B.27

NUCLEAR REGULATORY COMMISSION

IN THE MATTER OF:

THREE MILE ISLAND
SPECIAL INQUIRY DEPOSITION

DEPOSITION OF: HERMAN M. DIECKAMP

Place - MIDDLETOWN, PA.

Date - WEDNESDAY, OCTOBER 3, 1979 Pages 1 - 84

Telephone:
(202) 347-3700

ACE - FEDERAL REPORTERS, INC.

Official Reporters

444 North Capitol Street
Washington, D.C. 20001

NATIONWIDE COVERAGE - DAILY

JS
ec

UNITED STATES OF AMERICA

BEFORE:

NUCLEAR REGULATORY COMMISSION
THREE MILE ISLAND
SPECIAL INQUIRY GROUP

Oral Deposition of HERMAN M. DIECKAMP

APPEARANCES:

GEORGE T. FRAMPTON, JR., ESQ.
For - Nuclear Regulatory Commission
Special Inquiry Group

DAVID J. EVANS, ESQ.
U.S. NRC TMI Special Inquiry Group

JAMES B. LIBERMAN
General Counsel

ALSO PRESENT:
Hartmut Schierling, E.H.
James C. Snell
R. Lawrence Vandenberg

TAKEN AT:

Three Mile Island
Middletown, Pa.

Wednesday,
October 3, 1979
at 9:10 a.m.

I N D E X

E X H I B I T S

Exhibits	Page
Exhibit 18	49

HERMAN M. DIECKAMP, Sworn

MR. FRAMPTON: This is the deposition of Mr. Herman Dieckamp being taken by the U. S. Nuclear Regulatory Commission's Special Inquiry Group on the accident at Three Mile Island at Three Mile Island, Pennsylvania on October 3, 1979.

Present in addition to Mr. Dieckamp are Mr. James Liberman, representing GPU and Mr. Dieckamp. In addition, Mr. Vandenberg, Mr. Snell, Mr. Schierling, Mr. Evans, and Mr. Frampton all of the Special Inquiry Group.

BY MR. FRAMPTON:

Q. Mr. Dieckamp, I have shown you our Witness Notification Form that describes the purpose of this deposition, your rights in connection with it, and the fact that the transcript of the deposition may eventually in whole or in part become public information.

Have you read that and do you have any questions about it?

A. No. I have read it and I have no problem with it whatsoever.

Q. We do have the benefit of prior public testimony that you have given, which we have studied and we also have the transcript as corrected by you of the deposition you gave, I believe, in early August to the President's Commission Staff.

We will attempt not to repeat matters that are covered in that other testimony just for the purpose of saying that we asked you the same questions. We will try to focus on things that have not already been covered in prior testimony.

I would like to begin by asking you a series of questions concerning your activities on March 28th and the four or five days after that.

I believe that you have testified before that you were in Harrisburg that morning and that you got a message around 9:00 o'clock in the morning about an incident at TMI-2 and that you shortly thereafter talked to Mr. Creitz and Mr. Arnold, is that right?

A. That is right.

Q. Then you recall talking to either Mr. Arnold or Mr. Creitz an hour or two later in the morning on that date?

A. That is right.

Q. Based on what you learned from them in those telephone conversations or any other conversations you had that morning, what kind of an impression did you have about the situation here?

A. I couldn't say that the impressions I gained were very clear in talking with Creitz and Arnold. I guess I learned of the shutdown of the plant, the actuation of the emergency core cooling system, the radiation alarms, the

declaration of the site in general emergencies, the off site radiation monitoring, the indicated levels of off site activity releases, specifically at Goldsboro. The indication or the impression from the plant that there had been fuel damage.

I recall specifically having questioned the observation conclusion about fuel damage and having questioned it on the basis of saying that, "Well, if the emergency core cooling system was activated, isn't the design basis for the emergency core cooling system to prevent that fuel failure?" Therefore, I am not sure I know why we got failed fuel so I am nervous about that conclusion. If we got radiation, we can't set that aside but at least I was concerned about what appeared to me to be the immediate inconsistency of those things.

I really did not get a very strong feeling about exactly where we were. I didn't get the feeling of impending danger or the depth of problem that I ultimately became aware of.

I also, on that same morning, stood in on the Bill Scranton press briefing in the State Capitol. It must have been around 11:00 o'clock in the morning; at which point I guess it was Bill Dornsisf who was giving a fair amount of a run down of what he understood to be the status of things at the plant. I don't know where Dornsisf got his

information, but I guess my immediate reaction at the time was that Dornsisf was terribly positive and I wasn't quite sure in my own mind that there was a basis for being quite as positive as he sounded.

Q. How did you come to go to that briefing?

A. Since I was in that complex there, I was in the North Office Building in a meeting with the Pennsylvania PUC, I became aware of that briefing and I just decided to go up and listen in to see -- it was just another opportunity for me to learn what was going on.

Q. Nobody turned to you, I take it, and asked you during the briefing what you knew about this?

A. No. I am not sure anybody even knew who I was. It is a very small crowded kind of a little room and I just stood in the back and listened to the -- the reporters were all crowded around the front talking to Dornsisf and Scranton. I was probably kind of unobserved. Not that I made any great effort to be unobserved, but I didn't make any effort to push myself forward because I frankly had very little information.

Q. Why do you say he was surprisingly positive?

A. Because he was -- my impression was simply that I felt he was positive. It was not that he was saying things that I knew to be wrong, but that he was saying things that I didn't feel that I would have been able to say with quite

that degree of positiveness, simply because of what I didn't know rather than what I did know.

I definitely had that kind of a feeling, you know, a kind of a generalized feeling. In a sense, I probably learned -- Dornsisf's words were probably 90 percent of what I knew at that time. In a sense, I took his words also as being somewhat reassuring to me of the status of things even though I was a little nervous of whether he really knew things as well as they sounded when he made the statements.

Q. As you stood there, did you believe that the plant was shut down?

A. Yes. No, I was assured of that early on that the plant had tripped, the rods had been inserted, the power level was down, and the plant was shut down. What I did not know at that time and did not come to know a day or a day and a half if not more, that the emergency -- the high pressure injection system had been defeated or interrupted and thus the very premise that I was dealing from that the inherent plant system would prevent these kinds of occurrences had been contravened and had not been able to function. (sic)

Q. As of late morning, was Mr. Dornsisf saying or did you note that the reactor coolant pumps were off or there was some problem with forced cooling?

A. No, I don't have a recollection -- a specific knowledge of whether the coolant pumps were turned off. I

really did not become aware of that -- perhaps I was aware of it. I was aware that they had to have been off because I became aware late that same evening after the plant had -- after forced cooling had been re-established that a limiting factor had been in getting a coolant pump back into operation.

I guess I have to say in that sense I had to become aware that the pumps had been off and that the forcing action had stopped.

Q. I am interested in the reaction which you expressed, and I believe it was over the telephone, to Mr. Arnold about the possibility of fuel failure.

The way I heard it, do you recall saying to him in substance, "That can't happen, that is why we have an emergency core cooling system"?

A. I don't know whether I said it that way or whether I said that is inconsistent with the design -- the basis for the design criteria of the emergency core cooling system. I am sure there is a substantive difference in the way you say that, but as I recall, when the suggestion -- I think both Arnold and Creitz were very direct with me in saying, "We feel there are indications failed fuel." There is no question that they said that.

My reaction to that was one of being somewhat reluctant to believe that on the basis of my understanding of the way in which the emergency core cooling was supposed

to work.

Q. It is that state of mind I am really trying to get at.

You have had very extensive experiences with reactor operations and reactor design. I wonder if that is a fair reflection of a state of mind that we have these safety systems so it can't happen, it is impossible, that is not supposed to happen.

Is that a fair characterization of your thinking about the safety systems that they made impossible, in effect, some kind of fuel damage?

A. Let me comment about that.

First of all, with respect to the background, I have certainly had alot of background in nuclear power, but I would not, at that time, have listed myself as one of the nation's experts in water reactors.

Alot of my experience has been in the breeder reactor technology and that sort of thing. There are alot of details of water reactors that I have come to know since the accident that I didn't know on that day.

With respect to the state of mind thing, I would have to say that philosophically, I have always understood, you know, the fundamental basis of the reactor safety and the fundamental aspects of all the possible faults and reliabilities and faultries and analysis and the maximum

and credible accidents and all those things. Certainly, they never in my mind got even to the point of saying it can't happen.

At the same time, I have to say to you that indeed my reaction was one of having an initial reluctance to accept the observation of failed fuel on the basis that meant to me that the emergency cooling system had not functioned in the way in which it was supposed to have functioned. That was the conclusion that I drew.

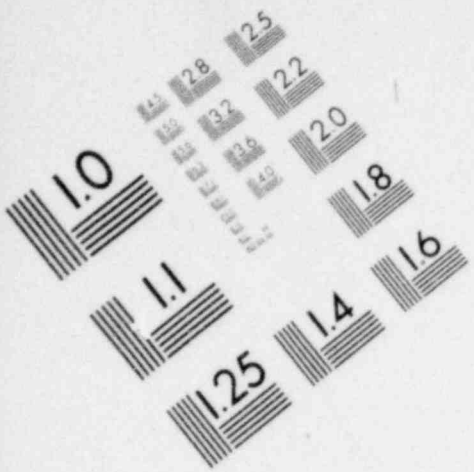
I said I am reluctant to accept that unless we really know that is the case. It implied that immediately to me that says, "Hey, that means the emergency cooling system didn't work." That is something that needs to be looked at, that is something that needs to be checked, that is something that needs to be pursued.

Q. I think that afternoon you met Mr. Herbein and Mr. Miller on the steps of the State House as they were coming to brief the Lieutenant Governor, is that right?

A. Yes.

Q. Was that by chance or design?

A. No. In talking to Creitz later in the morning, and I don't recall exactly when, he told me that Herbein had this date set with Scranton at 2:00 o'clock. Since our session with the PUC was over around lunch, 12:30 or something like that, I decided that I will stick around and



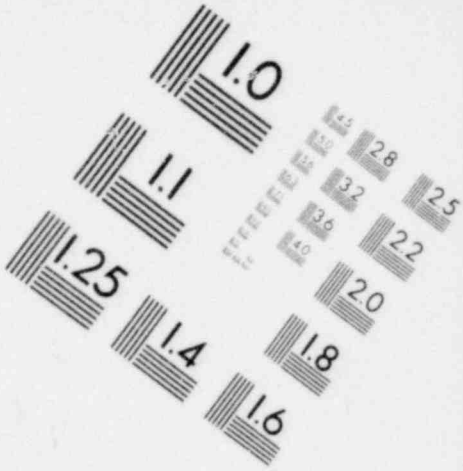
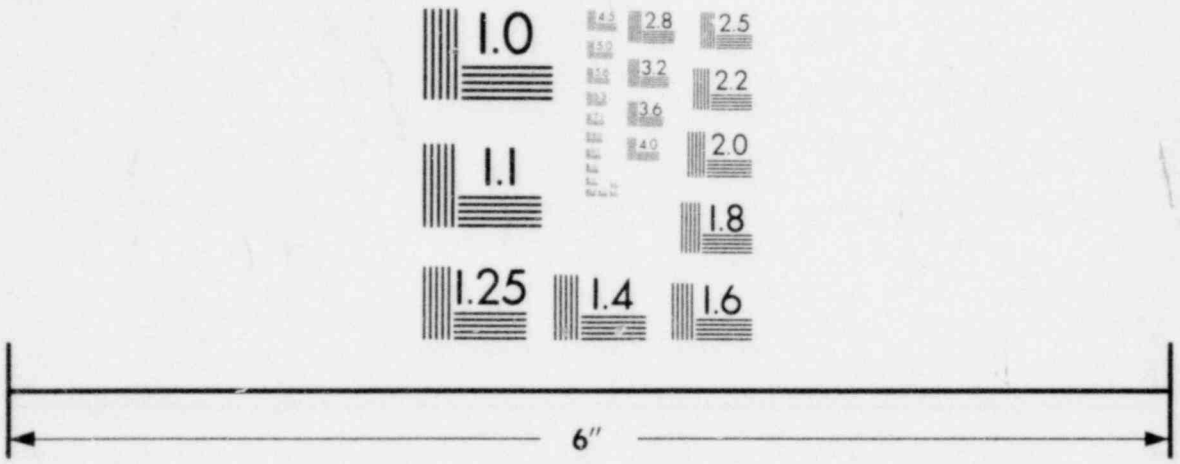
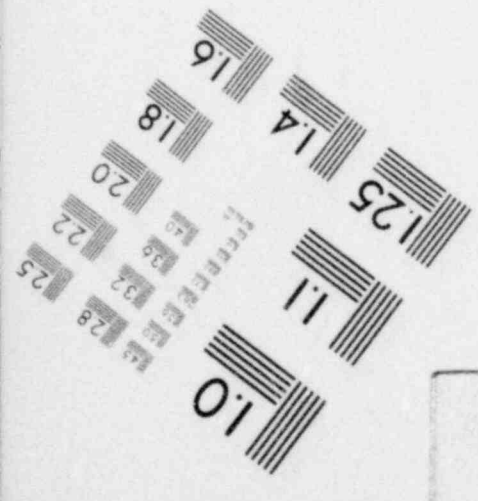
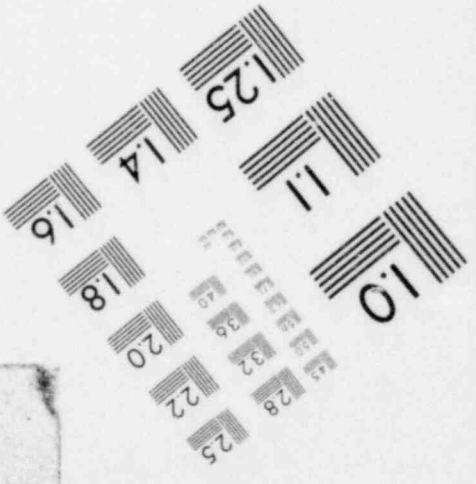


IMAGE EVALUATION
TEST TARGET (MT-3)



MICROCOPY RESOLUTION TEST CHART





I will sit in on that session; again, wanting to learn more and find out more.

I went to the Lieutenant Governor's office and got there about 2:00 o'clock and stood around for awhile and talked to a few of the guys and told them who I was and what I was there for.

Sometime before 2:30, and I don't know whether it was ten after 2:00 or somewhere in there, I was in effect disinvited. I said, "Okay, this is your business. I am not here to inject myself so if I am disinvited, I will leave."

Q. By whom were you disinvited?

A. Specifically, Ray Holtz. I don't know what his job is or whether he is still there. I think he had previously been with the Governor's Energy Council, the Lieutenant Governor. He came to me and said, "You know, we would kind of like to keep this at a low key meeting, just among the local folks."

I said, "Ray, do I understand you are asking me to leave?" He said, "Yes." I didn't think it was appropriate to argue with him so I left.

In a sense, I personally didn't have anything specific to contribute to the conversation, but I was concerned that our guys would be careful about not glossing things over and what have you. As I walked out, I did indeed encounter -- and this was now by happenstance, I encountered

Herbein, Miller, and George Kunder. They were getting out of the car and coming up the steps. I stopped there and spoke with them for a couple of minutes because they were late and I didn't want to hold them up.

My first reaction was one of chagrin that those three guys should all be absent from the plant, and I sort of expressed that view to them. I said, "My God, who is watching the store?" We had some brief discussion to that effect.

I don't think I could swear to it, but my mind tells me that I think I said something to them like, "Tell it like it is." You know, it was just a rather brief encounter because they were in a hurry to get there.

Q. You didn't see them after they came out?

A. No, I did not.

Q. Did you get any chance to talk with them about their impressions about the status of the plant at that time?

A. No, only very briefly and only to the extent in that brief encounter they in no way reflected to me that things were in some extreme state of distress.

I guess I can't be clear in my mind about the degree of which that was explicitly stated or the degree to which I somewhat concluded that on the basis of their own decision for the three of them to absent themselves from the plant. I certainly didn't have conveyed to me at that

point any indication of the level of difficulty that ultimately we all became aware of.

Q. They didn't let you know or give you the impression that they might still have a continuing problem from an operation's or shut down point of view?

A. Well, I am very hazy on that. I would not characterize it as their saying that everything was completely under control. I think in terms of their feeling of comfort that things were stable, I think I got that impression from them.

When you get to the specifics of whether there was a pump running at the time and the problem they were having with re-establishing pressure, I am not sure the exchange was anywhere near of sufficient depth to get that kind of a real feeling on the status of things.

I didn't get that kind of a mixed feeling until after I got back to New Jersey, and talking with Bob Arnold on the phone and hearing from him that he and Herbein, after Herbein returned from the Lieutenant Governor's office, that he and Herbein had sort of reached a position or a judgment that says, "Let's just jam water in it until we take that thing solid and get flow," and that they then achieved that by 7:00 or 8:00 o'clock in the morning.

I think I was talking to him in that time period with th t sort of milestone having been reached.

Again, I would say if I tried to recreate, I would sort of -- in the business then of understanding the effort that was necessary to re-establish force convection that I became more cognizant of the exact or at least the degree of problems that they had been through during the day.

Q. Between 2:30 in the afternoon and whenever you talked to Mr. Arnold as you just described, did you have any other conversations or status updates about the plant?

A. No. I guess I can't reconstruct where all the time went. I basically proceeded to go back to New Jersey. What I don't know right now, and I would have to consult records as to how I got back. I don't know whether I flew back or was driven back, I am not certain about that.

I might have been driven back. Very likely I was driven back which in turn would contribute to the time schedules involved.

Q. Did you have any contact with media people or with NRC people on Wednesday?

A. No.

Q. Did you have any participation in drafting any press releases or statements that would be read on the phone in response to the inquiries?

A. No.

Q. On Thursday I believe you came back to the site for the briefing of the Senators and Congressmen who came

up here from Washington?

A. Yes.

Q. Had you known you were going to do that as of Wednesday night, do you remember that?

A. I don't know whether I got that Wednesday night or Thursday morning. It seems to me I got to the site around 1:30 or 2:00 o'clock. I know I flew out so I suspect I got that word Thursday morning.

Q. Did you introduce Mr. Herbein or make a short introduction?

A. I made a few introductory comments and Herbein provided a briefing. Do you have a transcript of that?

Q. I don't know whether we do. I think one exists. I personally have not seen it.

A. A transcript of that exists because a fellow -- well, one of the things I was concerned about and what I knew of this visit was whether or not the Lieutenant Governor's office was knowledgeable of this.

I tried to make sure he was aware of this visit, so if he chose, he could sit in on this discussion or briefing or what have you.

He toured the plant, I think, around noon that day but chose not to be present during this briefing with Senator Hart and other members of his subcommittee. He did have a fellow by the name of Benesch attend for him.

Benesch wanted to record it. I personally said to Benesch, "Look Benesch, I am not sure we record the doings of Senators without their approval. I don't have any problem in recording it, but I think you better make sure Senator Hart has no problem with it."

It turned out that he did not have a problem and as a result Benesch made a recording.

Benesch agreed to give a copy of the recording to Dick Vollmer. He subsequently refused to give us a copy so we were able to get a copy from Dick Vollmer. There is a transcript. It has got some rough spots in it because of the quality of the recording and the like. I think it is probably one of the better indicators of Jack Herbein's specific state knowledge at that time and how he was expressing it.

To me, I think alot of the tone of that even though it was in that kind of a session and in many subsequent sessions, it was very difficult to main. control of any tone. Alot of the tone was, there is alot we don't know.

Q. When you were at the site, did you discuss with Jack Herbein or anyone else, the fact that there were small releases being seen as a result of off gassing the primary system and gas going through the auxiliary building? Did that come up on Thursday?

A. I was aware that there was some continuing levels

of releases and local radiation. I was of the impression that they were quite minimal, minor.

Probably the most significant specific thing that I was not aware of was the high measurement by the helicopter over the stack that afternoon.

Q. Thursday afternoon?

A. That is right.

I don't know whether Jack was aware of that measurement because it was right at about 2:00 o'clock or somewhere in that area. I had this general feeling of rather minor, you know, a few M. R. kind of environmental readings, but no indications of specific levels of release as measured at that same time and no discussion or awareness of the plant operations that were leading to those releases.

Q. It appears that mid or late afternoon the people in the Unit Two Control Room, at least, had correlated these releases or peaks in the release to the venting of the make-up tank and so forth.

There wasn't any discussion of correlation between an operation and a release that day?

A. I certainly was unaware of that.

Q. Did you then return to Parsipanny after the briefing of the Congressman?

A. Yes.

Q. While you were at the site on Thursday, did you

have any contact with media people or with NRC people?

A. Well, when I got to the Visitor's Center, I met Dick Vollmer. I had known Dick Vollmer alot of years going back to Atomics International. We spoke about the situation and what he was going to be doing. I think his anticipation and my understanding at the time was that he was going to lead an NRC investigation into, I guess at that time, I may have called it, an event rather than an accident.

During the briefing with Senator Hart, I introduced Dick and asked whether he had anything he wanted to say. He said just a very few things like, "I just got here," and what we are going to do about an investigation.

I also met then while I was there, the first of our guys -- maybe not the first, but a number of the guys who were arriving for the purpose of the GPU, Met-Ed investigation. Specifically, Bill Lowe and Tom Cremins, and I am not sure how many others, but they were arriving that afternoon to go into the plant to begin their investigation.

I think they remained there in the Visitor's Center for this briefing of Senator Hart; essentially for the reason of expecting that Herbein's summary of things would be sort of an immediate opportunity for them to get a bit of an overview status, starting point understanding where things were.

Q As of that time, had you made any requests for

assistance from other industrial groups outside of GPU?

A. Well, to the extent that a fellow like Bill Lowe was outside GPU, I would have to say no. Bill Lowe is a consultant who has worked for us for many years. In that sense, he was an outside guy, but not in the sense of the outside of what became the industrial advisory group.

Q. Mr. Lowe, or his firm, has a standing contract with GPU Service?

A. Yes.

Q. Did you learn that evening from Mr. Arnold or from other people that the analysis that was ongoing here at the site revealed that the problem was probably more serious than you thought before?

A. I think it was in talking with Bob Arnold that evening, Thursday evening, that I first became aware that the high pressure injection system had been defeated and that very likely the core had been uncovered to some degree. In the course of that, I became aware of a next level of awareness of the potential damage to the fuel.

Beyond that, it was my impression at that tim , both from the visit Thursday afternoon and still also from that conversation with Bob, that things were stable. I think it was my perception of a growing awareness of a greater level of potential physical damage to the core materials discharging, you know, with early recognition of the possibilitie

of cracked, popped glidings and the like, and getting to the point of starved cooling and uncovering being more severe and the damage to the fuel, but still coming back then to, we have flow, we have forced confection, temperatures are in reasonable ranges, things seem to be stable.

I think it was also -- I know it was on that Thursday night that Bob said to me, "I have been thinking further about the kinds of things we are going to have to do in terms of the investigation and organizing the investigation and so on, assistance in the ongoing operation. I have a number of thoughts about how to organize it and the kind of people we better bring into the job."

He said, "Do you want me to come in and see you first thing in the morning?" I said, "No, I think the best thing for you to do is to go straight to the site and don't bother to come in and talk to me about it. Just go straight to the site and begin talking with Jack Herbein to begin implementing these things."

Q. You are speaking now of the investigation?

A. This was in the context at that point then of investigation that I think by that point a growing awareness that we had more things that we were going to have to do than just kind of quietly sit back and investigate. There was a greater awareness that there were more problems that were going to be required to support the ongoing operations and

the like.

I don't know that that was specified in terms of specific activities, but --

Q. What I am getting at is this: Mr. Arnold at some point on Thursday night or Friday morning perceived a need for, I think, what he called a more formal inquiry board which would be people from the service company and some outside people to look into what had happened.

Was there a distinction between that idea of his and your now perceiving a need for outside people to help you with the recovery, with the ongoing problems?

A. I would characterize it this way: On probably Wednesday night, Thursday, we identified a half a dozen fellows to be sort of an incident-accident investigation inquiry group.

Q. To reconstruct the events?

A. Yes, what happened.

By Thursday night they had grown to an awareness of a greater need to provide additional levels of technical support to the plant. It was in that relationship that Bob said he had thoughts about organization and people and tasks division support. He and I did not discuss that in detail.

I said, "Gee, I am sure you got to do that; just go straight to the site and begin doing it. Don't bother to check with me on that." That is what put him at the site

early Friday morning.

Q. And you began to work on calling more people?

A. No, let me go one more step.

Then comes Friday morning and there is the major release that caused the significant upgrading of people's awareness of the fact that things were not as stable as previously perceived or assumed or characterized. I guess I became aware of that around 9:00 or 10:00 in the morning, roughtly.

Q. How did you learn of that, do you remember?

A. I think we started getting phone calls about news inquiries. I am not clear on this, but I probably got a phone call from Bob Arnold early Friday morning or in that time period that gave us kind of a status report on what -- about this release and the implications of it.

It was at that point that I then sort of officially decided that we were going to need more help, more smarts, the best smarts we could get and began then to make inquiry throughout the industry to get assistants to give us a hand.

As I began then to call people, it was still in a very generalized kind of a way. I think by that time I had become aware that we were faced, and again there is this growing awareness, that we had the probability of extensive core damage from the evidences of uncovering. I became more keenly aware of the significance of some of the hot spot

temperature indications as contrasted with the mixed mean outlook temperature and also aware of the presence of the large quantity of non-condensible gas in the primary system.

As I began to talk to people, I said to them, "Look, I think we need people who are system analysts, people who understand the hydraulics and understand heat transfer." I said, "I don't know exactly what we are going to have to do. I just think we are going to need smarts in those areas. Who do you got? Who is a good guy?"

If I happened to know of somebody, I would say, "Could so and so come to help pitch in and see what we've got to do?" It was not in a clear knowledge that we were going to do A, B, C, but rather a kind of a feeling that these were the areas of technology or the areas of different disciplines or phenomenon that we were going to have to deal with.

Q. Did you spend a good part of Friday calling people yourself, or did you have other staff people doing alot of that, do you remember?

A. I spent a good part of Friday and through virtually all of Friday night, I stayed overnight in the office, calling people and talking occasionally with the site. We were having significant telephone problems with the site so we kind of worked out an arrangement that Arnold would try to call in and call back to Parsippany every hour or hour

and a half as he would get a chance to give us an update.

During Friday night, communications weren't too bad at 2:00 o'clock in the morning. I spent a fair amount of time several times that night talking with Bill Lowe about the business of the non-condensible gas, the hydrogen, the way it was measured, the size of the problems with radiolytic decomposition, the rates and all those kinds of things.

Having a certain back of the envelope awareness of radiolytic decomposition of water because years ago I worked on solution reactors where you get alot of radiolytic decomposition....

I spent a fair fraction and I couldn't tell you exactly whether it is a half or two-thirds of the time during Friday -- late Friday morning and Friday afternoon calling people. Bud Cherry, one of the guys, pitched in. He called several people, several organizations. One of his guys had worked at Electric Boat and he gave us a name of a guy at Electric Boat and got access to some health-physics people.

That went on, I would say, during the day Friday and on into Saturday morning. I think some of the initial people I contacted were EPI people and asked specifically for Levinson and Zebroski because I had gotten to know those individuals quite well over the last few years and knew of their capabilities.

Floyd Culler helped me identify people within Oak Ridge who could be useful to the radiation control or radiation waste problem. He was a fellow by the name of Bob Brooksbank who came as a result of that inquiry.

I talked with Bud Cherry, I talked with Philadelphia Electric and Public Service Electric and Gas relative to health-physics type people through Bud Cherry through Jim McConnell who made contact with Electric Boat. I in turn had to call a fellow in the Naval Reactor Branch by the name of Miles in order to get Electric Boat to feel comfortable to let a health-physics guy become available, et cetera.

It was that kind of a chain of communications that we had to go through to get that guy here.

I talked to people at Bechtel, I talked to my former colleagues at AI and asked them for specific people.

I think there is a list of organizations that I specifically contacted that we gave to the NRC Inquiry Group. I don't know whether you have that list or not.

MR. FRAMPTON: Off the record.

(Discussion had off the record.)

THE WITNESS: This started, you know, late Friday morning, Friday afternoon, Friday evening on through Saturday and as late as Saturday evening and Saturday evening I know specifically after getting to the site here I was still calling people like Libarrando and Kauffman from EG&G or

fellows with a law program background and also I called Dale Myers at DOE and asked him to round up masses of foremost experts in hydrogen because we need a hydrogen expert here. Most of these people that I had contacted, a good fraction of them, arranged to arrive here late Saturday afternoon.

We had the first sort of formative meeting of the IAG -- what became the IAG down at Building 26, somewhere around, and I don't know whether it was 4:00, 5:00, 6:00 o'clock in the afternoon, on Saturday.

BY MR. FRAMPTOM:

Q. Let me stop you for a minute and ask you whether by the end of Saturday night you had pretty much completed the process of calling people to get the major systems you needed or whether that continued on into Sunday morning?

A. No. I think it ought to be characterized this way: With the exception of discussions with B&W Management and discussions with Westinghouse that occurred over the next two or three days, my efforts to aggregate additional people into that group essentially stopped. What happened then, was the group tended to self aggregate additional people, guys like Levinson and Zebroski and Leavy, began to bring in other people on their own.

Q. For areas that their colleagues perceived --

A. That's right. That group then grew from, you know -- I guess personally I might relate to nucleating

25 to 30 people. That group then grew to something over a hundred in the next week and I think there were a few people that also sort of added into that group by the NRC. The specific guy that falls into that category is the instrument guy.

Q. Ackerman?

A. Ackerman. I think he was brought in -- maybe Vic Stello or someone called him and Ackerman kind of joined that group.

In other words, it kind of became an amalgam of people once the original nucleation and then it sort of self - propagation and co-opting some of the NRC people.

Q. Did you yourself identify areas where the best people that you could get quickly would be NRC people? Did you request specific people from the NRC?

A. I would say there was only one -- I keep thinking maybe two, and I can't think of what the second one was, but at least one specific case where I did not go after somebody in the NRC because I knew he was the best guy. When I went after the fellows at EG&G because of their loft background, they in turn said, "Gosh, we work for the NRC and we are not sure we want to give you a hand. We may have a conflict of interest problem."

I said, "Well, I would hope that you can talk to the NRC and resolve that problem because we are both trying

to do the same job." Indeed, that is what happened. They talked to the NRC and then got back to me and said, "We've got it cleared and we will be there."

I felt kind of good about the way that worked out. We didn't really end up with a hard barrier there that was controlled by a conflict of interest question. I guess I didn't really relate to anybody specific in the NRC. After I got here I began to realize that concurrent with this formation of the IAG, the NRC fellows had their own network out that was accessing all kinds of organizations, vendors, contractors, their national labs. I guess over the next few days we found that some of these organizations were fighting themselves getting the same or similar or slightly different questions from the two sources, one from us and one from the NRC and we had a little bit of confusion occassionally out in some of these contractor shops in terms of who is calling what shots.

Again, I think those things worked out. They were not really a critical problem other than a bit of a very minor piece of inefficiency, and that is a neutral word.

Q. I would like to go back for a minute to Friday morning and ask you whether you had any conversations on Friday morning or early Friday afternoon with either NRC people or state officials as a result of the evacuation plan.

A. I don't recall any conversations with anybody in

Pennsylvania State Government on Friday. I recall conversations on Friday afternoon with an aide to Governor Burn who was calling to keep Governor Burn informed. We did have that contact, but I don't recall and I am virtually certain that no direct contact between me and anybody in Pennsylvania State Government.

I don't have any recollection of any specific conversation with anybody in the NRC on Friday. I do clearly recall on Saturday morning approaching noon or 11:30, 12:00 o'clock, somewhere in that general time period, getting three phone calls in rapid succession from Denton, Hendrie, and Watson all with the same message. They said, "Gee, we urge you guys to get busy and try and bring as many outside experts as you can."

I specifically recall talking to Jack Watson and rattling off the longer list of people that we had already made arrangements with. I don't have quite the same recollection of the same degree of a longer listing in talking with Denton or Hendrie. I may have, I may not have.

Q. Did Mr. Hendrie tell you that Denton was going to come to the site?

A. No, I don't have any remembrance of that.

Q. Did Denton?

A. No. I think he told me, "I am here."

Q. He was already here?

A. Yes. This was Saturday morning when I talked to him. I probably learned about it in the newspaper or maybe Bob Arnold or somebody told me Friday night that he had arrived. That would have come up late Friday afternoon.

Q. Do you recall any other subjects that you talked about with Harold Denton?

A. In that time period, Friday or Saturday?

Q. Yes.

A. Again, I am virtually certain I didn't talk to him on Friday and on Saturday. I think the principle thrust of it was, "Why don't you guys go to work and round up as many experts out of the industry as you can find to beef up the support?" I think that was the gist of it.

I don't have a recollection of any other content to that discussion.

Q. Did you talk to either of them on the telephone before you arrived at the site about whether the NRC was going to get more involved in decision making here with respect to the operation of the plant?

A. No. I had that kind of a conversation with Denton once I got here. I don't recall -- not in terms of specific occassions, but sort of an amorphous recollection of the tone because as far as I was concerned, and I think I radiated that to Denton and others, whether it was Stello, Ross, or Mattson, that I didn't see us with any conflict in

terms of who is in charge. I felt we were both faced with a "hell" of a tough job.

In fact, I made specific pleas to sort of set aside the normal adversary relationship between regulator and regulated. I think I said, "Look, we got one job to do, let's combine our resources to do this job."

I also told Denton that if the problem ever got so bad that we as a company had to agree that it was beyond our resources to handle, there was not going to be any problem in terms of who is in charge. We weren't going to be reluctant to ask them to bring in their resources or what have you.

Q. When you say their resources, you mean the NRC resources?

A. The federal government or whoever. I just felt that we have got a problem here that we have got to handle, and this is not a time for some sort of dancing around the daisy chain of who is in charge. Who's responsible? Who isn't responsible? That wasn't the issue.

Q. Did you feel that the NRC's technical assistance on the weekend and over the next week or 10 days was a very significant input or would you say that the bulk or almost all of the technical expertise came from GPU and from the other industry people who came in to help you?

A. I would not say the latter.

I think that's sort of what happened; the way I would characterize it, is that at the first meeting of the IAG I said to the fellows, "I think we got three or four major problems." I said, "One: We have got to begin to better understand the potential state of physical disarray or coolability of the damaged core.

"Two: We have got to understand what unique problems we may have associated with the cooling system at that point which contained a significant amount of non-condensible gas.

"Three: We have to figure out how we are going to get from here to there; mainly something we are going to construe is a confident and reliable cold shut down.

"Four: We have got a hell of a problem with radioactive waste."

On Saturday afternoon I outlined those four areas and I don't know if it was on a blackboard or a big white piece of paper. I asked specific guys to take charge of specific pieces.

I think I asked Zebroski to take hold of the damaged core thing. I asked Levinson to take hold of the heat transfer reliability. I asked Warren Owen to begin to look at the questions and the procedures and the path that we were going to follow in getting from here to there.

I asked Bob Brooksbank of Oak Ridge to kind of take charge of the radioactive waste handling management

problem. I said to these guys, "Look, I don't know all of you guys in great detail, and I don't know each of your feelings of greatest knowledge, but I think you yourselves know where you can best contribute to these four areas. Conglomerate yourselves into the groups that are working on these problems and go to work."

I said, "That is about as much as I can tell you what to do." I felt I picked four knowledgeable good guys to provice leadership and I think they did just that.

I think that group initially got started on what I would characterize as these major general problems.

It was my impression then in my immediate encounters with Stello, Ross, and Mattson that they were, you know, concerned and aware of the same problems and were accessing their own independent resources relative to those kinds of problems. I think I also felt that they were working alot of nearer term problems in terms of detailed immediate contingency plans.

At that time, I was not as well plugged into the group that Arnold and Herbein were working closely with. And I guess was immediately headed up by Bill Lowe and Tom Cremins and later had Dick Wilson added to it, which were the sort of guys providing the closer end support to the plant.

I was not paying as much attention to what they were doing. They were kind of being managed directly by

Arnold and Herbein to support the operations on the short-range basis.

Q That is what came to be called the technical working group?

A No, I don't think so. I think that is what was called the technical support group in the later organization.

If you look at the organization chart, that body was headed up by Dick Wilson's technical support group, but that started out, you see, as the hard core of guys from what we had sent in as the initial investigation team, then immediately fanned itself into a sort of round the clock direct operations support function with Bill Lowe, I think, handling one 12-hour shift and Tom Cremins handling the other, or something like that; and Dick Wilson then arrived and began to provide additional support to that.

Q When was the technical working group set up?

A I will get to that. Let me finish first.

My impression then with the NRC was that they were working alot of these contingency problems. They may well have, in the first day or two, you know, then focusing more specific on the immediate aspects of the plant; more aligned with what Bill Lowe and the Tom Cremins' group were doing. What became the IAG was working on these longer term problems.

I would say that my impression is that everybody

was sort of working like hell to learn as much as he could to understand as much as he could, to figure out as many uncertanties, contingencies, fallback positions, future problems, and the like.

In a sense, if we had a problem in that early period of the first few days, we didn't have a mechanism in place for sorting out the priority of those problems and for combining our resources, allocating our joint resources to those problems. There tended to be sort of a parallel, not tightly coordinated effort on going there.

Again, on one hand that might sound critical, but on the other hand I've got to say to you that I think that is sort of the inherent way in which the first time you are faced with something like that is going to develop.

You say when did we lay on the technical group? We established an organizational structure on Wednesday, the following Wednesday, which set forth an organization headed by Bob Arnold with four segments under it. The technical support group under Dick Wilson. The plant operations under Herbein. The radioactive waste management -- I am not sure -- well, by that time, we had the other guys brought in from Commonwealth and Duke. Frank Palmer stepped into that spot. Brooksbank was helping him.

Then we set up another group with people from Burns and Rowe to try and handle the emergency ad hoc

construction activities.

Q. When you say, "We set up this group," who basically laid out the structure, was it you or you and others?

A. By Tuesday night, I had gotten to the point where I felt that I had a sufficient awareness of the major blocks of effort and their priorities that I felt that I was able then to start talking about an organization to handle those, because up to that time things were in a very ad hoc state. People were becoming somewhat restent because of the ad hoc unstructured aspect of it.

I guess it was Tuesday night that Denton, on his own, reached the conclusion that we needed extra support and made the calls to arrange for Bill Lee and a couple of guys from Commonwealth.

Wednesday morning Warren Owen and John McMillen grabbed ahold of me and said, "Look, we have got to organize this thing." We closeted ourselves and began to lay out the organization structure that ultimately became established.

There were certain dynamic interplays between myself and the other two guys. Those got resolved down to this organization of those four major elements, plus a technical working group for the purpose of sort of providing a coordination form plus the identification was somewhat separate. The IAG group showing it plugging into the technical

support group headed by Dick Wilson, and have them sort of be the backup longer hair technical assessment behind the technical support group of the organization itself.

Q. Did you intend that the technical working group would serve as basically Arnold's senior staff?

A. Yes. It was the mechanism whereby -- I am not sure it ever worked in exactly the way in which it was conceived, but I think as time went on the technical working group and the Arnold staff meeting kind of fused together and its purpose though was to provide the form for cross functional review and approval of major initiatives, major strategies, major decisions, major what have you.

Like the business of what is our plan for getting from where we were to getting to go to cold shutdown. That was a major piece of strategy with all of its procedures and fallback positions related to it. That got hammered out on Tuesday afternoon in a session that I personally led.

For example, if we were to make a change to that plan, the technical working group was the mechanism whereby that change would get cross functional review to provide your self assurance that all the affected aspects of the operation participated in that review and decision making process.

I also personally took the initiative to invite the NRC to be a directment of that technical working group and

had no problem with that whatsoever. I felt that was a practical way to begin to better join our resources.

I think I also have to say that as soon as that organization structure was brought forth and I reviewed it in detail with Harold Denton, I think it was around 2:00 o'clock in the afternoon on that Wednesday, from that time forward, the NRC also said, "Gee, we now also have a specific organization structure."

It seemed to me that our composite organization functioned a heck of alot more smoothly all of a sudden; whether it was less sort of competition, less regulator, regulatee, more of a combined composite approach to the problem. Alot of things seemed to just all of a sudden fall in place with the establishment of that organizational structure.

I don't know what other factors might have contributed to the kind of maturing of the relationship that occurred on that time scale, but that is how I recall it happening.

Q. Did you spend a good bit of your time Sunday and then the following days coordinating the IAG?

A. Yes.

Q. Were you the main point of contact between all of these outside people and the GPU people, or did they mostly go directly to the people who were interested in the

same problems with GPU?

A. In a sense I was, and in reality I wasn't.

Saturday night we kicked it off. On Sunday the group met and we started on a path of having Dick Wilson come in and brief these outside advisory group people on the plant status and the problems we were dealing with and how we saw them.

That effort on Sunday afternoon got interrupted by the great hydrogen bubble.

Sunday night the IAG met with the NRC people from the site here. The principle activity being the NRC people, Denny Ross and Roger Mattson giving the IAG their view of the state of things and their view of the critical problems that we faced.

Joe Hendrie sat in on that session on Sunday night. After that broke up there was a little more time that I spent with some of the IAG members kind of refining the activities and the thrust of where they were trying to go and whether the IAG could or could not effectively function in an area that went as deep into procedures as contrasted with the technical analysis. I think there was a feeling that the IAG didn't have the right kind of people to get as close as procedures as such. That their role was better in the sort of bigger picture analysis kind of an area.

Somewhere along the line, I guess Sunday night if

I have the timing right on this, Denton said, "My God, I didn't see anybody from B&W at the IAG." I said, "I agree with you. I don't understand what happened. I have a committment from B&W to have people here."

I think what really happened to the B&W people, because they had other people on the site, whomever from B&W arrived just got co-opted into that activity on site. I then called back, and I guess it was probably Sunday night, to B&W and said, "Hey Goddamn it, you have got to have somebody here, a higher level guy." Monday morning John McMillen showed up.

During Monday afternoon, the IAG spent alot of time interacting with John McMillen and a couple of his senior guys sort of getting the B&W view of where we were and what the problems were.

Monday night we met with Roger Mattson and Dennis Ross, I think, for the purpose of reviewing the result of this first interaction between B&W and the IAG. That ended up really -- it didn't end up achieving that. It ended up being alot of detail discussions as far as with Roger Mattson on the subject of thermo couples and how they are designed and what they look like and their measurements and that kind of thing.

Tuesday morning Denton and I don't know if it was Denton and Mattson, or Denton, Mattson, and Stello,

confronted me with the proposition that you guys don't have a firm plan on how you are going to get from here to there. I said, "I have to agree with you. We will be back tonight at 7:00 o'clock with a plan."

Tuesday afternoon I closeted myself with McMillen, Warren Owen, Bob Arnold, Dick Wilson and a couple more B&W guys and we just hammered out point by point what is the plan for going from where we are to cold shutdown. What is the route we are going to take? What is the step? What is the sequence? What is the rationale? What if this fails? What do we do next if this fails? What do we do if the pump fails? What were the fallback positions to that plan?

It took us about six hours to hammer that out. There was alot of reluctance to sign up for a plan. There was the sort of feeling that we have got alot more analysis to do and I just hung in there with the things that if we had to make the decision right now, what would it be, because that is what we were faced with. That, of course, in turn led to having in place in the control room, or at least to a degree, having in place in the control room at all times the fallback procedure.

We weren't in a position anymore to be in the business as usual protracted review and approval processes because if God decided to turn the pump off, we had to have somebody there who knew what to do, whether it was

approved or not.

We put in place these procedures and their fall-back procedures, while at the same time the NRC undertook to do their own review of that and comment on it, and if effect approve, if you will.

That plan then was reviewed in detail with Denton and Stello, I think. I don't know whether Roger was there or not on Tuesday evening.

Then it was on Wednesday morning we turned our attention to organization and Wednesday afternoon that organization was put into place.

In between time, yes I was acting as a messenger boy, I was acting as an interlocketer. I did alot of cross communicating with people at breakfast at the Holiday Inn, hopping from table to table. We indeed had this problem of trying to keep this group of people organized and focusing on issues. At the same time, developing a sense of priority of what were the things we really had to do.

One of the problems that I had or felt I had with some of the NRC guys was a tendency to say, "Why in the hell aren't you doing this? You can do that in three days. Why in the hell aren't you doing this? You can do that in four day. Why aren't you doing that? You can do this in one day."

I wasn't quite sure what the priorities really ought to be. I may have appeared a little reluctant on some

of those items. What I kind of felt was a need to sort out those priorities.

(Short recess.)

BY MR. FRAMPTON:

Q. Mr. Dieckamp, just a couple of specific points in the sequence of events that we jumped over that I want to ask you about.

You spoke of a telephone call from Jack Wattson at the White House on Saturday. Do you recall whether you asked him or the White House for any support during that phone call or at any other time?

A. No. I think in that phone call he said to me that he was the guy tagged with the responsibility to make whatever national resources available that existed.

I did not -- I don't think I made any specific requests.

Later when I heard of the President's visit on Sunday, I did call him to make a specific request. In that specific request I specified three things. I said, one: I don't want any helicopter around the transmission lines because they are absolutely vital and critical. Two: You have got to control the traffic so we don't jam up the ingress, egress to the plant. Three: I would like to have you restrict the number of people in the party in the control room to 15. He said, "We will absolutely do all of that."

I don't know whether the latter one was quite adhered to or not in the sequence of events.

Q. Do you know how and by whom the decision was made on Saturday morning that Met-Ed, GPU would get out of the press briefing business?

A. Well, by that time I think I probably -- whether it was Saturday morning or Saturday afternoon or just when it was, I probably participated in that decision because it was becoming apparent that there was alot of problems with the press concentration on what they perceived as conflicting statements.

I also felt strongly that the press demands were an excessive call on Jack Herbein's time and energies.

So I said I thought that we should withdraw from -- I guess by that time it was also apparent that the NRC was going to be having standup briefings and I said we should withdraw from the daily standup briefing. That if we have got something to say, perhaps we should put out once or twice a day a brief written statement, but that we should try to minimize this opportunity for press concentration on appearances of conflict.

I just didn't feel that was serving any good purpose so I felt that we should modify our approach.

Q. Had you received any pressure or suggestions from the NRC or the White House prior to that decision being made

to take that step?

A. No. I never had any conversation about it from the NRC.

I did get a phone call from Jack Watson saying, "Hey, these conflicting press stories have got to stop."

I then told him, "We have already decided to cease the daily standup briefings which are the source of alot of that." On one hand he told me the importance of not feeding those conflicts but by that time we had already made our own decision as to what we felt was the proper thing to do.

Q. I just want to put on the record a short discussion we had during the break about how you went about calling people and identifying needs from outside your own organization on Friday the 30th.

Is it fair to say that as of Friday you weren't able to identify alot of the specific needs that you had, but rather called the people for general restraints and abilities?

A. Yes. The calls were not in relationship to clearly defining specific tasks, but rather a feeling on my part that the tasks were of such a general magnitude and sort of yet to be defined scope that we needed people with strong basic backgrounds, rather than narrow specialties.

Q. When you arrived here on Saturday afternoon or evening, I think you said that you had a meeting with Mr. Denton and possible with Mr. Stello that night. Do you

recall such a meeting?

A. I am not clear on that. I may well have. I don't recall saying that I had one with them on Saturday.

Q. I may be mistaken about that.

A. I may have had one, but I just don't relate to it right now.

Q. In the first meeting that you had with Denton and Stello and that group, whether it was Saturday evening or Sunday, what conversations did you have with them about what the NRC's role was going to be in overseeing or possibly vetoing any major plant actions?

A. I don't recall any specific conversation about that. I don't recall any assertion from them as to what their role was going to be. I guess I didn't even conceive of it as an issue. I had no trouble in my mind accepting from the outset that this was an unusual situation.

We clearly were not talking in terms of operating in strict relationship to technical specs which were drawn up for a different set of conditions. We understood completely and just implicitly that this was a situation where we needed to be glued together.

Q. So you assumed then that the NRC would be in the loop and any major decision making?

A. Certainly that was my assumption. I think I have to say I can't specify a cutoff level where the plant

operated within its perceptions of its authorization versus where we would feel that there is an item of sufficient importance that we would have to ourselves take the initiative to insure that we had the NPC on board and approving. I think I have got to believe that interface between the nickel and dime items and the more significant items that had to develop with time was not clearly articulatable at the outset.

Q. Let me turn now to the question of the issue of whether unit two was improperly rushed into commercial operation prior to the end of calendar, 1979 (sic) in order to realize a certain financial tax or other benefits for the company.

As I said before we started, this is an issue that has been raised in the press and in the public. It is an issue we are looking into. I don't believe we have any predisposition that we would like to try and get as many of the facts as we can and call the evidence one way or another if we are able to do that at the end of our inquiry.

I know you have testified about this subject at some length elsewhere and I will try and not simply repeat that.

Let me begin by asking you this: I think you had said before that you were aware that any tax advantages that might accrue to the company in 1978 did not necessarily

depend on the plant being declared into commercial operation by the end of the year as you understood the perhaps rather vague tax criteria that were used, is that correct?

A. I was aware or made aware of the tax case that indicated prior precedent for allowing, and I don't know whether it is the tax credit or the accelerated depreciation half year convention; based upon a condition of the plant being ready to operate, I think might have even been the words in the ruling, as contrasted with depending upon some specific declaration of its being in commercial service.

Q. Do you remember what the source of your awareness of this was?

A. I think it was brought forth by the GPU controller or his tax people who looked into this question.

Q. Do you recall whether there were discussions about the subject during the latter half of 1978 in which you participated?

A. Yes, there were discussions.

Q. Where do you recall that the people who talked to you came down on this issue, if they did? Did they say it is our opinion that we probably wouldn't have to actually go commercial according to the existing criteria and rulings or that we would? What was communicated to you as the bottom line on this?

A. It was my understanding that it was their judgment

that plant had long since met the minimum criteria consistent with the tax codes.

Q. By long sense, you mean some time in the spring of 1978?

A. I don't know whether it was exactly the spring. It was at some point back towards the middle of the year, late in the spring, middle of the year. I don't recall a specific date, but long since meaning not last week or two weeks ago, but several months before that time period of the discussion.

Q. Do you remember whether there was any concern that if the plant had apparently qualified in the spring that that might be jeopardized by the down tim. over the summer to replace the valves?

A. I don't recall that kind of a thing, specifically. I do recall some discussion of the case where the plant had only operated for the briefest period of time and then was down for a significant length of time. I think in that case the tax treatment was disallowed. That is my recollection. There was, you know, a degree of judgment involved in terms of what degree of operability is really required to justify or to qualify for the various tax treatments.

I don't think that is very specifically stated. It is sort of implied from these rulings rather than being a statement of a specific set of criteria. It is easily

measurable.

Q. This is something you recall knowing during 1978?

A. Yes.

Q. Do you recall whether there was any reconsideration of the question of whether unit two would actually have to go commercial before qualifying for the tax benefits in December of 1978?

A. I don't have any recollection of a specific reconsideration.

MR. FRAMPTON: Off the record.

(Discussion had off the record.)

MR. FRAMPTOM: I would like to have marked as Exhibit 18 of this deposition a one-page memorandum with an attachment dated December 28, 1978 entitled Status of TMI, Number Two for Income Tax Purposes.

(Whereupon, the memorandum entitled Status of TMI Number Two for Income Tax Purposes was marked as Exhibit Number 18.)

BY MR. FRAMPTOM:

Q. Mr. Dieckamp, that document indicates that it was sent to you among other people. Do you recall getting the document and reading it?

A. I don't have a specific recollection of this document. I do have this recollection of some uncertainty about the degree of readiness for operation if necessary to

qualify and I gather --

Q. In late December?

A. Yes -- I gather this document brings forth a case where the tax treatment was questioned because of the degree of operability at the plant.

Q. Along the lines that you mentioned before?

A. Yes.

Q. Do you recall if the specific subject that is covered by this memorandum was discussed by you in late December with anyone?

A. The specific item in there that says something about two more tests need to be accomplished in order to do something or the other?

Q. Right.

A. I don't have a recollection of that.

Q. I believe that unit two was resynchronized with the grid sometime in mid or late September of 1978, is that correct?

A. Whatever that date is. That ought to be a part of record.

Q. Approximately?

A. Yes.

Q. Do you recall any discussions after that to the effect that the tax advantages would be available or tax treatment would be available based on the continued operation

of the plant after the September resynchronization regardless of whether it might have been available on the basis of the plant's operation back in March and April?

A. I don't have a recollection -- again, a specific discussion that says here is a specific milestone that now does or does not enable the tax. I rather have an impression of kind of a general judgment relative to operability.

Q. What was that general judgment?

A. Well, in relationship to the other tax reference which describes the degree of operability of that plant or says -- I think it uses words to the effect of ready to operate or something.

I guess what I'm saying is, I don't have any impression of judgments having been made on the basis of specific milestones. I would rather have impressions of people having been asked, does the plant seem to conform with the kind of language in this other ruling that says basically ready to operate.

Q. When you are talking about the other ruling, you are talking about the revenue ruling?

A. Yes. The other case, whatever you want to call it or whatever you should call it.

Q. Do you recall whether there was any discussion of this subject at a meeting of the GPU or GPU Service Company Board in December of 1978?

A. Yes.

Q. Was Mr. Arnold there during that time?

A. I think so, yes.

Q. What do you recall about the conversation or conversations on the subject at that meeting? Who said what to whom about this?

A. I can't reproduce that. I think I have the impression that at that meeting there were statements or discussions to the effect that Bob Arnold, who in looking at these criteria -- I shouldn't use the word criteria, descriptions of ready to operate or operability felt that the plant had already met those kinds of conditions.

Q. Prior to that meeting?

A. Prior to that meeting, yes.

Q. Was he showed a revenue ruling or a list of criteria to your recollection?

A. I don't have a recollection of that having been an official piece of the meeting where somebody grabs this and gives it to Bob Arnold and says, "What about that?"

I have the impression that perhaps somewhere in a side bar discussion this was reviewed with Bob.

Q. But you do have a recollection of that happening, of his looking at some criteria and giving a judgment based on his review?

A. Yes.

You know, having said in my opinion him not being a tax lawyer, but in my opinion the operations of the plant are consistent with what is described here as operable or operability.

Q. This December 28th memorandum, Exhibit Number 18, seems to reflect a slightly different outlook on that. An outlook that suggests that in order to make sure of getting the desired tax treatment you would want to make sure to go commercial in 1978. Do you recall whether this surprised you or you took any particular notice of that?

A. I didn't take any particular note of that. Again, I had this impression that the criteria -- again, I hate to use the word criteria -- the description is alot more general than what that memorandum would suggest in terms of specificness of completion of specific tests.

Q. Do you recall whether anyone else who was a recipient of this memorandum of December 28th expressed any views about it to you or discussed it with you?

A. Discussed what?

Q. The memorandum or the views expressed in it.

A. I don't recall a discussion of that memorandum.

Q. Do you recall the discussion of this point of view, namely that it still would probably have to go commercial in order to make sure of getting the tax treatment?

A. I think it is fair to say that at some point in

the discussion, it may well have been characterized as saying if the plant is commercial, there will be little question about it. I don't recall that as having been stated as the limiting necessary and sufficient condition.

Q. Are you talking about a discussion at the board meeting or a discussion at or about the time this memorandum was circulated?

A. Again, I don't recall any discussion at the time of that memorandum. I recall the discussion at the time of the board meeting and I recall the content there being the fairly broad characterizations necessary to qualify. I recall the judgment that, "Yes, we had met that level of qualifications."

I recall somewhere along the line of having been sort of made aware of another ruling that tended to undercut that by citing the example at the plant that operated only for a short period of time.

I think in my mind that was a very exaggerated case because that plant had operated for an extremely short period of time at a very low power level.

I don't think that I personally felt that I was making the judgment as to whether we did or didn't meet the tax criteria.

MR. LIBEPMAN: I think by inadvertent, Mr. Frampton, you referred to the memorandum as saying it had

a reference to commercial operation. As I look at it, it doesn't unless I am missing something. It talks about passing some test, but it doesn't talk about what has come to be known as the elusive term "commercial operation", correct?

MR. FRAMPTON: Yes, you are correct.

Let me pursue that a little bit.

BY MR. FRAMPTON:

Q. I understand that a nuclear power plant does not have to go through the complete power essention test schedule required by the NRC and be qualified to operate at full power rating in order to be declared commercially available, is that your understanding?

A. Well, I think in general terms that is true. One does not find in any regulations or any literature a statement to the effect that those are the criteria for commercial.

I must say that we were keenly aware that in the rate making process the question of whether the plant was or was not commercial was an important question and that we took steps to try to, well in advance, describe to the commissions the purpose of the test program and the kinds of things that would be accomplished. The discipline or vigor with which they would be accomplished before we would declare the plant commercial because we felt we did not want to be in a position where someone would later say, "Well, you just willy, nilly declared it commercial for rate making purposes."

We wanted to say, "No, it is a definite plan that we will have gone through in order to declare it commercial."

I think it is also proper to say that this is probably the most explicit that we have ever been in that regard.

Q. In fact, GPU -- the GPU system had had a plant that went commercial at 60 percent of its power, had it not?

A. Yes.

Q. But in the case of Three Mile Island, unit two, you had made some representations or had some communications with the Public Utility Commission in Pennsylvania to the effect that you would not declare the plant in commercial operation until you had completed the full test sequence that you had mapped out and that the NRC requires, isn't that correct?

A. I would have to let the letter stand on itself in terms of its own merits, in terms of the specific degree of committment. I haven't looked at the letter in a few months so I don't recall exactly what it says in terms of that we won't do this before that and if it says that, fine.

Q. What was your understanding --

A. It was my understanding that it was our intention to conduct that program before declaring the plant commercial.

We felt that there was so much uncertainty on the part of alot of parties about what was meant by commercial,

what was the purpose of declaring it commercial, what was the impact of declaring it commercial, that we felt it was in our interest to try to articulate all those factors to the commission so as to provide a basis. When we later went in saying that the plant was commercial and asking for a rate making treatment, that we could say, "Look, this has been the program, this is what we said we were going to do and what we intended to do. This is the degree to which we have done that."

Q. Did you yourself regard this as a firm plan?

A. I regarded it as a firm plan, but I also felt free to exercise some judgment about that plan and I think just a specific example of that is that we declared the plant commercial even though it had not -- you know, what was it? I think it was at 98 percent power when we declared it commercial. It had been at 100 percent for a rather brief period of time.

I felt free and comfortable in making the judgment that that differential was not significant in terms of what we were trying to demonstrate and accomplish.

Q. Was it your understanding that you had made some kind of a committment to the PUC in Pennsylvania, whether that committment was revocable or not, to wait till you finished the testing program before declaring the unit in commercial operation?

A. I am having trouble in terms of black and whiteness of committment.

I personally felt and personally felt that it was in our best interest, to conduct the program in a way so that there could be the least question about whether the plant was qualified to be declared commercial. I personally then felt that adherence to our prior statement of intention of the plan was the best way to minimize any downstream arguments about whether it was or was not commercial.

Let me just say that I have trouble accepting the word committment when we indeed departed, but I don't think we departed in terms of the intent or the insignificance of what we said we were going to do. We essentially adhered to our plan.

Q. Would it be fair to say that representations were made that that was your plan?

A. Sure. I guess, again, the letter speaks for itself.

Q What conversations can you recall having with Mr. Arnold in the second half of 1978 about the desirability of going commercial before the end of the calendar year, if any?

A. I don't recall any exact dates or any exact subjects or things like that.

I would have to say that I felt that we did have

a schedule for taking the plant commercial. I think we did have a feeling that we wanted to achieve that milestone, you know, relatively early on.

I am sure that there was some suggestion that we would like to accomplish that before the end of the year. I am also sure that in those conversations with Mr. Arnold I told him explicitly that the staff was not to depart from the requirements of the test program; in fact, they were not to depart from doing things in accordance with their own judgment for the simple purpose of achieving the schedule.

Q. When do you recall telling them that, as best as you can place it?

A. I am sure I had the same kind of conversation with them two or three times over that time period of the fall and winter, which had the general content that says, "Yes, we want the schedule removed. Yes, we want to complete the program. By all means we should not sacrifice doing the job right."

Q. Why did you feel that it was necessary to say that to him?

A. To make sure he understood the relative importance of conducting the program properly and safely in relationship to schedule.

I think one side of discussion about schedule only might not have conveyed the proper emphasis.

Q. Did you have any belief or view or concern that without that kind of caveat from you he might feel some undue pressure to push ahead with the test schedule?

A. I had no reason for concern. I felt it important to make sure he didn't imply some pressure that I didn't want to convey. I felt it was important for me to be explicit about that.

Q. Do you recall any further about any discussions with him on that subject or do you recall what his response was in any of these conversations?

A. I don't know that there was any specific response. There certainly was no argument. I think if anything, I would characterize it as one of saying, "I understand."

Q. Did you ever have any discussions with him about the specifics of the time schedule in terms of whether it could be shortened, telescoped, or whether any tests that you had planned to do that were not required by the NRC could be postponed?

A. No, to the contrary. I at no time ever suggested deletion of the test. If anything, and again my memory -- you would have to look at the record on this, I have a recollection of suggesting that the time at power be reasonably substantial in terms of the number of days, not just the one hour or one minute, but that there be a reasonable period at power again so that it was not just a fleeting

accomplishment.

I am unaware of how many days it had actually been operating when we did declare it commercial. Again, you can check the record on that.

Again, that was a matter of judgment as to how many days you would be at full power. What did we say in the letter to you? Do you have that letter?

MR. LIBERMAN: I furnished it to the gentleman.

THE WITNESS: I think the letter said four days.

MR. FRAMPTON: Off the record.

(Discussion had off the record.)

BY MR. FRAMPTON:

Q. Do you recall any conversations with Mr. Herbein about the desirability of going commercial before the end of the year and the relationship between that desire and the test schedule?

A. I am not sure. I think I might have talked with Herbein once about the status of the test program and where we were.

In general, these kinds of discussions were dominantly with or through Bob Arnold.

Q. Do you have any recollection of saying to Mr. Herbein in substance, "We would like to go commercial before the end of the year, but we don't want to rush it. And if we don't make it, we don't make it"?

A. I have no trouble saying that that is consistent with what my position was. If I did say such a thing to Herbein, that would not surprise me. I don't recall a specific occassion of having done that. If Jack recalls that, fine.

Q. In your own view, what were the major advantages of going commercial before the end of the year or the major reasons why it was desirable?

A. Well, I don't know that in my own mind I attached extreme importance to it even though I think it was our general feeling that that would be the preferable case.

I saw in the trade off as involving the impact on income if we declared the plant to commercial too early in relationship to receiving rates to cover the cost versus the risk of the plant of going commercial sometime beyond the end of the rate making test year for one of our cases.

That to me was the trade off. I think from my own personal view of that was that I was more concerned about the earnings attrition from declaring it commercial before the rates were in effect than I was a few days or weeks beyond the test year in the Penn-Elec case. That was my own sort of weighing of some of these considerations.

Q. Let me ask you to explain for the record the disadvantage of declaring commercial well before you receive approval to include the entire unit in the rate base.

A. Well, the declaration of the plant being commercial in accordance with the FERC accounting principles really signals the change in the accounting for the plant.

At that time one ceases to capitalize returns on the capital employ, one begins to charge operating an maintenance expenses directly to income and stopping to capitalize those. One begins to take depreciation on the investment and so to the extent, those expenses are recognized in the income statement and are not either taken -- not taken or capitalized; one impacts on the company's earnings very directly until such time that rates are in place to provide revenues to offset those costs.

Q. Let me go back to see if I understand this.

Before the unit is declared commercial, there are certains costs of the test program which can ultimately be capitalized and put into a rate base?

A. Yes.

Q. Those include both the cost of money and the actual cost of operation or some of the actual costs of operating the plant during the test period?

A. Most of the costs of construction, operation, maintenance that is going on, start up test program, as well as the allowed cost of money both for the borrowed funds as well as the equity portion of the investment.

Q. When the unit is declared commercial, after that

point in time under FERC rules, those expenses are no longer eligible to go into the rate base for FERC purposes, is that right, for wholesale rate purposes?

A. Without getting too narrow about it, I would say in general the requirements are that those expenses no longer be capitalized but be incurred currently in the operating income statement.

The question of rate base, I think, you have got to watch that terminology. That is why I say capitalized. While it is an investment, we usually say it is rate base. When a regulatory commission has accepted that investment as a basis for determining rates.

Q. Is it your understanding that the State Public Utility Commission usually gives you rate relief based on the additional plant as of the date it decides to do that, or as of the previous date on which it decides that the plant was eligible for such treatment?

A. I think the record on that is extremely clear. It is if and when they get around to it, and that is a very difficult problem. I think you can look at the record on Three Mile One, Homer City Three. Whatever major investment. In general, there is a delay between the time that that plant goes into service and those costs are no longer capitalized and the time which rates are granted to compensate for those costs.

Q. You suggested in the deposition taken by the President's Commission that in the interim period, there is a danger of losing the benefits of the operating expenses and the interest costs, the cost borrowed, but in this time period between declaring commercial and getting rate relief, can you explain how those expenses are considered operating expenses?

A. Those expenses are not benefits.

Q. Getting credit for them in effect?

A. I think what I said there, once incurred those expenses are never recovered. Once they are gone, one only achieves rates -- maybe I should say normally achieves the rates prospectively. Once the rate order is handed down and the extent to which the revenues match the expenses to make you whole, you are okay. The prior absence of revenues to offset those expenses is never recovered. That is lost forever. I think I said to the President's Commission that for that reason and when plants have significant expenses and significant levels of investment involved in them, a major incentive or major objective that we have is to try to plan ahead so as to synchronize the rate making and the date on which the plant goes into service.

Q. I think in some earlier testimony, public testimony before the President's Commission, you mentioned that one of the reasons for wanting to get into commercial operation in

1978 was the testing or potential problem with the test year.

It is my understanding that only one of the three operating companies had a test year, the end of which coincides with the end of calendar '78, is that right?

A. I think that is right.

Q. You were aware of that at the time?

A. Yes.

Q. By the time, I mean in late '78.

A. Yes.

Q. Can you describe why it would be desirable to go commercial within the test year with respect to that utility's pending application?

A. Yes. It simply eliminates a technical argument as to whether or not those expenses should be recognized in the rate making.

However, you can also look at the record and I think you will find that many commissions permit rates to go into effect and recognize plants that have come into being modestly beyond the test year. It is a very pragmatic thing.

It would be extremely disadvantageous if you waited until your test year could reflect a full year of expenses for that plant.

What that means is that you would have the entire duration of the rate case with no revenues for those expenses

so you almost end up with a requirement for some normalization to adjust the test year expenses to reflect what they would be had the plant been in service as well as any other offsets that may be incurred because of the plant being in service. Then you get into the question of regulatory practice, precedence and the like as to the degree to which the commission will reach out and recognize a plant which is not yet in service in that process.

But as such reaching out is done, the business of having the plant commercial during the period of test year, in my mind, simply closes or constrains the opportunity for a very, very narrow technical argument to not reach out and normalize for those expenses.

Q What would the technical argument -- what result would the technical argument have if it prevailed? In other words, if you had gone commercial on January 5th and the PUC said, "No, no, you did not make the test year," what would they do; would they set up a new test year of June to June or something like that? What would be the possible --

A I think if you looked at the -- if indeed it happened exactly that way, certainly there would be a significant impact until such time as that plant was filled -- on the other hand, if you look at the practices, I think in fact the Pennsylvania Commission has made statements about their willingness to reach out and recognize the plants that

are not yet in service. There is a limit to that.

Any number of things can be done to adjust for that. We, in effect, went through that because we originally were planning that the plant would be in service by May 31st. It was necessary to kind of recycle one of the cases in order to bring it into coincidence with the plant going into service.

Q. Do you recall any discussion about whether it would be desirable to have the plant in commercial service prior to the oral arguments before the PUC that were scheduled for mid-January, I believe, of '79?

A. We may have talked about that kind of thing. I can visualize it as being the kind of thing we would recognize as a factor.

Q. So you wouldn't be surprised if it was recognized but you don't recall conversations about it?

A. I don't recall a specific one that was set up on a date based on that basis. Again, it gets back to the point in my mind that says, "We are involved in a process that has certain opportunities for technical argument and we would like to minimize our vulnerability of those technical arguments."

Q. Was there ever any meaningful concern about whether failing to make the FERC Rule 9D deadline might actually result in disallowance of some of these expenses? That rule

requires you to make a report in explanation if you don't meet the 120-day deadline.

A. Yes.

Q. Was there any concern that some expenses might actually be disallowed if the time period dragged on too long?

A. Certainly that is a concern. I think my own impression of that also is that we, on occassion, sensed that the regulators, the state regulators, would like for us to defer completion of the project and continue to capitalize costs and not recognize the cost of the rates. The FERC guidelines of 120 days also constitutes an argument as to why you cannot or should not continue to defer coming to grips with the issue of declaring the plant commercial.

Q. When you say the state regulators, is it the state regulators or the company that has an incentive to try to capitalize as many of these test expenses as possible?

A. The company has an incentive to convert capitalize earnings to true earnings as early as possible. The regulators seem to have a desire to delay coming to grips with the issue.

Q. The rates may be higher due to the delay?

A. Yes. You will find in the record cases where they have suggested that the absence of rate making is not important because one can just go ahead and capitalize these expenses.

Q. Was that a perceived position of the Pennsylvania

PUC on your part?

A. We were concerned about the Pennsylvania Commission's behavior in this regard. I think their behavior in the Philadelphia Electric case on Salem One was a good indicator of their preferences or their thinking so as to say I felt in my mind that the importance of the FERC standard or the FERC criteria on 120 days was a basis to suggest to the regulator why we needed to come to grips with this matter and could not in turn delay the rate making process.

Granted, if we had engaged in that game planning of delaying the coming to grips with it and appearing to be happy because of the capitalizing expenses, we would have then opened up a vulnera . .ty to a later disallowance on the FERC audit.

Q. What penalties or disadvantages, if any, was GPU or the operating companies suffering as a result of not having met the original committment to go on line in May or June of 1978?

A. I don't recall that we were suffering anything significant relative to the pool. I am sure there may have been some capacity payments because of the absence of this generating capability for GPU, but that is not an extremely large quantity. I think that was running 20 at that time,22, $25 a kilowatt year.

Q. But that was not in your view a substantial

incentive to get the plant commercial compared to various other measures one way or another?

A. No, I don't think so. I am sure all nickels add up to dollars and what have you, but I would not in my mind have identified that as an overriding consideration.

MR. FRAMPTON: Off the record.

(Discussion had off the record.)

(Short recess.)

BY MR. FRAMPTON:

Q. Mr. Dieckamp, do you recall making any calls to people at EPRI on Thursday, Thursday night, about getting some help to Milt Levinson or Mr. Zebroski or anyone else?

A. I might have. I think I was in contact with them. I don't know whether it was Thursday night or Friday morning, I really don't.

MR. LIBERMAN: Off the record.

(Discussion had off the record.)

BY MR. FRAMPTON:

Q. We were speaking before about the IAG. How did the results of the group's work or of the various groups' work get input into the operations?

A. That input came mostly, I think, a number of ways. I suspect it really did not start having a significant affect until we set up the organization and people like Zebroski and Levinson sat in on the working group -- technical working

group and began to make direct input there. Then as time went on, other people, and I don't know whether that started exactly on Wednesday or Thursday, but people began to do things.

I think that for the first several days the role of the Industry Advisory Group was one getting up to speed and beginning to look as some of the longer range issues and later began to do specific things like planning for natural compaction, doing some diagnostic work on looking at the self-powered neutron detectors, Ackerman hooking up this or that or other things of that sort began to get in.

I don't think in the early days they did not have a significant impact on the direct operations.

Q. When they did have more of an impact, how was that structured? Was it through Bob Arnold or you?

A. No, it was direct from Levinson sitting on the technical working group of the organization and its daily meetings. Then by setting up, you know, sort of collaborations for working arrangements between specific people in the Industry Advisory Group and the plant staff people that were concerned about something.

When you look -- in my mind, and again just kind of a summary about it, the role of the IAG, that sort of surfaced early on, was the added confidence that it gave both us and the NRC that there was a separate set of guides

with a recognized degree of competence that were looking at some of the problems and coming up with some independent impressions and judgments and anticipations.

I think it was that rule in let's say the first -- let's say you had two or three days of getting up to speed and then you went into this phase of some added confidence from the presence of these extra analysis, advisors, anticipators, then you went into a later phase of more detailed interactions of Ackerman hooking up this or that, a temperature reading; or Zebroski talking to somebody to dig out some data about reconstructing the core damage or Levinson and others, Leavy, getting very specific in consulting on the transition to natural confection and the anticipation of how that was going to go and those kinds of things.

You mentioned earlier about the comment about whether the industry ought to have such a thing set up ahead of time. I think one, in order to do that effectively, one has to assume that our experience here would constitute a model and the benefit of having some kind of a prearranged situation would be to kind of anticipate, provide earlier awareness of what spectrum of skills you wanted, what kind of basic organization you ought to have, what kind of people would be able to move in and provide leadership. It would not take as long to develop a sense of priorities and a sense of structures that was necessary to get there.

Maybe there was somebody that was a much better crisis manager than I happened to be or whoever else happened to be that could have done this in one day instead of three or four, but that is how long it took us in this case. I think the objective, the next time around, would be to compress that time scale to get to the point where such added resources were useful and meaningful and helpful.

Q. Are you aware of any cutback in maintenance or decision not to increase the maintenance budget or effort in the time frame of December, '78 or early '79 with respect to unit two?

A. I am not aware of anything in terms of specific details or specific numbers or specifit people or activities. I am clearly aware that at all times we are trying to look at the budgets for our major activities.

I am also keenly aware that because of the costs that we were experiencing, we made an effort to analyze our cost experience with that of others in the industry to the extent we could by accessing the FPC form something or other, which reports these costs. We were always concerned about whether these costs were uniformly reported under the same ground rules so that the comparisons were meaningful.

We derived the impression that we were among the higher plants, whether it was Oyster Creek or Three Mile Island, we were among the higher organizations in terms of

the amount of money that we expended on operating and maintenance for the plants.

We also felt that our plants had an outstanding capacity factor of records. I personally felt to the degree that those expenditures contributed to those capacity factor performances, we were doing the right thing, but I couldn't prove that there was a one to one corelation between those two.

Q. So you are not aware of any overall cutback?

A. I am not aware of a specific cutback. I am sure we had budget restraints and pressures.

Again, we attempted to assess those in relationship to the experience and practices of others.

By the way, there is a GPU report on that subject where we attempt to corelate or compare our experience with that of others.

MR. FRAMPTON: Off the record.

(Discussion had off the record.)

MR. FRAMPTON: For the record, we have just requested to see if we can get a copy of the document that the witness referred to.

BY MR. FRAMPTON:

Q. Mr. Dieckamp, one of the things that we have certainly --

A. You know -- let me just back up for a minute. I

think at the last management and review meeting the comment was made about O&M restrictions and cutting back on simulator training in order to, you know, reduce expenses, at which time I said, "No, we will have annual simulator training; don't go to the once or every two year side." You know, we were trying to balance those things.

Q One of the things that we have certainly tentatively identified as a serious problem has been highlighted by the accident here is that neither the industry nor the government seems to have done a very good job in the past of evaluating operating experience and getting information that can be learned from that experience back to the people who need it. In particular, nobody has really heretofore thought about setting up a system that would be effective in weeding out the important information from all of the unimportant information and seen that it gets to the right place.

In a prior deposition, you had some pretty interesting things to say about the advantages of having what you would call an operations analysis type person working for you to look at your own operating experience and other people's. I wonder if you have some thoughts about what the utility company -- the utilities can individually do in this area and how they might go about doing it and what they can't do; what is it, if anything, that is better done by industry as a whole or by the NRC or the government of somebody

else?

A. Well, you put your finger on alot of the pieces of it and I did elaborate on some thoughts for the Kennedy Commission deposition and I continue to feel that that is an extremely important piece of learning. I would characterize it as none of us having recognized the importance of using operating experience as a source of development of a sense of values for the maturing of the technology. I think it becomes complicated because you said a key thing when you said prioritize and you also used a key thing in terms of sorting out and identify which things are important and not important.

I think there is also an opportunity here for alot of loss if you end up with alot of duplication. I think it might not be best if everybody tried to do it for themselves.

The kinds of thoughts I have is that when we think of putting a degreed man in the control room in all shifts, I think one of the things you also have to think about is what intellectual pursuit do you give that guy in order to keep him engaged and happy and make his position meaningful. I think this business of the operations analysis, the pursuit of the understanding and the operational events that you observe is one of the kinds of things that that guy could do that would be synergistic with this task of

understanding the safety and being there as a resource person in case of an emergency.

I think one needs some kind of a structure where each company does a good job of analyzing its own experiences and then somehow comes together on an owner's group basis or something to get the crossfeed from the other companies and to do that on a fairly frequent basis. I think in that deposition, I suggested monthly.

I also suggested that I think there would probably be merit then in someone like the NRC doing this essentially in parallel so that we perhaps have the benefit of a degree of redundant look at those issues.

I think the problem here, when you try to trace back specifically through Davis-Besse, is that that event was just snow into a mountain of other analogous paper. The only report with significant details in terms of the event, is the one that came through a private reporting service, but even that report provided no evidence of the significance of the observations, no derivation of the meaning. It was all just very matter of factly reported as A did this, B did this, C did something else; no derivation or meaning. As far as I can tell, Toledo didn't pick it up, B&W didn't pick it up, the NRC didn't pick it up, we didn't pick it up, the significance of that event.

When you look at the forms of the official reporting

channels, those were all so sketchy as to -- well, a guy would really have to be looking -- like walking across the United States and stop off in Kansas and reach down and pick up a nugget of gold. It is just a needle in a haystack.

You do have the problem of looking beyond these events, not just accepting these events as the ordinary behavior of components, but rather analyzing those events for their meaning in terms of the system and safety assumptions, the operator training procedures and the like.

The very, very fundamental thing in the Davis-Besse matter is that that signal that there had not been a proper anticipation of system behavior in response to a leak from the pressurizer and that then significantly undercut the validity of the prior procedural reviews and training and the like. That wasn't detected. Here with one kind of a leak, the system behaves fundamentally different than it does for most other leaks. One has to recognize that and make sure that the procedures and the training are recognized and that was missed.

I do believe that one of the most important things that ought to be learned out of this is to treat these plants as maturing technology, which means you learn from the experience with them as you go.

Q On Wednesday, March 28th, it appears that there was quite a bit of advantage in being away from the control

room in terms of the ability of people to diagnose what was happening even though they had alot less information.

There were quite a few people with experience, competent people, who got themselves pretty well organized in the control room and had alot of information available to them but they were having really a terrible time, it appears, throughout the day really doping out what the situation was.

At the same time, people with much less information in places like Parsippany and Lynchburg, Virginia seemed to be able to take some of that information and diagnose what was happening by mid-afternoon and wanted to get back to the control room with input.

I think you have discussed in prior testimony the desirability of having an experienced engineer in the control room knowing something perhaps a little more than an operator or even a shift supervisor about the way in which the system may be working or not working as expected.

Q. It has also been suggested that it might be advisable to have some kind of a national centralized command center where basic plant perimeter data can be talemetered through the same channels that are set up for a reactormeter and where you have, instead of having hotlines to the NRC, you have a hotline from the control room to this place so that instead of speaking with people with engineering degrees in every one of 160 control rooms, you have people at the

central location who can do this kind of a diagnosis. Do you have any reactions to that latter suggestion?

A. I don't think the perimeter of importance is proximity. I think the perimeter of importance is breath of knowledge about the basic phenomenon involved in training.

Again, I think the problem of the limitation of the fellows in the control room was that their experience and their training was heavily concentrated under the presumption of operations in the normal regime and that they were not knowledgeable enough about all of the transfer fluid flow, safety phenomenon that manifest themselves when you get into the way the hell off normal regime as we did.

I think, again, the advantage of the guys at a distance was not their distance, but rather their depth of knowledge in their training. If you say then that there is such a limitation of people with such knowledge, maybe then in order to get broad coverage, one needs to centralize them.

I am not sure that is necessarily true, because in turn you still have got a problem of a backlength in terms of how does that knowledge on the part of those separated observers get back to the control room and get translated into actions and decisions and the like.

I would definitely be against any concept of remote control. I just can't conceive that that could ever work. I guess I think of the guy in Bethesda who doped it

out towards the end of the day, Vic Stello. Well, I think Vic is an unusual guy in terms of his breadths and depths of knowledge. I don't happen to know who may have known how much at B&W and Lynchburug or even Parsippany. I think our guys in Parsippany were restricted by the amount of information available to them. Their ability to contribute would have been enhanced had they had more information directly available to them without the impedances of a communication lack.

I tend to think the dominant line of defense needs to be in the plant. I think there has got to be a tight loop there for observation, deduction, conclusion, action.

I don't have alot of confidence in the remote control concepts. Perhaps when I say remote control I am purposely using demeaning adjectives, but I don't have alot of confidence in the real ethicacy of that. Maybe it can work. I think it is different than the Savannah River, which is a remote emergency control, but that has kind of, as I understand it, one purpose. That is where the ultimate guy mashes the button that gives the ultimate shutdown. That is a very narrow kind of a thing. Here we are talking about all of the analysis, all of the understanding, and all of the decisions to begin to operate and maneuver the plant in the event that it is gotten far outside its normal regime.

It is one thing to control the plant if it is still solid water with pumps running. It is another thing when all of a sudden you have no pumps, no natural circulation, a large amount of non-condensible gas, et cetera.

I personally tend to think that there is not going to be an easy substitute for solid competence on the plant's site. That doesn't mean that remote observers and remote diagnosticians can not be useful, I don't mean to say that. I don't think that is the route to a permanent fix, but that is a personal judgment.

MR. FRAMPTON: I think it is a couple of minutes before 12:30. We promised to finish by then, so we will.

Thank you very much for your time, your cooperation. This has been very helpful for me and we appreciate it.

THE WITNESS: We hope so, and we hope it has been useful to you and we hope the final report will be useful. I think our feeling has been that we have a special obligation to be as open and cooperative as we know how on all these investigations because we think it is critically important that the full range of the facts come out in our report, in laymen's language.

MR. LIBERMAN: Mr. Dieckamp earlier referred to the level of power operation of TMI-2 during the power essention program at various levels. I would simply like to call to your attention, because of the flood of papers you

perceive, that on August 23rd I sent Mr. Vandenberg a copy of a letter and some enclosures that I had sent Mr. Whitman in a letter of August 20th that included a graphic form and also in a very short summary a level of energy generation and I think it may be a useful document to refer to.

The question I have is that in the deposition of Mr. Toole, he had a very large diagramatic presentation of sequence of the test program. I don't know if Mr. Evans and Mr. Vandenberg are aware of this form, but it may be of some useful purposes for you. If you don't have it I would like to renew the offer to get it to you in some form that would be useful to you because I think it tends to present as well as I think we can what the program was in graphical form.

MR. FRAMPTON: I think we would like to have that. Thank you very much.

(Whereupon, the deposition was concluded at 12:30 p.m.)

CERTIFICATE

I hereby certify that the proceedings and evidence are contained fully and accurately in the notes taken by me on the hearing of the foregoing cause, and that this copy is a correct transcript of the same.

Joseph C. Spontarelli, Reporter
Notary Public in and for the
Commonwealth of Pennsylvania

MONICK STENOGRAPHIC SERVICE

My commission expires
July 20, 1981