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UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION  
BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

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In the Matter of :  
LONG ISLAND LIGHTING COMPANY : Docket No. 50-322-OL  
(Shoreham Nuclear Power Station) :  
- - - - -x

Riverhead County Complex  
Legislative Hearing Room  
Riverhead, N.Y.  
Wednesday, August 4, 1982

The hearing in the above-entitled matter  
convened, pursuant to notice, at 9:05 a.m.

BEFORE:

LAWRENCE BRENNER, Chairman  
Administrative Judge

JAMES CARPENTER, Member  
Administrative Judge

PETER A. MORRIS, Member  
Administrative Judge

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1 go to the next, so the operator would not sit there and  
2 try to juggle with injection rods manually from the  
3 control panel and do that for ten or fifteen minutes  
4 before he went to try out one of these other actions.  
5 The intent of stating it in this way is that you are  
6 trying all of these things together.

7 Q Mr. Calone, let me ask you, is that what LILCO  
8 meant in this procedure by the use of the term  
9 "concurrently?"

10 A (WITNESS CALONE) Yes, that is correct. The  
11 control room operator would -- the reactor operator in  
12 the control room would be doing most of the individual  
13 actions, obviously sequentially, because each one  
14 requires a step. The field operators may be doing one  
15 or two or three of those items concurrently, depending  
16 again on the scenario we are into as to what got us to  
17 this point, and what the status is of the rest of the  
18 plant equipment.

19 Q Let me ask, with respect to the first thing he  
20 is told to do here, 3.5.1, insert the rods not fully  
21 inserted with the reactor manual control system. How  
22 long is he supposed to be trying to do that before he  
23 gives up and moves on to the next one?

24 JUDGE BRENNER: Ms. Letsche, I am sorry, I  
25 missed your reference.

1 performed any review of the operability of these systems  
2 at the Shoreham plant with respect to their ability to  
3 mitigate the consequences of an ATWS event?

4 A (WITNESS HODGES) Some of these don't make  
5 sense to apply to Shoreham yet, since they haven't  
6 operated, and in fact A and B under Item 6 would not  
7 necessarily apply.

8 Q Well, let's talk about A. Has the staff  
9 reviewed surveillance procedures or maintenance  
10 procedures at Shoreham for the systems that are  
11 referenced up in the beginning Paragraph 6?

12 A (WITNESS HODGES) I have not personally. I am  
13 not sure what level of detail those procedures have been  
14 reviewed at.

15 (Whereupon, counsel for Suffolk County  
16 conferred.)

17 Q How about Paragraph C under Item 6 here? Has  
18 the type of review that is referenced in their 50.59  
19 review been conducted for the Shoreham plant?

20 JUDGE BRENNER: Why don't you get to the  
21 substance of the requirement, because if you hang him up  
22 on the applicability or lack thereof of 50.59 to a  
23 non-operating -- to a plant that has never received an  
24 operating license, you are going to be diverted, and it  
25 won't be important to where you want to go. You want to

1 for the inventory of the ultimate heat sink?

2           WITNESS HODGES: The test data that we have  
3 seen as far as how the quenching and such works from the  
4 tailpipes to the relief valves in the suppression pool  
5 indicates that at 200 degrees there is no problem, and I  
6 think the data may even go up to 210 to 220. It is --  
7 some of the data go up in that particular range, and the  
8 quenchers perform satisfactorily. The NRC has written  
9 off on 200 and has not blessed the higher temperature at  
10 this point, but using the data, you could probably go to  
11 220. If you get above 220, there is just no data to  
12 support it. You might be okay, but it starts to be  
13 questionable. And so I would have to label it at this  
14 point as borderline.

15           JUDGE BRENNER: All right.

16           Now, the flow you have assumed with one pump,  
17 is that the same flow as would actually occur at  
18 Shoreham?

19           WITNESS HODGES: That is the 43 gpm at  
20 Shoreham, yes.

21           JUDGE BRENNER: I am asking for your  
22 assistance, your advice, whatever.

23           How can we get a handle on whether the  
24 operator would be starting initiating SLCS in a minute  
25 and a half to two minutes, assuming he follows the

1 into initiating standby liquid control, at least to the  
2 point of recognizing that he has an ATWS, and if he has  
3 over 6 percent power, believe me, he is interested in  
4 turning that power level around.

5           WITNESS HODGES: I would tend to disagree. I  
6 think that he is going to try first to get those means  
7 which would be most efficient in shutting the reactor  
8 down and also which would be the least penalty to him.  
9 And those are the ones where he inserts the rods by  
10 either resetting the scrams or inserting them manually,  
11 or these others, and I think he is going to use the time  
12 he has until he reaches that 110 in order to try to use  
13 these other means. And if he sees these other means  
14 being effective, that is what he will use.

15           Now, if he tries these other means and they do  
16 not work, then I do not necessarily think he will wait  
17 around to that minute and a half. But he is not going  
18 to go immediately to the standby liquid control system.  
19 I think he is going to try these other actions first,  
20 and I think he should because they do not take 20 or so  
21 minutes in order to get the reactor down. They work  
22 very quickly, if they work.

23           JUDGE BRENNER: Well, but are they going to  
24 take more than a minute and a half to two minutes, or  
25 did you start that minute and a half to two minutes

1 to scram, his first action is to manually scram the  
2 reactor. He does that by two mechanisms, as the  
3 procedure says. He hits the manual scram, which is one,  
4 and he puts the mode switch to shutdown, which is the  
5 second scram. The operator is trained in a scram  
6 scenario, his normal shutdown scenario is as he moves  
7 that mode switch to shutdown, he scans his APRMs and  
8 expects to see APRMs, average power range monitors,  
9 decreasing in power, and in a short period of time he  
10 will know that he doesn't have or he does have greater  
11 than 6 percent power. So it is right there on the  
12 board, and when he hits those buttons, he expects to see  
13 that power immediately drop.

14 WITNESS HODGES: It should take about 5  
15 seconds approximately for the power to get down to that  
16 range, if it is going to get down on a normal trip. So  
17 if it stays above 6 percent beyond the first five  
18 seconds, he should be aware that he has an ATWS in  
19 progress.

20 JUDGE BRENNER: Shouldn't that 3.6 requirement  
21 then, particularly the 6 percent aspect but not  
22 exclusively, appear further up in these procedures?

23 WITNESS CALONE: As Mr. Revely mentioned  
24 before in these procedures, these procedures do have a  
25 tendency of changing them. From our experience at the

1 be moved up front in the procedures?

2 WITNESS HODGES: The emergency procedure  
3 guidelines are a little bit different. First off, they  
4 use 3 percent as a guide rather than 6 percent. It is  
5 supposed to really be the lower end of the APRM range is  
6 what they recommend, and for the plant that they use as  
7 their example, that was 3 percent. Also in the  
8 guidelines it does I think assume that the operator will  
9 try these other steps first rather than trying to go to  
10 the injection of the standby liquid control system  
11 early. It assumes that he will wait until it reaches  
12 the suppression pool temperature limit.

13 JUDGE BRENNER: Okay. Let me come back to the  
14 other discussion, Mr. Hodges, when you gave us your view  
15 that when you get to around something over 200 degrees,  
16 then you are not sure the basis is there to support a  
17 conclusion that you are okay with respect to inventory.

18 Is that the situation that we get into in  
19 Shoreham, then, given the fact that it is one pump?

20 WITNESS HODGES: Well, there is --

21 JUDGE BRENNER: And given the other  
22 assumptions that you made about things that would work.

23 WITNESS HODGES: It is a combination of  
24 problems, and one is you have got to worry about load on  
25 the pool at that point, and also you have to worry about