NUCLEAR REGULATORY COMMISSION

NRC PDR

In the Matter of:

WORKSHOP

EMERGENCY RESPONSE FACILITIES

NUREG 0696

DATE: August 19, 1980 PAGES: 1 thru 291

AT: Valley Forge, Pennsylvania

ALDERSON REPORTING

400 Virginia Ave., S.W. Washington, D. C. 20024

Telephone: (202) 554-2345

8009050403

UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

WORKSHOP

EMERGENCY RESPONSE FACILITIES

NUREG 0696

Sheraton-Valley Forge
Valley Forge, Pa.

Tuesday, August 19, 1980

P R O C E E D I N G S

MR. MINNERS: For the people who have just come in, I would repeat the request one more time. I'm trying to segregate the smokers and non-smokers. And if the non-smokers would sit on my left and the smokers on my right, I think we can easily accommodate that request.

(Pause)

MR. CRIER: Good morning. I think it's time we start the workshop. I'd like to welcome all of you to this NRC Workshop on Emergency Response Facilities, being hosted here today by Region 1 Office. This is the first of three workshops on the subject being held this week. Tomorrow there's a similar workshop in Chicago; and on Friday, in Atlanta.

As we all know, investigation of the accident at Three Mile Island Unit 2 identified the need for extensive improvements in emergency preparedness at nuclear power plants.

Some areas identified as deficient and in need of improvement include: the organization of personnel to control, manage, assess, support, and coordinate activities both on and off site during emergency situations; the facilities for these personnel; the availability of information needed to assess and manage the reactor, other sources of radioactivity, and to assess actual and potential

radiological consequences; and the provisions for disseminating acccurate and timely information, warnings, and instructions to local and state agencies, the affected population, and the public in general.

The criteria to be met in providing emergency response facilities are proposed in NUREG-0696, entitled "Functional Criteria for Emergency Response Facilities." And this is the subject of the workshops this week.

The facilities referred to are: the on-site Technical Support Center, or the TSC; the Emergency Operations Facilities, or EOF; Safety Parameter Display System, SPDS; and the Nuclear Data Link, NDL.

On the panel today to lead the discussions we have Mr. Warren Minners, of the Office of Nuclear Reactor Regulation. Mr. Minners is chairman of the Coordinating Committee of the Safety Data Integration Group, and will commence the presentations this morning describing NUREG-0696.

He'll be followed by Mr. Leo Beltracchi, of the Humans Factors Safety Division, who will cover the Safety Parameter Display System and the Nuclear Data Link.

And then Mr. Steve Ramos, of the Emergency Preparedness Program Office in Nuclear Reactor Regulation, will cover the Technical Support Center and the Emergency Operations Facility.

Before we get started, two things I'd like to say.

One, there are some copies of NUREG-0696, a limited number, available at the registration desk; if you don't have a copy, you may pick one up at the desk, but we ask that you not get them if you already have a copy, because of the limited availabilty this morning.

And secondly, if you desire to make comments during the day, at the end of the presentations, opportunity for comments will be provided, but you need to register specifically on the list, indicating your desire to make comments. So if you have not signed the list specifically for comments, I would ask that you do that at this time. And if you desire to submit written comments, you can present them to the registration desk.

Now, without further ado, I'll turn the meeting over to Mr. Minners.

MR. MINNERS: Thank you.

I think you all know the history of the development of these requirements or guidance for emergency facilities. The Commission always had requirements for emergency response plans and, presumably, for facilities to accommodate the staff that had to be provided. But that was not too well specified, and it wasn't until Three Mile Island that people began to realize that an accident required a pre-planned response to it and that required

facilties for people to perform their functions.

And this requirement was first proposed in the Lessons Learned Task Force and later issued in letters to licensees and applicants, to have a Technical Support Center. And the concept was there, but not much more.

Now, in parallel with that, and starting much earlier, had been the development of Reg Guide 197, in which the Commission had been working on guidance for having instrumentation -- or, more generally, information -- to follow the course of accidents. And that had been worked on for some years.

In May and June of this year, it became obvious that the emergency response facilities development was not too well organized. Different people were doing different things. The industry was unclear what requirements might be provided to them. So NRR decided that we would get a group together and try to coordinate the activities better. If we were going to have any reasonable implementation date, it was our responsibility to get some requirements out on the street, that people knew what they had to do.

So we got people from the different divisions in NRR who were doing the different things, and we also met with AIF, who at that time was representing most of the industry comments, and we came up with a, what was the precursor to 0696, and we discussed that with AIF. We got

several good comments from that, and we revised it again and also then decided that we really should get broader public comment on these requirements.

So we put the document into the form of a NUREG report, which you've all seen, I hope, NUREG-0696, and published it for public comments and wish to receive public comments. And as part of that receipt of public comments, we thought that if we could go around and talk to the industry, the public in general, and, hopefully, explain what the report is supposed to do, we could get better comments.

It's difficult to write anything that explains everything you want to say. And we wanted to have the opportunity to explain to you what we hoped the words in the report meant, what some of the background was, so that you had a better idea of the intent. And we are sincerely looking for comments.

We are here to try to explain what the report says. And there's always a tendency to defend what you've done, and we'll try to resist that tendency. We are only here to try to say what we did and why we did it; and, hopefully, then we don't try to defend it too much.

Now, although the industry may think that it's a distinction without a difference, the NUREG report is only guidance; it is not a rule, it doesn't carry the force of

law that a rule does. And it can be interpreted; if other bases are given, you don't have to necessarily follow the guidance of the NUREG reports or regulatory guides. So that's a perspective that you should have when you look at this report.

We have tried to find a balance in the report between being giving specific guidance that a designer can use and giving general criteria that explain what the problem is and what we want accomplished and leave flexibility. And that's always a difficult balance and you never find the proper place, but we have tried.

Now, agenda have been passed out, and we are going to run through the morning with our presentation. Presumably, you have all read the report, but we are going to quickly again go through the essential elements of what is in the report. Then after this presentation is over, we will have a comment period, when anyone who wishes to speak may do so; we welcome your comments, we welcome your questions.

If you wish to have a comment, please register, so that we can keep some order to it. I intend to follow the order of the people, first come, first served; we'll go down the list. I think we're going to put a 15-minute limit on any comment that people want to make; that should certainly be enough.

If you wish to expand on your comments, you can certainly do that in written form. We'll accept any and all written comments. You can either leave them here, at the desk, or you can send them to the Commission and we will receive them that way.

Hopefully, I understand that the best time to leave for lunch is eleven-thirty. So we'll shoot for a break at eleven-thirty and nothing in between. It's a little long, but I think it would be better to do that.

Now, the schedule for this is, there is a 45-day comment period, in the Federal Register. So any comment which is received within that period will be considered. That does not mean that comments received after that period won't be. If we receive a comment, we try to accommodate it. It's just that if you have it in before the 45-day period ends, then we certainly will consider it.

We are --

VOICE: What is the Federal Register date, please?

MR. MINNERS: I have not seen the Federal Register date, and therefore I don't want to quote it. I was told it was published on Friday, but I haven't seen it, and I haven't counted the number of days, to give you a legal determination of when your last comment can be in.

I don't think that that's a serious problem. We take, we are interested in having comments, and the 45 days

is more to indicate what our schedule is than try to exclude comments.

We are shooting for a schedule to reissue this report, hopefully, in final form, in October, late October, end of October, beginning of November. Which is a optimistic schedule, but I think the industry needs early indication of what the requirements for Technical Support Centers and the other facilities are going to be, if they're going to meet the implementation schedule.

Now, one of the most important things is the implementation schedule, which is not in the report but is in the Federal Register notice. We would like comments on the technical content of the report, of course. But I would particularly invite comments on the implementation schedule, because that's always the hard part.

VOICE: Excuse me.

MR. MINNERS: Yes?

VOICE: Your August 1st meeting memo to applicants, licensees, and all (WORDS UNINTELLIGIBLE) says 30 days for comments, and you just said 45. Is it there a -- what is it, 45 or 30?

MR. MINNERS: It's 45.

MR. RAMOS: The 30 days came out of the fact that's what the Commission had originally authorized us for a comment period. And we decided, subsequent to printing of

that letter, to make it 45 days, just to ensure we got all the comments in.

VOICE: Will there be another letter?

MR. RAMOS: I don't think there's a need for another letter.

MR. MINNERS: Now, on the comments, as I said, we would like to have your comments, but as important as the commemts, if not more so, are the basis for your comments. I would like to see that we have, when we finish this report, a good basis for the content of it. And the industry has much more technical knowledge than we do, much more brain power than we do. And a comment by itself is a lot less useful than a comment which gives the basis for why, especially on implementation scheduling.

Now, we have tried to develop an implementation schedule, and we've gone out to people who we think know what the availability of this type of equipment should be; but we're certainly willing to listen to what the industry has to say, if we are giving some schedules, and to back up that, their estimate of what the implementation schedule should be.

Okay. Now are there any questions on the administrative kind of details?

Fine.

May I have the first slide, please.

Now, as Boyd said, I think we all have seen this slide or something like this slide many, many times. And everybody, I think, agrees that there is need for improvement of emergency response at nuclear power plants and it's a difficult thing to do. And these are what we think were the improvements that were called for. And the guidance in the NUREG is an attempt to provide the facilities that will support the functions that will accomplish these improvements.

May I have the next slide, please.

Now, these are the facilities that are contained within the scope of the NUREG report.

A Safety Parameter Display System, which is a concise display of system variables which lets the operator quickly determine where he is, whether he is going to abnormal conditions or whether he is within normal ranges.

The Technical Support Center is just what its name indicates. It's a center, a location, in which people who are going to give technical support during the accident can assemble, can have information and facilities provided to them, can discuss, diagnose, and direct the accident.

The Emergency Operations Facility is a similar function to the Technical Support Center, but it's more directed towards interaction with off-site activities and it takes a broader and more overall view during an accident

situation.

And then the last item is one which is controversial, is the Nuclear Data Link, which the Commission believes is something that it needs to discharge its responsibilities during accidents. We feel that the NRC headquarters needs information during accidents, so that it can monitor the licensee's actions and provide information to the public.

And may I have the next slide, please.

Now, the purpose of 0696 is to try to integrate all of these functions, and that's what we have attempted to do in the NUREG report; and that was, we think, the largest failing that we had before we had written the report, is that the activities were not integrated. And they need to be integrated both from a functional point of view and also from a cost and efficiency standpoint.

But all of these facilities, it should be understood, are only, I'll use the word, "advise" -- the point that I want to make is that the control room is still the point where the plant is going to be controlled from. All actions controlling the plant will be taken from the control room, and the control room personnel have the responsibility for controlling or mitigating or reacting to the accident.

These other facilities are support facilities.

And that's a difficult question, because you're going to have some high-level people in these support facilities and it's going to be difficult for the control room operators not to look at these people and say, "Well, that's the vice-president -- I ought to do this and that." But the organization is such that the control room is the place where the control is done. And when you're looking at these support facilities, you should look at it from that perspective.

Now, we're going to have brief presentations of each one of these elements of the support facilities. And the first presentation will be on the Safety Parameter Display, by Leo Beltracchi.

MR. BELTRACCHI: Thank you, Warren.

May I have the first slide, please.

The Safety Parameter Display System has been called the "safety vector," the "plant status display console." It has, it had several names, but the function, the function that really gets down in its purpose, is to provide a display of the minimum set of plant parameters from which the safety status of operation may be assessed, and, that is, by controlling personnel.

It's basically a monitoring system. And it's a aid in the detection of abnormal operating conditions. It's also to be used by the operator to know that he's operating

within bounds.

May I have the second slide, please.

In terms of scope, it should contain the magnitude and trends of parameters or derived variables. And I'd like to emphasize the trend portion of this specifically from the point of view that the operator is in need of transient information while he's in a transient, and transient rates will provide him with that information. It's from this type of information that he can tell that his plant has been stabilized.

The display is for normal as well as abnormal conditions; and I'll touch on that, in a little bit later, in further detail. And the display is to be duplicated in the TSC and the EOF.

In terms of the functional considerations, it is basically an operator aid and its main function is detection of abnormal operating conditions. It's to be used in all plant operating modes. It should be capable of functioning during and following events expected to occur during the life of the plant. It should be flexible in design, to allow for future modifications; and flexibility means that it's capable of adding -- being able to add additional functions at a later date. We have not completed all the, all our studies relative to Three Mile Island and in terms of implementation, but we do feel that the Safety Parameter

Display System is an important aspect that would have to be done early. And therefore, to allow for the incorporation of additional requirements in the future, we feel that this design should be flexible and expandable.

In terms of its use, the emergency procedures should specify its limitations such that the operator will know when he can convert to 1E type displays.

With regard to location, it's to be in the control room, and it should have the following properties. It should be easily recognized and identified by control room personnel; it should be readily accessible, readily visible, should not obscure the full visual access to other displays and systems in the control room.

With respect to size, it should be sufficient to be readable from operating stations by the following personnel -- the shift supervisor, the shift technical advisor, and at least one reactor operator.

With regard to staffing, by design we are requiring that there should be no additional control room staff should be needed for the operation of the display system or its interpretation.

In terms of data requirements, as stated in 696, the use of signals from Reg Guide 197 sensors, when the variables are accounted to the SPDS, should be incorporated in the system. Of course, they will have to be isolated and

by means of electrical isolators. The second item with respect to data requirements is, data validation should be required prior to data display. And let me amplify on this a moment, because this was not put across in detail relative to NUREG 696.

The type of data validation that's being called for here is an on-line validation of the data prior to its presentation to the operator. This can be done either through redundancy or secondary variables, in order to ensure that the primary data is proper and correct. In those instances where there is a discrepancy, the operator should be notified by the display system, so that he would be able to resolve the discrepancy and determine whether it was a sensor problem or some other problem.

With respect to display considerations, we shall require the use of human factor engineering to enhance the functional effectiveness of the display. One example of this would be the use of pattern and coding techniques to assist operators' memory recall. In the form of coding, it may take the form of bounding a parameter in terms of its normal operating range, or highlighting the parameter in terms of its abnormal operating ranges.

We are also requiring that a single display format be required for each mode of operation, and maybe that several modes will combine into one display format; however,

it's conceivable that different parameters would be, different parameters and variables would be used in different modes.

We are also -- additional display formats as appropriate to monitor and present parameters will be allowed. And this is, obviously, from the point of view to assist the operator in analyzing or diagnosing the situation that he may detect with the Safety Parameter Display.

We are requiring that the Safety Parameter Display be continually displayed. And these other, additional display formats may be available to him, in order to assist in diagnosing a detected problem with the display.

In terms of design criteria, the system not be class -- totally class 1E. However, we would not object if the system is designed and totally -- or 1E.

With respect to sensors and signal conditioners, because of our Reg Guide 197 association, we are requiring that these be class 1E qualified and, therefore, isolated.

The system as a display system need not meet the single failure criterion. However, because of that, we do feel that the availability goal should be -- our unavailability goal should be one times ten to the minus three on a yearly basis. And this is to stress the need for some gradation between, say, total safety systems in the form of trip systems or engineering safeguard systems, which

are basically class 1E criteria design, versus total non-safety systems. We feel that the Safety Parameter Display System is a system important to safety and therefore should have criteria in a graded form between non-safety and total safety systems.

Furthermore, the system should be capable of function during and following an operating base earthquake.

The basis for these, again, would be that Reg Guide 197 would call for E-qualified displays, so that if one of the Safety Parameter Display Systems failed, the operator would be able to revert to a 1E-qualified system.

Relative to verification and validation criteria -- and here I'd like to stress that this verification and validation is with respect to the design and development of -- and installation of the -- qualification and installation of the system, which is a one-time effort, and it's different than the validation of the data, that I referred to previously, which would be a continual, ongoing real-time task. This verification and validation, again, would have to be done by independent and qualified personnel. A reason and objective for this would be to achieve a highly reliable and available system. Again to address its importance to safety, we feel that it must be highly reliable and available to the operator.

In terms of schedule, the plant Safety Parameter

Display, NRR would issue requirements by August, 1980, licensee -- and that's in the form of the current draft 696 that you have -- licensees are to submit designs, system designs, for NRR review, by January of '81, with a scheduled complete implementation in the plants by January of '82.

And that pretty much summarizes the information I had to relate on the Safety Parameter Display.

VOICE: If I may ask one question?

MR. BELTRACCHI: Yes.

VOICE: Do you consider the completion, implementation completion, date a realistic date, based on known industry problems and availability of systems?

MR. BELTRACCHI: I'm not here to promote any particular design; however, I do feel that there are designs or partial implementations that can be achieved by that date.

VOICE: You asked for a completed implementation, not a partial one.

MR. BELTRACCHI: I meant complete, now, completed in the form of the Safety Parameter Display -- okay? -- as a system. When you look at -- if you look at some designs which have considered some rather large, extensive computer systems, you could look at the Safety Parameter Display as a small portion of that; and that's certainly, I think, an achievable objective by that date.

VOICE: On page 8 in the guidelines, there's a

reference to more detailed requirements. I don't see those on the schedule.

MR. BELTRACCHI: Okay, very specifically, I don't have a firm answer on that. I know that at one time the AIF had proposed that the industry respond to 696 in a form of performance specifications, and I think this was being considered by our management. However, relative to the Safety Parameter Display System, I do have a draft set of performance specifications that I intend to use as a form of an acceptance criterion.

Do you want to take these now or do you want to --

MR. GRIER: I think questions. Then we're going to get into the --

VOICE: On page 8 of 696, I just like to read this, it says: "The whole Safety Parameter Display System need not be class 1E or meet single-failure criteria. The data acquisition system for the SPDS, consisting of sensors and signal conditioners, shall be designed and qualified to 1E standards." Then it goes on further to say it's expected to function during the operating base earthquake.

Could you explain those apparently contradictory requirements?

MR. BELTRACCHI: They're not, they're not necessarily -- they're not contradictory in the sense that if you consider that Reg Guide 197 on safety-qualified,

class 1E-qualified sensors would probably be your best source of information.

But again coming back to stressing the importance to safety in the sense that the display system need not necessarily be needed for direct shutdown of the plant and function automatically.

In trying to categorize these systems, and also trying to allow the industry some flexibility to incorporate some modern technology and human factors approach to the problem, we tried to stress the display portion of the system versus the sensor portion of the system bounding the class 1E requirements and also the need for some, say, quote, unquote, "class 2E" restrictions.

VOICE: But the way I interpret this is that, well, I envision the system as having a CRT display, and I think most people would probably go along with that, and you're saying that a CRT has got to be capable of functioning during an ODE.

MR. BELTRACCHI: Well, we can get into that issue. We did not -- that's certainly a concern, that was a concern of ours. And I am well aware of hardened CRTs that are on the market. They do cost a bit of money. And I'm not sure that they would meet an SSE requirement. However, I know they are hardened in the sense that you can throw a hammer at them and they'll still operate.

VOICE: But I don't believe they're qualified for 344.

MR. BELTRACCHI: I didn't say 1E.

VOICE: It's the only qualification requirement we have for seismic, is (WORDS UNINTELLIGIBLE) 344.

MR. BELTRACCHI: We felt that the need -- well, in this 696 we've presented an operating base earthquake, which, obviously, is not going to stress it to the extent that an SSE would.

MR. MINNERS: Excuse me, is there any problem with the people in the back of the room hearing the questions?

VOICE: Yes.

MR. MINNERS: All right. Would the people who ask questions please try to use a microphone, so that people can hear the questions. Thank you.

MR. BELTRACCHI: Yes?

VOICE: What's the boundary on the data acquisition system? My question is, where is the A to B converter, the visual system?

MR. BELTRACCHI: In terms of whether it's class 1E or non-1E?

VOICE: Yes.

MR. BELTRACCHI: Let's see. Relative to, I think we're going to get into, probably, some design details here, but I think that, I think that would have to probably,

dependent upon the design you proposed, I would foresee that one boundary could be in the form of, one boundary could be in the form of an isolation device between the sensor and the multiplexer. Okay? However, if one were to propose a design where he wanted to incorporate the post-accident monitoring function into the Safety Parameter Display System, and then you're looking at a 1E from sensor to display.

So without getting into design details it's very hard to answer that question, specific designs.

Yes?

VOICE: In regard to your verification and validation criteria for independent verification and validation, can I safely assume that you are talking about an implementation of the criteria that have been developed out of the Appendix B (WORDS UNINTELLIGIBLE) and the ANSI --

MR. BELTRACCHI: They are ours, and there is some guidance in the form of P-742, which is a draft office standard for safety grade computer systems. Okay? That, the verification and validation definitions you see in 696 were taken from that almost word for word.

VOICE: So --

MR. BELTRACCHI: That will provide you some guidance. There's also some guidance in the form of the reviews that were conducted on the RESAR 414, which was the

Westinghouse integrated protection system, and the reviews that are also being conducted on the RPS 2.

VOICE: With regard to my specific question, are you looking for a degree of verification and validation which is greater than or more independent than what is presently being done with portions of the safety systems?

MR. BELTRACCHI: No.

Yes?

VOICE: My question centers on the stated inputs. In your earlier drafts, you indicated -- of this NUREG -- you indicated that you coulin't use the plant process computer input to your Safety Parameter Display System. Now, I'm wondering why that is. And --

MR. BELTRACCHI: I can address that. Have you gone back and looked at some of the LERs associated with plant process computers?

VOICE: No.

MR. BELTRACCHI: Their history is not very -- their history in the form of their control is not very good.

Our concerns are that because of that, in the form of modifications that may be made for other functions being addressed by that computer, say, like a heat calibration or things of that nature, that although it may be a program that may have had a little bit of trouble doing that, you finally got it to work, but, in the process of doing so, you

inadvertently changed something in the Safety Parameter Display or something in the plant process, in the TSC, such that when we really needed it, it wouldn't function properly.

VOICE: Well, I'm not a computer expert, but from what I understand, there can be programmed into the comp[illegible] certain security provisions which would allow -- or, prevent the kind of problems you're talking about. And I'm just wondering if you people considered that, because as you know --

MR. BELTRACCHI: These -- I understand that there is an awful lot of flexibility in terms of architecture, and without having to get down and specify each of these aspects, I think we stated the general concerns and --

VOICE: Well, you stated that you cannot use the plant process computer. And what I'm suggesting is that maybe you ought to show some flexibility and allow the designer to work out a system that addresses your specific concern of inadvertent tampering with the SPDS system.

MR. BELTRACCHI: I'm talking about a monolithic plant process computer in the form of a single CPU and a single memory and a single data acquisition system. Then you may be very restricted in terms of what you can do.

However, if you have multi-processors or multi-memory, I guess, I'm going to have to grant you that you may be able to come up with an architecture that could

address our concerns.

MR. MINNERS: Let me make a comment on that. I think that is one area that I have noted is a good place where I would welcome comments from the industry on some specific words which would accomplish the purpose, which, I think we all realize, is to have a computer which has adequate security and things like that to do the safety function and cannot -- that the operational side of the computer won't interfere. And we need some good words, we would welcome some comments in that respect.

MR. BELTRACCHI: Yes?

VOICE: Just simply, doesn't the criteria of ten to the minus three eliminate all monolithic computers?

MR. BELTRACCHI: Not necessarily. There was a recent report put out by (WORD UNINTELLIGIBLE), and it depends, I guess, on how many (WORDS UNINTELLIGIBLE) you want to put on the -- a monolithic (WORD UNINTELLIGIBLE) computer and still call it monolithic. The report, basically, stated -- the report was done for NSAC, and it, basically, stated that unavailability -- or, an availability of 99.8 percent was -- could be reasonably achieved. Unavailabilities -- or, availabilities higher than that would probably cost a considerably greater amount of funds.

Yes?

VOICE: You just mentioned 99.8 percent. That's,

what, .002. So you're doubling that required availability.

MR. BELTRACCHI: I think that's probably close enough in terms of C01.

VOICE: Well --

MR. BELTRACCHI: You're talking in terms of eight hours a year.

VOICE: That's right. And when --

MR. BELTRACCHI: And one.

VOICE: When we met, through the AIF Safety Parameter Display Committee, we, I thought, had agreement with the NRC, through this NSAC study, that .003 was about the best availability you could expect from a single CPU. And when you tie all the sensors and display systems together, you're going to reduce that availability significantly.

MR. BELTRACCHI: I guess I wasn't aware of the 003 number or its agreement.

VOICE: It came up in a meeting with you people about a month and a half ago.

MR. BELTRACCHI: Yes?

VOICE: The statement you have here (WORDS UNINTELLIGIBLE) just plain computer. You're talking about the transmitting process to the display panel. In fact, you would have to go all the way back to the sensor for the isolation (WORDS UNINTELLIGIBLE) and then go to the setup.

MR. BELTRACCHI: I'm not quite sure I understand your questioning. Are you saying that we -- would we accept the isolation device at the sensor?

VOICE: Well, that's what you're implying, that it has to be at the sensor, because you say it's got to be transmitted, processed, and displayed independently of any other equipment in use.

MR. BELTRACCHI: That was to achieve, basically, some functional separation for the normal functions that are performed in a process computer; and I think we've addressed that. We were trying to get some separation between the functions that are normally addressed in a process computer, which could be a source of error in the form of either modifications or interference.

VOICE: Well, what we're talking about is the input to the computer. And you're saying go all the way back to the sensor, rather than --

MR. BELTRACCHI: No.

VOICE: -- isolate at the input to the computer.

MR. MINNERS: I don't think it says that. I think it says you can isolate where you want to isolate.

I guess if you follow those criteria you can build the isolation where you wish.

MR. BELTRACCHI: Are there other questions?

Yes?

VOICE: You talked about limiting conditions for operations, as well; and you indicated some mitigating measures might be acceptable if you're down for, I think it was, eight hours at a time. Or is it for a year? I don't know what it was?

MR. BELTRACCHI: Eight hours -- no -- it was eight hours per -- 001 works out roughly to about eight to ten hours per year.

VOICE: What do you mean --

MR. MINNERS: But the limiting condition operation would probably be written the way all the other ones are, as for -- how do I want to say it? -- it's not an integrated approach. It's not eight hours per year. If you're out for more than eight hours, you would have to do something. And presumably, a day later you could be out for eight hours again. Just as the present tech specs handle LCOs.

VOICE: What would you consider a compensating measure for the Safety Parameter Display System not functioning?

MR. BELTRACCHI: Well, one might be that you would have to have additional staffing in order to interface with the boards, your current boards.

VOICE: Could you describe the relationship between the current control board and --

MR. BELTRACCHI: Yes. The source of the Safety

Parameter Display System basically came about, it was fairly simple. Both the, I believe, the Enrico Fermi, a review of the Enrico Fermi accident and the Three Mile Island accident had some rather common review comments, and they went something as follows: all the information was in the control room, and yet it was so dispersed in the control room that the operator could not integrate it and tell what the status of the plant was.

It's basically that simple: integrate the information such that it can be interfaced with in a rapid and efficient manner to understand the process that's currently occurring in the plant.

Yes?

VOICE: Going back over to the overall system, you talk about being able to function during after an OBE. Does NSAC (WORD UNINTELLIGIBLE) survey, does that address that availability of a seismic type of computers? And also, if we do have the ability to use (WORD UNINTELLIGIBLE) main frames, our BOP system may use (WORD UNINTELLIGIBLE) computers.

MR. BELTRACCHI: Okay. Relative to seismically qualified computers, the coefficient calculator systems which were licensed, I believe, in '78 did meet class 1E qualifications; they are commercially available.

MR. MINNERS: I'd like to make a comment on your

question on the control room and the SPD. In developing the requirement, I think, we looked at the Safety Parameter Display as an additional, supplemental means to the operator, not something that was supposed to take over his other functions and replace other functions, but a supplemental means. And I think we all recognize, is that control rooms could be improved in their design. And our thought was, is that until that could be accomplished, something like the Safety Parameter Display could give you a measure of improvement that was possible in present control rooms, without redesigning the whole control room. And that's the thought behind the Safety Parameter Display.

MR. BELTRACCHI: Yes?

VOICE: Where do you draw the line between present and future control rooms?

MR. BELTRACCHI: That would, well, relative to future control rooms, that would probably be integrated into the board, anyway.

VOICE: Your statement with regard to the Safety Parameter Display System is a good goal, but you haven't really quantified the instruments and the parameters that you're going to display there or the method by which you're going to do it, to enable -- at least, in my view, you haven't yet, though there's a lot of discussions going on -- but I believe that has to be done for you to really quantify

whether that goal is achievable or not.

MR. BELTRACCHI: Okay. Relative to the parameters, now, we did not go out and conduct the study -- we stated the goal. You're correct. However, there is an efforts being done and there was a presentation made to ACRS a little over a week ago, by AIF and NSAC and the industry, that did define a set of parameters for both PWRs and BWRs.

Let's see. What was the other aspect of your question?

VOICE: Well, an analysis with those parameters how various things would be approached; simulate some occurrences and see what --

MR. BELTRACCHI: They --

VOICE: -- (WORDS UNINTELLIGIBLE) happen and how effective it's going to be.

I have a concern that no matter what you put on there, we'll dream up a scenario that does not have the information that you would like to have displayed on that safety parameters system. And what I believe you're going to have is a ratcheting in the future of "Well, let's add this piece of instrumentation or information into that system, as well."

MR. BELTRACCHI: I hear your concern. That's why the stress was on "minimum." There has been, I think if you look at the presentations that were made to ACRS, there was

a systematic approach -- or, at least, claimed systematic approach -- to that, in the form of leading indicators, review of emergency operating procedures to determine what should be there as leading indicators to identify for the operator that that was the process was occurring in the plant.

MR. MINNERS: Let me understand your question or comment. Are you suggesting that you want us to specify which variables should be in the Safety Parameter Display?

VOICE: No. I just think you have a goal, but I don't -- and that's fine. Now I think that you have to look more closely at whether that goal is achievable by what you're trying to do there or whether you're going to end up with, basically, another control room minus a few switches, and whether the Safety Parameter Display System is going to be able to achieve its function in a large number of occurrences that are possible. It may work for some, it may not work for others, is my concern. Somebody's going to be over there in front of that panel and say, "Gee," you know, "I see something, but I don't know what it means, I" -- you know -- "It isn't any help to me."

MR. MINNERS: Okay. I think we're putting that burden on the designer, is that he has to verify that the Safety Parameter Display is responsive to a spectrum of transients and accidents that's he's trying to respond to.

Our intent in --

VOICE: Well, I don't think that's a proper approach. You know, it --

MR. MINNERS: Well, that's what I want to get at. Is that the difference between us? That is -- our intent is to put the burden on the industry to do that work, and we, we were not going to try to be any more specific than that. And that's what I'm trying to understand, and do you think that we should go more specific?

VOICE: Well, I think that collectively we have to go further and see whether it's a desirable and achievable goal or not, whether it can be reached. If it can't be reached and can't be achieved, there's no use going through spending all the money that's going to be involved in doing this. This is not going to be a cheap installation.

MR. BELTRACCHI: I'd suggest that --

MR. MINNERS: If you make a comment on that, I would suggest that you put in some kind of a program for doing this study which I think you suggested.

VOICE: Okay.

MR. BELTRACCHI: Yes?

VOICE: I assume this 696 is going to replace the implementation on the instruments for the safety display similar to what is stated in the 5/78 and 6/16 and the Eisenhut letter that you have to have something displayed by

January '81 in the control room and Technical Support Center?

MR. BELTRACCHI: No, see, well, no, the -- well, that -- you want to address that one, Steve?

MR. RAMOS: You're addressing really the TSC and EOF. The SPDS has never had a requirement to have displayed by 1/1/81.

MR. BELTRACCHI: Designed.

MR. RAMOS: Just the design.

MR. BELTRACCHI: Designed by 1/1/81. Installation by '82.

MR. RAMOS: TSC and EOF were supposed to be installed by 1/1/81. And yes, we are changing that date. You have to have your design in for review by 1/1/81, with the full implementation by 1 April '82.

VOICE: How about the Eisenhut letter? That's -- that has you have to have --

MR. RAMOS: Which Eisenhut letter?

VOICE: April 22.

MR. RAMOS: Well, that's been superseded by NUREG 696 and also by Eisenhut's letter of August the 1st, which gave you a new schedule.

MR. MINNERS: Hopefully, I don't confuse it, but there are requirements which are the Lessons Learned requirements to have new instruments, like inadequate core cooling and containment pressure and things like that, those

dates are unchanged by this NUREG report.

MR. BELTRACCHI: Yes, question in the back?

VOICE: Well, one of the requirements for input into this system you have listed here as "containment integrity." Do you envision that as meaning that each isolation valve must be input into this system? Or are you looking for some other method?

MR. BELTRACCHI: No, using -- I think that the -- I think the Parameter Display System should concern itself with variables and not status of systems and valves. It keeps it -- that would be consistent with keeping things minimal. I would consider such things as systems and valves as another monitoring type function.

Yes?

VOICE: In the August 1 Eisenhut letter, your schedule shows a submittal of the design by January 1 and then a review and approval process over the next four months. But it occurred to us that there is hardware procurement and basically getting on with the project by the licensee.

MR. MINNERS: We have a better slide which shows implementation schedule. Maybe you can hold that until Mr. Ramos puts his slide up. And if that doesn't answer your question you can raise it again.

VOICE: Is this also the time to ask philosophy

questions? There is management philosophy on pages 3 and 4.

MR. MINNERS: Could I ask you to stand up, so that everybody in the room can hear you, and use the microphone if it's convenient?

VOICE: On pages 3 and 4 for 0696, there are -- there's management philosophy described of the control of information during an event. I don't know whether I should address the question now or hold --

MR. MINNERS: You're talking about the Nuclear Data Link part?

VOICE: Well, it's under the Nuclear Data Link, but I'm referring specifically to things like the primary role (WORDS UNINTELLIGIBLE) compliance is "to inform" -- and I'm skipping here -- "inform officials and the general public about all aspects of the incident and response activities."

MR. MINNERS: That's the NDL function, yes.

VOICE: All right. Let me go down a little bit further, seeing I've started. The next paragraph: "Certain key decisions, particularly those relating to recommendations for actions affecting the general public and those involving changes in NRC's role in responding to the accident, will remain with the executive management team director."

And if I go to page 4 for a second and read one or

two other sentences. "When an incident occurs, the NRC must be prepared to provide advice and support to the nuclear facility operator, off-site state and local authorities, and other federal officials." And skipping down another sentence: "In addition, the NRC is also responsible for keeping federal, state, and local officials and the general public informed about all aspects of the incident and subsequent emergency response activities."

You have assumed those responsibilities by those sentences I have just read. What is the utility's responsibility for information flow to the general public and advice on things like evacuation?

MR. MINNERS: I think that will be discussed by Mr. Ramos when he talks about the Emergency Operations Facility. Let's try it that way, and then if it doesn't satisfy you, you can bring it up again.

VOICE: Fine.

MR. BELTRACCHI: Yes?

VOICE: In the response you both had to an earlier question, the impression I get is that you view your role as being that of the regulator and, therefore, the burden of the analysis in developing the individual designs will be on the licensee or the industry.

MR. MINNERS: That's correct.

VOICE: Now, in that regard, am I correct in

assuming that the staff would then recognize that it has the responsibility to have some flexibility in terms of these very prescriptive, quantitative reliability goals that have been specified? By that I mean, if an analysis, both the human factors analysis and a reliability analysis show that the reliability goals that have been specified are unnecessary to meet the functional objectives of the systems, then will the staff have the flexibility to allow those goals to be relaxed?

MR. MINNERS: Well, I think we have our usual problem of being -- giving criteria and yes, and yet giving specific enough that the designer can operate with it. And maybe we've gone too far one way, in putting down a number. I didn't see any other way. If you just put down some words as to it should have good availability or whatever, or highly reliable, that certainly wasn't good enough, I think, to really tell anybody what we wanted. So we ended up putting down numbers.

If you have another suggestion of a way to write it, we're certainly open to -- to do -- to look at that.

VOICE: No, I think I'm just trying to distinguish between a reliability target and an overall goal which you found is the only way you can communicate your desires. It's what we do with it once we have it that I'm concerned with.

MR. MINNERS: Are you worried that we're going to make it a very hard and fast line that if you go a little bit --

VOICE: Yes.

MR. MINNERS: Okay.

VOICE: Yes.

MR. MINNERS: Well, I again suggest that you look at the words and see how you'd like to qualify them so that your thought gets through. I understand your problem.

MR. BELTRACCHI: Just as another comment. Our safety systems, we're looking at the unavailability of ten to the minus four, and considering that these have to be automatic and respond in the form of an automatic response to shut the plant down. Safety Parameter Display System being a function important and serving a function important to safety, we didn't feel it had to be as high an unavailability, and yet had to be distinguished from non-safety functions. Many plant process computers have been advertised to be or have been told to the staff to be on the order of ten to the minus two, so it would seem that this would be an appropriate goal, ten to the minus three.

Yes?

VOICE: Could you explain for me again the difference between the NUREG document, the reg guide, and a rule? And everyone's been saying these are requirements

today.

MR. BELTRACCHI: I'll turn to our lawyer.

MR. MINNERS: We didn't bring a lawyer with us today, and maybe that was a mistake.

A rule is something that the regulated licensee has to comply with. And we have tried to supplement those rules, or maybe I should -- with other documentation, which is generally regulatory guidance. And the regulatory guides always have a disclaimer on them which says, "This is just an acceptable way of doing it, if you do it this way we will consider that you have complied with the applicable rule; if you can propose other methods and justify other methods, then we may accept them." It's not the only way to do it.

I have noticed myself that we used to pretty much keep all requirements in regulatory -- no, all that kind of guidance in regulatory guides, and we had saved NUREG reports to give backup data and what I would call "facts," in the past. Somehow we have slipped over the line and now we are also putting guidance into NUREG reports. I am not sure that's a conscious decision, but it's happened. And I think the NUREG reports now are very similar to the regulatory guides. And what might happen in the future is that some of these NUREG reports may be transferred later into regulatory guides.

And it may be a fine distinction; as I said, in

the beginning, people may not think there's any real difference. But it is there. People will bring in other solutions to the problems, and with a justification -- you can't just say, "I want to do it this way" -- but with a justification; the staff will look at it and, based on what's presented, accept it or reject it. And hopefully, we do that with an open mind.

But I think, you know, we have to recognize that once we have done a lot of work in developing a position in a NUREG report and taken everybody's comments into consideration, you're going to have to have a very strong argument for saying you want to do it a different way. And we all recognize that, and I think that's why people think the difference is small, in that regulatory guides almost effectively become rules although they're not.

Does that explain your question? I think in this case the NUREG document we intend to be an interim document and that later on we'll put it into a different form.

MR. BELTRACCHI: Yes?

VOICE: I'd like to have a little clarification in the human factors area as regards the SPDS. In your introduction, you said that the SPDS display is to be available to the shift technical advisor, the shift supervisor, and the control, or the reactor operator from their normal operating locations. I think that's fine

during normal conditions: you can accommodate that. But when a reactor operator gets into a transient situation and he's trying to get himself out, he doesn't have an area in the control room where he's working in any one location, and it will be very difficult to give him this display in all those locations, for one thing. And the second thing, he shouldn't be using this display during the event.

MR. BELTRACCHI: The display is more of an overview function, and it was from that intent. Okay? We did feel that we should be able to show to an operator so he should have -- if he showed -- should desire the overview he would be able to see it.

We've also had some requests from people to be able to partition this and present it -- or, some people have promoted designs that would partition this and present portions of it at various work stations.

Again, the intent was an overview, okay; it was not intended to have it such that it would be, the overview would be, at each work station.

Yes?

I'll get to you in a minute.

VOICE: I hate to dwell on a point, but this seismic qualification really bothers me. If -- you mentioned that the core protection calculator, which, I believe, is built by Combustion Engineering, is seismically

qualified. Now, if I recall correctly, that was built specially for Combustion Engineering for one computer manufacturer. If I write a specification that says that this system, including the CPU, the CRT, et cetera, has to be qualified to this response spectra which I put in my specification, and if I send it out to some of the major computer manufacturers, which I think we'd like to, to just get a reliable system, companies like Foxboro, IBM, Control Data, et cetera, I would be very confident that I would not get any response from these vendors.

We've already looked at a lot of vendors as far as seismically qualifying computer systems, and we've gotten a lot of negative responses and only one half-positive response.

MR. MINNERS: Well, what's your counterproposal to that? I think you realize there's got to be some kind of environmental, natural environmental qualification, like earthquakes, floods, and everything. How would you go about specifying something like that?

VOICE: To be able to function, I don't think you're going to be able to verify that a computer is going to function during an operating basis earthquake. You can probably --

MR. MINNERS: But you certainly have to put something on it. You don't want it to go out of service

every time a truck -- to exaggerate -- every time a truck goes by. There must be some level of vibration qualification that it has to have.

VOICE: Well, dealing with these vendors is very difficult. Either it's qualified or not qualified. And I'm not suggesting an alternate proposal; I'm just saying it's going to be extremely difficult to get any computer manufacturer to have, develop a QA program and qualify a system for any seismic requirements.

MR. BELTRACCHI: That seems to be in contrast to some of the computer vendors that have called me up within the last month or two, in terms of trying to find out whether their performances can meet our requirements.

MR. MINNERS: It may be your original premise is wrong, is that it's not going to be a CRT or a computer. See, we looked at it from the safety function and said this is the safety function that has to be performed, and it's the safety function that has to be operational during some kind of an earthquake -- I'm not sure CBE is the right one, or whatever, but something. And if computers and CRTs are unable to be qualified under those conditions, you have to go some other way.

I think we would suggest, is that you can buy that kind of equipment which is qualified. And I'm just trying to point out to you the different point of view. You're

looking at it from saying, "Well, I want to have a computer and I can't buy a computer that does this thing under an OBE." And I'm saying, "I want to accomplish a function on an OBE. I don't really care how the industry does it. If they do it with a computer, fine. If they do it with something else, that's all right, too."

MR. BELTRACCHI: I'd also like to add the comment that I've looked at some recent computer proposals that have been promoted by DOD, and they certainly had some rather restrictive transient requirements in there, transient loading (WORD UNINTELLIGIBLE). I can't specifically say I made a one-to-one comparison to say that it meets OBE, but I know that DOD is able to buy computers that meet rather restrictive requirements when it comes to transient loading.

Yes?

VOICE: I just want to clarify you said before about the -- in your question besides the OBE. You say that as long as we meet the reliability and as long as security of the software is in such a way that they normally can change the software, and also may be required if the -- it doesn't back up during the absolute case or whatever it is, you said we can use process computer -- right? Now --

MR. BELTRACCHI: I think we've encouraged, we've encouraged you to come back and promote, you know, to address these issues, what would you use in the words, I

think, is what Warren stated.

MR. MINNERS: The way 0696 is now written says you may not use the computer. And I'm suggesting that if you have some words which address these problems, we'll look at it and maybe we'll change the words to allow you to use process computers under certain conditions.

VOICE: Can you just take out the process computer out from the 696 and just replace with the functional requirements? Or is that --

MR. MINNERS: And I'm suggesting if something can provide those functional requirements, that would be helpful.

I think you wore them out.

MR. BELTRACCHI: Wore them out.

I guess -- Steve?

The next speaker will be Steve Ramos, who will address the Tech' Support Center and EOF.

MR. RAMOS: Can you hear me all right?

I'd like to go through this famous diagram of ours, to start out with. There's one error on this diagram. Where it says, "optional printing on the process computer to the SPDS," was deleted in the edition. It's in the NUREG, and the one in the NUREG is correct.

We put this in NUREG 0696 to show you a data flow and how we envisioned that the data would flow, from a single data acquisition system that was keyed to the NDL,

the TSC, the EOF, and the SPDS, with an option going to vendors and states. For example, the state of New York has expressed the intention of having a NDL to them, to run a similar type of an operation as we're planning in our operations center.

There is a dot missing there underneath the data acquisition system block that should be there to show that it's a common bus, basically, and it's being tapped off of there to feed the NDL.

The next slide now.

This slide shows you, basically, the emergency response facilities, with the -- what we consider the time of operation, the prime users, the data requirements, and the functions that are to be derived therefrom.

Mr. Beltracchi has covered the SPDS in great detail. So I won't address that.

The TSC, as we show on here, is a room that's near the control room, the nearest possible. Our druthers would be that it would be adjacent to it, you could go out of the control room into, through a door into, the Technical Support Center. We realize that a lot of facilities that are older and already in operation might not to do that. That's the reason why we wrote in the requirement of a two-minute easy walking distance. Still, the desire is to have it as near the control room as possible.

The intent is to provide ready -- readily face-to-face communication between the plant managers who are in the TSC and the SROs or whoever else is running the show in the control room. It's also to allow ready access to the control room for data that may not be in the Technical Support Center.

And finally, we would, as we said, prefer to be in the same building. I've talked to many, many utilities, over the last six weeks, who are proposing anything from adjacent to the control room to a mile and a half away. In most cases, those that are a mile and a half away have been turned down.

The time of operation is during emergency and recovery operations. As we defined in the NUREG, during the notification period, event or level, it's an optional thing. You can start to man it then. But when you get to the alert stage, we expect it to be fully manned, and then for all severe action levels.

The size of the facility -- we have taken as a model roughly 75 square feet per person and we have specified 25 people, which comes to 1875 square feet. You might want it larger. You might want it a little smaller -- I don't think you'll have room if you make it much smaller than that.

We've had some input from a regional director that

indicates that he wants to have 15 people, NRC people, in the Technical Support Center, which could cause a lot of problems with our current philosophy, because we're specifying five. We're taking it under advisement. We're taking comments from the NRC as well as from the industry. And we'll have go come up with some sort of resolution on that question.

As you know, we also require as part of the Technical Support Center a separate room in the same complex as the TSC for the NRC to do independent evaluations.

The minimum data requirements is Reg Guide 1.97. We said "minimum" because we realized a lot of plant-specific data is not in Reg Guide 197 and you will probably want that data in the TSC.

And a lot of questions have arisen about displays in the TSC and the EOF, and I will discuss that now.

The displays -- the data requirements are the same for both the TSC and the EOF -- the displays, however, are considerably different. The function for the TSC, as noted here, is for plant management technical support, just to help the control room mitigate the problems and get the people out of the control room into a place where they can work. It's -- the displays in there have to be such to help them make those types of decisions to help the control room.

Now, in the -- when you start to get into the site

-- or -- yeah, the site emergency situation, you will be starting to man the EOF, and it will take some time, maybe an hour, two hours, to man it completely. During that time period, it's expected that the Technical Support Center will perform the functions of the EOF. Therefore, you need the meteorological and the radiological data in the TSC to do that function.

The rad' team that you'll have in the area will report to the Technical Support Center until they can shift that reporting to the EOF. The NRC will be dealing with the TSC throughout this period of time, to ensure they have a clear picture of it.

So the displays in the TSC will be considerably different than those in the EOF.

The EOF will have displays designed to mitigate off-site problems, radiological problems -- evacuation paths, routes. You'll have the data there and availability of the data so that in the event you need to make a decision on plant of a corporate structure or NRC you will have the data there to help you make that decision.

Again, it's to support the -- it's a backup support for the TSC. But the primary purpose of the TSC, as I said, is to support the control room. EOF is to take control and manage the off-site mitigation of the problem and to support the TSC.

Some of the questions that have arisen concerning our unavailability factors of .01 and .001. Originally we had .001 as the unavailability factor for the TSC and all the components within it. We backed off to .01 for the overall requirements for the TSC, because industry had strong objections to the .001 and because it would require you really to have two computers or a much more sophisticated computer; and it was decided that we could live with .01 as an overall system design, because the primary control of the reactor from a safety standpoint was still the control room and not the TSC or the EOF.

We retained the .001 for any individual parameter, because the inputs through the various amplifiers, et cetera, should meet a .001 if you're going to have the data at those facilities.

We put a caveat under staffing that, basically, we said you had to have sufficient personnel to perform the plant management functions. We're in the process of doing a detailed study of the data flow as we envisage the data flow into and out of the TSC and the EOF and looking at it both on the communication and data standpoint to determine what data comes in, how long it should be there, what type of people should manage it or massage it, and then the outflow.

That study we expect to have done in about another six to eight weeks. At that time we will give you the

benefit of that report.

It, hopefully, will give us, also, a clear picture of the type of displays that we expect to have in the TSC, as a model, which we'll also provide to you. We're not trying to tell you how to design it, because you've asked us not to. But we are telling you, basically, what we would like to see in there.

So, with these staffing -- this report on staffing plus the functional -- not the functional criteria, but the acceptance criteria which we're in the process of developing, you should be able to come up with a good design by the 1st of January.

We have bandied the word around about "structure" of the TSC. Obviously, if it's within the same building as the control room it'll meet the structure. If it's outside, we, again, are saying not seismic 1E, but we are saying that it must be a substantial structure. In other words, if you put a butler (?) building, it's not going to be acceptable.

Go on to the next slide down.

Trying to relate a little bit of the functions of the various facilities, I don't know if this diagram does a very good job of it, but it's an attempt to show you that the Technical Support Center is very close to the control room, you must have both data and communication links, and the EOF must be outside the -- off-site and also must have

the data and communication links; there must be a communication link with the control room and the NRC, in either case.

One line that's missing is the direct line from the control room to the NRC, which you would use in the very early stages of accident mitigation.

VOICE: Excuse me. Can you leave that on? Aren't you in conflict in some of your comments with 696, where you have direct communication from the EOF to the control room? In 696 you said that communication has to go through the Technical Support Center.

MR. RAMOS: You're right. That diagram -- yeah, you're right. That communication should be with the Technical Support Center, directly with the Technical Support Center.

The intent is to get it out of the control room, so they don't have to manage the -- or where you're going to put the rad' teams or what type of rad' people you need out of a control -- out of the site complex.

VOICE: Do you set any requirements for that communications as for as reliability?

MR. RAMOS: Who's asking the question? I can't see.

Yes?

VOICE: Have you set any requirements for

communications links reliability?

MR. RAMOS: Only that we -- we require that you have dedicated communication, primary communication, and that you have priority dedicated backup communications. It must be a two-way set of communications.

Backing up a little bit in the philosophy of the TSC, most of these items I've already covered. Here, in this second bullet, you may want to have a full 25 people in the TSC, depending on what the emergency action level indicates. And we hope to show you this in the staffing report when we finish that.

Then we highlight on this slide that the plant operation management will shift from the control room to the TSC upon activation of alert and higher emergency action level, and the requirement for both radiological and meteorological data.

VOICE: Will your staffing report address the potential control of these 25 people from having them all inundate the control room at one time, since they're within two minutes' walking distance?

MR. RAMOS: Would you repeat the question?

VOICE: Will your staffing report address control of the 25 people's access to the control room, since they are within two minutes' walking distance, so that they will not inundate the operation?

MR. MINNERS: There already is a requirement that the plant set up procedures for access to the control room. They may have to be modified when these facilities are put in place, but there's supposed to be some procedure -- the things I have seen is, they give people different badges and if you've got a blue badge you can get into the control room, if you don't have a blue badge you can't get into the control room. And that's already a requirement that's supposed to be implemented.

MR. RAMOS: Yeah. The Emergency Operations Facility, again, is a facility near the plant. Now, the words that are in NUREG 0696 say no further than five to ten miles. Many utilities have argued with me that that's not very near the plant. And I tend to agree that is not near the plant. But that is the direction that we had in the discussion with the Commission on the 11th of July.

VOICE: Excuse me. You said before that staffing of the EOF wasn't required until you get the site emergency classifications and then you have to --

MR. RAMOS: Agreed. That, that's why it should have been changed, in that it wasn't but that's optional for the alert stage and it is required for the site area emergency and general emergency levels. And the s covers it in that vein.

I apologize for that change -- that error.

VOICE: Excuse me. Would you expand on this five miles restriction (WORDS UNINTELLIGIBLE)?

MR. RAMOS: Yeah. I was just about to.

We've had many discussions about that location. We've dealt with other countries, to see what their philosophy was on where this facility should be. Some said it should be outside the evacuation zone. Some have said it needs to be as close to the plant as possible. Some have said it's a matter of convenience, wherever you have a center that you can readily adapt.

In our recent discussion with the British, they're trying to put an EOF, comparable to what our, what we consider an EOF, within one to three miles of their facility. And we originally had it in NUREG 696.

The concern that came up about the five to ten miles was the fact that if you put it in one to three miles it has to be a very, very substantial structure, to meet the shielding requirements, and the Commission was concerned that if you had to evacuate and you didn't have a substantial structure, with its own ventilation system, if you had to evacuate this facility, at the time when you would need to have data flow continuous, when you were advising the public on where the problem areas were -- so, at their direction, we changed it to five to ten miles.

I've had many utilities come to me and say that

that's too far, because you're now designing a system or a facility to handle the very, very low probability accident.

We're looking for as much comments as you people have in this regard, where it should be actually located and the reasons therefor.

We have both sides of the fence inside the staff, also. Some feel that it should be within a mile to three miles of the plant. Some others are willing to accept it out to ten miles.

VOICE: You don't seem to be talking about anything within a mile. Is it your intent to say that it should never be closer than a mile?

MR. RAMOS: No. No, we've never said that. We're saying, basically, it can be anywhere in the ten-mile area as long as it meets the habitability requirements so that if you have to evacuate you do not evacuate the EOF, you have continuous flow of data at all times. And that's what NUREG 696 now says.

MR. MINNERS: I think that some people don't seem to think so.

MR. RAMOS: Yes?

VOICE: I was at the Commissioners' meeting and they seemed to be pretty adament of this five to fifteen miles and no closer than five miles. They were not only worried about the habitability of the facility, but they

were also worried about access to the facility. No matter how habitable a structure you have, if you don't have access to it it's no good to you.

How are you going to address the Commissioners? And I thought they said they wanted at least five miles out, no closer than.

MR. RAMOS: No, when you read the final words in the transcript, it said they'd be -- they, actually, the words came out and Mr. Hendrie said that he would accept up to about five miles, if you want to take his exact words.

VOICE: Up to about five miles he said?

MR. RAMOS: He said about five miles, yes.

VOICE: Is one mile okay?

MR. RAMOS: As we've written NUREG 696, one mile is okay as long as it meets the habitability requirements.

VOICE: Thank you.

VOICE: The habitability requirement is the same as that for the control room and TSC, no difference?

MR. RAMOS: I didn't say that. I said --

VOICE: Well, then define "habitability."

MR. RAMOS: The habitability requirements are such that regardless of the type of accident you do not have to evacuate that facility. Which means that you have to design it to handle all types of radiation, and so it has to have its own filtering, own ventilation system.

VOICE: Well, that sounds like the control room, as long as you're not talking about (WORDS UNINTELLIGIBLE) accidents. You're changing the criteria for the EOF different than the TSC and the control room and saying now you are talking about (WORDS UNINTELLIGIBLE).

MR. RAMOS: You can interpret it that way.

VOICE: Yeah, but I -- that's --

MR. RAMOS: I'm saying, all I'm saying is --

VOICE: -- (WORDS UNINTELLIGIBLE) regulation (WORDS UINTELLIGIBLE).

MR. RAMOS: I'm saying, is that you cannot -- when you build that EOF it has to be of such structure and habitability that you do not evacuate it during any type of accident. That's all.

And I'm not going to define what that accident is. It's for you to define the accident.

VOICE: But let me ask the question: has the Staff looked at that criteria and decided the fifteen miles, or ten miles, or three miles, is there a building that can meet those, to any class of accident?

I think that criteria really is no criteria.

MR. MINNERS: Once again, I would suggest that that, the purpose of this is to try to have people provide us with your comments. If you think our criteria are inadequately written, we would welcome and encourage you to

send us criteria written the way you think they ought to be.

VOICE: What capacity do you project for this? Is this the media center, as well?

MR. RAMOS: No. We originally had in 696 that it had to be a media center, also in 654, that it had to provide press facilities. We are leaving that up to you. It's an optional function, for you to provide media briefings if you want. The only thing we're requiring is that that facility handle the off-site problems associated with the accident, and also that it have communications so that it can communicate with the state, local, and NRC, and to control the mobile radiation monitoring teams, and have the ability to access of the meteorological data that's available in that area, so that they can plot plumes if there is a plume, and also to help control and have the data available to evacuate if it's necessary to evacuate -- they'll have the routes laid out and what have you.

VOICE: Does this mean there's no longer a need for an alternate EOF?

MR. RAMOS: That's correct. You will not find the term "alternate EOF" in the -- in 0696.

VOICE: Why is that concept being abandoned?

MR. RAMOS: Why, the alternate? Because the Commission requested that we do not have four facilities. And we only have three facilities. And they did not want us

to have an alternate either way.

Now, if that word is still in there, it was supposed to have been taken out.

MR. MINNERS: Did you say page 12? Because I can't -- I thought I read it, too, but --

VOICE: Page 19. Oh, yeah, about the middle of the page on 18 and top of the page on 19. "The alternate EOF need not be elaborate (WORDS UNINTELLIGIBLE)."

MR. RAMOS: Well, I'm glad you brought that to our attention, because it's coming out. There will not be a need for an alternate EOF.

VOICE: Well, not a need for it, but how about that as an alternative that could respond just as the primary EOF that you're specifying here?

MR. RAMOS: We'd have to see your plan and see your proposal and make the ruling on it at that time.

MR. MINNERS: The problem that was brought up in the Commissioners' meeting was, is that if you had to evacuate the EOF to an alternate EOF, that would throw off all of the communications at that time and at a very critical point. And that's the, I guess that's the question on that.

VOICE: Why is that? You have the TSC and you have your own, sir, that all has the same data?

MR. MINNERS: But the evacuation is going to be --

the TSC, if you were in that situation in which you had the EOF manned, the TSC would be basically taking care of the plant and the EOF would be directing the evacuation. So those people who had to be coordinative for evacuation would be in the EOF. And then if you moved to an alternate, during that period there would be lack of communication. And that's the problem that has to be addressed, I think, if you're suggesting an alternate EOF.

VOICE: Pardon?

MR. MINNERS: If you wish to suggest an alternate EOF, I think, that's the problem that you have to address and say, "What do I do while moving all these people out of the EOF?"

You might say, "I'll move them into the TSC." I don't know. You know. I'm just trying to point out to you what I think the problem was raised with having an alternate EOF.

VOICE: Can I just expand on that just for a moment? The concept of an alternate EOF was such that should you need to have radiological monitoring it could be done from an alternate location and some locations near site. And you're saying right now that it's okay to have people in a building that may be well shielded and well ventilated -- or, ventilated in terms of protection. But what about those people that will be out in the plume

monitoring and having to have access to the EOF?

It seems to me it's ludicrous to have a group of people inside a building maybe within a mile or so of the reactor and not have other people be able to get to it should evacuation be required; but, rather, it's much more appropriate to have a central facility where monitoring teams could come back to, and in a relatively habitable location at some distance removed from the plant site, where evacuation would not be a problem, as an alternate facility. And if that was (WORDS UNINTELLIGIBLE) --

MR. RAMOS: That falls into the argument of having the TS -- the EOF, rather, at ten miles away.

VOICE: It certainly does -- or having a primary for most accident situations and an alternate, a backup position at ten miles or less.

I think that's a concept that I don't think should be abandoned right now.

MR. RAMOS: Well, that's the purpose of 696, is to get those comments. It's written in the vein right now as we were given direction to write it and to put it out for comments.

MR. MINNERS: I think the Commissioners were looking at if you had it way out it would serve both of those functions.

MR. RAMOS: Yes.

MR. MINNERS: You're talking about the situation in which you have a hardened, if you'll pardon the expression, close in and then you'd need an alternate. But if you had an OEF which was five to ten miles out, the concept was, then, that you could do all of those things.

VOICE: Well, if I may, the reports that we get from our radiological people are that they would like and have to be close in to the plant to provide plant support. That's the reason for putting it close to the site, so they can have so-called face-to-face discussions with plant officials as well. And they feel it's important to be in the area to conduct the kind of monitoring that will be required.

MR. MINNERS: I don't -- now I don't understand your comment.

VOICE: Well, what I'm saying --

MR. MINNERS: Because you seem -- let me try to get it straight now. I just want to understand. I'm not trying to argue with you. You're saying that you'd have a close in EOF that would be habitable, and then you'd have an alternate EOF where the radiological teams could go. And that would be, have to be far away for them to have access.

VOICE: What I'm saying is that there will be a need to provide, whether it's habitable or not habitable, access, close access to the plant for support people and

others. So the point is, in a real emergency that requires evacuation, say, within five miles of the plant, you will have some personnel near site providing assistance to the plant, whether it be technicians or whatever, (WORDS UNINTELLIGIBLE) the site itself. That is a requirement we felt it's very important to have, to provide input for the plant site, the plant operating staff. Which is why we placed ours, then, at closer than, say, the ten-mile location, which would make the response to the emergency unmanageable.

MR. MINNERS: I won't argue that point. Many utilities are giving us the same argument -- they'd like to have it in close.

VOICE: Sure. That's what I'm saying.

MR. MINNERS: It's a balance of factors, and I guess people have a different balance.

VOICE: It depends on where they're EOF is.

MR. MINNERS: That's right.

(Laughter)

VOICE: Do I understand the staff's position to mean that you can't have an EOF beyond ten miles no matter what the showing of the utility?

MR. RAMOS: Well, that's what the NUREG says.

VOICE: Yes. Well, I'm not sure --

MR. RAMOS: We will --

VOICE: See, I have a people with your having said that --

MR. RAMOS: We will -- well, that's what the NUREG said. As I say, we will take into consideration -- in other words, if you had it at eleven and a half miles, we probably would not throw it out.

VOICE: You're probably talking about my company.

MR. RAMOS: We know what your view is.

VOICE: I guess the concern I had was that if the EOF is primarily for off-site functions, many times the location should be dictated by the interface with the local people who are going to have to respond to any accident. And some utilities have very nice situations but they're -- for communications and public notification, even for radiation monitoring -- but not within the hard ten-mile zone; it may be eleven, eleven and a half, something like that. But I think the primary consideration should be the ability to interface with the state and local officials, if that's the primary purpose of the facility. And I think that that philosophy should be considered in the regulations.

MR. RAMOS: That's part of the purpose of it, though.

VOICE: I know it's part. But, of course, it seems to me that one of the primary functions of all of this is to protect the public; that's what (WORDS UNINTELLIGIBLE).

MR. RAMOS: That's true.

MR. MINNERS: Well, part of the problem is, is that the EOF has a lot of functions, and when I have looked at it, it seemed to me like maybe you ought to have several EOFs and we have resisted that and have said only one. So, you know, if you need one EOF to have the close support to the plant and you need another EOF to have close contact with the local officials and on and on, so it's a -- it's a difficult problem if you want to keep it to one or two EOFs.

VOICE: But you've got all kinds of communications within the facilities.

MR. MINNERS: But I think everybody -- and that's -- that's right, we do -- but I think everybody realizes that a face-to-face contact is different than a telephone conversation.

VOICE: Well, you've got a closed-circuit TV. (WORDS UNINTELLIGIBLE) closed-circuit TV (WORDS UNINTELLIGIBLE) this. And I guess what I'm looking for is -- and I think that's (WORDS UNINTELLIGIBLE) our comments -- in terms of what our practical approach is. Each site is different, as we already know.

MR. MINNERS: If I thought that telephones and letters and TVs were adequate communication, I wouldn't be here.

MR. RAMOS: Yes?

VOICE: I'd like to go back to the comment that the gentleman in the middle made about near-site EOFs being used to control evacuation. I can't think of any case at all offhand where (WORDS UNINTELLIGIBLE).

MR. RAMOS: There are some emergency plans that have the local people in the EOF, and in those cases the plan is for the evacuation to be controlled from there.

VOICE: I don't think so.

MR. RAMOS: Now --

VOICE: I think you're mistaken. I think if you will look in their plans, you will see that their evacuations are controlled from their own EOC and not from the EOF.

MR. RAMOS: It's a combined EOF and EOC.

VOICE: Where is that? I don't know of any.

(Pause)

MR. RAMOS: I mean, we can stay here and bang that around all day long.

VOICE: But that's a very important point.

MR. RAMOS: But the EOF function itself, you're right, is not going to control evacuation. It has a recommendation role, an advisory role to local and state. When the state and the local are co-located in the EOF, then that function will occur there.

VOICE: I'm sorry, that's not true. That's for

collection and monitoring of data and for assessment, and it's not to be used for evacuation control.

MR. RAMOS: Well, I don't -- I don't want to get in an argument.

MR. MINNERS: I don't understand your comment. Are you saying that there is none? Or are you saying that you can't have state and local people in the EOF or just that nobody is doing that?

VOICE: I'm saying the purpose of the EOF is not to direct and control any operation of state and local government. It is simply to make the assessment of the radiological situation vis-a-vis the state and local. Now, what it's used for for the licensee, I don't know.

MR. RAMOS: I'm not disagreeing with that statement. I'm saying in those situations where they're both co-located in the same facility -- and it may be ten miles away -- the intent in those plans is for that control to evolve from that facility.

VOICE: Do you plan to have county commissioners in your EOF?

MR. RAMOS: In some cases, yeah.

MR. MINNERS: If they'd like to.

MR. RAMOS: It's optional right now to guard it.

VOICE: But it is not a requirement.

MR. RAMOS: That's correct.

VOICE: I don't think the EOF --

MR. RAMOS: Its function, the function of the EOF, you're right, it is not the function of the EOF to control evacuation. But if it becomes a combined EOF-EOC, then control can be managed from that facility.

VOICE: Then let's call it -- and it's still the EOC for state and local officials.

MR. RAMOS: Fine.

VOICE: And then the --

MR. RAMOS: I'm not going to argue that point.

MR. MINNERS: You're using the term "EOC" as what the state and local officials use?

VOICE: That's correct. Their (WORDS UNINTELLIGIBLE) control center.

MR. MINNERS: Okay. I understand.

VOICE: Would you just go back to a comment you made early on about the Nuclear Data Link to state or local? You mentioned that New York State had made some inquiry into that. I'd like to know what your response was to this.

MR. RAMOS: We didn't respond to it. The State of New York can do whatever they want to do. We're not going to tell them what to do and not to do. We're providing in the system for them to plug in. That's all.

VOICE: Where are you providing for them to plug

in -- with you or with us?

MR. RAMOS: With you, the licensee. We're just saying that we'd provide an optional line there to plug into the state or vendors or whoever else.

VOICE: It my understanding, from remarks at early meetings providing guidance, that the staff position was strongly against that connection to state and local government on parameters in the data link such as --

MR. RAMOS: Well --

VOICE: -- what's going on in the reactor and so forth. Is this a -- this seems to me to be a rather dangerous change of position on the part of the staff.

MR. RAMOS: Get that first slide.

We're talking about this line over here. And if you look at it in the diagram, it says, "Optional Vendor and State" -- instead of "States," that's an error. And there are many utilities that are plugging into the vendor. There is no reason why there -- that a plug can't be provided there to give the data to the state. And that's all we're showing.

I'm just saying that there are some states that are considering it right now. New York is one that has mentioned it.

VOICE: But why I'm raising the question at this point: the plugging in to not just off-site radiation and

meteorology data but in-plant parameters is part and parcel of a -- at least in this state, in New York -- an effort to get the state into the regulatory business over nuclear power plants; or, at least, that's the objective of a fractional group in Albany, and, I understand, in certain other states. And on that basis, it's my understanding that the regulatory staff was strongly oppose to that; that we're not talking about the information needed to manage state and local off-site response, but we're talking about information on managing what's going on in the plant. There's a big difference.

MR. RAMOS: We understand. And we basically agree that that is a staff objection. However, if the states want that information there's nothing that we can do to stop it. We have no authority to stop them from getting at that.

VOICE: The potential is there, though, that it will supersede the staff's recommendations during --

MR. RAMOS: No, I don't think so.

MR. MINNERS: No, I don't think that's true. I don't think that you're under the authority of the state if they tell you to do something.

At Three Mile Island the state told them to do something and they did it. Which may have been unwise on their part. But they certainly did not have to, legally, comply with that requirement -- that request.

MR. RAMOS: Yes?

VOICE: While you're on that chart, could you explain the difference between that chart and the one that is now in the Reg Guide -- NUREG and why?

MR. RAMOS: The line that says "optional from plant process computer" has been deleted.

VOICE: I can see that. But why? And why did you eliminate the processor --

MR. RAMOS: Well --

VOICE: -- aspect? Just so I can understand what your thinking was between July 8th and whenever this thing was done.

MR. BELTRACCHI: We felt that the functions that were being performed within the process computer, modifications of those functions may very well inadvertently have affected the parameters, the variables, that were associated with the Safety Parameter Display and therefore would lead to false information.

VOICE: But why did you eliminate processors from the Safety Parameter Display System?

MR. BELTRACCHI: I think we addressed that issue previously, and Warren, in a sense, that. And if you wanted to promote an alternate approach for means of specifying how the process computer could be used, you're free to do so.

MR. RAMOS: We've had a few utilities that are

coming down the line, that aren't -- that don't already have an old-generation process computer, proposing just that, to use their process computer, if they can show us that it meet our unavailability factors, the isolation factors, and the safety factors; and we said we would take a look at it in their proposal.

Yes?

VOICE: Could you explain how 0654 and 0696 are being coordinated? And what's the current thinking on the interactive data link for the Emergency Operations Facility?

MR. RAMOS: Six nine six will take precedence over oh six five four, which is in the process of being revised right now.

MR. MINNERS: Is there an inconsistency in that?

MR. RAMOS: There is a certain amount.

Pardon?

VOICE: If 0696 is being -- taking precedence, why is 0654 being revised?

MR. RAMOS: Because of the comments we received from -- about a two-, three-inch set of comments that we had from the industry, is the reason why we're revising 0654. It was out for interviews and comment when we issued it in January.

MR. MINNERS: Oh six five four does a different thing than oh six nine six.

MR. RAMOS: There are several Reg Guides and NUREGs that interface with 0654, such as Reg Guide 1.23 and Reg Guide 1.97 and NUREG 694, NUREG 660, 578, there are several of them, as far as implementation and -- and 0694, which is a recent one that came out that discussed what's required for fuel load in low power and for full power requirements.

So 696 was done with the knowledge that 654 was in the process of revision and that it will take -- it will provide the needed criteria for the TSC-EOF that 654 does not do right now.

That answer your question?

VOICE: No. The question was: what's being done to coordinate the two? And you're telling me nothing --

MR. RAMOS: It's being done, being done in my office. So, you know, we have the same group working on both documents.

VOICE: Well, why aren't the requirements put in one and the same?

MR. RAMOS: They will be when we're finished.

MR. MINNERS: I didn't realize there were any significant differences. Are there?

MR. RAMOS: Yeah, there are some.

MR. MINNERS: You've got some examples of problems between the two?

VOICE: Yes, 0654, all it points out the format that the data is going to be transmitted with.

MR. RAMOS: Which data are you talking about now?

VOICE: The data that it requires is different than, say, what 1.97 requires.

MR. RAMOS: Data that 1.97 requires is a minimum data base for the TSC and EOF. It does not lay out any format on the data display.

We have not laid out the criteria, acceptance criteria for the TSC and EOF. And we expect to do that in the next --

MR. MINNERS: I think as a general --

MR. RAMOS: -- six weeks or so.

MR. MINNERS: That's a good general comment, and if you can help us to straighten out the inconsistencies, if they are any, between the two documents, we'd appreciate it. They're intended to do different things, I think; and you can't get rid of one and replace it with another.

MR. RAMOS: Well, they don't really do different things. Six five four lays out the overall criteria for your emergency plan and for overall emergency preparedness at a particular facility. Six nine six is trying to integrate the various emergency response facilities, and it expands abive and beyond 654 in that it includes the NDL and SPDS, which it never did before, 654 doesn't do; 654 doesn't

really address the TSC.

VOICE: I have a question concerning the monitoring systems that you have mentioned for both the Technical Support Center and the EOF. Does this make portable instrumentation now unacceptable to monitor radiation levels and airborne levels in these two centers?

MR. RAMOS: Not entirely. There will have to be a combination of both. When I said radiation monitoring teams, there are several -- not several, there are some facilities that have radiation monitoring vans that they'll use for portable -- not portable, but mobile radiation monitoring. The NRC has some that will be plugged into this overall system. And there will be some hand-held, portable system that'll support this.

MR. MINNERS: I thought his question was within the center.

Are you saying in the environment or in the center?

VOICE: In the center itself.

MR. RAMOS: Inside, you mean, the EOF and the TSC?

VOICE: Well, on the top of page 18, it starts off, "Permanent radiation monitoring systems shall be installed in the EOF."

MR. RAMOS: Yes. Okay. I was thinking of something else.

VOICE: And then it goes on to describe these

systems as having the capability of distinguishing between the presence and absence --

MR. RAMOS: Yes. Our intent in 696 is that they be permanently installed, not portable, not portable monitors.

VOICE: Are you talking about automatic iodine analyzers in the EOF?

MR. RAMOS: We are?

Okay.

Yes?

VOICE: A quick question. Five to ten miles -- is that air miles or road miles?

MR. RAMOS: As the crow flies.

(Laughter)

As long -- again, as he said, as long as it's within 20 minutes and there are no hindrances that you have no control over, like a drawbridge, for example.

VOICE: There's another statement here, in relation to the TSC to the control room, that "Provision shall be made for the safe and timely movement of personnel between the TSC and the control room under all emergency conditions." Does that, essentially, say that you're to have a habitable conduit between those two facilities?

MR. RAMOS: That's what it implies.

MR. MINNERS: Well, they can wear air masks.

MR. RAMOS: As Warren just said, if you -- you know, you can put on proper protective clothing, that probably will meet the intent.

MR. MINNERS: You know, we do have a problem. The words say "all emergency conditions," and I don't think anybody has defined what "all" means. And I, I think, you know, to be frank about it, I think that definition is going to have to be worked out. There are, obviously, conditions that you and I can conceive of in which it would be very difficult unless you had some kind of a protected tunnel that you could move people back and forth. And there's going to be a problem on exactly what is meant by "all." And I don't think we know what that definition is. I don't think we want to at this time specify exactly what the maximum conditions that we're going to require are.

VOICE: Maybe I can pick up on that for just a second. In -- we're talking of location of the EOF, we talk about habitability in the EOF or the TSC, and we keep coming back to, basically, what accident scenario, what is the design basis accident scenario. And I realize that that's a tough subject to address. I'm not sure I want the answer. But --

MR. MINNERS: We are trying to leave flexibility in the guidance.

VOICE: Yeah, but then you throw them all in there

in just --

MR. MINNERS: Yeah, but we're trying to be specific enough so that --

(Laughter)

MR. RAMOS: I think you can understand some of the problems we had in writing 0696.

Yes?

VOICE: Would you expand a little bit on why the NRC feels that permanent installantion of instrumentation in the EOF is necessary for air monitoring and (WORDS UNINTELLIGIBLE) measurement and so forth, in place of portable instrumentation, which most of the utilities have and are using and intend to use in the future?

MR. RAMOS: Basically, because we didn't want to have you, require you to have people standing around doing nothing but monitoring the atmosphere, which should be an automatic system.

VOICE: Well, it --

MR. MINNERS: Excuse me. I'm not much of a health physicist. When you're saying "portable" do you mean that --

VOICE: Well, let me give a for-instance. You take a, the basic frisker (?), with (WORDS UNINTELLIGIBLE), and you place that on one of the tables in the EOF, it gives you two things. It gives you a gamma alarm, to tell you (WORDS UNINTELLIGIBLE); and you can use it for an alarm for

that system. You can have, everybody uses air sampling. particular filters and (WORDS UNINTELLIGIBLE) and so forth, with instruments like (WORDS UNINTELLIGIBLE) to determine the specific activity for iodine and so forth in the area. You put the equipment on for sampling, for a half hour or an hour, whatever you want, and you determine the specific activity, and use the other instrument, like the frisker, to tell you when conditions have changed. An installation as an EOF, and especially for certain utilities who are already into building their EOFs, it's a change that hasn't been brought up before and now we're getting hit with it.

MR. MINNERS: I would appreciate that as a written comment, with some of the reasons why you think portable, what you call portable, which I would, I think is more manual, is acceptable. I would call it manual, because you're going to take the air samples and take them to a lab someplace and analyze them -- is that what you're saying?

VOICE: No. No. We intend to compare them right there in the EOF.

(Pause)

VOICE: On permanent, these things would have to be permanently installed in a rack or something like that and can't be picked up and moved somewhere else. Now, portable means you can bring it in and will have it there at the time when you need it, it'll do the function of the

thing that the permanent one will, and will save the investment of sticking an instrument in (WORDS UNINTELLIGIBLE) and also maintained.

MR. RAMOS: Let me leave it that you come in with your comments, explain how and what you would consider to meet that criteria and suggested word changes, and we'll take those into consideration.

VOICE: The words are just "continuous monitor" (WORDS UNINTELLIGIBLE).

MR. RAMOS: I'm not going to try to change the words today.

MR. MINNERS: Well, "continuous monitor" is part of the question. The other part of the question is reliability. And I think what the words also try to get at is a statement of reliability. We want equipment there all the time, not having it somewhere else in the plant or something. So it's a question of both continuous and reliable.

VOICE: Throughout 0696 the point is made that all these Reg Guide 197 parameters should be transmitted to the Tech' Support Center and to the Emergency Operations Facility. At the ACRS meeting about a week and a half ago a point was made to define the functional requirements for the Emergency Operations Facility and Technical Support Center; once those functional requirements are cast in concrete,

then a program be developed to define what instrumentation is required to meet those functional requirements. I had to leave the ACRS meeting, I think it was, on Thursday afternoon, and never was there for their final decision and recommendation. They did seem sympathetic to the AIF approach that, rather than putting in all 197 instrumentation, you define the functional requirements and then determine what instrumentation is required.

MR. RAMOS: Well, the --

VOICE: Did anything else come from that?

MR. RAMOS: The letter we got from the ACRS didn't exactly state what you said. It said that we should provide statements as to the end use of the instrumentation in the -- in Reg Guide 1.97. And we had a meeting last week in the staff, with Standards, NRR, what have you, to try to reconcile those comments and the direction we got from the ACRS, and we're in process of doing it.

They've given us -- how long did they give us?

(Pause)

MR. MINNERS: I have a copy of the letter, which I'd be glad to let people read, if it's of interest to them.

MR. BELTRACCHI: There is one other point that I think it might be well worth pointing out. Relative to the number of parameters in 197, which really seemed to be an issue, and the sensors, I think it's worth noting that, at

least, from conversations that I've had, and also from the letter that the ACRS wrote, there probably isn't that much discrepancy between the variables that are stated within the Reg Guide 197 list and what industry has proposed as well, from an overview. The fact that there is not functionally organized was also brought up in the letter, its functional end use. But I think the basis issue is that in terms of the number of sensors -- Ed Wenzinger, from our Office of Standards, got up and made a comment, and I think it was very appropriate -- three years from now the list will probably be no different, other than maybe five or ten parameters at most. So in terms of sensors it's probably pretty well defined.

VOICE: What is the status of 197 right now? I haven't seen that letter.

MR. BELTRACCHI: The letter, I think, states in the end that the ACRS recommended that the staff also interface with industry and resolve the issue within the next three months.

MR. MINNERS: That's their recommendation. But I don't know what Standards' schedule or what they're going to exactly do. I think they're going to -- they are in the process of rewriting it, but I don't know the official response to the ACRS committee.

MR. RAMOS: As I said, we met with Standards last

cmd3

week and laid out a list of tasking for various people. And we are in the process of rewriting 197 to meet the requirements of the ACRS. Basically, that's for a more systematic approach to how we got the list. And we're showing them in the rewrite how we got there.

VOICE: One other minor technical kind of a problem. The first time I've seen it is on page 19, where you want seismic data in the ECF, the middle of page 19. Now, that's the first time I've seen it either in 197 or any of these documents, and I just don't know what type of seismic data you'd want out in the ECF.

MR. MINNERS: But there is the caveat as needed. Well, I think it tries to be a comprehensive statement of all the kind of stuff that might be needed to say, hey, let's think about seismic data and if you think you need seismic data it should be provided.

VOICE: I would like to make a point on that. NUREG 654 calls for -- -- monitors.

MR. MINNERS: Yes.

VOICE: This is what they are addressing? Can you verify that?

MR. RAMOS: 654. That is specifically what 696 was written against. As Warren said, the seismic word was put in there specifically to be all encompassing, and it depended on whether or not it is actually needed.

VOICE: Get back to the (inaudible) of 0696 (inaudible) And for us to go ahead and make a little interpretation of this NUREG document and you then have to draw up a second technical support document (inaudible).

MR. RAMOS: Do we have your proposal in hand?

VOICE: Pardon me?

MR. RAMOS: Do we have your proposal in hand? Do we have your proposal in haud, in house?

VOICE: We have submitted our proposal, yes.

MR. RAMOS: What facility are you talking about?

VOICE: (inaudible)

MR. RAMOS: I don't see anything.

VOICE: It -- -- offsite, several pages, and there was no objection at the time. I guess our proposal would be -- one is to possibly skip the evaluation of each utility's -- --

MR. RAMOS: That is already there. You must have dedicated communication.

VOICE: And that would be -- that -- -- concerns providing interface to the support center.

MR. RAMOS: That is not the concern. It is the face-to-face interface.

VOICE: Well, the whole intention of the technical support center is to get people out of the control room. You don't have face-to-face communications.

MR. MINNERS: All the time. But there is obviously going to be a need for face-to-face communication.

VOICE: Why would you have to have to have face-to-face communication?

MR. MINNERS: Well, I think that is a difficult thing to stand up and say why you need it, but my experience has been -- -- difference between talking to someone on the telephone and face-to-face communication. We get a lot more misinformation and misunderstanding in those kind of communications than you do face-to-face. I don't know whether I could quantify it, but certainly it is my

experience that there is a real qualitative difference between talking to somebody face-to-face and on the telephone.

And in accident situations misunderstandings are very easy to occur, and I think we are trying to say in some situations you may have to. Plus, as Steve pointed out, there may be some information in the control room that is not available in the TSC. You may want to send somebody into the control room to look at it.

VOICE: Or call somebody up on the telephone.

MR. MINNERS: That distracts an operator from doing his functions.

VOICE: Well, communication perhaps between the operator and the person (inaudible).

MR. MINNERS: Then you would have a dedicated guy in the control room.

VOICE: That might be an acceptable alternative. There also might be -- there is a concern about the communications being operational (inaudible) technical support center, possibly (inaudible) members of the plant management staff to the control. An additional two or three people in absolute control would not cause congestion in the control room. Let's not be extremely rigid in this requirement. There may be alternative solutions to resolve any concerns or problems which you may have.

MR. MINNERS: Well, I think we all, I hope we all understand what we are trying to accomplish in the control room in the TSC and if you have good reasons for saying I ought to have some management types in the control room I guess that can be explained and people can evaluate it on the facts as presented.

My general conclusion is I think we are trying to make the shift supervisor guy who has the capability to do it himself and doesn't need somebody else to help him in the management sense. He is supposed to be trained in that kind of stuff. What he needs is technical support.

VOICE: Well, just in conclusion, for us to -- you know, there are nine months down the road. This will all be in the technical support center. Enrollment is there. It may be -- well, I really don't feel that this is extremely (inaudible) and to develop another technical support center (inaudible) and create an organization (inaudible). I don't feel that is the solution for us to try to build another technical support center.

MR. RAMOS: When I get back, let me take a look at your proposal or get with your project manager and our team leader and see what you are proposing and take a look at it.

MR. MINNERS: My preference was not to put any numbers in this report, but in trying to do that it was pointed out to me that it became such a vague document as

being useless, and you have showed an instance of that. I don't know how to put down some words which allow four to five minutes in certain situations and yet don't also permit people to have things in an half an hour way type of thing.

If you can suggest some better words, we would like to have them.

VOICE: As another representative (inaudible) I appreciate your looking into that. I think we just have a peculiar situation. Of course we had the old Peach Bottom No. 1 plant with the shielded area there. (inaudible) but we can provide a good technical support center right convenient to the main plant, and we can communicate face-to-face by fast track on our site from one building to the other.

MR. RAMOS: Okay. Let's take a good hard look at it. I don't know what is in there now, in the proposal.

VOICE: There is another consideration.

MR. RAMOS: But I had really not argue specifics in this discussion.

VOICE: No, no, right. I am on another subject. Consideration of instrumentation.

MR. RAMOS: Okay.

VOICE: Have you considered the use of television as a communications means or transmittal of information from the control room to the technical support center? We have

installed as our preliminary means of communications a television. We have checked it out, and we can read just about any instrument in the control room with a television. It takes a little more time than if it is right in front of you on a data reproduction screen. But with a person on the headset in each facility, giving -- we have remote panels so you can zero in on any instrument you want. From all the points before you, you need to be told what point you are training on, so that you can get the sequence, because of the lighting effect and the size of the screen and what not.

MR. RAMOS: How are you going to meet the requirements for a complete recording of all that data, training capabilities --

VOICE: Okay, perhaps this could serve as a backup and eliminate the need for seismic qualifications of the computer if nothing else, because in an event like that, which is a low probability event, and you might lose some of that instrumentation, well, this can serve as a backup. Is that a --

MR. RAMOS: We have looked at closed circuit televisions, and we pretty much have decided that that won't meet the requirements.

VOICE: What is the basic reason?

MR. MINNERS: For a backup?

MR. RAMOS: Pardon?

MR. MINNERS: For a backup?

VOICE: With people -- -- communication you can get -- you don't have to pay attention --

MR. RAMOS: You are saying you want to put this in as a backup to the data link?

VOICE: Yes, and let it serve, let it meet some of the requirements of the data link perhaps, or seismic requirements.

MR. RAMOS: Okay. Take a look at 696. We have made no requirement for a seismic requirement for the data going into the TSC or the EOF.

VOICE: I am sorry, I didn't hear that.

MR. RAMOS: There is no seismic requirements for the data going to the TSC or the EOF.

VOICE: Didn't you have discussion earlier about seismic requirements, the specifics.

MR. RAMOS: Safety parameter display.

VOICE: But is the output of the safety parameter display that is going to the technical support center?

MR. RAMOS: No. It is not the output of the SPDF.

VOICE: Well, it is the same originating equipment. I mean with all the things that you are deciding on, requiring in the safety parameter display center it is going to be a hell of an additional cost to go some other way. You will have it all coming out of one data

acquisition system up there.

VOICE: There is another handwritten slide that you saw earlier that showed -- --

MR. RAMOS: Yes.

VOICE: I mean it is obviously going to be the same piece of equipment.

MR. RAMOS: Yes, the data acquisition equipment will be the same.

VOICE: Right. And that would divert a seismic requirement which may or may not be difficult to obtain, or very costly to obtain.

MR. RAMOS: Can you address that, Warren?

VOICE: I am really not saying -- have you looked at the cost aspects of the thing, have you looked at all (inaudible) or is it a thing that are to propose and let's evaluate it? I mean I think you got to see the television. You say you have evaluated them and you undoubtedly looked at them.

MR. RAMOS: Yes, that is right.

VOICE: But I think you got to look at particular installations and particular control room layouts, everything involved, or you wouldn't be able to see it.

MR. BELTRACCHI: I will address the issue.

MR. RAMOS: Good.

MR. BELTRACCHI: Relative to that there has been a

concern in the industry to integrate a common data base, the reasons being that it would provide a good source of data that could be used for the safety parameter displays and -- -- data link, TSC, et cetera and also for plant control.

It would appear that if you, if that type of logic, now that type of thinking would proceed, you would want to have that integrated data base which doesn't necessarily have to be a computer but could be the memory portion of the computer or a memory portion with a small processor.

And it would be that that would be drawn upon by your other functions -- the TSC, the safety parameter display, et cetera. However, if it is going to be used for that important a function and multi-functions, it would appear that also should meet the -- that portion of it should meet the seismic requirements.

It doesn't necessarily mean that all aspects of it, but at least that portion of it should.

MR. RAMOS: Unless they can show the unavailability factors.

MR. BELTRACCHI: That is right.

VOICE: What your diagram shows there is that there is a data link to the EOF from the technical support center, and there is also a big parameter display console in the EOF -- --

MR. BELTRACCHI: A duplicated display in the safety parameter display in the EOF. I don't think it necessarily had to be the one that became seismically qualified. The one that is in the control room should be, and I guess that point -- or meet the seismic requirements. And I think that is the point that should be stressed.

VOICE: But there are two separate data links going into the EOF from the technical support center.

MR. MINNERS: Well, let me give you a warning about the diagram. We have arguments about the diagrams, and I personally would -- the diagrams I think tend to be misleading. There are examples that try to illustrate what we are talking about, and I hate to have the diagrams looked at as a requirement. The purpose of them are design. They are not design, but they are trying to illustrate our concept, and if you are going to hold this to the certain line that goes from here to there you are not using the diagrams correctly. They try to illustrate the purposes. And your questions are good to find out what it is. But we are not making the diagrams a design requirement.

MR. RAMOS: To answer your specific question about two data links. There is a display requirement of SPDS and in the TSC and the EOF. If you want to call that a data link, fine.

VOICE: Earlier a question was brought up

concerning the reasoning behind the -- -- NRC, of providing opinions and recommendations (inaudible)

MR. RAMOS: Can we hold off the NDl, because Leo is going to cover that as soon as we can finish it?

VOICE: You are going to cover it. That and the EOF seems to be somewhat conflicting.

MR. RAMOS: The only thing between the NRC and the EOF is communication. And the purpose of the communication between the NRC and the EOF is to exchange information to ensure that both the people in the EOF and the NRC have the same opinions or come to the same conclusions, so that at least they can argue them out.

If we didn't have that communication link, they would both be going in two separate worlds.

VOICE: The discussions on the safety parameter display system earlier, you indicated that the (inaudible) were using existing equipment (inaudible) computer --

MR. RAMOS: Yes.

VOICE: -- for that function, depending on what we could present.

MR. RAMOS: That is right.

VOICE: Also that argument was acceptable. Would that also be carried over then to the TSC and the EOF and the NDL?

MR. RAMOS: Yes. If you can prove conclusively,

demonstrate conclusively that the data coming from the sensors to the TSC, EOF are going to meet the unavailability factors and if they haven't been manipulated, fine.

VOICE: Well, we have established that one part of that (inaudible) acquisition in the computer.

MR. RAMOS: Yes. What we call the data acquisition system could be part of a second generation process computer.

VOICE: Okay, what I am saying is if we do make an argument for the safety parameter display systems which satisfied the exact requirements --

MR. RAMOS: Yes.

VOICE: You don't turn around and have a diversion requirement, the TSC, EOF, in terms of reliability (inaudible)

MR. RAMOS: I agree.

VOICE: Okay. The first question would be where you have tended to try to conduct (inaudible) using normal -- -- equipment. We have equipment that serves both the normal and the accident function, you know, for the control room operator and for the people who call in and report the accident. That is the computer room. Is there any reason why (inaudible)

MR. RAMOS: Okay, let me go back to what Warren said a minute ago. He said the diagram would provide you,

and most of the words in here are guidance, okay. If you can give us a system that will meet all the functional requirements and the unavailability factors, et cetera, et cetera, we will take a look at it and we will review it and then we will discuss it with you if we feel it doesn't meet the requirement.

VOICE: (inaudible)

MR. RAMOS: Now we have only said that for the process computer, and the reason we said that about the process computer is based on the LER information that we have had for those past few years.

Now if you have a better process computer, then the first generation process computers, I will reiterate to say that we will take a look at it, and if you can demonstrate conclusively that that data meets the .001 requirements then we will probably accept it.

VOICE: One final question. Once we have made -- -- to NRC, how do we follow that up? Are we guaranteed that there will be some advice from you?

MR. RAMOS: Let me cut the questions, and may I go on to the schedule and then allow Mr. Beltracchi to go through the NDL, because we still want to break at 11:30 if possible. Okay. Let me stop the questions now and go on with the schedule.

Okay, the overall schedule is highlighted in that

we are shooting for October 1980 to finish NUREG 0696 in final form.

VOICE: Can that be focused -- --

MR. RAMOS: No.

VOICE: Well, then you had better read it.

MR. RAMOS: I just read it. Develop -- -- criteria in October 1980. Can you read it now? I will get in the details on the next slide, but we plan to complete the STDS with existing instruments. And that date is wrong on their April 1982. That is January 1982.

And supply the TSC, the EOF with data on April 1st, 1982. And the reason why I have the June 1983 date is because currently REG GUIDE 1.97 calls for all operating plants to have all of the data from 1.97 in place by June of 1983. The new plants coming down the line right now would have to meet that in June of 1982.

This recent perturbation we have had in the issuing schedule of 1.97 they changed that end date of June 1983. Go on to the next slide.

It has got the same data on it. We only go to this slide because it has the details. Hopefully, it is correct.

(Laughter.)

Okay, this is the schedule that we provided to all of the licensees in a letter from Eisenhut on the 1st of

August.

VOICE: And that is correct?

MR. RAMOS: Yes. We are shooting, and we show there on the first slide, to develop the functional criteria for emergency facilities, NUREG 0696, and have it out in October 1980.

We have a plot there that allows you to design your system, do whatever studies you need to do and submit to us for review and approval your conceptual design description. The 1st of January 1981.

We would then review that criteria from the 1st of January to the 1st of April and get input back to you. Obviously if we got the data earlier, we would get you a reply response sooner. We are in the process right now of developing the acceptance criteria for NUREG 0696. With is a comment from here we may have to adjust that criteria a bit, but we hope to issue that sometime in October. So you will have that and you will know what we are shooting for as far as acceptance criteria.

We have a licensee develop interface and equipment specifications. We figured you would start that at the same time you would start the system studies and conceptual design. We started that block in June because many facilities are chartered, many of them chartered long before June of 1980. And we figure that would run through about

1st of June 1981.

Develop, start your building construction and whatever modification is necessary throughout that same time frame to be completed sometime around July of 1981. -- procurement starting in January. Some would start. Some have already started. And have it completed by October 1981.

Install hardware through January 1982. Software development should start the same time you do your design and development and proceed through January 1982.

Your system performance testing, procedure development and training, and meet our overall requirements, have your STDS in place by 1 January 1982 that meets the NUREG 0578. And we have slipped the TSC and EOF from 1-1-81 to 1 April 1982.

The comment at the bottom for June 1983 we are to meet the overall requirements for REG GUIDE 1.97 in that everyone would have to meet the requirements for REG GUIDE 1.97 by June of 1983.

Now this is the schedule as we have proposed it, presented it to the Commission, and it is a slip of a year and three months from what has been out on the streets before. We have looked at procurements, et cetera, and think that this is a very tough schedule but a realizable schedule. You all may disagree.

Let me turn it over to Mr. Beltracchi to cover the

NDL, and we have all afternoon for comments and questions.

VOICE: Question on that schedule. I am quite concerned, you are talking about --

MR. MINNERS: I am sorry, but we would really like to get on because I want to release people for lunch at 11:30, and there is an afternoon session at which we can answer all questions. These people are going to have to push on. If there is time after Leo finishes, we can take some of these schedules. I know you are very interested in it, but let's get it pushed up.

MR. BELTRACCHI: First of all, I am going to have to say that I am pinchhitting for our inspection and enforcement people who couldn't be here to give this presentation. But I have been associated in the past with various portions of the nuclear data link, so I will try to present the presentation and answer your questions to the best of my knowledge and ability.

The fi st slide many of you may have seen before. It deals with the spectrum of roles of the NRC in emergency. The monitoring advisory direction -- -- control and constraints are the key areas. I would like to address those above the line first. This represents a great majority of the roles. That and particularly monitoring and advisory.

I believe the Commission stated that 98 percent of

our effort or 98 percent of the cases would fall in that category, being above the line. The monitoring is to verify and evaluate data from multiple sources to assure that proper and adequate operational and protective measures are being taken, and to inform the public.

With respect to advisory it provides requested or volunteers -- -- diagnosing the situation and isolating critical problems and protective actions. Determining, advise of termination; advise other concerned agencies.

Only in a small number of cases, as I said, in terms of on the order of 2 percent, that we may have to find ourselves -- NRC may find itself in a situation where it may have to assume initiative in making operational procedures regarding licensee actions to be taken.

And also to, and under that would be the assumption of management control, tasking and licensing supervision of the implementation (garbled)

Constraints would not -- would be that the NRC would not physically operate the facility. With respect to anticipated NRC actions, these fall into the category of making recommendations on actions needed to protect the health and safety, advising and counseling the licensee, providing the evaluated information in determining the significance of the event, coordinating onsite assistance to the licensee and possibly directing the licensee to take or

not take specific actions.

The emergency response summary would be notification on the hotline to duty officers, et cetera, at operation center.

The licensee again is to maintain open and continuous communication channels.

Our headquarters and region notification procedures would be initiated. Regional and regional director and support staff would leave from the regional site to the plant, and that is dependent upon location of the plant with respect to site regional headquarters, can vary anywhere from 3 to 8 hours.

The resident inspector would be notified, and that would be one hour for an ETA. Operations center man, that is the operation center in Bethesda. That way would be from five minutes to one hour, depending on the location of personnel in the Bethesda area.

The operating staff during an activation may grow as much as up to 60 people, and of course there is the single voice line to the site during the initial phase of that.

Some of the data link design features consist of approximately 100 data points for each PWR, BWR, and I might say that this is consistent with the monitoring function. It is certainly not a duplication of what is currently in

control rooms in terms of thousands of points that the operator would have at his access in order to control the plant.

VOICE: Is that consistent with 1.97?

MR. BELTRACCHI: Yes. Well, this may be, I believe, probably a subset of 1.97 or may end up being a subset of 1.97, and I will address that in a moment.

Parameters will be samples selected and processed, I believe on the order of one per minute. We do call for pre-event data on the order of 30 minutes. There is also some transient analysis. I believe some of the earlier specs in this area call for flux and pressure on a transient basis, particularly to detect anomalies. That was the intent.

The capability of storing two weeks of event data I believe is what our operation center would have.

Event alerting, key parameters, at this time I know we were thinking of automatically initiating a link such as safety injection and similar type signals, so that wouldn't have to be a manual activation but would occur automatically.

The data would be presented in our operation center in a data format and protocol. That would be to be sure that our response -- our operation center would be able to disseminate and use the data for the various technical

support people that would be evaluating the data.

Next slide, please?

The data indicated in NUREG 696 will be the same as the REG GUIDE 1.97 variables. It basically I believe will be a subset of that. I don't think it will be early in the 1.97.

It is to be an engineering unit, digitized and formatted for transmission. And in order to do that, that will probably be put forth in an interface spec, which will deal with the data formats, the transition requirements of environmental and performance criteria to the interface at your plants.

This has not been completed at this time. It is in our plans to do this, but it will represent a logical point to have an interface with, I believe it is the site transmission unit and what units you people would have at your plant. It is important that the format of that interface in terms of data rates, bit storage, transmission rates and items of that nature be addressed.

The last slide deals with the proposed schedule in terms of the nuclear data link implementation, dealing from concept study to our RFP specifications, where our current thinking is that this will be advertised in Commerce Business Daily and go a procurement route. I know many of you have initially heard that this was to be operational by

1982. However, in government procurement right that is certainly going to extend the operational date.

There are the typical subactivities, consisting of assistance studies. There will be a lab mockup, a lead plant installation and testing, interface of equipment specifications, the hardware procurement and installation, software development, operations for operation center testing, and systems performance testing, documentation and training, and initial operational capabilities to be achieved by the end of Fiscal Year 1984.

This will give you a broad outline of what our activities will be in this area, and I guess that pretty much covers the major items that I wanted to present relative to the data link.

Are there any other items that you have, Warren?

MR. MINNERS: Do any people have any questions on the data link?

MR. BELTRACCHI: Yes.

VOICE: I have a couple. How would you (inaudible) using the link?

MR. BELTRACCHI: Well, there would probably be a requirement that the plant subsystem would have to retain 30 minutes of past data.

VOICE: Yes, but how do we get it (inaudible)

MR. BELTRACCHI: Well, okay, the activation of the

link would have -- part of the interface specifications that define the signals that would activate the link would also have to subspecify that this would be part of the initial transmission.

VOICE: You mean just (inaudible)

MR. BELTRACCHI: That is correct. And that is feasible with the -- rates and the amount of data. I mean it is no big operation.

Yes?

VOICE: Could you give us a little more description on your end of the data link? Are you going to have separate terminals for each plant? How is it going to be manned? Is there going to be an expert for each plant in the center?

MR. BELTRACCHI: I can't directly answer that. I know we do have some contracts with both Sandia and with Mitre Corporation to go into the details of laying that information out. I kind of doubt if it would be a separate dedicated display for each plant. I sort of suspect that the displays would be -- the data would be stored in a base and drawn upon.

Yes?

VOICE: As a utility what do we have to do right now? Do we have any requirements to incorporate nuclear data link capabilities or anything like that?

MR. BELTRACCHI: No. However, I would sort -- I don't think it is --

MR. MINNERS: In this document, yes, I think we are putting forth the requirement that you are going to have to have the capability to have the plugs, if I can characterize it that way. I think that is the intent.

MR. BELTRACCHI: But I think, and fortunate, if you have done the safety parameter display and technical support center and EOF, this plug I think is going to be a small portion of that total problem.

Yes?

VOICE: How can you expect a utility to install a safety parameter display panel in two years and give themself four years to install your end of it?

(Laughter.)

(inaudible)

MR. BELTRACCHI: All right, I am not quite sure how to answer that, but in terms of the link --

MR. MINNERS: Let me answer the question. You can't do everything at once.

(Laughter.)

I think the industry would agree that the safety parameter display has a higher safety importance than the nuclear data link does, and I agree with that, and I think most people on the Commission agree with that.

So the thing to do first is to get a safety parameter display in the control rooms, to help the operators do their job, and then we want to have the type of support center EOF put into place, that is second importance, and then the nuclear data link.

Now I think if we required you -- if we tried to put our nuclear data link in at the same time that you are putting safety parameter display, that is going to certainly affect you. So I think there is that consideration. There is no doubt in my mind that we are putting tougher requirements on you than we are ourselves, but there is a logical order to having the data link put in after the safety parameter display.

So it is not completely that we are making you do things faster than we would do it ourselves. You wouldn't want us to make all the requirements at the same time.

VOICE: If I can go back -- and I don't know whether you want to break for lunch or what, but if I can go back to the schedule --

MR. MINNERS: No, I would like to finish up all the questions on the data link, and let's take the schedule, which is a subject unto itself, after lunch if I may do that. Any more questions on the data link?

MR. BELTRACCHI: Yes, Bob.

VOICE: You didn't mention anything about

interactive link, but I can assume that (unintelligible accent).

MR. BELTRACCHI: I think that in our initial preliminary specifications for the parameters that we define on the nuclear data link, they were basically just a monitoring function. We didn't want to get involved with other activities within the plant. It was only to provide sufficient information for the staff to assess, independently assess, adequacy of cooling say from sink to core, and just very, very elementary status information.

VOICE: Because it is mentioned in the 696 on the future possibility of the interactive -- the Commission -- --

MR. BELTRACCHI: Oh, no, I think initially we weren't concerned about that. And one of the reasons why -- on the interactive -- was to be able to communicate both ways, but it came down to where it was a case where we ended up with a one-way communication.

Part of the communication both ways of course could do with such things as error, treatment of errors, and asking for a recall of the data.

Yes?

VOICE: Why wouldn't the safety parameter display parameters be adequate for NRC's monitoring function?

MR. BELTRACCHI: It was our intent to have the safety parameter display as a subset of the nuclear data

link. We wanted to have a little more information than that in the sense of the functions that I addressed -- the elementary status of the plant, which would get into, oh, such things I believe as safety injection signals and things of that nature, which isn't in the safety parameter display.

MR. MINNERS: Let me try and clarify the interactive aspect. There may be some interaction between us and the sites because of the stored data. To that extent there may be interaction, but I don't think the present concept is to have any ability to go into the site computers and have them do something and then transmit that data. The manipulation is now conceived to be at the NRC headquarters.

MR. RAMOS: The only interaction would be to activate whatever data storage, if it is decided that the data storage should be held at the site rather than at the NRC. And that would be activating the system to start the flow of data coming into the NRC.

MR. BELTRACCHI: Yes?

VOICE: You have mentioned that you felt that the safety parameter display might be a subset of the nuclear data link. I am not so sure you can achieve that if you are going to have a straight -- data flow of information coming toward you from one direction. I am not so sure you are going to get any safety parameter display as a subset.

MR. MINNERS: We are not going to have a display;

we are going to have the information.

MR. BELTRACCHI: No, just the information.

VOICE: Just the same information -- --

MR. BELTRACCHI: That is right.

Yes?

VOICE: Wouldn't it mean that more data (inaudible)?

MR. BELTRACCHI: No, it was the intent that 1.97 be sort of the umbrella and the nuclear data link be a subset.

VOICE: Well, you also had a growth factor console in there, saying that you wanted 143 more parameters.

MR. BELTRACCHI: I think it was up to 140 parameters.

VOICE: Something like that.

MR. BELTRACCHI: Okay.

VOICE: That could mean another 600 points.

MR. BELTRACCHI: I don't think it was our intent to get 600 points per se.

MR. MINNERS: The intent was to give some, not the design of things, but some exact number now will not have the capabilities later on to add a couple of points.

MR. BELTRACCHI: They do -- -- design flexibility.

MR. MINNERS: Yes. Because it doesn't cost any more to put a little extra capacity.

VOICE: How about the data requirements for 0654? Is that a -- -- link?

MR. RAMOS: Which part of 654 are you talking about?

VOICE: Appendix 2, page 6.

MR. RAMOS: For the meteorological data?

VOICE: Yes.

MR. RAMOS: That lays out the requirements for meteorological data which will be part -- we have added it into 1.97.

VOICE: Okay, but will it also -- -- nuclear data link?

MR. RAMOS: Will all of 1.97 come over to the data link?

VOICE: No, no. All the data required by 0654, Appendix 2, will that all be integrated into just one data link?

MR. RAMOS: No.

VOICE: Why not?

MR. RAMOS: There are certain specific parameters that are in 1.97, or which we have added to 1.97, to accommodate those specific parameters that we want as far as meteorological and radiological data.

VOICE: (inaudible)

MR. RAMOS: No, it is one data link.

VOICE: -- Page 6 of Appendix 2, 0654 calls for an active data link? Where will that fit in on Figure 1 that you show with 0696?

MR. RAMOS: I am not answering your question right. That requirement is in there. It is planned to integrate that with the requirement for 1.97. Those requirements that are in Appendix 2, which will be reissued as REG GUIDE 1.23, are being cranked into the parameters that are in REG GUIDE 1.97.

VOICE: Okay, but in fairness, when it is cranked into 1.97, will all of the data required come over the one nuclear data link?

MR. RAMOS: Yes. To the NRC, yes.

VOICE: The NRC. So as far as the access to the data link --

MR. RAMOS: Yes.

VOICE: -- that Appendix 2 calls for, that will be taken care of at the NRC end?

MR. RAMOS: No, no, no.

MR. BELTRACCHI: No, if you are asking is the format of -- that that data at your plant would have to be formatted and then interfaced with NRC, you would have to integrate that data in order to interface with --

VOICE: Okay, but we would have to supply (inaudible) format, as specified in the appendix, nuclear

data link. (inaudible)

MR. BELTRACCHI: Wait, now Figure of -- Steve?

VOICE: 0696.

MR. MINNERS: I think you are telling us that we have a job to make 654, 696 and 1.97 more consistent. I think we hear you.

VOICE: Okay.

MR. RAMOS: Yes, I am looking at the diagram.

(Pause.)

VOICE: Okay, the only question is where does the -- what path does the meteorological data follow when it goes to the NRC?

VOICE: The digitized.

MR. MINNERS: We don't really care where it comes from, except that it goes through the nuclear data link.

VOICE: Okay, good.

MR. MINNERS: I don't think we are telling you you have to bring it from a certain place.

VOICE: Well, that is fine, because 0654 reads entirely different than nuclear data link as far as the data requirements. (inaudible)

MR. MINNERS: I will have to go back and read 065$ more carefully, because you are telling me things --

MR. RAMOS: You are correct. There is a requirement right now to provide that data, and in the case

of Indian Point, for example, it is already installed.

VOICE: Would you just explain what you mean by event (intelligible)

MR. BELTRACCHI: Event?

VOICE: Event -- -- of the parameters that you have the slides, you know one of the things that you have to do is two weeks storage capability and then --

MR. BELTRACCHI: Oh, that was, I believe, two weeks storage capability was the requirement imposed on the NRC operation center.

VOICE: Right after that. You have event alerting the parameters.

MR. BELTRACCHI: Oh, safety injection would be one of the events that would automatically initiate transmission.

VOICE: Oh, I see.

MR. BELTRACCHI: Would you put the slide up because I am -- third or fourth line, I think.

(Pause.)

MR. RAMOS: How about repeating your question again?

VOICE: Well, I don't understand what you mean by the event alerting of key parameters.

MR. MINNERS: Are you talking about in 0696 or in a slide?

VOICE: No, no, this slide.

MR. BELTRACCHI: No, I think it is back one or two, Tom.

MR. MINNERS: Event alerting. I am not quite sure, I think that is supposed to be -- -- by key parameters. I guess I don't understand the slide myself.

MR. BELTRACCHI: I was under the impression, you know, I know that we had discussed this and we wanted automatic initiation so that we wouldn't have to impact the operator. And we had defined in one of the initial specifications in the nuclear data link several signals, which I know safety injection was one.

VOICE: It is my understanding that your NDL is going to be continuous. The data stream would be continuous, but the (inaudible).

MR. BELTRACCHI: Yes.

VOICE: (inaudible) The data is coming in in continuous streams. There may be certain -- --

MR. BELTRACCHI: Okay.

MR. RAMOS: You are right, it is from previous presentations. Those specifications haven't been completely written yet, but --

VOICE: I think that is what I am probably alluding to.

MR. BELTRACCHI: It could very well be, you know, one aspect of the thing is that we were concerned about

having the capability of looking at say the safety parameter display portion of the nuclear data link information.

So that could be what that term is referring to.

MR. MINNERS: Okay, I think I have been told that if you don't get to lunch here around 11:30 there's so many other people that -- so let's break for lunch and we will start the discussion, basically questions and comments at 12:30 in this room.

(Whereupon, at 11:35 a.m., the meeting was recessed, to be reconvened at 12:30 p.m. of the same day.)

AFTERNOON SESSION

(12:44 p.m.)

MR. MINNERS: We have a much reduced -- -- and I guess this is all we are going to get, so let's begin. In the foyer there are copies of the August letter from Darrell Eisenhut to all of the advocates and licensees which transmit copies of 0696 and also says there will be a 30-day comment period, which got changed by the time it was published in the Federal Register to a 45-day comment period.

There is also a transcript being made, and if you wish a copy of the transcript, I am not sure of this, but I believe if you will contact our Rules and Records Division that you will be able to obtain one. That is the usual way.

All right, the first name of a person who would wish to make a comment is Mr. Feinberg of GPU. Is he here to make his comment. Mr. Feinberg?

(Pause.)

I can't make this out, it is a Mr. M-o-r-l-l-e-n, maybe Moellen from Public Service Electric and Gas in New Jersey. Is he here and would like to make a comment? No.

Mr. Lipinski from Con Edison. Would he like to make a comment? Mr. Lipinski?

Mr. Fasnoeht, F-a-s-n-o-e-h-t, from Jersey Central Power and Light. Would he like to make a comment? No.

Mr. Shepard from Yankee Atomic, would he like to make a comment? When you make a comment, would you please use the center microphone so that the reporter can get your comments, and identify yourself.

MR. SHEPARD: Arthur Shepard, Yankee Atomic. I would just like to comment on two or three items that you have discussed this morning, one concerning the location of the EOF.

I recognize that there is considerable controversy as to whether this facility should be located near site or far from the site. I think what you have tried in this document here is to compromise between the two, and I guess the results have negated the event. But the advantages of either locating it close or far away -- certainly locating it close to the facility has the advantage during most of the times that the facility will be activated of being able to have a very close contact between the emergency operations facility and the plant site.

Likewise, the advantages of putting it far away allows you to continue operation without evacuation. I think you should really reactivate a possibility of having alternative EOF's, allowing the normal use of near site facility during most of the activation time period and allowing people to go far away when it becomes necessary.

As far as the use of a separate processor, I see

that it does offer -- this is what the information going into the technical support center -- I see where it does offer some advantages in where you may have certain reasons for wanting to use a separate processor rather than to use the main -- --. However, there may be information that is available through the use of the plant computer which may be desirable to have in the technical support center and the emergency operations facility there, and which would not be available if you had to put this through a separate processor. There is more information available in the plant than would be made available to the technical support center through the use of the main computers.

MR. MINNERS: Maybe there is a clarification on that. I don't think it was our intent to prohibit people from taking information from the process computer and presenting it. We just said that the minimum set of data would have to be on this independent separate processing, and if other data which was available in the computer were to be presented, that was all right, but it was to be presented in an independent way.

MR. RAMOS: We recognize that there would be some data that would be coming from the process computer independent of the other processes, to supplement the data that is in REG GUIDE 1.97. We knew that some time ago, and we figured that would be part of your design parameters.

MR. SHEPARD: Yes, but I think you tend to limit that amount by going to two processors or two methods of gathering this information. I think it would be simpler and would be more compact and more readily available if everything came through the same process system.

MR. MINNERS: Yes, I think we discussed that before, and I guess the question is how do you write up criteria which you give you satisfactory independence and security and things like that.

MR. SHEPARD: I think we can address these, and you should keep an open mind to this possibility. And finally I would just like to indicate that as far as the parameters that should be sent through to the technical support center and emergency center, one should try to keep these minimal and to the point of being able to follow the accidents. One is able to come up with enough scenarios that almost all the information in the plant under one scenario or another could become the necessary information that the NRC feels should go to the centers. But I think it should be kept minimal in order to be able to really follow the accident without getting all of these other parameters to clog up the issues. And this should be certainly addressed in 1.97 when that does come out.

MR. MINNERS: 1.97 is intended to be the minimum set of data that will have to be provided for the PSC and

the EOF.

MR. SHEPARD: Let's make it the minimum set of criteria and not start building up on it as one tries to come up with different scenarios.

MR. MINNERS: We are trying to stay with that minimum. We will stay with the minimum set. If the operator wishes to add more data, I think we wouldn't prohibit it.

Mr. Arvbovak from Philadelphia Electric. I am sorry if I don't pronounce your name right.

VOICE: Mr. Chairman, can I just --

MR. MINNERS: Your name, sir?

VOICE: (inaudible)

MR. MINNERS: Oh, okay, certainly. I am just asking here -- I have come down to your name. If you would like to make a comment, we would like to have it.

VOICE: Shall I hold off for a few minutes?

MR. MINNERS: Okay, I will come back to you.

Mr. McDonald from Yankee Atomic?

Mr. Cotton?

MR. MCDONALD: Yes, Mr. McDonald here.

MR. MINNERS: I am sorry.

MR. MCDONALD: Sorry. I have three or four basic comments. One thing that I would like to expand on from our discussion earlier this morning and what Art Shepard has

just brought up in connection with the EOF is the issue of location and providing alternates to the primary EOF.

Am I to understand from the discussion this morning that the direction given in 0696 as it currently is drafted comes from the staff view of the considerations and directions specified by the commissioners themselves in a recent meeting?

MR. MINNERS: That is correct.

MR. MCDONALD: And that direction is somewhat confused by a couple of discussions this morning in connection with the location, and that is whether it is one to three miles from the site or within a total distance of five to ten miles. And I guess my confusion is that apparently the commissioners seem to be saying one to three, and your interpretation seems to say within ten.

MR. RAMOS: I think it is the other way around. No, I think the commissioners said five to ten is what they wanted, and if we interpret it the way they said it, you could also have something closer than that if it was properly protected.

MR. BELTRACCHI: We don't have the building requirements.

MR. MINNERS: Their primary concern was that you would not have to evacuate the EOF if you had a larger lead. Just at the time when you had to be giving

recommendations and directions on evacuation.

MR. COTTON: Have the commissioners quantified that consideration in terms of the accidents that radiological hazardability has to be demonstrated for?

MR. MINNERS: No.

MR. COTTON: There seemed to be some confusion in our discussion this morning on that also.

MR. MINNERS: No, the Commission hasn't done that, and the staff hasn't done that, and the industry hasn't done that. And I am not sure we know how to do that. I will have to agree with you that that is probably an open area that is going to have to be worked out.

I would suggest that we would probably go ahead with what may be a vague criterion at this point rather than trying to resolve every issue at this time.

MR. COTTON: Can I point out if the statements made in the rider map on page 17 and see if my understanding is correct or incorrect on that issue there?

MR. MINNERS: Sure. Which page?

MR. COTTON: Page 17 under item (f), the second half of that paragraph cites some radiological hazardability requirements in the references that it makes. It is calling for GEC 19 and SRP 614, radiological hazardability demonstration, lights at control room and lights at technical support center.

Now embodied in those guidelines and criteria are the design basis accident considerations for demonstrating radiological hazardability.

Am I correct in making the interpretation that the EOF radiological hazardability demonstration is made like the control room and the technical support center demonstration; that is, GEC 19 6.4, which is a DBA event.

MR. RAMOS: That is true.

MR. MINNERS: Yes, I think you have a correct interpretation.

MR. COTTON: Okay. That would seem to clear up the confusion about the accident that, first, EOF radiological hazardability might be demonstrated for, and there was another comment this morning about access to EOF and the plant proper itself.(inaudible) on what the accident is for -- that type of accident -- -- reason as well, I would think.

MR. MINNERS: As far as design criteria, those are the design criteria, yes. But when people are looking at it, they go beyond that.

MR. COTTON: I know, and I fear --

MR. MINNERS: That is where the confusion is, I think.

MR. COTTON: I guess I share in that confusion because I was surprised to see in any talk about

radiological hazardability, seeing it specified in black and white as detailed as it is here by making those references at 19 and 6.4. Those would abound on the type of radiological hazardability demonstration that must be made for a facility like that.

But at the same time, more than DBA type accident considerations are always thrown into conjunction on radiological hazardability and considerations.

MR. RAMOS: That is true.

MR. COTTON: I am just trying to put a bound on it here, and I don't know if you can do that based on your discussions with the commissioners.

MR. MINNERS: Well, you know, could I interpret your comment to say that the criteria in criterion 19 and 6.4 are adequate, do you think are adequate? If that is what you want to support, you probably ought to say that in a comment and say why it is adequate.

MR. CATTON: Well, I am saying now that they do put a cap on it. I am not -- the whole question of EOF radiological hazardability is another issue, and alternate versus primaries --

MR. MINNERS: And I am sure people are going to be asking questions of what happens if you have a larger than a DBA release.

MR. COTTON: Yes, I recognize that. We always get

those questions in connection with any of the things that --

MR. MINNERS: And the Commission has not --

MR. COTTON: -- including technical support center hazardability.

MR. MINNERS: The Commission hasn't decided yet how far, if at all, it should go beyond its present DBA's, and that is going to be a continuing question, and I don't know really how to resolve it in any reasonable time frame.

MR. COTTON: Okay.

MR. MINNERS: I would hope that when a utility designs one of these things they would recognize that.

MR. COTTON: My last two comments are related. There was an implication this morning that, quite disturbing, and that is the regional response plan is not finalized in terms of the numbers, licensees to expect regional response would constitute.

MR. MINNERS: NRC regions you are talking about?

MR. COTTON: NRC regions, right. As specified now and has been some time, an allocation of ten to the EOF, five to the technical support center. But if I heard correctly this morning, there was some mention of maybe those numbers being increased on the urging of the region, I guess.

MR. MINNERS: Yes, we have had a comment from a region at least that would like to have more. So far we are

sticking with the numbers that we have.

MR. COTTON: Okay.

MR. MINNERS: But you know, they can make comments like everybody else.

MR. COTTON: Well, I guess that is the context that you did mention it, that they were free to comment as we were, and these things as design bases keep moving targetwise, and that is a very fundamental issue in terms of specifying EOF's and technical support center.

MR. MINNERS: Well, when we put the document out in October or November, whenever, hopefully those issues will be resolved and you will have some firm guidance. That is the purpose of issuing a document which gives the guidance so that the utilities, the licensees and applicants know what they are supposed to do by 1983 and can start doing it.

Do we have anybody from the regions who would like to comment on the number of people they think they need in the meeting?

Go ahead.

VOICE: I can actually tell you how many we will have.

MR. MINNERS: Do you want to use the slide machine?

VOICE: Yeah, briefly.

Generically, I would comment that this requirement is --

MR. MINNERS: Would you identify yourself, please.

VOICE: I'm (NAME UNINTELLIGIBLE) from Region 1.

Generically, the thing we're finding is that rather than going to headquarters and asking what the regions are going to do, you should be going to the regional office for coordination.

VOICE: As far as the numbers that we'll be using --

VOICE: (WORDS UNINTELLIGIBLE) letters we get from Eisenhut and respond to them?

VOICE: From our regional office. This is a plan that's in existence and has been in existence for about a year. I think that may be appropriate. This is from the regional group. And this will list where the people will report and in what numbers. And their communication needs.

Now --

VOICE: Where are the numbers?

VOICE: The numbers are represented by the blocks themselves.

VOICE: (UNINTELLIGIBLE).

VOICE: Right.

Team A, of course, is the regional director, deputy director, or, depending on the severity of the incident, the responsible branch chief -- and by "responsible" that's the overriding consideration of the event: if it's an operational oriented event, it'll be the reactor operations branch chief; if it's radiological it'll be the radiological branch chief. Our director of operational assessment, of course, is the appropriate section chief from the region assigned responsibility for that particular facility; he's located in the EOF. The resident inspector reports to the control room as his initial duty station. Our so-called systems specialist is Technical Support Center. Public affairs officer would report to the news center, again co-located with other news people. We have a security assessment and logistical support individual who initially involves himself in security assessment; he reports to the EOF, that's his prime duty station. The director of radiological assessment is our regional emergency planning officer or his alternate; he

report to the EOF; and under his direction and control are the two radiation specialists, one reporting to the OSC and is involved in in-plant radiation protection, one roves in the environment and makes spot assessments of the licensee's performance in the environmental area.

Now, that's all supported by a tactical network of radio. There are all those people that are intercommunicated. And you can see that the EMS is our operational link with headquarters for the passage of data and that the health physics net is the passage of radiological and environmental data through to headquarters.

One thing you'll note that we don't have is a command and administrative and logistics net, which implies hard-wired telephone. That's yet to be worked out.

And I guess the bottom line of all this is, is that if you add that up, numbers of people, this is the NRC regional response, will be the first people on. This will be supplemented by headquarters senior management individuals. So we've got what, one, two, three, four, five, six, seven, eight, nine individuals from the regional office; that's our optimum number of people. All right? And this is designed to be the initial response phase.

If you have the design basis or a Three Mile Island scenario, then essentially you're going to be into a different ball game. We're always going to supplement.

Just as you'll supplement your organizations and augment with other personnel, we'll also augment.

If you look at the headquarters breakdown that interfaces with our organization, it looks like this. The current policy right now is that management of the NRC's response will initially take place from the headquarters office in Bethesda; upon arrival of the team, the regional team, at the licensee's EOF, upon an in-briefing and upon coordination between the director of the EMT and the team leader, who is our regional director, overall management of the NRC's response is now transferred down to the responsibility of the regional team, transferred forward, if you will.

That's roughly the breakdown. Now, between the EMT and the regional office there'll be plans -- need for supplemental people. So if we're in a continuing scenario, of course, and we have to operate 24 hours a day, we have to have relief, just as your people would.

So, from a base-line standpoint and looking at the first 24 to 48 hours of the incident, we're talking about nine people initially at various locations in your facility. The number of ten gives maximum flexibility such that senior officials, or even the Commissioners themselves, could be housed in the EOF.

So in terms of the initial response, we're talking

that way. And again, I think you've got to handle that issue. It -- our plans change just like yours do. This is fairly static. But you need to coordinate with the regional office, in whatever region you may be from, to find out what their response plans are, just like you coordinate with the state and everything else.

Does that help you, John?

MR. COTTON: Well, yeah, it certainly does. This is the first I've seen of this. We've had many requests for this type of information through licensing, and I guess it's not coming through them and we're dealing with the wrong branch of the Commission.

VOICE: The NRC's incident response role or mission is assigned to Inspection and Enforcement. And I think the problem is, when you go to another division within NRC they're trying to be responsive to you but they're not necessarily talking to you about the latest policy. So from the regional standpoint, the best point to contact is just like you would any off-site agency or any supporting group, like you would with FEMA or anybody else. And again, we have plans that we're more than happy to discuss, individual communications problems, on a -- on an on-call basis; and we'll certainly do that. I'm sure all the utilities will. But that's the final comment, then, is for the people responsible for 0696 to be aware of --

MR. RAMOS: The numbers that we've laid out in 0696, the five in the TSC and the ten in the EOF, can easily accommodate the regional requirement, headquarters requirements.

On top of our five in the TSC and ten in the EOF, we've had a recommendation for even more people, from one of the regional directors. We are taking that into consideration now.

There is a requirement, as you know, for a separate room for the NRC to have as part of the TSC complex. We have to -- if we are forced within the staff to increase the number in the TSC, that's where we'll put them, in that separate room.

MR. MINNERS: At least on this, we think we're coordinated. Do you think that we're not and there's something more we have to do?

MR. COTTON: Well, from seeing this organizational response charts, it leads me to believe that there are probably some pretty detailed response procedures and responsibility outlines on the part of the NRC regional people. And I guess I'd be looking for that information as well as the numbers.

MR. RAMOS: But when you look at the numbers of people he has in those slides --

MR. COTTON: Right.

MR. RAMOS: -- you still don't exceed the numbers that we're requiring --

MR. COTTON: No, I recognize that. But it was mentioned this morning that maybe that was subject to comment. And --

MR. RAMOS: Well, that's right, because we do have a recommendation from a region, which we will probably have more of before we're done --

MR. COTTON: Okay.

MR. RAMOS: -- to reconcile that. And we haven't reconciled that. We are right now staying with the five and ten requirement, until we can reconcile that in-house. But, as I said, there is really room that has to be provided separately as part of the TSC, and that's where we'd probably move those additional people that are associated with the TSC.

MR. COTTON: Now, is this regional response capability that's developed or being developed being integrated with the licensing and NRR response?

MR. RAMOS: We're part of a team with I&E to develop the overall NRC incident response plan. And so --

MR. COTTON: Okay, I guess what I'm asking is what the status of that is, where that rests?

MR. RAMOS: We have the requirement to report to Congress in 60 days on that plan. And we're in the --

MR. COTTON: Okay. So that's under development now?

MR. RAMOS: -- in the process of -- it's under development now. Both that and communications are two, two reports that we have to give Congress within 60 days.

MR. COTTON: Okay. Thank you.

MR. MINNERS: Mr. Arubovak, did you want to speak now?

MR. ARUBOVAK: This is for comments or questions or anything? Or --

MR. MINNERS: Anything you want to say that's -- can be put in the record.

MR. ARUBOVAK: Let's go back to a page before. And when you write this and it's published, we have a harder time arguing against a particular decision, is that true?

MR. MINNERS: It's like a regulatory guide: this will be an acceptable position and, obviously, is the one that we've agonized over and the one we love dearly and we'd, you know, hang onto. But if you have a different position and can demonstrate that it's adequate or better, we will listen to you and --

MR. ARUBOVAK: But it becomes more difficult at a later date, right?

MR. MINNERS: Certainly. If you think you see something wrong, you should try to get this changed, because

it's going to cause you a lot less trouble.

MR. ARUBOVAK: Right. We will send you a formal letter. But, in the meantime, I'd like to just again reiterate something that with reference to the plant process computer.

Given the fact that we are evaluating our computer presently and find it to be adequate, which we doubt that we can do, but I still think that we ought to be able to utilize, if we put new equipment in there, the plant process computer to transmit data to the TSC or the data link to the OSC, CSF.

MR. MINNERS: Did you understand his comment? I didn't hear him.

MR. BELTRACCHI: Yeah. Yeah.

Let me be sure I understand what you're saying. Are you saying that the plant process computer should be a portion of a new digital link -- a new digital system?

MR. ARUBOVAK: It's possible it may be. And what you're saying here is, you're eliminating generically a process computer in the plan. Now, if you find that one plant does not have an adequate process computer, that would be for that plant to discuss with you. But you're already eliminating, in setting up the criteria on the design basis, (WORDS UNINTELLIGIBLE) utilize the plant process computer.

MR. MINNERS: No, we're not eliminating the

process computer from the plan. We're just saying here -- and we may modify it a little bit -- that the process computer is not satisfactory, at least, the present-day process computers are not satisfactory, for this minimum set of data that we want displayed in the TSC and EOF. If you have -- and the NDL -- if you have other data that the operator thinks is necessary to put in these facilities that comes from the process computer, that is permitted. But it -- by the current guidance, that would have to be done independently.

MR. ARUBOVAK: Well, then, you're saying, basically, that any process computer throughout the United States is not adequate to transmit any data on the safety parameters you talk about.

MR. MINNERS: That's what the current guidance says. And I would -- and we discussed that a little bit before.

MR. ARUBOVAK: Right.

MR. MINNERS: That may be too strong a statement. We didn't know at this time how to specify the criteria for what was a good process computer. We realize it has to have some security, it has to have some reliability, and I don't know what else. And if we could get some help from people early on stating the criteria that would allow us to use good process computers but exclude bad process computers, we

would like to -- we'd appreciate those words. There are bad process computers, and I think people would agree.

MR. ARUBOVAK: You have no objections to us reiterating what you've stated here to cover present-day computers if they're adequate?

MR. MINNERS: If they're adequate.

MR. BELTRACCHI: If they're adequate, it's no stumbling block.

MR. ARUBOVAK: All right. Now, you mentioned seismic computers -- and you mentioned someone actually has this available now?

MR. BELTRACCHI: No, I said, very specifically, that I've seen some DOD computer specifications and I know they're capable of procuring these types of systems.

MR. ARUBOVAK: Who are these again?

MR. BELTRACCHI: DOD: Department of Defense.

MR. ARUBOVAK: Department of Defense.

The Navy, in particular, has acquired computers for on board ship that require some rather extensive environmental operations, environmental qualifications.

MR. MINNERS: That, the seismic requirement, is only on the Safety parameter Display.

MR. ARUBOVAK: Well, that's true, but if we put other things in the computer --

MR. MINNERS: If you want to make a complete

integrated display, yes. I agree, but I'm just trying to clarify the requirement.

MR. ARUBOVAK: Do you have any cost factor what a seismic-qualified computer would be for a standard type computer such as, say, a (WORDS UNINTELLIGIBLE) machine?

MR. BELTRACCHI: No, I don't have, I don't have them with me, but I know I do have some. I know if you were to even contact somebody like Combustion Engineering they could give you a feeling for what the costs would be in terms of what they went through to qualify the core protection (WORD UNINTELLIGIBLE) system.

MR. ARUBOVAK: Can you give me the telephone numbers of those individuals that --

MR. BELTRACCHI: If you'll see me after this meeting, I'll --

MR. ARUBOVAK: Fine.

Your data link, I assume it's a one-way street: we send you data, you take care of it.

MR. MINNERS: Essentially that, except that we discussed that we may have to have some interaction to be able to get access to the 30-minute and two-week storage.

MR. ARUBOVAK: Who's going to store the two-week storage?

MR. BELTRACCHI: No, that's at this end. I believe the two-week storage is at the operations center in

Bethesda.

MR. RAMOS: No, wait a minute, that hasn't been decided yet. That spec' is still in the process of being written.

MR. ARUBOVAK: When are you going to decide? Because that impacts the size of the computer (WORDS UNINTELLIGIBLE).

MR. RAMOS: It'll be part of the NDL package once it's completed.

MR. ARUBOVAK: All right. And --

MR. RAMOS: The decision hasn't been made whether to store the data with the licensee or bring it all back and store it at the NRC.

MR. ARUBOVAK: Now, this two weeks is only during the occurrence, it's not at all times?

MR. MINNERS: Correct. After an occurrence, there'll be a two-week storage of what happened during the incident.

MR. ARUBOVAK: And you only want 30 minutes prior to the --

MR. MINNERS: Right.

MR. ARUBOVAK: -- an event?

MR. MINNERS: The 30 minutes will definitely be at the site and it will be -- how do you want to say that? -- a running 30 minutes.

MR. ARUBOVAK: When will you decide who stores the two weeks?

MR. MINNERS: I didn't hear your question.

MR. ARUBOVAK: When will the NRC decide who stores the two weeks of data?

MR. MINNERS: I hope that, the intent is to have it in this document when we issue it in October or November. That's the purpose of this document, is to get those kind of requirements out on the street, so that the utilities can design their systems.

MR. ARUBOVAK: The parameters to be displayed are something like 100 megapoints?

MR. MINNERS: Yes.

MR. ARUBOVAK: The event alert and the key parameters, are we to assume that our computer system, whatever it may be, can transmit it to Bethesda, would initiate someone there and flash a red light and say we have a problem?

MR. MINNERS: Yes.

MR. ARUBOVAK: And will you define the particular parameters you want?

MR. MINNERS: Yes.

MR. ARUBOVAK: And that again in October?

MR. MINNERS: Pardon?

MR. ARUBOVAK: Again by October?

MR. MINNERS: Yes. Oh, which -- oh, which parameters?

MR. ARUBOVAK: Yes.

MR. MINNERS: Well, I think that would probably come in the detailed requirements for the NDLs and not in this. This would just describe that you have to have a certain connection, and not get that specific.

MR. ARUBOVAK: This would be a quiescent type system where you only get the information on (WORDS UNINTELLIGIBLE)?

MR. MINNERS: No, I think it was envisioned that we would have access to information at any time. We could press a button and start viewing the data from the plants.

MR. ARUBOVAK: When you press a button you're only allowing your side to receive whatever is being transmitted, not that you're coming back to our computer --

MR. MINNERS: Yeah.

MR. ARUBOVAK: -- and telling us to transmit?

MR. MINNERS: You would have -- essentially, you'd be continuously transmitting data to us, but we just wouldn't do anything with it, unless we -- unless an incident --

MR. ARUBOVAK: Under no circumstances are you to request anything specific from the computer?

MR. MINNERS: The concept now is, we would have no

other interaction with the site data except to get access to the 30 minutes storage.

MR. ARUBOVAK: All right. Going back to Jerry Whooley's question before, I still don't quite get the concept about the meteorological data, which we probably have in a separate computer, the first, the plant-type computer, and transmitting on one data link.

MR. MINNERS: Well, Reg Guide 197, this, the parameters that we want, which are very few, there's not -- less than a half a dozen, and it's temperature and wind -- no, it's just wind velocities, and, you know, I don't -- it doesn't sound like a lot of data.

MR. ARUBOVAK: No, it (WORDS UNINTELLIGIBLE).

MR. BELTRACCHI: You're talking about a different system. You're talking about the requirements of 0654.

MR. MINNERS: For the data link, it's very few meteorological parameters. They've got it down to the minimum minimum.

MR. ARUBOVAK: And clarification -- pardon, verification and validation criteria: how do you envision that being accomplished? Or what is your criterion?

MR. MINNERS: You mean where -- there were two comments.

MR. ARUBOVAK: Well, let me read what you have here.

MR. MINNERS: Yeah, let's get the page reference.

MR. ARUBOVAK: It's page 5, section D.

MR. MINNERS: Okay.

MR. ARUBOVAK: You're talking about, "The design and development, qualification, and installation shall be independently verified by qualified personnel other than the original designers and developers." Who is the "qualified personnel"?

MR. MINNERS: It's an analogous statement to what's in Appendix B. And I don't really understand your question.

It seems to me that that's just extracted from Appendix B.

MR. ARUBOVAK: Well, I'm asking you the question: I'm not sure what you mean by it. In other words, let's assume PECO (?) designs the system with the contractors, are you asking for it now to get an independent, a third party?

MR. BELTRACCHI: Don't have the designer who designed it do the verification. Okay?

If you feel that you have an independent group in-house that's qualified, another designer or another group of designers in-house who are qualified or could have done that original design, then promote that.

MR. ARUBOVAK: But in-house we could do it or hire a --

MR. BELTRACCHI: Yes.

MR. ARUBOVAK: -- contractor of some sort?

MR. BELTRACCHI: Yes.

MR. RAMOS: There's too much conflict of interest if you have the designer verify it.

MR. ARUBOVAK: Agreed.

Again on page 13 you make a reference to -- under "I," the second paragraph from the bottom -- again you're dictating (WORDS UNINTELLIGIBLE) process computer not knowing its capabilities. Maybe we can reword that to some extent.

MR. RAMOS: Yeah. Well, we did this based originally on the fact that the LER data showed that process computers were not, present-day process computers were not adequate.

MR. ARUBOVAK: And you're saying that's throughout the United States?

MR. BELTRACCHI: Let me clarify that. There was a small effort done to analyze the LER data base that we have at headquarters. In the course of that, there were, well, I guess it covered, I guess, something on the order of the last ten years, '69 to the present time, there were something like, oh, I don't know, 150, 160 LERs that dealt with process computers, and the category of the errors was just about uniformly distributed among hardware errors,

hardware failures or component failures, software design errors, and the man-machine interface. Furthermore, if you took in and tried to break those down in terms of periods of time, like the macro report sort of addressed, and the periods being prior to 1970, it was probably a monolithic computer, '70 to '75 was, now, a little higher grade computer, and from '75 to present, in terms of when a plant was licensed, it was probably a modern-day computer. If you look at the trend of the LERs in the course of that, over those periods of times, you will find that it continues to go up. I'm not sure whether that's due to the fact that there are more functions being done on later installations, or that it might represent a lack of quality control.

That's really the source of our concerns.

MR. ARUBOVAK: You are looking, basically, at the computer, not the fact that, let's say, the utility may have seven computers as -- working for that plant, for displays, for alarming, for calculating, and so forth. So you're talking about a specific type of a computer, not the overall aspects.

MR. BELTRACCHI: That is correct. And it's very, very probable that if you can propose an architecture that has your plant process computer as some element of that architecture, given that it's properly interfaced such that its failure will not impact the rest of the architecture,

that may very well be an acceptable solution.

I think my previous comment this morning, in terms of many people in the industry would like to work with a common data base, would be one example of that. Your process computer -- or your process computer could draw from that common data base, given that it didn't impact the rest of the system on failure and things of a similar nature, and still be tied in with the architecture.

MR. ARUBOVAK: Do you have any computers you're satisfied with? Or --

MR. BELTRACCHI: That's not my job, to endorse --

MR. ARUBOVAK: You've knocked them down, so you must have found some that'll do better than that.

MR. BELTRACCHI: No, I want to point out that the way the staff treated the process computer in here was thinking of the monolithic kind. There are, obviously, digital architectures that are -- that can be promoted in today's design that I strongly suspect would meet our requirements.

MR. ARUBOVAK: All right.

MR. MINNERS: It isn't that the computer is a bad piece of equipment, in my understanding; it's just that it's the software that gets -- keeps loaded into it. And what we want to have is something was independent of that process software.

MR. BELTRACCHI: If you want the characteristics of a lot of the problems that the staff had in the review of the core protection calculator system, go back to NUREG, I think it's, 0308 or 0304, I can't remember which, but there were something like 27 safety positions that were developed in the course of that review, and it covered all aspects of the hardware-software quality assurance, as well as the testing and qualification of the system.

MR. ARUBOVAK: What Reg Guide?

MR. BELTRACCHI: It's NUREG. It's the Arkansas Nuclear 1 Unit 2 NUREG. I'm not -- hold on a second. Yeah, it's the SER. It's 0308. It was published in November of '77. The 27 positions are stated in the appendix.

MR. ARUBOVAK: All right. November '77, 0308.

MR. BELTRACCHI: That's correct.

MR. ARUBOVAK: Well, I don't know whether you're going to be discussing this schedule that we put up here. I don't want to take --

MR. MINNERS: We are.

MR. ARUBOVAK: -- time personally. But there are some conflicts here.

MR. MINNERS: No, I think everyone has an interest in the schedule, and I cut some people off on the schedule, and we're going to discuss it, if people want to.

MR. RAMOS: We can discuss it now.

MR. MINNERS: Doesn't seem to be interest. Let's go on to somebody else. Okay, onward. Let's see, Mr. Cotton, Mr. Burns from PASNY?

Oh, Mr. Cotton, I'm sorry, didn't I get you?

MR. KNAPP: He just left. And I can speak for him. He had one question on (WORDS UNINTELLIGIBLE).

MR. MINNERS: All right. Will you identify yourself, please, sir?

MR. KNAPP: Walter Knapp, Philadelphia Electric.

All right?

MR. MINNERS: Go ahead.

MR. KNAPP: Relative to the SPDS information to the EOF, the reference page is 19, section I: one of the fundamental purposes of the EOF is for interface between the plant and the off-site, which is the whole world, if you will, and in doing that they would need, primarily, the met' data, meteorological data, to determine or assess the impact on the environment -- what is the real reason or justification for having the SPDS information and all the data related to it transmitted to the EOF? In other words, we feel that the reason it's transmitted as indicated in the document (WORDS UNINTELLIGIBLE) resources is a strong enough reason. And we're wondering in recovery phase if (WORDS UNINTELLIGIBLE) that significant (WORDS UNINTELLIGIBLE) and even less reason to have this data transmitted to the EOF.

MR. MINNERS: Well, I -- you find our reason inadequate, which is, is to allow the overall managers of the event, who are going to be in the EOF, to have some information in the form of the Safety Parameter Display. And you find that inadequate?

MR. KNAPP: Well, it's --

MR. MINNERS: I guess all I can say is that we hear you and if you'd like to --

MR. KNAPP: Okay.

MR. MINNERS: -- provide a written comment we'll consider it further.

MR. KNAPP: Okay. I'm on the list. I'll wait my turn.

MR. MINNERS: All right. Mr. Gennard of Westinghouse?

MR. GENNARD: Yes. No comment.

MR. MINNERS: No comment? And let's see, double checking -- Mr. Burns? No?

Mr. Birdy of Philadelphia Electric?

MR. BIRELY: Birely, please.

MR. MINNERS: Birely?

MR. BIRELY: My comment has been fully discussed.

MR. MINNERS: All right. Thank you.

Mr. Edwards of Philadelphia Electric?

MR. EDWARDS: One concern I have is the SPDS

portion of the display between the Tech' Support Center and the EOF. Are they assumed to be -- have the same criteria as the SPDS in the control room?

MR. MINNERS: No.

MR. EDWARDS: Okay. That's just an augmented set of data that they're going to have?

MR. RAMOS: Just a set of displays in those two facilities.

MR. EDWARDS: Okay. Again in relation to the SPDS, I'm still kind of confused as to the function as relating to the control room operator, because --

MR. BELTRACCHI: Okay, the function would be to have a minimum set of data so that he, the operator, would be able to assess if the plant is operating safely. Now --

MR. EDWARDS: I think -- now, I'm a member of the BWR owners' group subcommittee that's looking at this, and the way we were looking at the SPDS was, we would try and give the operator the information that would get him into his emergency procedures.

MR. BELTRACCHI: I think you're carrying it one step -- a couple of steps too far. It's going to have to be the case where the emergency procedures would be reviewed to assess whether or not you have leading indicators that should be displayed in the safety parameter context. However, having the Safety Parameter Display System tell

you, "Go to emergency procedure 213," is not the intent. You're going to have to -- the capability of being able to diagnose and associate with what emergency procedure you go to is far beyond the scope.

MR. EDWARDS: We were not saying that the system would designate what procedure to go to. What we were trying to do is develop a set of parameters that would give the operator overall assurance of safety but also would be the initiating parameters that -- for a --

MR. RAMOS: Are you inferring that --

MR. EDWARDS: -- diagnosis for a systematic response, and he would say okay. We're trying to limit the number of parameters.

MR. BELTRACCHI: That's okay. That's --

MR. EDWARDS: Once he finds out what is the main parameter or the main condition that's going on, I don't think he would have any more interface with that SPDS while he's trying to --

MR. BELTRACCHI: He will need additional information and additional data in order to determine the cause. I agree. It's not within the context of the Safety Parameter Display System to do that additional information that can --

MR. EDWARDS: So we're limiting it to --

MR. BELTRACCHI: Detection. Initial detection.

MR. EDWARDS: -- (WORDS UNINTELLIGIBLE) type of parameters (WORDS UNINTELLIGIBLE).

MR. MINNERS: It's an overall plant, total nuclear power plant system alarm. It just tells you that you've got something wrong, but it doesn't tell you what.

MR. EDWARDS: Okay. But getting back to the condition on the computer systems and talking about the mil specs having pretty stringent vibration requirements, we got into a problem with this about five years ago with equipment we were trying to purchase and we used mil specs to try and give us seismic capability, and we were very surprised to find out that most of the mil specs were very high frequency vibrations and when we try and get that back to seismic response it doesn't work. (WORDS UNINTELLIGIBLE) completely different type of response and the equipment will not survive a seismic event even though it can take all kinds of vibrations on a ship or in a plane.

MR. BELTRACCHI: Okay.

MR. EDWARDS: So I don't know whether we're talking the same thing. It might be apples and oranges.

MR. BELTRACCHI: Okay. You may have a point. I think I stated I did not make a one-to-one comparison --

MR. EDWARDS: Okay.

MR. BELTRACCHI: -- of the two.

MR. MINNERS: Thank you.

Mr. Morley of Philadelphia Electric?

MR. MORLEY: I have three comments or questions on the TSC.

At the bottom of page 9, it's indicated it shall be a reportable occurrence if the TSC is not operational for a period exceeding eight hours. Could you clarify a little bit the "operational" definition? Knowing what is required in the TSC as far as some type of SPDS, (WORD UNINTELLIGIBLE) system, ventilation system, and so forth, what would you consider as being a reportable occurrence and not being operational?

MR. RAMOS: If the facility itself in toto is not operational. Say, that your data link was down for some reason or other. Or the computer, if you had a separate computer, is down for greater than the eight-hour period, that's a reportable occurrence.

MR. MORLEY: The computer facilities themselves, is that the only thing you're considering in that --

MR. RAMOS: We're considering the whole facility. Now, if you can't get the data in there your facility isn't operational.

MR. MORLEY: Okay.

MR. RAMOS: So when you make the report of occurrence you report what other, compensatory measures you're taking so that you don't have to shut down the plant.

MR. MORLEY: Okay. How about the filter system we're talking about for habitability, is there any requirement if you test and you find some problem about that?

MR. RAMOS: Yeah, that's part of the TSC.

MR. MORLEY: Excuse me? Pardon?

MR. RAMOS: That is part of the TSC.

MR. MORLEY: So that would be considered also as non-operational. So any portion of the TSC that's not operational, it is then considered to be completely non-operational? Or is the facility (WORDS UNINTELLIGIBLE)?

MR. MINNERS: Now you're going too far, because the TSC is going to have a whole bunch of variables that go into it, and obviously, if only one of those variables is not displayed, the TSC is still operational. And that's a question I don't think we know how to address, and it's going to have to be something that's going to have to be worked out in the details later, how many variables can be down and still have the facility called operational. And I don't know how to address that question in detail. It's going to depend very much on the facility and I don't know what else. And staffing.

MR. MORLEY: Is this something you expect the facilities to further define or will you have further direction on this?

MR. MINNERS: Well, I don't think --

MR. RAMOS: I'd like to get all the help I can get to help define that term.

MR. MINNERS: If you would have some comments on how to write that up to define it better, that would be very helpful. I've worked on it, and I think you're going to have a tough time doing it. It's going to be one of those things which the inspectors are going to hate NRR for, because they're going to have to inspect to it and it's going to be a continual point of argument between the utility and the inspector of what's a reportable incident.

MR. RAMOS: Unless we rectify it now.

MR. MINNERS: And I don't know how to be very specific.

MR. MORLEY: Okay, fine. Next I --

MR. MINNERS: I think you understand the concept of what we're trying to do. We're trying to ensure that there's an operable TSC when an accident occurs, without --

MR. MORLEY: Yes. And you want some provisions for testing the various --

MR. MINNERS: Yes.

MR. MORLEY: -- items, on some things a periodic on-line test (WORDS UNINTELLIGIBLE). I understand. I just wondered how far you expected us to go, whether you wanted some facilities to be continual. It depends on the usage you're going to give this area other than for the TSC usage,

also.

MR. MINNERS: Yeah. Well, the tech' specs for like ECCS systems have gotten very detailed and are getting down to component levels. And maybe this will have to evolve in the tech' specs into being into component levels of how you -- how much time each component can be out. I would hope it wouldn't get that detailed, but it may.

MR. MORLEY: Okay. The next item, touching on a comment that was made this morning, page 10, you indicate: "If circumstances dictate the habitable TSC be located at a greater distance than this" -- meaning the two-minute comfortable walking distance -- "then a primary TSC facility must be provided close to the control room which does not meet the habitability requirements." So you're in fact requesting that we provide two facilities.

Now, in an operating plant, we feel that to meet your requirements, it's really always possible to put a facility right next to the control room. We would like to have some flexibility in going outside this two-minute comfortable walking distance, which is somewhat arbitrary. And my comment would be, also, we feel that if it were four or five minutes away and we have a good facility which meets your requirements, we could, again, with this camera system that we discussed, of course, a closed-circuit camera system could be used to duplicate the face-to-face confrontations

you're after and also get the additional data which you're concerned about maybe the SPDS display not having.

So I'd like to offer that as a comment and ask perhaps that you relax this two-minute comfortable walking distance, because I feel that's somewhat arbitrary and this is somewhat a functional spec' to give the utility flexibility to do the best possible job in this area and then you throw in kind of a ringer here with a very restrictive time.

MR. MINNERS: Well, let me explain one thing. When we wrote this document and people didn't -- we had to come to some of these arbitrary things, which are, admittedly, arbitrary, I requested that they come on the tight side rather than the loose side, for the very purpose of getting comments from the industry. We could have just as well maybe written four or five or even 15 minutes in here, but then we would have gotten no comments back from the industry. So on some of these things we do expect comment back from the industry from it, and hopefully, the comments will be accompanied by a basis which would say, "It's okay to have five minutes or ten minutes because..." and they also might have the cost side of it says if you go more than some time it's going to cost us ten times as much.

So the reason some of these things are on the tight side is because they were requested to be so, in order

to elicit comments from the industry.

MR. RAMOS: Originally we had in there 50 feet.

MR. MORLEY: I know. I remember that.

(Laughter)

The same comment applies to 50 feet, too.

(Laughter)

MR. RAMOS: Well, we relaxed it quite a bit by saying two minutes.

MR. MORLEY: Okay, as long as you recognize that we need some flexibility, because we would come back and comment and justify a position like this, fine.

MR. MINNERS: And if everybody comes back and the maximum time is five minutes, maybe we'll move it up to five minutes or something, if it's not too unreasonable.

MR. MORLEY: My next item is on the next page, under "Technical Support Center Structure," indicating that it should be a well-engineered structure. Also, in the discussion this morning about the SPDS, you indicated that should be functional under an OBE. Are you inferring that this well-engineered structure also, since it has an SPDS, SPDS display system, and it should be designed to an OBE?

MR. RAMOS: No. We purposely did not put down OBE.

MR. MORLEY: Okay.

MR. MINNERS: We think that the SPDS in the control room, the display in the control room, has a very

significant safety function; and obviously, you have an earthquake, you're going to have all kinds of alarms and signals going off, which are going to confuse the operator, and you would like to have the SPD so they can just look at it and say, "Gee, I'm still okay even though I've got all these things going on." But in the TSC it does a survey function, so we don't think it needs to be OBE-qualified.

MR. MORLEY: Fine. Thank you.

MR. MINNERS: Thank you.

Was there a question?

VOICE: Yeah, George brought up a point here, and I'm confused myself. On the Technical Support Center --

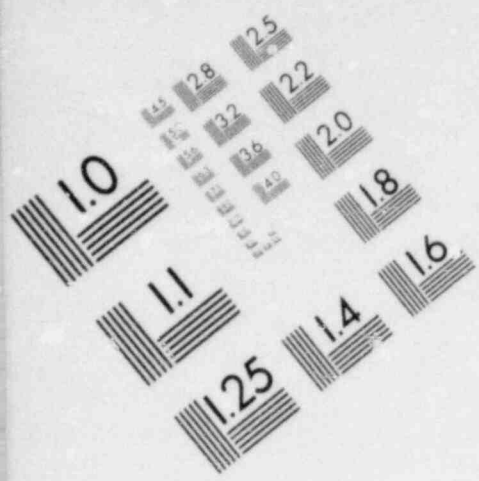
MR. MINNERS: Would you come up to the microphone, please.

VOICE: On page 9, where George talked about the Technical Support Center, that Technical Support Center is going to lay dormant for a number of years, presumably, right?

MR. MINNERS: Not necessarily. No, hopefully, there will be exerises performed to assure that it works.

VOICE: All right. So, let's say, there'll be periodic inspections.

Now, this eight-hour period that you're talking about here would be during the time that someone inspected it and said -- found it down.



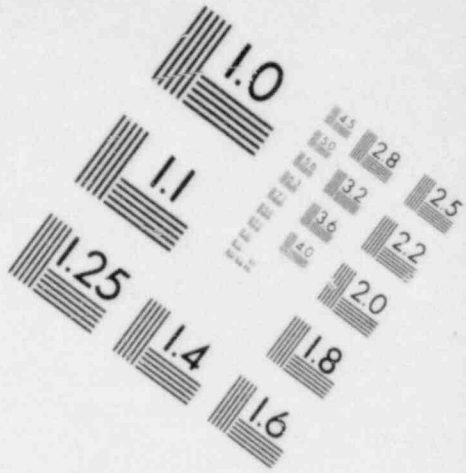
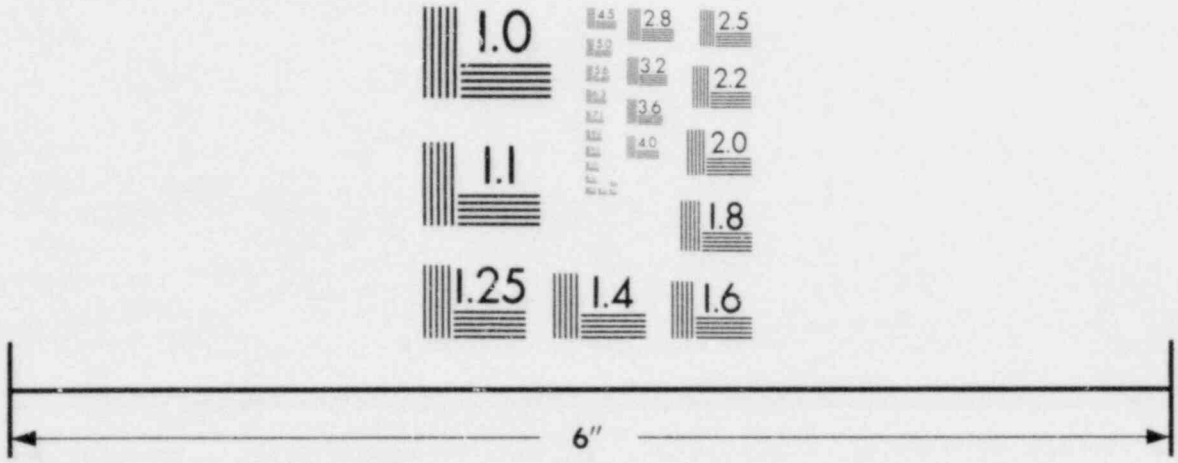
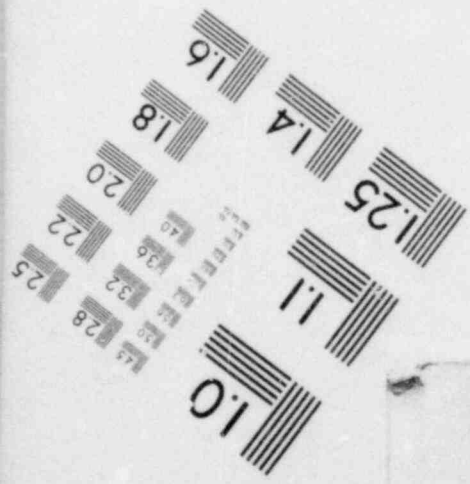
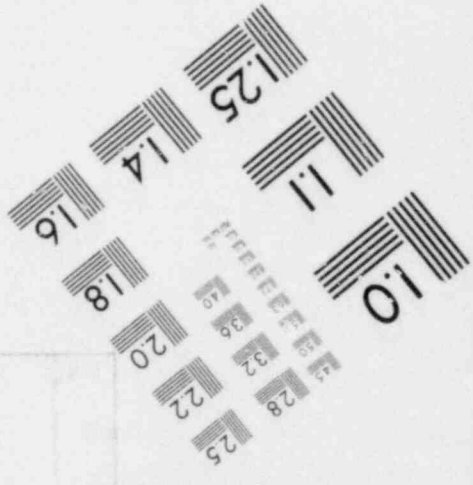


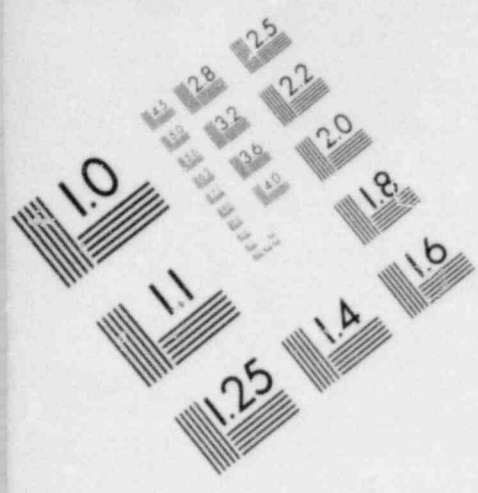
IMAGE EVALUATION
TEST TARGET (MT-3)



MICROCOPY RESOLUTION TEST CHART







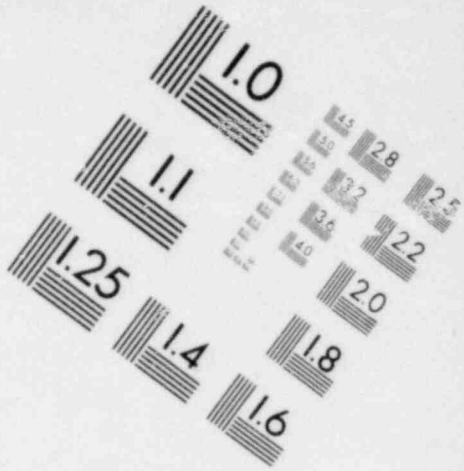
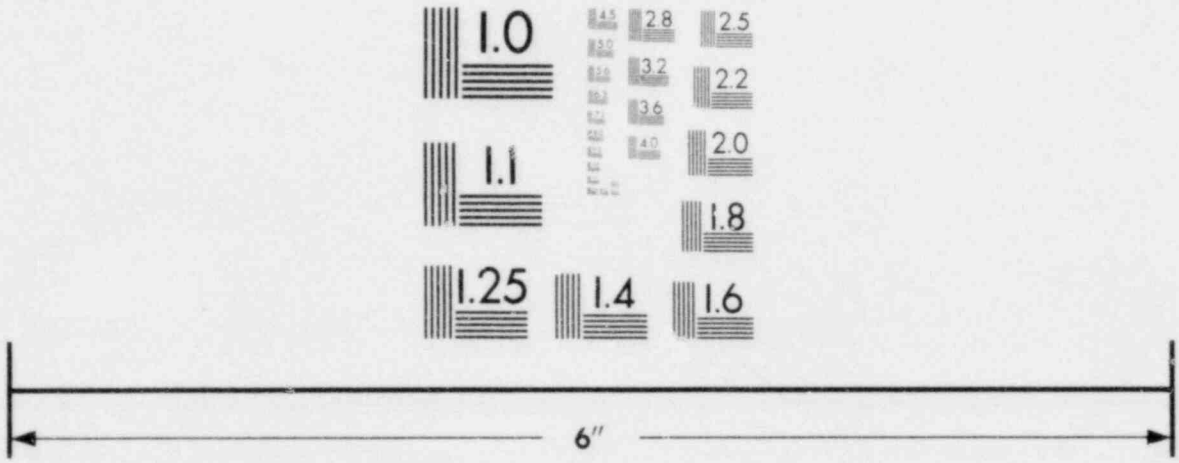
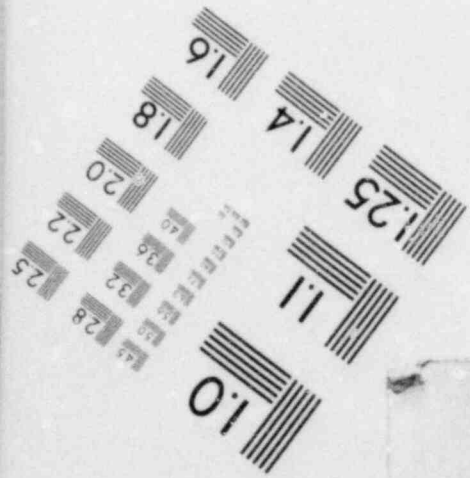
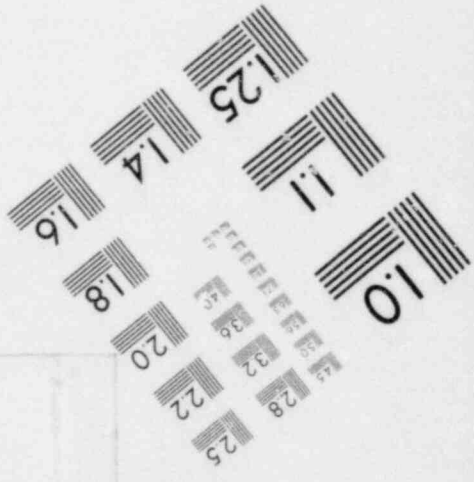


IMAGE EVALUATION
TEST TARGET (MT-3)



MICROCOPY RESOLUTION TEST CHART





MR. MINNERS: But there are going to be surveillance requirements on it. You're going to have to go through and test your equipment to be sure that it's operable. It's going to be just like an ECCS pump, and you're going to have to start it up and see if it runs.

VOICE: Are you asking that room, then, to be completely air-conditioned and operating?

MR. MINNERS: Yeah. I don't quite understand. You mean all the time?

VOICE: Yes. You want that room to be operational 24 hours a day, with the CRTs and whatever equipment there?

MR. MINNERS: What I mean by "operational" -- yeah, I mean, you can have them turned off and the air conditioning turned off --

VOICE: Yeah.

MR. MINNERS: -- but the surveillance tests would then be, the guy goes in and tests that the air conditioner works.

VOICE: Okay.

MR. MINNERS: Okay? He runs a half-hour test and the air conditioner works -- okay.

But no, it doesn't have to be at the instant readiness: you don't have to have all the CRTs warmed up and the air conditioning running and, you know --

VOICE: You don't envision (WORDS UNINTELLIGIBLE)?

MR. MINNERS: -- and the coffee pot plugged in and all that kind of stuff. It's, you know, it's got to be ready to go.

VOICE: Okay.

VOICE: Do you have any problem if it's somehow integrated into the day-to-day operation of the plant?

MR. RAMOS: We really hoped you would --

VOICE: It doesn't have to be a separate thing (WORDS UNINTELLIGIBLE)?

MR. RAMOS: No. We hoped you would use it as a day-to-day --

VOICE: The TSC.

MR. RAMOS: -- you can use it as plant training, you can use it as plant monitoring; whatever you want to do with the thing. It might even be the place you'd put your STA standard watch, if it's right next to the control room. There's all sorts of things you can do with it.

MR. MINNERS: The NUREG is giving the minimum requirements, or minimum guidance, however you want to be legalistic about it. And people can do things beyond that. This is minimum.

Mr Kadak from Yankee Atomic? Is that right?

MR. KADAK: Yes, thank you. I made many of my comments earlier this morning. But I'd like to focus in on a couple of things that perhaps I don't understand

completely. And that is the definition of the Safety Parameter Display System and then its role. Your document says: "It's solely a monitoring system to aid the operator in the detection of abnormal operating conditions." That's far from a significant safety system, which is what you just used as a definition of the SPDS.

MR. MINNERS: I guess that's your opinion of what a safety significance is to my opinion of what is safety significance. I think a monitoring function is a very important safety function.

MR. KADAK: Well, again, if -- we have to go back to the control board and its overall monitoring capability --

MR. MINNERS: Yes.

MR. KADAK: -- to the SPDS as an aid to the operator in addition to what he has in front of him on the control board.

MR. MINNERS: Well, the SPDS won't do it by itself. It's an overall system total plant monitor.

MR. BELTRACCHI: On a -- more or less on a macro basis.

MR. KADAK: That's right. I --

MR. BELTRACCHI: Okay.

MR. KADAK: -- understand that. And I think what I'm trying to say is, it ought to be considered as a backup to the basic control board in terms of its safety

significance.

MR. MINNERS: Yes. It is. It is considered as a backup.

But the problem is, if the guy, the operator, gets a lot of alarms, he takes a long time to figure out whether the plant is safe or not. And we want to be able to have him just look at this one thing and say the plant is safe or unsafe very quickly. But the alarms can be very confusing because there's so many of them; it takes him a longer time to figure it out.

MR. BELTRACCHI: Because they're both safety and non-safety --

MR. KADAK: Sure.

MR. BELTRACCHI: -- and in many plants they're not (WORDS UNINTELLIGIBLE).

MR. MINNERS: It's a complementary function.

MR. KADAK: Well, I can understand the impetus behind it, and I agree with it. But I think the reliance on the safety class 1E type of qualification, the whole seismic group, if there are safety parameters that are 1E, fine, they ought to be 1E, but there are other parameters that are not 1E, perhaps the processing computer that you use doesn't have to be seismically qualified because people have as a primary tool, still, the control room.

MR. BELTRACCHI: But by virtue of the example that

I cited, in terms of both the Enrico Fermi incident and the Three Mile Island accident, the very common characteristic was that all the information was in the control room and y the operator could not put it together, by virtue of the fact that it was dispersed throughout the control room.

MR. KADAK: You're missing my point. I agree with the need for the system. I disagree with the kind of sophistication and reliability requirements you're placing on it. That's my basic point.

MR. BELTRACCHI: Well, it's only the sensors that --

MR. KADAK: Well, it's the whole system has t have availability of .001.

MR. BELTRACCHI: What would you propose?

MR. KADAK: I would say something that you can feel relatively confident about working and having available, without going into a specific number, a good quality-engineered system, because it's in the best interest of the operator to have it working, and I think the utilities and the engineering consultants that they have can design a system without being so darn specific as to its availability or unavailability and still make it work well. That's my whole point.

(Pause)

And just another comment. You talked about the

Combustion Engineering Core Protection Calculators and used that --

MR. BELTRACCHI: Well, let me go back to your other comment. If you think our specification of unavailability is incorrect, I'd appreciate you making a comment which makes your suggestion and a basis for that suggestion. Okay? And some rationale for picking that number.

MR. KADAK: Sure. Now getting to the Core Protection Calculators and trying to distinguish between the SPDS and the Core Protection Calculator function, the Core Protection Calculators are safety systems: they trip the plant. They have an active safety function.

MR. BELTRACCHI: That's it. That's exactly right. And that's why that --

MR. KADAK: They're seismically qualified and all that.

MR. BELTRACCHI: And that's why the unavailability is not ten to the minus four.

MR. KADAK: Okay. But there is a distinction between that system --

MR. BELTRACCHI: That is correct.

MR. KADAK: -- and SPDS (WORDS UNINTELLIGIBLE)?

MR. BELTRACCHI: That is correct. And it was deliberate.

MR. KADAK: Right.

MR. MINNERS: But the SPDS has to be of high quality, because if it indicates a failure when there is none, that's going to misdirect the operator. He's going to have a lot of faith in that display, and if it says that something's wrong, he's going to start running around doing things that maybe he shouldn't be doing. That's why I think it needs to be a highly reliable piece of equipment. It's a --

MR. KADAK: It does. I agree. But I would say at that point he would look at his control board, because that is, I would guess, his best source of information on the overall plant status.

MR. MINNERS: I'm not certain. I had thought -- if this safety display is advertised as the ultimate, which I think it could be, he's got to choose between conflicting information. He may have a control board which says it's okay, which is only process equipment, and he says this safety display, which is advertised as safety equipment, which says everything's wrong -- what does he do? He's got a problem.

So what you want to do is avoid that problem and never have the safety display wrong, if possible. That's the --

MR. KADAK: Okay. I want to --

MR. MINNERS: Well, of course, it's going to be wrong sometimes. But you want to minimize that, because the more times the safety display gives erroneous information, you're going to put yourself in an unsafe condition.

MR. BELTRACCHI: There's one other aspect of this. I think it's too long in this industry it's been black and white: it's safety 1E or non-safety. And I think if anything that came out of Three Mile Island, it's time to start considering some intermediate categories --

MR. KADAK: Sure.

MR. BELTRACCHI: -- such as important to safety. And I would consider that the Safety Parameter Display System would be a 2E, quote, unquote, type system.

MR. KADAK: I agree. I'd like to now get to the question of the NRC response plan. I was heartened to see that the region had a plan in force or in effect. And the question that I have is: what specifically will be the assignments of the individuals? We saw something there about a systems engineers reporting to the Technical Support Center. What we've done in our utility is, we've listed -- and this applies to the data link, we're establishing our own data links before NRC data link -- but we have established a system whereby we ask the designers, "What do you need this particular piece of data for? And justify it for us. If you make a sufficiently good justification,

we'll provide you with that information. And how would you use it?"

We've done this, as well, with the personnel assignments. If we're sending somebody to the Technical Support Center, he will have a specific job to do, and that job will be clearly defined for that particular individual.

Now, as you formulate your NRC response plan, as you formulate your Data Link requirements, as you formulate your SPDS requirements, I think that is an essential step that you've got to go through -- how will you use a particular piece of information, what will I do when I get there -- because if you don't do that you'll have your ten people in the EOF, you'll have your five NRC people in the Technical Support Center, who knows doing what, perhaps getting in the way.

MR. BELTRACCHI: That's being worked on right now.

MR. MINNERS: I think we have a little easier job than you do, because the basic function of all the NRC people is just to monitor; they don't really have to do anything.

MR. KADAK: This is why I get nervous when I see a dotted line "assume operational management direction" and all that. I get very nervous about that. And I think (WORDS UNINTELLIGIBLE).

MR. BELTRACCHI: I don't -- I don't think you can

-- I don't think you can say that with a hundred -- a hundred pieces of data in Bethesda, even in a one-minute interval, that you've got enough information to control the plant.

MR. KADAK: Okay, that gets to my, I think, my final point.

MR. MINNERS: But let me address that dotted line. It makes everyone nervous. The Commissioners are nervous about it. And we realize our limitations, but we also recognize -- and I think everybody else must recognize -- that there could be a situation in the plant in which an operator -- and I -- a member of the operating staff does something which is incompetent, crazy, stupid. You know? What would -- we just could not stand by and let that happen. If we saw that --

MR. KADAK: Neither could the plant management.

MR. MINNERS: But maybe he's the guy that's doing it. He's not infallible.

MR. KADAK: No, but, I mean, the Technical Support Center is supposed to be the eye and ears and, theoretically, the brains of the overall recovery from an --

MR. MINNERS: And I agree, 99/100ths percent of the time the guy will be doing that, that you'll be doing it correctly.

MR. KADAK: Right.

MR. MINNERS: Okay, and the dotted line is for a very, very, very small percentage of the time, which you have to consider -- there is a possibility that something may go wrong at the plant, that -- you know -- that somebody may panic, something may happen, or, you know, or we may have information you don't know about. And -- you know.

MR. KADAK: Okay.

MR. MINNERS: My example, my facetious example is, is the Pope is blessing 20,000 people downwind of the plant and you don't know about it; you got a Protestant control room or something, I don't you. And we know that. So we tell the guy, "No, don't release." I mean, that's a very exaggerated example, but it's only to illustrate the point that there could be situations in which we would know things that you wouldn't know and we would want to give you very strong advice.

MR. KADAK: Two comments to that. One would be that if you are interested in taking that kind of a responsibility, my recommendation would be that you have qualified operators that might be able to be assigned to that particular facility who might, at least, understand that particular facility and how it functioned, in detail. And the training of your response people to individual reactors, I think, is a very important part of their contribution to accident assessment and overall management.

Which leads me to my final point.

MR. MINNERS: If you'll put that as a written comment, because I think --

MR. KADAK: I sure will.

MR. MINNERS: -- that would be a very useful one.

MR. KADAK: Independent decision-making with Nuclear Data Links, my feeling there is, as it's been described in the NUREG document, it could lead to uncoordinated decision-making, for the simple reason that you will be getting data, you will not necessarily be aware of all the actions that are being taken at the particular plant site, and unless there are some strict controls placed on the use of Data Link or even SPDS information that you may get in the short term, that it could be lead to people making erroneous judgments about what is, in fact, going on at the plant. And I think what ought to be written into the document is a, some sort of a commitment that indicates that before policy decisions are made, the ENT and the NRC site personnel and the utility management personnel agree on what actions ought to be taken based on data that they get. And unless that happens, I think, you're going to get into the TMI situation where people are reacting without having full information.

MR. MINNERS: Well, we hope we get better communication if there's a next time. And we try to, we're

trying to clean up our act. I think that comments applies to the NRC as well as to the operators.

MR. KADAK: Sure.

MR. MINNERS: It's a difficult problem and there's no real way that you can give absolute assurance. Everybody has to realize there has to be some discipline and that discipline is hard to maintain in action situations.

MR. KADAK: Right. But I think if Kemeny said anything and if TMI proved anything, it was the need for coordinated, informed response. It's not the information you haven't got, it's the information (WORDS UNINTELLIGIBLE).

MR. MINNERS: Well, we think that the Nuclear Data Link will help in the coordination aspect.

MR. KADAK: Thank you.

MR. MINNERS: Thank you.

Mr. Knapp of Philadelphia Electric?

MR. KNAPP: On page 18, section D, second paragraph, you talk about the communications from the EOF to federal, state, and local agencies. And I'm -- I have a need to know a clarification of what would be the nature of the information communicated to the local EMAs.

MR. RAMOS: That's the radiological, meteorological data that the EOF has been generating and which they will be able to provide to the local government or to --

MR. KNAPP: We're talking about the local governments.

MR. RAMOS: Yeah.

MR. KNAPP: I'm asking the information that the EOF personnel would transmit to the local governments.

MR. RAMOS: What I just said -- the radiological and meteorological data.

MR. KNAPP: And for what purpose?

MR. RAMOS: To keep them informed of what's happening in the atmosphere.

MR. KNAPP: State plans take care of that from the state --

MR. MINNERS: Could I -- excuse me -- why would you ask that question? It'd seem to me obvious. I'm not trying to insult you; I'm just trying to understand why you asked that question.

MR. KNAPP: Because state and county plans have a built-in communication link that takes care of that transmission of information.

MR. MINNERS: With the EOF.

MR. KNAPP: And during the initial --

MR. MINNERS: With the EOF.

MR. KNAPP: Pardon?

MR. MINNERS: They have a communiation link, it's supposed to be with the EOF.

MR. KNAPP: No. It will be from county level to the state level.

MR. RAMOS: And nothing with the EOF? You're saying there's nothing with the EOF?

MR. KNAPP: The EOF is a licensee center.

MR. MINNERS: We understand that. But are you saying that the information would flow from the EOF to the state to the county to the local, in that series?

MR. KNAPP: Yes, because the state plans call for that. The state plan has an agency which is responsible for the radiological recommendations for protective action, based on met' data and radiological data and field survey data.

MR. RAMOS: And in your state, you're saying that the state does not permit the EOF, the licensee, to send this data directly to the local?

MR. KNAPP: No, I'm not saying they don't permit. I'm just saying I'm wondering why you need it when we do have this other organization which is part of state and local plans.

MR. RAMOS: You need it for close cooperation with the local government. That's what you need it for.

MR. KNAPP: Assuming we need it, what kind of communication equipment are you thinking of? Dedicated phones between the EOF and the counties?

MR. RAMOS: Yes. Not data link. Just the --

MR. KNAPP: Pardon?

MR. RAMOS: Can you hear me? We're talking about telephones, basically, and/or radios as a backup.

MR. KNAPP: Well, if it's telephones you must require dedicated then.

MR. RAMOS: Yes.

MR. KNAPP: So you're dedicated phones from the EOF to the counties' EMAs.

MR. RAMOS: Yes.

MR. KNAPP: This morning you used the term "priority backup communication." Can you describe what you mean by "priority backup comminication"?

MR. RAMOS: Priority backup means, for example, on site you have your own phone system, and we're saying if you pick up this phone and you dialed the control room, for example, from the EOF, that line will take priority over any other line that's on that particular circuit. That's a priority dedicated line.

MR. KNAPP: Well, now, for example, we would have a dedicated phone link between the control room and the Technical Support Center --

MR. RAMOS: Yeah.

MR. KNAPP: -- and from the Technical Support Center to the EOF --

MR. RAMOS: Yeah.

MR. KNAPP: -- and from the EOF to the state bureau of protection --

MR. RAMOS: Yes.

MR. KNAPP: -- and those are all dedicated lines. Now, and that's the primary form of communication.

MR. RAMOS: Yeah.

MR. KNAPP: Now I'm asking about backup communications. And you used the term this morning, I think I heard somebody say, "priority backup communications." And I don't understand what this means.

MR. RAMOS: Priority dedicated communication is where by -- you could have several lines coming in in the back system, and when you want to use that particular phone with a particular point and you dial it through, it takes priority over all other systems or other phone conversations, it'll cut them off.

MR. KNAPP: And if you use radio then that would be adequate, right?

MR. RAMOS: Yes.

MR. KNAPP: Okay. Then on page 8, in section A, and also again on page 13, in section I, the third paragraph, you mention that the Technical Support Center would still be in use during the recovery phase. And I guess our concept of recovery phase would be emphasis on the

EOF and downgrade the Technical Support Center, because the facility now would be more accessible, you could get in and out of the control room, the staff that would normally be in the Technical Support Center would be back at their normal stations. So the comment really is, we think that you shouldn't emphasize the need for the Technical Support Center during recovery phase. There should be some freedom permitted there.

MR. RAMOS: Mm hm. Okay.

MR. KNAPP: And my final question has to do with the SPDS. And I don't know whether this was answered or not, I'll have to ask it again. If you have more than one display, say, for example, you have -- you mentioned something about having a display for the supervision and at least one for the operators in the control room -- and if one of them addresses the SPDS for certain information, the other one has to wait. So there'll be some confusion, huh?

MR. BELTRACCHI: No. I think we've had some utilities have approached from the point, the point of view that they wanted to break portions of the SPDS off into work-station-dependent type of display. And the reason why we put the display -- the reason why it's worded in terms of its location and who it should be used by was to accommodate that. The main objective is to provide an overview, principally for the shift supervisor, shift technical

advisor. Replicative displays, or duplicative displays, outside of the control room, in the EOF and the TSC, do not have to be designed to the criteria that the control room displays are designed to.

Does that answer your question?

MR. KNAPP: I don't know if it does. Now let's say we're in the Technical Support Center and the --

MR. BELTRACCHI: The EOF does not -- the display, the Safety Parameter Display, does not have to be seismic for OBE.

MR. KNAPP: No, I'm not talking about design or reliability. I'm just talking about addressing, for information purposes, you know, for receiving data: if the, let's say, the emergency director in the Technical Support Center wants to see a certain listing of parameters, he would address the computer and get a display; while he's doing that, the control room may want to address it also -- and it can't.

MR. BELTRACCHI: Oh. That's -- in terms of -- in terms of -- in terms of priority on something like that, if you had a control -- if you had a computer system that did that, or a computer architecture that really gave your priority to your TSC, I guess, we probably would not accept it.

MR. KNAPP: Thank you.

MR. MINNERS: Okay. Mr. Holden of Stone Webster?

MR. HOLDEN: Some comments and questions directed to trying to implement the -- all these facilities.

As to the availability business, you very clearly said, and it shows up on page 13, where if you come down to .01 for the system, as long as you had .001 for the parameters, but now in the -- on page 14, this .001 seems to creep in again. Could you clarify that? For the TSC.

MR. MINNERS: I think that means each system. I think that's an individual (WORDS UNINTELLIGIBLE) --

MR. RAMOS: (WORDS UNINTELLIGIBLE) parameters and power supply.

MR. HOLDEN: I'm sorry, I can't hear you.

MR. RAMOS: It's meant to mean individual parameters and the power supply to have less than .001.

The overall TSC system is .01.

MR. HOLDEN: Thank you.

MR. MINNERS: If that's not clear, we can clarify that sentence.

MR. HOLDEN: I think that paragraph and that sentence on page, top of page 14, it says the TSC including the TSC system (WORDS UNINTELLIGIBLE) data system.

MR. MINNERS: Maybe that would be better stated as: Each TSC system, including power supply, shall have less than .001.

Does that explain it?

MR. HOLDEN: Oh, each individual -- well, I think that the way you said it on the previous page is good. That says --

MR. RAMOS: We'll -- we'll fix that.

MR. HOLDEN: All right. Now, that, that also shows up again for the EOF, on page 19.

MR. RAMOS: Okay.

MR. HOLDEN: There we've got, we've just got .001 with no mention of --

MR. RAMOS: Yeah.

MR. HOLDEN: Okay?

MR. RAMOS: Okay.

MR. HOLDEN: Further, on power supply, the October -- and this, now, is the power supply for the ventilation systems -- (WORDS UNINTELLIGIBLE) to have dropped out that were mentioned -- maybe I shouldn't ask the question (WORDS UNINTELLIGIBLE) right to ask it -- but the October clarification, that is, 0578, (WORDS UNINTELLIGIBLE) ventilation systems, and very clearly says they should be from the main power supply.

Now, you only mentioned that in 0696 (WORDS UNINTELLIGIBLE).

Could you comment on that?

MR. RAMOS: Well, certainly we will not be in

conflict with 0578.

MR. HOLDEN: In fact, that's a key --

MR. RAMOS: I understand.

MR. HOLDEN: If I was getting on with the design of a, say, a Technical Support Center, and what we had for a overall power supply, that's a key point.

MR. MINNERS: Well, maybe we've been too general. But the statement is, is that the EOF ventilation system shall function in a manner comparable to the control room and TSC ventilation systems.

MR. HOLDEN: Exactly.

MR. MINNERS: So I think that infers emergency power.

MR. HOLDEN: Now we're into 1E and redundant, that right? I guess (WORDS UNINTELLIGIBLE).

MR. RAMOS: (WORDS UNINTELLIGIBLE) have redundant (WORDS UNINTELLIGIBLE).

Okay. We'll -- we'll -- give us your comments and we'll see what needs to be done to clarify this percentage.

MR. MINNERS: I think you have a -- I think it's more than that that's confusing. Do you -- would you have a positive suggestion that it should not be emergency power or it shouldn't be redundant, or something like that, is that your comment?

MR. HOLDEN: I certainly don't think it should be

redundant. (WORDS UNINTELLIGIBLE) power.

MR. MINNERS: Well, okay, if you'd state your comment that way, if you have a written comment, and with a basis, fine, I'd be interested to see it.

MR. HOLDEN: Okay, fine.

On page 6, on the SPDS, there's a paragraph -- let me find it -- on separation from safety systems. That's very clear. That's the last paragraph under "A." But then the last sentence, when you're talking about separation from non-safety systems -- could you expand on that?

MR. BELTRACCHI: Yes. Our concern there was that the failure of non-safety systems could propagate and cause the failure of the Safety Parameter Display System.

MR. HOLDEN: And we're talking about isolation from non-safety systems there.

MR. BELTRACCHI: To the extent that failures are contained and will not spread and propagate to cause a failure.

MR. HOLDEN: All right. On 197 (WORDS UNINTELLIGIBLE), I think it's not untrue that 197 is still considered as a moving target. You're talking, let's say, three months to put out (WORDS UNINTELLIGIBLE)?

MR. BELTRACCHI: The letter, I think, stated specifically, "The Committee strongly recommends that the NRC and the industry continue to devote sufficient resources

to this matter and to enable development of a revised guide ready for publication by the end of the calendar year." Okay?

MR. HOLDEN: And that of course is the heart of all these systems. And that --

MR. BELTRACCHI: I think I stated earlier that --

MR. HOLDEN: Right, I heard what you said --

MR. BELTRACCHI: Okay.

MR. HOLDEN: -- about ten parameters. I heard you say that. But I also (WORDS UNINTELLIGIBLE) introduced at this August 6th meeting, is that mentioned in the letter?

MR. BELTRACCHI: Yes, it is.

MR. HOLDEN: Would you explain how that might impact us?

MR. MINNERS: I don't think it's going to change the result significantly. There are some more parameters. And we have already looked at the report and have decided which ones we would include and which ones we wouldn't; we've already done the work. I think the problem was that we didn't have a piece of paper which explained to the ACRS and others why we accepted or rejected the different items. It's not that we had never looked at the report, it's just that we couldn't tell people exactly what we did and why.

MR. HOLDEN: For example, the environs radiation monitoring requirements, are those looked on as (WORDS

UNINTELLIGIBLE) systems? (WORDS UNINTELLIGIBLE) on site into this?

MR. RAMOS: Are you talking about the requirements in 654 and --

MR. HOLDEN: No, I'm referring to 197.

MR. MINNERS: You mean hard-wired versus somebody'd go out and reading it and coming back? Or hard-wired versus radio microwave?

MR. HOLDEN: It addresses either. It addresses somebody going out and reading it.

MR. MINNERS: Maybe I've forgotten what it -- it's intended to be a continuous monitoring.

MR. HOLDEN: Well, that, that's quite an impact. It requires us to (WORDS UNINTELLIGIBLE) out on the street.

MR. MINNERS: Well, we would like to have seen 197 on the street, too.

MR. HOLDEN: One comment about, we heard a lot about, the OBE on the SPDS, and I think why it's such a concern is that the scenario it's going to follow -- and I suppose you will say that this is our problem -- but if the SPDS has to be seismic and you want to get it from this new computer system, the display which actually would go in the TSC, now we're into a OBE TSC (WORDS UNINTELLIGIBLE) to it. (WORDS UNINTELLIGIBLE) introducing seismics at all isn't going to stop at the SPDS.

MR. MINNERS: Well, if you think there's a rationale for not having the SPDS during seismic events, you know, I think you ought to present it and say why -- why -- maybe you want to say that the control room's backup or, you know, something like that. But I think, I maybe incorrectly perceive that you seem to be saying it's going to be a very hard thing to do, so, therefore, we wouldn't do it. And that's a difficult comment to accept.

MR. HOLDEN: I understand that.

(WORDS UNINTELLIGIBLE) some words that you have, I think, somewhat modified today, (WORDS UNINTELLIGIBLE) says there's a ready reaction (WORDS UNINTELLIGIBLE) connected with the NDL, on page 9, that "ready reaction" needs some clarification (WORDS UNINTELLIGIBLE) today.

MR. MINNERS: Whereabouts on page 4?

MR. HOLDEN: Page 9 (WORDS UNINTELLIGIBLE) page 9.

MR. MINNERS: It's on page 9?

MR. HOLDEN: Yes.

MR. MINNERS: Okay.

MR. HOLDEN: The fourth paragraph. (WORDS UNINTELLIGIBLE).

MR. MINNERS: Now I don't understand. That isn't the NDL directive. That's the TSC and the EOF (WORDS UNINTELLIGIBLE) display cable. We want the TSC and the EOF to be able to interact with the computer and draw up

diagnostic -- well, or other information, not diagnostic.

Sir? Does that explain it?

MR. HOLDEN: Yes, that explains it. I had it wrong.

We got down to one EOF, because we're eliminating the backup EOF. But we still have the need for the backup TSC.

MR. MINNERS: No, if you don't have a habitable TSC, you have to have a backup TSC.

MR. RAMOS: That was put in there to give you what we call the "Arkansas option." Arkansas proposed to have a TSC, a non-habitable TSC, on their turbine bay and to have a habitable one some distance way. And that was accepted, provided that both facilities have all of the data that one of them would have to have.

MR. HOLDEN: I guess I don't read that paragraph that way. It (WORDS UNINTELLIGIBLE) "Provision for an adequate alternate TSC facility shall be made for the possibility that the TSC may become uninhabitable." (WORDS UNINTELLIGIBLE).

Thank you.

MR. MINNERS: That seems to be an if: it starts out with "If" -- "If you have a habitable TSC a long way away, you have to have a uninhabitable one close by."

Mr. Imai from Con Edison?

MR. IMAI: I would also like to ask for a clarification about the comment you made (WORDS UNINTELLIGIBLE) basic philosophy of having a, let's say, if you have a earthquake (WORDS UNINTELLIGIBLE) earthquake (WORDS UNINTELLIGIBLE) earthquake, the (WORDS UNINTELLIGIBLE) will not be operating, so you (WORDS UNINTELLIGIBLE). If you have a operating (WORD UNINTELLIGIBLE) earthquake and the (WORDS UNINTELLIGIBLE) that way the plant itself is, say, safe, because it (WORDS UNINTELLIGIBLE) earthquake, and -- and the SPDS isn't working but will (WORDS UNINTELLIGIBLE) repairing within a few hours (WORDS UNINTELLIGIBLE). And I don't see really good reasons for having earthquake (WORDS UNINTELLIGIBLE) earthquake requirements for this system, for (WORDS UNINTELLIGIBLE) system.

Now, the same kind of condition that you mentioned before, I agree with that, because that is (WORDS UNINTELLIGIBLE) safety systems and other things. But the -- well, I'm just making comment that the --

MR. MINNERS: Okay. While we're thinking about the answer to that question, would Mr. Pete Moeller please take an urgent telephone call. M-o-e-l-l-e-r.

MR. RAMOS: See the secretary out there in the --

MR. MINNERS: The secretary out in the foyer can help you.

Let me try my explanation of why you need an OBE-qualified Safety Parameter Display. The idea was that if you had an OBE, it was agreed that the plant was designed to survive such an event, however, he would, the operator would, get multitude of alarms during such an earthquake, all kinds of things would be going off, and there would be a high probability of him being confused. And that's exactly what the Safety Parameter Display's purpose is.

MR. IMAI: Well, that may be true for even the (WORDS UNINTELLIGIBLE) trip. It would be all the alarm systems coming on and everything else.

MR. MINNERS: And that's right. And the Safety Parameter Display will work in a trip and tell him whether he's okay or he's not okay. And the Parameter Display is also supposed to work during an operating earthquake to tell him whether he's okay or not okay.

MR. IMAI: Well, if you look at the chances of having earthquakes in any buildings and the, you know, percentage of failure of your system, I don't think you really are justifiable to put (WORDS UNINTELLIGIBLE) system, but that might at least have some --

MR. MINNERS: I don't understand -- I understand what you're saying about the low probability of the earthquake -- but what do you mean by the "percentage of failure" -- of what system?

MR. IMAI: Looking at the (WORD UNINTELLIGIBLE) chance of any (WORDS UNINTELLIGIBLE) system failure, which is a .001 -- .01, the (WORDS UNINTELLIGIBLE) system failure say .01.

MR. MINNERS: The .001 requirement is to assure reliability without earthquakes. But you have to put on top of it -- that's just a random failure rate, but it still has to be qualified for other environment, it has to be designed to survive things that might happen, like earthquakes, or floods, or tornadoes, or whatever. And the idea is that you have this thing when you have an event.

If your comment is an OBE is -- is your comment that the OBE is such a low-probability event that you really shouldn't have to have this equipment for that thing?

MR. IMAI: Yes.

MR. MINNERS: Right. I mean, I could move it down to a half an OBE and I don't think it'd help you much.

MR. BELTRACCHI: Or carrying that one step further, what would you propose? No transient loads? Just static loads?

MR. IMAI: Well, I think if maybe reliable systems, for example, for the CPU systems (WORDS UNINTELLIGIBLE) even though one may fail, another one, there's some chance of having survived another one.

MR. MINNERS: If neither one is qualified for an

OBE, I can't see how you think one's going to survive.

MR. IMAI: Okay. (WORDS UNINTELLIGIBLE) next question is (WORDS UNINTELLIGIBLE).

MR. MINNERS: Wait, let -- before you go on, just for -- as a general comment, if it's a -- this earthquake and all the environmental hazards is a difficult question. We've tried to present our rationale. If people have other rationales, we'd love to hear what they are and we would consider them. And I'm not trying to cut anybody off, but I'm -- I would like to hear other rationales to say why you should do it a different way. And that would be good information to have in comments.

MR. IMAI: So you are saying if we meet all of the requirements in the 0696 (WORDS UNINTELLIGIBLE) the CPUs or whatever it is, the CRT and the CPU's don't meet the OBE requirement you will not accept it?

MR. BELTRACCHI: No, what he was really saying is, propose an alternative.

MR. IMAI: Now suppose --

MR. MINNERS: Let me answer your question now. I don't want to say never, but I don't think we'd accept that, no. If you came in without an earthquake-qualified Safety Parameter Display, I think we would reject it. Unless you came in with some good rationale of why it didn't have to be.

MR. IMAI: Would you accept the testing only two

items within it, like a CPU and also the CRT, or do you want it for each component?

MR. MINNERS: Sounds to me like it's a chain and you've got to have all the links qualified. I mean, it's not parallel; I mean, it's a chain and if all the components don't work the system doesn't work. So if one component is not qualified the system won't work.

MR. IMAI: Now that brings the second point, if you have a deadline in April '82 and you want us to start doing all the safety testing and other things, you will not, I don't think we'd meet the the deadline, and not only (WORDS UNINTELLIGIBLE) manufacturer is limited, and if everybody orders the same computer, pretty soon his delivery date is much longer and you can't meet (WORDS UNINTELLIGIBLE) you cannot meet the deadline, would you -- what's your position? Would you request (WORDS UNINTELLIGIBLE) or would you just take any reasonable schedule and (WORDS UNINTELLIGIBLE) case-by-case?

MR. RAMOS: Are you trying to paint us into a box by that and tell you you're going to have to shut down in April '82?

MR. MINNERS: You would do -- instead of asking that question, I would urge you to present information which provides backup to what you say, is that equipment availability is such that you can't meet that date, or it

would give you bad equipment or whatever the reasoning is, if you'd give us some facts to base our implementation schedule on, we may change the implementation schedule.

To try to predict what kind of action the Commission might take if somebody doesn't meet a requirement on a certain day, it all depends on the circumstances at the time. I don't know what would be done.

MR. RAMOS: If you're the only facility in the country that can't meet that requirement, I can tell you what probably would be done.

(Laughter)

MR. MINNERS: Mr. Jenckes of Pacific Gas & Electric?

Not here?

Mr. Prebula from Bechtel?

MR. PREBULA: I have two comments, both of which have been touched on, so I don't want you to dwell on them. But the first is on the interactive capability on the Nuclear Data Link for the EOF.

MR. MINNERS: Wait a minute.

MR. PREBULA: On --

MR. MINNERS: Go ahead.

MR. PREBULA: -- page 9, that paragraph we went through before. It states that it may be desirable to provide an interactive terminal and display capability

between the emergency facilities and the NRC headquarters, to aid emergency management. And that statement was added after the -- prior to the July 1st draft of this and, I assume, came from 0654. And I'm not sure that from -- even with the assurances that you're giving us today that 0654 and 0696 have been adequately coordinated -- I would ask that you look at that, because 0654 does have a lot of interactive display data.

MR. MINNERS: I think that's a fair comment, and we will look more closely at 0654.

MR. PREBULA: Okay. The other comment is the same one that we've been addressing on the seismic capability and overall availability of the Safety Parameter Display System. I'm working on the (WORDS UNINTELLIGIBLE) and we're down the road a ways, so that we have to order our computer systems (WORDS UNINTELLIGIBLE) and a very reliable fuel train (WORDS UNINTELLIGIBLE) computer (WORDS UNINTELLIGIBLE). And it's not qualified for the OBE. And we were looking (WORDS UNINTELLIGIBLE) common data base for all of this (WORDS UNINTELLIGIBLE) putting all of our input into (WORDS UNINTELLIGIBLE) what we found is that with this one common system (WORDS UNINTELLIGIBLE) train, we have a system that we could utilize in the plant to provide the availability requirements we're looking for. We feel also that the arbitrary implementation of that OBE may not be

absolutely necessary. And the reason, which I hope to provide as what you're looking for, is that for SSE, even, there is no requirement in an FSAR, chapter 15, to analyze the doses from an SSE. The plant is designed to operate and come to a safe shutdown with an SSE without releasing any radiation.

MR. PREBULA: To arbitrarily limit the qualification of this SPDS to an OBE and not take it to the SSE is an admission on your part, possibly, that there won't be any radiation release.

If we are going to seismically qualify to the OBE SPDS, we will have to bring in a new system to provide new components of unproven reliability and possibly introduce a new computer system with unproven reliability and (inaudible) to the availability of the system.

MR. MINNERS: Well, there has to be some shock and vibration criteria for the SPDS. What would you suggest?

MR. PREBULA: I'm not sure that there has to be. If you could --

MR. MINNERS: I'm giving you an extreme example again. I mean, a truck could not go by the plant and knock out the SPDS.

MR. PREBULA: I think you could look at your computer system and determine that it's built substantially and that the components are adequately strong to withstand certain vibrations.

MR. MINNERS: Well if somebody would come in and give me the shock of loading vibrations for a truck or some mild earthquake and suggest those as design criteria, I guess we would consider them.

My impression is that if you specify almost any

shock or vibration criteria, it's going to be almost the same as the OBE because it's not so muc. the problem of the computer being able to stand it, it's the problem of getting somebody to be able to demonstrate it.

That is my understanding of the problem.

An OBE is not a very severe shock load.

MR. PREBULA: But it is a vibratory load as opposed to a shock load.

MR. MINNERS: Well, I try to say shock and vibration. However you look at it.

VOICE: May I offer a comment on your example?

Any commercially available computer system is capable of standing some vibratory load -- certainly of a truck going by -- and if they're not, they'll certainly never pass the acceptance test because there are numerous small laboratory loads applying to it.

I think your example is a little bit ridiculous.

MR. MINNERS. It was meant to be an exaggeration to try to illustrate the point. I'm not suggesting that that small a vibration would be design level. But there is obviously some earthquake type load that the computer should be demonstrated to be capable of resisting. Okay?

We picked OBE because that's kind of a number that's around, all right? I think a computer can probably withstand that load. I don't think there's any problem.

My understanding is that the problem demonstrating will meet those loads.

I am not that much of a computer expert, but that's my understanding of what is going on. So to make it half an OBE or a quarter or anything else is not going to be any help because it is the demonstration requirement that is the difficult point and nobody is going to change the design of the computer, I don't think.

Now, maybe if you went to SAE and had to beef up the computer -- it's the demonstration requiremnt.

It seems to me it is a logical difficult to go out and say that the SPDS cannot be demonstrated to survive a mild earthquake. I would think that would be a difficult position to defend.

People will say, well, why in the heck do we have it, because an earthquake is a time when you'd like to have it.

I'm just trying to explain the problem.

VOICE: Perhaps the problem cannot be totally appreciated at this point until some qualification programs have actually begun to be implemented. I think the concern that people are expressing has to do with, as much as anything else, the difficulty of setting up a qualification program, implementing it in something as complex as a computer and that sort of thing, and maybe what we need to

do on both sides of this fence is recognize the approach to qualification in this kind of situation may be different. It may be less stringent than what qualification has evolved into in the last five or so years.

MR. MINNERS: And some more specific suggestions of what that qualification program would be would be a helpful comment.

Mr. Chandler of Stone and Western.

MR. CHANDLER: Most of my comments have been addressed earlier, but there is one on page 13 with regards to the data display.

It talks about the data received and displayed in the TSC and the second sentence goes on to state, "In providing this function, the display shall include dedicated display of plant systems variables."

Now, you could construe that to mean one, indicators, recorders, that type of thing in the TSC or can you just say that if you had (inaudible) available at a CRT terminal, that would be sufficient?

MR. RAMOS: We aren't constraining your design criteria. If that's what you want to propose and it turns out to be acceptable, we'll accept that.

I can't answer your question specifically until I see what you're proposing.

MR. CHANDLER: I just question the phrase

"dedicated displays."

MR. MINNERS: I think he doesn't want the process computer printer. Is that right?

MR. BELTRACCHI: An example, and maybe an exaggerated one --

MR. MINNERS: No, he wants to come out and say either a printer or a recorder or a CRT. There are several ways it could be done.

MR. CHANDLER: I'm not sure what dedicated means.

MR. BELTRACCHI: Dedicated would be used functionally for that and only for that.

MR. MINNERS: You wouldn't take a process display that was only qualified for the process and use it for this function. I don't think I'm explaining it to you.

MR. CHANDLER: Not really.

MR. MINNERS: I think the process computer printer would not be acceptable because it is not dedicated to this function. Now you can do a lot of things to the process computer and its printer and everything to make it acceptable but by the time you got out there you would have a dedicated system that would go from the sensor down through some kind of a computer system and all this which would go through some kind of a display which was designed for these qualfications and requirements, it would be okay.

There would be nothing wrong and taking it and

having a slave display and putting it someplace else for another process operation function, okay, but the other way around doesn't work. You can't take an operating thing which is designed only for the operating function and say that's good enough for the TSC function because of the qualification requirements.

Mr. Blanch of Northeast Utilities?

MR. BLANCH: On page 10 I would like to read just one sentence and propose an interpretation to see whether my interpretation to see whether my interpretation meets your intent.

It's page 10, section (b), third paragraph. "If circumstances dictate that the applicable TSC be located at a greater distance, if this is greater than that to the control room" -- which is two minutes -- "a primary TSC facility must be provided close to the control room which need not meet the habitability requirements."

Now, my interpretation would be that if I don't have a room that's applicable within two minutes of the control room, I can locate my TSC somewhere remote from that. Let's say we have an emergency operations facility one mile from the control room -- okay? And I have a conference room which is within two minutes of the control room which is going to be my primary TSC does that meet your requirements?

MR. RAMOS: As long as it meets the data requirements, the number of personnel requirements and the various displays, yes. The only change in the two facilities is the fact that the primary one in this example doesn't meet the habitability requirements.

MR. BLANCH: Our specific problem is that we have an area designated as the TSC but it can only house about ten people. It happens to be habitable. But we have a conference room that can hold 25 people and we have an Emergency Operations Facility one mile away which we could split in half and call it the TSC EOF. Really, that statement sounds like it would meet your requirements. Is that right?

MR. RAMOS: Where is this conference room? Is it in the reactor building?

MR. BLANCH: I'm sorry?

MR. RAMOS: Where is the conference room?

MR. BLANCH: The conference room is within two minuites of the control room.

MR. RAMOS: Let's see the proposal and we will judge it when we see it.

MR. MINNERS: It sounds like it meets the requirements. From what you state, it sounds like what we are talking about.

MR. BLANCH: Thank you.

The August 1st letter, I think I heard a statement that this supercedes all previous requirements for tech support center and emergency operations facility. Is that correct?

MR. MINNERS: Yes.

MR. BLANCH: The gentleman from Region I tated up on his slide some reference to an OSC, which I think is an Operational Support Center. What has happened to that?

MR. RAMOS: We haven't done away with OSC. That is still part of 654. That is still required.

MR. BLANCH: We still have a requirement for the OSC, then?

MR. RAMOS: Yes, sir. We figure that is going to be a moving target anyway, you know, wherever you are going to put it. We really haven't laid out specific requirements for the OSC.

Now, if you feel it is necessary, we can add the OSC to the --

MR. BLANCH: No, we've got enough, thank you.

MR. RAMOS: Well no, I would only try to give a better integration. Your question seems to say that people are going to get confused, that all they have to do is provide what is in 0696, which is not true. And since it does supersede some stuff, maybe you would want to know which it supersedes and which it doesn't.

MR. MINNERS: I'd like to offer a possible approach to this whole question of seismic and SPDS, as you are aware, ENSAC and EPRI and a few other organizations, such as MACRO, have done a lot of studies on computer qualification, computer reliability and I think that our relationship with ENSAC, we can obtain the information from ENSAC especially on the reliability aspect and incorporate those comments if they have changed significantly from your 001, we will put them in writing to the NRC.

Also on the availability of the seismically qualified CRT, we will do some research prior to the 30-day comment period and get comments to you.

MR. BLANCH: The comments on this are of interest to everyone. The Atomic Industrial Forum Safety Parameter Integration Committee which has been working with the NRC is having a meeting next week down in D.C. just to file a lot of comments on NUREG 0696. Most of the utilites, AEs, are already represented on these committees. I know Stone Webster is, Bechtel is represented, and a lot of the utilities.

I think it would probably help the NRC if they could receive comments through that AIF Subcommittee rather than be deluged by hundred and hundreds of letters.

MR. MINNERS: We would appreciate the function that AIF would do in taking the comments and also

coordinasting them and also coming up with an industry position. It would be helpful to us if you could do that.

If other people wish to provide comments, please do. I'm not trying to cut off any comments, I'm just saying that AIF can and has provided a very good function of getting the industry to have one position which is easier. Then you guys get to decide what the compromise is that you'd like to propose rather than us taking a half a dozen utility comments and saying well, on the average this means something.

Because, you know, some utilities are over here and some are over there.

MR. BLANCH: In the past the AIF Subcommittee has had a meeting and a presentation before the NRC. If anyone is interested, the meeting is going to be down in D.C. on the 28th of August and it's going to be at 1747 Pennsylvania Avenue. Again, I believe they want to minimize the number of representatives there, but the contact's name is Art Bevans from AIF.

Thank you.

MR. MINNERS: Thank you.

Mr. Whooley, of Public Service Electric and Gas?

MR. WHOOLEY: I will try not to recover ground that's already been covered.

In 0696, there are a number of references to

future criteria. This is a little too vague. I think the dates should appear on the implementation schedule. We shouldn't be just waiting for a criteria and not knowing when it's coming and yet still having to comply to a schedule.

MR. MINNERS: Let me ask you a question. Let me try to turn your question a little bit.

Do you think that more detail is necessary or desirable? My hope would be that it would be possible to put out a document that does not require any more supporting documentation.

MR. WHOOLEY: Well, the problem is that 0696 is very specific in certain areas and in other areas, it leaves a little bit to interpretation and it is difficult to come up with a uniform response to it when some areas, that in itself is fairly hard to define.

I think the biggest job is going to be buying and installing the instrumentation and wiring up some system to be able to verify it. That's going to be a bigger job than the actual computerization of some of these things.

And if the data isn't defined as to specifically what data is required, it seems to me to be difficult to size the task.

MR. MINNERS: Reg Guide 1.97 is going to define the data that's required, the minimum set and we realize

that we have to get that out. We are going to tell you what variables form the minimum set. That's in Reg Guide 1.97. It is in Reg Guide 1.97 because that is where it has been for a long time and nobody wanted to take it out and start all over again in this document.

We're having some problems getting out Reg Guide 1.97. We understand that.

VOICE: Is that Reg Guide the one that will address page 8, bottom, section (f) where it says, "detailed guide for preparation for (inaudible)"?

MR. MINNERS: No, it will not. All the references in here to further detailed guidance, that's not Reg Guide 1.97 with all the things in parentheses. My question is, is that extra guidance as to SPDS performance specs necessary or desirable.

Or can you design a good SPDS with what is here?

VOICE: You said you were going to provide it. Are you or are you not?

MR. MINNERS: That's the question I'm asking. Should we?

MR. WHOOLEY: Well, if you're asking me, I would say yes. It would certinly make the job a lot easier.

MR. MINNERS: Okay. I'd like to hear that from the rest of the industry because, you know, some people want specific guidance and some people don't. If we give you

specific guidance, it's going to reduce your flexibility. That's the continual problem.

VOICE: The counterproblem to that is, regulatory discretion as to what is acceptable and what isn't acceptable. We've seen examples of utilities taking the initiative in building their own facilities and six months later you decide to issue a criteria or a NUREG or a Reg Guide which throws $2 million in the hole on restart.

That is the problem we face with whether you specify criteria or you don't specify criteria.

We are trying to accomplish a functional objective which you have specified but you can't do that if six months later someone sets out some criteria you can't meet, which is why utilities are now reluctant to take any action until they see something down on paper and that it is in fact the way it is going to be for seven months.

MR. WHOOLEY: Let me rephrase what I said. I think what we would all like to see is in 0696, the specific reference is made, the criteria is coming. They should be tied to some type of calendar date so that they could be coordinated with the overall implementation of the four phases of the emergency facilities.

MR. MINNERS: That's a valid comment.

MR. WHOOLEY: Overall, a lot of sections of 0696 seem to have as a design base current operating plants and

there doesn't seem to be much credit given for say, the plants that (inaudible) with more or less integrated control rooms.

For example, the thing we've talkdd about all day is the elimination of the process computer. I think the trigger 1 is a diagram of a single method of possibly implementing and what I would like to propose is this. I think the trigger 1 should be removed from 0696 and I would suggest the wording on page 5 as follows. Where you specifically eliminate "process computer," I would like to see it read, "such as the process computer, unless it can be demonstrated that the process computer has been designed to meet the emergency response facility design criteria."

MR. MINNERS: Plus a security requirement.

MR. WHOOLEY: Pardon?

MR. MINNERS: Plus a security requirement.

MR. WHOOLEY: If that's part of 0696, then fine.

MR. MINNERS: It's not part of 0696, because when we were working it out we said no process computers, so we didn't write in a security requirement.

MR. WHOOLEY: It's interesting to note that P742 was rigged to cover the application of computers to systems designed under 603 and perhaps the SPDS could be considered to be a 603 system, but certainly the Technical Support Center, EOF and a nuclear data link cannot.

MR. BELTRACCHI: That's correct.

MR. WHOOLEY: And yet the verification and validation seems to be across the board. Why is that?

MR. BELTRACCHI: Wouldn't it appear to be a valid requirement to have verification and validation across the board?

MR. WHOOLEY: If it can be demonstrated to be necessary, yes.

MR. BELTRACCHI: You don't think it's necessary for TSC or EOF?

MR. WHOOLEY: No, not for the TSC or EOF.

MR. BELTRACCHI: Why?

MR. MINNERS: If you've got all that software, if you have some kind of computer facilities with software that's going to give people displays, you don't think that stuff has to be verified?

MR. WHOOLEY: Well, for many years we wrestled this out to beta gamma and also the potential of applying an alpha to all plant systems, and the worry always was, why don't the extremes of the maximum case if it's not required?

And that's why 742 (inaudible) or what used to be referred to as alpha systems, it's the use of visual computers and safety systems as a subset of Ieee603 right across the board.

MR. BELTRACCHI: What are you proposing in terms

of qualification or to achieve the high quality product, which is really what V and B is in here for?

MR. WHOOLEY: You always answer a question with another question. I'm demonstrating the requirement. If there is a requirement to meet -- if it's demonstrated that the Technical Support Center should have that lower qualification, I'm not against it.

MR. MINNERS: The rationale for having a validation and verification requirement is that you are going to have a whole bunch of displays that people are going to be relying upon in accident situations. And if those displays are wrong because the software is wrong, it's obviously a very bad situation. You're worse off than you were before.

My experience with computers are that software is very vulnerable to errors and so how do you get the errors out of the software? The computers are pretty good. The software is very [illegible]or-ridden.

MR. WHOOLEY: I maintain that verification and validation improves your potential for maintaining a high-level product. But actually, the only thing that proves it is actually demonstrating on the system itself through repetitive testing and examples, and then all the verification and validation doesn't necessary guarantee the end product.

MR. MINNERS: But I can't do 100 accidents on this equipment to do what you want to do.

MR. WHOOLEY: All right. Well in the schedules for implementation it's quite possible that the verification and validation will add six months calendar time to the procurement activity. Has that been taken into consideration?

MR. BELTRACCHI: Could you give an example of that?

MR. MINNERS: I think we realize that software is a very large part of the job, not just the specific number of six months -- that's a good comment, you know.

But once again, we're nailed between a rock and a hard place. Do you accept something of less quality to get it faster? I don't know.

MR. WHOOLEY: Everything is relative, but again, if it can be demonstrated that such a high level is required before implementation is considered satisfactory -- in other words, I think a lot of the verification could be done after the system was put into service.

MR. MINNERS: I would agree. I would think the verification could be done during its development, because verification is a step-by-step process. If you're talking about validation which would be your final process by which you would assess how well you meet your functional requirements, then it's a question of the end product

against the functional requirements. And that may take some time, I would agree.

MR. WHOOLEY: This is the kind of thing that doesn't lead anywhere. All I'm trying to point out is that P742 was written as a substitute for Ieee603. Ieee603 covers safety systems and to the degree that the SPDS should qualify as a safety system, then P742 should apply.

But unless the Technical Support Center, the EOF or the nuclear data link are safety systems in the sense of Ieee603, I don't think the sections of P742 should be applied.

MR. BELTRACCHI: Well, there is another aspect of this, and we may as well lay it on the table.

V and V was adopted by the staff simply as a means of trying to assure a high quality product would be developed without having to have an army of auditors to go out and check it line by line and code it, in terms of an army of regulators who go out and check it line by line and code it.

So that is another approach and I know Roger Mattson embraced that in terms of passing it on to other aspects of the industry. Other aspects other than just a pure safety system.

So I do want to get that point across.

MR. MINNERS: Let me just make a comment to

hopefully maybe explain why we have what we have in the document is we have changed our way of doing business slightly, maybe. And you seem to be saying that if it's defined as a safety system it meets a certain set of documents for qualification.

We have taken that and now we're mixing it up. We are having what some people sometimes call Class 2E and things like that and mixing all our requirements up which is kind of a new departure from what we did before. And so we are not being as black and white as we were before.

It used to be it was either a safety system or it wasn't a safety system. What we're recognizing is that there are some in betweens and we're trying to fit the requirements to the in betweens. I am only trying to explain why we wrote what we wrote.

MR. WHOOLEY: One last comment.

On 742, it explicitly eliminates the need for self-tests and yet that's worked in here.

MR. BELTRACCHI: You are talking about self-monitoring capability? Yes.

MR. WHOOLEY: If it's not part of the safety system, why is that required here?

MR. BELTRACCHI It was just a means of automatic monitoring to assess the status of the system.

MR. WHOOLEY: All right, let me get off my

comments. I have a clarification to some of the questions this morning.

On the data link itself, did you say that the data link is not a continuous activity, that it should be activated automatically upon some event or series of events, but that it wasn't something that we were sending data 24 hours a day, seven days a week.

MR. BELTRACCHI: There were several variations in the design. I know the design did consist of having 30 minutes of the previous data sent on a continuous basis. Okay?

There were other aspects that addressed not having it sent every 30 minutes but having it sent on activation.

I don't think some of those have been finally decided upon, okay? The reason for this is there are cost trade-offs that do impact out and there are hardware trade-offs in terms of some of the pre-processes that were involved.

MR. WHOOLEY: A continuous transmittal of data that isn't required can put a processing requirement that may not be necessary under the conditions where a data link would be valuable.

In other words, you could require less capacity of sending the processor --

MR. BELTRACCHI: The amount of time to send 30

minutes of data is miniscule, really.

MR. WHOOLEY: The question is simply is there a continuous data link or is there a data link only acted upon by certain criteria which may not be defined?

MR. MINNERS: I don't think it's clear in the document and it's not clear in my mind, and I'm going to ask the question.

My impression is that some of the people I've talked to have the concept that there would be a continuous transmission of data to the NRC which would normally ignore it except upon a certain critical parameter which would then automatically alarm and initiate the display, or the Commission would be able to access that data if they felt like it. They would be able to put it up under the display and just see what your plant is doing on Tuesday night.

MR. WHOOLEY: Somehow, this morning I thought you gave a different answer to that question.

MR. MINNERS: I think that reflects that we're not clear on what we are doing. You've pointed out that it needs to be clarified.

MR. RAMOS: The whole point on the NDL is that the specs are not written yet. They are in the process of being written now and to ask us to give you a clear, concise answer to your question on where the data is going to be stowed is too early.

MR. WHOOLEY: But to write hardware procurement specs to purchase the system, an integrated system that can support all the applications, it needs to be divided better than it is.

MR. BELTRACCHI: I guess in terms of the 30 minutes, you would have to store 30 minutes at your end anyway. So you're actually going -- I guess I don't quite understand what other aspect would be involved, in terms of the design parameter?

What other things would you be looking for in terms of the design parameters that would have to be specified now?

MR. WHOOLEY: Well, overall, the amount of data, the frequency of transmission --

MR. BELTRACCHI: The frequency of transmission --

MR. WHOOLEY: -- over the board rate and would determine the type of communications that would be required and the data storage and everything. It overall does serve to size the processor.

MR. BELTRACCHI: I think as far as you are concerned, it would be more of a case of sizing a processor in terms of being able to format the data and present it to an interface device that would be at the plant.

MR. WHOOLEY: I didn't mean to --

MR. BELTRACCHI: Now, the board --

MR. WHOOLEY: All I wanted to know is the question, did you say this morning that it was to be activated automatically upon an event or --

MR. BELTRACCHI: I did and I was reflecting one phase and I know I did recall that that was, at one time, a consideration. I know that we have now looked at it in terms of other aspects of having it sent continuously on the basis of the last 30 minutes. The reason for that was that you would be able to assess the operational availability of the line.

I don't think a final decision has been made on that and, as Steve says, it will probably come off in terms of some interface specs.

MR. WHOOLEY: Okay.

Did we also say then on a separate aspect on data link that whatever date the NRC requires from 0696 or from 0654 or verifications in 1697 that aren't spelled out that there will be a single data link from the plant to the NRC containing all that data in one message string?

MR. BELTRACCHI: That is my understanding, yes.

MR. WHOOLEY: All right. Thank you.

I guess that's all I have. Thank you.

MR. MINNERS: Thank you.

Mr. Cruse, of Baltimore Gas and Electric.

MR. CRUSE: I just have one question on scheduling

of the tech support center. 0578 had two dates, January 1, 1980 requirement which everyone should have met by this time, and the second January 1, 1981.

Do I understand that that date is now gone and the new date is the April, 1982 date? Or is it something that will be required?

MR. RAMOS: January 1, 1981, we require system description proposal for us to review.

MR. CRUSE: Yes, but there is no part that has to be installed by one?

MR. RAMOS: No.

The same requirements that were required on January 1, 1980 are required for 1981.

MR. CRUSE: Thank you.

MR. MINNERS: Did Mr. Dahlquist of Baltimore Gas also want to ask something?

MR. CRUSE: Pardon?

MR. MINNERS: Did your colleague also wish to speak?

MR. DAHLQUIST: If you answered these earlier today, I am sorry.

When you say radiological data, is this just our regular (inaudible) parameters, or are you talking about radiation sensitive around radiation plants, several miles of plants?

MR. MINNERS: Those would be the ones thast are specified in Reg Guide 1.97 and that includes environmental monitors.

MR. DAHLQUIST: I hope you realize that is a very expensive system for us.

MR. MINNERS: I urge people that since the industry is the best source of cost data that you provide a comment that says this s what it will cost and an argument that, you know, the cost benefit is not there.

MR. DAHLQUIST: What is the intent of your imposing that? Is that necessary for that data to be hardwired online on the time at the EOF or the Tech Support Center?

MR. MINNERS: That's the concept.

MR. DAHLQUIST: Do you think the people there know what to do with it?

MR. RAMOS: I sure hope they know what to do with it.

MR. MINNERS: I think the last part of your question is, it doesn't make much difference whether the data is manually taken back to their room or continuously, the guy has to know what to do with the data.

MR. DAHLQUIST: Yes.

MR. MINNERS: And your question is, is it worth the extra expense to have a continuous monitoring system

versus some guy going out and sampling? It's not myself who wrote that, but the people who are in this field at the NRC felt that that was a requirement. If you felt that was not a requirement, make that comment and give a basis for why you think it's not required.

MR. DAHLQUIST: Well, we did make that comment.

MR. MINNERS: Obviously, you must admit that continuous data is better than gong out and sampling, you know. But is it worth it? That is, I think, the question.

Wouldn't you rather have continuous data in your display room if it cost the same amount of money as some guy going out to take the data and bring it back?

MR. DAHLQUIST: If you were going to get meaningful data, but the low level radiation that he is going to get, the most effective means of getting that is TLD and to simulate the levels of accuracy at that low level at a scene several miles from the plant would be a very expensive system.

MR. MINNERS: Isn't the idea to transmit back data that says the level is not low?

I don't know what the accuracy and range requirements are in 1.97 for the environmental stuff, but that would answer your question.

The intent is not to have a continuous environmental monitoring program to see that their normal

operation, things are okay down the road. The idea is that when an accident occurs and the radiation levels down there become significant or indicate that they are going to increase, that you know that. That's the intent.

We're not trying to have an automatic environmental --

MR. DAHLQUIST: Wouldn't the plant's effluent monitors indicate that?

MR. RAMOS: Not necessarily.

MR. MINNERS: I don't know. I'm not a health physicist.

I sympathize with your view that I think that the effluent monitors are more important that the environmental monitors, but that doesn't mean that the environmental monitors are completely useless, and I'd be interested to hear your comments because I think I sympathize with them.

MR. DAHLQUIST: At the bottom of page 4, on your last sentence on page 4, you did say that you are implying that these signals shall be transmitted, et cetera (inaudible). You would not have us install brand new dedicated transmitters? That is not what you mean by that?

MR. MINNERS: Such as the process computer? We're back to the process computer again.

MR. DAHLQUIST: No. I read that as the process transmitter at the pressure (inaudible), the level

transmitter. You don't mean that, do you? You don't mean we must install a new pressure transmitter?

MR. MINNERS: If the pressure transmitter meets Reg Guide 1.97, the qualification requirements that are in Reg Guide 1.97, then that's okay for the TSC and the EOF and if you also want to use that same equipment as a process instrument, that's okay. But you can't go the other way around. You can't use something that's only qualified as a process instrumentation and then use it for the TSC.

MR. DAHLQUIST: Do you think you could clarify that? I can see five years down the road (inaudible) those words differently.

MR. MINNERS: You're talking about the last sentence on page 4?

MR. DAHLQUIST: Specifically the word "transmitter."

MR. MINNERS: No, I don't know how to change the words. I think those were the words that were written elsewhere and I don't know how else to say it.

If you could give me some suggestion, I would consider it, but it seems to me you have to transmit it independently. In other words, you can't use signals that are process signals and put them into the TSC. Now, if you qualify the instrument and the transmission and the display and all that stuff to the 1.97 qualifications, then it drops

out of the normal plant and operations category and becomes this instrumentation to follow the course of an accident and meets our requirements.

MR. DAHLQUIST: Okay. We have (inaudible) control board indicators (inaudible).

MR. MINNERS: And if they're properly qualified, they're acceptable.

MR. DAHLQUIST: Okay, but they also supply the main control board indicator.

MR. MINNERS: If that indicator is qualified, then that's acceptable.

MR. DAHLQUIST: All right. But that isn't what the sentence reads.

MR. MINNERS: I think that's the Ieee603 definition of independent. If you have a Class Ie system it has to be independent of non-Ie systems and/or be isolated.

The problem is, you don't want to have a non-Ie indicator hooked up to a Ie system because people say if the non-Ie system fails it will affect your Class Ie system.

That's all that is trying to say.

MR. BELTRACCHI: General design criteria 24 addresses that aspect of the thing in terms of interdependence between safety and nonsafety and it does say that if they are connected that there shall be no significant interference, which leads up to the isolation device.

MR. DAHLQUIST: Okay. I can understand isolation. It is transmission down through the transmitter, that there has to be a dedicated transmitter at the Tech Support Center, et cetera, at that data base. That's the way I read that last sentence.

You're telling me that's not what you mean, but that's what --

MR. BELTRACCHI: If I understand you correctly, you are saying that it should be a dedicated sensor functionally for TSC. Is that correct?

MR. DAHLQUIST: That's the way I'm reading that sentence.

VOICE: I think the problem for us laymen is, what's the transmitter? You got an RTD in the system and you got a wire coming from it, that's transmitting the signal. It's not a transmitter.

You need a separate wire going to the TSC. You need two wires coming off that RTD.

Where do you divide it up? That's our question.

MR. BELTRACCHI: Where are you going to put your isolator? And if you are going to use that RTD for safety, if you took --

VOICE: The isolator control. There's nothing wrong with that.

VOICE: Let's say you have 1.97 (inaudible) data

acquisition systems going and "non-Ie" isolator. So if your computer screws up you won't --

MR. BELTRACCHI: That's right. That's the intent.

MR. MINNERS: That's all that is supposed to say and I don't know how else to say it.

VOICE: Because that comes back to the sketch you showed of an isolator that then showed (inaudible) 1.97 data and we assume the logical interpretation of that isolator would be Ie class data --

MR. BELTRACCHI: I see your point. It's a correlation of the statement with the figure. There is an isolator --

VOICE: -- transmitter It is clear to me, and then I would (inaudible).

MR. MINNERS: We want the wires to be independent, too.

VOICE: You get that with the isolators.

MR. MINNERS: I'm trying to answer his question, too.

Okay, we're working on it. I don't know whether if it's going to come out any better, but we'll try.

MR. RAMOS: We are missing an isolator on that diagram.

MR. DAHLQUIST: On page 11, the Tech Support Center (inaudible), you say that a separate space for TSC

shall be provided for (inaudible). Do you want your own soundproof room?

MR. MINNERS: We want a room where we can go and discuss the problem. I don't want you to bug it, either.

MR. BELTRACCHI: He just wants a regular office with walls, that's all. It doesn't have to be soundproof and secure and locks on the door. It just has to be a separate office where people can go sit down.

MR. DAHLQUIST: A conference table in the corner of the Tech Support Center?

MR. RAMOS: No. A separate room.

MR. MINNERS: Maybe that would be a better way to say it, a separate room.

MR. RAMOS: We did say that.

VOICE: How big? A separate room for five people?

MR. MINNERS: I forget what it says.

MR. DAHLQUIST: Do you have plans to define how many dedicated individual voice links are to be provided at the various facilities? In several places you say there will be telephones that will be dedicated (inaudible). You don't say how many.

Is two enough? Do you need one for everybody who is going to be there?

MR. RAMOS: You're now asking us to design it for you? We don't want to design it for you. We can. We were

asked by AIF and other industry groups not to tell you how to do it but only tell you what the functions are

MR. DAHLQUIST: Well, you said tell (WORDS UNINTELLIGIBLE) some meaning, must have some sense, regarding more than one.

MR. RAMOS: We don't say (WORDS UNINTELLIGIBLE) voice communication link.

MR. DAHLQUIST: And it says --

MR. RAMOS: "An additional communication link is necessary for communication," et cetera.

MR. DAHLQUIST: (WORDS UNINTELLIGIBLE) page 12, the paragraph, the third paragraph under the (WORDS UNINTELLIGIBLE) "dedicated (WORDS UNINTELLIGIBLE) link." And that would be more than one link.

MR. RAMOS: That's right. (WORDS UNINTELLIGIBLE) dedicated and a backup system.

MR. MINNERS: You're going to have to assign, in your emergency plan, staff to these different centers. And that's going to determine how many phone links. If you've only got one guy in each room, there's much use in having 15 telephones. And that depends on how the utility organizes itself and what your capabilities are.

MR. DAHLQUIST: Okay. Yes. I'm sorry, I gave a very bad example. The last one (WORDS UNINTELLIGIBLE) what we will require. But in another place you make reference to

NRC's communication (WORDS UNINTELLIGIBLE).

MR. RAMOS. Oh, you want us to tell you how many phones the NRC wants there?

MR. DAHLQUIST: Yes. How many phones does the NRC require?

MR. RAMOS: Okay, we'll tell you.

Okay. That's a fair comment.

VOICE: The gentleman at the end of the table said (WORDS UNINTELLIGIBLE) where are you going to add it?

MR. MINNERS: No, it was -- I think Figure 1 was lacking (WORDS UNINTELLIGIBLE).

MR. RAMOS: Well, it's from the dot down the line, it says, "Non-safety system signals," in that line, after the dot and just before you get to "Reg Guide 1.97 data," it says, "Isolate" -- it should be an "Isolator" there.

VOICE: You want the (WORDS UNINTELLIGIBLE) completely isolatable?

MR. RAMOS: Yes.

VOICE: Could you show that on the slide, if that's still available?

MR. MINNERS: I don't know if we --

MR. RAMOS: Why don't I show it to you (WORDS ININTELLIGIBLE)?

MR. DAHLQUIST: I think I just have one more question. (WORDS UNINTELLIGIBLE) others. On page 21, the

middle of the page, the paragraph on item two, you talk about (WORDS UNINTELLIGIBLE) requirements. And it says, "The data stream must be continuous on one-minute intervals." And I have a hard time picturing what that means.

MR. BELTRACCHI: All right. Well, I think, basically, there was, I know, at one time, the specification, basically, came down to state that there had to be no more than a five-minute lag -- okay? -- from the time that sensor was read to the time the information would be in the operations center in Bethesda. I don't think this is meant to be the type of thing where you read your -- at every one-minute interval you'd take all the sensors that you've read and then ship it out.

That is one approach. But I think that -- I know at one time the specification read that every five minutes you'd take the data that you've gathered and ship it out. That would -- that, that was acceptable at one time. And I don't think that the final requirements in terms of when this is -- of the interface specification, that this, this is interpreted to mean every minute ship your data.

There's a sampling rate at which you collect the data, and then there is also a rate by which you'd have to transmit.

MR. DAHLQUIST: Okay. So this doesn't mean that

you'd want us continuously transmitting?

MR. BELTRACCHI: That is correct.

MR. DAHLQUIST: (WORDS UNINTELLIGIBLE) one-minute intervals.

MR. MINNERS: You want each data point every minute.

MR. DAHLQUIST: Yes. Okay.

MR. MINNERS: Okay. And if you send it in one-minute -- yeah, very short pulses, every minute, I think that's acceptable. Right?

MR. BELTRACCHI: That would be an acceptable approach. But I think the -- I know that one of the latter specifications got into stating that it was every five minutes it could be sent. Okay?

Yes?

VOICE: I don't know if everybody caught the gentleman's request for a clarification on that drawing one. Did you also state that isolators are needed on the non-safety inputs?

MR. MINNERS: Tom, do you have that slide? Maybe you can get a Xerox, the page Xeroxed.

We'll try to get the slide and put it back up. All right, sir.

Okay, let's come back to the slide. We'll get it and flash it on that screen.

Is that -- okay, next.

And Mr. Hardy of FEMA?

MR. HARDY: The EOF, the idea of the EOF and what it, apparently, was originally meant to be, coming out of the experience of Three Mile Island, it's, obviously, an evolving concept. And the interfacing was between what happens on-site and what happens off-site and it occurs at the EOF. NUREG 0696 should be broad enough the state and local and the federal agency requirements other than NRC also, in the same detail that this addresses licensees and NRC requirements at the EOF. And this document, which talks about the place where the licensee, the NRC, state, local, and other federal agencies coordinate their activities, seems to talk mainly about the licensee. It should be a much broader document, partly because state and locals will look at this and they see the concept of the ECC in here and will begin to adopt things that are here, and yet I have a feeling, after looking through it for the first time this morning, that a lot of things need to be changed in order to include the state, the local, and other federal agencies.

MR. MINNERS: I don't quite -- we have general statements in that says the EOF is the point of interaction.

MR. HARDY: Yes.

MR. MINNERS: It doesn't say exactly what those interactions are, because they vary from place to place.

MR. HARDY: That's true, just like any particular site, every state is different, every site has different counties that want to have different things there.

MR. MINNERS: How would you put those various situations into a single document?

MR. HARDY: Well, there are some things here in the document, I guess we can go to some particulars.

MR. MINNERS: Well, just give me an example. I'm sure you'll give us some comments later that are written or something. But to understand your comment, could you give me an example?

MR. HARDY: An example of how this document should speak more? Okay, well, I'd like to go to the document itself.

MR. MINNERS: Sure.

MR. HARDY: For instance, page 16, C, "Emergency Operations Facility Staffing," the second paragraph talks about drills at the EOF, and it talks about this in relation to the licensee. Any drill at the EOF should include all of those individuals, all those levels of government, and including the federal government, and the licensee, if they plan to operate from that facility.

MR. MINNERS: I think we've had comments from local governments that they don't want that. Some don't.

MR. HARDY: That's true. Some do not.

MR. MINNERS: Not, I mean, every drill. They want to participate in drills, but they think that every drill would be too much.

MR. HARDY: Well, I don't know how often you would plan to drill in an Emergency Operations Facility. I would think that when you have the drills in the power plant at large, together with the preparedness off-site you would want to test the EOF, in addition.

MR. MINNERS: For example, would you think that some words that said that this should include state and local people appropriately, or something like that -- is that what you're trying --

MR. HARDY: Certainly. I would think that looking at this the licensee would say, "Well, we can have a drill with ourselves and we're okay," and that's not true.

MR. MINNERS: So you don't want to get specific, you just want to note that the drill also might have to, depending on what the emergency plan was --

MR. HARDY: If the --

MR. MINNERS: -- include state and local.

MR. HARDY: -- state plan and the local plans that come under that and the licensee plan call for representation at the facility of every other organizations, then they've got to be included in the drill.

MR. MINNERS: Okay. I think I understand your

comment. And I -- if you have -- I would appreciate any written comments that you have that have more specifics.

MR. HARDY: All right. And also the same page, the first paragraph of "C," there was a comment that was made by one of the gentlemen here about the EOF is a licensee facility. And even though this may have been the concept originally, it is something that's becoming a joint facility for coordination of monitoring and assessment, if nothing else. And the comment, the statement, for instance, the next-to-the-last sentence says that the licensee's plant and corporate management shall be in charge of all activities in the EOF.

MR. MINNERS: Because they're going to have --

MR. HARDY: Well, certainly if you have state personnel there on radiological health that are receiving monitoring information and trying to develop an independent assessment of the radiological situation, they're not going to want to be under the control of the plant.

MR. MINNERS: And the NRC is going to be there and we're not going to be under their control.

MR. HARDY: That's true. So the statement is --

MR. MINNERS: But I still think -- well, I see what you're saying. Okay. Maybe --

MR. HARDY: The next paragraph, on page 17, the Emergency Operations Facility size, talks about at least 35

persons, including ten NRC personnel. Well, if other federal agencies are going to be located there, and I'm sure that there'll be people there from DOE and EPA and FDA and Department of Agriculture and FEMA and a few others, in addition to state and local personnel, you're getting pretty close to 35 right there, let alone having the licensee's personnel there.

MR. RAMOS: You know, you're talking generalities, a lot of what you're talking about is the way that the emergency plan is written, and --

MR. HARDY: I think that's the way --

MR. RAMOS: -- the 35 people is the ten NRC plus 25 licensee personnel. If we -- if the state and locals, and we've left it as an option to bring the state and locals into the EOF, want to be in there, then that has to be coordinated with the licensee, the facility is made large enough to accommodate them.

MR. HARDY: That's true. But in one hand you talk about state and locals being part of this, and on the other hand you're talking about them not being part of it. I mean, this comment on the 35, you're saying that's NRC and licensee personnel --

MR. RAMOS: That's right.

MR. HARDY: -- but in other instances you talk about it as if it's already, you're talking about the

complete facility. I would think if you talk about a facility, you should talk about everyone that's supposed to be there.

Of course, it's going to depend on the coordination of the licensee and state and local plans as to how many people are going to be there.

MR. RAMOS: As far as the totals are concerned. We're only laying out the minimum requirements as far as NRC is concerned, what we perceive to be the minimum that's required for the licensee. And we are not specifying what's required for the state, local, FEMA, or DOE, or any other federal agency.

MR. HARDY: And yet if this facility is going to be developed by the licensee, it's got to be in here that they have to make arrangements (WORDS UNINTELLIGIBLE).

MR. MINNERS: You would suggest that a statement that said "and state and local," maybe something else, "as outlined in the emergency plan."

MR. HARDY: Certainly. On page 18, where it talks about -- "G" -- where it talks about communications, and it says "appropriate state and local links."

MR. MINNERS: Yes.

MR. HARDY: And I would say the same thing. You should be consistent throughout the document.

MR. MINNERS: We'll go through and keep state and

local in mind and add them where --

MR. HARDY: And it'd be a good idea to coordinate that with FEMA.

MR. MINNERS: Okay.

MR. HARDY: Also, and again it's getting back to the same point, that you're talking only about NRC and the licensee, but then on page 18, under G, where it talks about (WORDS UNINTELLIGIBLE) communications link required and that it is site-specific and shall be determined by the licensee's emergency response plan, I would think that that would want to include state and local response plans in the interface of the on-site and off-site plans.

Also, later on, it talks about provision for communication with state and local operations center shall be provided in the control room and TSC, to be used for initial notification, early recommendation to off-site authorities, prior to staffing the EOF. Well, those same types of communication links should be in the EOF.

MR. RAMOS: I hope you're going to give us some of these comments in writing.

MR. HARDY: Well, I certainly hope I can. They're not really that extensive. I think the thrust of my comments has to do with broadening the base of this document, especially since someone up there made the comment this morning that this document will supersede portions of

0654

MR. RAMOS: Yeah, it will. It will.

MR. HARDY: Well, but I think that that should be coordinated with FEMA before you do that.

MR. RAMOS: Well, this only addresses the licensee's part of the plan.

MR. HARDY: But it addresses the licensee and how it interfaces with state and local government.

MR. RAMOS: Yeah, but that has not effect as far as this document is concerned. We might correct some of that into 0654, what you're saying.

MR. HARDY: Okay, but I think that goes back to my original comment, that if this document talks about the EOF and the requirements, it should be across the board; if it's for the licensee and those things it needs to provide, it's got to provide for all for all of those links to interface with state and local government.

MR. RAMOS: I agree with you.

MR. HARDY: Okay.

MR. RAMOS: And the state and local plans are part and parcel of the licensee's emergency plan, and when we review it is a single package.

MR. MINNERS: Yeah, but to understand your correction on page 18, half a dozen lines down, under C, it says, "Additional communication links are necessary for

communications with the NRC, other federal and state agencies, and designated emergency response personnel."

MR. HARDY: Right.

MR. MINNERS: Now, from listening to your comment, that -- is that adequate? Or do you think we need to say --

MR. HARDY: My comment was directed to the line where it says it will be determined by the licensee's emergency response plan.

MR. MINNERS: And where is that?

MR. HARDY: In the middle of the paragraph, about ten lines down.

MR. RAMOS: You understand, from a regulatory standpoint, that's the only link that we really have, and --

MR. HARDY: Exactly. That's why --

MR. RAMOS: And let me finish. And that one of the requirements of the new rule is that the state and local plans are part of that site or licensee's emergency plan.

MR. HARDY: Exactly.

MR. RAMOS: So, you know, that's the reason that term is used.

MR. MINNERS: What should that sentence say rather than that? You seem to think it's inadequate.

MR. HARDY: I think it should -- it should talk about the -- the -- the overall plan for the site plan and all. I mean, it's a combination of what the (WORDS

UNINTELLIGIBLE).

MR. MINNERS: (WORDS UNINTELLIGIBLE) Our definition of the licensee's emergency response plan includes the state and locals.

MR. RAMOS: Right.

MR. MINNERS: Maybe that --

MR. RAMOS: That, you know, I can change the word "licensee's emergency response plan" to "the facility emergency response plan," or "the site emergency response plan," if --

MR. HARDY: Well, there has been a dichotomy here between on-site and off-site planning.

MR. RAMOS: Yeah, but that's only in -- in the vein we tried to explain the differences between the TSC and the EOF.

MR. HARDY: That's right. And that's -- this is why I would like to make sure you understand our side of this, that we want to make sure that when you're talking about these facilities that are interface points, that it's across the board, that everyone understands that we're talking about both sides of the coin.

MR. RAMOS: Okay.

MR. HARDY: I'd like to make another point on the positioning of the near-site EOF. On the one hand, it talks about the EOF could be, let's see, no further than five to

ten miles, but eleven, eleven and a half possibly, 20 minutes away. Well, outside the ten-mile EPZ there would be no need for it to have the types of radiation protection that you're talk about in the following paragraphs, paragraph E and F.

MR. RAMOS: Yeah. So?

MR. HARDY: That true?

MR. RAMOS: That's possible.

MR. HARDY: It's possible?

MR. MINNERS: There are certainly situations in which ten -- you could have wind directions or geographic conditions where that wouldn't be true. I mean, you're trying to get him to say all, and that's too inclusive.

MR. HARDY: Well, part of the problem there is that on the state and local level the planning for evacuation is up to ten miles.

MR. RAMOS: No, that's not true.

MR. HARDY: (WORDS UNINTELLIGIBLE) problem of credibility once you move into an area where an EOF is 12 miles away that's protected against fallout, against radiation. And if you're not going to evacuate people out that far, they begin to wonder why you have to be protected but they don't.

See my point?

MR. RAMOS: I see your point.

MR. HARDY: The other thing is, if you're inside the ten-mile EPZ and you are getting radiation levels there that require protection, and you're going to have state and local people there and other federal agency people coming in and out, how are they going to get to and from it if it's in a radiation zone?

MR. MINNERS: Well, let me explain that. Maybe they're not. But I think one of the lessons that was learned from Three Mile Island is that you should not design for the design basis accident, the worst case, and if you direct all of your thoughts towards what I think that indicates it is, is that you're going to have radiation, and that's a worst case, you may misdesign for the more normal situation. And one of the problems I perceive is, you're going to have more incidents in which radiation is not released than in which it is.

MR. HARDY: I would have to agree with you. And obviously --

MR. MINNERS: So --

MR. HARDY: -- in a case like that you wouldn't have to protect the facility any more than you would have the surrounding population protected.

MR. MINNERS: No, that's not true, because we're going to evacuate the surrounding population. If I have a EOF inside the ten-mile zone, and preferably close to the

plant, so that communication is very good, and I mean all kinds of communication, not just electronic, so the communication is good, so that the chance of giving an evacuation order incorrectly is reduced, all right, I would still have to take into consideration the possibility that I'm going to get some radiation released and shield the people in there, because they're going to be the last ones to move and the population is going to be protected by evacuation.

MR. HARDY: (UNINTELLIGIBLE)

MR. MINNERS: And all I'm trying to say is, is you can't look at the very worst case, in which you get these huge doses of radiation and you can't move anybody anywhere.

MR. HARDY: Well, if the surrounding population is evacuated and there's a shift change and I'm assigned to the EOF, I'm going to have a problem going into that evacuated area to go to the EOF, a personal problem.

MR. MINNERS: Yes, you are.

MR. HARDY: That's why we'd like to see it outside of the ten-mile EPZ.

MR. MINNERS: Well, you know what it -- what it comes down to, is that you -- people are saying you need -- as I said before, you need multiple EOFs, and we have tried to stay with the concept of having one EOF. And --

MR. HARDY: I would think it would be prudent to,

in case of, you know, there's always something, a fire or a power outage and a generator is not working, whatever, you would want to have a backup in any case; possibly it could be the state EOC, you know, if you're talking about for monitoring information and the assessment of the radiological situation.

MR. MINNERS: Well, we had that before.

MR. HARDY: Yeah.

MR. MINNERS: And that, and that was the criticism, that if you have a near-site EOF and then you evacuate to the far-site, to the alternate one, you're going to screw up your communications during that period and get all fouled up. So people said, "No, have it someplace where you don't have to evacuate."

MR. HARDY: True, but it would be simple to have people that at the state EOC, they could pick up the slack, rather than the exorbitant costs that might be involved in developing an EOF that would withstand high radiation levels.

MR. MINNERS: Well, but then I've got the problem of my communication problem for cases in which I don't have radiation. What do I do about that? If I have an EOF which is far out and I've got a -- it's inexpensive and it's nice and all those things -- but it's got poor communication. So when I have incidents that don't require evacuation, I'm going to evacuate.

MR. HARDY: No, poor communications are unacceptable in any case, in every case.

MR. MINNERS: Well, they may be unacceptable -- they can't be unacceptable, because you're going to -- you can't -- you cannot ensure that you're going to have perfect communications. Telephones and all that stuff will not ensure it. And all you can do is try to get the best you can.

MR. HARDY: That's why you always have a backup system.

MR. MINNERS: Well, I think you're -- you're interpreting the communication to be electronic equipment. Okay, I'm not talking about communication in that narrow equipment sense. I'm talking about human communication. You communicate less well --

MR. HARDY: Information. Sure.

MR. MINNERS: -- less well over the telephone than you do face-to-face. It's just a fact.

MR. HARDY: Unless you know the people you're doing with.

MR. MINNERS: Do you know -- well, that's -- I'm just trying to explain some of our philosophy -- okay? -- of why these things are the way they are.

MR. HARDY: Sure.

MR. MINNERS: And there are people that have

different views. You seem to think that you could have adequate telephone communications. Other people think that there is no way that you could ever have adequate telephone communications that you need face-to-face contact. And that's a difference of --

MR. HARDY: Well, I think it's certainly desirable to be able to have face-to-face communication, sure.

MR. MINNERS: And some people think it's more than desirable, it's necessary. And that's a judgment call. That's a judgment call. And that's why some people think the EOF has to be close and other people think the EOF has to be far away. It's not an easy problem. It's not -- there isn't one right answer. There's just people's opinions and it will have to be balanced out.

MR. HARDY: That's true. You said that you look at it from the standpoint of state and local governments, and they're a very large part of the preparedness process, and I wouldn't say that all of them, but most of them think it's pretty stupid to have it within the ten-mile EPZ. I mean, that's the way they characterize it. It's very difficult for them to see that you would want to have the facility within that area.

MR. MINNERS: Well --

MR. HARDY: And when you start talking about, you know, first it was 15 minutes' walking, now it's 20 minutes'

driving, it can be up to 11 miles, 11 and a half, 12, okay, that's beyond the ten miles, why not say just it can be beyond the ten miles but it has to be near?

MR. RAMOS: How about --

MR. HARDY: And the judgment is made on (WORDS UNINTELLIGIBLE) --

MR. RAMOS: How about 150 miles, is that okay?

MR. HARDY: Well, I think that there have been some comments on that down in TVA.

MR. RAMOS: Yeah, and that was completely shot down, and they're going with --

MR. HARDY: I'm not suggesting that --

MR. RAMOS: --the regulations that we're calling for.

MR. HARDY: I just think that if you're going to have it near site, you can do that and still keep it beyond the ten miles and you can eliminate the need for the special protection.

MR. MINNERS: Well, I think you're getting a little caught up in some of the legalisms. I mean, you say you're not going to evacuate people beyond ten miles and you are within ten miles: I can't believe in an accident that the line of demarcation is going to be that clear. I think you have to be a little careful that, yes, you do have to have some rules by which you do your design on and you're

going to pick ten miles as the number, and I have no problem wtih that, but then I think you have to recognize that in a realistic, actual situation, that these rules no longer apply and things are going to happen the way things are going to happen and whatever your rules are aren't going to hold any more. So --

MR. HARDY: Well, I don't know, I don't know if you were involved at all in the planning that went on at TMI, that Pennsylvania Emergency Management Agency together with there were some of the federal agencies that assisted them at that time, and their plans did not call for evacuations of the magnitude that was being suggested, and you have to rewrite your plans almost from scratch when you change the magnitude of the evacuation. If you talk about ten miles, evacuation up to ten miles, it's a completely different story when you say, "Well, gee, really maybe we ought to do it to 15 miles"; you have to start your planning all over.

MR. MINNERS: I understand that. That's not the point I'm trying to make. Because we went through that exercise on Three Mile Island, on the systems, we had -- we had a plan for how the emergency core cooling system was going to work -- okay? -- and despite our plan it didn't work that way. That's all I'm trying to say, is that --

MR. HARDY: That's true.

MR. MINNERS: -- that you must keep the perspective, is that a plan is only a plan and you use it as a basis for your design to do --

MR. HARDY: Agreed.

MR. MINNERS: -- but you can't take in the whole world and do everything.

MR. HARDY: That's true.

MR. MINNERS: But you still must realize that it's only a plan and that whatever happens will happen and you have to recognize that. That's all I'm trying to say.

MR. HARDY: Well, I would have to agree with you. But I think --

MR. MINNERS: So I'm just saying that an argument that says, "Hey, the amount of protection I give depends on whether I'm 9.9 miles or 10.1 miles" --

MR HARDY: I'm saying that you lose credibility with state and locals when you say you want to be in the ten-mile EPZ.

VOICE: But the problem you have to some extent is, though, not a public perception problem, but if you're saying, "None of my people are going to go within ten miles," why are you telling people to stay? So you have a perception problem, too, if you're not willing to go in and you're telling everyone else to stay there. So you might have people panicking and running because you're outside the

ten miles and they're inside the ten miles. And you've got to look at it in a -- from a mobile point of view, not just (WORDS UNINTELLIGIBLE).

MR. MINNERS: I would -- what I would like, I would like to have the other comments of people in a written comment which presents their rationale for where they think the EOF should be. That would be a very helpful piece of information to have from anybody who cares to do it. But just to have a comment that it ought to be inside or outside some number is not too helpful. We really need the rationale that goes along with it. I'd appreciate those comments.

MR. HARDY: Okay. If I could just state what I said originally, then, to finish off, and that is, I think the document that's going to talk about the near-site EOF should speak to all sides of that, that is, to include state, local, and other federal agencies in the document.

MR. MINNERS: We did some. And --

MR. HARDY: Right.

MR. MINNERS: -- your comment indicates we could do some more.

MR. HARDY: Right. Thank you.

MR. MINNERS: Thank you.

All right. Yeah, that's -- you've got that slide? Can we put it up and you guys can show where that

isolation thing was?

(Pause)

Well, we're here to try to clarify it.

(Pause)

MR. BELTRACCHI: No, no. It's really not needed for nonsafety system signals. I think that's probably what was misleading is that the Reg Guide 1.9780 on the righthand side.

VOICE: So your diagram was correct?

MR. BELTRACCHI: It was an earlier diagram.

VOICE: On page 6 on the question you answered earlier, it says that it shall insure the interface between SPDS and nonsafety systems.

MR. BELTRACCHI: Yes.

VOICE: The way that was answered was in the (inaudible) between nonsafety and the SPDS.

MR. BELTRACCHI: Right. In terms of preventing propogation.

VOICE: In other words, you do want that isolator.

MR. MINNERS: Between the SPDS, yes.

VOICE: (Inaudible)

MR. BELTRACCHI: Pardon?

VOICE: If you want to establish system integrity you don't have to use the isolators.

MR. BELTRACCHI: I guess that's correct. There are probably other ways of doing it.

VOICE: That's right.

MR. BELTRACCHI: The function -- and maybe that's one of the reasons why the diagram is misleading -- the

function is to insure the failure of the nonsafety systems will not propogate and wipe out the SPDS. So it's the integrity that we are really after.

Furthermore, to consider the unavailability, you have to consider that in your design, anyway.

MR. MINNERS: Please don't get hung up in the diagarams. As I said before, the diagrams are trying to illustrate the content.

VOICE: If you want to talk about isolators and system integrity systems.

MR. MINNERS: Isolators is two, you're saying?

VOICE: Isolators -- between nonsafety and safety systems.

MR. MINNERS: Let's see. Mr. Lewis? Would Mr. Lewis like to make a comment?

MR. LEWIS: I am an intervenor at Three Mile Island number one.

I have something I'd like to say about the NRC (inaudible).

First of all, I do appreciate the fact that the NRC is trying, obviously, to improve the safety of nuclear reactor systems. And I do appreciate the fact that this panel didn't back down too much.

You have to sometimes agree with a good comment, but I have to admit you didn't back down all the way and I

appreciate that also.

However, my comments on this fact group are not quite as complimentary. The main problem I see with -- well, one of the problems I see with this criteria -- is that you specify how many minutes you have to walk from here and there, how many hours it takes to notify somebody -- a lot of things of that nature.

But you don't say after a certain event, the EOF or the TSC will be operational. People are sitting there with a pen in their hand, a phone at their ear -- that is not gone into. You don't say, after an emergency if you call at 10:00 you will have the EOF with enough people and the TSC with enough people and everything turned on within a half an hour or forty-five minutes.

In other words, this doesn't have any teeth. You can have everything in the world to qualify the TSC and the EOF and if you don't say, all right, so many minutes after whatever -- whatever the phase is, Phase I, Phase II -- you've got to stop and operate, it's pretty much worthless.

MR. MINNERS: Let me respond to that.

I think we had some discussions and people maybe didn't understand this. 696 is a document which is supposed to address bricks and mortar, equipment. 654 is supposed to address what you're talking about.

MR. LEWIS: It doesn't.

MR. MINNERS: 654 does not?

MR. LEWIS: It doesn't say that will be operational within a certain amount of time and you've got another document here that doesn't do the same thing.

MR. RAMOS: Well, we do say that it will be activated during alert site area for the TSC, during alert site area emergency and general emergency levels and emergency action as specified in NUREG 0654 Appendix 1, NUREG 0610.

MR. LEWIS: Fine. But that doesn't give you an hour to do it, two hours to do it or a day to do it. It just says it will be done.

Well, will be is a future test. There's a lot of things that will be.

MR. RAMOS: It says, "it shall be activated." At the time that you designate that you're in the alert situation, that TSC must be manned and operational.

MR. LEWIS: No, sir.

MR. RAMOS: That's what that says.

MR. LEWIS: Not according to what 0654 says. Activating it and making it operational are two different things. You can't say as soon as the site emergency has been declared operational, you have to have quite a period to say how many people are there, how many phones are working -- well, not how many phones are working, but how

many people have to be there, equipment has to be turned on and operated and they have to have (inaudible) or what have you for their ear.

This is not in 0654 and this is not in here. You just say activated. Well, activated and operational are not the same word. Activated and working are not the same word.

You call these people in and they are there are not the same thing and that's one of my problems.

The second problem -- and I hope you will answer that problem --

MR. RAMOS: I understand it and we will work on it. I don't know that we will satisfy it.

MR. LEWIS: The second comment -- and you go through it in the document -- is interface between EOF and a lot of other things, including the media, and you've mentioned that there have to be (inaudible).

The question is if you do have display for the media -- I forget what it says, but it mentions something in here that display for the media is optional and what have you. But what worries me is the EOF will be under the control of the senior utility official. All right?

What it amounts to is that that is the interface -- or rather, that is the interface in the TMI1 plant, but it is the interface in this document between the media, the public, the utility, the NRC, and the link to the NRC is

optional.

In other words, generally speaking -- and perhaps specifically speaking -- most of your media, PR, what have you, will come out of the EOf and I just can't see that a senior plant official being in charge of this discharge is going to do it any better than it was done at (inaudible).

I don't know what is the cure for that. I don't know what to suggest about it, but I think that it does take a little working on. I think this is where you really fall down, and the utilities fell down, where the populace -- whether it was rational that they should be frightened or not, I'm not going to argue that point -- but where the populace really got scared out of their gourd was the poor way the media was handled, and I don't see any improvement.

You're sticking it right back on the utilities and they're going to screw up just as badly as they did before.

Okay. Thank you very much.

MR. MINNERS: Thank you.

Mr. Poppel of General Electric?

MR. POPPEL: I have just something really in the nature of some questions that probably I just need some clarification on.

I think I understand the relationship that 1.97 should be the minimumm set of data to be transmitted to all these systems. On page 9 about the second or third

paragraph down, you use the word "comprehensive data for monitor reactor status and planned system abnormalities should be derived through TFC."

Is that the same thing? Are you saying 1.97 is that comprehensive data and no other is required?

MR. RAMOS: No.

MR. POPPEL: No. I said "required" not -- I understand the utility can suppy more.

MR. RAMOS: As far as the NRC is concerned, the minimum data base is 1.97.

MR. POPPEL: So in other words, if the utility only provided 197, you'd be happy, to all those facilities?

MR. RAMOS: I don't think they will, but --

MR. MINNERS: If we were forced into it and that were the only data that a utility had was TFC, you would probably have to accept it. What I think in most cases we probably argued with them and say, we'd make them demonstrate that we could do with emergency functions with just that data.

MR. POPPEL: That may get back to what we discussed earlier today with the question of defining some of these things. I might agree with you when you said that the 1.97 isn't comprehensive data to evaluate all plant abnormalities. But the you're in a position of, what is? And I am sure that some of these utilities wouldn't want to

hear six months from now oh, by the way, you forgot to include -- and lay some more data into the system.

MR. MINNERS: Well, you know, I guess I wouldn't like to hear that either, but I think people have to realize that realistically new information is discovered and new operating experience is discovered and people just realize they made omissions. And to say just because I put out a requirement in October of 1980 I can't change it forever and ever, we can't say that.

But what people can do is point to Reg Guide 1.97 and say hey, you'd better put in these extra instruments because we don't want to be stuck with them later. And I think the general trend of industry is to take stuff out of Reg Guide 1.97 which will increase the chance that in the future there will be an increase in the data requirements.

So, you know, you can't have it both ways. If we give you a minimum, minimum, minimum set of data today, the chance that next year you add a couple is going to be increased. But if we give you a little larger set, there is less chance that we are going to increase it.

MR. POPPEL: I want to narrow in on the fact that yes, we might find something in the future that might help us post accident, which is what 1.97 addresses. But what you seem to be talking about here is the plant system abnormalities and the monitor reactor systems status, which

is somewhat more than post-accident.

So if you said something like in three months -- that was page 9, the third paragraph -- if you said in three months, well we forgot this parameter which is useful to monitor an accident, that's clear and that's fine and perhaps some provision can be made to put that in. But if you said hey, this thing involves storage tank levels or the condensate system or something like that, that's --

MR. MINNERS: I don't think we understand you correctly.

MR. BELTRACCHI: I'd also like to point out that in the course of Three Mile Island in the last year and a half, the staff has been attempting to work at the control room reviews and we've just issued some control room review guidelines.

I take it anything in the course of what may end up being modified or result in modifications will come out in that review and that review isn't going to be done in the next six months. It will probably take an extra year or a year and a half, because we're even having trouble compiling all the criteria and guidelines that should be used by licensees to conduct that review.

So there is going to have to be some flexibility in these designs. I think you are going to see that the monitoring and the instrumentation will really be assessed

during that review for its adequacy. And I don't think that there is anybody that can say at this time that the rules that we have are completely adequate or that they can get by without modification.

Those modifications could well impact the information that goes out to the TFC and the EOF.

MR. POPPEL: Well, I understand what you just said. If I were an engineer and somebody handed me a list of 100 Reg Guide 1.97 signals and you said be prudent and be flexible, I might say, okay, 150. But if somebody said to me monitor plant abnormality status, I might write down 1,000.

So I guess what I'm asking is, what your intent? Is your intent post-accident or is your intent plant abnormality and reactor system status?

MR. MINNERS: You're making a differentiation between abnormalities and accidents?

MR. POPPEL: Yes, and abnormality to me means (inaudible). I mean, if you tell me I'm wrong, that's fine.

MR. MINNERS: Let me say it and get corrected if I am wrong. I don't think abnormalities means a normal turbine trip. I don't call that an abnormality. That's something -- it really is an abnormality, in steady, straight operation, but it's really not an abnormality in that you design for it and you know you are going to have

turbine trip.

But if you have a turbine trip with failure bypass, now I think you are in an abnormality. So really it's kind of hard to define what you want and I don't really know how to do it.

I don't mean to -- if I said "accidents," that wouldn't define it either, because some people's concept of what an accident is is a lot different from my concept of an accident.

MR. POPPEL: That is exactly right, and for example, if you say now that turbine trip without bypass is an abnormality, that throws in a whole lot of pressure regulators that weren't anywhere on Reg Guide 1.97.

MR. MINNERS: We tried to write up a report which gave the basis for the guidelines, okay? And that's a sentence which says, try and give a general statement of what the purpose of the TFC is.

The purpose of the TFC is to have comprehensive data to monitor, et cetera, et cetera. Later on, we get down and we tell you that Reg Guide 1.97 is the minimum set of variables that you have to have. So I don't know what else to say.

I can cross out that sentence and just say Reg Guide 1.97, but I don't think that's what I want to say. I think I want to give the general statement and the specific

statement. But you're worried that somebody is going to ratchet in between the two. Is that what you're saying?

MR. POPPEL: Well, yes. I mean, it's always prudent to improve flexibility but I'm just trying to get an order of magnitude. What you're saying, it would be very prudent for a utility to think about this very hard and include more than just the 1.97, probably.

MR. MINNERS: But we don't think it's necessary to have instrumentation to monitor every aspect of an abnormality. What we're interested in is to monitor the core, the reactor. Okay?

MR. POPPEL: Well, then, how does the word plant system come in?

MR. MINNERS: Maybe that's where the problem comes in, and maybe we'll look at that a little harder and see if we don't mean just core.

MR. POPPEL: Okay. Because like, trying to read what was in your minds, there are sometimes regular balanced plant systems that are useful, helpful, or have been used that perhaps might be interested to the Technical Support Center.

But I guess what I was fishing for was --

MR. MINNERS: We think we don't mean plant but we'll go back and look at it. We think we mean a lot closer to the core than plant.

MR. POPPEL: Okay.

Kind of a related question, on page 13 when you talk about power supplies and availability, the second paragraph says power supply failure, et cetera, "shall not cause the loss of any data vital to the TFC function."

Is the data that vital that these prudent extra things should be added, or just the 1.97? Because if that were the case, for example, then it might be easy to power the Technical Support Center from an uninterruptable power supply or perhaps a planned diesel, some of those parameters that are of interest but say, not safety, are already powered by nonuninterruptable and non-1E systems.

So that could be interpreted as requiring somebody to go back and power one.

MR. RAMOS: The 1.97 data.

MR. POPPEL: Okay.

This was asked before, but it's not clear in my mind. When you talk about a dedicated display, maybe I understood the question a little differently.

Would you guys consider a dedicated display like CRT that could show, say, water level, if the guy called it up? Or does it actually have to be a meter or recorder that displays water level continuously?

In other words, you have a CRT that if anytime you [illegible], it's dedicated, you can call up that function, but it

wouldn't be on, then, necessarily all the time as opposed to a meter recorder where it would.

MR. BELTRACCHI: Are you directing that question at the safety parameter display particularly?

MR. POPPEL: I can't find it now that I'm looking for it, but on page 13, at about the third or fourth line down, to provide this function the display shall include dedicated displays of plant systems variables.

So, I mean, in one case one CRT could do the work and be dedicated to the TFC function and do the work of 50 meters or recorders, depending on how you define the word dedicated.

MR. RAMOS: In the next sentence we talk about call up display.

MR. MINNERS: I think what you said, if it says what you think it says, we should say dedicated displays of each plant system variable. We don't mean that. You don't have to have one display for each variable. You can have one display which covers several variables.

MR. RAMOS: Otherwise we would have another control.

MR. MINNERS: But that display device, the CRT has to be dedicated to this TSC function and not for operation.

MR. POPPEL: Those are the words I wanted to hear. Thank you.

And finally, when you talk about validation and we're doing it, say, validation of data that's going to be displayed, say with redundancy, is there going to be some more detailed guideline about what you would do to handle it if it were not -- say if the redundant data didn't agree?

I mean, good engineering data would argue that it should flash or change color or something like that or are you going to let the utilities decide how to handle nonverified data?

MR. BELTRACCHI: In reality, this starts to get into a design detail which I would feel it would probably be more appropriate for a performance spec which should be the complement of this document, and it's a question of, at one time I know that NAF was proposing that the industry respond and provide that. I also know that in this document we've also stated that we would also provide additional guidance.

So I guess that one is up in the air.

Would you have any additonal commnts?

MR. MINNERS: That's the point that was addressed before. Leo is starting to, and would like to give out, more detailed guidance. My personal opinion is I would rather not.

When I asked the question before, the person who responded said he wanted detailed guidance, but I get the feeling that, for example, in this situation that if I tell

you that validation means it has to flash three times per second, there are going to be a lot of designers coming back to me and saying why did you get so specific.

So we've got that continuous problem and I don't know what to do about it. At the moment, we are thinking about giving further guidance.

I'm going to try to change that and not give further guidance.

VOICE: I think I would agree with the gentleman that we wanted a lot of more details. No. I think maybe in the (inaudible) case we could have more general criteria but not any more -- if we need them we're going to get them now and not --

MR. MINNERS: And that's a problem and maybe in your comments you can be very specific on what kind of additional guidance you need and not just say give us additional performance specs because that covers the whole world. If you only need performance specs on one particular aspect, you ought to say that's what you want.

If you make it general, you get a performance spec on everything.

MR. POPPEL: Thank you.

MR. MINNERS: Okay.

I've gone through the list of people who signed up. Are there any other people I've missed or people who

haven't signed up or people who would just like to say something else?

Anybody? We have some more time.

Yes? Would you please identify yourself?

MR. METZGER: William Metzger, Pennsylvania Power and Light Company. I just have a few questions that I'd like to get answers on.

First, in previous NUREGs, for instance, 0660 and 0694, some of these facilities, like the Technical Support Centers were addressed as interim facilities or nearterm operation (inaudible). We had to provide interim facilities and then provide description of the complete facilities.

The schedule attached to the August 1 letter, does this schedule supersede any scheduling information in those other NUREGs?

MR. RAMOS: As far as your final emergency response facility configuration is concerned, yes. As far as meeting 0694 requirements for fuel load and low power license and full power license, no.

You must still meet requirement 694.

MR. METZGER: This changes end data only, then?

MR. RAMOS: That's right.

MR. METZGER: What is the significance of the chart showing the various milestone events or the milestone dates, the end dates here? Is this an idea of what you saw

that --

MR. RAMOS: That is how we envisage the possible path from now and trying to meet the April 1st date.

MR. MINNERS: Those middle points would not be requirements. It would only be the end points that would be requirements. There's a couple of end points.

MR. RAMOS: Yes. The 1 January '82 date for the SPDS and the 1 April '82 date for the TSC and EOF. Those are the critical dates.

MR. METZGER: Okay.

In regarding 0696, there is nothing in 0696 that we see that addresses security of the emergency operations facility in that it is offsite. We have some ideas on what we think should be done, but we think should be done, but we would like to know what your -- do you expect to give guidance on that? Do you have some feelings on security in relationship to what we're doing at the plant site?

MR. RAMOS: That's a good question. We did not address safeguard requirements for the EOF and it's something we will have to consider. I don't know if we want to get into the safeguards problem with the EOF.

MR. METZGER: I don't know whether --

MR. RAMOS: Because EOF doesn't really have, you know --

MR. MINNERS: It's hard to see how access to the

EOF could affect the plant.

MR. RAMOS: Yes.

VOICE: If you have 300 reporters flowing in and out of the building, you have no way of controlling the working conditions and the working of the EOF.

MR. RAMOS: There are supposed to be separate facilities for -- if you design your EOF to incorporate the functions of the press, then that's a separate section.

VOICE: But if you set the EOF without any security, who can you stop from walking in and out of the building?

MR. MINNERS: We may have to put some general statement in here that there should be procedures for controlling access to the control room, the TFC and the EOF.

MR. RAMOS: But not to the extent of 1755. We're not going to tell you who it is, whether it be three terrorists or 400 reporters.

MR. METZGER: Okay.

I have a question on the media center.

Earlier today I believe it was stated that the option of incorporating any facility within the EOF to handle media interface was at the utility's discretion.

Is the whole concept of a media center at the utility's discretion or is there some further guidance coming on that?

MR. RAMOS: That's up to the utility, how they handle the press. I mean, our Public Affairs Office has ideas on the matter which you can discuss with them, but we are not making it a criteria for emergency planning to have it incoporated it in Emergency Operations Facilities.

You have to have some place to handle the press.

MR. METZGER: We recognize that.

MR. MINNERS: Well, the EOF has to have space for 20 people, which is presumably press. As people have pointed out, it's going to be hard to limit only 20 reporters and you may have to have some other facility to take care of that problem. That's probably part of your access procedure for limiting people to the EOF.

MR. METZGER: My next question is, we are planning on having a Technical Support Center, as I believe many other facilities are, that would serve as a Technical Support Center for two units within one plant.

Our question is, as far as data display is involved, what is the thought on whether or not both units have to be able to be displayed at the same time?

MR. RAMOS: I was asked that same question three or four days ago by Arizona Power as far as having the capability of having three accidents at once.

MR. MINNERS: We don't have any thoughts on it yet and that's one of the purposes of the comment period. You

must have some tnoughts and I'd like to know what is your rationale for not having them both displayed at the same time?

MR. RAMOS: Arizona Power planned to have the capability. They plan to have one TFC, but they plan to have the capability of being able to handle three accidents.

MR. METZGER: At the same time?

MR. RAMOS: At the same time.

That's their scenario. Now, we have not addressed that in detail yet.

VOICE: We can't hear you up there. What did you say about Arizona Power?

MR. RAMOS: They're planning to be able to handle three accidents simultaneously from one Technical Support Center.

MR. METZGER: Okay.

Those are the end of my comments. Thank you.

MR. MINNERS: Anyone else?

Yes, sir?

MR. JACKSON: Charles Jackson, Con Edison.

I want to add our voice to the recommendation that you not abandon the alternate EOF concept. It appears to be the answer to some of the siting questions that as long as we adequately address the staffing and any possible time to get their communications data.

It has been part of our planning at the Indian Point site for several years and we would like to retain that flexibility in your requirements.

MR. MINNERS: You've used shorthand as an alternate EOF concept. Could you describe what you think the concept is so I am sure I understand?

MR. JACKSON: Up until we've had to plan for ten mile site scenarios, we've used the facility in a low probability and different direction, wind direction. We had our primary EOF within one mile and the alternate approximately three miles away.

The idea that we've been following is that we would have duplicate communications and other data display information there and we would evacuate to that location.

Now that we're talking a ten mile scenario, perhaps a duplicate facility that would be with either one of the county EOC's or with the state local office beyond ten miles, a 15 or 20 mile difference. The concept might be that we would plan to dispatch somebody to that alternate location that would be activated at the same time their primary EOF would be activated.

That location would have hard wire duplicate primary back-up communication -- phones, data and video. That would be my idea of what we would do and I think that it would keep that flexibility and it addresses the

Commission's question of what you would have to do if you evacuate your primary EOF during the midst of a general evacuation in the area. You could instantaneously transfer that to an alternate location.

The second area is that I noticed in 696 another area of flexibility for the EOF. You've talked about use of adjacent buildings so that the total requirements could be met by more than one structure. I would encourage you to retain that flexibility.

The idea of mobile EOF's I don't think is necessarily a bad one on certain specific facilities. The idea to break it up functionally, for example, perhaps to put the longer term recovery operation in one facility and have the immediate off-site crisis management emergency control center concept in a separate facility and perhaps different levels of hardening based upon the function of each of those separate EOFs -- the media center being somewhere nearby but again a separate facility.

I think it's an area of flexibility that if you would retain it, you would permit us to maximize the use of existing facilities rather than having to construct new facilities. It's particularly important to us since our primary EOF, ECC concept -- Emergency Control Center concept -- has recently been -- basic construction has been completed.

We are hardened to a great extent, but we don't know what the final requirements are going to be in terms of dose assumptions, shielding factors. Allowing these alternative concepts would allow us to be able to accommodate your new requirements.

Thank you.

MR. RAMOS: How close are these several buildings that you're talking about. Are they within the same general vicinity?

MR. JACKSON: Yes, within several hundred feet of one another.

MR. RAMOS: We've talked about this before at the Safety Data Integration Group sessions and we've pretty much bought that and I thought I had that in here. Evidently I've taken it out.

But the intent is to let you do that.

MR. JACKSON: It is briefly mentioned. When I heard you say that perhaps it is a mistake, or perhaps a typo to have the alternate EOF concept still mentioned -- I don't know whether your remarks were intending to the basic building concept as well, which is very important to us.

MR. MINNERS: Anyone else?

MR. PRICE: My name is "Strike" Price, Long Island Light Company. I'd like to go over several comments on the schedule that you have given us in the form letter. It may

be somewhat repetitious, but I think the emphasis is necessary.

I would evaluate this schedule as being impractical for most utilities. I would like to make the following set of requirements with regard to that.

For one thing, it requires the utility to be incredibly detailed, interface equipment specifications parallel to developing our own conceptual design, and parallel with your own review. And this is not the way to develop a good system. It is not the way to make a good system in a time that can be adaptable to future requirements.

Secondly, it allows nine months for the procurement side. Procurement, in nine months, of many pieces of equipment is difficult. However, here we have the complication that in excess of 70 plants across the country are going to be competing with the same venders for essentially the same components.

We haven't really factored in the excessive competing problem we have with all these plants trying to get the same kind of material, some of which may be available from only one or two qualified manufacturers who are (inaudible).

It does not allow for consideration of some customization of design which would extend procurement

cycles and does not allow for consideration of the qualification of that equipment.

In comparison to the nine months that you've allowed here, I would suggest a minimum of 12 to 18 months somewhere in this schedule to procure that equipment and again any advance effort to develop equipment specifications at the same time we were doing conceptual designs could only impact on procurement later on because we would be going back and changing equipment specifications in the middle of procurement.

So from those two standpoints I feel that this schedule while it looks good on paper, could never be realized. Therefore, the end dates that are shown could also never be met.

Finally, the earliest item for completion you've shown here is the safety parameter displacement. It's one I think that a great deal of conversation has revolved around in terms of the OBE requirement for the computer, in terms of what the real purpose is going to be.

I saw up on the stand what is just the subset of Reg Guide 1.97 or a very limited number of perhaps a half dozen or a dozen parameters that are derived from 1.97. It requires further elaboration. It is foremost to come on line in this schedule and your own doctrine, 0696, says flat out that there will be additional design criteria

requirements provided by NRC with no date on its schedule telling us when those specific, detailed design criteria documents are going to be provided.

I could never go back and tell my management that we would have any chance of meeting the schedule with those considerations.

MR. RAMOS: I'd like to remark on the SPDS schedule. That's been in existence since 1.05-78 came out.

MR. BELTRACCHI: I think the schedule was really clarified to a great extent, I think, in NUREG 0660. That is, I think, the first time they identified January of '82 for implementation.

I know NUREG 0585 also had an implementation date, but if my memory serves me correctly, that may have been a bit earlier than the 660.

Am I correct on that one?

MR. MINNERS: I forget the dates, but it's been one of the first requirements and I would agree with the details of what it was supposed to do were not there, but many people have certainly been able to adopted the concept and have already designed and built systems which fulfill it.

MR. BELTRACCHI: Your comments -- you know, I just had a very lengthy conversation with Dave Kane of ENSAC and your comments seem to be completely out of context with respect to the path that they're taking.

They presented their approach again to ACRS last week and it was looked upon fairly favorably.

MR. PRICE: Is that ENSAC?

MR. BELTRACCHI: ENSAC. Right.

By the way, as I mentioned previously, they did define their priorities for both PWRs and BWRs in their hand-outs that they presented at the ACRS presentation.

MR. PRICE: Okay. But again, regardless of the fact that (inaudible) for additional criteria for SPDS, how do I know today whether the conceptual design that I'd like to have might be totally invalidated if I meet the requirements. At what point do I begin my design application, serious design application? (inaudible)

When can I begin to do the design that will lead me to a procurement, that will lead me to installation, that will lead me to performance specs? When will those requirements (inaudible).

MR. MINNERS: I'll give you a harsh answer on that. The design effort should have begun a year ago and it should have been nice if it had begun a year ago and then you could have handed us the design specifications which we could have endorsed. That's my answer to that.

MR. PRICE: I don't know that we were in any position at all a year ago to have appropriate designs that you would be happy with today. But I'm speaking

specifically. I wasn't involved in certain test efforts, perhaps, but I'm asking a question that if today, in order to comply with additional detailed criteria for an integrated system, could you tell us when those criteria will be on the street? If the criteria are not going to be on the street, either remove it from the (inaudible).

Will there be additional detailed design criteria?

MR. MINNERS: At the moment, we have said we are going to give additional design criteria. My question, which I have asked previously, was are they necessary or desirable?

MR. PRICE: I take that to mean that detailed design criteria may not be provided in terms of the comment period.

MR. MINNERS: We have some draft criteria specifications which we have written up, you know, fine. But some of my experience indicates that sometimes it is better not to issue those details, that people will do better without them. And my question to you is, are those necessary or desirable?

I am sure that your designer is saying give them to me, because it makes his job much easier. But I'm not sure that you wouldn't be better off if you were given more flexibility and allowed to design your own system.

But at the moment, the NUREG says we are going to

put out more detailed specifications and that is, at the moment, our intent.

MR. PRICE: I've stated my comments on evaluation of your schedule for the record. I would like to ask also if we provided the conceptual design prior to January, could you move up on your schedule in view of that time?

MR. RAMOS: Yes.

MR. PRICE: Thank you.

MR. RUDANS(?): My name is Michael Rudans (?) of the Pennsylvania Power and Light Company. My question concerns the limiting conditions for operations in the plant technical specifications.

We specify action to be taken by the licensee when EOF is not operational, whether it's the EOF or systems included in the EOF and it should be (inaudible) EOF is not operational for a period exceeding eight hours.

In light of the previous inquiry which is not included in this because it's (inaudible) was that the plant would be shut down if the EOF was not operational for a period exceeding one week.

Is it still your feeling that if such an occurrence should happen the plant would have to be shut down and this kind of set us back to the security issue on how well we will secure this?

MR. MINNERS: I don't understand the last part of

your question but I think I can answer your first part. We changed it from the original drafts because people said that was really unnecessary to shut down plants just because these facilities were not operational. So the details of exactly what the LCO would be are not specified but the intent is that some other compensating measures, other than shutting down the plant, would be acceptable.

But I don't know how the security works into it which was the last part of your question.

MR. RUDANS: Well, it might be -- if I might say something -- supposing the EOF was attacked by some group that knew all the regulations (inaudible) would shut down the plant. It might just be theory, but --

MR. MINNERS: I would think if the plant was being attacked by somebody, by an armed force, that you would shut down the plant.

MR. RUDANS: I'm talking about the EOF ten miles away.

MR. BELTRACCHI: You would make the report, you will tell us what compensatory measures you are taking in the event that you have an accident during the period of time that the thing was out of commission.

The way the TSC is set up right now it is designed to handle the EOF functions. You don't have the EOF operational until such time as you can get it operational.

That may be your compensatory measurements. I can't address that. You have to look at the situation at the particular time and if somebody vandalizes the plant, then you come back and say they vandalized it and in case of an accident, we will use the TSC to perform the EOF function until we get it back up, and we will probably accept that.

MR. RUDANS: Thank you.

MR. MINNERS: Anyone else?

MR. GILBERT (?): Ray Gilbert (?) of Pennsylvania Power and Light Company. I think you answered this question earlier but I wanted to clarify it on the (inaudible) of the EOF.

MR. MINNERS: I hope I can give the same answer to your question.

MR. GILBERT: It came out (inaudible) -- I'm really worried about radiation (inaudible). You said earlier that (inaudible) design and I said good, I'll have something to go on, and then it was stated a little later as to maybe you have to design it (inaudible).

So I'm not sure where I stand on that.

MR. MINNERS: I think what I was trying to say is that the document gives you criterion 19 and Reg Guide 6.4 which had within them the DBA. What I was trying to say was when people were evaluating whether to have the EOF near or far or wherever, they are not going to limit themselves to

the old DBA. The argument is that they have to take into account things beyond the DBA.

MR. RAMOS: such as if you have to evacuate that EPC, the Commission's contention is they do not want the EOF to be evacuated. So therefore you have to establish, have a building requirement, so you would not have to evacuate the EOF.

MR. GILBERT: That's the thing. I'm wondering what sorts of (inaudible) do I have to worry about? If I'm within a mile, what facilities do I need and what do I need for short-term. That's what I am concerned about.

MR. MINNERS: No. It's the DBA source terms, you know, that the control room would design to and things like that. That's what is in the SPs, if my memory serves on that.

But the other point is that you can't come back and say I can quickly EOF close to the plant because I've only got this DBA action that I've got to consider. They will listen to that, but they will also extend it and say well, what will happen beyond the DBA accidents. And so therefore, put it five to ten miles away.

MR. GILBERT: It's confusing. If I design it for (inaudible) and they come back and say what is it, yes. (Inaudible) We built this thing. It's published in concrete and later on they say well, what if you get

something you planned on, at what point do I have to put another (inaudible).

MR. MINNERS: That's an uncertainty that people will have to live with. At the moment we think we have a document which gives you rather specific design criteria for sure. But you can't say that later on the Commission may decide that you are going take a different kind of accident into account, or that people are not going to use arguments beyond the DBA to say what you have isn't adequate.

I don't know how to address that question. That's always been the case. We now design systems only for DBA conditions but people have always realized that there were worse possibilities and there were arguments about them.

MR. GILBERT: I would have thought you would have established that criteria.

MR. MINNERS: I think we have established the document, but I think you're trying to get me to say that these requirement will never be changed or that people will never argue with them.

MR. GILBERT: No, no.

VOICE: We just want to know whether next year you're going to change them.

MR. GILBERT: (Inaudible) if I can really go by this design now or whether (inaudible).

MR. MINNERS: We are not.

I think we have time for maybe one more.

No one else?

All right.

Well, we certainly appreciate your taking the time and trouble to come here and we'll be looking forward to your written comments and hope that we can speed this thing along and put out something so that you can get your designs going and get your facilities modified.

Thank you very much.

(Whereupon, at 4:35 p.m. the meeting concluded.)

- - -

This is to certify that the attached proceedings before the

NUCLEAR REGULATORY COMMISSION

In the matter of: WOTKSHOP - EMERGENCY RESPONSE FACILITIES - NUREG 0696

Date of Proceeding: 19 AUG 80

Docket Number:

Place of Proceeding: VALLEY FORGE, PA

were held as herein appears, and that this is the original transcript thereof for the file of the Commission.

MS. LINDA BEHERNS

Official Reporter (Typed)

Linda Beherns

Official Reporter (Signature)

COMMENTS TO NUREG-0696
"FUNCTIONAL CRITERIA FOR
EMERGENCY RESPONSE FACILITIES"

COMPANY NAME	MAILING ADDRESS	INDIVIDUAL'S NAME
GPU	PARSIPPANY, N.J.	IRVING FEINBERG
PSE&G	80 Park Plaza - 15A Newark N.J.	Peter A. Mueller
CON EDISON	4 IRVING PLACE NEW YORK, N.Y. 10003	ZYGMUNT J. LIPINSKI
JCP&L	P.O. Box 388 Forked River N.J.	Richard J. Fasnacht
Yankee Atomic	25 Research Rd Westboro Mass 01581	Arthur M. Shepard
PHILA. ELEC. Co	2301 Market St Phila. Pa. 19101	A. W. Arubovzk

COMMENTS TO NUREG-0696
"FUNCTIONAL CRITERIA FOR
EMERGENCY RESPONSE FACILITIES"

COMPANY NAME	MAILING ADDRESS	INDIVIDUAL'S NAME
YANKEE ATOMIC	25 RESEARCH DR WESTBORO MA 01581	JAMES A. MACDONALD
PHILA. ELECTRIC	2301 MARKET ST PHILA PA 19101	JOHN B. COTTON
PASNY / JAFNPP	P.O. BOX 41 LYCOMING NEW YORK	ROBT. G. BURN
Westinghouse Elec Corp	BOX 355 Pittsburgh Pa	DANIEL V. GENNARO
Philadelphia Electric Co.	2301 Market St. Phila, PA 19101	William C. Bird
PHILA ELEC CO	2301 MARKET ST PHILA. PA. 19101	GARRETT D. EDWARDS

COMMENTS TO NUREG-0696
"FUNCTIONAL CRITERIA FOR
EMERGENCY RESPONSE FACILITIES"

COMPANY NAME	MAILING ADDRESS	INDIVIDUAL'S NAME
PHILA. ELECTRIC CO	2301 Market St Phila, Pa.	George Morley
YANKEE ATOMIC	25 Research Drive Westboro, MASS	ANDREW C. KADAK
Phila Elec	2301 Market ST Phila Pa 19101	Walter Knapp
Stone & Webster	245 Summer St Boston Mass	Philip J Holden
~~Atlantic~~ CON EDISON	4 IRVING PLACE NEW YORK, N.Y. 10003	MOTOHARU IMAI
Pacific Gas + Electric	77 Beale St. San Francisco CA 94106	Thomas A. Jenckes

COMMENTS TO NUREG-0696
"FUNCTIONAL CRITERIA FOR
EMERGENCY RESPONSE FACILITIES"

COMPANY NAME	MAILING ADDRESS	INDIVIDUAL'S NAME
STONE & WEBSTER	P.O. Box 5200 CHERRY HILL, NJ 08034	T. M. BATES, JR
BECHTEL POWER CORP	11547 SAMOY GRAVE ROAD GAITHERSBURG, MD. 20760	J S PRIBULA
STONE + WEBSTER	P.O. BOX 2325 BOSTON MASS 02107	VERNON CHANDLER.
~~Consolidated Edison Co. OF N.Y~~	~~4 Irving Place New York, N.Y. 10003~~	~~Donald M. Roth~~
NORTHEAST UTILITIES	PO BOX 270 HTFD CT	PAUL BLANCH
PSE&G Co.	60 PARK PLACE. NEWARK NJ 07101	J. P. WIDDOLEY

COMMENTS TO NUREG-0696
"FUNCTIONAL CRITERIA FOR
EMERGENCY RESPONSE FACILITIES"

COMPANY NAME	MAILING ADDRESS	INDIVIDUAL'S NAME
Baltimore Gas & Elec	P.O. Box 1475 Baltimore, Md 21203	Charles H. Cruse J M D'Arcquistz Jr

"WELCOME"
EMERGENCY RESPONSE
FACILITY WORKSHOP
AUGUST 19, 1980

COMPANY NAME	MAILING ADDRESS	INDIVIDUAL'S NAME
PUBLIC SERVICE ELECTRIC & GAS CO.	80 PARK PLAZA NEWARK NJ 07101	JOHN J. SCHUBEL
FEMA, REGION III	CURTIS BLDG, 6TH & WALNUT PHILA, PA	THOMAS E. HARDY
PA. POWER & LIGHT CO.	P.O. BOX 467 BERWICK, PA. 18603	CHARLES R. WIKE, JR.
PSE & G Co.	80 PARK PLAZA NEWARK, NJ 07101	J P WHOOLEY
BALT. GAS & ELECTRIC	P.O. 1475 BALT. MD	J.M. DAHLQUIST, JR
Phila. Electric Co.	2301 Market St Phila 19101	V. S. Boyer

"WELCOME"
EMERGENCY RESPONSE
FACILITY WORKSHOP
AUGUST 19, 1980

COMPANY NAME	MAILING ADDRESS	INDIVIDUAL'S NAME
Niagara Mohawk Pwr.	300 Erie Blvd. W. Syracuse, N.Y. 13202	T. E. Lempges
J C P&L	161 MADISON AVE MORRISTOWN N.J. 0	MARCOS V. DUDA
Long Island Lighting Co	PO Box 64 Wading River NY 11792	R. Haladyna
CON EDISON	4 IRVING PLACE NEW YORK, N.Y. 10003	MOTOHARU IMAI
BECHTEL POWER CORP	SANDY GROVE ROAD GAITHERSBURG Md 20760	JOHN S PREBULA
BURNS & ROE INC	800 KINDERKAMACK RD ORADELL NJ	S.M. KOWKABANY

"WELCOME"
EMERGENCY RESPONSE
FACILITY WORKSHOP
AUGUST 19, 1980

COMPANY NAME	MAILING ADDRESS	INDIVIDUAL'S NAME
August Systems	799 Valley Forge Plaza King of Prussia PA 19406	F.J Keegan
" "	"	R K Gardner
" "	"	D.C. Esler

"WELCOME"
EMERGENCY RESPONSE
FACILITY WORKSHOP
AUGUST 19, 1980

COMPANY NAME	MAILING ADDRESS	INDIVIDUAL'S NAME
PACIFIC GAS + ELECTRK	77 Beale St. San Francisco CA 94106	Thomas A. Jenckes
EDISON ELECTRIC Institute	1111 19th St Wash DC 20036	Saul Harris
STONE + WEBSTER ENGIN. CORP.	P.O. Box 2325 BOSTON MASS.	VERNON CHANDLER
Long Island Lighting Co	Shoreham NPS P.O. Box 628 Wading River N.Y. 11792	Len Calone
General Public Utilities	100 Interpace Pkwy Parsippany, N.J. 07054	Gautam Sen
Consolidated Edison Co.	4 Irving Pl., NY., N.Y, 10003	JOHN D. O'TOOLE

"WELCOME"
EMERGENCY RESPONSE
FACILITY WORKSHOP
AUGUST 19, 1980

COMPANY NAME	MAILING ADDRESS	INDIVIDUAL'S NAME
NYS Power Authority	10 Columbus Circle NYC. NY 10019	Alan P. Nelson
LAWRENCE LIVERMORE NATIONAL LABS	L-140 LLNL LIVERMORE CA 94550	JAN PRESTON-SMITH
PSE&G Co	PO Box 168 Hancocks Bridge NJ. 08038	Dick Silverio
Jersey Central Power & Light	Madison Ave @ Punkhouse Rd Morristown, New Jersey 07960	George W. Busel
PHILA ELECTRIC Co.	2301 Market St Phila, Pa.	George Morley
LONG ISLAND LIGHTING Co.	LILCO Project Office P.O. Box 618 WADING RIVER NY 11792	GREGORY K PRICE

"WELCOME"
EMERGENCY RESPONSE
FACILITY WORKSHOP
AUGUST 19, 1980

COMPANY NAME	MAILING ADDRESS	INDIVIDUAL'S NAME
Federal Emergency Management Agency Region III	Curtis Building, 7th Floor 6th + Walnut Sts. Phila. 19103	Richard Feldmun
Yankee Atomic Electric Co.	25 Research Drive Westboro Mass 01581	Arthur M. Shepard
PHILADELPHIA ELECTRIC COMPANY	2301 MARKET ST PHILADELPHIA, PA. 19101	WILLIAM M. ALDEN
CON-ED/EDS	445 BROADHOLLOW RD MELVILLE, NY [illegible]	CLIFFORD HEITZ
Boston Edison	800 Boylston St Boston MA 02199	Robert H. Cunningham
Alderson Reporting	414 Ta. Ave. SW WASHINGTON, D.C.	LINDA BEHRENS

"WELCOME"
EMERGENCY RESPONSE
FACILITY WORKSHOP
AUGUST 19, 1980

COMPANY NAME	MAILING ADDRESS	INDIVIDUAL'S NAME
Consolidated Edison	4 Irving Place, Rm 1015-S, N.Y., N.Y. 10003	Thomas Magnani
Consolidated Edison Co.	4 Irving Place New York, NY. 10003	Donald M. Kosh
Baltimore Gas & Electric Co.	P.O. Box 1475 Baltimore Md 21203	Thomas N. Pritchett
KMC, Inc	1747 Penn. Ave WASHINGTON, D.C.	Donald F Knust
Baltimore Gas & Elec	P.O. Box 1475 Balt, Md 21203	Charles H. Crose

"WELCOME"
EMERGENCY RESPONSE
FACILITY WORKSHOP
AUGUST 19, 1980

COMPANY NAME	MAILING ADDRESS	INDIVIDUAL'S NAME
Metropolitan Edison Company	Po Box 480 Middletown Pa 17057	Scott Wilkerson
PACIFIC GAS + ELECTRIC CO	77 BEALE ST. SAN FRANCISCO, CA.	RICHARD F. LOCKE
PHILA ELEC CO	2301 Market St Philadelphia Pa	GARRETT D. EDWARDS
Phila Electric Co	11	William C. Birely
YANKEE ATOMIC ELECTRIC	25 Research Drive Westboro, MASS	ANDREW C. KADAK
Stone & Webster	245 Summer St Boston, Mass	Philip J Holden

"WELCOME"
EMERGENCY RESPONSE
FACILITY WORKSHOP
AUGUST 19, 1980

COMPANY NAME	MAILING ADDRESS	INDIVIDUAL'S NAME
Vt. Yankee Nuclear Power	P.O Box 157 Vernon, Vt. 05354	Burton M. Ball
PHILA. ELECTRIC	2301 MARKET PHILA PA 19101	John B. Cotton
Lawrence Livermore National Laboratory	T.O. Box 45 Mercury, NV 89023	L. Rolf Peterson
USNRC	Exec Dep. Ops., Assist for Emerg Planning	Ken Perkins
NIAGARA MOHAWK POWER CORP.	300 ERIE BLVD WEST SYRACUSE NY 13202	STANLEY W. WILCOX, Jr.
WESTINGHOUSE ELEC.	Box 355 PITTSBURGH PA	D. V. GENNARO

"WELCOME"
EMERGENCY RESPONSE
FACILITY WORKSHOP
AUGUST 19, 1980

COMPANY NAME	MAILING ADDRESS	INDIVIDUAL'S NAME
CON-ED/EDS	495 BROAD HOLLOW RD MELVILLE, N.Y.	JOHN A. BOWLES
PP&L	2. N. 9th Allentown PA 18101	Raymond M. Harkin
PP+L	2 N 9th ST ALLENTOWN PA 18101	RAMOND E. DOEBLER
PP&L	Two N. Ninth St. Allentown, Pa 18101	Michael D Radvansky
PA Bureau of Rad. Protection	P.O Box 2063 Harrisburg, PA 17120	Thomas Gerusky
Yankee Atomic Electric	25 RESEARCH DR. WESTBORO, MA 01581	JAMES A. MACDONALD

"WELCOME"
EMERGENCY RESPONSE
FACILITY WORKSHOP
AUGUST 19, 1980

COMPANY NAME	MAILING ADDRESS	INDIVIDUAL'S NAME
GPU	PARSIPPANY, N.J.	IRVING FEINBERG
CON EDISON	4 IRVING PLACE NEW YORK, NY 10003	ZYGMUNT J. LIPINSKI
B&W	P O Box 1260 LYNCHBURG, VA	Louis GIORDANO
PSE&G	80 PARK PL - 17A NEWARK, N.J.	CRAIG W. VERKER
JCP&L	P.O. 388 Forked River N.J.	Richard J. Farnack
Con Edison	Indian Point Station Buchanan N.Y. 10511	George H. Liebler
PHILA. ELEC. Co.	2301 Market St Phila. Pa 19101	A. W. HRIBOVAK

"WELCOME"
EMERGENCY RESPONSE
FACILITY WORKSHOP
AUGUST 19, 1980

COMPANY NAME	MAILING ADDRESS	INDIVIDUAL'S NAME
NORTHEAST UTILITIES	PO BOX 270 HARTFORD CT	PAUL DEHAEN JEFF BIBBY

"WELCOME"
EMERGENCY RESPONSE
FACILITY WORKSHOP
AUGUST 19, 1980

COMPANY NAME	MAILING ADDRESS	INDIVIDUAL'S NAME
CON EDISON	4 IRVING PLACE, N.Y. N.Y. 10003	CHARLES W. JACKSON
Public Service E/C + Gas	80 Park Plaza - 15A Newark N.J.	Peter A Helfer
PSE&G	80 PARK PLAZA - 16E NEWARK, N. J. 07101	N. P. DYCK
GENERAL ELECTRIC	M/C 884 175 CURTNER AVE SAN JOSE CALIF 95051	IRA POPPEL
PUBLIC SERVICE CO. OF NEW HAMPSHIRE	BOX 330 1000 ELM ST. MANCHESTER, NH 03105	DEAN L. BACON
PENNSYLVANIA POWER & LIGHT Co.	2 North 9th Street Allentown PA. 18101	ALAN P. DERKACS & WILLIAM METZGER

"WELCOME"
EMERGENCY RESPONSE
FACILITY WORKSHOP
AUGUST 19, 1980

COMPANY NAME	MAILING ADDRESS	INDIVIDUAL'S NAME
PASNY - JAFNPP	P.O. Box 41 Lycoming NY 13093	Robt. A. Burns
Maine Yankee Atomic Power	Edison Drive Augusta, ME 04336	Stephen D. Evans
Jersey Central Power Light	Madison Ave at Punchbowl Rd. Morristown, NJ	John M Mateychick
Long Island Lighting	175 E Old Country Rd. Hicksville, N.Y.	Charles Daverio
Public Service E & G	80 Park Plazza Newark NJ	Robert F Yewdall
Niagara Mohawk	P O Box 32 Lycoming	T. J. Perkins.
Stone & Webster	PO Box 5200 Cherry Hill NJ 08034	T. M. Bates, Jr.