



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

In the matter of:

BRIEFING ON WORK PLANS OF THE OFFICE  
OF ANALYSIS & EVALUATION OF OPERATING  
DATA

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Room 1130, Eleventh Floor  
1717 H Street, N.W.  
Washington, D.C.

Thursday, March 20, 1980

The Commission met , pursuant to notice, for  
presentation of the above entitled matter, at 1:35 p.m.,

BEFORE:

JOHN F. AHEARNE, CHAIRMAN  
VICTOR GILINSKY, COMMISSIONER  
PETER A. BRADFORD, COMMISSIONER

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PRESENT:

- CARL MICHELSON
- KEVIN CORNELL
- JACK HELTEMES
- ED HANRAHAN
- MR. HOYLE

P R O C E E D I N G S

1  
2 CHAIRMAN AHEARNE: We meet this afternoon  
3 to hear the first of what I expect to be many reports  
4 from a new office of the Commission. That has a fairly  
5 hard to pronounce acronym which I will not try. It  
6 has to do with the analysis and evaluation of operational  
7 data.

8 As a result of many reviews, many suggestions,  
9 many comments and criticisms, the NRC over the last year  
10 and perhaps even longer, gradually begun to realize the  
11 necessity for reviewing the operational data, analyzing  
12 it and determining what ought to be done as a result of  
13 that.

14 Last July, we reached the conclusion undoubtedly  
15 encouraged strongly by a quick review of Three Mile Island  
16 that it was absolutely essential for us to establish such  
17 an office. After substantial Commission debate as to  
18 where that office ought to be located, we concluded that  
19 it had to be at a high level in the organization, so  
20 we established it working for the executive director.

21 We then rapidly began to form the office, with  
22 the fortunate utilization of some of our own people, hard  
23 labor of Jack. We also tried hard to find a permanent  
24 director preferably looking on the outside of the NRC  
25 itself because we are very interested in trying to bring

1 a fresh approach to our reviews of our approaches. We  
2 were very fortunate in getting Carl Michelson to come.  
3 Today is the first opportunity that we have to formally  
4 hear from Carl as to how he is coming in setting up this  
5 office which is going to be of vital importance and I  
6 would expect, other than perhaps the Commissioners them-  
7 selves, will be the one where most people will look to find  
8 out what do we know about the agency and unlike looking  
9 to the Commission, they probably would like to find some  
10 knowledge embedded there.

11 I think, also, Carl will be asked to explain  
12 quite frequently what have we learned, and I hope not  
13 too often, why didn't we learn that fast enough?

14 With those kind of opening remarks, let me  
15 turn to Kevin Cornell, the Deputy Executive Director, and  
16 find out what he has to say before we go on with the  
17 briefing.

18 MR. CORNELL: I don't have very much to say at  
19 this time other than I am glad to be here and Carl has  
20 been on board for about a month.

21 As I understand, he plans to give you a rundown  
22 on how he is organizing his office and where he sees things  
23 going in the next several months.

24 I think at some point in the future, we will  
25 be able to talk more about how that effort is going to

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be coordinated with the rest of the agency that is also involved.

CHAIRMAN AHEARNE: Maybe you can get into some of that today.

Welcome, Carl.

MR. MICHELSON: Thank you, Mr. Chairman. I am here today to present the initial status report as Director of AEOD. I have been working in this office for about one month, so it does appear like an appropriate time to give you a first status report.

My plans are less than firm, yet, so I will try to give you an idea of the direction because I think the direction is becoming sufficiently clear.

I have provided a handout which I will follow in part and try to expand upon each of the points as you may wish to hear about them and skip over some areas depending on what time.

It should be recognized, of course, that AEOD is only a part of the total evaluation effort for operational data. There are a number of NRC offices involved in this activity and they represent a very important part of the total picture. So, we will try today to talk about them a little bit but, indeed, they are subject perhaps to future interest.

First, the purposes of the office as I see it,

1 clearly it is to perform three acts.

2 To collect, to assess, and to feedback the  
3 operating experience. To collect the operation experience,  
4 it is necessary to identify the data, and then to propose  
5 proper methods of reporting and so forth.

6 To assess the data requires that we look to  
7 seek for trends and patterns and to identify safety  
8 significant precursors to future events.

9 So, the important thing, though, and the key  
10 to our work product, is finally arriving at a recommendation.  
11 We will do a lot of looking, collecting, assessing, and  
12 finally we decide that a recommendation is in order and  
13 that is the key function finally of the office.

14 However, very important also is being sure that  
15 after having made a recommendation, then we get a resolu-  
16 tion. That is that the office is responsible to follow  
17 up and assure a resolution.

18 We recognize that and are going to pursue that  
19 very hard.

20 One other aspect, of course, is making sure  
21 now that the results of our work, our recommendations,  
22 and our resolutions, are appropriately fed back to the  
23 industry which needs to hit them. We will look at the ways  
24 of effectively feeding back such information. This is  
25 very, very important.

1                   Finally, of course, we will from time to time  
2 verify that indeed the feedback information is being under-  
3 stood and implemented by industry, which, of course, has  
4 to be the final end product. This will require a lot of  
5 coordination work. We will try to coordinate our activities  
6 both within NRC and outside, including such organizations  
7 as IMPO and ENSAC and the industry representatives.

8                   The importance of AEOD, of course, was highlighted  
9 historically by GAO, the ACRS, Kemeny, Rogovin, NRC, SIG,  
10 and Lessons Learned in the IE Task Force. So, everybody  
11 agrees that is something that needs to be done and now  
12 we are trying to trying to set about to do it.

13                   There is a little question, of course, on the  
14 scope of such an operation. For instance, should we get  
15 involved in environmental matters, economic considerations,  
16 as reflected in operational data?

17                   Security aspects of what we need in operational  
18 data. These are the kinds of things that we are looking  
19 into now, and we will try to reach positions on, so that  
20 we can take appropriate directions in the future.

21                   But, our principal thrust is going to be, of  
22 course, assuring the protection of the public health and  
23 safety. That means we would intend to downplay other  
24 things than public health and safety.

25                   CHAIRMAN AHEARNE: Before you leave that, one of



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the questions that was certainly raised by the Rogovin review was, what should be the appropriate length between the conclusions your office reaches and the actions the agency would then take?

I would expect that one of the things that the Commission would hope that the EDO addresses has as you go forward is to how to respond to that particular condition.

There is certainly always a concern when you have a staff office, do they have any influence? Making the world's most brilliant recommendations which are never implemented sometimes can not only not be useful, but can be extremely frustrating. I hope that that never ends up being your situation and obviously Rogovin proposal was one method to try to force an address of it.

There is another side, which as you reach a conclusion and EDO comes forward, that I want to make sure that you consider.

There is a sort of a tuning of responsibility that in a operational analysis office, when they know their recommendation, have to pass a high threshold or else they must be followed. That is sort of a self-discipline that one forces oneself to pay to think a lot harder about the specific recommendations you make. So, it works both ways, and that is clearly one of the things that you are

1 going to have to address, and we expect EDO to make some  
2 recommendation on them.

3 COMMISSIONER GILINSKY: I apologize for being  
4 late, Carl. I lost my check in the Hot Shoppe Cafeteria,  
5 and I had to negotiate my way out of it.

6 (Laughter.)

7 CHAIRMAN AHEARNE: That is one of those operational  
8 problems.

9 MR. MICHELSON: I think I appreciate what you are  
10 saying and we are sensitive to that problem. The general  
11 attitude, though, that I would like to approach the job  
12 with is that of trying to search out the problems, identify  
13 the problems, then, attempt a resolution, which is  
14 obviously, and many times a compromise of many, many factors  
15 trying to arrive at a reasonable position. One that  
16 can even be implemented, and finally is useful in terms  
17 of reducing the risk to public health and safety.

18 So, it is certainly something we will watch  
19 closely.

20 Just a little bit of history on the formation  
21 of AEOD. It was established, of course, in July of 1979  
22 and at the time it was established, the Commission did  
23 direct the other major offices to establish a capability  
24 to perform certain special analyses of operational data.  
25 These other efforts are going along, and that is something

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that you might want to hear about later on.

The interim office for AEOD was established in October of 1979. It was the first efforts now to go ahead and set about facilitating an early and efficient formation of the office before the permanent Director even arrived. It did a lot of good work and started the developing procedures portions for the NRC manual. Other valuable steps were taken which were time consuming and we got them over early so we don't have to go through them now.

So, I think the Interim office served a very useful function and certainly has been a great help to me, now.

You, of course, appointed a permanent Director in January of 1980, and I arrived here in February. In early March, I issued an Interim organizational structure, which I intend to operate and I am now in the process of recruiting a staff. That recruiting effort, which you will hear about in a moment, is anticipated to be completed by May 1980.

Since the first thing one has to do is find somebody to work, that is the subject of the next part of the handout. The authorized working level for the office, is 20 for FY-80. These 20 people I have divided into 4 functional areas. Two will be Executive, a Director, and a Deputy

1 Director.

2 Thirteen will be in the main functional area,  
3 which is operations analysis and evaluation, 2 will be  
4 concerned with program and data management, and 3 with  
5 secretarial and clerical.

6 Now, there will be no other formal structure.  
7 There will be no branches or divisions, or that sort of  
8 thing. I am dividing this group among 8 lead engineers,  
9 7 of them will carry analysis and evaluation leads and  
10 the 8th one, data management lead.

11 The lead engineers enter the key to my effort.  
12 They will have working with them each one supporting  
13 engineer, who will be his backup and his helping hand.  
14 But, basically, I will be working directly with these 8  
15 lead engineers.

16 As you can see from the handout, they are  
17 divided roughly, 4 of them are on reactor systems, 1 is  
18 on plant systems, which is essentially electrical engineering,  
19 1 is on nonreactor operations, which we will talk about  
20 a little later, and 1 on program and data management.

21 Of the lead engineers I need, I have now recruited  
22 and have acceptances on 5. I have recruited and have  
23 acceptances on 2 supporting engineers.

24 CHAIRMAN AHEARNE: How is the President's freeze  
25 going to impact? Do you or Kevin know?

1 MR. CORNELL: A good part of that will depend  
2 on this latest round of offers that the agency as a whole  
3 has put out. How many of those accept and how many don't.

4 CHAIRMAN AHEARNE: Carl, do you have offers out  
5 to the other people?

6 MR. MICHELSON: Most of the people, of course,  
7 are from within the agency. I, so far, recruited only  
8 one outside the agency. The efforts outside have not  
9 been real successful. By and large the kinds of applicants  
10 that send in applications have not been very strong.

11 I have put a fairly high standard on what I  
12 think I need. I believe that such standards can be met  
13 within the agency, I have found limited help outside.

14 CHAIRMAN AHEARNE: So you would expect to be  
15 able to transfer them?

16 MR. CORNELL: My understanding as of  
17 last week, with all the offers that were out, we were up to  
18 half a dozen people being of full strength, if they have  
19 all been accepted. Now, if they don't accept, we won't  
20 be able to fill all of those empty slots, then, it is a  
21 matter of apportioning that between his office if he needs  
22 it, or the other program offices.

23 MR. MICHELSON: Just to give you an idea of the  
24 general quality and experience of the people, the lead  
25 engineers that I have recruited so far, 4 have master's

1 degree, and 1 has a doctorate degree.

2 The average 8 years of industrial or nuclear  
3 Navy experience, and 6 years of NRC experience.

4 The supporting engineers recruited thus far,  
5 1 is a bachelor and one is a master and they have an  
6 average of 7 years of industry experience and 2 years of  
7 NRC.

8 I have made an effort to mix education, experience,  
9 discipline, type of experience, and even attitudes to  
10 some extent. I have tried to search out people with  
11 varying approaches to this problem in line.

12 I think this will be healthy in the long run  
13 and maybe a little more difficult in the short run. I have  
14 not attempted to recruit with any particular image in mind.  
15 But, rather searching out people that I think appear to  
16 be interested and who, I believe, can make a real contri-  
17 bution.

18 I have also searched for inexperienced people to  
19 some extent, who are at the learning stage, who have a  
20 real desire to want to do this type of work and who have  
21 an adequate educational background to do it.

22 If the experience is short, then I have to go  
23 longer on education. I have been looking at the ACRS  
24 fellowship program as a possible source of people finishing  
25 up their term there. I think is a valuable source for what

1 I want to do and I have talked to some of those people.

2 Now, for FY-81, I was authorized 22 people.

3 I have asked and received permission to move that authori-  
4 ation up to the present date. So this will permit me to  
5 pick up one more lead engineer who I had a real need for.  
6 Namely, a good mechanical engineer who would concentrate  
7 on components difficulties, the material difficulties,  
8 more the classical mechanical engineer as opposed to  
9 reactor systems man who is looking at system responses.

10 CHAIRMAN AHEARNE: Yes.

11 MR. MICHELSON: So by getting the authorization  
12 moved up, I think I am going to pick up a man that is very --  
13 and I already have him in mind, the offers gone out. If  
14 he comes, he will have a doctor's degree, with 7 years  
15 of industry experience and 7 years of NRC experience.  
16 So he will be also a powerful addition.

17 In addition we have put out two more offers, but  
18 I have no acceptances yet on supporting engineers, one  
19 of those has a bachelor's degree, another has a doctor's  
20 degree. They average about 2 years of industry experience  
21 and 3 years of NRC experience.

22 CHAIRMAN AHEARNE: Are any of these people you  
23 hired women?

24 MR. MICHELSON: No, although I have got one that  
25 I wanted to interview this week. I have been looking, but

1 not necessarily because she is a woman. But rather  
2 because I have been acquainted with her, I know her  
3 capabilities, and she is a very fine person.

4 Now the heart of our program of course has  
5 to be analysis and evaluation of data, so I would like to  
6 talk just briefly about the game plan there. This may  
7 be of some interest to know what my approach will be.

8 The first thing of course is we would receive  
9 a large amount of operational data. It would be in the  
10 form of correspondence, notifications, LER's, construction  
11 deficiencies, inspection reports, vendor reports, anything  
12 else we can get our hands on.

13 This data then has to be examined of course  
14 to see if it is telling us a message that we need to know.  
15 Sometimes the messages are not real clear. They have a lot  
16 of noise, they may be like a rock pile with a few gems in  
17 it. We try to search those out.

18 So one of the first operations after collecting  
19 this information is to try to identify the significant  
20 items.

21 Now, this will be basically done by these 8  
22 lead engineers that I will have. They will be essentially  
23 sorting the information, trying to reach relatively quick  
24 decisions on where to concentrate. Try to spot the gems,  
25 if we can.



1                   This screening process will go on a day-to-day  
2 basis. I haven't worked out a final game plan yet but  
3 we will meet frequently to discuss the material that is  
4 coming in currently and who can best handle it, and how  
5 it might relate to what other people have been saying,  
6 or whatever. I intend to work very closely in this  
7 particular operation to inject whatever observations I  
8 have early in the game for whatever benefit would be for  
9 the engineers.

10                   Then they will take off and work on the problem.

11                   The screening of course is the heart of our  
12 work. We can't look at everything. We have to hopefully  
13 do a fair screen job. We have to try to spot the signi-  
14 ficant items without a lot of time. We will do the best  
15 we can.

16                   Once having screened the items and having  
17 picked out those that we consider significant, we will  
18 then make case studies of them. We will look at each of  
19 these items in terms of a case. In some instances though  
20 the item may fit into an existing case, it may be just  
21 another piece of data now coming in.

22                   CHAIRMAN AHEARNE: Could you describe what you  
23 mean by a case study?

24                   MR. MICHELSON: Okay. It is done in management  
25 very often.

1 CHAIRMAN AHEARNE: I am familiar with that.

2 Is it the same kind of a --

3 MR. MICHELSON: Yes, it is sort of the same  
4 concept, with a little different twist on it.

5 Basically, we take the information, and it may  
6 be bits and pieces. It is not necessarily real clear, yet,  
7 at that stage of the game. We begin to start looking at the  
8 information we have, and as we are looking at that information  
9 additional daily information is coming in or whatever the  
10 case.

11 So we keep building on this, on an individual  
12 case, until we reach the point where we can begin to  
13 put the pieces together.

14 We also will begin to look back in time, having  
15 started the case, we will look both back in time and keep  
16 a current of time. What we are trying to do is put together  
17 a jigsaw puzzle with enough pieces ; that we can see the  
18 picture but not waiting for the final case to fall in  
19 place which might be an event that we would rather not  
20 see.

21 So we are trying to get the picture before  
22 a serious incident were to occur. So that is what I call  
23 a case study. Played around with other possible terms,  
24 it seems as good as any.

25 So the other point is that we will maintain these

1 case studies as files. We will maintain a a document  
2 control system, so we know what is going into the case,  
3 so that any point in time, somebody wants to know where it  
4 is at, or what it is or if anybody wants a copy of it, we  
5 will so provide.

6 This is the basic plan of action.

7 Early in the examination of the given case, it  
8 is necessary to decide how far we should go into it,  
9 we need to get other peoples ideas in the process.  
10 So, we scope the problem as we proceed to get into the  
11 details of it.

12 Then, finally, we will proceed to conduct a  
13 case study, which is basically done by one of the lead  
14 engineers and developing a case study, now, will involve  
15 examination of past experience, other information, and  
16 onsite exposure.

17 In many cases, I believe, it will be necessary  
18 that the person go and look at what he is dealing with.  
19 You cannot do this job totally in an ivory tower. It is  
20 necessary to see the real world, to understand what the  
21 data and agency are trying to tell you.

22 CHAIRMAN AHEARNE: Do you see any potential  
23 problem of interaction with IE inspectors on doing that  
24 review?

25 MR. MICHELSON: We've had some preliminary

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discussion already, as to how this can be handled. I don't foresee any problem as long as we reach agreement on how it will be done.

IE of course does the early screening, not screening, but the early accumulation of information on a given LER, it is done in the regional offices. Then, in the headquarter's office a further examination is done. Now the results of this kind of work is made available to us in the process of our looking at that particular case.

Wherein we have insufficient information and need to go back to get more, this would be done primarily by working through IE, but we are trying to work out agreements as to -- we are trying to eliminate some of the middlemen, so to speak, so we can get back at the source.

MR. CORNELL: I think that touches on one of the areas that we are looking at. That is, how the regions, for example, interact with the other NRC offices.

The view has been, at least on some of the reports on Three Mile Island, the chain of command, things that come to the region, go through IE, and then up over the top and down, I think we are looking at ways of facilitating the regions interacting directly with Carl's office as well as NRR, I think that is an important area.

MR. MICHELSON: We will have to try to shorten the communications where we are dealing with just getting some

1 small answer. When dealing with a major piece of work that  
2 might have to be done, certainly then, you will want to go  
3 through the more normal communication channels.

4 We are working on that. I personally view  
5 the resident inspector as a very valuable extension of  
6 one's eyes and ears into the plant. You can get from him  
7 feelings and information about things that just do not  
8 normally appear on paper.

9 I think it is a valuable resource and we are  
10 going to try to work out methods of tapping that resource.

11 Finally, in our analysis work, of course, the  
12 case reaches the point where we can formulate a recommenda-  
13 tion. Now, that will be formulated depending on the  
14 seriousness of what we see. It may have to be formulated  
15 early in the game to head off a serious problem. We  
16 will have to make judgments, in other words, as to when  
17 to start hollering. That is a difficult thing to do.  
18 You always like to get one more piece of the puzzle in  
19 place so you can see the picture better. But, you can't  
20 wait too long.

21 That is a part of our problem, it would be when  
22 do we submit a recommendation. Of course, that recommenda-  
23 tion is kind of the end product of our case effort. The  
24 next step in the process now is to seek an implementation  
25 of the recommendation. That means resolving with other

1 parts of NRC what we are suggesting to be done. It eventually  
2 means going out into the industry and trying to seek the  
3 implementation.

4 I had pointed out, though, that basically my  
5 intention is to start out with current operating data. By  
6 that I mean when it starts coming in, hopefully we want  
7 to start April 1.

8 We will be, of course, looking at past history  
9 as our cases start to develop and as we have a particular  
10 case, wherein we need to look back in history to see what  
11 has been happening. That approach will not assure, though,  
12 that we have looked at all the LER's in the last 3 years,  
13 or 5 years. We do not presently have plans to try to on  
14 a complete basis look at all the old LER's.

15 I am afraid that the manpower required to do  
16 this is not commensurate with the value of doing it.

17 CHAIRMAN AHEARNE: Have you thought about the  
18 possibility of contracting someone if you could focus  
19 certain things that you would like extracted, or collated  
20 from the old LER's?

21 MR. MICHELSON: We have looked and recognize that  
22 we have capability to go out on contract. We will look  
23 to see if there are certain kinds of areas that this could  
24 be an efficient tool.

25 Right now, though, the basic approach we are using

1 and I guess what I would call the qualitative analysis  
2 approach. This may be difficult to hire out. We will  
3 probably have to do that by ourselves. We can hire out  
4 many kinds of support activities. We intend to watch  
5 for this.

6 CHAIRMAN AHEARNE: I guess I would not want  
7 to put aside the potential for at least digging out what,  
8 to go back to your analogy, to the gems and the rock pile.  
9 You have several very large piles of rocks in the old  
10 LER's. I am not sure whether they are gems or grenades,  
11 but whatever is buried in there might be worthwhile  
12 finding.

13 MR. MICHELSON: We gave very serious thought  
14 to this. I would like to commit at this time to start  
15 fresh with the current material.

16 Basically, we do intend immediately, by that  
17 I mean in the next 2 or 3 months, to backfit to January  
18 1 of this year, all LER's. Beyond that we felt we would  
19 have to see how we were making out.

20 I don't have a good feel yet for the amount of  
21 manpower it would take to go back and search all LER's.

22 CHAIRMAN AHEARNE: No, I am not suggesting that  
23 you have all your people do that, I would like you to,  
24 at least, think some more about whether you couldn't  
25 somehow focus a contractor to do that.

1 MR. MICHELSON: We will certainly look into  
2 that possibility. We can get a contractor to focus on  
3 the kinds of things we want to watch for, this could be  
4 a possibility.

5 One final thing that our analysis program  
6 will strive for and that is that we make sure that our  
7 lead engineers maintain an awareness of all potential  
8 safety issues that are being considered in the industry  
9 and NRC.

10 This is important because there is two ways  
11 of using LER's. One way is to look at LER's and watch a  
12 pattern and finally derive from it a picture of a potential  
13 safety concern.

14 Another way to use an LER is to first of all  
15 picture what you believe to be potential safety concerns,  
16 and then watch the LER history to see if it is starting  
17 to identify or to verify what you are presently just  
18 postulating on or if some other basis.

19 So we are trying to make sure that the lead  
20 engineers become acquainted with a lot of these possible  
21 safety problems that haven't really been substantiated, to  
22 find out if they really are legitimate possibilities.

23 So that is another part of our program.

24 In addition to our analysis and evaluation, we  
25 are conducting a small program which I call program and



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data management activity. The primary thrust of this part of our program is to look at the problem of organizing the operational data on such a fashion that our analysis and evaluation people can make effective use of it. So I have a lead engineer who is concentrating in this area. In addition, he is looking out for formalization of our documentation process and keep it sufficiently orderly so we can trace it to know what we looked at, to know why we performed whatever action that we did. It is a part of our basic management structure for managing the office.

Also involved in this is the coordination with the other parts of NRC, developed in the proper coordination procedures.

We do think that there are some problems with the information gathering process and we have presently --

CHAIRMAN AHEARNE: We are not surprised.

MR. MICHELSON: We are looking into the details of it. We are quite sure we will be recommending certain changes, but we want to make sure that before we recommend a change, that we do it only once. That is not the sort of system that you can put through an upheaval very many times.

We want to work with the other parts of NRC, we

1 are going to try to link up with the industry to reach a  
2 mutually acceptable program for improving the data management.  
3 The ultimate goal would be a single information trace.

4 We have a lot of them presently that are maybe  
5 not fully effective because they are fragmented.

6 CHAIRMAN AHEARNE: When you say link up with  
7 the industry, do you foresee any proprietary problems  
8 that might arise there?

9 MR. MICHELSON: Yes, I can foresee difficulties  
10 of what one may call proprietary, the proprietary nature of  
11 the information you are dealing with. That is one of the  
12 things we will have to discuss.

13 A part of this program, of course, is linking  
14 up with the foreign data into this same --

15 CHAIRMAN AHEARNE: Which has different but  
16 similar problems?

17 MR. MICHELSON: Yes, it also has proprietary  
18 problems along with a number of others.

19 CHAIRMAN AHEARNE: But, you would not, I guess,  
20 try to establish that kind of a data base just because  
21 you couldn't share it with the industry?

22 MR. MICHELSON: What we have to do is look at  
23 this problem. What can we put in the data base and still  
24 share with industry to see what is a worthwhile approach?

25 We may have to end up with using the data base

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TAPE 1/26

1 only ourselves. It depends on the agreement that can be  
2 worked out. We are just getting started in that area.

3 We are looking at the problem of proper coding  
4 of this information. We are looking into the use of  
5 a universal identification scheme which is being worked  
6 up now as a part of an IEEE standard.

7 We are trying to determine if it could be used  
8 in the LER process to better code our information so that  
9 we can sort a number of ways than we can presently sort.  
10 Basically, our sort now is mostly key word sorting and  
11 date sorting, and control number sorting.

12 This is, again, in the formative stage but we  
13 feel it is worth looking into and that is what we are  
14 presently working on.

15 We have another problem which is interesting to  
16 discuss, and that is the recovery of data that is not  
17 currently being reported.

18 The reporting requirements are such that a lot  
19 of potentially interesting operational information, may  
20 not have to go into the normal LER or other formal  
21 recording systems. In some cases, it remains only in the  
22 log book of the plant experiencing the event.

23 We are going to do a little looking to see how  
24 significant this information might be. Then, try to  
25 derive a recommendation as to what is the best way to get

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1 at it and certainly we don't want to go into more elaborate  
2 reporting systems. But rather we look to see what would  
3 a reasonable way of getting that information out of the  
4 plant when we seem to think we need it.

5 It is another area, though, that we are recog-  
6 nizing. That is not all the good information is available.

7 Another area is the unavailability of the events  
8 associated with nonsafety-related equipment. The event  
9 occurs in portions of the plant not covered by tech  
10 specs, it is lost to the normal reporting process. Again, we  
11 are going to try to see, well, what can we work out to  
12 reprove some of this?

13 The NPRDS system tends to reprove some of this  
14 information, but more as statistical information than it  
15 does event related. It doesn't tell you what happened.

16 CHAIRMAN AHEARNE: And it is also not that complete.

17 MR. MICHELSON: It is the worse perhaps for the  
18 purpose intended but not too helpful for what we are trying  
19 to do.

20 COMMISSIONER GILINSKY: Is that a useful system?

21 MR. MICHELSON: There are various opinions on  
22 that. I haven't looked into it, myself, carefully enough.  
23 I have talked to some people in the past and since I have  
24 come here. There is no universal opinion as to whether it is  
25 good or bad. It depends on who you talk to. Generally, it

1 seems to have serious limitations that make the statistical  
2 examinations that are used that result from the data quite  
3 questionabP.

4 COMMISSIONER GILINSKY: You are saying that it doesn't  
5 turn out useful information for your purposes.

6 MR. MICHELSON: No, it is doesn't tell me the  
7 details of component failure and things that happened at the  
8 same time, for instance.

9 Perhaps an event consisted of several different  
10 failures, it doesn't sort them, it doesn't keep them in  
11 one place and relate them. It puts them on several different  
12 pigeonholes. The fact is that sometimes it only puts  
13 it into one and only the most significant part is there.

14 For instance, a valve failure, if a valve fails,  
15 a function might be recorded as a valve failure. Now,  
16 to me it is more important to know whether the electrical  
17 lead broke in the motor operator, or whether the bolts  
18 broke on it, or what. But, in the NPRDS system, that  
19 kind of detail is lost, it becomes a valve failure.

20 If you count enough valve failures, it is important  
21 to know, but it doesn't tell me about the event. About the  
22 particular valve, why it failed, in detail.

23 CHAIRMAN AHEARNE: One of the issues we have are  
24 out for comment, isn't it? Whether or not to make that  
25 system mandatory and whether or not to make changes in the

1 system. I am sure we will look very much to your office  
2 and when the comments come back in, to give us your advice  
3 and recommendation.

4 MR. MICHELSON: It is still very preliminary.  
5 I have not sat down and taken yet a hard look at it from the  
6 viewpoint of this office, but rather my experiences that I  
7 relate to you are mostly from my looks in the past when  
8 I had a different reasoning.

9 Yes, we are going to take a hard look at it  
10 to see how it could be made useful in its present form, or  
11 what changes may be needed to make it useful.

12 A couple other things that we need to mention here,  
13 and that is, of course, there is a great deal of work going  
14 on in the probabalistic analysis area.

15 My office is going to follow closely what is  
16 going on in that area, keeping an eye out for its potential  
17 usefulness as a tool in the evaluation of operational  
18 experience.

19 We are not, of course, manning up to develop  
20 techniques in themselves, nor even to do the statistical  
21 examination. We will depend upon the inputs from other  
22 parts of NRC in that regard. It is to handle probabalistic  
23 assessment is not a small operation.

24 I think we will find that the PAS people who  
25 adequately covered that, that we are going to look into that

1 area, if we find they aren't, I think we can probably still  
2 arrange for it from them.

3 The human factors work is in the same general  
4 category, again, it is not the sort of thing to do on a  
5 part time basis. It takes an organized, dedicated, examination  
6 approach.

7 I think that is now being set up with NRR as a  
8 part of a division.

9 CHAIRMAN AHEARNE: Correct.

10 MR. MICHELSON: So I would look to them and work  
11 with them closely on the human facet factors aspects.  
12 For instance, we will, in our examination of LER's, come  
13 across many things which appear suspicious to us from the  
14 human factors viewpoint.

15 I would anticipate us sending these to the people  
16 in the human factors branch, who will make use of them  
17 and perhaps feed back their observations concerning them,  
18 to man our own organization to do an intelligent examination  
19 of these apparent human factors accidents.

20 This is quite an undertaking.

21 MR. MICHELSON: Let me ask you a question that  
22 might help me understand where you might draw the line.

23 Let us suppose that in a certain type of transient  
24 situation, operators were faced with situations which their  
25 procedures didn't cover. So they would take a given action,

1 that might or might not aggravate or might help the  
2 development. Let's suppose that that happened three  
3 or four times in a variety of plants.

4 Now, would that event and analysis which would  
5 come through your office, the trend would begin to develop  
6 that it is the -- the operators are facing a situation  
7 and the reactions are trending in a certain direction.

8 Would you view that as something which would be  
9 appropriate for you to analyze or would that be human factors  
10 issue?

11 MR. MICHELSON: From some past reading of LER's,  
12 I find that an LER may start as an operator error and then  
13 it may proceed through various equipment responses, some  
14 of which were surprises. We would be very much interested  
15 in the surprises that resulted from this human error, but  
16 would not go back and examine the human error in the sense  
17 of where was the instrument located when he was turning  
18 the switch?

19 Was it a visualization problem? Did he just  
20 reach for the wrong switch and if so why?

21 That kind of human factors were, we wouldn't  
22 really be very well qualified to analyze. But we would  
23 analyze the consequential effects of the human error.

24 CHAIRMAN AHEARNE: I was trying to get a feeling  
25 for if, let's say buried within the LER's, there turned



1 out to be a series of events which were being aggravated  
2 because operators facing a given situation, were taking a wrong  
3 set of actions.

4 I am not clear from your description whether I  
5 should be looking to your organization to dig that out, or  
6 NRR to dig that out?

7 MR. MICHELSON: I think what we would do is this.  
8 Clearly, when we come across to a human error problem that  
9 concerns us, but for which we don't feel very well qualified,  
10 we would certainly work, then, with the human factors branch  
11 over in NRR.

12 We would assure ourselves it doesn't fall into  
13 a crack. I would like to see the course of this specific  
14 case first, and we would make a judgment. We feel we would  
15 not want to pretend to be examining human factor aspects  
16 when we really aren't qualified to do it.

17 In other words, I am not attempting to staff with  
18 human factors as a major thrust. We will only maintain an  
19 awareness of it. Try to assure ourselves it doesn't fall  
20 into a crack.

21 My own view is that it is not the sort of thing  
22 that you can staff for on a part time basis, or that sort  
23 of thing. It is a dedication which I think takes a group  
24 of people working together on. I did not envision having  
25 such a group.

1           Another problem area which I am not sure how  
2 serious it would be yet, is the problem of giving  
3 adequate component and system information.

4           An LER is an event to a real plant and to a real  
5 piece of equipment. To understand that event, it is necessary  
6 to understand that piece of equipment.

7           To do that, it is necessary to have some information  
8 about it. You cannot do this work in an ivory tower. You  
9 have got to have the technical information.

10           Presently, such information in a collective sense,  
11 and technical information center sense, doesn't exist with  
12 NRC. We have to go and search it out.

13           We have to go to the plants to get the information  
14 or to the vendors, or wherever. This could be time consuming,  
15 very inconvenient. But, how to overcome that limitation,  
16 is not. We have not reached a position on it.

17           It is just tough. To do good work you have to have  
18 good information and if you work at the plant site, for  
19 instance, you have it. If you work at the NSS vendor plants,  
20 you would have it for certain parts of the plant at least.

21           We are going to look at this problem and maybe  
22 formulate a recommendation on how to handle it. Presently,  
23 we have no answer.

24           CHAIRMAN AHEARNE: I appreciate your looking at  
25 the program we have to try to incorporate into our document,

1 retrieval system on all the documents on the plants.

2 One of the justifications we have been making  
3 for it is that that would enable us to have radioactive  
4 quality information available on a given plant.

5 If that isn't the case or modification should be  
6 made, I think we would like to know as soon as possible.

7 MR. MICHELSON: What needs to be appreciated here,  
8 is the depth of detail of this information.

9 First is a full diagram, of course, it is an  
10 important piece of information, but what is more important  
11 when you experience, say, a valve failure, is the details  
12 of the valves that fail.

13 That begins to require a lot of storage capacity.  
14 You have to get a lot of information together and the capacity  
15 to store and retrieve it, and it is so plant specific that  
16 you will be collecting it from all the plants and fill the  
17 building with it.

18 CHAIRMAN AHEARNE: My impression is that on the  
19 volume and documentation we are collecting, we will build  
20 a building if it weren't reduced and put on various electronic  
21 recovery methods.

22 MR. MICHELSON: Right, and this is part of what  
23 we are looking at. It would be nice, of course, again, if  
24 there were a central data center where you could call on  
25 to get any of this information on any plant, and any other

1 plant that needed it or any other utility or whatever that  
2 needed it, call in and get it.

3 CHAIRMAN AHEARNE: There you would probably start  
4 running into some of those other problems --

5 MR. MICHELSON: Right, you would begin to get into  
6 proprietary problems, withdrawals, and information.

7 MR. CORNELL: It gets very sticky.

8 MR. MICHELSON: Right.

9 But, to do our work, we are going to have to --

10 CHAIRMAN AHEARNE: Yes, you are going to have  
11 to have the access.

12 MR. MICHELSON: And, we are going to work to figure  
13 out how to achieve that access. Otherwise, we will not be  
14 too successful.

15 One other point, of course, again, is the foreign  
16 operating experience, in the same category. Getting  
17 their experience is one thing, getting the details on the  
18 components that were involved is yet another matter.

19 CHAIRMAN AHEARNE: Although in many cases the  
20 components are either installed or made by U.S. manufacturers.

21 MR. MICHELSON: This helps to some extent, yes.

22 However, a lot of what we are beginning to find to  
23 be very interesting is in the so-called balancing plant.  
24 It is very plant specific. Sometimes they bought identical  
25 valves, but many times they are different.

1 It gets quite difficult.

2 Another subject for discussion, and I think,  
3 serious consideration, is the fact that AEOD is also asked  
4 to look at all licensee events.

5 This includes the so-called nonreactor events  
6 as well as those involved with nuclear power plants.

7 I gave you a slide to give you some feel for the  
8 number of licenses that are outstanding in this area, they're  
9 are over 8500 on this list.

10 CHAIRMAN AHEARNE: You may have missed some. The  
11 number looks low.

12 MR. MICHELSON: It may be. We picked out the big  
13 ones.

14 CHAIRMAN AHEARNE: Either the number is low or  
15 NMSS has been inflating their figures.

16 MR. MICHELSON: Well, I wouldn't want to say either  
17 way.

18 The point here is, though, and the reason for even  
19 giving you the numbers is that this is a real difficult area  
20 to get a handle on. The availability of data is a serious  
21 limitation. They don't have the same reporting requirements.

22 It is very difficult to find out what happened,  
23 the regional offices are involved, but a lot of it never gets  
24 back to headquarters, in fact, I understand most of it doesn't  
25 get back to headquarters.

1                   How you get a handle on this whole problem is  
2 not at all clear. I foresee it as something that is going to  
3 consume a lot of manpower to even try to get a grasp on  
4 it.

5                   CHAIRMAN AHEARNE: Well, as the gentlemen on  
6 my left has mentioned, perhaps your office ought to be bigger.

7                   MR. MICHELSON: Yes, that is not what I am really  
8 pushing for but rather I want to make sure --

9                   CHAIRMAN AHEARNE: I recognize the thrust of  
10 your comment.

11                   MR. MICHELSON: I want to make sure, and I am sure  
12 you appreciate, that this is an area which first of all,  
13 the office is going out now to recruit a lead engineer in  
14 this area, so I have got somebody who I think I can trust  
15 to know what is going on.

16                   Hopefully, I am successful in finding the right  
17 kind of lead engineer who will really find out what is going on.

18                   Assuming that that is the case, I still have a diffi-  
19 culty with the availability of data. It isn't in a nice  
20 form, it isn't in the retrievable form that I can get it  
21 for reactors.

22                   It is a serious area. It has a potential for  
23 impact on the public, which in many ways is of major concern.  
24 It isn't, perhaps, the capacity for the catastrophic source  
25 of events, but it certainly can develop some very serious

1 problems that would give you a lot of public relations  
2 difficulty.

3 So, it is an area which we are responsible for to  
4 look at the operating experience. It is an area, then, that  
5 we are going to be hard pressed to do much in. I have no  
6 feel yet for it. This is an area, which admittedly, I have --  
7 I am inexperienced in. Therefore, I am trying to find the  
8 experience.

9 It is an area which I find great difficulty in  
10 getting a handle on, getting a hold of even.

11 CHAIRMAN AHEARNE: We have felt the same way. We  
12 are hoping you can help lead us in this.

13 MR. MICHELSON: I am going to start out in it,  
14 and it is going to be tough.

15 CHAIRMAN AHEARNE: Yes, and we recognize that.  
16 Particularly the aspect that the data in it is minimal,  
17 if that. So that obviously is going to take a lot longer  
18 to get anywhere with it.

19 MR. MICHELSON: Again, of course, I have to look  
20 at priorities and limited resources and maybe I am biased  
21 a little bit, but I would like to look at reactors harder.  
22 I think that the potential in this area is just as serious,  
23 from the small exposure I have had so far to it.

24 For the smaller events, but still the ones that will  
25 get you in a lot of sticky difficulties.

1 CHAIRMAN AHEARNE: That's right. Certainly,  
2 in occupational exposure, this is where a lot --

3 MR. MICHELSON: In terms of actual exposure of  
4 the public, there is a lot more potential here probably  
5 than in the nuclear power plants.

6 CHAIRMAN AHEARNE: I notice you didn't put  
7 fuel facilities on it.

8 MR. MICHELSON: They are in there. Yes, they  
9 are the special nuclear material, fuel fabrication and so  
10 forth. Of course, then there is the source material factor,  
11 the uranium mills, and whatever. It is a large operation.

12 What I did on the next part of the handout is  
13 just to point out the number of other parts of NRC, of  
14 course, that are looking at operational data and have a very  
15 important part to play in the total program.

16 Now, AEOD, as I understand it, has a responsibility  
17 of coordination which means that we will try to assure that  
18 the total program makes sense. However, we don't necessarily  
19 control the individual elements but rather only coordinate  
20 the activity.

21 We will try to assure that the total program  
22 makes sense. For that reason, we will maintain a close  
23 contact with all of these various elements.

24 CHAIRMAN AHEARNE: Although, as I mentioned at least  
25 for myself, that when issues come up about the various data



1 systems, I will really look to you for your recommendation as  
2 to what should be done.

3 MR. MICHELSON: Yes, and we are going to maintain  
4 very close working relationship with these people. They all  
5 have a very important part to play, by the way, they are  
6 each doing their own particular part of the work. For  
7 instance, IE has an immediate response to the requirement.  
8 Or as the AEOD is looking at the LER's, not on an immediate  
9 response basis, but on a longer term examination basis.

10 But, the IE people must respond, but they have  
11 LER curves and they have to make an immediate decision. They  
12 have a very important role to play. We want to assure our-  
13 selves that we don't have unnecessary duplication of effort  
14 and on the other hand, we want to make sure things don't fall  
15 into the cracks.

16 They think they are doing it, we think we are doing  
17 it, sort of situation. NRR is the same thing. They are  
18 caught in an almost immediate response situation, too, because  
19 they are dealing with licenses and the status of licenses, so  
20 they must make quick decisions when things happen.

21 Again, my office is not involved in an immediate  
22 response. Although, when an efficiently serious event occurs,  
23 we anticipate being -- we don't want to get in the way, but  
24 we will go in before the dust completely clears, so that  
25 we can start sorting out and getting information we need

1 before it gets lost, as it does so.

2 We are not intending to be any kind of an immediate  
3 response organization.

4 So the others are listed here to give you a  
5 complete picture. I failed to put down the standards  
6 development on this list. They do become involved though  
7 when regulatory guides have to be changed and when we go  
8 through rulemaking, as in the case of NPRDS.

9 Also, I added here the ACRS LER subcommittee. We  
10 certainly will anticipate working with them and meeting with  
11 them as they see fit. They issued a report several months  
12 ago, we are now preparing to put together a story for them  
13 for April meeting in which we will first of all tell them  
14 how we are going to handle the LER situation and each of  
15 the program officers will be involved in that briefing. We  
16 will also try to trace for them what has happened to their  
17 ACRS report so that they get some feeling as they read  
18 it.

19 CHAIRMAN AHEARNE: I would like to know that.

20 MR. MICHELSON: I haven't yet traced it out, it  
21 is on my list of things to do for the April meeting.

22 CHAIRMAN AHEARNE: Good, I am very interested in  
23 finding out what happens to ACRS reports.

24 MR. MICHELSON: I was on the other side of the fence  
25 when the report was written, I had participated in the

1 preparation of the report, and before I came here, I  
2 wondered also what happened to it.

3 CHAIRMAN AHEARNE: From having had some experience,  
4 I can tell you at times it is not too enjoyable answering  
5 your own letters.

6 MR. MICHELSON: Yes, I will find that out, I am  
7 sure.

8 The last two items, in terms of other operational  
9 data activities are the NSIC, this is the Oak Ridge data  
10 operation. We are looking towards it to see, first of all,  
11 we want to see what its capabilities are, how it has been  
12 handled and perhaps there recommendations on possible improve-  
13 ments or changes that would help our work.

14 As I understand, that is an NRC deal, we combined  
15 operations so we would have to --

16 CHAIRMAN AHEARNE: Yes, certainly jointly funded.

17 MR. MICHELSON: Yes, so we would have to look into  
18 that a little bit.

19 Then, finally, of course, the NPRDS which we are  
20 looking into and again, have no present position on.

21 The next part of the handout was just to point  
22 out to you some other operational data activities which are  
23 going on.

24 The reactor licensees, for instance, are required  
25 to presently examine their own LER experience and those of

1 sister plants to the particular plant involved. This is  
2 a part of a Lessons Learned activity.

3 We would like to on a perusal basis, at least,  
4 find out how that is working. Maybe it is generating infor-  
5 mation that we perhaps could get into the information  
6 stream on.

7 We would like to see what is going on there, and  
8 whether it is possible to share in their work. I think it  
9 could be mutually beneficial. But I don't know yet and  
10 haven't approached anybody on how well we can get into that  
11 process. It is going on and would be nice if it could.  
12 Clearly the resident inspector can get into it at any time.

13 Beyond that it is not clear to me how to break  
14 into it.

15 Another operation is the INPO/ NSAC. I am going  
16 to hold discussions with those people as soon as possible,  
17 I have already talked to Doctor Zubrosky, and we are going  
18 to try to setup discussions to see how we can  
19 fold in what NRC does with what they do.

20 I think that there is an area of mutual advantage to  
21 sharing our work in data accumulation. I don't think we  
22 can share our work in data analysis. I think we will have  
23 to approach that on our own.

24 Clearly the accumulation of the data so that we  
25 are all working from a common information base, could be

1 beneficial to both of us.

2 COMMISSIONER GILINSKY: How would you deal with  
3 an event such as Crystal River, in terms of the functioning  
4 of your office? INPO/NSAC sent some people there and turned  
5 out a report that came out last week. Would you see yourself  
6 doing something like this?

7 MR. MICHELSON: I can tell you what we did.

8 Crystal River came along when I had one engineer  
9 available that I put on it immediately. I put him on  
10 it. I did not send him down the day it occurred, I waited  
11 for the dust to settle a little bit, and I sent him down  
12 on Friday.

13 He was down there over the weekend. He got a  
14 first hand view of what the situation was, accumulated  
15 a considerable amount of information, talked to a number of  
16 people and made the kind of contacts that it took to do his  
17 job later.

18 He then came back to my office and proceeded to  
19 do some more of the background information. We are attending  
20 all the meetings that are being held with the licensee and  
21 with other B&W licensees and with B&W. We are maintaining  
22 a close contact, although we do not directly participate  
23 in the deliberations other than to, of course, times ask  
24 appropriate questions.

25 If I had a normal staff capability at this time, I

1 probably would not have done it much differently. Except, I  
2 would, perhaps, had two people looking at this instead of  
3 one.

4 But, we -- an event of this sort is so widely  
5 publicized and so closely looked at, that I think my main  
6 concern would be to take a kind of a fresh independent look  
7 at it and just assure myself that they have touched all the  
8 bases.

9 COMMISSIONER GILINSKY: Would you see yourself  
10 turning out a report?

11 MR. MICHELSON: Not necessarily, in this case,  
12 I would be reluctant to commit to it because of the limited  
13 manpower to deal with it.

14 COMMISSIONER GILINSKY: I was just using that  
15 as an example.

16 MR. MICHELSON: We are looking into 2 or 3 areas,  
17 even at Crystal River, that other people didn't seem to pay  
18 much attention to, which we felt were safety significant  
19 and worthy of some more thought. That is the thing that I  
20 would like to do. I am not going to do what we feel and  
21 believe from our own perusal as being adequately covered, but  
22 rather go into some of the avenues that other people may  
23 not be looking at which we believe might be a potential  
24 interest.

25 For instance, in the case of Crystal River, we are

1 looking into the problem of the bearing failure on the motor  
2 and we have some questions about that area and I think it is  
3 a significant bit of operational data which was very peripheral  
4 to the event but which was telling us a story.

5 So, that is the sort of thing that we do.

6 COMMISSIONER GILINSKY: I raise that because your  
7 office is often compared to what the National Transportation  
8 Safety Board does. I am sure you are aware there have been  
9 all sorts of proposals that we said something of the sort.  
10 I was trying to get a feel for how close the parallel was.

11 You are really saying that you will not be neces-  
12 sarily jumping into every incident, only to the extent that you  
13 feel that the job isn't being done elsewhere or that there  
14 are areas that aren't covered properly.

15 MR. MICHELSON: I would say it a little differently.  
16 We certainly need to get in to assure ourselves that the  
17 full operational experience is being properly appreciated.  
18 Where we think that there is adequate work being done, invest-  
19 igation being conducted, we certainly don't want to get in.  
20 We want to be aware of it and look at it from our own viewpoint.

21 Wherein, we see areas that haven't been looked at  
22 that we think are also significant parts, safety significant  
23 parts of the event we would look into them if others don't.

24 The analogy to the National Transportation Safety  
25 Board has been often imperative. I do not think that at this

1 time set up to do anything even comparable to that, nor  
2 should we be set up that way.

3 I emphasized a little earlier that I didn't think  
4 that we should be an immediate or incident response kind of  
5 team.

6 But, we certainly don't want to wait back for a  
7 month or two after the event before we start looking. Things  
8 get lost, information gets lost in that kind of time period,  
9 so we would like the privilege of going in early to look but  
10 try to stay out of the way.

11 COMMISSIONER GILINSKY: You don't have to be  
12 a instant response team, I don't think anybody ever contemplated  
13 that, but you could be an assessment team.

14 MR. MICHELSON: We could be, we have certainly  
15 assessment capability. I have no preconceived notion on that.  
16 If it were desired to function that way, we could certainly  
17 function that way.

18 I had not anticipated that as being in the charter.  
19 I anticipated that we have the right to start looking quickly  
20 to make our own appraisal but not to be in the normal regu-  
21 latory process associated with that event.

22 We could be but I had not anticipated doing that.

23 We went in in our own way and have kept track of  
24 Crystal River as a good example.

25 There are a few possible problems with our operational



1 data acquisition. One of the problems is the unequal reporting  
2 requirements. Some plants are required to report more things  
3 than other plants are required. This stems back to certain  
4 differences in the technical specifications for the plants.

5 This results, then, in some amount of information  
6 being lost in the case of some plants but being reported in  
7 the case of others. As a consequence, one can sometimes draw  
8 incorrect conclusions if you aren't careful, to find out  
9 were they even required to report that kind of information.

10 So, I am pointing as one of the problems, is this  
11 unequal reporting requirement.

12 COMMISSIONER BRADFORD: How unequal is the reporting  
13 requirement?

14 MR. MICHELSON: I can't give you a good feel for  
15 that. Every once in a while an example will come up though,  
16 in terms of, and I can't give you good ones yet because  
17 I am just getting into this area a little bit, but the problem  
18 is that the tech specs say what you have to report.

19 Scrams, for instance, well one time I guess  
20 nobody reported scrams, but there are a number of these kinds  
21 of technical happenings which in some cases they require  
22 reports, so the fact that they reported it at one plant  
23 and not at another plant, doesn't mean that one plant didn't  
24 experience it. Rather it may mean that one plant wasn't  
25 required to report it.

1 We have not searched this out, it is just --

2 CHAIRMAN AHEARNE: And there are some plants that  
3 interpret reporting requirements differently. One side  
4 will lean on one side of the threshold.

5 MR. MICHELSON: I wouldn't want to make any claim  
6 as to how serious this difference in tech specs is, I haven't  
7 seen any good study of it by specific details example. It  
8 might be an interesting one for someone to do. I wouldn't  
9 intend to do it but it would be worthwhile I think.

10 COMMISSIONER GILINSKY: I thought we had something  
11 in the works to standardize tech specs.

12 CHAIRMAN AHEARNE: We do.

13 COMMISSIONER GILINSKY: Where is that statement?

14 CHAIRMAN AHEARNE: The paper is in the final stages,  
15 it has been written and it is a coordination of the staff.

16 It was about 3 months ago.

17 COMMISSIONER GILINSKY: It's been years in works.

18 CHAIRMAN AHEARNE: The one that we task was about  
19 3 months ago. There may have been something in the works  
20 before that.

21 MR. MICHELSON: Most of our operational data is  
22 being produced by plants which are relatively old now, I  
23 guess, in terms of more current thinking and standardization  
24 tech specs and so forth. It is not clear to me how far back  
25 with the standard tech spec.

1 COMMISSIONER BRADFORD: That is pretty important  
2 I think. Most of the newer plants would be underfairly  
3 uniform requirements.

4 It is the real discrepancies in all the older  
5 plants.

6 MR. MICHELSON: Yes, it is the older plants that  
7 primarily we have been dealing with so far.

8 CHAIRMAN AHEARNE: Are they the ones on which  
9 you have the LER's?

10 MR. MICHELSON: That is where most of them are coming  
11 from, right.

12 Another factor is the difference in attitudes  
13 towards reporting. Depending on what your particular plant  
14 attitude is, you might produce very good LER reports or very  
15 poor ones. I have seen good samples of both, with excellent  
16 reporting and very poor reporting.

17 Also, it is a matter of the viewpoint of the writers  
18 To an operator maybe human errors never occur. You don't see  
19 them as often in the LER's.

20 CHAIRMAN AHEARNE: On the other hand, I have been  
21 talking to some people who operate plants, the impression I  
22 have is that to some writers, equipment errors never occur.

23 It is a lot easier to say it is an operator error.

24 MR. MICHELSON: Right, so this is one of the things  
25 that clouds the reporting process. People generally don't like

1 to tell on themselves, they would rather tell on equipment.  
2 This can be a difficulty then in properly analyzing what  
3 happened.

4 COMMISSIONER BRADFORD: When you see an example  
5 of poor reporting, do you call that to IE's attention? Do  
6 you call it to the licensee's attention?

7 MR. MICHELSON: I would have to point out, of course,  
8 we haven't started our operation yet, we are in the process,  
9 what I am telling you is mostly based on past experience where  
10 I didn't have IE to talk to.

11 I think part of the review that the ACRS did, pointed  
12 this same comment.

13 The differing attitudes also has to do how you  
14 view an event. The fellow who writes it up may view the most  
15 important thing was the fact that the wire broke inside of a  
16 motor operator. That is what caused the motor to not work and,  
17 therefore, it is impossible to function. When in reality it  
18 might be that the valve is sitting there shaking day after day  
19 vibrating severely, and he doesn't even mention that in the  
20 report.

21 That is the true cause of the wire breaking, it  
22 was the cold work fatigue of the comparem. You don't pick  
23 these up depending on his view and attitude and so forth.

24 So, it is very hard to find out from an LER what  
25 really happened unless he is a very good observer who has

1 been doing the writing.

2 Another problem, the events that require reporting  
3 are certain kinds of significant events like this rem as  
4 an example in the past.

5 CHAIRMAN AHEARNE: Do you intend to in your review  
6 to come up with some sort of a list of items that you think  
7 ought to be put into requirements and reports?

8 MR. MICHELSON: The difficulty of coming up with that  
9 is, of course, being aware of it. How will I find out unless  
10 I go out in the plant and find out what they didn't report. .

11 CHAIRMAN AHEARNE: Well, I guess, one way though  
12 as certainly you, yourself, and the people you are hiring,  
13 have a large amount of experience with plants and as such  
14 I would suppose in some better feel than others, might have  
15 on what kinds of items are really critical to keep track of.

16 MR. MICHELSON: Certainly, we are putting it down  
17 here because it is an area we are concerned about and we  
18 are going to look into. One way, of course, of getting a feel  
19 for this is to go back into a plant or perhaps hire a contractor  
20 to go on a sampling basis and examine logbooks to find out the kinds  
21 of events that occur and then determine which kinds of these  
22 events end up as LER's and which kind don't. Then what is  
23 the safety significance even of those events that don't end  
24 up in the LER file.

25 You can then make a judgment and the interim office

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1 last fall, AEOD interim office, did some of this work and  
2 the sample was small but the results seem to be conclusive  
3 at least for the example we looked at, there seemed to be  
4 a large amount of significant information that didn't get  
5 into the LER system.

6 It was deemed nonreportable by the regulatory  
7 definitions. I would certainly want to sample several other  
8 plants on a similar way before I drew a conclusion that  
9 we were missing it, but it appear that we could be missing  
10 more important data.

11 The foreign reactor data, of course, we discussed  
12 a little bit, and then I have listed here many of the problems  
13 of the proprietary and commercial restrictions problems, the  
14 differences in plant design, the inability to find out what the  
15 real hardware looks like and of course it is a little un-  
16 handy to travel all over the world trying to look at all of  
17 these reactors.

18 So there is some question about what we will do  
19 with the information after we get it, and I think I can always  
20 say after we start looking at it, how well off we are.

21 Storage retrieval is not as well arranged in the  
22 foreign countries, so it is hard to get it. Knowing what  
23 they even ask for might be a difficulty. And finally,  
24 translating it. Getting it into a form that our engineers  
25 can use.

1 I think I want to just make a few concluding  
2 remarks. First of all, I do feel that the recruiting effort  
3 has been very fruitful. I am quite encouraged with the  
4 technical level and the expertise of the people that I  
5 have so far been able to attract to the office. I am  
6 very well pleased.

7 There may be some question about whether or not I  
8 have adequate resources. I would rather wait for a while,  
9 though, before growing any firm conclusions on that. I think  
10 we will need a period of time now to shake down what I have.  
11 Maybe in 6 months, or something like that.

12 CHAIRMAN AHEARNE: Well, I encourage you to realize  
13 that we do have new cycle, budget cycle coming up to focus  
14 seriously on. It is a very important issue.

15 MR. MICHELSON: We'll move on it as quickly as  
16 possible to try to make some good recommendations. Right  
17 now we will concentrate on getting started.

18 CHAIRMAN AHEARNE: Sure, obviously, the most important  
19 thing.

20 Then, the final item is that, and I will point it  
21 out to you, there are several areas of uncertainty and, for  
22 instance, the data reporting system is going to need revision,  
23 we are going to have to do quite a bit of work to see how to  
24 make best use of foreign experience, we are going to have  
25 some amount of coordination problem with the rest of NRC and

1 with the outside industry. This is going to take time and  
2 a lot of effort.

3 Finally, there is some uncertainty as to how deeply  
4 we get involved in the probabalistic assessment and the  
5 human factors work. I think I have outlined the attitude  
6 I have taken so far.

7 To get any further or any deeper into it, it would  
8 almost require a step, a large step, between keeping an aware-  
9 ness and really being involved enough to be able to make  
10 a true technical contribution.

11 So, I see this as an area that might be very  
12 important but I am still laying back on it. Maintaining  
13 communication and awareness, but not direct active working  
14 involvement.

15 I believe that concludes what I have. Are there  
16 any other questions, or whatever?

17 CHAIRMAN AHEARNE: Vic?

18 COMMISSIONER GILINSKY: I don't have any questions,  
19 thank you for your presentation. I just want to say, I am  
20 sure John said at the outset, we are very pleased to have  
21 you. I don't think there is any activity in the agency that  
22 is more important than the one you are undertaking.

23 CHAIRMAN AHEARNE: Peter?

24 COMMISSIONER BRADFORD: I agree with that.

25 CHAIRMAN AHEARNE: Well, Carl, Jack, I would like



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2 to also say thanks for the effort you did in getting this  
3 office started in those early months when we had recognized  
4 the need and we were trying to move out quickly. You  
5 did a very good job.

6 MR. HELTEMES: Thank you, Dr. Ahearne.

7 CHAIRMAN AHEARNE: Carl, I recognize all the  
8 problems you have and I agree you have to concentrate on  
9 growing and making sure that you get the good people and that  
10 you take bite sized pieces and you swallow them.

11 I want to reiterate what the other two Commissioners  
12 said and I am sure what Joe and Dick would say, were they  
13 here. This is really something that we all recognize that  
14 must be done and must be done very well. It is of great  
15 importance. I think we all regret that we all haven't gotten  
16 wiser faster.

17 We are looking on you to make a great contribution.

18 Thank you.

19 (Whereupon the meeting  
20 was adjourned at  
21 3:00 p.m.)  
22  
23  
24  
25

STATUS REPORT  
OFFICE FOR ANALYSIS AND EVALUATION  
OF OPERATIONAL DATA (AEOD)

Carl Michelson, Director

March 20, 1980

~~8000270195~~

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### AEOD PURPOSE AND GOALS

- Collect, assess, and feedback operating experience.
- Identify needed operational data and propose data reporting methods and systems.
- Seek trends or patterns, or otherwise identify potential safety problems or precursors of more serious events.
- Develop recommendations for action by other NRC offices for resolution of safety issues revealed by analysis and evaluation.
- Assure that safety concerns inherent in the experience are identified to the appropriate NRC office, industry, licensees, and the public, and are satisfactorily resolved and implemented.
- Provide guidance and a focal point for coordination of such activities within the NRC and with ACRS, industry, and other groups.

### FORMATION OF AEOD

- Established by Commission in July 1979.\*
- Interim office established in October 1979.
- Permanent Director appointed in January 1980, and reported in February.
- Interim organizational structure established in early March 1980.
- Recruiting of authorized staff will be completed by May 1980.

\*Commission also directed major program offices to establish capability to perform special analyses of operational data.

ORGANIZATION AND STAFFING OF AEOD

- Authorized level of 20 for FY-80.
- Functional areas:
  - Executive (2)
  - Operations analysis and evaluation (13)
  - Program and data management (2)
  - Secretarial and clerical (3)
- Technical Personnel in Functional Areas.

<u>Lead Engineers</u>		<u>Support Engineers</u>
Reactor system operation	(4)	(4)
Plant system operation	(1)	(2)
Nonreactor operations	(1)	(1)
Program and data management	(1)	(1)

- Permanent staff recruited to-date.

Lead engineers (5)  
Supporting engineers (2)

- Staff education and average experience.

Lead engineers 4 masters and 1 doctor  
8 yrs. in industry or nuclear navy  
6 yrs. in NRC/AEC

Supporting engineers 1 bachelor and 1 master  
7 yrs. in industry  
2 yrs. in NRC

- Level of 22 authorized for FY-81 is now current ceiling.

## AEOD ANALYSIS AND EVALUATION PROGRAM

- Review current operational data.  
Identify significant items.  
Screen for possible case studies.  
Coordinate review status with other NRC offices.
- Scope selected case studies.
- Conduct case studies.  
Assign lead engineer and priority.  
Develop case (examination of past operating experience and possible onsite follow-up).  
Prepare recommendation for action.
- Other examination of past operating experience on special case basis.
- Monitor feedback and implementation of operational experience.
- Maintain an awareness of established or potential safety issues.\*

\*May use operational data to substantiate safety concerns first postulated on a "what if" or equivalent basis, or to identify additional "what if" or potential generic safety concerns.

## AEOD PROGRAM AND DATA MANAGEMENT ACTIVITIES

- Establish AEOD and agency-wide guidance documents and control procedures.
- Recommend and help achieve improvements in data collection, reporting processes, and storage systems.
- Reach a position on the recovery of data not currently available, e.g. -
  - Events associated with safety-related systems and equipment but not required to be reported.
  - Events associated with nonsafety-related systems and equipment.
- Evaluate and recommend possible applications of probabilistic analysis techniques and results.
- Maintain contact with NRC human factors work.
- Recommend approaches to gain access to an adequate component and system technical information base.
- Aid in achieving effective input and use of foreign operating experience.

AEOD ANALYSIS AND EVALUATION OF NONREACTOR DATA

- Types and numbers of nonreactor licenses, e.g. -

By-product material

Medical	( ~2650)
Academic	( ~ 365)
Industrial	( ~4530)
Civil Defense	( ~90)

Source material ( ~340)

Special nuclear material ( ~580)

- AEOD scope of analysis and evaluation of nonreactor data is under study.

Problem with availability of data.  
Priorities and limited resources.



OTHER NRC OPERATIONAL DATA ACTIVITIES

- IE operational data staff.
- NRR operational data staff.
- NMSS operational data assignments.
- MPA licensee operations evaluation staff.
- RES probabilistic analysis staff.
- IP foreign reactor data acquisition activities.
- ACRS (LER subcommittee).
- NSIC (NRC/DOE).
- NPRDS (NRC/utility).

OUTSIDE OPERATIONAL DATA ACTIVITIES

- Reactor licensees.  
Shift technical advisor.  
Onsite safety engineering group.
- INPO/NSAC  
INPO for human factor related events.  
NSAC for systems and equipment related events.
- NSSS vendors.
- Architect-engineers and consultants.
- Nonreactor licensees.

## POSSIBLE PROBLEMS WITH OPERATIONAL DATA ACQUISITION

### Domestic Reactor Data

- Differences in plant technical specification reporting requirements.
- Differing utility attitudes toward reporting.
- Not all significant events must be reported.
- Many less significant events are required to be reported.
- Incomplete or imprecise reports.

### Foreign Reactor Data

- Limited reporting of events to U.S. by some countries.
- Proprietary or commercial restrictions.
- Differences in plant design.
- Data not routinely placed in data storage and retrieval systems.
- Data availability and selection.
- Translation problems.

### Nonreactor Data