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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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In the Matter of: :
:
THREE MILE ISLAND :
SPECIAL INQUIRY DEPOSITIONS :
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INTERVIEW OF: WARREN R. COBEAN, JR.
and ALLAN SCOTT DAM

Offices of Burns & Roe
650 Winters Avenue
Paramus, New Jersey

Monday, November 5, 1979
9:30 a.m.

BEFORE:

For the Nuclear Regulatory Commission:

HANS SCHIERLING, TMI/NRC Special Inquiry Group
BARRY HORVICK, TMI/NRC Special Inquiry Group

For Burns & Roe:

TOM A. HENDRICKSON, Assistant to the President
KEVIN MURPHY, Senior Counsel
RICHARD B. DiFEDELE, Staff Attorney

1 MR. MURPHY: It's not a deposition at all.

2 MR. HORVICK: It is a continuation of the
3 interview conducted previously with Mr. Cobean. We'll be
4 questioning Scott Dam.

5 Whereupon,

6 ALLAN SCOTT DAM

7 was called as a witness, was examined, and testified as
8 follows:

9 EXAMINATION

10 BY MR. HORVICK:

11 Q Let's see. Mr. Dam, have you read the witness
12 notification —

13 A Yes.

14 Q — form, and you understand it?

15 A Yes.

16 Q Okay. Mr. Dam, could you tell us what prior
17 testimony you've given regarding Three Mile Island?

18 A I've given no testimony on the record.

19 Q Okay. And I would also like to get this on the
20 record.

21 Mr. Hendrickson, you have given testimony.

22 MR. HENDRICKSON: Yes, I have.

23 MR. HORVICK: In front of the President's
24 Commission. And just to get it on the record, that
25 testimony does in part cover this issue of the AEs' role?

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1 MR. HENDRICKSON: It covers it extensively.

2 MR. HORVICK: And the utility's operating license
3 and decision to go into commercial operation. Okay.

4 To get into the --

5 MR. HENDRICKSON: This might be helpful. The
6 testimony was, as I remember, on Wednesday and Thursday,
7 August 1st and 2nd of this year.

8 BY MR. HORVICK:

9 Q Okay. Now, Mr. Dam, were you at the TMI site for
10 the full calendar year, 1978?

11 A Was I at the TMI site?

12 Q Yes.

13 A No.

14 Q Well, were you involved in any of the pre-op or
15 start-up tests at the site?

16 A No.

17 Q Okay. What was your involvement with TMI, then,
18 during 1978?

19 A I became the Project Manager for Burns & Roe in
20 March, 1978. Burns & Roe at that time was still involved
21 with the construction, design and construction contract for
22 the Three Mile Island Unit-2.

23 Q Could you tell us more specifically what your
24 duties were as Project Manager?

25 A The Project Manager is responsible for the overall

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1 operations in the company, as Burns & Roe, for the project,
2 for the project being for the design of the Three Mile
3 Island Unit-2. Burns & Roe was responsible for the balance
4 of plant design.

5 Q Let's see. Was there any significant change in
6 the character of your duties after TMI-2 gained its
7 operating license of February 8, 1978?

8 A Again, I say that I became Project Manager in
9 March, after they had the operating license.

10 MR. HORVICK: Okay. If we could go off the record
11 one second.

12 (Discussion off the record.)

13 MR. HORVICK: If we could go back on the record,
14 then. At this point, for the record, I would just like to
15 identify the authors of these questions as Larry Vandenberg,
16 V-A-N-D-E-N-B-E-R-G, and David Evans.

17 MR. MURPHY: Employees of whom?

18 MR. HORVICK: They are both with the Task Group of
19 the Nuclear Regulatory Commission dealing with precursors to
20 the TMI-2 accident.

21 MR. MURPHY: From where? From the government?
22 From the NRC offices or --

23 MR. HORVICK: Yes. They are with the NRC.
24 Right. They are.

25 MR. MURPHY: Okay.

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1 BY MR. HORVICK:

2 Q If we could just back up a second, Mr. Dam, some
3 of the questions I've asked up to this point, you have
4 responded to them as an individual. If we could look at
5 some of these questions in a larger context, if you were not
6 personally responsible for certain pre-op and start-up tests
7 during 1978, are you aware of any other B&R people under you
8 or any other divisions of B&R that were involved with these
9 tests?

10 A Burns & Roe provided an engineering liaison
11 service during the start-up test program. In that regard,
12 we had an engineer assigned to the Test Working Group. His
13 name was Rich Brownell.

14 Q If we could just discuss your attendance at any
15 monthly meetings conducted by the GPU Project Manager, were
16 there any such meetings that you know of, and did you,
17 indeed, attend them?

18 A During the design and construction of TMI Unit-2,
19 there were monthly Project Managers' meetings of which the
20 GPU Project Manager, the Burns & Roe Project Manager, as
21 well as the constructor -- and I believe B&W is the reactor
22 manufacturer -- attended. They were typically held at the
23 TMI site. I believe shortly after the operating license was
24 obtained, those meetings were stopped as far as the design
25 project goes. There were subsequent meetings called the

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1 monthly Project Managers' meetings held on the site, but
2 they dealt with first refueling project items.

3 Q In the course of any of these meetings that you've
4 just mentioned, was there talk of some kind of a target date
5 for going into commercial operation?

6 A Yes.

7 Q Could you tell us what the import of those
8 discussions was?

9 A I don't understand your question.

10 Q Okay. Was the issue a question of time or GPU
11 people saying, "We need to get into operation, commercial
12 operation," within a certain period of time?

13 A I don't remember the discussions phrased in that
14 manner. The date of commercial operation really was not
15 something that either the Project Managers or specifically
16 Burns & Roe were particularly concerned with. It as more of
17 a financial consideration or whatever. We had target dates
18 for various things that we were doing, and certainly the
19 commercial operation date was mentioned. But more
20 importantly, we were talking about a target system operation
21 date of when the plant would be at full power.

22 MR. HENDRICKSON: I think if I might elaborate on
23 that, the commercial operation date is not technically
24 oriented. Obviously, the plant must be completed and tested
25 and accepted before that. But the date is a utility matter,

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1 not something — commercial operation is a utility matter,
2 not something the architect engineer is involved with
3 directly.

4 BY MR. HORVICK:

5 Q Right. We're just trying to pick up as much
6 information as we can in this area. I think if something
7 was passed on to you, you could perhaps tell us about it.
8 In fact, can you specifically recall what the discussion
9 concerning commercial operation did have to do with?
10 Apparently, you weren't pushed in terms of time, but
11 whatever discussion you did have along those lines, can you
12 remember what the thrust of such discussions were?

13 A There were a variety of dates, again, to target
14 system operation, 100 percent power, which we were working
15 for and various completions of tasks. By the time of
16 initial criticality, there were not too many Burns & Roe
17 related tasks that were required to be done to support 100
18 percent power. And during the spring and summer, various
19 dates were mentioned as far as target dates for 100 percent
20 power, starting like in June of '78. I think that answers
21 what you're looking for.

22 Q Yes. I think that does. Let's go on then. Which
23 GPU Service Corporation and Met Ed people did you regularly
24 work with or discuss plant problems with when you became
25 Project Manager?

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1 A I believe — and this is a recollection — that
2 when I became Project Manager, Dick Heward, H-E-W-A-R-D, was
3 the GPU Project Manager for the design and construction.
4 Shortly thereafter, I believe that John Barton became
5 Project Manager, and I don't remember the dates on any of
6 these changes. After Barton, Clay Montgomery became our
7 contact as the GPUSC Project Manager.

8 With regard to Met Ed, we had a number of contacts in the
9 Gary Miller site organization as well as with Met Ed,
10 Reading, and that group is headed by Dick Klingaman, and
11 there were many individuals involved in all of the
12 organizations.

13 Q Let me ask you, specifically with regards to
14 commercial operation, did you ever have any discussions with
15 any of the people that you've just mentioned regarding
16 commercial operation? Even more specifically, a need to get
17 the plant into commercial operation by a specific date?

18 A Again, this was over a year ago, and I don't
19 remember the discussions at all regarding commercial
20 operation. It was a date that was being mentioned at
21 various times. But as far as a Burns & Roe target date, it
22 really didn't play a factor in our work. It was more of a
23 general interest.

24 Q Let me ask you, had you ever heard anything about
25 a May 31, 1978, target date for TMI-2 going into commercial

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1 service?

2 A I believe I said first of June, but May 31 could
3 have been the date as well.

4 Q All right.

5 A That was the date, I believe, that was chosen very
6 soon after initial criticality.

7 Q Do you have any insight as to why that date was
8 specifically picked?

9 A No.

10 MR. HORVICK: If we could go off the record for
11 one second.

12 (Discussion off the record.)

13 MR. HENDRICKSON: Back on the record. I'd like to
14 amplify Mr. Dam's responses to these questions by saying
15 that architect engineers do operate in accordance with
16 schedules for all projects. And there is also a schedule or
17 pressure on us by all clients to get the power plants
18 finished and on the line and generating electricity.

19 In the case of the Three Mile Island project and GPU, we
20 have had schedules throughout and operated and did our work
21 in accordance with schedules. And there was schedule
22 pressure by GPU, as there is from all clients, but there was
23 no undue pressure. We did the job completely and
24 thoroughly, and all requirements that we were aware of in
25 the course of the design and testing program for the plant.

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1 I might also add that our contract with General Public
2 Utilities is a standard architect/engineers contract. It is
3 unrelated to meeting particular schedules or goals. We were
4 paid for our work with a multiplier to meet our costs and a
5 modest fee.

6 MR. HORVICK: Off the record again, please.

7 (Discussion off the record.)

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1 MR. HORVICK: Back on the record.

2 Mr. Hendrickson, in view of what you have just said, we
3 have looked in Mr. Cobean's deposition taken by the President's
4 Commission. At page 154 of that deposition, Mr. Cobean
5 testified that, "The client was always concerned about meeting
6 a commercial operation date. That was his principal goal in
7 life, to make that commercial operation date in some way."

8 Could you speak a little about Mr. Cobean's statement? Does
9 it in any way refute what you just said?

10 MR. HENDRICKSON: No, I don't believe it does. If
11 you read the entire section of Mr. Cobean's testimony, you
12 will see that the gist of his remarks are roughly the same as
13 mine. And that the particular quote is taken out of context.

14 Mr. Cobean was indicating that all clients are properly
15 concerned with the timely completion of their plants and
16 placing their utilities in commercial operation. But, there
17 is no one who has concern, to our knowledge, on the part of
18 General Public Utilities and in no way were short-cuts taken
19 to our knowledge, in the completion of the Three Mile Island
20 Unit No. 2.

21 BY MR. HORVICK:

22 Q Okay. Going on, Mr. Dam, you stated that you weren't --
23 that commercial operation dates were not a major concern of
24 yours. But, to the extent that you did know about the target
25 dates for commercial operation, did you report them to your

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1 superiors? Was there any discussion about these dates? Was it
2 an important issue with your superiors to know about such
3 dates?

4 A The commercial operation date that was discussed
5 previously was certainly mentioned to my superiors, Mr. Cobean,
6 again, for general interest. I don't remember any lengthy
7 discussions with him or anyone else in particular regarding
8 commercial operation.

9 MR. MURPHY: Ask another question.

10 BY MR. HORVICK:

11 Q Okay. We are moving into a new set of questions
12 here relating to the April 23, 1978, transient. Were you
13 on the site when the main steam safety relief valves failed
14 to recede?

15 A No.

16 Q Could you tell us where you were?

17 A No, because I don't remember there I was. I
18 remember I was not in the office.

19 MR. MURPHY: Do you have a date when that happened?

20 BY MR. HORVICK:

21 Q April 23.

22 A I would have to check a calendar back then of where
23 I might have been.

24 MR. SCHIERLING: Do you recall that particular
25 transient?

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1 THE WITNESS: Yes.

2 MR. HENDRICKSON: According to my calendar, Scott,
3 April 23, 1978 was a Sunday. Would that help?

4 THE WITNESS: I think Ron Toole called me at home
5 that Sunday, as a matter of fact, asking me some technical
6 questions regarding the safety valves. And I remember taking
7 some data on a notepad that was hanging up on the wall in the
8 basement.

9 BY MR. SCHIERLING:

10 Q Did he identify to you the reason for that call?

11 A That's the call I am thinking of, he was asking for
12 some information regarding the safety valves. It may not,
13 in fact, be that same call.

14 Q I just wonder, Mr. Dam, assuming that April 23 was,
15 indeed, a Sunday, you mentioned that you did become aware of
16 the main steam safety valve not receding. Were you involved?
17 Was Burns & Roe involved in any follow-up action on that
18 transient?

19 A Yes.

20 Q And if so, what were the activities?

21 A Our main activity was -- first started out with an
22 evaluation in detail of the main steam safety valves that were
23 provided by Lonergan Company, how they were supposed to perform,
24 and how in fact they were performing, along with various reviews
25 to determine what corrective action or additional testing

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1 should be undertaken with regard to the Lonergan valves.

2 Subsequent to that time, after numerous meetings, discussions,
3 tests, et cetera, it was concluded to replace Lonergan safety
4 valves with a different designed valve. And Burns & Roe
5 provided the design for those modifications.

6 Q Was that activity requested of you by the GPU
7 organization?

8 A Yes.

9 MR. SCHIERLING: Why don't you go off the record?

10 (Discussion off the record.)

11 BY MR. HORVICK:

12 Q Back on the record.

13 Do you remember any discussion about the May 31, 1978,
14 commercial operation date in regard to this transient?

15 A Only that late in May, the date was changed. But
16 I don't even remember what the date that they changed it to
17 was.

18 Q Do you have any knowledge of what kind of factors
19 went into that change of date?

20 A Only that the plant was not going to be operate
21 at 100 percent power because the safety valves were being
22 replaced.

23 Q But you personally weren't involved in any of those
24 discussions?

25 A As we have talked, commercial operation was something

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1 the utility was involved with, not Burns & Roe.

2 BY MR. SCHIERLING:

3 Q These safety valves that we are talking about, are
4 they within the scope of supply of Burns & Roe or of the
5 NSSS vendor?

6 A Burns & Roe specified the valves based on the B&W
7 design requirements. And purchasing was done by GPU, as was
8 all procurement activities for the balance of plant equipment.

9 BY MR. HORVICK:

10 Q Okay. Mr. Dam, we have another question here based
11 on Mr. Cobean's deposition taken by the President's Commission.
12 At page 157 of that deposition, Mr. Cobean testified that it
13 was important to GPU for accounting reasons, if for no other
14 reason, to try to get the plant on-line commercially before
15 the end of 1978.

16 We are aware from your testimony up to this point, that you
17 had very little import or discussion regarding target commercial
18 operation dates. But do you know anything at all about this
19 kind of reasoning in regards to a commercial operation date?

20 A Time out.

21 MR. HENDRICKSON: Off the record.

22 (Discussion off the record.)

23 BY MR. HORVICK:

24 Q Mr. Dam, based on our questions and answers up to
25 this point, it is obvious that you know very little about the

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1 various target dates for commercial operation that GPU and
2 Met Ed arrived at in 1978. Could you just summarize your
3 role surrounding this whole issue?

4 A Again, the commercial operation dates were mentioned
5 at various times, at various meetings. However, there was no
6 direct contact on Burns & Roe with those dates.

7 The one side issue with regard to commercial operation date
8 was the date that work started for the Metropolitan Edison
9 Company under our continuing services agreement for updating
10 drawings under their contract, versus updating them under the
11 GPU contract. That was one of the principal -- one of the
12 principal reasons to know the commercial operation date.

13 The work we were doing was task-type work resolving
14 reopen items. A number of those continued after the commercial
15 operation date, which were GPU's responsibility. Some were
16 turned over and became Met Ed responsibility, and we worked
17 on those for Met Ed.

18 Q Is that all you have on that?

19 A Unless there is something else you want me to say
20 specifically.

21 Q That sounds fine. Why don't we just put the lid on
22 that issue.

23 Hans, why don't you take over with some of these questions
24 regarding the valve itself?

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1 BY MR. SCHIERLING:

2 Q Okay. Mr. Dam, we talked about before, the April 23
3 failure of the main steam safety valve, relief valve. And
4 you indicated already that you were directed by GPU to prepare
5 design changes in case that valve would have to be replaced.
6 Is that correct?

7 A Yes.

8 Q When were you advised or requested by GPU to initiate
9 that effort?

10 A I don't recollect. It would be in the timeframe
11 of May, 1978. But I don't remember what exact date.

12 Q Specifically, what did you do, look at other valve
13 designs, evaluated those with regard to their applicability,
14 or what was involved?

15 A I think, as I said before, we first started out
16 looking at the Lonergan valve to see what should be done to
17 make the Lonergan valve work. In addition, a test valve was
18 taken by Lonergan and modified by them to attempt to make the
19 valve recede with the specified limits.

20 As a back-up to Lonergan not performing, Burns & Roe did
21 a number of studies looking at valves of size and types which
22 could be installed in place of the Lonergan valves.

23 A decision was reached sometime in May, I believe, that GPU
24 wished to proceed with the detailed design of a replacement
25 valve. And that was done.

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1 Q It is my understanding that there was a meeting on
2 May 23rd at the TMI site on that particular issue between
3 Burns & Roe, Lonergan and GPU. Did you attend that meeting?

4 A I attended numerous meetings. I could have, very
5 easily, attended that one.

6 Q If you did not personally attend it, is it correct
7 to assume that you probably had someone else attend that
8 meeting?

9 A Yes.

10 Q Okay. Were you aware that there were other valves
11 intended to be used for the Forked River project at about
12 the same size as the Lonergan valves, but made by a different
13 manufacturer, and that they would be available in November of
14 1978?

15 A Yes, although that date was in question. At various
16 times, Crane Company would not give us a firm date. In fact,
17 I don't believe their valves had even started fabrication in
18 May.

19 So, any date that Crane would have given, would have been
20 a questionable date.

21 MR. SCHIERLING: Off the record.

22 (Discussion off the record.)

23 BY MR. SCHIERLING:

24 Q Back on the record.

25 Mr. Dam, could you please address the whole issue of these

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1 safety release valves with respect to the availability of the
2 Crane design that were not into manufacturing yet for the
3 Forker River project, the Dresser valves, and the Lonergan
4 valve? Which one was finally opted to be installed at the
5 TMI-2 unit?

6 While we were off the record, we mentioned three valves;
7 is that correct? Dresser, Lonergan, and Crane?

8 A Okay.

9 Q Which is the one that was finally selected?

10 A The Dresser valve was selected.

11 Q And that Dresser valve was obtained from where,
12 from another nuclear power plant or was it specially ordered
13 for GPU before TMI-2?

14 A The valves were in the Dresser shop. They had been
15 ordered by Commonwealth for one of their projects. And I
16 don't remember which project. But they had not yet been
17 shipped.

18 Q And these are the valves that were then ultimately
19 installed at TMI-2?

20 A That's correct.

21 Q How much time did you have to complete that task?

22 A It was not so much as how much time we had, it is
23 how much time it took to do it. Nowhere do I remember being
24 given: you have to have it done by a certain date. It was
25 how fast can you do it. Look at various options so that the

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1 endproduct can be done in a reasonable -- as quickly as
2 possible. But I don't remember ever being given a date that
3 it had to be done by.

4 Q What effort, was it considered a rush job, then,
5 for Burns & Roe?

6 A It was considered --

7 Q To the extent that other work had -- other scheduled
8 work had to be dropped in order to accomplish this task?

9 A It was considered our highest priority task. And
10 as many of the staff that were needed worked on that in deference
11 to other work items which had lower priority, particularly
12 the items that weren't due until the first refueling outage,
13 which was the predominant workload of our group at that time.

14 Q The original valves that were in the TMI-2 safety
15 relief valves, they were Lonergan valves?

16 A That's correct.

17 Q They were designed according to Burns & Roe
18 specifications?

19 A Burns & Roe provided what is called a performance
20 specification. That is, we provide the set pressure, the
21 blowdown percentage, other characteristics that the valve
22 has to be made to. However, we do not tell a valve manufacturer
23 how to do his valve design in our specifications.

24 Q Why was this design selected, rather than a more
25 common design used in the nuclear industry? Let me ask you:

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1 Is, indeed, the Lonergan design one of the lesser used valves
2 in the nuclear industry?

3 A I can't speak for the whole nuclear industry.

4 Q To the best of your knowledge.

5 A It is not -- I don't believe at that time it was
6 the prevalent design in the power industry. However, there
7 was good precedent, I believe, for that valve that was chosen.

8 MR. HENDRICKSON: Let me give also a partial answer
9 to that. This is from so long ago that I may not have it all
10 exactly right.

11 But the Dresser valve was an outgrowth of the relief valve
12 failure that had occurred.

13 THE WITNESS: You mean the Lonergan valve?

14 MR. HENDRICKSON: In one of these Virginia plants.

15 THE WITNESS: Which valve do you mean, the Lonergan
16 valve or the Dresser valve?

17 MR. HENDRICKSON: The Lonergan valve. The original
18 Three Mile Island design was an outgrowth of one of the
19 failures that had occurred a number a years ago at one of the
20 nuclear plants, one of the relief valves. It was a VEPCO
21 plant, that's right.

22 And the feature that Lonergan had provided in this valve
23 was a double discharge, which balanced or tended to equalize
24 unbalanced loads that were prevalent with the other designs.

25 And this as considered at the time a new and desirable

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1 feature.

2 However, relief valves are very difficult. And there are
3 not very many suitable facilities for testing valves.

4 Unfortunately, this was the first chance for a full test of
5 this design. And it did not perform well.

6 We therefore had to alter the Three Mile Island plant and
7 install valves similar to earlier designs that did have,
8 as I recall, unbalanced loads. Am I correct, Scott?

9 THE WITNESS: That's correct.

10 MR. HENDRICKSON: And design the supports and piping
11 to accommodate the unbalanced loads.

12 THE WITNESS: The Lonergan valve was a much simpler
13 valve for installation and had much reduced loads on the
14 piping system. And therefore was a highly desirable valve.

15 There were 12 Lonergan valves that had to be replaced by
16 20 Dresser valves.

17 So, the valves -- the Lonergan valves, while they were
18 larger, had much less forces on to the valve stem and their
19 attachment to the piping.

20 MR. HENDRICKSON: If the valve had performed properly,
21 it would have been a very desirable valve.

22 THE WITNESS: In fact, the Forked River valves you
23 mentioned before designed by Crane, were essentially the same
24 as the Lonergan valves. That is, they were double discharge
25 T size orifice valves.

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MR. HENDRICKSON: Right.

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MR. HENDRICKSON: Right.

BY MR. SCHIERLING:

Q You mentioned that the 12 Lonergan valves, the original Lonergan valves at TMI-2 were replaced by 20 Dresser valves.

MR. MURPHY: He mentioned it.

BY MR. SCHIERLING:

Q You mentioned that, Mr. Dam. In that selection of the Lonergan valves, the fact that they were quite a few less, did cost play any role in the selection of these valves, to the best of your recollection?

A Yes, the Lonergan valves were less expensive than either Crane or Dresser at that time. And a technical evaluation as well as a cost evaluation was done on the bids. And as I remember from looking at the history -- I was not on the project at the time -- a thorough evaluation was done, prior to placing the order with Lonergan.

Q There's one final question that probably will require you to go back into your memory, your recollection. Please try to do so, if you can.

You participated in various meetings, I'm sure, on the schedule, although commercial operation is not of interest to you, to Burns & Roe. But meetings where, indeed, schedule was discussed. And based on your prior testimony, the information that you have given us, you probably did not

kap/PL 1 have any -- you appeared to have not had any input into
2 these discussions; however, do you recall that ever issues
3 were discussed relating to what aspects of the TMI-2 plant
4 could be safely deleted or postponed in order to get the
5 TMI-2 unit on-line by the end of 1978?

6 A No.

7 Q You do not recall that any tasks that still were
8 not completed at that time could be postponed to beyond
9 commercial operation?

10 A I don't believe that's what you asked the first
11 time.

12 Q That's what I meant to ask the first time.

13 A Now, I'm confused about your question.

14 Q I'm asking if there were any TMI-2 related tasks,
15 safety-related, that were deleted to beyond the commercial
16 operation date of December 1979?

17 A I don't remember any commercial operation date,
18 safety-related.

19 Q '78, I'm sorry.

20 A '78. Any safety-related items that were not
21 completed before commercial operation where there was a
22 reason or need to have them completed. There were, as you
23 know, licensing commitments made in the operating license
24 for safety-related items, which would be done at the first
25 refueling outage, which was per the agreement of

kap/PL 1 Metropolitan Edison and the NRC. Those were the only items
2 that I know of that were scheduled out after commercial
3 operation.

4 MR. SCHIERLING: Did you want to add something to
5 that?

6 MR. MURPHY: I think you meant to say deferred,
7 rather than deleted.

8 MR. SCHIERLING: Deferred.

9 MR. MURPHY: Deferred beyond the commercial
10 operation.

11 THE WITNESS: I know of no items that were
12 deleted.

13 MR. SCHIERLING: Deferred or postponed, that was
14 my intent.

15 MR. MURPHY: Right.

16 BY MR. SCHIERLING:

17 Q Is there anything else that you would like to add
18 on this line of questioning regarding the need -- the rush
19 to go into commercial operation by the end of 1978?

20 A From Burns & Roe's standpoint, I don't remember
21 any particular rush as it affected Burns & Roe. There were
22 numerous discussions I'm aware of within the GPU system on
23 work breakdown between Met Ed and GPU, and who was going to
24 do what and be responsible to what, relative to commercial
25 operation.

kap/PL 1 But as it affected Burns & Roe, I don't really know of
2 anything that would show a rush.

3 MR. HENDRICKSON: Scott, there was a
4 contract-related issue before commercial operation date. I
5 believe our work fell under the original new construction
6 contract. And there was a continuing services contract
7 between Burns & Roe and Metropolitan Edison and obviously at
8 some point, tasks that still needed to be done, whether it's
9 the parking lot or the glass or whatever it is, might be
10 carried on on the continuing services contract, rather than
11 new construction contract.

12 THE WITNESS: In fact, I did mention the
13 drawings. The responsibilities were pretty well-defined in
14 November and December, which items were going to be GPU
15 response and which items were going to be Met Ed response.
16 And in fact, we had already started working with Met Ed on
17 some tasks, when Met Ed wanted to make some planned
18 improvements on the neutralizing system, for example, and
19 for make-up water in the secondary plant, things of this
20 nature, which Met Ed said it was their responsibility,
21 because they were not part of the original designer and
22 construction.

23 GPU did carry over past the first of the year, various
24 items which were of a peripheral nature.

25 MR. HENDRICKSON: I believe, isn't it true, that

kap/PL

1 both contracts are still open today and work is still being
2 done by Burns & Roe under both contracts, both the initial
3 construction and the continuing services contract?

4 THE WITNESS: That's right.

5 MR. SCHIERLING: I think that completes this line
6 of questioning. Do you have anything else to add, Barry?

7 MR. HORVICK: No. I think we've covered all the
8 issues and that's it. Thank you very much.

9 MR. MURPHY: I have a request before we go off the
10 record, and that is that the pages of Mr. Cobean,
11 Mr. Cobean's interview, be identified from the beginning of
12 his testimony until it ended. Those pages within
13 Mr. Cobean's interview that reflect Mr. Dam's few answers
14 and questions — answers to questions be identified, and
15 then pages of Mr. Dam's interview be identified from
16 beginning to end after Mr. Cobean finished. And those few
17 pages where Mr. Hendrickson answered. Otherwise, we're
18 going to go crazy trying to get this thing properly
19 reviewed, since it's not going to be broken down. It's all
20 going to be in one package.

21 MR. SCHIERLING: Back on the record.

22 Whereupon,

23 WARREN R. COBEAN

24 was recalled as a witness and, having first been duly sworn,
25 was examined and testified further as follows:

cap/PL

1 BY MR. SCHIERLING:

2 Q At the suggestion of Mr. Murphy from Burns & Roe,
3 we would like to ask you, Mr. Cobean, two questions on some
4 prior testimony you had given. We are referring to the
5 testimony that you gave for the President's Commission. And
6 we are referring to a statement on page 154 where you
7 testified, and I quote: "The client was always concerned
8 about meeting a commercial operation date. That was his
9 principal goal in life, to make that commercial operation
10 date in some way."

11 Now, this is a statement, indeed, out of context. But
12 you --

13 A Also, it doesn't reflect the change that I made to
14 this thing. Did you realize that?

15 Q No. I didn't realize that.

16 MR. MURPHY: Is there an errata?

17 THE WITNESS: You bet there is. This doesn't read
18 English. The client was concerned about getting through.
19 There are certain things you have to do in designing and
20 building and testing a power plant that let you get
21 through. He was never trying to skip any of the steps of
22 getting through. But he wanted to get through.

23 Why did he want to get through? He wanted to get through
24 for a lot of reasons, principally, because they needed the
25 power, and second of all, that by being through they could

ap/PL 1 go -- they could declare that the plant was in commercial
2 operations. That means having completely designed the
3 plant, having completely constructed the plant and having
4 completely tested the plant. Then, they could declare
5 commercial operations.

6 Now, from an economic point of view, that had two
7 benefits to him. One is that he started generating electric
8 power for the thing, and two, he could get, hopefully, the
9 cost of that plant in the rate base for his area and stop
10 incurring additional -- and start paying off the debts that
11 he had incurred in designing and constructing and testing
12 the plant.

13 So, that's what I meant by --

14 BY MR. SCHIERLING:

15 Q Could you explain to me what you mean by saying
16 "getting through"?

17 A Well, I put it that way because I thought it was
18 the simplest way of saying it.

19 Q Getting through what?

20 A Getting through the job of designing,
21 constructing, and testing the plant. There is, as you know,
22 a design to complete of a plant. That plant has to be
23 constructed to that design. That plant then gets tested on
24 a piecemeal basis, continuing to add parts until at the end,
25 you have the whole plant being tested simultaneously as an

kap/PL 1 integrated plant.

2 Now, upon completion of all the pre-planned and
3 pre-ordained tests, meeting all the criteria for the test
4 data, test data recorded during those tests, then the plant
5 has successfully been tested. After having been
6 successfully designed and completed — constructed —
7 that's what I mean by finishing, getting through.

8 Q Mr. Cobean, the second statement on page 157,
9 attributed to you, have you looked over that particular
10 statement?

11 A Yes.

12 Q Let me repeat it here. "It was important to GPU
13 for accounting reasons, if for no other reason, to try to
14 get the plant on-line commercially before the end of 1978."

15 I think in your previous statement you gave us your
16 interpretation of that, of this statement here, what it
17 means to get to on-line commercially.

18 Did Mr. Scott Dam provide you with any input to make that
19 statement?

20 A If he did, he did it in a very offhand way. I
21 don't remember anything. As I said in the following
22 question and answer, I have been and am still in almost
23 constant contact with a number of people within GPU. And I
24 am certain that that's the principal source of information.

25 However, Dam could have contributed to it. I don't

kap/PL

1 recall.

2 Q Mr. Cobean, you mentioned earlier that the first
3 statement had been corrected by you; is that correct?

4 A I'm almost positive it has, because the last
5 sentence does not read good English. And one of the things
6 that I tried to do when I was correcting my testimony, as
7 you see, was to try to pick up that kind of —

8 MR. MURPHY: Let's take a look and see if we have
9 the errata in the back.

10 THE WITNESS: No, we don't have the errata. We've
11 got part of the errata.

12 MR. HORVICK: My copy does have it.

13 THE WITNESS: It is not corrected. I missed that
14 one, sorry. It doesn't read good English, though.

15 MR. SCHIERLING: I think that we'll, first of all,
16 straighten out the record with regard to the errata sheet.
17 And secondly, it amplifies the statement that Mr. Cobean
18 made in the earlier testimony.

19 Would you, Mr. Murphy — do you have any additional
20 comments on this particular issue now? I do not see any
21 need to have Mr. Dam address the same questions again. I
22 think as far as we are concerned, the information provided
23 by Mr. Cobean suffices.

24 MR. MURPHY: I'm very satisfied that the issue has
25 been fully covered.

*You bet it
isn't!*

*see
p. 104*

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MR. SCHIERLING: Okay, with that statement, I think we have obtained the information that we wanted to obtain today.

Again, Mr. Cobean, I want to thank you for your participation and all the information. That's it.

Mr. Cobean, one final comment I would like to make is, in case there should be any need to obtain further information, either from you or someone else in the Burns & Roe organization, we will let you know about it and arrange for any additional interviews or depositions, if they should be required.

That's it.

(Whereupon, at 3:30 p.m., the interviews were concluded.)

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