25 implemented.

1 CHAIRMAN PALLADINO: I am going to suggest that you
2 follow-up on Commissioner Asselstine's proposal that you
3 periodically document the root causes of slippages. I would
4 encourage the panel to keep this on their agenda and if you
5 sense that there is lack of due diligence in keeping on the
6 schedule that you don't hesitate to bring it to our attention.

7 MR. MORRIS: All right. I would hope that the staff
8 and I am not suggesting that they go back and review the ones,
9 the delays, that have already happened because that is past
10 and it might be extra work that may be not necessary but as
11 to future slippage, if they would be willing to do a summary
12 and a review of them and provide the panel and the Commission
13 with that, I think it would be very helpful and we certainly
14 will keep you involved as we go along as we are today.

15 COMMISSIONER ASSELSTINE: I think I would even
16 suggest that since what I heard from the staff was they have
17 basically done the review for the past slippages, that it
18 would be useful just to get a short paper from them that
19 summarizes what their conclusions were.

20 I guess what I am particularly interested in is
21 identifying what the root causes were for the slippages that
22 occurred during the past year as well as the staff's assessment
23 for what has been done to make sure that those root causes do
24 not cause further slippages.

25 It seems to me while it is nice to look at future

1 slippages when they occur, one thing we might learn is let's
2 learn from the mistakes over the past year or so to make sure
3 that those mistakes don't cause future slippages. Let's take
4 a little pro-active approach to it.

5 Unless it is a huge burden on the staff, I would
6 suggest they do a little report on the slippages over the past
7 year and in particular focus on what has been done to insure
8 that the problems that existed then won't recur in the future.

9 MR. TRAVERS: I think we can address that. There
10 have not been that many slips and I think it would be a
11 fairly straight forward thing to do.

12 COMMISSIONER ASSELSTINE: I would give it to the
13 panel and then you all could comment on that at a future
14 meeting if it is worthwhile.

15 CHAIRMAN PALLADINO: All right.

16 MR. MORRIS: Fine.

17 CHAIRMAN PALLADINO: So we can expect to see
18 something about this analysis of slippages to date and you
19 will keep us posted on the potentials for slippages as they
20 arise.

21 MR. TRAVERS: As best we can, Mr. Chairman. I think
22 there is something that I ought to point out and that is as a
23 result of the first of a kind nature of this job I think it is
24 very likely that we will see additional slips.

25 For example, GPU now is moving core debris about.

1 They may find very soon that they need additional tools and
2 equipment to do that job. There is a certain lag time in
3 procuring and designing that equipment.

4 COMMISSIONER ASSELSTINE: Sure.

5 MR. TRAVERS: But I think that is a technical kind
6 of thing.

7 CHAIRMAN PALLADINO: I think what we are looking for
8 is assurance that there is due diligence in pursuing the
9 schedule. We recognize that there are going to be slippages
10 but they should be only for good cause.

11 COMMISSIONER ASSELSTINE: That is right.

12 COMMISSIONER ZECH: I agree but I think that we
13 should frankly exercise some judgment here too because we
14 don't want to bring the pressure on people to bring forth
15 something on this very unique operation that would -- you
16 know, if there is any question about safety we should rely on
17 safety side and so on.

18 COMMISSIONER ASSELSTINE: That's right.

19 COMMISSIONER ZECH: I agree that it is worth looking
20 at but I think we simply must -- in other words, if they are
21 making up equipment that has never been made up before, if
22 they are using techniques that are rather special, it seems to
23 me that we should encourage everything to be done that would
24 provide safety and that to me is something I think we should
25 keep in mind.

1 CHAIRMAN PALLADINO: We certainly agree with that
2 and I think our attention to schedule does not mean we are not
3 interested in maintaining the safety.

4 COMMISSIONER ZECH: It is just the balance is all I
5 am trying to say.

6 MR. MORRIS: I think I mentioned safety several
7 times. I think right now there is no balance. There is
8 really nothing that causes GPU to feel that the schedule has
9 to be met or should be met. There is none of this reporting
10 and study of why it slipped. That is all I am asking is for
11 the balance, to have safety with --

12 COMMISSIONER ZECH: I think that is fine but I agree
13 with your opening request for safety. I am just trying to
14 re-emphasize the balance and I hope we don't lose sight of
15 that. In other words, we should not let the pendulum swing
16 completely the other way.

17 MR. MORRIS: I think we all agree with you on that,
18 certainly.

19 CHAIRMAN PALLADINO: All right. Any other comments
20 on this topic?

21 (No response.)

22 CHAIRMAN PALLADINO: Do you want to proceed with the
23 next?

24 MR. MORRIS: All right. Item four is advisory panel
25 comments on the results of the health studies conducted in the

1 vicinity of TMI-2 in response to the accident the fact that we
2 received a presentation and Tom Smithgall, a panel member, is
3 going to speak to this item or try to. He found this out
4 right before the meeting.

5 (Laughter.)

6 COMMISSIONER ASSELSTINE: This will be very brief.

7 MR. MORRIS: I apologize for that, Tom.

8 MR. SMITHGALL: Joe DiNunno and myself as you
9 probably are aware were charged with preparing a proposal for
10 guiding our discussions on these health studies and had that
11 and I believe approved that and as you know we will act pretty
12 much as a conduit for information and not necessarily as a
13 critique of these health studies. That takes us over old
14 ground.

15 We have had an ongoing discussion with the State
16 Department of Health in the sense that they have made a
17 presentation to us at our last panel meeting. We intend to as
18 I believe our schedule is now dictating to hear from the
19 Aamodts hopefully in December and then also hear from the TMI
20 Public Health Fund.

21 There have been a number of discussions in our
22 meetings and as you read our last transcript, Tom Cochran had
23 some concerns about how we review these and our discussions on
24 them.

25 It is the sense of the panel I believe and I will

1 reiterate that we do not act as a further level of critique
2 for these health studies but act as a conduit of information
3 to the public.

4 I think it is being very well received by the public
5 and they feel it is a necessary area for discussion and our
6 initial assumption that the public has really nowhere else to
7 go with these concerns I think was correct.

8 We have had some lively discussions and some
9 interplay between the parties. So I think it is something
10 that we should continue with on the schedule that I outlined
11 here.

12 I hope you feel confident that we will stay within
13 our charter. I think we have the balance in our panel that
14 will do that. Again, I think it is one that cuts across a lot
15 of the issues at Three Mile Island and one that the public
16 really feels is necessary.

17 We do get a lot of active interplay at our panel
18 meetings, I know that some people feel unnecessary and arduous,
19 but I think it is something that we need to continue.

20 If anyone else on the panel wishes to add to that,
21 they may.

22 MR. COCHRAN: I will add a few comments in the
23 capacity of serving as a conduit from the public back to you.

24 To begin with a little background, as you recall
25 there was a citizen study of health effects in the area which

1 is now often called the Aamodt study, two of the principals
2 involved in it.

3 That study worked its way into the licensing hearings
4 of TMI-1 and was critiqued by the Pennsylvania State Health
5 Department and the critique was written by Dr. Tokuhata
6 and one of his colleagues.

7 We were told at the meeting when that study was in
8 effect being presented to us, reviewed for our benefit and for
9 the benefit of the members of the public that there was a law
10 suit pending and that the authors of the report had received
11 legal advice not to appear in public. Therefore, the
12 presentation was made by Dr. Muller who is Tokuhata's superior.

13 The state study at least from my perspective has two
14 components. One is to look, part of their ongoing analysis is
15 to look at the cancer incidence within the five-mile radius or
16 roughly a five-mile radius and as an appendix it also critiqued
17 the Aamodt study.

18 As many people might have predicted the study did
19 not find any statistically significant excess health effects
20 in the five-mile radius and because of the numbers and the
21 latency period and so forth you would anticipate that or at
22 least I would.

23 With regard to the critique of the Aamodt Study
24 which raises the question of whether there is a significant
25 incidence in the form of a cluster of cancers in one of two

1 areas about five or six miles distant, I look at that issue as
2 two separate issues, one, whether there are any significant
3 health effects there first and secondly, whether they are TMI
4 related.

5 The citizens group that did the original analysis
6 strongly believes that they are real and that they are TMI
7 related. The State Study appeared to in its critique rely
8 heavily on that causal relationship and in effect argued that
9 they were not real -- they certainly were not caused by TMI
10 and that they were if anything a normal clustering that you
11 would expect in doing that sort of analysis and thirdly, they
12 allege that there was bias in the choice of the roads which
13 were surveyed in so forth. The picked roads which had cancer
14 incidence on it and dismissed roads that did not.

15 So from my perspective these two issues, whether the
16 cancer incidence is real and secondly, whether it is TMI
17 related, the panel majority voted against my recommendation
18 not to address the first issue whether they were real at all
19 because in their view --

20 COMMISSIONER BERNTHAL Your recommendation was
21 what?

22 MR COCHRAN: My recommendation was to have a
23 further exchange at least between myself and the person making
24 the presentation over whether their analysis was adequate with
25 regard to the question of whether there was something real

1 there should be addressed irrespective of TMI. Because that
2 was irrespective of TMI and other panel members can express
3 their own views on this, the majority of panel members thought
4 that was beyond our charter and voted not to pursue that.

5 So I find that the situation is in a somewhat
6 unsatisfactory state bearing in mind that our charter we are
7 not to critique these analyses to begin with and further that
8 the panel is certainly not going to get involved with issues
9 where they perceive they are not TMI related.

10 So I don't think there will be any further resolution
11 of that until perhaps the Health Fund Study which is a contract
12 with a group at Columbia addresses that and those conclusions
13 will not be forthcoming for a couple of years.

14 But you are going to get a lot of citizen concern
15 over this because the citizens still believe it is TMI related
16 but the analyses doesn't really get uncoupled from whether
17 there may be something there or not.

18 COMMISSIONER BERNTHAL: Are you suggesting that the
19 question of the relation to TMI is arguable or that that was
20 not settled by the State? If everybody agrees that it is not
21 TMI related, then whether one should go around doing a survey
22 of who are smokers, for example, and non-smokers does appear
23 to me to get a bit beyond the charter of your group.

24 MR. COCHRAN: I personally having looked at this
25 issue and looked a number of studies related to this issue

1 don't believe it is TMI related, that the cluster of cancers
2 be it whether they are real or not, I don't believe they are
3 TMI related.

4 I do believe that the issue of whether they are real
5 or not is important to address perhaps not by this panel or
6 you from the standpoint of whether the State Health Department
7 is doing its job adequately and in that regard that is a TMI
8 related issue.

9 If they are not doing their analysis there
10 adequately, then there is reason to suspect their analysis of
11 TMI related health effects. That is as far as I am willing to
12 go.

13 CHAIRMAN PALLADINO: Tom, have you brought your
14 feelings to the attention of the Public Health Department as
15 an individual aside from being a member of the panel?

16 MR. COCHRAN: No, I have not.

17 CHAIRMAN PALLADINO: It might be worth bringing it
18 to their attention because I think they welcome input from
19 people from their work as well as anybody else.

20 COMMISSIONER BERNTHAL: I guess I agree with your
21 point that if as a separate question you as a citizen or
22 others are concerned about why the phenomenon was observed or
23 whether an agency is carrying out its duties quite the way it
24 should, that is certainly a matter worth pursuing in itself
25 but it also seems to me that in a sense it is your duty to say

1 what you have just said and say it clearly and not confuse the
2 issue.

3 Say clearly what you have said here today that in
4 your judgment these cancer incidences are not related to TMI
5 because that finally is the charter of your group and I think
6 the important question that the public is interested in
7 hearing.

8 COMMISSIONER ASSELSTINE: I thought you took that
9 away from him. I thought we said quite clearly that they were
10 not supposed to critique these studies. I would disagree.
11 That is not their duty.

12 MR. COCHRAN: You recall I made that statement
13 explicitly in my letter to you the first time around.

14 COMMISSIONER ASSELSTINE: Exactly.

15 COMMISSIONER BERNTHAL: I am talking about Tom
16 personally who has just made a statement here today and if
17 people ask him what his opinion is, it seems to me that he
18 clearly ought to say what that opinion is.

19 COMMISSIONER ASSELSTINE: I thought you said though
20 that that was their duty as a panel.

21 COMMISSIONER BERNTHAL: No. I am talking about his
22 personally. He made a statement here today that even given
23 and I think you really have misinterpreted what I was saying,
24 that even given all of the concerns that he may have and they
25 may be valid concerns on these other issues, there is a key

1 issue that the public at large deserves to have you speak
2 clearly on as you have spoken here today and that is whether
3 in your judgment they are TMI related.

4 CHAIRMAN PALLADINO: We did put a restriction on not
5 getting another layer of critique.

6 COMMISSIONER BERNTHAL: I don't think that
7 restriction is on individuals.

8 CHAIRMAN PALLADINO: Excuse me. Let me finish my
9 paragraph. But that does not in any way restrict an individual
10 from bringing his opinions or her opinions to the attention of
11 the Public Health Department of Pennsylvania.

12 COMMISSIONER ASSELSTINE: Tom, is the TMI Health
13 Fund Study going to examine health issues both whether the
14 State's analysis or the Citizen analysis if you will of the
15 incidences of cancer and the locations of them, not only
16 cancers but the incidences of health effects and the locations
17 of those, which is the accurate view, was there an abnormally
18 high incidence of health effects at that time in certain
19 specific locations as well as the causal relationship question?

20 MR. COCHRAN: Yes, to some extent. It certainly
21 will address probably more carefully the issue of the
22 clustering issue. If you do such a survey and you measure
23 something statistically significant, is that just a random
24 cluster event?

25 It will also look at the issue of relationship to

1 TMI by looking at correlations with the plume and so forth.
2 Now whether they will do it satisfactorily, I don't know. We
3 will have to wait and see. But there will be some attempt to
4 address that.

5 The problem is you might in your mind reach a
6 conclusion that the cluster of cancers is not TMI related but
7 it sure is going to be related to your conduct of your work
8 because there are people up there that firmly believe it is
9 and believe that the analysis showing that it isn't has not
10 been adequately performed.

11 COMMISSIONER BERNTHAL: It sounds to me like it
12 might be worthwhile having the people who do the statistics
13 explain in somewhat more detail as they explained it very
14 broadly and I have read some of the transcripts of meeting how
15 those statistical comparisons are made.

16 As you know, Tom, in any given population seeing
17 that there are 50-percent more or less has a certain reasonable
18 probability just as separating from one population from another
19 population and finding similar aberrations comparing two
20 groups.

21 Those are fine points of statistical analysis that
22 perhaps the public deserves to have somewhat better explained.

23 CHAIRMAN PALLADINO: Is Pennsylvania looking at the
24 radon problem in this particular area?

25 MR. GERUSKY: No, not yet.

1 CHAIRMAN PALLADINO: Not yet. Do you plan to?

2 MR. GERUSKY: Yes, but not because of --

3 CHAIRMAN PALLADINO: No, not because of TMI.

4 MR. GERUSKY: In eastern Pennsylvania, we are going
5 to look at radon.

6 CHAIRMAN PALLADINO: I was thinking that among the
7 other effects that might have to be considered is that one.

8 COMMISSIONER BERNTHAL: I have to say that I favored
9 as many of you know and have heard more than you care to
10 account, I favored the NRC giving some financial support to
11 the State of Pennsylvania or other responsible bodies for that
12 matter to try to bring some closure to this issue of statistics
13 and clusters and the incidence of disease and whatnot.

14 The thing that gets lost in all the epidemiology and
15 in so much of the discussion is the single question of why it
16 is that nobody in a controlled experiment has ever been able
17 to demonstrate any residue anywhere out there.

18 I will say with characteristic immodesty perhaps
19 that this does happen to be an area of my expertise and I
20 looked at the raw data in some considerable detail.

21 They weren't exactly as complete as I might have
22 liked or might have done if I were doing it myself but there
23 simply is not an iota of evidence that there is any residue
24 and it is absolutely certain that if there were a major plume
25 emission other than the inert gases that that residue must be

1 there.

2 My response to a lot of this is that somebody who
3 believes in that kind of large emission needs to go out and
4 try to prove it in a controlled situation where there can be
5 no dispute.

6 Thus far, there has never been any evidence of that
7 type presented.

8 MR. MORRIS: As to the panel's charge, however --

9 COMMISSIONER BERNTHAL: That is not your job.

10 MR. MORRIS: I think you understand that when you
11 agreed to open this up and allowed us to be a conduit that we
12 were going to get into certain times when there would be some
13 frustrating discussions as to what we can and cannot do and
14 there will be times when we may have to vote on it.

15 As it happened, we have one or several panel members
16 in this particular case, Tom Cochran and some others, who felt
17 one way and some other panel members felt the other way.

18 The only way to determine it is to take a vote.
19 That is not always an easy solution but at this point it is
20 the only one that we have in order to determine just how far
21 we can and cannot go.

22 We intend on continuing the discussions on this.
23 The Aamodts will be as Tom Smithgall mentioned be at the next
24 meeting to present their viewpoints and the public has been
25 very active and very interested and the frustrations will

1 build to some degree because while there will be a chance to
2 explain at least understand where the Department is coming
3 from, where the public is coming from, there will be no one
4 entity that will attempt to necessarily resolve the
5 differences.

6 I think that is what the frustration is. We as a
7 panel are not that entity and apparently nobody else may be
8 is.

9 CHAIRMAN PALLADINO: Tom, did you have a comment?

10 MR. SMITHGALL: Basically echoing what Art is
11 saying, either do we want to be a critique but we also don't
12 want to be an endorser one way or the other.

13 * COMMISSIONER ZECH: I think you are handling a tough
14 issue very responsibly frankly. I think you are doing a good
15 job with that, just exactly what you ought to do.

16 Mr. GERUSKY: One additional comment, the level of
17 frustration at least has a chance of receding as person years
18 at risk build up over time. Really the answers will come in
19 as that element increases and therefore the statistical
20 certainty or uncertainty of any evidence of an effect will
21 become clearer.

22 So it really is a matter of patient waiting and the
23 additional study the Public Health Fund is doing will take us
24 further down the road in time and may have some more definitive
25 answers.

1 MR. WALD: One of the issues that is clouding the
2 review, not our view but other people's review of the Health
3 Department's data, is the confidentiality of that data. That
4 is the law suit business. There is a law suit requesting
5 that the data be made available to other people.

6 So that issue, it may hinder the critical review of
7 the Health Department Study by anyone. There have been
8 critical reviews but they have been done by people selected by
9 the Health Department who have maintained the confidentiality
10 of the data.

11 So there are some problems and the courts are going
12 to make the decision. I think we will have to wait for the
13 courts to make that decision.

14 CHAIRMAN PALLADINO: All right. I think you are
15 approaching the problem or this issue the way that the
16 Commission had indicated. Nevertheless I do find this
17 discussion very interesting and maybe that is where I will
18 leave it for now. I may want to ask the staff some questions
19 but I will do that as a Commissioner and not in relationship to
20 this panel.

21 MR. MORRIS: All right. Item five I believe is a
22 listing of the advisory panel's activities for the next six
23 months or items the panel believes are important to consider
24 during the next six months.

25 If I may for the record just read off in no special

1 order the types of things we will be going into during the
2 next six months, a discussion of the strontium calibration
3 mistake. If you want further discussion on this today please
4 let me know and I will just go through this list quickly right
5 now but the first one is the strontium calibration mistake.

6 Next is the status of canister fabrication and
7 canister QA program. We will revisit the issue of monitoring
8 to determine whether federal or state agencies are
9 contemplating any changes due to TMI-1 Restart.

10 Defueling discussions and updates will continue and
11 that will be on next month's agenda particularly, a
12 presentation by DOE on fuel transportation, burial of Epicor
13 filters at commercial burial sites.

14 Also on the next meeting's agenda would be the
15 Aamodts' critique of the Pennsylvania Department of Health
16 studies, polar crane hand brake mechanism and particularly the
17 OI report of investigation of 9/23/85, and a presentation by
18 the TMI-2 Safety Advisory Board at some future meetings.

19 That again in no special order lists what we will be
20 doing over the next six months and probably some other things
21 as well. Do you have any questions or suggestions?

22 MR. SMITHGALL: I think we also, Mr. Morris, added
23 the water disposition issue that is probably on your next
24 page.

25 MR. MORRIS: It is.

1 MR. SMITHGALL: If you read the transcript of our
2 Annapolis meeting there was a presentation made by GPU on the
3 disposition of accident generator water and I would like to
4 suggest that staff begin to gear up to look at that particular
5 issue since I believe they made a suggestion that it may be a
6 year away for making presentations to you all..

7 So I think it would bear beginning a new review of
8 that for the panel's review as well as the public's and
9 possibly your own.

10 CHAIRMAN PALLADINO: Are you suggesting we have the
11 staff look at options.

12 MR. SMITHGALL: Review the options that were
13 presented at that Annapolis meeting and correlate it to the
14 previous analysis that was done by the staff and see where we
15 stand and bring you up to date.

16 CHAIRMAN PALLADINO: Is there a likelihood that it
17 is going to be within a year? My impression was that it was
18 down the road.

19 MR. MORRIS: They are saying within a year that they
20 are expecting to take this issue up and make a presentation.
21 Since it was, I believe, something that was treated pretty
22 significantly either in the EIS or the update to that it may
23 be good for the staff to start getting involved in it now
24 before the issue surfaces so that we will be in a better
25 position to respond to it.

1 There is a lot of interest in it both from the panel
2 and the public's standpoint.

3 CHAIRMAN PALLADINO: I know there is a lot of
4 interest in what is going to happen to that water.

5 MR. TRAVERS: My expectation is that a year from
6 January or February according to what the licensee has told me
7 is that they plan to come in with a proposal.

8 We don't have any idea what that proposal will be
9 obviously. We have already taken some preliminary looks at
10 possible options of disposing of that processed accident water
11 but we have done that informally.

12 As of now and probably for a year we won't yet have
13 received even a proposal from the licensee.

14 CHAIRMAN PALLADINO: Is there any work that you
15 might profitably do between now and then in anticipation of
16 that?

17 MR. TRAVERS: We have done some and I personally
18 don't think that we could do much more effectively between now
19 and the time that we get a proposal.

20 We are staying abreast of the kind of radioactive
21 materials that are stored in those tanks. There are tech spec
22 limitations on the totals but until the licensee effectively
23 comes in and says, "This is what we would like to do," we are
24 not in a very good position to do much more than stay abreast
25 of anything.

1 CHAIRMAN PALLADINO: The panel feels that there are
2 some things you can do. Maybe we need to understand that a
3 little better.

4 MR. MORRIS: I guess it may make it clearer if we
5 could have an explanation of what kind of schedule the utility
6 company expects to follow.

7 If they are going to come up with a proposal a year
8 from now and they are not going to be pushing and there is no
9 haste to make a quick decision and we can take another year to
10 really look into it, then maybe there is no need for the staff
11 to be reviewing anything ahead of time.

12 What I don't want to have happen is to have them
13 make a proposal in a year and say they need to move quickly and
14 that we don't spend the kind of time that I think a Tom
15 Smithgall and other panel members feel needs to be taken.

16 I am just cautious as to what will happen in a year
17 and don't want to see any options passed by because there
18 isn't time to review them or spend time on them.

19 CHAIRMAN PALLADINO: If I recall correctly the
20 Commission did step in on this and made an agreement I think.

21 MR. TRAVERS: That is correct, Mr. Chairman. In
22 fact you stated that the Commission will take a direct role in
23 any proposed method for disposing of that water.

24 CHAIRMAN PALLADINO: That is correct. That is what
25 I was going to follow up with. It will come back to the

1 Commission. I don't sense any urgent need to move promptly on
2 this when the proposal comes in but let me ask the staff to
3 keep abreast of the situation and if there are some specific
4 things that the panel thinks we ought to be doing now, we
5 would like to be kept abreast of those suggestions.

6 COMMISSIONER ASSELSTINE: Joe, if I could, maybe the
7 staff could check with the licensee and see not only when
8 their schedule is for proposing something but also the time
9 frame in which the licensee now anticipates wanting some kind
10 of an answer from us as to what should be done.

11 Second, the staff mentioned that they had informally
12 looked at some possible options. I would be interested in
13 knowing what options they looked at and whether any options
14 would be foreclosed by simply waiting for the next year to
15 pass until we get a specific proposal from the licensee.

16 If that period of time passes, are there options for
17 disposing that would be foreclosed or more limited?

18 MR. TRAVERS: Maybe I will start from the beginning.
19 We have already some indication of the licensee's plans for
20 coming in to the staff and the Commission and specifically they
21 have said beginning of 1987, that is the target, January of
22 1987 for coming to us with an approach, a proposal for
23 disposing of the water.

24 They have indicated again on their target that they
25 would like to have an answer from the staff within five

1 months.

2 CHAIRMAN PALLADINO: After that?

3 MR. TRAVERS: After that. They have also indicated
4 that they expect an implementation period of about a year
5 after that for actually disposing of the water.

6 COMMISSIONER ASSELSTINE: Do we have any indications
7 of what options they are considering?

8 MR. TRAVERS: No. I could guess because we have
9 thought about it in some advance.

10 COMMISSIONER ASSELSTINE: Which ones did you all
11 look at and which ones do you think they are considering?

12 MR. TRAVERS: Making concrete out of it, disposing
13 of it in the river as a normal operating plant would do,
14 evaporating it somehow, cooling towers or in a pond, things of
15 that nature.

16 COMMISSIONER BERNTHAL: Excuse me. I gather that
17 the isotope of principal interest and concern is tritium, is
18 it not?

19 MR. TRAVERS: It is the isotope with the largest
20 curie amount, that is for sure. Its biological significance
21 though is way down from things like strontium cesium.

22 COMMISSIONER BERNTHAL: Does strontium cesium even
23 at those levels are greater biological significance?

24 MR. TRAVERS: I would have to look at the specific
25 levels but I think we are talking about hundreds of thousands

1 of curies.

2 COMMISSIONER BERNTHAL: I am just looking at it
3 right now and you are talking about 20 millicuries of strontium
4 and 60 millicuries of cesium in 860,000 gallons which is not
5 very much.

6 MR. COCHRAN: It is irrelevant.

7 COMMISSIONER BERNTHAL: I know.

8 MR. COCHRAN: This is a political thing.

9 (Laughter.)

10 COMMISSIONER ROBERTS: That's right.

11 MR. SMITHGALL: We don't operate in a vacuum, do we?

12 MR. TRAVERS: I think it is fair to point out that a
13 normal operating reactor these kinds of levels of radioactivity
14 are routinely discharged including tritium.

15 COMMISSIONER BERNTHAL: Yes. The tritium though
16 being a big number and 800 curies sounds big, isn't that
17 mostly ionic, hydrogen ion if you will in solution and can't
18 that be easily removed by some simple ion exchange mechanism?

19 MR. TRAVERS: No.

20 COMMISSIONER BERNTHAL: It is too low a level?

21 MR. TRAVERS: It acts chemically like water and that
22 is the problem. Even at those levels I think if you want to
23 compare it to what an operating PWR discharges I think it is
24 like 500 curies.

25 MR. MIRAGLIA: Five hundred to a 1,000.

1 MR. TRAVERS: Five hundred to 1,000 curies per
2 year.

3 COMMISSIONER BERNTHAL: Forget it, it is too low.

4 MR. MORRIS: I think the concern though is what you
5 are outlining here and what Bill is and that is that is in the
6 technical society there may not be any concern for the level
7 and that it is my judgment quite frankly personally that the
8 recommendation is going to be to dump that water in the river.

9 I want to make sure that there is adequate time to
10 look into that and respond to it and it is strange to me that
11 they have had years to look at the question and they want to
12 take one more year but they are only going to give the staff
13 five months or suggesting that the staff only take five months
14 to look at it.

15 I would hope that in their schedule and that we
16 would say it to them very soon that they should look at more
17 of a length of time than five months because that really goes
18 by every so quickly.

19 CHAIRMAN PALLADINO: I think when the proposal is
20 made the staff will be in a position to react as to the length
21 of time that they think they are going to need to assess the
22 problem.

23 MR. MORRIS: I am just going on record that five
24 months for them to react and get all the input because it may
25 not be a technical and that is why it might need more of an

1 answer, will not necessarily be a technical answer as to the
2 health effects but more of a political concern and a citizen
3 concern.

4 CHAIRMAN PALLADINO: One thing the staff might do
5 since it has gotten information informally, it might also
6 transmit informally their concern about the length of time
7 that might be available for Commission action.

8 MR. MORRIS: Yes, fine.

9 COMMISSIONER ASSELSTINE: Is the one year period the
10 time necessary for the licensee to evaluate the issue and
11 decide what it wants to do? It sounds like technically it may
12 not be all that difficult a question to address or is it
13 simply that well they don't need to worry about it until some
14 time in 1987 and therefore they are not going to worry about
15 it until 1987?

16 (Commissioner Roberts leaves the meeting.)

17 MR. TRAVERS: The issue obviously is not a technical
18 one. I think if they wanted to make a proposal based on what
19 is standard practice they would come in and say, "We would
20 like to release it." Obviously, it is a much more sensitive
21 issue than that.

22 COMMISSIONER ASSELSTINE: Then if the more pressing
23 part of this may well be the debate and discussion about the
24 merits of the licensee's proposal, then why doesn't it make
25 more sense to get them to come in earlier say six months from

1 now with their proposal and then allow a year to evaluate it,
2 for people to discuss it, for people to understand what the
3 technical significance is before a decision has to be made?
4 Why doesn't that make sense?

5 COMMISSIONER BERNTHAL: That is a good point.

6 CHAIRMAN PALLADINO: I wonder whether we should be
7 pushing in that direction because I think it is a problem that
8 has important political overtones and I think those ought to
9 be factored in both in the scheduling and in the decision.

10 MR. MIRAGLIA: Frank Miraglia of the staff. I did
11 attend the meeting in Annapolis and I think there is one
12 issue, at least the sense that I got at my first exposure to
13 this whole question as it is going to be part of my new
14 responsibilities, one thing the utility did say is that this
15 is a valuable resource for them right now in the cleanup
16 operation.

17 It is a clean source of water. They use it in
18 decontamination operations. Every time they use it, it turns
19 out they make more water. So the number whatever it is, 800,
20 is going to go up. The curie content may change a bit. They
21 don't know what is ahead of them in the next few months of
22 defueling operations.

23 So to characterize a proposal too early, they may
24 not be characterizing exactly what they are going to dispose
25 of. So I think there is a sensitivity at least. I think it

1 is worth exploring your suggestion, Commissioner Asselstine,
2 but I had the sense that there are those other kinds of
3 considerations at least in the utility's mind, at least in the
4 conversations that I heard at the Annapolis meeting.

5 There is a risk of coming in too early because they
6 might not be characterizing the exact quantities of material
7 involved or the volumes involved.

8 COMMISSIONER ASSELSTINE: Fair enough. I am not
9 suggesting that we direct them that they have to come in with
10 their proposal within a specified time but it does seem to me
11 that it wouldn't hurt to get the staff to raise the issue with
12 them about the timing and to emphasize what appears to be a
13 concern on the part of the panel as well as I suspect the
14 community that there be sufficient time to insure a careful
15 evaluation.

16 MR. MIRAGLIA: They were at the meeting and I think
17 that concern was concern was clear to everyone at that meeting.

18 COMMISSIONER ASSELSTINE: all right.

19 CHAIRMAN PALLADINO: I would suggest that if the
20 panel does have points that they think the staff ought to be
21 exploring as time goes on and we would appreciate knowing
22 about them.

23 MR. MORRIS: Fine.

24 MR. SMITHGALL: We will suggest it again.

25 CHAIRMAN PALLADINO: All right.

1 COMMISSIONER BERNTHAL: Maybe this is a subject for
2 a solar pond.

3 MR. MORRIS: Mr. Chairman, those are the items that
4 we had expected to cover. I don't know if any of the other
5 panel members had anything they wanted to add to the discussion
6 or bring up at this time.

7 MR. COCHRAN: I would just observe that the Savannah
8 River Plant uses about 100 million curies of tritium per year
9 and releases about 1,000 which may be 100 times too high.

10 MR. MORRIS: We are going to run a line, Tom, from
11 TMI to your office building and see how many of your people
12 want to drink the water.

13 COMMISSIONER ASSELSTINE: We can drink it, right?

14 (Laughter.)

15 MR. SMITHGALL: I suggested taking it to the Mason
16 Dixon line at the Annapolis meeting, I think that was my
17 suggestion, and there wasn't any concern at least from the
18 gentleman speaking. I don't know that he spoke for the entire
19 state.

20 MR. MORRIS: He did not. There were several senators
21 who were upset with his answer.

22 CHAIRMAN PALLADINO: It sounds as though we are
23 going to have some interesting times ahead but getting this
24 input early is very valuable and we will expect any additional
25 points that you may have as time goes on on this issue.

1 Anything more that we should cover today?

2 (No response.)

3 CHAIRMAN PALLADINO: Let me express my appreciation
4 and the Commission's appreciation for the extensive amount of
5 time that you as a panel give to the issues related to TMI-2.
6 We are very grateful for your effort and we look forward to
7 continuing to work with you on these issues. Unless there is
8 something more to be said, I will conclude the meeting.

9 COMMISSIONER BERNTHAL: I agree. I second what the
10 Chairman has said. I think that this is working out rather
11 well and is a valuable function.

12 CHAIRMAN PALLADINO: Anything further?

13 (No response.)

14 CHAIRMAN PALLADINO: Thank you again. We will stand
15 adjourned.

16 (Whereupon, the Commission meeting was adjourned at
17 12:20 o'clock p.m., to reconvene at the Call of the Chair.)

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11/19/85

SCHEDULING NOTES

TITLE: PERIODIC MEETING WITH ADVISORY PANEL ON DECONTAMINATION
OF TMI-2

SCHEDULED: 11:00 A.M., TUESDAY, NOVEMBER 19, 1985 (OPEN)

DURATION: APPROX 1-1/2 HRS

PROPOSED TOPICS:

- ° PANEL COMMENTS ON TECHNICAL ASPECTS OF DEFUELING PROGRAM
- ° PANEL COMMENTS ON POTENTIAL FOR RECRITICALITY OF TMI-2
CORE DURING DEFUELING
- ° GPUNC'S SCHEDULE FOR FUEL REMOVAL
- ° PANEL COMMENTS ON RESULTS OF HEALTH STUDIES
- ° PANEL ACTIVITIES DURING NEXT SIX MONTHS

REFERENCES: NOVEMBER 6, 1985 LETTER FROM CHAIRMAN PALLADINO TO
A. MORRIS