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## UNITED STATES ATOMIC ENERGY COMMISSION

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IN THE MATTER OF:

TOLEDO EDISON COMPANY  
and  
THE CLEVELAND ELECTRIC  
ILLUMINATING COMPANY

Docket No. 50-146

Dayton-Warren Nuclear Power  
Station, Unit No. 1



Place - East Clinton, Ohio

Date - 18 February 1971

Pages: 1915 - 2112

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REGULATORY DOCKET FILE COPY

RMS-1

1 UNITED STATES OF AMERICA

2 ATOMIC ENERGY COMMISSION

3 -----+

4 In the matter of :

5 TOLEDO EDISON COMPANY :

6 and : Docket No. 50-346

7 THE CLEVELAND ELECTRIC :

8 ILLUMINATING COMPANY :

9 (Davis-Besse Nuclear Power :

10 Station, Unit No. 1) :

11 -----+

11 Trinity Methodist Church  
 12 Conference Room  
 13 Adams and Second Streets  
 14 Port Clinton, Ohio

15 Wednesday, 10 February 1971

16 The above-entitled matter came on for further  
 17 hearing, pursuant to notice, at 9:30 a.m.

18 BEFORE:

19 WALTER SKALLERUP, JR., Esq., Chairman,  
 20 Atomic Safety and Licensing Board.

21 DR. CHARLES E. WINTERS, Member.

22 DR. WALTER H. JORDAN, Member.

23 APPEARANCES:

24 (As heretofore noted.)

25

ln

C O N T E N T S

2	WITNESSES:	<u>DIRECT</u>	<u>CROSS</u>	<u>REDIRECT</u>	<u>RECROSS</u>
3	Morton Goldman		1917		
	Lowell Roe		1930		
4	Lester Rogers		1931		
	Bernd Kahn		1945		
5	Edythalena Tompkins		1950		
	Morton Goldman		1958		
6	Daniel Nelson		1977		
	Paul Tompkins		1990		
7	Lester Rogers		1997	2012	
	Morton Goldman		2020.		

## (EVENING SESSION)

10	Carol Lau		2044		
	Tom Gibbs		2053		
11	Lawrence Brown		2057		
	Steve Verb		2060		
12	Joan Cook		2084		
	Charleen Riffle		2089		
13	Al Krueger		2094		
	Jim Green		2100		
14	Willis Rappaport		2103		

16	EXHIBITS:	<u>FOR IDENTIFICATION</u>	<u>IN EVIDENCE</u>
17	Lau No. 1	2052	2114
18	Lau No. 2	2063	2072
19	Lau No. 3	2067	2072
20	Lau No. 4	2070	2072
21	Lau No. 5A through E	2079	2081
22	Lau No. 6	2106	2106

23

24

25

RMS/rms1

P R O C E E D I N G S

1  
2 CHAIRMAN SKALLERUP: Will the hearing come to  
3 order, please.

4 Mr. Baron?

5 MR. BARON: Yes, sir. We have some questions  
6 on cross examination. I would like to turn to the Appli-  
7 cants first and ask Dr. Goldman a question or two.

8 Whereupon,

9 DR. MORTON GOLDMAN

10 resumed the stand as a witness on behalf of the Applicant  
11 and, having been previously sworn, was examined and testified  
12 as follows:

13 MR. BARON: Somewhere in the transcript there  
14 were some remarks by Dr. Goldman with reference to  
15 Dr. Sternglass' statement that you cannot monitor the isotopes  
16 as they come out. Do you remember it?

17 MRS. STEBBINS: Yes, I have it.

18 CROSS EXAMINATION

19 BY MR. BARON

20 Q But let me ask you a preliminary question. Your  
21 company is privately owned; is that correct?

22 A That is correct.

23 Q And it is in the business of providing monitoring  
24 services to industry whether it be radioactivity monitoring  
25 or other kinds; is that correct?

1 A In part, yes.

2 Q Of course, you are here on behalf of the utility  
3 company to provide this testimony, and I would assume this  
4 is looking towards the completion of the plant, the oper-  
5 ation of the plant and then your company will go into some  
6 kind of contractual relationship with the Applicant for the  
7 purpose of providing monitoring services throughout the  
8 operation of the plant?

9 A No, sir.

10 Q That is not correct?

11 So that once the hearing is over and license  
12 to construct has been issued your company and you personally  
13 will be through with any relationship?

14 A That is not necessarily correct. There is no  
15 contractual obligation on the part of Toledo Edison at  
16 the present time for the services with my organization.

17 Q Is there one anticipated?

18 A I think you had better ask that of Mr. Roe.

19 Q Maybe you would like to know the answer too.

20 (Laughter.)

21 Well, what I am getting at then is it anticipated --  
22 and I assume you are in a position to answer this question --  
23 that once it is built a company such as yours would provide  
24 such a service?

25 A I think this is correct, yes.

RMS/rms3 1

Q Is there a normal pattern as to how this kind of service is rendered?

R rms3 2

A There are several patterns which will vary with the individual company. In some cases it is a private organization that conducts these radiological surveillance programs. In other cases it is a program conducted by a state agency but funded by the utility. And in still other cases it is a university or nonprofit organization that conducts these surveys under contract to the utility.

Q Does it depend as to which of these methods is employed -- does it depend upon the size of the utility, the megawattage and so on?

A No.

Q Regardless of how it comes to pass, whether it is privately done or whether it is funded or whatever, is there a prescribed number of times, shall we say, that monitoring services should be conducted? That is, do you set up a set of equipment of your own on the site and send a man around once a week to read it?

I am really looking for the actual way it is done.

A Well the program itself, the definition of the samples to be taken, the frequency with which they are taken, the analyses to be conducted on the samples that are collected and so forth, are spelled out by the utility, usually in the

RMS/  
RPSA

1 Preliminary Safety Analysis Report and certainly in the  
2 Final Safety Analysis Report. They are included in the  
3 technical specifications for the operating plant which means  
4 that they have to be approved by the regulatory staff as to  
5 their comprehensiveness. The way in which any individual  
6 program may be implemented in terms of whether it is a  
7 contractor body so to speak that goes around and turns  
8 samplers on and off or whether it is the utility's own  
9 personnel who may turn the switches on the equipment is  
10 strictly a matter of individual prerogative in these programs.

11 Q You have had an opportunity I assume to examine  
12 the methods of the Applicant, the methods they intend to  
13 employ here?

14 A In a very cursory fashion.

15 Q You have had enough information and opportunity  
16 to form an opinion?

17 A No, I have not. I just have not looked at it in  
18 that detail.

19 Q I see.

20 From your experience with this kind of an item  
21 would you say that by and large the monitoring program that  
22 is employed is up to the individual company to supervise and  
23 run?

24 A To a certain extent, yes. But, of course, the  
25 content of the program and to some extent the qualifications

RMS/rms5

1 of the organization that will conduct it must be approved  
2 by the Regulatory Staff, so that the utility organization is  
3 carrying out a program either directly or through a con-  
4 tractor, which program has been examined and approved by the  
5 Regulatory Staff.

6 Q Has your company been hired on other occasions  
7 to do this kind of work?

8 A Yes.

9 Q And you personally have had how many years of  
10 experience in this facet?

11 A In environmental monitoring?

12 Q Yes.

13 A About 19 or 20 years, if one counts monitoring  
14 at the test site in Nevada.

15 Q Other than the test site in Nevada have you  
16 had experience with monitoring of other areas of radiation?

17 A You mean other utilities, nuclear power plants,  
18 yes.

19 Q Which ones?

20 A Calvert Cliffs, the Crystal River facility in  
21 Florida, Beaver Valley, Pennsylvania, Iowa Electric in  
22 Cedar Rapids.

23 We have done some monitoring, but not very much,  
24 at Dresden.

25 Q Now each of these that you have mentioned that



RMS/rms6

1 you were involved, is that because your company was hired  
2 by the various utilities?

3 A Yes.

4 Q Now should your company be hired in this particular  
5 case to do it, then you would provide the same kind of  
6 service that was provided with regard to those utilities?

7 A Yes.

8 Q Now let me ask you: Describe for me then, if you  
9 will, the exact method. Will you set up your own equipment  
10 and send your own man around? How frequently? What do you  
11 do with the results? How do you tabulate them? And to whom  
12 do you send them?

13 A Let me give you an answer which is compounded  
14 from our composite experience, because it does differ  
15 from plant to plant as to how these details are specifically  
16 implemented.

17 In many cases what our practice has been is to  
18 retain a local individual not a utility employee but usually  
19 a local high school science teacher or college professor  
20 or his staff to collect the samples. We train him in the  
21 actual physical collection of the samples, in the operation  
22 of equipment, which we provide, air samplers, dosimeters,  
23 and this individual who is on the scene goes around, usually  
24 at weekly intervals to change air samplers. The frequency  
25 of collection of water samples or samples of aquatic life

RMS/rms7

1 will be somewhat different. These water samples may be  
2 composite samples which are actually forwarded to us on a  
3 monthly basis. Samples of fish or bottom organisms will  
4 be frequently collected on a quarterly basis. And on these  
5 we usually have our own people go around with the local  
6 individual and frequently with a representative of an  
7 appropriate state game or fish commission representative  
8 because frequently we are collecting the samples by what  
9 would be regarded otherwise as an illegal means.

10 The samples are forwarded to our laboratories in  
11 Rockville, Maryland, where they are analyzed in accordance  
12 with procedures which have generally, though not always,  
13 been reviewed by the Atomic Energy Commission Staff. We  
14 use, for example, in our laboratories the identically similar  
15 procedures as those used by what used to be the Public  
16 Health Service and now is EPA in their radioactivity labor-  
17 atories.

18 The results are published by the -- we send the  
19 results to the utility in the form of a report. The utility  
20 will forward copies of this report to the Regulatory Staff,  
21 to the State Health Department and to any other agencies  
22 with whom they may have an agreement to do so, such as the  
23 fish and wildlife service and so forth.

24 Very frequently, in fact it is usual, from time to  
25 time a representative of the state health agency will split

RMS/rms8

1 samples with us. That is, we will collect a sample and  
2 forward a portion of it to the state health department  
3 laboratory for their analysis. We analyze one half and  
4 they analyze the other. Or they may have people at the  
5 site who will collect samples at the same time and same place  
6 as we do and then do their own analyses on it as sort of a  
7 check on work that we are doing.

8 Q Let me interrupt you at this point. I gather then  
9 that your company is not beholden to the government, is not  
10 regulated by any governmental agency, or licensed or any-  
11 thing of that nature?

12 A It is regulated by, I am sure, at least one  
13 governmental agency, but not in a technical sense.

14 Q Then is there a specific requirement that you  
15 send duplicates, for example, of the various reports to  
16 shall we say the Regulatory Staff?

17 A There is not a requirement on us that we do this.  
18 There is a requirement on the utility to do this.

19 Q So basically then you are employed by the utility  
20 to render a service to the utility? You provide that ser-  
21 vice in the form of written reports. And what they do with  
22 those reports really is not your concern?

23 A Strictly speaking, I suppose that is correct.

24 Q And your company and its officials have absolutely  
25 no knowledge as to whether or not the utility companies carry

RMS/rms9

1 out their obligations to send reports in to the governmental  
2 bodies?

3 A No, that is not true. We do know that these are  
4 sent in, because we get questions from time to time with  
5 respect to certain of the numbers that are in these reports  
6 or procedures that are referenced in the reports from state  
7 officials who have some questions about them. So we know  
8 that they get copies.

9 Q I see.

10 They refer their questions to you instead of the  
11 utility?

12 A Yes.

13 Q I hope that the answer to this next question can  
14 be brief. On page 1665 of the transcript which was from the  
15 8th you were asked a question by Mr. Charnoff which referred  
16 you to something that Dr. Sternglass had stated to the  
17 effect that the monitoring program -- and I am quoting the  
18 question. I assume it's a quote of Dr. Sternglass, "A monitoring  
19 program would not detect the isotopic discharges from the  
20 plant and that such a program would not provide a sufficient  
21 basis for appropriate action." And then you proceed to  
22 give a long answer which of course explored the whole sub-  
23 ject.

24 The specific question which has come up which I  
25 would like to ask you is: Is it the function of the monitoring

1 program to be working all the time or does it go on and  
2 off at specific times? Let's take that to begin with.

3  
4 A The monitoring program is a continuous program  
5 in the sense that it is continuous in time over the life  
6 of the plant. Some of the samples that are included in the  
7 monitoring program are not continuous samples in the sense  
8 that one does not normally collect, say, fish samples every  
9 day or every hour or every minute.

10 Q We are talking about the isotopic discharges.  
11 I should have limited it to that.

12 A Well, the answer was related to the determin-  
13 ation of the isotopic discharge in the environment of the  
14 plant. In fact within the plant before any liquid waste  
15 or gaseous waste, for that matter, is discharged, the last  
16 tank in the line, so to speak, is sampled and analyzed prior  
17 to discharge so that its contents are known and the  
18 composition of the discharge is known prior to release.

19 The environmental monitoring program is intended  
20 to assure that the concentrations and the amounts of radio-  
21 activity in environmental media outside of the plant are  
22 well within the standards, so to speak.

23 Q Is there a level beneath which a monitoring  
24 system will not pick up isotopic discharge?

25 A Yes, there are limits in the sense of sensitivity to  
these programs. Since there is a natural composition of

RMS/rms11

1 radioactive materials in the environment normally this serves  
2 as basically a so-called noise level. And once the amounts  
3 of artificially contributed activity from the plant get into  
4 the range of that noise level, it is essentially impossible  
5 or certainly extremely difficult to distinguish the plant  
6 contribution from that which is there to begin with.

7 Q But then I assume at that level -- well, we're  
8 talking in the area of such minimal effluent that it is meaning-  
9 less?

10 A That is correct.

11 Q Getting away from the scientific aspects of this  
12 and going back to the practical side of your company, are  
13 there other companies like yours that do this kind of work?

14 A I hate to admit it but there are, yes.

15 (Laughter.)

16 Q So it is a competitive kind of thing?

17 A To some extent, yes.

18 Q To the extent that competition takes a part in  
19 your getting a contract with the utility or not.

20 A We have not gotten many contracts to do this.

21 Q Have you found from your experience that whether  
22 the contract is issued or not depends upon the contract price,  
23 or is it lack of facilities or lack of expertise in the  
24 employ of the company?

25 A I think it varies. There are companies whose

RMS/rms12

1 primary activity is in this area. This is not a major  
2 activity of the company that I am associated with. If we  
3 stopped our environmental monitoring program activities  
4 tomorrow it would make a very small and insignificant  
5 difference in our income or profit. This is not a major  
6 function of our company.

7 Q In the monitoring systems that are installed  
8 to detect isotopic effluent do they pick up every single  
9 kind of isotope that it is possible to pick up as a result  
10 of burning this fuel?

11 A No.

12 Q There are some that they do not pick up?

13 A There are some that you do not pick up. There  
14 are many that are not worth picking up in the sense that their  
15 contribution to the overall activity is so small that they  
16 are insignificant.

17 Q So in other words, a system can be programmed to  
18 pick up specific isotopes and leave others out?

19 A Well, you look for what is most significant  
20 in the samples that you take. When you identify 90-plus per-  
21 cent of what is there, the last 10 percent is usually not  
22 important.

23 Q When you set up the programming of a monitoring  
24 system, I assume you make sure that those isotopes that can  
25 be absorbed in the food processes are among those that are

RMS/rms13

1 monitored?

2 A Yes.

3 Q And those would be all the ones that I have  
4 heard: Tritium, cesium, xenon and so on?

5 A Yes. Xenon is not usually present in food.

6 Q But whichever they are?

7 A Yes.

8 Q Those which are omitted are those which do not  
9 get into the food chain, or which have no radioactivity, which  
10 are not harmful?

11 A Not necessarily. I think those that are looked for  
12 are those which have the greatest biological significance  
13 and are present in significant amounts; those that we don't  
14 find, although we look for everything of significance, are  
15 those which are presumed not to be there in amounts worth  
16 being concerned about or at least are in an extremely small  
17 quantity.

18 MR. BARON: I think that's all the questions I  
19 have.

20 DR. JORDAN: I just have to make sure that this  
21 gets on the record properly.

22 When you monitor a sample you look for all the  
23 components of activity that are there?

24 WITNESS MORTON GOLDMAN: That is correct.

25 DR. JORDAN: Is that not right?



RMS/rms14

1 WITNESS MORTON GOLDMAN: Yes.

2 DR. JORDAN: And the mere fact that ruthenium  
3 may not have been observed before would not make any differ-  
4 ence. If suddenly ruthenium did occur, you would surely  
5 see it?

6 WITNESS MORTON GOLDMAN: Yes, sir.

7 MR. BARON: You mean it would be picked up by  
8 some aspect of the monitoring system?

9 WITNESS MORTON GOLDMAN: That is correct. One of  
10 the analytical methods that is routinely used is what is  
11 called a gammaspectrometric analysis which displays essentially  
12 the individual gamma rays from whatever is there. And if  
13 we see a gamma ray which happens to come from ruthenium-106,  
14 even though we don't expect to find that, we cannot help  
15 but note that it is present in the sample.

16 Whereupon,

17 LOWELL ROE

18 resumed the stand as a witness on behalf of the Applicant  
19 and, having been previously duly sworn, was examined and  
20 testified further as follows:

21 CROSS EXAMINATION

22 BY MR. BARON:

23 Q Let me ask then of Mr. Roe in line with what  
24 Dr. Goldman has described -- and this may be a question which  
25 has already been answered -- just say yes or no if it has been.

RMS/rms15

1 I assume that the PSAR has already anticipated  
2 all of this and that this is set forth in great detail as to  
3 how it is going to be monitored and by what kind of a company  
4 and so forth; is that correct?

5 A No, it has not been set forth in great detail  
6 and it does not designate which company and in what manner  
7 it will be. The commitment in the PSAR does describe what  
8 our general plans are for this monitoring program, our  
9 commitments to work with the state agencies and the U.S.  
10 Bureau of Sports Fisheries and Wildlife and that generally  
11 it will be designed and in operation before the station goes  
12 in operation. And it will be -- the final program will  
13 be cleared with these appropriate interested agencies. This  
14 is all in addition to having the Regulatory Staff review.

15 MR. BARON: Let us turn now to the Staff.

16 MR. ENGELHARDT: Mr. Baron, do you have the names  
17 of the particular witnesses that you would like to have  
18 called. They are in the rear of the room and we can call  
19 them up so that you can continue your examination.

20 MR. BARON: Let's see. This would be Lester  
21 Rogers.

22 Whereupon,

23 LESTER ROGERS

24 resumed the stand as a witness on behalf of the Regulatory  
25 Staff and, having been previously duly sworn, was examined  
and testified further as follows:

## CROSS EXAMINATION

1  
2 BY MR. BARON:

3 Q Mr. Rogers I am more interested in knowing how  
4 it actually works, you might say, how the agency itself  
5 implements everything that is in the Code of Federal Regu-  
6 lations and laws. I am looking at page 10 of your testi-  
7 mony, and you talked about Part 20 and how the Commission  
8 can "limit total quantities of material" and so forth, "if it  
9 appears that daily intake" and so on "by a good sample exceeds  
10 the requirements."

11 And I was wondering if you could explain, for  
12 example, if it appears to whom and by what method this has  
13 happened, then who actually picks it up and does what and  
14 when and how?

15 MR. CHARNOFF: Mr. Chairman, this is Mr. Engelhardt's  
16 witness, and he certainly is free to answer the question.  
17 And we do have time and he may well answer it. I think,  
18 however, it should be noted that the Coalition was not  
19 admitted to challenge 10 CFR Part 20.

20 MR. BARON: That is a good point. And the question  
21 did enter my mind. This has become like a public information  
22 hearing as well. And I am very pleased that it has. I am  
23 not going to raise any strong fuss if the Chair upholds  
24 him.

25 CHAIRMAN SKALLERUP: Well, Mr. Engelhardt is his

1 lawyer.

2 /rms17  
3 MR. ENGLEHARDT: Mr. Chairman, we have no objection  
4 to explaining 10 CFR Part 20. It is an issue in this  
5 proceeding. And if the record could be made more complete  
6 by an explanation here of what Part 20 involves, we as a  
7 party to this proceeding, will not raise any particular  
8 objection, if it will help clarify this matter.

9 WITNESS ROGERS: Well, first, at the time that a  
10 construction permit is submitted, information is provided  
11 on the site characteristics, the meteorology, the hydrology,  
12 the important pathways of exposure, identification of any  
13 critical pathways, such as any kind of biological concen-  
14 tration mechanism that is in the food chain. The important  
15 sources of food that might concentrate radionuclides  
16 are examined. And then estimates are made using data which  
17 is available as to the relationship of the operation of this  
18 plant and potential exposures to the public.

19 And based on this estimate a determination is  
20 in fact made as to whether there is any likelihood that  
21 the exposures are likely to be a significant fraction of  
22 the limits of 170 millirem or 500 millirem to the individual.  
23 And if so, if the quantities of radioactive materials that  
24 are likely to be released would in fact even approach  
25 the values which are stated, then in addition to the  
concentrations, the quantity limits could be imposed.

1 BY MR. BARON:

2 Q I understand that. That is the general method  
3 by which this whole process takes place.

4 A That's right.

5 Q What I am getting at then is that you really  
6 depend on the utility company to send in those reports that  
7 have been given to them by companies such as Dr. Goldman's.

8 A We are talking about an evaluation which is prior  
9 to the operation of the plant.

10 Q I am referring to this sentence, "It appears that  
11 if in any situation the daily intake" -- I assume this means  
12 the plant is already in operation?

13 A Not necessarily. It is true that we carefully  
14 follow the results of environmental monitoring programs which  
15 are carried out by the Applicant, but we don't depend on  
16 that information alone.

17 There are also independent assessments of releases  
18 of radioactivity from the plant by our own Division of  
19 Compliance in terms of spot checks. There are also environ-  
20 mental monitoring programs that are carried out. In some  
21 cases the health department -- in some cases we have actually  
22 entered into arrangements with the state health departments  
23 to conduct these environmental monitoring programs and  
24 provide the data to the Atomic Energy Commission.

25 Q Let me ask you this at this point then: Do you have

1 any personal experience with the state Department of Health  
2 of Ohio?

RMS/rms19  
3 A Not directly on this particular question. Let  
4 me go further and say that in addition the Bureau of Radio-  
5 logical Health of the Public Health Service, which is now  
6 the Division of Surveillance and Inspection of the Environmental  
7 Protection Agency, also carries out the environmental  
8 monitoring program around many of these plants such as at  
9 the Dresden Plant, and they carry out special studies around  
10 the reactors.

11 We cooperate with them in this effort. We also  
12 obtain data at the source as a basis for continually  
13 evaluating the operation of the plant, the radioactivity  
14 released and any build-up in the environment.

15 I want to make it very clear that we don't wait  
16 until the plant is in operation to make a thorough assess-  
17 ment as to what exposures are likely to be and the important  
18 pathways of exposure that are likely to exist from the oper-  
19 ation of this plant. We do depend on data which is sub-  
20 mitted by the Applicant at the time the construction permit  
21 is submitted, but we don't rely only on that data.

22 Q I understand.

23 A There is substantial information available on  
24 biological concentration mechanisms, on pathways of ex-  
25 posure, dilution factors, meteorology, hydrology. And we have

RMS/rms20

end RMS

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a great and substantial wealth of information and scientific expertise available to us through the various federal agencies that are concerned and have responsibilities in these areas. We have access to outside consultants, if we need them in a particular instance.

DB1

1n1

1 Q Would you be able to place a percentage upon, let's  
2 say, the State of Ohio, how much you would anticipate receiving  
3 in the way of information from the state bureaus involved in  
4 this kind of thing, as distinguished from your own people  
5 getting information, as distinguished on the third hand from  
6 what the utility company itself will provide?

7 Are they about equal, the pipelines you might say  
8 of information, about equally providing information normally?

9 A Well, of course this depends to some extent on the  
10 history of the operation of the plant.

11 Q Well, from past experience is all you can answer  
12 on, of course.

13 A From past experience, of course, we rely a great  
14 deal on the information which is developed by the licensee  
15 in the operation of the plant itself in terms of the release  
16 data which he is required to generate on a day by day basis.

17 And we have our Division of Compliance that inspects  
18 these plants, they review the monitoring systems, the pro-  
19 cedures that are used.

20 Q How often?

21 A This varies again with the plant. I am not in the  
22 Division of Compliance in terms of the specifics. But we rely  
23 on both the applicants' data as well as the data which is  
24 developed independently.

25 Q What I am getting at, having lived in the State of



ln2

1 Ohio for all of my life and having been aware of many of the  
2 things that agencies have or have not done, I am kind of con-  
3 cerned as to what can be anticipated or expected of the  
4 Department of Health in helping you or assisting you.

5 A I think this remains to be seen. With respect to  
6 the State of Ohio, we don't know at this point. Now, as I  
7 have indicated, we have entered into arrangements with some  
8 states to provide this data. But we don't depend on the states.

9 If they do not have monitoring programs, we take  
10 care of that by our own monitoring programs, or with the  
11 monitoring programs developed with the Environmental Protection  
12 Agency.

13 Q On page 10 you also, in this prepared statement,  
14 indicate that the regulations be implemented in the licensing  
15 process if it appears likely sufficiently large quantities of  
16 radioactivity will be released and so forth. I assume then  
17 in this particular case the PSAR was examined by you or someone  
18 in your department?

19 MR. ENGELHARDT: I think that, Mr. Baron, we may  
20 be going afield as far as this witness is concerned. The  
21 thrust of his rebuttal testimony dealt with the application of  
22 10 CFR Part 20.

23 I think if you are interested in developing a line  
24 of questions regarding the specifics of this particular  
25 program, then I think it might be appropriate for us to either

ln3

1 have your questions directed to Mr. Howe or Mr. Tedesco.

2 However, then we are definitely going outside of  
3 the scope of the rebuttal testimony.

4 MR. BARON: Okay. The word pathway is used here  
5 and I certainly want to straighten my pathway in these ques-  
6 tions.

7 BY MR. BARON:

8 Q On page 11 you use in the first sentence the words,  
9 "For some nuclear activities, it may not be practicable to  
10 comply with the concentration limits."

11 The question is merely what kind may it not be  
12 practicable?

13 A What kind of activities may not be practical?

14 Q Yes, you say for some it may not be practicable.

15 A Yes. Now you realize that with respect to that  
16 testimony, this was referring to a provision in our Regulation  
17 2.106(a) which limits the release levels to concentrations  
18 normally in a stack or in a conduit at that point to the  
19 Appendix B, Table 2 values. This is the case where an  
20 individual, the concentration would have to be limited in a  
21 stack or conduit such that one could breath the air right out  
22 of the stack, all of his life, or drink the water coming out  
23 of the conduit all of his life, without exceeding radiation  
24 protection guides, prior to any kind of environmental dilution.

25 Activity such as chemical reprocessing plants,

ln4

1 in some cases even nuclear power reactors would not be able  
2 to meet those very restrictive limits under that particular  
3 provision.

4 Q Also, on page 11 in the second paragraph there is  
5 reference made that experience shows that licensees have  
6 generally kept exposures to radiation and releases of radio-  
7 activity. I would assume that means experience with power  
8 reactors of one kind or another.

9 MR. ENGELHARDT: I don't know whether we are clear on  
10 your reference, Mr. Baron.

11 Are you referring to the sentence that reads,  
12 "This general principle has been a central one in the field  
13 of radiation protection?"

14 MR. BARON: The next sentence, "experience shows  
15 that --

16 MR. ENGELHARDT: "Experience shows that licensees  
17 have generally kept exposures in radiation and releases of  
18 radioactivity in effluents that are well below 10 CFR Part  
19 20."

20 Is that the sentence you are referring to?

21 MR. BARON: Yes. I am merely asking what is the  
22 experience? Are you referring to power reactors and so on in  
23 that statement?

24 THE WITNESS: With respect to this particular  
25 statement, it is a fairly generic statement which applies

ln5

1 generally to all license activities. It also applies to  
2 nuclear power reactors and the basis of this statement is  
3 supported in the attachments to my statement -- it is Exhibit  
4 3, which discusses experience for one year, 1969.

5 BY MR. BARON:

6 Q Right. I notice that some of the -- let me ask  
7 you a question:

8 Was this introduced as evidence, this entire  
9 statement?

10 MR. ENGELHARDT: Yes. I think if you will refer  
11 to --

12 MR. BARON: Exhibits 4, 5 and 6. I assume they  
13 were introduced in evidence.

14 MR. ENGELHARDT: That is correct.

15 MR. BARON: Because it occurred to me, even though  
16 I am questioning on something with which we were not admitted  
17 as intervenors on, some of this information is outside of the  
18 scope of the hearings itself.

19 For example, on page 15, it discusses the licensing  
20 operating and what is to be done at that stage. I would assume  
21 it would be irrelevant as evidence in this hearing.

22 From the standpoint of general information, it is  
23 fine, and to be perfectly formal about it, I suppose I should  
24 make a motion to strike it from the record.

25 MR. ENGELHARDT: Well, Mr. Baron, I think I would

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1 have an objection to that. I think first of all this material  
2 was not prepared -- it was rebuttal testimony to deal with the  
3 contentions of Intervenor LIFE with regard to the adequacy of  
4 10 CFR Part 20.

5 I would question whether you as a party representing  
6 the Coalition would be the one to raise such questions, if  
7 they were to be raised at all. With respect to the testimony  
8 itself, it was rebuttal to put into perspective the matter  
9 which is the subject of the question which is the adequacy of  
10 10 CFR Part 20.

11 And it is essential to present that rebuttal to  
12 deal with all aspects of our review and application of 10 CFR  
13 Part 20.

14 MR. BARON: I will withdraw the objection.  
15  
16  
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end 1

1 BY MR. BARON:

2 Q The experience factor that you have had as shown  
3 on this table 3 on which you base the statement that they  
4 are all far below what they are entitled to emit, do you  
5 have any knowledge as to where the information itself came  
6 from that went into these tables? Did it come primarily  
7 from the utility companies, or did it come from the state  
8 agencies or did it come from the Enforcement Division, or  
9 was it an equal combination of all three?

10 A The information in these tables is based primarily  
11 on data which have been submitted by the licensees operating  
12 the plants.

13 Now in addition, though, the data which had been  
14 independently generated by the Atomic Energy Commission  
15 through our independent monitoring program, the environmental  
16 monitoring programs which have been carried out by the  
17 Division of Inspection, surveillance and inspection of the  
18 Environmental Protection Agency, and the data which has  
19 been generated in some cases by state health departments  
20 also confirm the data in these tables. And of course in  
21 evaluating this data we consider all of these sources of  
22 information in arriving at a conclusion as to the validity  
23 of the data.

24 Q You concluded this testimony on page 25 by making  
25 reference to the amendments to the regulations which became

1 effective on January 2, 1971. It has been indicated at an  
2 earlier time in these hearings that even though the effective  
3 date was January 2, 1971, these new amendments were taken  
4 into consideration in connection with this application.

5 Is this outside of your scope? If so, just state  
6 it.

7 MR. ENGELHARDT: This is outside of the scope of  
8 that testimony.

9 BY MR. BARON:

10 Q Mr. Rogers, one final question -- and I ask this  
11 in all sincerity -- you have given this as part of a public  
12 record and I therefore assume you have no objection if this  
13 were used as a basis for public information to other groups?

14 A No objection whatsoever.

15 MR. BARON: I personally want to do that, and  
16 that is why I am asking on the record, so I can't be accused  
17 of plagiarizing.

18 MR. ENGELHARDT: Yes, as counsel for the Regulatory  
19 Staff I should make it clear that anything the Regulatory  
20 Staff introduces as evidence or offers for the information  
21 of the public in any of these public proceedings may be used  
22 by any member of the public for whatever purposes they desire.

23 CHAIRMAN SKALLERUP: You don't copyright this  
24 material?

25 MR. ENGELHARDT: No, sir.

1 MR. BARON: I would like to turn then to Mr. Kahn,  
2 Bernd Kahn.

XXXX 3 Whereupon,

4 BERND KAHN

5 resumed the stand as a witness on behalf of the Regulatory  
6 Staff and, having been previously duly sworn, was examined  
7 and testified further as follows:

8 CROSS-EXAMINATION

9 BY MR. BARON:

10 Q I am referring now to the Staff Exhibit No. 9,  
11 which was introduced and upon which --

12 Is it Dr. Kahn?

13 A Yes.

14 Q -- you testified, the critical review of the  
15 Sternglass paper.

16 I understand from reading some of the earlier  
17 transcripts that this document which you prepared in  
18 collaboration with Dr. Davis was presented at the same  
19 time, at the same hearing as Dr. Sternglass' paper. Is  
20 that correct? A Pollution Control Board hearing?

21 A No.

22 Q That is not correct?

23 A No. Dr. Sternglass presented his paper there,  
24 and then we received a copy and read it and made comments  
25 upon it.



1 Q Was there a specific reason for your doing this?

2 A specific request presented to you to do it?

3 MR. ENGELHARDT: Mr. Baron, are you referring to  
4 the paper that is now identified as Staff Exhibit 9?

5 MR. BARON: The critical review.

6 MR. ENGELHARDT: You are asking why this paper  
7 was prepared?

8 MR. BARON: Yes.

9 THE WITNESS: Yes, my supervisor in Washington  
10 asked whether Dr. Sternglass' interpretation was correct  
11 and I had certain objections, I felt that in some cases it  
12 was either incorrect or leading to misinterpretations.

13 BY MR. BARON:

14 Q At what point in time did this request come to  
15 you? How much after, how long after Sternglass' paper was  
16 first presented?

17 A I don't -- oh, probably about a month ago.  
18 I don't know when Dr. Sternglass gave this originally.

19 Q September 1970 I believe.

20 A Probably in December. That is approximate. I don't  
21 know exactly.

22 Q And the request came to you from your superior?

23 A Yes.

24 Q Which is, I am sorry, I have forgotten where  
25 that is --

1 A Rockville, Maryland.

2 Q Which department?

3 A Oh, it was at the time -- there was a switch  
4 at that time, it was either the Public Health Service or  
5 the Environmental Protection Agency.

6 Q At any time prior to your being asked to do this,  
7 had you known or studied Sternglass' statements?

8 A No, I didn't even know they existed until I  
9 got this.

10 Q But it was something with which you had familiarity  
11 and that is why it was directed to you to investigate?

12 A Well, Dr. Sternglass based his interpretation on  
13 our work, so it came to us.

14 Q Now you make the comment that there are certain  
15 inconsistencies in the use of, I guess this is the Department  
16 of Health, Education, and Welfare data by Dr. Sternglass,  
17 referring to your data.

18 A Yes.

19 Q You had never been personally contacted by Dr.  
20 Sternglass, I assume, when he was first preparing these  
21 documents?

22 A No.

23 Q And on the other hand, you, yourself, did not  
24 contact him before preparing your answers, or your response?

25 A No. The response was purely on the basis of his

1 statements.

2 Q It is interesting to note, though, that in your  
3 footnotes you make reference to work by H. Moses, H. F.  
4 Lucas, Jr., and G. A. Zerbe.

5 A Yes.

6 Q I don't know what this document is, air pollution  
7 something, associates, 1963.

8 A I refer in my comments to the normal levels of  
9 radon concentration in the neighborhood of Chicago. We have  
10 never measured the normal radon levels near Chicago, but  
11 the authors you mentioned have measured these levels I  
12 believe at Argonne National Laboratory for a period of  
13 years, so that their data represent trustworthy values.

14 Q Is it possible that you perhaps might have done  
15 the same thing that Dr. Sternglass did with your data? You  
16 might have misinterpreted their data?

17 MR. ENGELHARDT: I object to that question,  
18 Mr. Chairman. I think it calls for an unwarranted conclusion.  
19 This witness has testified as to what he has done. He is an  
20 expert, I grant. But I think one can challenge or question  
21 what his views are, but that is all.

22 BY MR. BARON:

23 Q Dr. Kahn, have you heard of this Dr. DeGroot?

24 A I have read in the record that he is, I believe,  
25 a statistician in Pittsburgh.

1 Q You are not familiar with him though.

2 A No.

3 Q So you wouldn't have any opinion as to his quali-  
4 fications or anything of that sort.

5 A No.

6 Q Even though Dr. Sternglass might have misapplied,  
7 shall we say, your data, you are not unequivocally stating  
8 that he is totally wrong in his conclusions, are you?

9 A No.

10 Q You are merely, I think, saying that he has not  
11 proven them to be correct to your satisfaction?

12 A Could I discuss this a little bit?

13 Q Please do.

14 A In view of natural background in the area of  
15 80 milliroentgen per year, if, as he inferred from our  
16 report, the radioactivity due to Dresden were maybe 300,  
17 in other words, considerably larger than the natural  
18 radiation background, this would still be below, considerably  
19 below the permissible levels. But at least it would be a  
20 noticeable increase at certain locations over the natural  
21 radiation background.

22 In view of the fact that actually he made this  
23 mistake in multiplying by the total number of hours per  
24 year as compared to the number of hours during which the  
25 radiation would be at any one place, which is low by, let's

1 say, a factor of 50, he magnifies the radiation considerably,  
2 so that the actual radiation based on our measurements is  
3 such a tiny part of natural radiation background that it  
4 certainly affects his argument, the reasonableness of his  
5 argument.

6 MR. BARON: That is all, thank you.

7 I guess both of the Tompkins are Doctors, but  
8 let's have Mrs. Tompkins.

9 Whereupon,

10 EDYTHALENA TOMPKINS

11 resumed the stand as a witness on behalf of the Regulatory  
12 Staff and, having been previously duly sworn, was examined  
13 and testified further as follows:

14 CROSS-EXAMINATION

15 BY MR. BARON:

16 Q I assume that you heard some of the basic questions  
17 I asked Dr. Kahn?

18 A I did.

19 Q Basically I would be asking you the same thing.

20 The first one would be at what point in time were  
21 you or your department given this assignment to review his  
22 paper and what was the response?

23 A In June of 1969.

24 Q About a month after he had delivered it?

25 A That is right.

1 Q I am looking at the preface to the pamphlet.

2 MR. ENGELHARDT: Mr. Baron, I think I would like  
3 to identify for the record the pamphlet you are referring to.

4 MR. BARON: It is your Exhibit No. 8.

5 MR. ENGELHARDT: That is correct.

6 BY MR. BARON:

7 Q I understand from reading it that you basically  
8 were the one in charge of gathering up the information from  
9 which this was prepared.

10 A That is correct.

11 Q Were you familiar with Dr. Kahn's statistics?

12 A No, I am not.

13 Q You were not.

14 So your study then was totally independent of  
15 the points that Dr. Kahn has brought out here.

16 A That is right.

17 Q And the result of which study was, you might say,  
18 double barreled?

19 A His was addressed to earlier papers. I don't know  
20 even the date of Dr. Kahn's --

21 Q The earlier papers of Dr. Sternglass.

22 A Yes.

23 Q I see.

24 Do you know of Dr. Morris DeGroot?

25 A I know of him, yes.

1 Q Do you have any opinion as to his qualifications  
2 and his stature in the scientific community?

3 A I just know he is a mathematical statistician.

4 Q You haven't read anything he has written.

5 A No, he does not normally write in my field.

6 Q I see.

7 Were you aware of the fact that he had examined  
8 Dr. Sternglass' documents?

9 A I read the letter in the transcript from Dr.  
10 DeGroot, yes.

11 Q Do you have any observation as to that letter?

12 MR. ENGELHARDT: I think that may be outside of  
13 the scope here. The witness has recognized there is a  
14 letter that was prepared, I think she explained the extent  
15 to which she is familiar with Dr. DeGroot's work in this  
16 field and I think that is essentially all this witness can  
17 respond to.

18 I think she has responded to the extent that she  
19 has knowledge.

20 BY MR. BARON:

21 Q Let me ask it in a different way then.

22 Dr. DeGroot's field of course is not yours.

23 A That is correct.

24 Q All right.

25 So that if you were permitted to give a response to

ty 11

1 my question, it would not be based upon your expertise in  
2 his field.

End #2 3 A That is right.

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Q And, therefore, on that basis her testimony would not be proper, I think.

A All right. So I will withdraw the question.

Q Do you have any knowledge or familiarity with the National Academy of Science?

A I know of it, yes, sir.

Q Are you a member of it?

A No, sir.

Q Have you had anything to do with it?

A Well, there are many people in the Academy, and I certainly have had things to do with members of the Academy, yes, sir.

Q Would you say that if a scientist, regardless of his field, is asked to present a paper to the National Academy that this would denote some qualification on his part?

A Generally to my knowledge people do not present papers to the Academy. It is not this kind of an organization.

Q I believe in your testimony and perhaps in this pamphlet you make reference to other studies, I think something in Canada.

A It is not in the pamphlet, no, sir, in my testimony.

Q That is right. Do you know to what extent those studies have gone? Do you know whether or not they considered the same material as Dr. Sternglass as completely?

MR. ENGELHARDT: Mr. Baron, may we have a moment

ln2

1 to locate the reference?

2 MR. BARON: I thought I had the reference myself  
3 but I don't see it now. Wait a minute, I have it here. Here  
4 it is. 1847. Yes, Line 20.

5 MR. ENGELHARDT: Mr. Baron, are you referring to  
6 page 1348?

7 MR. BARON: No, 1847, Line 20.

8 MR. ENGELHARDT: That seems to be a question.

9 MR. BARON: Yes, that is where I am beginning. It  
10 was a question by you to the witness.

11 MR. ENGELHARDT: I see. The response begins at --

12 MR. BARON: Yes, I am just directing her attention  
13 to that area.

14 MR. ENGELHARDT: All right, fine.

15 BY MR. BARON:

16 Q Would your answer, if you could recall the full  
17 measure of your answer there, because it is several lines,  
18 but basically it is to the effect that no, Dr. Sternglass is  
19 not the only one doing this, there are many others, and then  
20 you proceed to talk about who they are, and my question is  
21 were these other studies on the same scale as the study of  
22 Dr. Sternglass?

23 Because his answer, or his statement, which is at  
24 page 1296 of the transcript, he said "I am at the moment the  
25 only one engaged in this type of epidemiological study on this

ln3 1 scale."

2 Then he goes on, "Other groups have, for instance,  
3 looked at some parts of this." And I saw that and I didn't  
4 know if your answer would still be the same. That is what I  
5 am asking.

6 A We looked at all of the data in the United States  
7 just as Dr. Sternglass did.

8 In addition, the British people did the same  
9 thing. The Canadian people looked at all of the data for all  
10 of Canada.

11 Q Okay. So then it is on the same scale as what  
12 he is talking about.

13 A This is correct, within the populations of countries.

14 CHAIRMAN SKALLERUP: Would you say it was a larger  
15 scale study than Dr. Sternglass'?

16 THE WITNESS: Well, we have more people.

17 BY MR. BARON:

18 Q What do you mean by that?

19 A We have 200 million and Canada does not have that  
20 many.

21 Q Which leads me to ask you this question: Your  
22 studies and those of the Canadians and so on I assume were  
23 government funded?

24 A The Canadians, I don't know anything about. They  
25 are in a hospital. As are the British people. I am a

ln4

1 government employee, so, yes, my studies are government  
2 funded.

3 Q Do you have any knowledge as to the makeup of  
4 Dr. Sternglass' group?

5 A Only what he said in the testimony.

6 Q May I sort of summarize what you have indicated  
7 in your testimony, both in the pamphlet and in the hearing by  
8 saying that you are not saying he is wrong, but merely that  
9 he has not provided sufficient proof to inform you that he is  
10 right? Is that correct?

11 A I would say that he has shown no proof that he is  
12 right.

13 Q And in the world of science, as in the world of law,  
14 possibilities don't count? Probabilities do.

15 A No, sir, any of us can hypothesize.

16 Q What he is doing is purely hypothetical?

17 A Correct.

18 MR. BARON: That is all of the questions I have  
19 for Mrs. Tompkins.

20 Could we take a five-minute recess, Mr. Chairman,  
21 and let me review with Mrs. Stebbins what she has?

22 CHAIRMAN SKALLERUP: We will take a ten-minute  
23 recess.

24 (Recess.)

25 CHAIRMAN SKALLERUP: On the record.

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MR. BARON: I don't think it would be improper to switch back to the applicants for a little more cross-examination of Dr. Goldman.

XXXX

4

## FURTHER CROSS-EXAMINATION

5

BY MR. BARON:

6

Q Earlier in the testimony there have been indications, maybe by Mr. Roe and maybe by Mr. Charnoff, to the effect that this plant will operate at far below standards and so on.

9

I assume you are aware of this idea?

10

A (Dr. Goldman) Yes, sir.

11

Q And you would say that yourself from your knowledge of the plant?

12

13

A Yes. There was a document that we had prepared which was entered as evidence which deals specifically with the dose estimation for the effluents from this plant.

16

Q Are you referring to the N.U.S. Corporation document?

17

A Yes, that is correct.

18

Q Mrs. Stebbins had that last night. Is there a specific page upon which this is set forth?

19

20

A There are several pages on which specific effects are summarized. I think there is a Table IX on page 19 in that document which summarizes the radiation exposures from both gaseous and liquid releases.

21

22

23

24

Q All right.

25

CHAIRMAN SKALLERUP: Excuse me, let's identify this

ln6

1 as Applicant's Exhibit 7.

2 MR. BARON: Right.

3 BY MR. BARON:

4 Q Then this Table IX basically contains the estimates  
5 of dosage that will emanate from this plant?

6 A From the releases projected in the PSAR, yes, sir.

7 Q And they are far below what the law requires them to  
8 be?

9 A Yes, sir.

10 Q I am assuming it would be everyone's hope that when  
11 put into actual operation they will certainly match this  
12 estimate, if not, shall I say, exceed it? Exceed it in the  
13 way that I mean it will be even below it?

14 A I would expect that the doses resulting from dis-  
15 charges from this plant would be immeasurably small as they are  
16 in other operating plants of this type.

17 Q There have been a lot of tables and a lot of  
18 statistics -- I don't know which specific one it is -- but  
19 there seems to have been one comparing the plants as far as  
20 what they did put out, what the operating license had said  
21 they would be allowed to put out, with a percentage being  
22 shown as to what percentage of total allowable emissions they  
23 actually gave out.

24 Are you familiar with what I am talking about?

25 A I think this was Mr. Rogers, yes.

ln7

1 Q I believe so. Is there any kind of a table where  
2 the estimates of the utility companies have been compiled  
3 and then compared with the actual emissions?

4 A I am not aware of any such table.

5 Q Okay. So in other words what I am suggesting is --  
6 this seems to be Exhibit 3 of Mr. Rogers --

7 MR. ENGELHARDT: I believe it is also identified as  
8 Staff Exhibit 6.

9 MR. BARON: That is right.

10 I am almost saying then perhaps there should have  
11 been another column in here, what were the original estimates,  
12 and how they compared with what was actually released.

13 To your knowledge there is no such table?

14 THE WITNESS: Not to my knowledge.

15 BY MR. BARON:

16 Q So it is entirely possible, even though I don't  
17 like to deal in the realm of possibility, that on this Staff  
18 Exhibit 6 the actual releases shown in this first column  
19 exceeded estimates that might have been mentioned during the  
20 construction license hearings?

21 A I think it is possible, yes, because I know of no  
22 such comparison.

23 Q I would like to read this to you and I am not trying  
24 to take it out of context, it is a quotation that happens to  
25 be here. This comes out of the U. S. Department of Health,

In8

1 Education and Welfare, Public Health Review of the Davis-Besse  
2 nuclear power station, appearing at pages 2 and 6 --

3 MR. CHARNOFF: What document is this, Mr. Baron?

4 MR. BARON: The document itself we don't have, but  
5 it is a statement that is contained in a letter. At an earlier  
6 time you will recall I wanted to submit Dr. Huver's information  
7 and testimony and it is an exhibit I think we had, I think  
8 that is the manner in which we handled it, contained in there  
9 is his reference to the Public Health Review of the Davis-Besse  
10 station and he quotes from that review.

11 That was what I was about to read.

12 Okay?

13 THE WITNESS: If you say so.

14 MR. CHARNOFF: I heard you say before you don't  
15 like to engage in the realm of possibilities, but since we  
16 are in the realm of possibilities, why don't you possibly  
17 read it.

18 What Dr. Huver may possibly have quoted.

19 MR. BARON: "Current pressurized water reactor  
20 operating experience indicates that the concentrations will  
21 be considerably higher and the applicant has not presented  
22 new design information to support the lower estimated dis-  
23 charges."

24 If you want me to read it again, I will.

25 MR. CHARNOFF: I understand what you have read.



ln9

1 Is there a question?

2 BY MR. BARON:

3 Q Yes. The question is you are giving lower estimated,  
4 lower estimates of discharges that will be lower than what the  
5 law allows?

6 A That is correct.

7 MR. BARON: Here is an individual quoting from a  
8 document which states that you have not presented any informa-  
9 tion which supports these lower estimates.

10 MR. CHARNOFF: Well, I think, Mr. Chairman, we  
11 have to object to the question. We don't know what the basis  
12 was for the statement that is allegedly being quoted, we don't  
13 know whether the quote is accurate. And it is very difficult  
14 to deal with that.

15 We don't for example know whether that source that  
16 is being quoted has ever even seen this particular document  
17 that has been entered as Applicant's Exhibit No. 7.

18 CHAIRMAN SKALLERUP: Are you acquainted with any  
19 Public Health Service critique of Davis-Besse?

20 MR. CHARNOFF: There may be some letters attached  
21 to the Staff's NEPA report. If you will give us a few moments,  
22 we can look through those and see if there is anything like  
23 that.

24 There is a document that appears on page A-7,  
25 Appendix D to the Staff's NEPA report, Mr. Chairman, Appendix

1nl0 1 D is a letter from the Department of Health, Education and  
2 Welfare to the Atomic Energy Commission and it transmits a  
3 report called "Public Health Review of the Davis-Besse Nuclear  
4 Power Station" by a project officer named John Russell.

5 MR. BARON: Is there more than one page?

6 MR. CHARNOFF: I am looking at page A-7. There is  
7 a paragraph at the top of the page which sounds like the  
8 language you quoted.

9 CHAIRMAN SKALLERUP: Is this P.H.S. report based  
10 upon a review of the environmental report of the applicant?  
11 Or some other report?

12 MR. ENGELHARDT: Mr. Chairman, the report that is  
13 being referenced here, the detailed statement, is in the  
14 record of this proceeding as Staff Exhibit No. 1 and was  
15 prepared by the Regulatory Staff and issued on November 20,  
16 1970. It reflects the views of various regulatory, or I  
17 should say, various governmental bodies with respect to the  
18 environmental report prepared by the applicant which was  
19 circulated pursuant to Commission regulation to these govern-  
20 mental bodies for their comment.

21 And as is customary in the preparation of these  
22 reports, we append to the detailed statement prepared by the  
23 Regulatory Staff, which reflects the conclusions of these  
24 various reviews, the actual comments received from these  
25 governmental bodies and these are all appended to Staff Exhibit  
1 in this proceeding.

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CHAIRMAN SKALLERUP: So Public Health Service did not get a copy of the PSAR at the time they made this comment?

MR. ENGELHARDT: That is probably correct, although here is a situation where since it is the Public Health Service they may well have independently also received a copy as is customary of the PSAR. And their comments may be both dealing with the PSAR and with the environmental report.

MR. CHARNOFF: Mr. Chairman, I can be helpful on this I think, Mr. Engelhardt.

As I read A-6, which is the introductory paragraph, which says, "This summarizes the Public Health Service's evaluation of the potential environmental effects of this plant," the next sentence says, "These comments are based on a site survey, visit to the Ohio Department of Health, and information provided by the Toledo Edison Company in the Preliminary Safety Analysis Report PSAR<sup>1</sup>." One is a footnote.

Let me see what that footnote refers to.

Yes, that is the PSAR "and Applicant's environmental report."

Then paragraph 3 says, "Estimates of the radioactive liquid waste concentrations are not in our judgment adequately documented. Current PWR operating experience indicates the concentrations will be considerably higher and the Applicant has not presented new design information

1 to support the lower submitted discharges."

2 Then AEC forwarded that comment to Toledo Edison,  
3 and on pages A-30 and A-31 there is a reply to the AEC  
4 from Mr. Sampson, Vice President of Toledo Edison, which  
5 comments specifically on this particular paragraph.

6 CHAIRMAN SKALLERUP: What does he say?

7 MR. CHARNOFF: I will read it.

8 "The basis for estimating the level of radio-  
9 activity contained in the primary system water is detailed  
10 in Section 11 of the PSAR. The basis of estimating the amount  
11 of primary system water to be processed together with an  
12 estimate of the amount of processed water to be released  
13 is contained in the answer to the AEC question 2.4 of the  
14 PSAR.

15 "The decontamination factors assumed for the  
16 process equipment are also detailed in answer to question  
17 2.4.

18 "The assumptions used to estimate the activity  
19 in the primary system are conservative and they result in  
20 an activity level higher than would be expected in normal  
21 operation on the decontamination factors used for the  
22 process equipment are conservatively low.

23 "Daily changes in the soluble boron concentration  
24 of the primary system are not required and only periodic  
25 adjustments throughout an operating cycle are necessary.

1 This minimizes the amount of liquid waste to be processed  
2 and consequently the amount of radioactive wastes discharged."

3 CHAIRMAN SKALLERUP: What was your question?

4 MR. BARON: It is not what was it, it is what it  
5 should be now.

6 First of all, the comment that I, or the  
7 observation I made, has been borne out by what has already  
8 been handled by the Applicant. The question I would then  
9 have would be put to the Applicant in general, to be answered  
10 by whomever they choose: Was there a response from the  
11 Public Health Service, HEW, to that answer?

12 MR. CHARNOFF: Not to our knowledge.

13 MR. BARON: In other words, we might say this  
14 satisfied HEW?

15 MR. CHARNOFF: I don't think we could answer  
16 that one way or the other, Mr. Baron.

17 MR. BARON: All right. But at least that is  
18 where it ended?

19 MR. CHARNOFF: So far as we know, that is correct.

20 BY MR. BARON:

21 Q Dr. Goldman, tritium comes out of the plant?

22 A That is correct.

23 Q As part of the water effluent?

24 A Yes.

25 Q And it can be absorbed in the body tissue?

1 A Yes.

2 Q Instead of hydrogen?

3 A Yes.

4 Q Now in the process of leaving the plant and flowing  
5 through the lakes and streams and so on to the water  
6 filtration plants, which process drinking water, do you  
7 have knowledge as to whether or not there are facilities in  
8 those filtration plants to take the tritium out?

9 A I have knowledge that there are no facilities  
10 to take tritium or tritiated water, to separate tritiated  
11 water from untritiated water.

12 MR. CHARNOFF: Mr. Chairman, since we are  
13 consuming time, I will let, from my standpoint, I won't  
14 object to this line of questioning. But I would simply  
15 reiterate the observation I made earlier this morning that  
16 none of this line of cross-examination by Mr. Baron for the  
17 last hour has related to any of his issues in this proceeding.  
18 The only suggestion I would make, sir, is that while it is  
19 well to indulge Mr. Baron in this pasttime, I would expect  
20 that if Mr. Baron somehow or other comes back to questions  
21 relating to his issues that his time period may well have  
22 expired.

23 We are to start with LIFE's cross-examination at  
24 1 o'clock.

25 And I would note too Mr. Lau has been sitting

1 here all morning, and he has allegedly some cross-examination  
2 to continue with. And it would seem inappropriate if at  
3 some later time, after consuming the better part of the  
4 last hour with material that is not in the scope of the  
5 Coalition's contentions, that Mr. Baron might have to forfeit  
6 his opportunity to conduct cross-examination in areas that  
7 are of interest to him.

8 MR. BARON: Would it surprise you that this was  
9 my last question?

10 MR. CHARNOFF: No, but I would say I had thought  
11 you were there a few moments ago.

12 MR. BARON: It is the last question. The reason  
13 for its being asked, though, is somehow connected with the  
14 question of reconcentration about which Dr. Sternglass  
15 testified and about which Dr. Goldman rebutted. It is  
16 difficult for me to phrase it in such a scientific way that  
17 it ties in directly. And this is the effort that Mrs.  
18 Stebbins and I are making.

19 Since I have received two positive answers from  
20 the witness, I am encouraged to go on with the third part  
21 of this question, if I may.

22 MR. CHARNOFF: I am not objecting to your last  
23 question.

24 BY MR. BARON:

25 Q Basically what we are driving at, the tritium

1 is now in the drinking water, it is migrating, going into  
2 my mouth, down the pipe, into the system. I assume somehow  
3 it will find its way into tissue in my body and stay there.

4 A Is there a question on the end of that?

5 Q Just encourage me some more, that is all, because  
6 this ties in -- I assuming you are going to say yes -- and  
7 this ties into something you said on page 1670 of the  
8 transcript.

9 MR. CHARNOFF: Apart from whether this is a  
10 scientifically-oriented yes or not, Mr. Baron --

11 MR. BARON: It is irrelevant.

12 MR. CHARNOFF: No, I won't even use that adjective.  
13 But since this is the last question, might I encourage you  
14 to ask it all at once?

15 BY MR. BARON:

16 Q Beginning at page 1670 you gave an answer starting  
17 on line 11 to the effect that dosages to an individual at the  
18 closest water system intake is less than 1/100 of 1 millirem  
19 per year from the ingestion of water and so on.

20 Does that answer take into consideration the  
21 concentration in the body of tritium that is absorbed through  
22 the drinking water?

23 A There is no substantial concentration of tritium  
24 in the body from drinking water. There is a transient lifetime  
25 of tritium in the body which is represented by a biological



1 half-life of on the order of 10 days. And so that there  
2 would be an equilibrium amount in the body represented  
3 by the rate of intake and that rate of removal from the  
4 body tissues.

5 There is an extremely small component, a very small  
6 fraction of the tritium which is taken in in the form of  
7 water which may become incorporated in some tissues of the  
8 body and remain longer than the 10-day half-period would  
9 indicate. But this contributes an extremely small fraction  
10 of the dose contributed by the more transient portions of  
11 that intake. And this was taken into account in the doses  
12 calculated in the document that I referred to earlier,  
13 Exhibit No. 7.

14 Q Is there a more --

15 MR. CHARNOFF: Is this another question, Mr.  
16 Baron?

17 MR. BARON: I am trying to satisfy a client,  
18 really.

19 MR. CHARNOFF: I want Mrs. Stebbins to be satisfied,  
20 too.

21 MR. BARON: I appreciate that.

22 MR. CHARNOFF: But I think we ought to exercise  
23 some self-restraint here and decide what the question is  
24 that is to be asked, ask it, and let's be done with it.

25 MR. BARON: She is concerned that the effect upon

1 a specific part of the body where the tritium might have  
2 concentrated, that the susceptibility of that specific  
3 part might be much greater than the body as a whole to  
4 radiation effects at a later time.

5 But I think you answered it when you indicated  
6 the half-life, I think that is what you are saying, is there,  
7 and there is a process of coming in and going out and coming  
8 in and going out. No matter where it concentrates, that  
9 same process is going on?

10 THE WITNESS: I think I stated, Mr. Baron, that  
11 tritium does not, or tritiated water does not concentrate  
12 in any organ of the body.

13 MR. BARON: I think that concludes our cross-  
14 examination of all witnesses.

15 CHAIRMAN SKALLERUP: Mr. Lau, were you prepared  
16 to conduct cross-examination?

17 MR. LAU: I would like to make a statement.

18 CHAIRMAN SKALLERUP: Would you confer with counsel  
19 and the Board and tell us the nature of your statement?

20 MR. LAU: I would be glad to.

End #4  
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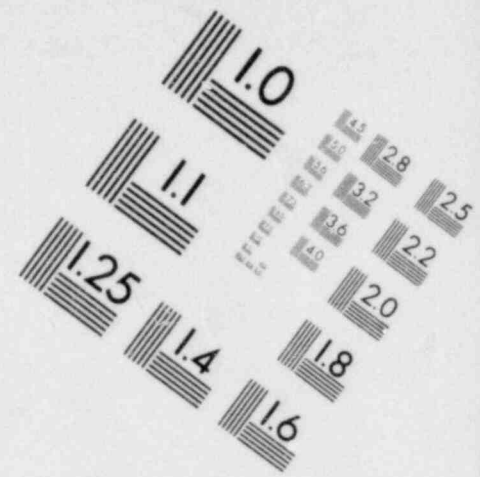
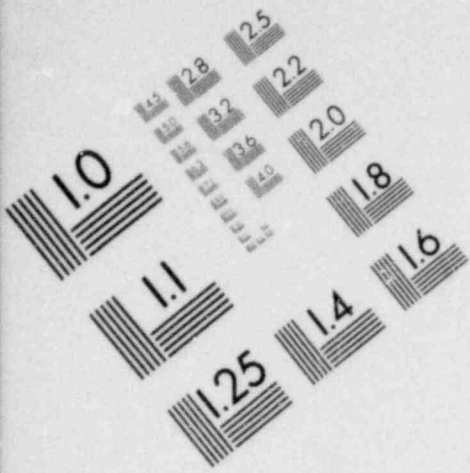
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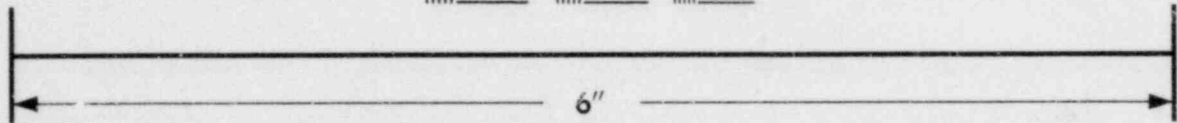
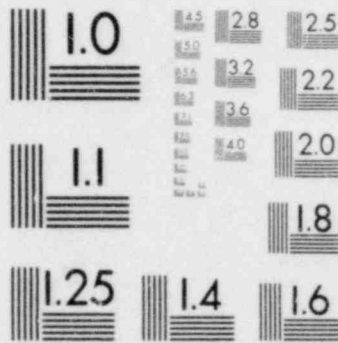
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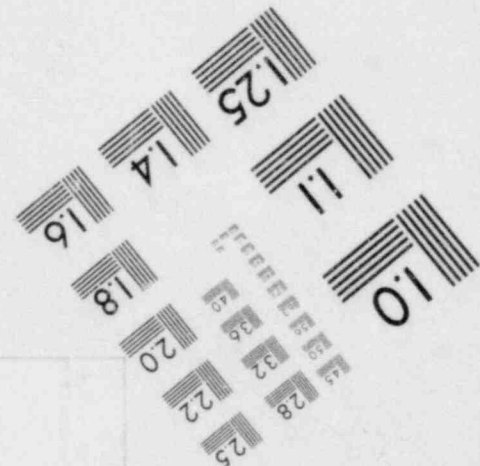
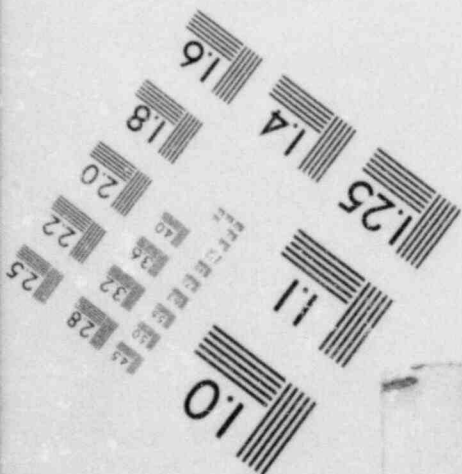
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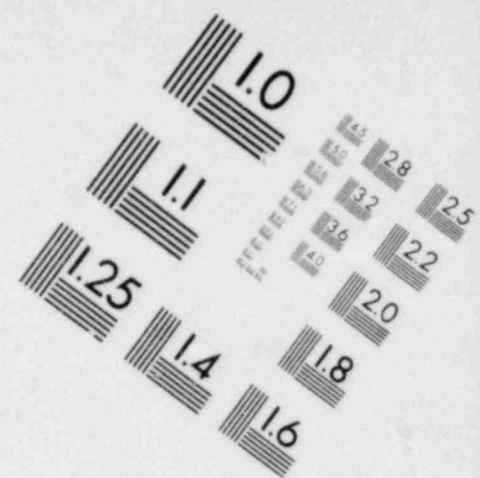
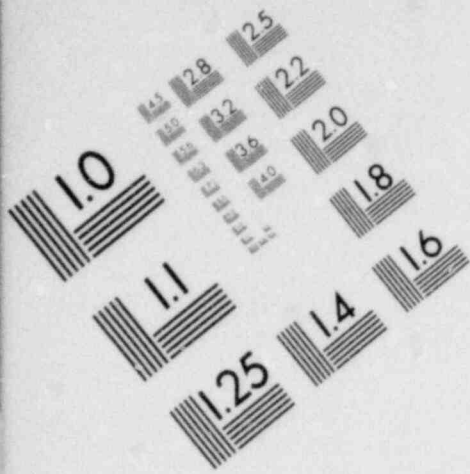


**IMAGE EVALUATION  
TEST TARGET (MT-3)**

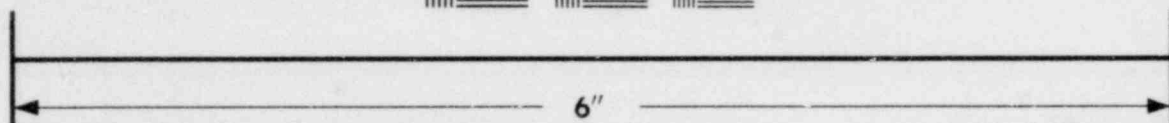
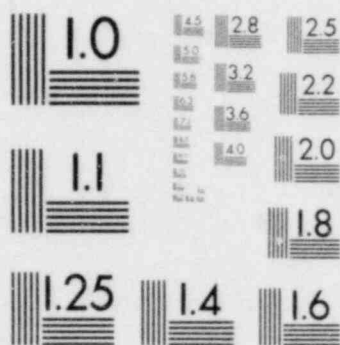


**MICROCOPY RESOLUTION TEST CHART**

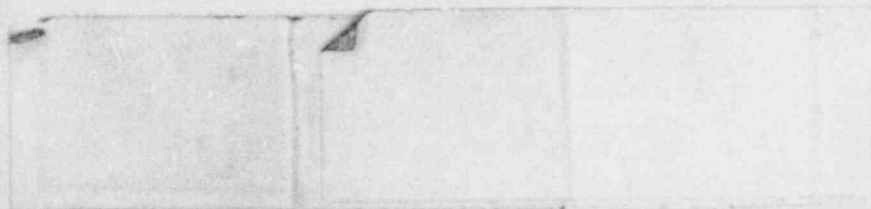
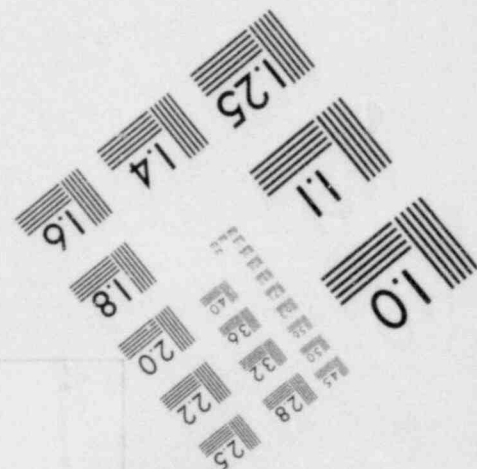
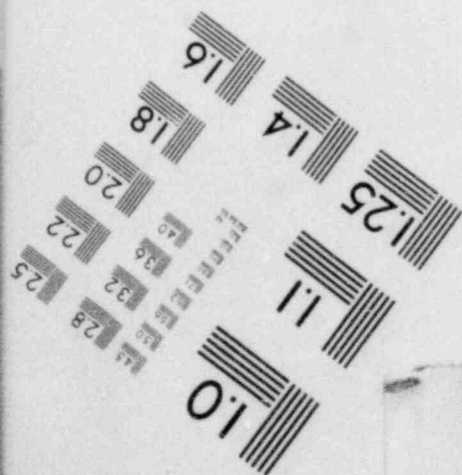




**IMAGE EVALUATION  
TEST TARGET (MT-3)**



**MICROCOPY RESOLUTION TEST CHART**



DB5 InE

2 CHAIRMAN SKALLERUP: We had a conference at which  
3 Mr. Lau disclosed certain information and indicated he wanted  
4 to make a motion. At this time I will call on Mr. Lau.

5 MR. LAU: First I would like to make a statement.

6 CHAIRMAN SKALLERUP: Inasmuch as you are not facing  
7 the audience, we would appreciate it if you would talk into  
8 the microphone.

9 MR. LAU: First I would like to make a statement  
10 that recaps a little of my history in the past few weeks since  
11 I dropped from existence at these hearings and that was because  
12 of health.

13 On the 26th, the afternoon of the 26th, I had to  
14 leave because I wasn't feeling well. I assumed that there was  
15 a possibility of having mumps. I went to Dr. Wagner and he  
16 verified this fact and I went home and within another day  
17 they had settled down in my lower tract.

18 And this demobilized me for some time.

19 Now, the hearings continued and we brought  
20 Dr. Tamplin in at the time and I appreciate the Board allowing  
21 him to testify on their behalf, even though it wasn't felt  
22 that he dealt with my contentions.

23 Last Saturday I was just on the verge of getting  
24 over the mumps when one side of my face was paralyzed and I  
25 found out that I had Bell's Palsy. This is very concerning to  
me, it has cut my health down considerably. I cannot see to

ln2 1 read, which is one of my real problems. I have tremendous  
2 headaches, besides having one side of my face paralyzed.

3 Yet the hearing has continued without me, and there  
4 has been testimony.

5 Now, I am not sure whether it is right or wrong to  
6 continue the hearing if one of the intervenors isn't here because  
7 he is ill and can't be here. I think it is one thing, it was  
8 pointed out to me once before, that I am not told to stay  
9 here, but it should be my responsibility to be here if I  
10 could, or something to that effect.

11 So if I miss something, it is not the fault of any-  
12 body but myself. Well this is not the case when you are  
13 demobilized the way I am.

14 Now, the doctor has told me to get as much rest as  
15 possible and I am presently getting shots every day to try and  
16 clear this matter up. I would like to make a motion to the  
17 Board that these proceedings be delayed after such time that  
18 we can conclude the direct testimony of my witnesses to allow  
19 me time to get my health back, so I can continue my cross-  
20 examination.

21 We have come so far in and my whole case is just  
22 really blossoming now. I would feel very bad to think that  
23 I was not able to conclude it. So my motion is that we have  
24 a three-week delay to allow me to try and regain my health  
25 so I can continue.

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But I must also say if in that motion that if I have not at that time, I would ask for another delay.

CHAIRMAN SKALLERUP: And you are prepared to proceed with your witnesses tonight?

MR. LAW: Yes.

CHAIRMAN SKALLERUP: Any comments on the motion from the applicant?

MR. CHARNOFF: As I understand it, Mr. Chairman, the Staff plans to complete a minor portion of its rebuttal from yesterday before the luncheon break and accordingly I would suggest we have the Staff do that, and then we will be prepared to talk to this motion if there is time before lunch or we would be pleased to do it after lunch or this evening, whenever you would like to have argument on it.

We are opposed to the motion.

MR. ENGELHARDT: Mr. Chairman, the Staff would like time to consider this motion before it responds.

CHAIRMAN SKALLERUP: When will you be prepared to respond? Do you have an idea?

MR. ENGELHARDT: I would hope we could be prepared to respond certainly by the session this evening, possibly sooner than that. But certainly I would like an opportunity to consider the situation and to reach some position which we can relate to the Board in regard to this motion we just heard.

ln4

1 MR. BARON: I don't know how much consideration has  
2 to be given to something like this. The man is sitting here  
3 in obvious discomfort and ill-health and it has been verified  
4 and attested to.

5 Now, I am just speaking as a member of the public,  
6 but he is a party, he has certain inalienable rights to pro-  
7 ceed and participate. And it is beyond his physical capability  
8 to do so.

9 It is beyond his capability to hire somebody to do  
10 so for him. I know that neither the applicant nor the staff  
11 is considering the merits of his position, because that would  
12 be totally unfair to consider that, well, he has nothing really  
13 important that is germane, anything like that, so let's take  
14 a stance again it.

15 The simple question is can he go on, and he can't.  
16 It is no different than if all of the power went off in this  
17 community. You can't proceed with the hearing. It is a thing  
18 that has come up, nobody anticipated it, he of all people  
19 certainly didn't want it to happen, but it has happened.

20 I don't care how big the project is, I don't care how  
21 many thousands or millions of dollars are at stake, he has  
22 certain basic rights which you cannot ignore at this time.

23 And the issue is just a very simple one. I don't  
24 see why it has to be postponed until it can be considered as  
25 to what is to be said in opposition to it. If the answer is



ln5 1 going to be no, it is going to be no, no matter how flowery  
2 are the words that surround it.

3 CHAIRMAN SKALLERUP: The Board is not prepared to  
4 rule on the motion at this time and will rule on the motion  
5 after it has heard comments from the parties. Inasmuch as  
6 we will be having cross-examination this afternoon, let's  
7 make it the first order of business at tonight's meeting and  
8 then we will have a ruling, Mr. Lau.

9 MR. LAU: Thank you.

10 MR. ENGELHARDT: Mr. Chairman, I would like to  
11 recall Dr. Daniel Nelson, who had testified yesterday.

12 At page 1820 of the transcript Dr. Jordan indicated  
13 that he would like Dr. Nelson to submit some additional  
14 information. In connection with Dr. Nelson's testimony the  
15 Staff offered for identification an Exhibit No. 7. The Staff  
16 is not at this time planning to request that this document  
17 identified as Staff Exhibit 7 be offered in evidence.

18 It will not be offered in evidence. In a sense  
19 I suppose what I am doing is withdrawing it, but since it has  
20 been identified in the sequence of exhibits, we would just  
21 not offer it in evidence, but allow it to remain as a document  
22 which has been identified but which will not be utilized in  
23 any further testimony on the part of the Staff.

24 We feel that Dr. Nelson -- and we have reviewed  
25 the matter of Dr. Jordan's concern last evening and Dr. Nelson

ln6 1 is now prepared to respond to that inquiry.

2 Whereupon,

3 DANIEL NELSON

4 resumed the stand as a witness and, having been previously  
5 duly sworn, was examined and testified as follows:

6 FURTHER DIRECT EXAMINATION

7 WITNESS NELSON: The crux of the problem, in  
8 attempting to evaluate Dr. Tamplin's work in estimating doses  
9 from maximum permissible concentration releases of cesium-137  
10 is that he has provided us with none of the underlying  
11 assumptions used by him in making his calculations.

12 Without such underlying assumptions, one cannot  
13 fully evaluate his results upon which he has based his con-  
14 clusions. He has given us the initial conditions of maximum  
15 permissible concentrations of cesium in air and water, suggested  
16 intakes by man in his final calculated doses.

17 There is absolutely no information supplied as to  
18 how he calculated these doses. In my work with Drs. Kaye  
19 and Booth, we have used certain assumptions with respect to the  
20 dose estimates on an average man which we consider to be  
21 realistic.

22 This is in contrast to those used by Dr. Tamplin,  
23 which are unknown. We have assumed certain assumptions with  
24 respect to the intake of cesium-137 by man to provide a  
25 calculated example as requested by Dr. Jordan.

ln7 1

DR. JORDAN: Could I ask a question here?

2

I recognize that all you have is Dr. Tamplin's testimony. But he did refer to some other documents and I wondered if possibly those other documents might have had the details of his calculation or if you made any attempt to find out what those documents were?

6

7

THE WITNESS: The documents referred to by Dr. Tamplin in this hearing do not contain the information with respect to his calculations. They contain some of the information, but they do not contain all of it. The basic document is missing.

11

12

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15

DR. JORDAN: I have, of course, seen at least one document written by Dr. Tamplin outside of this hearing which had some information, but I cannot say that it was complete in the sense that you mentioned.

16

Is that perhaps the situation you find?

17

THE WITNESS: Yes.

18

19

DR. JORDAN: There is another document which you have seen, but it is incomplete?

20

THE WITNESS: That is right. That document too is incomplete.

21

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DR. JORDAN: Thank you.

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THE WITNESS: The calculations that we have made are based on unpublished data which we have developed on computer runs for dose value data. The dose values that I will use provide the accumulated radiation dose from a 1 microcurie intake of radioactivity by man. These dose values are calculated from parameters including the radioactive half-life of the isotope involved, the biological half-life, the critical organ or tissue, fraction of the ingested radionuclide going to the critical organ or tissue, effective energy of radiation from the radionuclide and the relative biological effect of this.

For each radionuclide, there is a different dose value number. This number provides a cumulative dose in mr or a radionuclide intake of 1 microcurie per day.

The dose to an average man from a 1 microcurie intake is 43.2 mr. For a 75 pound child the dose is 41.7 mr.

DR. JORDAN: For a 1 microcurie intake of what?

THE WITNESS: Of cesium 137 in this particular case.

DR. JORDAN: Now then are these your calculations, or are these taken from tables?

THE WITNESS: This is a new calculation in which we looked at unit intakes which we assume to be 1 microcurie

1 and then we can use any fraction or portion of this in  
2 calculating the final dose.

3 DR. JORDAN: But these figures do appear in many  
4 handbooks and the question is: Are your calculations  
5 inconsistent with previous ones?

6 THE WITNESS: No. The big difference is it is  
7 just another way of doing it, doing the dose values,  
8 obtaining a dose.

9 For instance, we can hypothesize a variable intake  
10 by man from day to day, or a continuous intake either one.  
11 The advantage being that we do not have to consider the  
12 concept of equilibrium. So what we do is take an input  
13 for one day and then because of the biological turnover,  
14 this is giving a dose throughout the time the radionuclide  
15 is in the human body. As the radionuclide decays by  
16 physical processes and by biological processes, we use the  
17 effective half-life, so we get a cumulative dose for this  
18 one unit intake for a period of 30 years. Of course with  
19 isotopes which have a short biological half-life, or short  
20 physical half-life, the 30-year assumption is ridiculous.  
21 But we use it anyway.

22 DR. JORDAN: Fine.

23 THE WITNESS: The dose calculated by this method  
24 is the dose commitment for the person for a period of 30  
25 years as I mentioned.

1 In this example, we are using the maximum per-  
2 missible concentration of cesium 137 in water which is  
3 2/100,000 microcurie per ml. We are assuming or taking the  
4 standard value that Dr. Tamplin used of 2,200 mls of water  
5 intake per day and we obtain 1/44,000 microcuries per day  
6 input.

7 So our terms are microcuries per day.

8 We multiply this term then by the dose value that  
9 we calculated, which is in millirems per a 30-year period,  
10 and for an adult it was 43.2 times the millirems for 30  
11 years, times 1/44,000 microcuries per day, and we get a  
12 cumulative 30-year dose from this one day's intake of 1.9  
13 millirems dose.

14 To calculate the annual dose, we simply then  
15 multiply by 365 days per year and obtain 693 millirems,  
16 which is a 30-year dose commitment. Dividing this by 30,  
17 we get 23 millirems per year from drinking water which is  
18 at the maximum permissible concentration. And I am sure  
19 that --

20 DR. JORDAN: How much was it, 23 millirems?

21 THE WITNESS: Per year from this dose. See, we  
22 are talking about a dose commitment now for 30 years.

23 DR. JORDAN: Okay.

24 Are you going to integrate this then?

25 THE WITNESS: We have already integrated it in the

1 dose value for each radionuclide.

2 DR. JORDAN: So rather than getting 500 millirems,  
3 which is --

4 THE WITNESS: What a standard man --

5 DR. JORDAN: Which is the standard man, you now  
6 get a smaller figure of 23 millirems.

7 THE WITNESS: Yes, per year.

8 DR. JORDAN: So that this would change the, if  
9 your figures are correct, this would change the tables in  
10 10 CFR 20 and ICRP handbooks and so on. Is this right?

11 THE WITNESS: Conceivably.

12 DR. JORDAN: Conceivably, yes, all right.

13 Anyhow you do come up with a considerable  
14 discrepancy between your calculations and the ICRP handbook  
15 values. Very much less. He has 23 millirems, rather than  
16 500 millirems, because the 500 millirems comes from the --

17 THE WITNESS: Straight calculation.

18 DR. JORDAN: The straight calculation in the  
19 handbooks. In fact the concentrations are obtained by  
20 assuming that a man does drink the 2,200 ccs of water each  
21 day and the concentration is so set that the dose to a man,  
22 standard man in a year's time will therefore be 500 millirems.  
23 So therefore your values are consequently considerably less.

24 Go ahead.

25 THE WITNESS: You understand we integrated each  
increment, each daily intake for 30 years and add these up.

1 DR. JORDAN: Yes.

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2 THE WITNESS: Okay. So there is also the con-  
3 tention that man doesn't drink 2200 milliliters of water every  
4 day. So this is actually about 1200. So this dose could  
5 be reduced further by a factor of about 6/11ths. It would  
6 look then like you could get a dose of about 12.5 MR per  
7 year in this manner. So Dr. Tamplin has obtained a 500  
8 millirem dose from this same type of calculation, which we  
9 don't know how he has done it.

10 DR. JORDAN: 500 millirem?

11 THE WITNESS: He has assumed it is 500 millirem  
12 in drinking water.

13 DR. JORDAN: Yes, Dr. Tamplin and hundreds of  
14 other health physicists have agreed in that respect, I  
15 guess.

16 THE WITNESS: Yes.

17 DR. JORDAN: So what you are saying is new infor-  
18 mation. But I ma not sure of the significance. But please  
19 go ahead.

20 THE WITNESS: Okay. That is essentially what we  
21 have to say.

22 DR. JORDAN: I see.

23 MR. ENGELHARDT: That completes Dr. Nelson's  
24 statement.

25 CHAIRMAN SKALLERUP: Any matters to come before us



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1 this morning?

2 MR. BARON: Mr. Chairman, I think at this point  
3 the Coalition is through as an active participating party in  
4 the hearing itself, except for written findings of fact and  
5 so on.

6 I understand that there is a portion reserved  
7 for a final argument if the parties do not see fit to waive  
8 it. We don't know when that time will come, whether it will  
9 be tomorrow or Friday. Neither Mrs. Stebbins nor myself  
10 will be here. I asked her about that, whether she would have  
11 any desire to make a statement and it would probably have  
12 to be submitted in writing and sent in. Is that correct?

13 MRS. STEBBINS: If I am not here.

14 MR. BARON: Yes. If she can come back on her  
15 own, she will. As for myself, if you will indulge me, I  
16 would like to make a comment, not so much in the form of  
17 a final argument, because that is a lot longer perhaps,  
18 but in reflecting about my role and the role of others in this  
19 entire proceeding, I have appreciated the attitude of the  
20 Board and the Staff and of counsel for the Applicant. It has  
21 been a hearing which has been far more liberal than I under-  
22 stand others have been.

23 The evidentiary rules have been relaxed to  
24 a certain degree to permit sometimes irrelevant items to come  
25 out. I think by and large, however, the entire proceeding

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1 has been quite beneficial to the public. Whether this  
2 license will ever be issued or not still remains within the  
3 hands of the Board. There have been requests for delays,  
4 there have been requests for provision of materials.  
5 Obviously to the client that was making the request, when  
6 it is not granted, then it has been unfair. I personally  
7 feel that the Board has done its best to satisfy the demands  
8 of all parties concerned.

9 One of the intentions, of course, initially was  
10 to delay, delay, delay for the sake of delay. I think  
11 that we have explored this plant from all sides. There  
12 are still many mysteries about it and there will probably be  
13 many mysteries for quite some time to come after it has been  
14 in operation, there will still be things unknown about. I  
15 am certainly not going to make a statement like Irwin  
16 Oster made, I don't know why he made such a statement, nor  
17 what the reasons were behind it.

18 The Coalition has never been anti-nuclear power  
19 reactor as such. It has been "make it as safe as humanly  
20 possible. Make it as safe as the brains of all of these  
21 people who have been called forth at these hearings can make  
22 it."

23 I think this Board has certainly gone in that direction  
24 to the best of its ability. And, of course, I will go back  
25 to Cleveland with that message for the people back there.

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1 I will prepare, when the time does arrive, what-  
2 ever the final statement should be, findings of fact and so  
3 on, see it through to the conclusion of the hearing, of  
4 course. But I wouldn't have had another opportunity to make  
5 these remarks.

6 Thank you.

7 CHAIRMAN SKALLERUP: Thank you, Mr. Baron.

8 MR. CHARNOFF: May I say we will miss Mr. Baron.

9 CHAIRMAN SKALLERUP: So will the Board.

10 MR. BARON: Well, let's continue it and go on  
11 then.

12 CHAIRMAN SKALLERUP: We will resume at one  
13 o'clock.

14 (Whereupon, at 12:00 noon, the hearing was  
15 recessed for lunch to reconvene at 1:00 p.m.)  
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AFTERNOON SESSION

(1:00 p.m.)

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3 CHAIRMAN SKALLERUP: The time being 1 o'clock,  
4 will the hearing please come to order?

5 This afternoon we have scheduled the hearing  
6 for cross-examination by LIFE. Inasmuch as counsel and  
7 other parties for LIFE are not here, we will recess until  
8 they arrive or for a reasonable time.

9 (Recess.)

10 CHAIRMAN SKALLERUP: Will the hearing please  
11 come to order?

12 Mrs. Bleicher, two events occurred this morning  
13 that we would like to inform you of.

14 One, the Coalition completed its case, and, two,  
15 Mr. Lau moved that at the conclusion of this week's session  
16 that the hearings be suspended for three weeks so that he  
17 could regain his health and proceed with his cross-examination.  
18 We plan to hear argument on his motion tonight. We are  
19 planning to meet at 7 tonight to hear that and Mr. Lau's  
20 witnesses on his direct case.

21 Are you ready to proceed?

22 MRS. BLEICHER: Yes, I am.

23 Mr. Engelhardt had spoken to me before the  
24 opening of the session and he wanted some information from  
25 me which I can give him now I believe if we could have just

1 a few more minutes.

2 CHAIRMAN SKALLERUP: Did you want to call a  
3 conference for all hands or do this on the record?

4 MR. ENGELHARDT: I don't know what it is feasible  
5 to do it on the record.

6 The inquiry that I made to Mrs. Bleicher was I  
7 asked her whether she could give me the names of the Staff  
8 witnesses that she had cross-examination questions for.  
9 Our Staff witnesses are people who are very busy with other  
10 activities, both private, that is, universities, and in  
11 Federal Government agencies. They have volunteered their  
12 time to attend this session on behalf of the Staff to  
13 participate as witnesses. They are anxious to leave for  
14 their respective duty stations at the earliest possible  
15 time.

16 And my inquiry to Mrs. Bleicher was essentially  
17 to find out in what order the Intervenor LIFE proposed to  
18 question our witnesses and then to see whether we could  
19 make appropriate arrangements to begin to release those  
20 witnesses who may not be needed or possibly to release  
21 them as their cross-examination is completed.

22 CHAIRMAN SKALLERUP: Why don't you take the time  
23 to confer and we will recess while you do.

24 MR. ENGELHARDT: Thank you.

25 (Recess.)

1 CHAIRMAN SKALLERUP: On the record.

2 Mr. Engelhardt?

3 MR. ENGELHARDT: Mrs. Bleicher and I have had  
4 a discussion with regard to the witnesses that Mrs.  
5 Bleicher would like from the Staff and she has indicated to  
6 me that she would like to cross-examine Dr. Paul Tompkins,  
7 Mrs. Tompkins, and Lester Rogers.

8 At this point in time if I correctly indicated  
9 the names, and I think I did, at this time, Mr. Chairman,  
10 I would like permission to release as witnesses in this  
11 proceeding for the Staff the following individuals who testified  
12 in rebuttal testimony for the Staff during the two preceding  
13 days. Dr. Daniel Nelson, Dr. Bernd Kahn, Dr. A. K. Davis,  
14 Dr. Marvin Goldman. Those are the names of the names of  
15 the Staff witnesses which we would like permission from  
16 the Board to release.

17 CHAIRMAN SKALLERUP: The Board will go off the  
18 record.

19 (Discussion off the record.)

20 CHAIRMAN SKALLERUP: On the record.

21 Have you any objection, Mrs. Bleicher?

22 MRS. BLEICHER: No, I have no objection.

23 CHAIRMAN SKALLERUP: The Board has no objection.  
24 Those witnesses may be released.

1 (Witnesses Daniel Nelson, Bernd Kah, A. K. Davis,  
2 and Marvin Goldman were excused.)

3 MR. CHARNOFF: Mr. Chairman, with due respect to  
4 the gentleman sitting second to my left, I want to be  
5 clear that the person excused is Dr. Marvin Goldman, not  
6 Dr. Morton Goldman.

7 CHAIRMAN SKALLERUP: I am sure Dr. Marvin Goldman  
8 appreciates that distinction.

9 MR. CHARNOFF: Well, it has been said that Port  
10 Clinton is not big enough for two Goldmans.

11 CHAIRMAN SKALLERUP: Any further business, Mr.  
12 Engelhardt?

13 MR. ENGELHARDT: No, sir, I don't believe so. We  
14 are now ready to make our witnesses available as the  
15 Intervenor LIFE would like to call them.

16 CHAIRMAN SKALLERUP: Would you prefer to have  
17 all of the witnesses here or are you intending to call  
18 them one at a time, Mrs. Bleicher?

19 MR. BLEICHER: I can call them one at a time if  
20 that is more convenient.

21 First, we would like to address just a few  
22 questions to Dr. Tompkins.

23 XXXX FURTHER CROSS-EXAMINATION

24 BY MRS. BLEICHER:

25 Q Dr. Tompkins, in your testimony yesterday you

1 discussed some of the findings and recommendations that were  
2 made by the latest report of the National Council on  
3 Radiation Protection. Is that correct?

4 A (Dr. Paul Tompkins) That is correct.

5 Q And is it correct that the National Council on  
6 Radiation Protection has now recommended in its latest  
7 report that there be certain changes in the occupational  
8 exposures to workers in nuclear power plants and other  
9 facilities dealing with radiation?

10 A That is true.

11 Q Is it correct that the National Council on Radiation  
12 Protection criteria has come to the conclusion that the  
13 present standards in Part 20 are double the amount of  
14 radiation that should be allowed to the thyroid?

End #8 15 A That is not correct.

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1 Q Would you please explain how they have arrived at  
2 the conclusion that the dose to the thyroid should be reduced  
3 from 30 to 15?

4 A It was the intent and the effort of the members of  
5 the National Council on Radiation Protection and Measurements  
6 to simplify as much as possible the engineering guidance and  
7 criteria for control procedures. It has developed in the past  
8 few years evidence that whereas ten years ago the thyroid was  
9 felt to be somewhat less sensitive to radiation injury than  
10 tissues such as bone marrow, they feel now that they should  
11 assign to the thyroid a sensitivity about equal to that of other  
12 tissues.

13 And, therefore, they assigned to the thyroid the  
14 same dose that they assigned to other single organs treated  
15 occupationally.

16 Q In other words, there has been a change in their  
17 beliefs about the sensitivity of the thyroid?

18 A That is correct.

19 Q And they would recommend that this change and the  
20 new evidence be incorporated into current standards?

21 A That is correct.

22 Q Does this not mean that the present Part 20  
23 standards then allow a dose to the thyroid of double the  
24 amount that a dose to the thyroid should be, according to the  
25 National Council on Radiation Protection?

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1 MR. CHARNOFF: Mr. Chairman --

2 MR. ENGELHARDT: I would raise an objection to  
3 that question, Mr. Chairman. The 10 CFR Part 20 regulations  
4 are those published by the Atomic Energy Commission.

5 Dr. Tompkins' testimony related to the historic  
6 development of the standards which underlie the 10 CFR Part 20  
7 regulations. I think that the question, if it is a valid  
8 question, is one to be directed to Lester Rogers, another  
9 witness who is responsible for the development for the Commis-  
10 sion of 10 CFR Part 20.

11 But I think this witness is not the witness to  
12 ask that particular question of, because he does not have any  
13 direct responsibility with regard to the development and  
14 promulgation of 10 CFR Part 20.

15 CHAIRMAN SKALLERUP: Mr. Charnoff.

16 MR. CHARNOFF: I would like to comment on that  
17 question in a somewhat different respect, Mr. Chairman.

18 The contention of LIFE -- I am addressing myself  
19 to the specific contentions of LIFE in its amended petition --  
20 with regard to Part 20 are all addressed to the exposure  
21 limitations in Part 20 as they apply to the population at  
22 large.

23 To the general public, not to occupational doses.  
24 This last set of questions by Mrs. Bleicher was addressed  
25 directly to the occupational exposure recommendations by

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1 NCRP and not to the recommendations by the NCRP for the general  
2 public or the population at large. I would submit that in this  
3 regard this question is not related at all to the contentions  
4 by LIFE.

5 MRS. BLEICHER: Mr. Chairman, I think that  
6 Mr. Charnoff is incorrect and I am at the present time trying  
7 to find a copy of our motion for reconsideration, so that I  
8 can read to him the sections that apply to our contentions  
9 with respect to Part 20 and he will see that we did specifically  
10 state that we felt that the Part 20 criteria were inadequate  
11 insofar as their exposure doses for workers were concerned,  
12 as well as for the general population.

13 MR. CHARNOFF: It would be helpful if you would  
14 demonstrate wherein in that petition that is mentioned,  
15 Mrs. Bleicher.

16 MRS. BLEICHER: On page 23 of the supporting  
17 memorandum that went with our motion for reconsideration,  
18 paragraph 2 we state, "The proposed plant will be permitted to  
19 expose the workers in said plant to levels of radiation ten  
20 times and in some cases 50 times the level permitted to the  
21 general public. As a consequence the medical risks to the  
22 workers will be increased proportionately over those risks  
23 borne by the general public."

24 In other words, that whole paragraph was related  
25 to the problems that Part 20 raises and the inadequacy of

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1 their present standards with respect to workers.

2 MR. CHARNOFF: I will withdraw the objection. I  
3 was looking at paragraph 1 which addressed itself to the  
4 population at large.

5 BY MRS. BLEICHER:

6 Q Is it correct, Dr. Tompkins, that the NCRP has  
7 recommended a change with respect to the occupational skin  
8 dose from 30 rem per year to 15 rem per year?

9 In other words, cutting it by one-half?

10 A That is true.

11 Q And the forearm dose should be cut from 75 rem per  
12 year to 30 rem per year, which is much greater than one-half.

13 A That is true.

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1 Q And they have also changed the fetal dose  
2 criterion for occupational workers from 75 rems to 15  
3 rems per year?

4 A That is true.

5 Q It is also correct, isn't it, that they have  
6 changed the occupational dose permitted for pregnant women to  
7 .5 rem from the previous standard; is that correct?

8 A No, it is not.

9 Q Would you explain what the recommendations were  
10 of the NCRP with respect to the occupational dose to preg-  
11 nant women?

12 A Prior to this report they had none. This is a  
13 new recommendation, not a change in an old one.

14 Q I see. What is this new recommendation?

15 A That for women occupationally exposed and known  
16 to be pregnant that the occupational conditions be controlled  
17 to a low dose and a low dose rate for the protection of the  
18 fetus and the standard they recommended to achieve this  
19 control was 500 millirems during the gestation period of  
20 the fetus, which is 9 months.

21 Q Do you know whether this is the same standard  
22 that is used by the present Part 20 Standards?

23 A I am not in a position to answer that. I don't  
24 know.

25 CHAIRMAN SKALLERUP: Mr. Engelhardt, have you a

1 witness who could answer that question?

2 MR. ENGELHARDT: Yes, sir, Mr. Rogers. He is here  
3 in the audience.

4 MRS. BLEICHER: We will ask that of Mr. Rogers.  
5 Thank you very much, Dr. Tompkins. We have some questions  
6 we would like to ask Mr. Rogers.

7 FURTHER CROSS-EXAMINATION  
8 BY MRS. BLEICHER:

9 Q Mr. Rogers, is it true that the present Part  
10 20 standards do not have any specific provisions with  
11 respect to pregnant women who are in occupations connected  
12 with nuclear facilities?

13 A At the present time the Part 20 regulations apply  
14 to all radiation workers in restricted areas with respect  
15 to the occupational exposure, including pregnant women.

16 Q Are you familiar with the recommendations of  
17 the National Council on Radiation Protection with respect to  
18 a low dose for pregnant women?

19 A Yes, I am familiar with this.

20 MR. ENGELHARDT: I just want to make sure that the  
21 record is clear that the witness is consulting  
22 Applicant's Exhibit 8, which is the NCRP Report No. 39, which  
23 I believe, Mrs. Bleicher, is the report you are referring to.  
24 Is that right?

25 MRS. BLEICHER: Yes, that is right.

1 BY MRS. BLEICHER:

2 Q If the AEC were to adopt the recommendations of  
3 the National Council on Radiation Protection Criteria with  
4 respect to dosage to pregnant women, how much lower would  
5 the occupational dose have to be for pregnant women from  
6 that which is now set up in the Part 20 standards?

7 A I am unable to answer that question specifically  
8 at this point. The NCRP suggests that -- and I will quote,  
9 "In effect this implies that such women should be employed  
10 only in situations where the annual dose accumulation is unlikely  
11 to exceed two or three rems as acquired at a more or less  
12 stated dose rate."

13 Now, the basic objective of the recommendation  
14 is to limit the exposure of the embryo or the fetus during  
15 the entire gestation period.

16 DR. JORDAN: I am sorry. I don't quite under-  
17 stand. It says to fertile women is the 2 to 3 R, if I read  
18 it right.

19 THE WITNESS: That is correct.

20 DR. JORDAN: You didn't say pregnant women?

21 THE WITNESS: No, I was reading from the  
22 report itself, page 92, paragraph 240 and the portion that  
23 I read related to fertile women. It becomes a controlling  
24 factor -- let's read it all -- "The need to minimize exposure  
25 of the embryo and fetus is paramount. It becomes the

1 controlling factor in the occupational exposure of fertile  
2 women. In effect this implies that such women  
3 should be employed only in situation where the annual dose accu-  
4 mulation is unlikely to exceed two or three rems and is  
5 acquired at a more or less steady rate."

6 Now the present provisions in 10 CFR Part 20  
7 limit exposures to all occupational workers to one and  
8 one quarter rems per quarter unless there are detailed  
9 records on the exposure history and there is provision  
10 under certain circumstances, they can be exposed to higher  
11 levels, up to three rems per quarter, provided they do not  
12 exceed a dose of five times "N" minus 18 rems where "N"  
13 is the age of the individual greater than 18 which essentially  
14 limits the dose to an average of five rems per year, averaged  
15 over the lifetime.

16 NCRP suggests that if the dose is limited to  
17 two or three rems that in fact you are likely to achieve the  
18 objective of limiting the dose to the fetus to not more than  
19 5/10ths a rem during the entire period of gestation.

20 BY MRS. BLEICHER:

21 Q So that the NCRP would suggest limiting to 2 or  
22 3 rems instead of the 5 rems that is required by the Part  
23 20.

24 A One could infer that this is the sense of the  
25 recommendation of the NCRP.



1 DR. JORDAN: May I ask again, because it seems to  
2 me the two or three rems applied to fertile women.

3 THE WITNESS: That is correct.

4 DR. JORDAN: And the point five rems then would  
5 apply to the fetus of a woman who is pregnant. So there are  
6 two different things.

7 THE WITNESS: That is correct. The objective of  
8 the limitations of two to three rems to fertile women is to  
9 assure --

10 DR. JORDAN: Is to assure that when a woman becomes  
11 pregnant that it will be detected early enough, presumably, and  
12 then she will be put into a lower field, still, so that the  
13 dose to the fetus will only be .5 rems.

14 THE WITNESS: That is correct.

15 DR. JORDAN: But she would have to go to  
16 a lower field than the two or three rem per year field?

17 THE WITNESS: This is correct.

18 DR. JORDAN: All right.

19 BY MRS. BLEICHER:

20 Q Once the pregnancy is recognized?

21 A Once it is recognized she is pregnant.

22 DR. JORDAN: There was some confusion in the  
23 testimony much earlier when this was brought up. Not on  
24 your part, this harkens back to a previous session of the  
25 Board when we had cross examination of Dr. Sternglass and

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1 others before we had copies of this.

2 THE WITNESS: I must say the following sentence  
3 clarifies that, "In such cases the probability of  
4 dose to a fetus exceeding 0.5 rem before a pregnancy is  
5 recognized is negligible."

6 DR. JORDAN: Before a pregnancy is recognized.  
7 But presumably after it is recognized then you must apply  
8 the limitation of .5 rem?

9 THE WITNESS: Yes. " Once a pregnancy is known,  
10 the actual approximate dose can be reviewed to see if  
11 work can be continued within the framework of the limits  
12 set above." And I presume that they are speaking of the  
13 limiting of the dose to the fetus to 5/10ths rem. But  
14 let me make it clear, in terms of exactly how this recommen-  
15 dation would be implemented, it is one which has to be  
16 given considerable study in order to achieve the basic objectives  
17 of what the NCRP is recommending.

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BY MRS. BLEICHER:

Q Is it correct that the occupational skin dose currently required by Part 20 of 10 CFR is twice as high as that recommended by the National Council on Radiation Protection?

A Would you repeat that question, please?

Q The current occupational skin dose which is required by, the maximum dose required by Part 20, is twice as high as what the NCRP would recommend?

A The skin dose, the permitted skin dose in Part 20 is higher than the recommendations contained in the Handbook 39. However, I would like to again read what the NCRP has to say about those particular recommendations.

Q That is not necessary to read it again. I just wanted the answer to that one question.

MR. ENGELHARDT: Could the witness clarify his response with a citation to the particular section of the NCRP 39 which deals with that matter as to the consideration to be given --

MRS. BLEICHER: I am not asking him about NCRP and how they justify themselves. I am just asking him about the recommendations differ from the recommendations in Part 20.

BY MRS. BLEICHER:

Q Mr. Tompskins, excuse me, Mr. Rogers --

1 MRS. BLEICHER: Can I proceed now?

2 MR. ENGELHARDT: Yes.

3 BY MRS. BLEICHER:

4 Q Is it correct that the forearm dose recommended  
5 by the National Council on Radiation Protection is lower than  
6 the forearm dose required by Part 20?

7 A Yes, that is correct.

8 Q Is it correct that the feet and ankle dose  
9 recommended by the NCRP is also lower than the feet and  
10 ankle dose permitted by Part 20?

11 A That is correct.

12 Q In your testimony, Mr. Rogers, you indicated  
13 that Part 20 was designed to make it, and I will quote from  
14 the summary that I was given of your intended testimony,  
15 which is the only record of your testimony that I happen  
16 to have.

17 On page 6 of that written document containing  
18 your intended testimony, you stated that the objective was  
19 "to limit releases of radioactivity to the environment" -- so that  
20 and I am quoting -- "to limit releases of radioactivity to  
21 the environment from each nuclear facility or other licensed  
22 activity so that exposures of the general public to ionized  
23 radiation from the accumulative effects of all licensed  
24 atomic energy activities when added to exposures from other  
25 sources are not likely to exceed radiation protection guides

1 recommended by the FRC and approved by the President."

2 From this statement I gather that it is not possible  
3 to positively assure the public that radiation from  
4 multiple sources will not exceed radiation protection guides  
5 recommended by the FRC and approved by the President. Is  
6 that correct?

7 A I think we can positively assure the public that  
8 with respect to the regulatory controls which are placed  
9 on all licensed activities that radiation exposures, the  
10 likelihood of radiation exposures approaching radiation  
11 protection guides during normal operations is extremely remote.

12 Q What degree of assurance can you give the  
13 public that they will not receive any more than the total  
14 allowed dose from all the different sources of radiation?

15 A We can give them an extreme, high degree of  
16 assurance.

17 Q Can you assure them 100 percent that they will  
18 not?

19 A One of the problems, you cannot really talk  
20 in 100 percent absolute in almost anything. For practical  
21 purposes, we can give very positive assurance that with  
22 respect to exposures from routine operations of nuclear  
23 plants, the total exposures are not going to exceed radiation  
24 protection guides.

25 Q Are you talking about just nuclear plants? I

1 refer you to the exposure to radiation from all sources of  
2 radiation, nuclear plants and other licensed activities.

3 A Yds. And we are saying that we can give a very  
4 high degree of assurance that from normal routine operations  
5 that the radiation exposures will be within the radiation  
6 protection guides.

7 Q As it presently exists, however, Part 20 has  
8 no provisions for apportioning the allowable radiation  
9 from each plant and each source of radioactivity, so that  
10 people can be assured that the total amount received will  
11 not exceed the present guidelines.

End #11,12

A No, I don't agree with that statement.

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Q Is there provision for apportioning in Part 20?

A Apportionment is a concept and it depends on what one means. If what one means by apportionment is to assure that no single source or class of sources of radiation exposure to the public do not contribute a disproportionate share to the total, then the regulatory system provides assurance along those lines.

Q In what respect does the regulatory system provide assurance? And what degree of assurance does it provide?

A For example, the way in which we apply limits on releases of radioactivity from nuclear power plants assures that the exposure to the population will be a very small fraction of the total recommended dose limit to the total population.

And in addition to the upper release limit, the release limits which we impose on each plant, which are upper release limits, we also place specific conditions in the operating license, which require the plants to keep the levels as low as practicable.

Now, our experience has shown and the design and operation of these plants provide us reasonable assurance that generally these levels are going to be a very small percentage of the upper release limits.

Therefore, the contribution of any one source of

ln2 1 exposure to the total population dose is a very small fraction  
2 of the total.

3 And that is what one is trying to achieve with  
4 apportionment as such.

5 Q You referred to the standard which calls for  
6 limitation of emissions to make them as low as practicable?

7 A Yes.

8 Q From reading the regulations, I see that this  
9 calls for a determination of the cost of maintaining emissions  
10 at a particular level. This means that the cost is being  
11 considered as a component of safety. Is that correct?

12 I am referring to 10 CFR 20, Part 1(c).

13 A Specifically what the regulation says is the term  
14 as low as practical as used in this part means "as low as is  
15 practicably achievable taking into account the state of  
16 technology and the economics of improvements in relation to  
17 benefits to the public health and safety and in relation to  
18 the utilization of atomic energy in the public."

19 Now, would you frame your question again?

20 Q I am talking about the part where they discuss  
21 economic feasibility?

22 A Yes.

23 Q Is a calculation of economic feasibility made on  
24 a case by case basis?

25 A Let me answer your question with respect to the



ln3 1 economics by saying that with respect to complying with the  
2 limits in 10 CFR Part 20, with the conditions that go into the  
3 operating license as technical specifications, those conditions  
4 are to be met without regard to cost.

5 Further, with respect to achieving the objective  
6 of as low as practicable, we have stated in our Part 50.34(a)  
7 amendment to Part 50 that at this point in time we believe  
8 that there is available technology that is compatible with  
9 economics, that can be used in limiting releases from nuclear  
10 power reactors to keep these levels at small percentages of  
11 the Part 20 limits.

end 12 12

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1 Q If this is true, why don't you rewrite the Part  
2 20 limits to make them lower? You say it is logically  
3 feasible now to keep radiation lower, and since it has  
4 been indicated that radi activity is not a healthy thing  
5 for people, we should try to keep it as low as possible.

6 A As low as practicable.

7 Q As low as practicable.

8 A Well, I think that in order to understand why  
9 we are taking the approach that we are in Part 50 and Part  
10 20, one has to understand that you have to look at both  
11 Part 20 and Part 50 at the same time. Now part 20 defines  
12 the criteria for establishing upper, let me emphasize,  
13 upper limits beyond which the reactor is not allowed to  
14 operate.

15 Now that upper limit is designed to assure that  
16 the health and safety, the radiation protection standards  
17 which have been issued by the Federal Radiation Council,  
18 ICRP, are in fact met even if it operates at the upper limit  
19 of release.

20 In addition, we have the lowest practicable require-  
21 ment in 10 CFR Part 50 which requires that the plant operate  
22 in such a way as to keep the levels as low as practicable.  
23 Now we can recognize that at the present state of technology  
24 it is not feasible, it is very difficult to determine,  
25 when you get down to very low levels, when you are talking

1 about a few percent, it is very difficult to determine just  
2 where within the few percent the reactor will operate. You  
3 need operating flexibility.

4 Q I am just trying to determine from you now the  
5 decision is made about whether something is too  
6 expensive to be used in a plant in order to give lower  
7 emissions.

8 Do you evaluate each case and find out how much  
9 it will add per kilowatt hour to the cost of producing electricity?  
10 Does the AEC make this determination?

11 A At such time as one is considering further  
12 requirements, when the levels are already very, very low, it  
13 does have to be looked at on a case by case basis. And  
14 one judges the reduction in risk, the small reduction in  
15 risk at these very low levels versus the effort which is  
16 required to achieve that reduction in risk, and a judgment is  
17 made as to whether or not the effort is justified in light  
18 of the low reduction in risk. It is a subjective judgment  
19 at these levels as to what is as low as practicable.

20 Q In other words, at these levels you determine how  
21 much safety we can afford?

22 MR. ENGLEHARDT: Mr. Chairman, I think the witness  
23 has answered the question.

24 BY MRS. BLEICHER:

25 Q How much it will cost to make it more safe and  
whether it is worth it, right? Is that the kind of judgment

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1 that goes into this?

2 A I think I have pointed out that in applying the  
3 low as practicable concept we feel that the application of  
4 this concept with present technology will assure that  
5 generally the levels of release and exposures to the public  
6 will be at very small percentages of radiation protection  
7 guides, as a matter of fact, in the vicinity of a very few  
8 percent of the natural background.

9 Now as you get down to levels of a few MR,  
10 very few percent of natural background radiation, to a  
11 limited number of people, you are reaching a level where the  
12 risk is extremely low. For example, comparable to the risk  
13 which is involved in the natural variation in natural back-  
14 ground radiation in any one given location.

15 Therefore, one cannot justify a large amount  
16 of effort at these extremely low levels because the  
17 reduction in risk to public health and safety is extremely  
18 low. And this is a judgment question. It is a judgment  
19 which has to be exercised, both in the rulemaking process,  
20 as well as on an individual case basis. There is not a  
21 precise economic benefit-risk balance made at any of these  
22 levels. It is a judgment which is based on the best infor-  
23 mation available.

24 MRS. BLEICHER: Thank you very much.

25 MR. ENGELHARDT: Mr. Chairman, there is one

1 loose end with regard to some of the answers that Mr. Rogers  
2 gave with regard to NCRP 39 which is applicant's exhibit 8.  
3 I would like to ask him a question which I think might clarify  
4 the matter.

5 REDIRECT EXAMINATION

6 BY MR. ENGELHARDT:

7 Q The question, Mr. Rogers is --

8 MRS. BLEICHER: Is this in the nature of rebuttal  
9 or --

10 CHAIRMAN SKALLERUP: Clarifying the answer.

11 BY MR. ENGLEHARDT:

12 Q Mr. Rogers, in connection with the comments you made  
13 with regard to questions on the relationship between  
14 Exhibit 8 and 10 CFR Part 20, could you explain how the  
15 recommendations in NCRP are considered with respect to  
16 amendments or changes in 10 CFR Part 20?

17 A Within the Commission we are giving very careful  
18 consideration to the recommendations of the NCRP as con-  
19 tained in Exhibit 8 and within the federal government, of  
20 course, the Environmental Protection Agency is responsible  
21 for issuing, developing and issuing radiation protection  
22 standards and guidance on radiation protection standards  
23 that apply to the operation of federal agencies, including the  
24 AEC's regulatory activities.

25 Now after carefully evaluating the Handbook 39

report, if there are changes that should be made in our regulations, any changes which would be made would be carefully coordinated with the Environmental protection Agency before such changes were implemented.

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2 MRS. BLEICHER: Mr. Chairman, I would object to the  
3 procedure of allowing him to talk further in what is essentially  
4 further rebuttal. This was not the gist of my question and I  
5 see no need for him to be allowed an extra opportunity to  
6 present this testimony at this time.

7 CHAIRMAN SKALLERUP: I was surprised at the answer  
8 too, because I understood from counsel he was going to clarify.

9 MR. ENGELHARDT: Mr. Chairman, if it is an  
10 objectionable procedure, then let us withdraw that last  
11 statement and keep the record clear.

12 CHAIRMAN SKALLERUP: It is so ordered.

13 Have you completed your examination of Mr. Rogers?

14 MRS. BLEICHER: Yes.

15 We would like to ask some questions of Mrs. Tompkins.

FURTHER CROSS-EXAMINATION

BY MRS. BLEICHER:

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16 Q Mrs. Tompkins, on page 1831 of the transcript,  
17 Lines 12 through 17, you state that you believe -- first you  
18 state "We believe." I would like to know whom you are  
19 referring to there by "we"?

20 A (Dr. Edythalena Tompkins.) The group was reviewed  
21 this paper and agreed on the final form.

22 Q This paper that you are referring to is -- would  
23 you please just state the name itself?

24 A The evaluation of a possible causal relationship  
25 between fallout deposition of strontium-90 and infant and

ln2 1 fetal mortality trends.

2 MR. ENGELHARDT: For the record, Mrs. Bleicher,  
3 it is Staff Exhibit No. 8.

4 MRS. BLEICHER: Thank you.

5 BY MRS. BLEICHER:

6 Q You state that you believe that the assumption  
7 that you can project into the future from the past on things  
8 like infant mortality and fetal mortality is an oversimplifica-  
9 tion. Is that correct?

10 A That is correct.

11 Q On what statistical data do you base your comment  
12 that this kind of projection is an oversimplification?

13 A By the history of fetal mortality and infant  
14 mortality in the United States.

15 Q Have you any reports that you can cite us to --

16 A It is plotted in this document. It is Figure 6  
17 on page 9.

18 Q What source is that Figure 6 from?

19 A The National Office of Health Statistics Reports  
20 of the United States Government.

21 Q Which report would that be?

22 A They are issued every year.

23 Q Where did you get this particular one from?

24 A This data was plotted in a logarithmic transforma-  
25 tion exactly as Dr. Sternglass did from the published data for  
the years as stated.



1 Q Are you a statistician, Mrs. Tompkins?

2 A I have had two years of graduate work in health  
3 statistics, yes, ma'am.

4 Q Is it the straight line linear trend that you are  
5 stating is an oversimplification?

6 A What I have stated is that the assumption that  
7 you can project into the future from the past is an over-  
8 simplification.

9 Q I see.

10 Are you familiar with the work done by Mr.  
11 Moriyama?

12 A Very familiar with it.

13 Q Isn't it true that Dr. Moriyama uses this very  
14 type of calculation in his studies?

15 A I believe in my testimony I explained that this  
16 was used when you look at a five-year period, for example,  
17 you look at the trend, you see what is happening from the  
18 past. You look at five years of data and you say is it  
19 going down, is it going up. You do not project what is  
20 going to happen in the next year. This is what Dr. Moriyama's  
21 work is.

22 Q Which is what Dr. Moriyama's work is?

23 A When he looks at what has been happening in the  
24 last five years, he uses a trend line, which is a perfectly  
25 justifiable procedure. This does not say what is going to

1 happen in the future. It says what has happened for the  
2 past five years.

3 Q Isn't it correct that Dr. Moriyama has stated in  
4 his work that by using -- his work is entitled "Change in  
5 Mortality Trends of United States" published by the  
6 National Center for Health Statistics -- that it is possible  
7 using this method to estimate the excess deaths relative to  
8 the previously established trend?

9 A I would have to read that report again. I certainly  
10 would not expect Dr. Moriyama to say that.

11 Q You have read that report of 1964?

12 A Yes, I have.

13 Q Unfortunately we were unable to obtain that  
14 report from the library, so we haven't got it here today.  
15 We attempted to find it in the Bowling Green library and they  
16 were not able to give it to us today, so I can't present  
17 it to you to read.

18 A It is on my desk too.

19 MRS. BLEICHER: Thank you very much.

20 MR. ENGELHARDT: Mr. Chairman, may I inquire of  
21 Mrs. Bleicher whether this completes her cross-examination  
22 of Dr. Tompkins and Mrs. Tompkins and Mr. Lester Rogers?

23 MRS. BLEICHER: Yes, it does.

24 MR. ENGELHARDT: Then, Mr. Chairman, may I request  
25 on behalf of these three witnesses, that they be excused from

1 this proceeding at this time?

2 CHAIRMAN SKALLERUP: Like the others, they may be  
3 excused from this session of the hearing.

4 (Witnesses Paul Tompkins, Edythalena Tompkins and  
5 Lester Rogers were excused.)

6 MRS. BLEICHER: I would like to request here a  
7 five-minute recess before we continue cross-examination.

8 CHAIRMAN SKALLERUP: We will recess for 10  
9 minutes.

10 (Recess.)

11 CHAIRMAN SKALLERUP: Come to order, please.

12 MR. BLEICHER: We have a few questions we would  
13 like to ask of Dr. Goldman who is appearing here on behalf  
14 of Applicant.

15 In the prepared questions and answers for rebuttal  
16 testimony of Dr. Goldman, the question appeared concerning  
17 testimony by Davis and Harward of the U. S. Public Health  
18 Service before the Illinois Pollution Control Board.

19 I would like to know if this document where the  
20 testimony appeared has been entered into evidence or has  
21 been marked as an exhibit?

22 MR. CHARNOFF: I believe it was. I believe it  
23 was one of the Staff's exhibits. Is that correct?

24 CHAIRMAN SKALLERUP: Staff Exhibit 9, I believe.

25 MR. ENGELHARDT: If it is a report prepared by

1 Kahn and Davis, called "A Critique," then it is Staff Exhibit  
2 9.

3 MRS. BLEICHER: I am referring to a question that  
4 asks "Did the testimony by Davis and Harward of the U. S.  
5 Public Health Service before the Illinois Pollution Control  
6 Board" --

7 MR. CHARNOFF: That is the same document, Mrs.  
8 Bleicher. It had a cover page identifying it as a testimony  
9 of Drs. Davis and Harward. And when Mr. Engelhardt introduced  
10 it yesterday it was without the cover page and attached to  
11 that cover page was the document by Drs. Davis and Kahn, and  
12 identified as Staff Exhibit 9.

13 MRS. BLEICHER: Are you referring to the document  
14 that we have, which has no cover page, entitled "A Critical  
15 Review of Infant Mortality in Nuclear Power Generation" by  
16 A. K. Davis and Bernd Kahn?

17 MR. ENGELHARDT: That is Staff Exhibit 9.

18 MRS. BLEICHER: What kind of testimony did Mr.  
19 Harward give, where is his testimony?

20 MR. CHARNOFF: The document that has now been  
21 identified is exactly the same document, but apparently that  
22 testimony was given by Messrs. Davis and Harward before the  
23 State of Illinois Pollution Control Board in December. That  
24 paper was their testimony.

25 MRS. BLEICHER: I see.

1 Mr. Harward adopted the paper as his own testimony.

2 MR. CHARNOFF: Apparently so, yes.

3 MRS. BLEICHER: The question was asked to Dr.  
4 Goldman concerning that paper and the testimony that was  
5 given of whether they, Davis and Harward have found, that  
6 there was no basis for Dr. Sternglass' allegation regarding  
7 a possible relationship between the Dresden gaseous releases  
8 and infant mortality in Illinois.

9 CHAIRMAN SKALLERUP: Can you give us a page  
10 reference in the transcript?

11 MRS. BLEICHER: There are no page numbers on the  
12 copy that I received.

13 MR. CHARNOFF: I will locate it in the transcript.

14 MRS. BLEICHER: The only materials I had in  
15 preparing this was the prepared testimony.

16 MR. CHARNOFF: Page 1690.

17 FURTHER CROSS-EXAMINATION

18 BY MRS. BLEICHER:

19 Q In answering that question Dr. Goldman reported  
20 on the testimony of Davis and Harward to the effect that they  
21 had decided that Sternglass' analysis did not support his  
22 contention that an association exists between exposure to  
23 the radioactive emissions from Dresden and infant mortality.  
24 Then Dr. Goldman went on to say that in contrast the data  
25 cannot be interpreted to mean that no effects were produced

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1 by the radiation exposure.

2 Does this mean, Dr. Goldman, that although  
3 the study done by Davis and Harward first concludes that  
4 Sternglass' study does not support this contention, they  
5 then go on to conclude that the data does not indicate  
6 that his contention is not possible?

7 A (Dr. Morton Goldman) This is their conclusion.

8 Q In other words, it is possible that the data  
9 could be interpreted to mean that there were effects produced  
10 by radiation exposure?

11 A No, that is not correct. They stated, and I  
12 will repeat again from their testimony, and I quote: "In  
13 contrast, the data cannot be interpreted to mean that no  
14 effects were produced by the radiation exposure." That is  
15 the end of the quote.

16 The inverse of that statement is not necessarily  
17 true.

18 The next sentence of the summary, which is in my  
19 prepared rebuttal, states, "However, if radiation from the  
20 Dresden reactor contributes to infant mortality or respiratory  
21 deaths in Illinois or Chicag, it has not been demonstrated  
22 by this study."

23 MR. CHARNOFF: May I point out -- pardon me,  
24 Mrs. Bleicher -- that the transcript indicates that  
25 Chairman Skallerup indicated that the words "can not" should

1 be underlined or had been underlined in the original? That  
2 is a transcription error. That statement was made by  
3 Dr. Goldman interpolating in the middle of the quotation.

4 CHAIRMAN SKALLERUP: So we scratch out "Skallerup"?

5 MR. CHARNOFF: Yes. And I won't say what we  
6 insert.

7 MRS. BLEICHER: In other words, Dr. Goldman  
8 stated that the data cannot be interpreted to mean that  
9 no effects were produced by the radiation exposure.

10 MR. CHARNOFF: No. Dr. Goldman was quoting, and  
11 he was simply stating as he continued with the quote that  
12 in the document prepared by Kahn and Davis that the words  
13 "can not" were underscored. My correction to the transcript  
14 was simply to state that that was not an original contribution  
15 by Chairman Skallerup.

16 Do you have a copy of this transcript?

17 I believe I provided one to you.

18 MRS. BLEICHER: No, I don't believe I do.

19 MR. CHARNOFF: (Handing to Mrs. Bleicher.)

20 BY MRS. BLEICHER:

21 Q Would you interpret, Dr. Goldman, would you interpret  
22 this statement by Davis and Harward to mean that the evidence  
23 is inconclusive on the relationship of radioactive emissions  
24 from Dresden and infant mortality?

25 A In terms of a positive finding of association

1 between the emissions from Dresden and infant mortality,  
2 there is no such finding made. What they are stating is  
3 that they cannot prove the negative with the data that is  
4 available.

5 Q In other words, they can't prove that there was  
6 no association between the Dresden emissions --

7 A They did not intend to, but they are leaving that  
8 qualification in their conclusion.

9 Q In the NCRP report which was released on January  
10 15, 1971, did the NCRP recommend any change in the basic  
11 radiation protection standards as they apply to workers  
12 in plants?

13 A Yes, there were several changes that were made.  
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CHAIRMAN SKALLERUP: Mr. Engelhardt, can you help me on this?

MR. ENGELHARDT: Yes, sir.

CHAIRMAN SKALLERUP: Do we have two Exhibit 8s, one being the evaluation and the other being this NCRP report?

MR. ENGELHARDT: We have Applicant's Exhibit 8, the NCRP report, and we have a Staff Exhibit 3, which is Mrs. Tompkins' study, the green-covered document.

CHAIRMAN SKALLERUP: Thank you.

BY MRS. BLEICHER:

Q Dr. Goldman, do you believe that the radiation protection standards in 10 CFR Part 20 are consistent with the NCRP reports?

A With the NCRP --

Q The most recent NCRP report.

A I would be surprised that any government agency could move quite that fast. No, they are at the moment in definite disagreement with these most recent recommendations. I might clarify to some extent.

They are in agreement with respect to one of the changes introduced in this report and that is with respect to the thyroid dose. The recommendations of the Federal Radiation Council about 10 years ago incorporated a dose recommendation for the thyroid of 15 rems, which is now the current recommendation of the NCRP.

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So that although the NCRP may have reduced its prior recommendation by a factor of two, the Federal Radiation Council has been there for ten years.

Q In your testimony you seem to indicate some question about the ability of Dr. Tamplin to read and you referred to Dr. Tamplin's analysis of ICRP Publication 14.

As you know, we are of very limited means, we were unable to ask Dr. Tamplin to come back to study the rebuttal testimony concerning his direct testimony. And I realize that this testimony was presented on behalf of the Board, but I think for purposes of clarification and to do justice to Dr. Tamplin, it would be in order for certain of Dr. Tamplin's published reports directly related to the rebuttal to his position to be introduced into evidence at this time.

We have certain of these reports. One specifically concerning ICRP Publication 14 versus the Gofman-Tamplin report, which appeared in published form in the hearings before the Joint Committee on Atomic Energy, Part 2, Volume 2.

And we would at this time like to introduce a copy of that report into evidence, have it marked for identification and introduced.

MR. CHARNOFF: I would object to that, Mr. Chairman. There has been no foundation laid for that document.

MRS. BLEICHER: The document relates directly to both the direct testimony of Dr. Tamplin and also to the

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1 analysis by your own witness, Dr. Goldman.

2 MR. CHARNOFF: Dr. Tamplin is not here for cross-  
3 examination, sir.

4 MRS. BLEICHER: That is correct. Dr. Tamplin is  
5 not here. Actually we wouldn't have been the appropriate  
6 party to call him anyway, because the Board should have called  
7 him if it was to enable him to examine the rebuttal of his  
8 position.

9 And I think that since he is not here personally,  
10 his reports, in which he has done that very thing should be  
11 entered into evidence.

12 MR. ENGELHARDT: Mr. Chairman, may I also comment  
13 with regard to this proposal? I would agree with Mr. Charnoff  
14 and object to the offer. I think the Board should also take  
15 into consideration that as I recall the Intervenor LIFE closed  
16 their case as far as their direct case was concerned and while  
17 they are offering this document at the close of rebuttal  
18 testimony, it gives nobody any opportunity, if it were accepted,  
19 to do anything with this document.

20 But nevertheless, it would lay in the record and  
21 I think this procedure would result in inequities and unfair-  
22 ness with regard to the ability of the parties to the proceeding  
23 to test any of that material which might be contained in  
24 Dr. Tamplin's reports.

25 CHAIRMAN SKALLERUP: The Board will go off the

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1 record.

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(Discussion off the record.)

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CHAIRMAN SKALLERUP: The Board would like to call  
4 a conference.

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(Bench conference.)

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CHAIRMAN SKALLERUP: We have had a conference  
7 regarding the offer in evidence of a statement of Dr. Tamplin  
8 which appears in the hearings of the Joint Congressional  
9 Committee on Atomic Energy. And after hearing the arguments  
10 of the parties, the Board rules that the document should  
11 not be received in evidence. This ruling is consistent with  
12 a ruling we made earlier in the proceeding regarding an offer-  
13 ing on the part of the Applicant to include comparable informa-  
14 tion in the same source and in that instance the information  
15 was not included as evidence.

16

MRS. BLEICHER: That concludes our cross-examination  
17 of Dr. Goldman.

18

CHAIRMAN SKALLERUP: Who is your next witness?

19

MRS. BLEICHER: We don't have any other witnesses  
20 for cross-examination.

21

CHAIRMAN SKALLERUP: Are you finished with cross-  
22 examination?

23

MRS. BLEICHER: Yes. I would like to clarify one  
24 matter. LIFE had five exhibits which were presented at  
25 previous sessions. I would just like to clarify whether these

ln5 1 were accepted into evidence.

2 CHAIRMAN SKALLERUP: That would be in the transcript  
3 of 28 January, wouldn't it?

4 MRS. BLEICHER: They would have been introduced on  
5 the day that Dr. Sternglass was here.

6 CHAIRMAN SKALLERUP: Transcript 1339 and 1340 and  
7 1463 indicates they were received in evidence.

8 MRS. BLEICHER: Thank you.

9 CHAIRMAN SKALLERUP: Five exhibits.

10 MRS. BLEICHER: I would like to request a meeting  
11 with the Board.

12 (Bench conference.)

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CHAIRMAN SKALLERUP: On the record.

2 MRS. BLEICHER: Mr. Chairman, I would like to move  
3 that the findings of fact, conclusions of law and briefs and  
4 proposed form of order or decision be handled on a timetable  
5 in accordance with 10 CFR 2.754(a), actually 2.754(a) through  
6 (c). I think on a previous occasion the Board stated that  
7 there would be a timetable quite different from that and after  
8 being at these hearings and realizing the full scope of what  
9 is going to have to be done in connection with preparing these  
10 matters, I think that we should be able to have the full amount  
11 of time to prepare these in order to do a good job on them and  
12 in order to cover all of the points.

13 I also think that the NEPA issue can be briefed  
14 and submitted at the same time as the proof on -- now, I am  
15 speaking with respect to us -- at the same time as the brief  
16 on our Part 20 challenge. And in connection with this motion,  
17 I would also like to move for a ruling by the Board on the  
18 burden of proof on both issues that LIFE has raised here.

19 CHAIRMAN SKALLERUP: Have counsel had an opportunity  
20 to review the regulations and the transcript page 629?

21 MR. CHARNOFF: Yes, sir.

22 CHAIRMAN SKALLERUP: Any comment with respect to  
23 Mrs. Bleicher's motion?

24 MR. CHARNOFF: Shall we discuss the two points  
25 separately, sir, first the schedule and then separately the

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1 burden of proof?

2 Well, I can adress myself to both of them.

3 CHAIRMAN SKALLERUP: Maybe we should discuss the  
4 burden of proof first.

5 Since the burden of proof determines who files  
6 first.

7 MR. CHARNOFF: May I have another two minutes on  
8 this burden of proof?

9 I am prepared. First addressing myself to the  
10 burden of proof issue, certainly the burden of proof in licensing  
11 proceedings is typically on the Applicant, and we accepted  
12 that burden of proof. The burden of proof on the Applicants  
13 is to demonstrate that the plant will meet applicable Commission  
14 regulations.

15 We believe we have that burden, we believe we have  
16 satisfied that burden. In this hearing we have somewhat of an  
17 unusual issue with regard to the validity of two Commission's  
18 regulations, one being Part 20 and the other being Appendix D  
19 to Part 50.

20 As to the conformance with the regulations, as I  
21 have indicated, the burden of proof is on the Applicant. The  
22 Intervenor, however, is alleging the invalidity of two  
23 Commission's regulations, Part 20 and Appendix D.

24 As to that allegation, it seems to me the burden  
25 of proof must be on the party making that allegation. To make

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1 the issue even starker, it would be impossible for us to accept  
2 the burden of proof and to go forward first with the defense  
3 of 10 CFR Part 50, Appendix D, not even having seen or heard  
4 any of the arguments by the Intervenor.

5 And I think clearly the same thing would apply to  
6 defense of the validity of 10 CFR Part 20. In my view, while  
7 we have the burden of proof on plant conformance with the  
8 regulations, the Intervenor LIFE has the burden of proof with  
9 regard to the validity or invalidity of Part 20 and Appendix D.

10 With respect to the motion to adjust the schedules  
11 for the filing of proposed findings and briefs, let me say that  
12 here we are in February, delayed, I would submit for the  
13 consideration of the Board, delayed until now because LIFE had  
14 indicated that it was going to bring forth a number of witnesses.

15 LIFE, on January 20th, was to provide the Board and  
16 the parties with a list of its witnesses and an adequate  
17 summary or complete presentation of the testimony of such wit-  
18 nesses. This was to facilitate the hearing beginning January  
19 25th, which was then according to the Board to continue until  
20 conclusion.

21 LIFE failed to comply with that Board order. The  
22 Staff accordingly asked for additional time so that it might  
23 prepare rebuttal and cross-examination of the LIFE witnesses.  
24 LIFE on February 1st, I believe it was, on Monday, was to  
25 provide again a list of its witnesses, and it had indicated at



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1 the end of the hearing the week of the 25th that we could  
2 expect to see witnesses from out of state numbering about a  
3 half dozen, as I remember it.

4 On the basis of that, the Staff asking adequate  
5 time to prepare both rebuttal and cross-examination, was  
6 accorded a week's delay in the hearing again until the  
7 beginning of this week.

8 LIFE's direct witnesses that were promised in the  
9 number of six were reduced to two in the document handed to us  
10 on Monday the 1st. Those two were not here this week and we  
11 found that we in effect consumed the week in good part in  
12 vain.

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1                   This hearing has been prolonged on a number of  
2 occasions, gentlemen, in due deference to LIFE and to some  
3 of the other Intervenor, but principally to LIFE.

4                   Now Section 2.754 provides a guideline for  
5 setting schedules for proposed findings and conclusions  
6 and allows that guideline to be of greater or lesser amount  
7 of time as may be allowed by the Presiding Officer.

8                   We, at a conference on January 5, attended by  
9 all of the parties to this hearing, established a schedule  
10 for posthearing pleadings, if you will, and it was in the  
11 context, as you will remember, that the Board was deferring  
12 the hearing or announced plans to defer the hearing to the  
13 week of January 25 to allow further time for LIFE and Mr.  
14 Lau to prepare their case and in that context the Board had  
15 said that they were going to adjourn until the 25th, and we  
16 had discussed in that same conference the question of  
17 filings of proposed findings by the parties and briefs by the  
18 parties, and the schedule was set forth appearing on page 629.  
19 That schedule calls for filings by ourselves on findings 10  
20 days after the hearing, filing at the same time by Intervenor-  
21 LIFE and perhaps Mr. Lau will have briefs on the NEPA  
22 question and then 10 days thereafter or 20 days after the  
23 hearing is completed, filing of reply findings by LIFE and  
24 filing of reply briefs by the Applicant.

25                   The Staff, I would submit, is in the same category

1 as LIFE in that situation, that they would have until the  
2 20th day to file their findings of fact. We have had a  
3 number of schedules agreed upon from time to time for a  
4 variety of reasons in this hearing and for a variety of  
5 reasons these schedules have been adjusted, usually to our  
6 detriment, or always to our detriment.

7 I would submit that the Board has to weigh and  
8 balance a number of public interests: The interests of the  
9 intervenors, the interests of the parties, the interests of  
10 the public, however they may be defined. They include the  
11 interests of the public in safety first and foremost and  
12 they certainly include the interest of the public in the  
13 availability of power production on a reliable schedule.

14 That schedule has been substantially disrupted by  
15 the prolongation of this hearing, due to an intervenor who  
16 has not complied with prior schedules and on the basis of  
17 whose assertions as to what their case might be have caused  
18 disruptions in the schedule.

19 I would submit to you, Mr. Chairman, that it is  
20 essential that we adhere to schedules once set. The schedules  
21 that are set here are quite reasonable, the work has to be  
22 done, and I would strongly object to any change in the  
23 schedule as set forth on pages 629 and 630.

24 MR. ENGELHARDT: Mr. Chairman, with regard to the  
25 burden of proof question, I think in my view at least it

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1 is quite clear that there are two burdens to be shared in  
2 this particular proceeding. The Applicant has the burden of  
3 proving the adequacy of this facility as it is described  
4 in its application for a license. This is clear and I  
5 don't think there is any question with respect to that matter.

6 With regard to the issues raised by Intervenor  
7 LIFE as to the validity of the Commissioner's regulations under  
8 10 CFR Part 20, I think it is quite clear in my view that  
9 the challenger must bear the burden of going forward with  
10 regard to that matter.

11 The AEC Regulatory Staff of the Commission has  
12 applied the provisions of 10 CFR Part 20 and promulgated the  
13 provisions of 10 CFR Part 20 in a legal and valid way.

14 The challenger here to these regulations would  
15 claim otherwise and would claim that the implementation of  
16 Part 20 is invalid.

17 It is clear to me that such an allegation in the  
18 contest of a regulation requires the burden clearly to  
19 rest on the challenger. Otherwise there would be an  
20 implication that -- well, not an implication, there would  
21 be this problem of the Commission having to prove its case  
22 before we knew what the contentions of the Intervenor  
23 might be.

24 So with regard to the question of burden, I  
25 think it is very clear in our view at least that the Applicant

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1 has the burden of showing that the application for this  
2 construction permit is sufficient to warrant the issuance  
3 of a construction permit, and that the Intervenor LIFE  
4 has the burden of proving its contention and bearing the  
5 burden of proof with regard to the adequacy, the validity of  
6 the Commission's regulations in 10 CFR Part 20.

7 I think that a fair reading of the Calvert Cliffs  
8 memorandum of the Commission leads one to know other  
9 conclusion than that.

10 Now with respect to the question of the preparation  
11 of proposed findings and conclusions, it appears to me,  
12 Mr. Chairman, that this proceeding has been conducted for some  
13 time now, actually beginning in December, and that Intervenor  
14 LIFE was well aware, as has been indicated, that the schedule  
15 would be established allowing certain times for the preparation  
16 of proposed findings and briefs.

17 It would appear prudent, knowing that schedule,  
18 that counsel for the Intervenor or the Intervenors themselves,  
19 knowing this schedule, would have begun such preparation as  
20 could be done certainly in the preparation of necessary  
21 briefs long before today when we are approaching the  
22 conclusion of this hearing. And it seems to me that the  
23 time schedule which we have established was agreed upon by  
24 all of the parties at the time it was set and that the  
25 parties must be presumed to know what their commitments are,

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1 and to make advance preparations for them and not at the very  
2 last moment prior to the conclusion of the hearing to shift  
3 these procedures and to extend or to attempt to extend the  
4 time that has been agreed upon by all.

5 The Staff would encourage that the Board retain  
6 the schedule which has been established and agreed to by  
7 all of the parties with regard to the filing of briefs and  
8 the filing of proposed findings.

9 CHAIRMAN SKALLERUP: Mrs. Bleicher, would you care  
10 to reply?

11 MRS. BLEICHER: I would take issue with the state-  
12 ment that counsel for the Intervenors have agreed to the  
13 schedule. Because the schedule naturally, the adequacy of  
14 the schedule naturally depends upon the burden of proof  
15 and where that lies. We have never discussed that until  
16 today.

17 Furthermore, as originally stated, it was my  
18 impression that the 10-day requirement was for filing a  
19 brief on the NEPA issue. Of course I had no idea that this  
20 was also going to be 10 days for all other issues and for  
21 the findings of fact and conclusions of law and proposed  
22 form of order.

23 Furthermore, I will admit that at the time the  
24 discussion was held I was not aware that Section 2.754 set  
25 up guidelines which were broader than those which were

1 established by the Board. It may be that at the time the  
2 Board originally set its 10-day requirement the Board  
3 was not aware of the scope of the arguments that would  
4 be involved here.

5 So I think that it might be relevant here for the  
6 Board to review its former statement with respect to  
7 limiting, in fact cutting in half the time that is set up  
8 as a guideline in the regulations.

9 And then I would also like to know with respect  
10 to reply briefs whether the 10 days suggested here in the  
11 regulations applies, or whether that will also be cut in  
12 half, to five days.

13 I am simply stating I think it is a very  
14 difficult matter to adequately handle these issues, especially  
15 both of them, in that period of time. However, the Board  
16 can review these arguments and make its determination.

17 CHAIRMAN SKALLERUP: We will take a 10-minute  
18 recess.

End #18

19 (Recess.)  
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CHAIRMAN SKALLERUP: Mrs. Bleicher, the Board holds that you have the burden of proof with respect to the environmental problem and with respect to Part 20.

With respect to the dates for filing, the Board will make that determination after the rules on Mr. Lau's motion for the three-week delay which it would expect to do tonight.

MRS. BLEICHER: As I will not be able to be present at the session of the hearings this evening, when you will be discussing Mr. Lau's motion, I would like to state on the record that I heartily support Mr. Lau's motion, particularly in view of the fact that the man seems to be extremely ill, and has not had an opportunity to complete his case and the man would like to, since it is a matter very vital to him and his community.

Therefore, I would support and speak in favor of his motion. May I inquire of the Board in what manner we will be notified of the Board's ruling this evening? And how soon?

Because a day lost will make a great deal of difference.

MR. CHARNOFF: I would echo Mrs. Bleicher's remark that a day lost would make a lot of difference.

CHAIRMAN SKALLERUP: I would agree and I would assume you would start right away. What I will do after we make it, ask a party to notify you.



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MRS. BLEICHER: Fine.

CHAIRMAN SKALLERUP: Inasmuch as it is this evening, would you like to be notified at home?

MRS. BLEICHER: Yes, thank you.

MR. ENGELHARDT: I see who you are looking at.

CHAIRMAN SKALLERUP: I will ask Mr. Engelhardt if you would kindly notify you of the Board's ruling.

MRS. BLEICHER: Thank you.

CHAIRMAN SKALLERUP: Any further matters this afternoon?

(No response.)

CHAIRMAN SKALLERUP: We will convene at 7:00 at St. John's Lutheran Church.

(Whereupon, at 4:05 p.m., the hearing was adjourned, to reconvene at 7:00 p.m., this same day.)

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EVENING SESSION

(7:00 p.m.)

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CHAIRMAN SKALLERUP: Will the hearing please  
come to order?

We are having this evening session to provide  
Mr. Lau with an opportunity to present witnesses in support  
of his contention in the case.

Are you ready to proceed, Mr. Lau?

MR. LAU: Yes.

One of my main witnesses is not here yet. He  
had a doctor's appointment and evidently he has been delayed  
somewhat.

Before we get started I would first like to  
ask the Board if they have ruled on my request.

CHAIRMAN SKALLERUP: We have not and we will wait  
until you present your witnesses.

MR. LAU: Is there a reason for that?

CHAIRMAN SKALLERUP: Yes. We want to hear your  
case.

MR. LAU: At this time then I would like to make  
a motion.

The motion is that I move that Mr. Roe from the  
Toledo Edison be disqualified from this hearing because  
of testimony given that was not only misleading, but an  
outright lie.

1 Mr. Roe made the statement --

2 I am sorry, I can't read this. I will refer it  
3 to my wife.

4 CHAIRMAN SKALLERUP: Mr. Lau, are you appearing  
5 as a witness?

6 MR. LAU: Is she appearing as a witness?

7 CHAIRMAN SKALLERUP: No, are you giving testimony  
8 regarding Mr. Roe?

9 MR. LAU: Am I appearing as a witness? No,  
10 I am appearing as an Intervenor and I have a motion before  
11 the board. If you would like me to explain the motion, I  
12 would be glad to.

13 CHAIRMAN SKALLERUP: It sounded to me as though  
14 you were going to present evidence.

15 MR. LAU: Yes, I would consider this to be  
16 evidence if such. It is not -- it is an Intervenor, as  
17 a party, rather than testifying, because of my motion. I  
18 am trying to explain the motion. If I am out of order --

19 CHAIRMAN SKALLERUP: No, feel free to explain the  
20 motion. But if you propose to give evidence, we will  
21 swear you.

22 MR. LAU: We are just going to read from the  
23 transcript. It is nothing additional.

24 MRS. LAU: I am reading from page 1649 and I  
25 think starting on line 10.

1                   It states: "The Ottawa County engineer has  
2 stated that it is feasible to evacuate the Sand Beach and  
3 Long Beach areas within the low population zone under any  
4 weather conditions within a two-hour period."

5                   He has further stated that: "There is sufficient  
6 equipment now available in Ottawa County to assure that  
7 this be accomplished.

8                   "The County has a fleet of five trucks, equipped  
9 with snow blades, that are capable of removing snowdrifts  
10 over 12 feet in height. These trucks are maintained at a  
11 location five miles south of the station.

12                   "The State Highway Department presently has a  
13 fleet of five trucks, equipped with snow blades that are  
14 located in Oak Harbor. All trucks both county and state are  
15 radio equipped. Additional equipment is available within the  
16 area that could also be used for snow emergencies if required.

17                   "All fire departments within Ottawa County have  
18 both available for emergencies and there are two amphibious  
19 vehicles presently available in the county.

20                   "The Coast Guard station at Marblehead also has  
21 boats mounted on trailers for emergency use. The State  
22 Division of Wildlife has boats located at Crane Creek,  
23 a few miles west of the station, that are available for  
24 emergencies.

25                   "From our investigation and planning in this

1 regard, we have ascertained that a completely adequate  
2 evacuation program can and will be developed and maintained  
3 and that adequate equipment is now available in this area  
4 for this purpose."

5 That is read to page 1650, line 11.

6 MR. LAU: Now I guess I would like my wife sworn  
7 in as a witness.

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8 Whereupon,

9 CAROL LAU

10 was called as a witness on behalf of Intervenor Lau and,  
11 having been first duly sworn, was examined and testified as  
12 follows:

13 DIRECT EXAMINATION

14 BY MR. LAU:

15 Q Mrs. Lau, I would like to ask you a question.

16 It states here the Ottawa County engineers, the  
17 Ottawa County engineer stated that he, according to Mr.  
18 Roe, could evacuate the site in a two-hour period. You  
19 have had conversations with the Ottawa County engineer.  
20 Would you please describe them?

21 A I talked with Mr. Hobson yesterday afternoon and  
22 I read him the two paragraphs concerning what he was  
23 supposed to have said and he said that is not true. He said  
24 that in the first place the snow plow could not break through  
25 a snowdrift 12 feet in height. He said they do have a

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1 grader with a snow plow that can be used for this type of  
2 snow removal.

3 He also said he had told them it would probably  
4 take four to six hours before evacuation could be done within  
5 this radius.

6 Now we talked particularly about the Sand  
7 Beach area and he said of course if there was a snowstorm  
8 the equipment would already be out, so, therefore, they  
9 would have to get a hold of everybody and get them over there  
10 and that itself may take 45 minues. And he also said,  
11 posing questions, that, in a hypothetical question, that  
12 perhaps even though he ordered all of the men out there,  
13 that did not mean that everybody would go.

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1 MR. CHARNOFF: Mr. Chairman, we have asked  
2 Mr. Papcun to be available to come as a witness here tomorrow  
3 at two o'clock in the afternoon.

4 CHAIRMAN SKALLERUP: Is that the same gentleman  
5 Mr. Lau referred to?

6 MR. CHARNOFF: Yes, sir, the county engineer.  
7 It seems to me the appropriate thing would be to have  
8 Mr. Papcun here as a witness and to discuss with him just  
9 what it is he said and what his views are on the feasibility  
10 of evacuating persons within the area concerned.

11 Mr. Roe is a witness for the Applicant and it is  
12 not necessary for you to move that he be disqualified from  
13 the proceeding.

14 If you provide evidence bearing on any testimony  
15 that he provided, which is adverse to the testimony he  
16 provided, it is up to the Board to decide which testimony  
17 it will believe.

18 MR. LAU: I am not proper in making this motion  
19 then, is that right?

20 CHAIRMAN SKALLERUP: You don't need to make  
21 the motion. It is an evidentiary matter and one that the  
22 Board will have to make a conclusion about when it hears  
23 the conflicting evidence, if there is conflicting evidence  
24 and you have provided conflicting evidence.

25 MR. LAU: I would like to turn this over to my

1 wife now to go on and explain the rest of it, because there  
2 are other people involved. And I think that if Mr. Papcun  
3 has been called in, perhaps the other responsible people  
4 that have to do with this rescue should also be called in.

5 So I would like to ask her to go over the statement  
6 that she read and with the people she talked to, their  
7 comments on this.

8 CHAIRMAN SKALLERUP: Just to clear the record,  
9 we did deny your motion to disqualify Mr. Roe. But we  
10 will consider the evidence that you provide and determine  
11 just what facts we believe are credible.

12 MR. LAU: May I ask the Board at this time, not  
13 being an attorney, I think a lot of people can make mistakes,  
14 I think the attorney for the Applicant made statements that  
15 I was trying to mislead the truth to some extent, and I  
16 think even I could do that. However, I have not intentionally  
17 tried to do it at any time in this trial. I think in the  
18 case of the Applicant, where this is a life and death  
19 situation in a certain case that we are talking about, in  
20 this hypothetical accident, that if it is found he has tried  
21 to mislead the Board, I think this action should be taken.

22 I had a talk with Mr. Papcun and he did not state it.  
23 He just did not.

24 CHAIRMAN SKALLERUP: We will hear Mr. Papcun.  
25 How is that spelled?



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MR. LAU: P-a-p-c-u-n.

CHAIRMAN SKALLERUP: We will hear him tomorrow at what time?

MR. CHARNOFF: I understand he is available to testify at 2 o'clock tomorrow afternoon, sir.

CHAIRMAN SKALLERUP: Fine.

MRS. LAU: Concerning the county fleet of five trucks, I had talked with Merlin Budd at the Ottawa County Highway Garage, and he said that they do have some snow plows, but he also said that he was under Mr. Papcun, who is the county engineer and it would be up to him as to how they could use their equipment.

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1 I also talked with, coming to the State Highway  
2 Department, on page 1649, Line 20, talking about the equipment  
3 that they have, I talked with Galine Moritz who is the Acting  
4 Superintendent there of the State Highway Garage, and I talked  
5 with him yesterday and today to make sure that I had my facts  
6 correct.

7 He said that they can handle some snow drifts up to  
8 about three feet, depending on the weather conditions. There  
9 are times when snowstorms get out of hand and they can't  
10 handle the snow. And he says I can't guaranty you we can  
11 keep the roads open. He said Mr. Fox had called him and asked  
12 him about the snow and ice on the roads and about drifting  
13 conditions in the area, and he was also asked about problems  
14 on State Route 2. He was asked if they would go off the state  
15 routes and he said occasionally if someone is ill or in  
16 emergency this can be done, but this is not in their rules  
17 and regulations.

18 And he said there was no mention of their being  
19 asked if they could help evacuate anybody in case of an  
20 emergency concerning the reactor site. And he said they do  
21 have eight or nine trucks, which are kept in Oak Harbor and  
22 they have three by the Bay Bridge.

23 Concerning the Coast Guard Station at Marblehead,  
24 I talked with -- the Coast Guard Station at Marblehead is the  
25 closest station we have to this point of the reactor site.

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2           There I talked to the Commanding Officer, his name  
3 is David Martin, and he said no one had called his office, no  
4 one had talked to anybody there. He said they do have 17-foot  
5 boats and trailers and it states in here that they have boats  
6 mounted on trailers for emergency use. He said these boats  
7 are mounted on trailers, because this is the way they are  
8 stored in the wintertime.

9           During the summertime these boats are always in the  
10 water. Talking about, on page 1650, Line 4, down to 6, the  
11 State Division of Wildlife has boats located at Crane Creek,  
12 a few miles west of the station that are available for emer-  
13 gencies, I talked with Carl Bedmark, I talked with the  
14 secretary there, and I also took precautions to call the  
15 Crane Creek State Park and talked with a Mr. Langdon. They  
16 said that nobody there had contacted anyone there concerning  
17 the boats available.

18           They do have some boats available, as a matter of  
19 fact they have about 28 12-foot metal rowboats. There are  
20 no brackets for moulders. There are no trailers for any of  
21 the boats that are there. They do have 16 new 12 or 14  
22 fiberglass rowboats, but it takes four men to pick these boats  
23 up and put them into the water.

24           All of these boats are stored right near the dock,  
25 they are at the wildlife station, and they have no other means  
of transferring them except a pickup truck which can hold

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possibly two rowboats.

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Mr. Bednark stated that there really is no one there that could help in this situation. There are approximately three people employed, one is a secretary, Mr. Van Camp and himself, and, of course, if -- there is another person, he said, which may be out of town at the time, Mr. Van Camp, it could be his day off and he said during the nighttime he is the only one there and they would have nobody there to help come and evacuate.

He further stated that even if he was ordered to do so, that he would not come down there in a situation where there was radiation and people had to be evacuated, because if it came to the purpose of his life or coming to the rescue, that he would flee and not come, even if he was ordered to do so.

I might state the men at the State Highway Garage also said to me when I posed this question to him, he said that he might ask his men to come, but he certainly wouldn't guaranty that anyone would be out there.

MR. LAU: I have further testimony to be given by Mrs. Lau, that deals with the area of our home and our being snowed in. If it would be proper at this time we could just have her continue or how do you intend to handle the cross-examination on this?

CHAIRMAN SKALLERUP: After you have finished with

ln4 1 your witnesses, with all of the witnesses, we will ask the  
2 Applicant to cross-examine.

3 MR. LAU: Fine. Could I call on her later, or  
4 should we have her continue?

5 CHAIRMAN SKALLERUP: Anyway you would like to  
6 organize your case is up to you.

7 MR. LAU: All right. Is there somewhere I could  
8 hang this map so we can offer it as an exhibit?

9 Now I am not sure, Mr. Chairman, if that is  
10 Exhibit A or -- there may have been other exhibits.

11 CHAIRMAN SKALLERUP: It is your first exhibit. So  
12 it is Lau Exhibit 1 for identification.

13 (The document referred to was  
14 marked Lau Exhibit 1 for  
15 identification.)

XXXXX 16 MR. CHARNOFF: Mr. Chairman, could we have  
17 Mr. Lau identify what that is a map of?

18 MR. LAU: Yes. It is a map of Carroll Township and  
19 in that area is the low population zone that we are concerned  
20 about. It contains Locust Point, Sand Leach, Long Beach.

21 First I would like to call Mr. Tom Gibbs to the  
22 stand to be sworn in, please.

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1 Whereupon,

2 TOM GIBBS

3 was called as a witness on behalf of Intervenor Lau and,  
4 having been first duly sworn, was examined and testified as  
5 follows:

6 DIRECT EXAMINATION

7 BY MR. LAU:

8 Q I first would like to have you --

9 CHAIRMAN SKALLERUP: Please have Mr. Gibbs identify  
10 himself, his name, address, occupation.

11 THE WITNESS: My name is Tom Gibbs, I am a guidance  
12 counselor, Oak Harbor High School. I am a resident of Long  
13 Beach.

14 MR. LAU: Would you care for Mr. Gibbs to point that  
15 out on the map.

16 CHAIRMAN SKALLERUP: If you would like to have it  
17 pointed out, go ahead.

18 BY MR. LAU:

19 Q Tom, would you explain in your own words the  
20 problems that sometimes happen during some adverse conditions,  
21 snowstorms, in the area particularly around your home?

22 A I have been a resident of the area, I have had the  
23 place where I live now for approximately 17 years. I think  
24 I have seen every variety of weather possible. On the average  
25 of once every year we are snowed in, and by this I mean we do

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1 not have access even to the main highway. At one period we  
2 were snowed in or iced in, shall I call it, in an ice storm  
3 for a period of three days without electricity and without  
4 any access to the outside world.

5 CHAIRMAN SKALLERUP: Could I interrupt you. How  
6 far is your residence from the plant site?

7 THE WITNESS: Just a little less than two miles,  
8 I understand.

9 MR. LAU: I may interrupt, because there is some-  
10 thing that should be clarified. From the plant site or from  
11 the reactor?

12 CHAIRMAN SKALLERUP: That was my next question.  
13 Not quite that, but is the weather you are speaking of at the  
14 plant site or at your home?

15 THE WITNESS: This would be at and around my home.

16 MR. LAU: My point was that, and I still have not  
17 been able to determine, in all of my reading I have done in  
18 the past, does the two miles start at the edge of the exclusion  
19 zone and go out, or does it start from the reactor and go  
20 out?

21 MR. CHARNOFF: The answer to that is from the  
22 reactor, sir.

23 MR. LAU: Fine. That is the way this has all been  
24 measured.

25 THE WITNESS: As I said, we were without our phone,

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our lights, and everything for a period of three days.

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Several times we have been snowed in for a day at a time,

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things like that.

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1                   There have been times when I couldn't even get  
2 out of my own driveway. At times this has bothered me,  
3 and I have consulted with some of the local officials. And  
4 they say that they will not enter on the roads where we  
5 live because we are private property. Snow plows -- I have  
6 seen them on the county roads. And I think two years ago  
7 they had one that came down and went through our road. It  
8 became stuck and another truck came and tried to pull it  
9 out. It became stuck and then after this there was a fellow  
10 with a small tractor who came down and pulled them both out.

11                   But this has occurred many times. And I feel  
12 concerned. And we are placed in a position, in the first  
13 place, if it is necessary to evacuate in two hours, I  
14 doubt very much whether it could be done. I haven't seen  
15 any evidence previous to this time that it could be done.

16                   BY MR. LAU:

17                   Q        Tom I would also like to ask you if you have every  
18 seen a snowstorn where you could get your car out but it  
19 would be too bad to drive on the highways?

20                   A        Oh, I have seen this many times.

21                   Q        What do you think causes this in that area?  
22 Maybe more so than other places.

23                   A        When you are speaking of snow, it is drifting.  
24 Oftentimes -- and I had this happen to me very embarrassingly --  
25 thinking it was a drift of snow and it turned out to be a drift

rms 2

1 of sand. This is how bad the drifting is in the area. There  
 2 is never a clear pattern of how the drifting will occur.  
 3 Our principal difficulty seems to be on storms from the north  
 4 and the northeast. And this creates, you know, a very  
 5 great problem as far as drifting.

6 Also with the maintenance of the roads it is  
 7 quite possible and it is probable and it is apparent on  
 8 the roads tonight that there are many spots that nothing has  
 9 been done as yet from the previous storm. This creates an  
 10 ice situation under drifting snow. As I said, this happens  
 11 at least once every winter, that we are snowed in.

12 Q Okay, Tom, I think that is all I have. Thank you.

13 MR. LAU: I would like to call Lawrence Brown  
 14 at this time.

15 Whereupon,

16 LAWRENCE BROWN

17 was called as a witness on behalf of Intervenor Lau and,  
 18 XXXXXXXXXXXX having been first duly sworn, was examined and testified  
 19 as follows:

20 DIRECT EXAMINATION

21 BY MR. LAU:

22 Q Mr. Brown, will you please identify yourself?

23 A My name is Lawrence Brown, and I live northeast of  
 24 Oak Harbor, Township Road 224, Carrol Township.

25 Q Mr. Brown, will you identify your residence in the

1 geographic position with the nuclear reactor that is pro-  
2 posed at the site?

3 A Do you mean --

4 Q What area you live in.

5 A It would be about north northwest.

6 Q How far?

7 A Just a little over a mile and a quarter. I have  
8 one of Edison's maps, and it depends on where you want to  
9 measure, approximately 7200 feet.

10 Q Are you familiar with the adverse snow conditions  
11 that occur in your area.

12 A I have seen many times through the years that I  
13 have lived there four and five-foot snow drifts. And I  
14 have been unable to use the road even to get out to the  
15 main highway in as high as 72 hours.

16 Q Mr. Brown, is this -- this is a county road you  
17 live on?

18 A This is a county road.

19 Q Do you know who is responsible for removing the  
20 snow from that road?

21 A The township trustees. I might add we have  
22 one storm plow, they have one snow plow that they are able  
23 to use. Now not too many years ago they did break an axle  
24 on one and we were snowbound for quite a while under  
25 extreme conditions.

rms 4

1

Q I might ask you have you ever been without other conveniences? Have you ever been without other conveniences? Have you ever been without electric or without your telephone during these periods?

2

3

4

5

A Yes. Not only snow storms, but ice storms, sleet storms and there has been no communication in that particular area where I live.

6

7

8

Q How many people would you say are in the same or similar conditions that you would be in during these storms, that live within say a half mile of your area?

9

10

11

A Are you talking about individuals.

12

13

Q How many families?

14

15

A Families?

16

Q Family homes?

17

A Roughly about a dozen.

18

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25

end 4

MR. LAU: That is all I have.

DB #5  
ty 1

1 MR. LAU: I would like to call Mr. Verb.

2 XXX

Whereupon,

3 STEVE VERB

4 was called as a witness on behalf Intervenor Lau and, having  
5 been first duly sworn, was examined and testified as follows:

6 DIRECT EXAMINATION

7 BY MR. LAU:

8 Q Mr. Verb, I would like to have you give your  
9 address and then go to the map and show with the yellow  
10 pencil the area that you live in if you will please, after  
11 you describe it.

12 A I am Steve Verb, Sand Beach, Plot 2.

13 Q Would you please show on Exhibit 1 where Plot  
14 2 is located? And while you are at it, if you will please,  
15 show the Sand Beach Road that is located down there, just  
16 run the marker over it.

17 A (Witness marking.)

18 Q Mr. Verb, approximately how far do you think you  
19 are from the reactor site?

20 A Actually from the reactor site, about less than  
21 a half mile, from actually the reactor.

22 Q I notice on there that you show you live almost  
23 to the end of the road. How far would it be down Sand Beach  
24 Road from where it begins on the turn there, where you  
25 get off the main road to your house?

1 A Up to the front end you mean?

2 Q The private road.

3 A It would be about, oh, close to a mile and a  
4 half. A mile and a half to mile and three quarters.

5 Q Is that considered a two-lane highway?

6 A Parts of it. Actually the back end of it, from  
7 plot 1, or from the end of plot -- yes, from Plot 1 to Plot  
8 2 it breaks down into actually a one lane. Normally it is  
9 one lane.

10 Q Now I would like you to describe this, evening,  
11 how you got here.

12 A Well, we got snowed in and walked out about a  
13 quarter mile and rode up with somebody else that had their  
14 car out. My car is presently sitting back there and I  
15 can't get out.

16 Q Would you consider that a bad snowstorm?

17 A No, not right now yet.

18 Q This came from the other night?

19 A From the other night, the wind turned around to  
20 the south, and the marsh area there along the road, the  
21 cattails are gone and it is just letting the snow come  
22 across and blowing it from the other way now.

23 Q Have you ever seen weather so bad that you  
24 couldn't see your hand in front of your face?

25 A Yes, I have. I have walked it from the front

1 end with a blanket on my face and the only way I could  
2 identify where I was going would be to look at the names on the  
3 mailboxes, because you couldn't see nothing.

4 Q I would like to have you describe in your own  
5 words some of the snowstorms that have hit back there, and  
6 maybe even dates, if you can remember and how long you were  
7 snowbound?

8 A I can't recall actually the dates, but I think  
9 in 1964 or '63 we had a bad one and we were probably snow-  
10 bound maybe two weeks and we asked help from everybody.  
11 At that time the Lucas County engineer, they couldn't do  
12 nothing, they bypassed us, and the Erie Depot was still in  
13 progress and we got the Colonel down there, the Commander.  
14 The only thing that could get us out, they came down with a  
15 snowplower, like they use in the mountains, and they dug  
16 us out. That was the only way we got out. But there was  
17 nothing around here that had any equipment, the county or  
18 nobody. They just passed you from one to the other, they  
19 said you call the other guy, call the sheriff, call your  
20 commissioner, call your township.

End #5

21

22

23

24

25

1 CHAIRMAN SKALLERUP: Who owned the snow blower?

2 THE WITNESS: The Army did.

3 BY MR. LAU:

4 Q Is that snow blower still in the area?

5 A No. it isn't. There was one I think in the  
6 area that the Job Corps had, but then the Job Corps when they  
7 phased them out, I think they shipped that snow blower out  
8 and that was the only other one that would have been avail-  
9 able in this area.

10 Q I would like to ask you at this time how long did  
11 it take the snow blower to reach you?

12 A Roughly, I am just going to hit it pretty close here.  
13 I would say before they got to us on the back end, they  
14 worked about four or five hours, because the snow was so  
15 high and there was ice underneath it and they couldn't  
16 feed it into the auger part to blow it out. In other words,  
17 they would get into it and couldn't get traction, you  
18 know, and they had to be pulled back and go in again and plow.

19 MR. LAU: I would like to offer this as Exhibit  
20 2. It is a photograph that I am going to ask my witness to  
21 describe.

22 (The above-mentioned document was  
23 marked for identification as Lau  
24 Exhibit No. 2.)

25 BY MR. LAU:

Q Are you familiar with that photograph?



1 A Yes, I am.

2 Q Could you explain when that was taken?

3 A I think this was taken in '64, '63 or '64. This  
4 is the time we had the snow blower come down to get us out.

5 Q How long were you stranded at that time?

6 A Approximately two weeks.

7 Q Were there any adverse conditions? At any time  
8 did you feel you were possibly in danger?

9 A Definitely. I mean it was just a feeling that  
10 you just couldn't get out and you couldn't go nowhere to get  
11 food, you had to have food, and you had nobody to help  
12 you. And there was times we were without communication.

13 Q Without electric and communication?

14 A Without electric and communications.

15 Q Let me ask you, how did you go about trying to  
16 get the sheriff's department and the county officials  
17 and the other people to come down and help you out?

18 A Well, when there are different ones that get out,  
19 in other words, like at that time we had a bread man back  
20 there. We had a milk man. The milk man would leave a  
21 case of milk out on the front end where he could get with  
22 his truck and the kids could go out with a sled and bring the  
23 milk back. The bread was brought back the same way. When  
24 the roads opened up, he would collect from the different ones.

25 Q How long did it take the snow to build up to that  
point before the storm ceased?

rms 3

1           A        I have seen it build up actually within 24 hours,  
2 less than 24 hours. Now just like the other day, another  
3 hour, but for another hour, I might have got out of  
4 that back stretch. There was another car stuck there. We  
5 dug that one out, and by the time we got to my car I  
6 couldn't come through it, I had to take it back to the house.

7           Q        On this one-lane highway that exists in this  
8 area in certain places, have vehicles moving snow ever  
9 broken down so the whole operation had to be stopped?

10          A        Yes, the county equipment, they had a big grader  
11 in there with the front "V" think on it, and that broke down.

12          Q        Excuse me, would you explain the structure of  
13 this plow?

14          A        The nearest I can say it is you remember like the  
15 railroad had on a train, they put a "V" plow in front,  
16 cow catchers, something like that. They put this in front  
17 of a road grader and try to break it through.

18          Q        And this vehicle did break down?

19          A        It broke down. In fact in the year 1968 the county  
20 engineer, John Papcun, we talked to him and he finally  
21 got that down there and they worked seven hours. We were  
22 out of fuel and they worked seven hours, they still couldn't  
23 break it through. They had to go back another way, but a  
24 temporary way, because they couldn't break the drift  
25 down all of the way through to get back in there. That was

RMS 4

1 in '68.

2 Q What do you feel is the reason that the storm piles  
3 up in your particular area more so than in other areas?

4 A Well, one reason is that we have a narrow stretch  
5 of orad and it is a higher bank there and the roadway  
6 between the lake and the marsh area there is a very narrow  
7 place, and it just blows right on over it. Then you are  
8 covered. You don't have a wide area to work with where the  
9 snow can sit. And it is all open.

10 Q How far do you live from the lake itself, the  
11 lake shore?

12 A From the lake shore, I live about 300, 350 to  
13 400 feet.

14 Q Do all of the people in your area that live in  
15 say the area that is a mile or a mile and a half away from the  
16 beginning of the roads that lead back there have these  
17 same problems?

18 A Yes. But not as bad as we are in the back end  
19 back there, because they have a broader area on each side of  
20 the road, back by us there the one lane part doesn't give it  
21 enough room.

22 MR. LAU: I would like to offer this photograph  
23 as Exhibit 3 and ask my witness to identify it and what it  
24 means to him.

25 CHAIRMAN SKALLERUP: Mr. Lau, are you offering

1 these as evidence?

2 MR. LAU: Evidence, yes.

3 (The above-mentioned document was  
4 marked for identification as  
5 Lau Exhibit No. 3.)

6 MR. LAU: Is that proper?

7 CHAIRMAN SKALLERUP: If you offer these as  
8 exhibits, you can use them to refresh the memory of the  
9 witness. If you offer them as evidence, then you have to  
10 provide us with some additional information with respect to  
11 the photograph, namely, who took the picture and when it  
12 was taken.

13 MR. LAU: Yes. I think the information is  
14 there and the dates. And I would like to offer them.

15 CHAIRMAN SKALLERUP: Do you know whether the  
16 party who took the photograph is here.

17 MR. LAU: Yes, she is here and she will be a  
18 witness.

19 THE WITNESS: My brother took these pictures.  
20 I was a witness at the time he took them.

21 CHAIRMAN SKALLERUP: Mr. Charnoff.

22 MR. CHARNOFF: We would like to see what the  
23 pictures look like at some appropriate time. Until I see  
24 them, I am afraid I can't evaluate what they are.

25 MR. LAU: Mr. Charnoff, I would be more than glad

1 to let you see them. I think what you need at this point  
2 is the name of the person who took the picture and the date  
3 it was taken; is that correct?

4 MR. ENGELHARDT: Mr. Lau, I think we would like to  
5 know what the picture purports to be. In other words, what  
6 is the picture of?

7 MR. LAU: It is snow at Sand Beach.

8 CHAIRMAN SKALLERUP: Let's back up and go to the  
9 first one, your Exhibit 2.

10 MR. LAU: Okay. Explain that again.

11 THE WITNESS: This first picture here, my  
12 brother took it. It was taken January of 1964 after the  
13 snow blower from the Erie Army Depot came down and took the  
14 snow out after nobody else could do it, so we finally got them  
15 to do it. They just did it on their good will.

16 CHAIRMAN SKALLERUP: Would you show the photograph  
17 to Mr. Charnoff?

18 MR. LAU: Yes.

19 CHAIRMAN SKALLERUP: Mr. Lau, were all of the  
20 photographs that you are going to offer in evidence taken  
21 by the same individual?

22 MR. LAU: Yes. They are the property of a lady  
23 who is going to be a witness for us later. But this is  
24 her father and his brother took the photographs. Did you  
25 want me to pass these on?

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CHAIRMAN SKALLERUP: Please.

MRS. LAU: The exact date on the back of that one might not be the 7th. It might be the 14th. But it is the same month.

CHAIRMAN SKALLERUP: Same storm?

THE WITNESS: Same storm.

CHAIRMAN SKALLERUP: Now could you identify number 3 for me as to subject matter?

BY MR. LAU:

Q Would you please explain Exhibit No. 3, which is another photograph.

A This one here is before the snow blower from the Erie Army Depot came in to get us out. And on it it shows me standing there holding the telephone wires. That is the depth of the snow in that area before the blower came in.

CHAIRMAN SKALLERUP: In January of '64?

THE WITNESS: Yes.

DB7 ln1 1

2 MR. LAU: I would also like to add another exhibit,  
3 gentlemen. It had to do with the same bunch of pictures,  
4 it is just another dimension. It is very much like Exhibit 2.  
5 This is Exhibit 4.

6 (The document referred to was  
7 marked Lau Exhibit 4 for  
8 identification.)

XXXX

9 THE WITNESS: This won her; was taken after the  
10 snow blower went through, too. In regard to the front end  
11 of the beach, this picture shows how much wider the road is  
12 at the front end than the other picture did on the back end.

13 BY MR. LAU:

14 Q I would like to ask you, Mr. Verb --

15 CHAIRMAN SKALLERUP: Let's wait until they are  
16 ordered into evidence. That can't be done until we hear from  
17 the Applicant and from the Commission Staff. So give them  
18 an opportunity to look at the pictures and then we will come  
19 to that.

20 MR. LAU: Yes. I hope you will bear with me  
21 because I don't understand the whole procedure.

22 CHAIRMAN SKALLERUP: You bear with us and we will  
23 bear with you.

24 Mr. Lau, do you have any other photographs you are  
25 going to introduce?

MR. LAU: Can I have five minutes, please?

ln2

1 CHAIRMAN SKALLERUP: Surely. We will take a five-  
2 minute recess.

3 (Recess.)

4 CHAIRMAN SKALLERUP: Will the hearing please come  
5 to order.

6 Mr. Lau, before our recess I inquired whether you  
7 had any additional photographs you wanted to offer into  
8 evidence.

9 MR. LAU: We --

10 CHAIRMAN SKALLERUP: Simply to move ahead on this  
11 particular matter before going on with your next witness.

12 MR. LAU: Right. We do. But I don't have them  
13 now and I could make them available tomorrow. I could do  
14 that if possible. I thought they were going to be here  
15 tonight. We got our wires mixed up.

16 It has to do more with my next part of the coverage  
17 I am going to bring up with my witness about sand and erosion and  
18 being cut off by that.

19 CHAIRMAN SKALLERUP: Right. Then we will act on  
20 these. Mr. Lau has moved that they be introduced into evidence.  
21 Is there any objection?

22 MR. CHARNOFF: No, sir.

23 MR. ENGELHARDT: No objection.

24 CHAIRMAN SKALLERUP: It is so ordered that they are  
25 admitted into evidence as Lau Exhibits 2, 3 and 4.



ln3

1 (The documents referred to,  
2 heretofore marked Lau Exhibit  
3 Nos. 2, 3 and 4 for identifica-  
4 tion, were received in evidence.)

XXXXX

5 MR. LAU: Might I ask if it would be permissible  
6 to refer to the photographs that I can bring in tomorrow  
7 dealing with the sand erosion? Or should I --

8 CHAIRMAN SKALLERUP: Who will your witness be  
9 with respect to the sand erosion?

10 MR. LAU: There will be a number of them. It is  
11 snow and sand.

12 CHAIRMAN SKALLERUP: Is the photographer of the  
13 sand shots the same as the snow shots?

14 MR. LAU: No. Now I am not sure, the lady that  
15 has the photographs is the same that has these, and I am not  
16 sure. Perhaps the photographer is the same.

17 CHAIRMAN SKALLERUP: Will there be someone here  
18 that will be able to identify them?

19 MR. LAU: There is somebody here now. You are  
20 asking will there be somebody here tomorrow?

21 CHAIRMAN SKALLERUP: Yes, at the time you intro-  
22 duce the pictures?

23 MR. LAU: I think it could be arranged.

24 CHAIRMAN SKALLERUP: For purposes of proceeding  
25 tonight, and you have witnesses that want to talk about the

ln4

1 sand, I believe they should speak about the sand, what they  
2 know from direct experience, and then we will recall tomorrow  
3 for the purpose of introducing the pictures.

4 MR. LAU: All right.

5 Mr. Verb, I would like to continue with this  
6 witness for a brief moment if I may.

7 BY MR. LAU:

8 Q Mr. Verb, you have described one snowstorm that  
9 has had tremendous impact on your home life and being stranded.  
10 Can you possibly tell me how many times you have been stranded  
11 that you could not get out during the wintertime?

12 How many possibly in days or in number of times this  
13 has happened since you have lived here?

14 A Well, I have lived there about 15 years and in  
15 15 years I would say during the course of the wintertime we  
16 would be stranded an average of maybe three days in the winter-  
17 time to four, other times for two weeks, that we totally  
18 couldn't get out.

19 And there was times that we would be stranded maybe  
20 for just a week at a time that we couldn't get no cars out but  
21 we would walk out and ride with other people.

22 And there was times that we, going back in them  
23 years, that we just waited until the snow melted and that is the  
24 way you got out.

25 You never got help from anybody. Your way you did,

ln5

1 you more or less provided more, in other words, you had to  
2 always get stuff ahead to make sure you could live.

3 Q I might ask at this time, now there are snowstorms,  
4 but there are other hazards that occur where you are without  
5 communication and without access to get out of that one way  
6 or one lane road that you live on.

7 Could you explain some of the problems that exist  
8 with storms and sand?

9 A Well, we have had northeast storms there in that  
10 lake part, and it has taken the whole bank of the lake and  
11 pushed it over the road and it has dumped as high as four and  
12 five foot of sand over the road completely and washed the  
13 road right out.

14 Didn't wash it out, but covered it up. So then what  
15 we would have to do is go hire a private bulldozer and bulldoze  
16 all of the sand back up on the beach to open the road up. There  
17 was one time we got it cleared out, had it out for two days,  
18 and it just pushed it back again so we started all over again.

19 The waters get so high there, I think Mr. Lau can  
20 verify it, that a lot of the stuff from the beach out there  
21 has ended up there, like fuel oil tanks, garbage cans,  
22 carried right across through the marsh, over the lake and  
23 marsh and on to Route 2.

24 In fact, we can go over there and drive along  
25 Route 2 and see if we could identify our garbage cans or oil

In

1 tank or whatever is lost and pick it up, and that would be  
2 a mile away.

3 Q Has this ever caused flooding effects during some  
4 of these periods around your house?

5 A Yes, it has. Back where the reactor is setting,  
6 in that area, the marsh has backed up and flooded us from the  
7 back side. When the lake wouldn't get us from the front side.

8 In fact, last summer it done that. It is low back  
9 there, and the marsh got up to a high level and the water  
10 backed up from the marsh and went back to the cottages.

11 Q Thank you very much.

end 7

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1 CHAIRMAN SKALLERUP: Mr. Lau, will it be possible  
2 for us to keep those photographs?

3 MR. LAU: I will have to ask and see.

4 CHAIRMAN SKALLERUP: Or could copies be made?

5 MR. LAU: Would you keep them indefinitely, or  
6 would they be sent back six months or a year from now?

7 MR. ENGELHARDT: Mr. Chairman, I am afraid if they  
8 become part of this record, they become part of the record,  
9 and will have to be preserved for somewhat of an indefinite  
10 period, certainly until the appellate period has expired.  
11 And I don't mean just the appellate period within the hearing  
12 process, but in the event there is court action taken as a  
13 result of this proceeding, the court will have to be in  
14 receipt of a certified record of this proceeding, which  
15 would include all of the exhibits, which means these  
16 photographs, if they are pertinent to the portion of the  
17 record certified to the court, would have to be included.

18 MR. LAU: May I confer with the people that  
19 own them?

20 CHAIRMAN SKALLERUP: Well, look into this and  
21 see whether you can have copies made so that we do have an  
22 accurate copy of these exhibits in the record.

23 MR. LAU: Yes, sir.

24 MR. ENGELHARDT: Mr. Chairman, there is one  
25 alternative we could look into. If Mr. Lau is unable to

1 get copies, possibly through the public proceedings branch  
2 we can look into the possibility of having duplicate copies  
3 returned to Mr. Lau. He may not get the original back,  
4 but he may get a duplicate copy that might be arranged. But  
5 this would have to be an arrangement made through the public  
6 proceedings branch.

7 CHAIRMAN SKALLERUP: Why don't you see what you  
8 can do on your own first and then we will expore what the  
9 Commission might be able to do for you.

10 MR. LAU: Yes, sir. I would like to call Mrs.  
11 Bartley at this time.

12 XXXX Whereupon,

13 MRS. HOWARD BARTLEY

14 was called as a witness on behalf of Intervenor Lau and,  
15 heving been first duly sworn, was examined and testified  
16 as follows:

17 MR. LAU: I might say on Exhibits 2 and 4 that  
18 we have copies of these and that they can be put into the  
19 record of this proceeding.

20 DIRECT EXAMINATION

21 BY MR. LAU:

22 Q Would you please give your full name and your  
23 residence address?

24 A Mrs. Howard Bartley, Second Street, Sand Beach.

25 Q Mrs. Bartley has prepared a somewhat testimony on

1 paper and she will read that at this time. I would like to  
2 have --

3 Did you identify yourself and your address?

4 A Yes.

5 Q I would also like to have Mrs. Bartley give the  
6 number of years that she has resided there and her position  
7 with the Sand Beach Association.

8 A We live the second house on the right-hand side  
9 of Second Street on Sand Beach. And I serve as Financial  
10 Secretary for the Sand Beach Association.

11 We have lived there 14 years, winter and summer.

12 Along with our friends and neighbors, we have  
13 experienced innumerable snowstorms, snowdrifting across our  
14 one and only exit from the beach, making it impassable  
15 for days at a time. As Sand Beach is a private beach area,  
16 little help is available to us.

17 The area known as Plot 2 has been snowed in for  
18 as long as two weeks. County and township plows on several  
19 occasions have broken down as the drifts were too large  
20 for this equipment. Seven families reside year-round in that  
21 area and there are 16 families in Plot 1 this year. This  
22 varies from year to year. A total population of approximately  
23 72 persons reside there at this time.

24 We have brought pictures with us of the various  
25 drfits in different years. These pictures will help determine

1 the size of some of the drifts. In the summer we have had  
2 storms from the northeast washing sand and water from  
3 the lake to the boatway, bringing with the sand and debris  
4 from the lake.

5 On several occasions sand has been deposited so  
6 deep on the road we were unable to go through with cars.

7 We are deeply concerned in case of an emergency  
8 could the people of Sand Beach be evacuated?

9 MR. LAU: We do have other photographs at this  
10 time that we can offer as evidence. I wasn't aware of Mrs.  
11 Bartley having these, although I think they speak for  
12 themselves. So we have five photographs. We can offer them  
13 as one number or as individuals. I think they should  
14 probably be given as individual numbers.

15 CHAIRMAN SKALLERUP: Is Mrs. Bartley to be the sole  
16 witness to testify with respect to these photographs?

17 MR. LAU: I have another witness who will identify  
18 them also.

19 CHAIRMAN SKALLERUP: The same group?

20 THE WITNESS: Yes.

21 CHAIRMAN SKALLERUP: If there is no objection,  
22 let's call them 5-A, B, C, D, E.

23 (The photographs referred to were marked  
24 Lau Exhibit No. 5-A, 5-B, 5-C, 5-D, and  
25 5-E, for identification.)



1 CHAIRMAN SKALLERUP: Would you please identify  
2 each photograph as it has been numbered? That is the  
3 subject matter of the photograph, starting with 5-A, 5-B.

4 BY MR. LAU:

5 Q The first number is 5-A.

6 A This is the storm of January 1964, in fact it was  
7 on the 12th of January. And this is at, it is between First  
8 and Second Streets in that general area.

9 5-B is between Plot 1 and Plot 2 on the sand road  
10 that goes between the two areas.

11 CHAIRMAN SKALLERUP: Same storm?

12 THE WITNESS: No, this is 1968. And this shows  
13 my grandson standing on a drift holding on to the telephone  
14 wires.

15 This one here is 1968 --

16 CHAIRMAN SKALLERUP: This is 5-C now?

17 THE WITNESS: 5-C, that is right.

18 And this is the area between the two plots where  
19 the people have been snowed in that Mr. Verb testified to.

20 5-D is in that same general area and my husband  
21 is about 5 foot 10 and this is well over his head; on 5-D.

22 CHAIRMAN SKALLERUP: The 1968 storm?

23 THE WITNESS: Yes.

24 5-E is this same storm and this is at the  
25 corner -- 1964, yes. This was the bad one. And this is

1 at the corner of 4th and Division Streets.

2 BY MR. LAU:

3 Q Have you ever --

4 CHAIRMAN SKALLERUP: Let's wait until counsel  
5 have had an opportunity to look at the photographs.

6 Mr. Charnoff, any objection?

7 MR. CHARNOFF: No, sir.

8 MR. ENGELHARDT: No objection.

9 CHAIRMAN SKALLERUP: It is so ordered.

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(The photographs referred to heretofore,  
11 marked Lau Exhibit Nos. 5-A, 5-B, 5-C,  
12 5-D, and 5-E, for identification, were  
13 received in evidence.)

14 MR. LAU: These are available for the record.

15 I might point out at this point that when these  
16 storms occur, some people have said on the 7, 8, 9, and 10  
17 of January '64, marked on the back of the photographs and I  
18 have no way of knowing because I was not here at that time.  
19 But they were in that area within a day or two.

20 I know when you are faced with that kind of snow,  
21 I don't know if you remember what day it is or not. I  
22 just would like to bring that out, that these may not be  
23 exactly the precise dates, but within a day or two.

24 Q Mrs. Bartley, I would like to ask you about the  
25 sand conditions that sometimes happen during the windstorms,

1 I believe most of them that come in from the northeast?

2 A That is right. When we get a blow out of the  
3 northeast, it brings the water, the debris that is in the water,  
4 and our sand from the beach or the bottom of the lake,  
5 brings it clear down -- our street is not too long, Second  
6 Street isn't. But it washes in to the boatway at the end  
7 of that street.

8 Now where it lays, when it comes across the road,  
9 it lays there. We have many times had to get trucks to come  
10 in and remove this sand in order for the cars to get through.

11 Q Would you please describe Second Street in  
12 direction as compared to the east-west main road that goes  
13 through there? What we are talking about is side streets,  
14 and I think what you are trying to define is --

15 A We are directly across from the beach right-of-way,  
16 from Second Street beach right-of-way. And this Second  
17 Street is a paved street and the water washes directly  
18 down through there.

19 Q How far do you live from the beach?

20 A About 200-250 feet.

21 Q And this debris you are talking about --

22 A Dead fish, limbs, boards, anything that happens  
23 to be in the water comes on across.

24 Q You have not been able to get your car out because  
25 of this?

1           A       That is right. My husband drives, has a four-wheel  
2 drive truck that belongs to the Ohio Division of Wildlife,  
3 and he went through and made tracks so that people could  
4 get their cars through just a year ago. In the spring.

5           Q       I would also like to ask you about the snow again.  
6 When they come down with the snowplow, do they clear the  
7 side streets that you people are on, or just the main road?

8           A       Just the main road.

9           Q       Are you still without any form of transportation  
10 to get out?

11          A       That is right. We still have the drifts on all  
12 of the side streets.

End #8

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1 MR. LAU: Thank you.

2 That is all I have of this witness.

3 I would like to call Mr. John Cook.

4 Whereupon,

5 JOHN COOK

6 was called as a witness on behalf of Intervenor Lau and,  
7 having been duly sworn, was examined and testified as follows:

8 DIRECT EXAMINATION

9 BY MR. LAU:

10 Q Mr. Cook, would you please state your name and  
11 where your residence is located in the area of the nuclear  
12 power plant?

13 A My name is John Cook. I am an engineer, I reside  
14 about 30 percent of the time in Sand Beach and the balance of  
15 the time in Toledo.

16 Q I think we should establish just what area of  
17 Sand Beach you reside in.

18 CHAIRMAN SKALLERUP: First, Mr. Cook, will you  
19 repeat the position you hold? I think it is in the Sand  
20 Beach Association?

21 You appeared before us as a limited appearance,  
22 I believe.

23 THE WITNESS: Yes, I made a limited appearance as  
24 Vice President of the Sand Beach Association at the opening  
25 several weeks ago.

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BY MR. LAU:

1  
2 Q I might ask you at this point, Mr. Cook, are you  
3 familiar with the storms that occur during the wintertime that  
4 have occurred that have been demobilizing in a sense, that the  
5 people could not get out?

6 A Yes.

7 Q Would you please give your description of any cases  
8 where you have been there and seen these things happen yourself?

9 A Yes. On several occasions, even though we are only  
10 part-time winter residents, we have been snowed in, unable to  
11 get out and get our children back to school in Toledo.

12 We have no other, no transportation at all. Of  
13 course, we usually have no lights, no telephone, and I have  
14 also seen snow drifts which are six or eight feet high for  
15 a half a mile. I have run a car up and down the road myself  
16 at night trying to keep it open as long as possible.

17 But I have seen the roads plug up within four hours  
18 and I could no longer drive, we finally had to abandon the  
19 car, try to get it off the road, and abandoned cars are one  
20 of the big hazards, because the people with snow blow equip-  
21 ment, if we can lure county snow plows in to help us clear it  
22 out, abandoned automobiles along the way make it difficult  
23 for the plows to plow it.

24 So I have seen this. We also have pictures which  
25 were taken not for this purpose, but pictures of the snow.

ln3

1 Another condition which we have in association  
2 with the snow, we have had telephone poles down, telephone  
3 lines down, power lines down, and many trees across the  
4 road, and the Sand Beach Association, we have access to chain-  
5 saws and everybody turns out as a team and works through the  
6 night on getting the trees cut out of the road and the power  
7 lines, and there is no way for the power people to get in,  
8 when we have the lines down, it hampers them from taking care  
9 of it.

10 But I think one thing that perhaps those who have  
11 not gone close to the lake shore haven't appreciated that this  
12 kind of weather does exist. I spent 12 years in remote sections  
13 of Canada, I spent a lot of winters there and the snow drifts  
14 and ice drifts, I have seen ice banks 30 and 40 feet high, and  
15 I have seen many very difficult situations there.

16 I think it is just the strong wind and the large  
17 sweep it has across the lake, and it is all drifted snow, not  
18 that actually accumulating from a snowfall.

19 I don't know what the situation is tonight, but  
20 I think most of you would be surprised at the situation we  
21 do have.

22 Q Are you familiar with any of the problems that  
23 happen during the summertime, during the strong winds from  
24 sand getting across the road?

25 A Yes, of course, I don't have the actual statistics,

ln4 1 but I know we can't get into the lake sometimes, we can't get  
2 to our cottage, we have to wait until we get some equipment  
3 so we can track through.

4 We get washed out. Very frequently we are faced  
5 with a possible wash-through of the beach dike itself. This  
6 is very likely to happen from time to time. I haven't seen  
7 it happen, but once you punch a hole through the roadway, it  
8 will actually wash it out. That has happened, of course,  
9 at Metzger Marsh and Pintail Marsh and many of the other beach  
10 locations, unless the dikes are kept up, it will break a hole  
11 through them.

12 CHAIRMAN SKALLERUP: How far are those from your  
13 beach?

14 THE WITNESS: Crane Creek, from the Crane Creek  
15 Marsh site, that has washed through, the mouth of Crane Creek  
16 washes completely closed. I have spent time duck hunting  
17 along there. The Metzger Marsh is at the corner of the junction  
18 just beyond Bono on Route 2.

19 That entire dike washed out. That was diked clear  
20 across like Sand Beach is.

21 BY MR. LAU:

22 Q Are you familiar or have you ever seen any of the  
23 storms where people have been washed out and flooding takes  
24 place?

25 A I have known it to be -- I stay out of that area



ln5 1 below us, I used to live roughly half a mile from the entrance  
2 to Sand Beach Road, and when this flooding occurs, I know it  
3 occurs, but we don't get down in there, because we can't, I  
4 have no occasion to go down there when it is flooded.

5 MR. LAU: Thank you.

6 I believe that is all I have of this witness.

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1 I think I will continue with Sand Beach people.  
2 I would like to call Charleen Riffle.

3 Whereupon,

4 CHARLEEN RIFFLE

5 was called as a witness on behalf of Intervenor Lau and,  
6 having been first duly sworn, was examined and testified  
7 as follows:

8 DIRECT EXAMINATION

9 BY MR. LAU:

10 Q Charleen, will you please state your name and  
11 the area you live in at Sand Beach.

12 A Mrs. Charlie Riffle, and I live on plot 2 of Sand  
13 Beach. I have lived there for 18 and a half years.

14 Q Could you please tell where plot 2 is in relation-  
15 ship to the distance from the main highway into your area?

16 A From route 2 it is approximately -- from Route 27

17 Q From the county road, the Sand Beach Road?

18 A It is -- I am not sure -- about a mile or a mile  
19 and a half, maybe.

20 Q Now I would like to ask you -- I have some dates  
21 here in front of me, and it states here that you have  
22 personally observed the snow storms. I would like to have  
23 you comment on them and I do not expect these dates to be  
24 exactly correct. But these were some of the worst storms  
25 that you refer to. I would like to have you read them and

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1 refer to them as you go along, if you like. And any personal  
2 feelings you might have on each individual one and state  
3 the amount of time that it lasted and how you were removed  
4 from this area.

5 A Okay. December 1, 1962 to December 14, we were  
6 snowed in. We were plowed out by Erie Army Depot, by the  
7 blower. There were some pictures of that storm. On March  
8 12, 1962 to March 24, we were snowed in. And during that  
9 time my grandmother lived with us and she had a stroke and  
10 an ambulance could not come back to get her. They had to  
11 walk back with the stretcher and carry her out because we  
12 were snowed in. This was the only possible way to get  
13 her out.

14 January 7, 1964, to January 13, 1964, was the worst  
15 storm. And the Erie Army Depot, the snow blower, got us out  
16 then too. March 3, 1968 to March 11, 1968, we were snowed  
17 in. During that time I was attending Ohio State University  
18 and I had a broken leg and I had to go back. And there was  
19 no possible way to get back because we were snowed in. And  
20 the only way I got out was by a snowmobile. And then I  
21 almost got killed getting out like that, because we ran into  
22 a telephone pole. January 8, 1970, to January 13, 1970, we  
23 were snowed in. I wasn't here during that time because I  
24 did not live down at the Beach. So I couldn't --  
25 but I was home during that time, but I don't remember too

1 much about it. The trouble is that people don't remember  
2 how bad we get it back there. We have been stuck back  
3 there without phone service up to a month, without any  
4 phone at all. We have been stuck without fuel oil.  
5 We have gone around to other people's houses with buckets and  
6 stuff for fuel oil, because we were completely out and  
7 no trucks could get back. Right now we are snowed in back  
8 where we live. I had to walk out tonight. And we have about  
9 four days left of fuel. After that -- right now, a truck  
10 could not get back there to give us fuel.

11 If something doesn't happen in four days, we  
12 will not have any fuel back there. And I have an 8-month  
13 old son in the house. And I don't know what we are going to  
14 do.

15 Q Charles, aren't you also an expectant mother  
16 now?

17 A Yes, I am four months pregnant, and I plan to  
18 live down at the beach for quite a few years more, if I can.  
19 The power plant which is behind our house, it is within a  
20 half mile or so, we can even hear the trucks and stuff  
21 working on it, the thing I wonder about is I remember when I  
22 was younger was kids used to go out on the marsh back there  
23 and get duck boats and go over where the plant is now and  
24 go out in the marsh and what kids will do, and I was wondering  
25 when my children grow up, if they go out and do this, and

1 if they get over by the power plant, if there was any danger,  
2 which they could get into over there by the power plant by  
3 just goofing around and get caught up in something, I don't  
4 know.

5 Q Charleen, you have lived back there a good  
6 many years. Could you also tell me about some of the  
7 conditions that occur either by flooding or erosion or  
8 where roads have been cut off.

9 A Well, I have seen it -- I can't remember the date.  
10 It was during the summer, in which the water got so high  
11 it washed out road completely out. We did not have any means  
12 of getting in. We had to walk in. And it was so bad that  
13 it moved our house off its foundation. Our house has been  
14 moved three times off of its foundations by the storms. We  
15 at one time had to go into the beach and out by boat,  
16 because our roads were underwater. I have seen people's houses  
17 already where the first floor is completely submerged in  
18 water.

19 Q I would also like to ask you, during some of these  
20 storms, snow storms in particular, have you any idea how  
21 long from the time that they started at that private road  
22 entrance it took on some occasions for these people -- I  
23 understand trucks have broken down and so on -- do you have  
24 any personal experience where you know about how long it  
25 took for the blower to get back there?

1           A       For one thing, if we were really snowed in like  
2 these storms here, you could never get us out in two hours.  
3 It would be impossible because the equipment that the  
4 county has now and the regular storm plows and that, I  
5 have seen them busted down and just -- they have left them  
6 there, one of them. And they brought even another snow  
7 plow and tried to push that one through and they had two  
8 of them back there and they couldn't do it. When the snow  
9 blower came in it took approximately a half a day. Now this  
10 is from eight o'clock in the morning to I would say two or  
11 three o'clock in the afternoon for them to get through, just  
12 the back section of the beach.

13           Q       Is this the main road only?

14           A       No, this is plot 2. This is the sand road.

15           Q       What I am speaking of is it the main road or  
16 does clearing it off mean the side roads also?

17           A       No, they don't clear the side roads, just the  
18 main roads.

19           Q       Okay, Charleen. I think that is all. Thank you  
20 very much.

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MR. LAU: Might we take a short recess?

CHAIRMAN SKALLERUP: Ten-minute break.

(Recess.)

CHAIRMAN SKALLERUP: Will the hearing come to order?

Mr. Lau, who is your next witness?

MR. LAU: I would like to call Mr. Al Krueger.

XXX

Whereupon,

AL KRUEGER

was called as a witness on behalf of Intervenor Lau and, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. LAU:

Q Will you state your name and your present address?

A Al Krueger, I live at 6th and Division at Sand Beach, Oak Harbor, Ohio. I have lived there for approximately 12 years.

Q Mr. Krueger, would you tell in your own words some of the experiences that you have had with storms in the Sand Beach area?

A Yes. I was quite amused, not really amused, but quite concerned when I read in the Port Clinton paper that some of the county officials supposedly had said that under any circumstances the people on the beach could be

1 evacuated in two hours. I had gone through this January 7  
2 storm in 1964 and I will say it started snowing approximately  
3 at 3 o'clock and snowed for that entire night and the wind  
4 blew very strong and I would defy any county man or I  
5 would defy anyone to even leave the beach or come on to  
6 the beach during that time, because you absolutely could  
7 not see the distance of your arm in front of your face, plus  
8 the fact that the snow was blowing so hard, or the wind was  
9 blowing so hard you probably couldn't have stayed on your  
10 feet even if you were walking. This was probably the worst  
11 storm we have encountered out there. And unless you have  
12 gone through something like this, you just can't possibly  
13 imagine what the force of the winter will do. And I would  
14 say that it would have been impossible to evacuate anybody  
15 in at least 10 hours after that storm really hit hard.

16 Along with that storm I would like to mention the  
17 fact of our 4th of July last year when so much damage was  
18 done in Oak Harbor. We had quite a bit of damage out at  
19 Sand Beach, too, but not nearly to the extent they did at  
20 Oak Harbor. Had we had it like they did at Oak Harbor, I  
21 would say this would have been another real emergency and we  
22 probably would not have been able to get out of the beach  
23 for a period of 4 to 5 hours.

24 I may say that it has been stated that anything  
25 could be taken care of within two hours. In that particular



1 storm, the July 4th storm, it took Edison two days to get  
2 down and take care of us. So it is one of those things that  
3 takes a while to take care of. Then again we have these  
4 ice storms that I can remember approximately six years ago,  
5 when wires came down, hot wires, and we were quite concerned  
6 about that. And at that time it took the power company  
7 approximately five hours to get down to take care of the  
8 problems with the wires so that kids wouldn't be hurt.

9 Well, unless you see it, you just can't believe  
10 what these storms will do. In fact, I would like to have the  
11 Commission come down to the beach and see what we are up  
12 against when it really does snow. Like they say, a couple  
13 of the witnesses have mentioned, that at the present time  
14 they are snowbound. Come down and look for yourselves and  
15 see there is just nothing that can be done.

16 Q Mr. Krueger I am going to ask you a question  
17 that I haven't asked the other witnesses that just came to  
18 mind.

19 Mr. Novak, in testifying for the Applicant,  
20 said that they had been down and had talked to people in the  
21 area dealing with adverse conditions.

22 Were you ever notified or do you know of anybody  
23 who was ever notified months ago when they supposedly were  
24 around asking people?

25 A No. I wasn't. And I don't know of anyone.

1 Usually one of the things, I am Deputy down there, and usually  
2 when something comes up like this of an official nature, I  
3 am usually contacted by people who are approached and no one  
4 has said anything to me or talked to me about this at all.

5 Q Rather than testify on the stand again, and it is  
6 becoming rather repetitious, simply because it is a matter  
7 of fact, could you tell me how many weather adverse conditions  
8 that might prevail in the Sand Beach area that may not in  
9 other areas?

10 A It is rather ironical, I am also a real estate  
11 salesman and I don't like to say all of these adverse  
12 conditions. But nevertheless they are. But I would say,  
13 and probably the Commission wonders why on earth we stay  
14 somewhere that gives us so much trouble, but we stay there  
15 because we love it, it is one of the nicest places around  
16 here, and we certainly don't want to get out of this area.  
17 And we don't want to have it polluted or contaminated  
18 either.

19 Son on some of these other adverse conditions,  
20 when I first bought my first home out there, the place was  
21 completely surrounded by water. The previous winter water  
22 had come over the road, a northeast wind had blown, cars  
23 weren't able to come in or out. My place, the place I  
24 bought, and one of the reasons I bought it was due to the  
25 fact that it was surrounded by waer, I got it at a very

1 reduced rate. However, the water susided and I filled in  
2 ground and I had a fairly decent house. But I have seen  
3 already where cars have been moved on the road because of  
4 the wind plus the water washing against their wheels and  
5 making it quite difficult to come in and almost impossible  
in some cases.

End #116

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Q Have you any other concerns that might prevail as far as you are personally concerned from a health standpoint?

A I definitely do. I definitely do. And my well is a shallow well, I have a year-round home, as I mentioned before, and a shallow well, and I might say that even though it had been stated that only 5 to 10 percent of the people on the beach drink the water from their wells, this is absolutely not true.

It is more like 50 percent of the people on the beach use their well water for complete usage, another 25 percent use their wells for everything but drinking, and then the other 25 percent have all of their water hauled in.

So actually you can say 75 percent of the people on the beach use their well water for purposes, for cooking and drinking.

And I am concerned what will happen pertaining to my well in there, whether I am going to have problems as far as radioactivity or something of this nature for my drinking water and for the other people on the beach.

Another concern that I have is I know that heated water will be put out into the lake. And as it is, in the wintertime about December, the lake usually freezes over and we are not really concerned about the winter storms, the winter blows, as far as high water and erosion is concerned until maybe in the spring again.

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2 But for the months of December to maybe the end of  
3 March, the ice covers the lake and there is no wave action.  
4 However, I am very much concerned about this heated water  
5 that is going to be poured into the lake, what effect that is  
6 going to have with the ice covering on the lake, and if it  
7 is going to mean that I am going to have open water, then I  
8 am going to have to be concerned about high water eroding the  
9 sand and possibly coming over and flooding my home.

9 MR. LAU: I think that is all I have of Mr. Krueger.  
10 Mr. Jim Green, please.

11 Whereupon,

12 JIM GREEN

13 was called as a witness on behalf of Intervenor Lau and,  
14 having been first duly sworn, was examined and testified as  
15 follows:

16 DIRECT EXAMINATION

XXXXX

17 BY MR. LAU:

18 Q Would you state your name, address, and occupation?

19 A Jim Green, Route 1, Oak Harbor and I live on the  
20 Sand Beach Road and I am a farmer.

21 Q Jim, I think that we ought to point out that this  
22 is not the same Sand Beach Road. It is the road that runs  
23 north and south rather than east and west.

24 It is a county road, is that correct?

25 A County road, and I live on County Road 128.

ln3

1 Q You have lived in the area, back away from Sand  
2 Beach. And on many occasions I know after the storms that you  
3 have gone about digging people out of their driveways, on  
4 occasion you have come and dug us out of our driveway.

5 Can you tell me just in what way you go about doing  
6 this, what you have to use and how long it is after a storm  
7 before you get some of these people out?

8 A Well, I usually wait until the storm is over. I  
9 have a tractor and I can move around a lot better after the  
10 storm. If it is an emergency, we could get somebody out a  
11 little quicker.

12 But we have a problem, the distance and the amount  
13 of roads, smaller roads and driveways. I have a little crawler  
14 tractor with a bucket on it and I can get around pretty good.  
15 I don't know just how long it takes after a storm to get  
16 everybody cleaned out, because I have never been able to do  
17 all of it.

18 Long Beach is where I have done most of it. It is  
19 small roads and everything. And shorter and narrower. But  
20 this happens, well, we haven't had it this year at this time.  
21 But this will happen a couple of times a year.

22 Q Now, your equipment was used on Sand Beach during  
23 I believe the fourth of July storm. Is that correct?

24 A Yes. For sand removal on the road and on the side  
25 streets. Yes. And some tree removal.

ln4

1 Q I would like to ask you, do you recollect a period  
2 last year, let's see, it would be right at the end of the  
3 year, the end of '70 or 1969, the beginning of 1970 when you  
4 had to go over after, I believe, three days and dig my wife  
5 out of the road we lived approximately 120 yards back in?

6 A I think it was about three days after the storm.  
7 And I cleaned out all of the driveways and roads from the  
8 Locust Point Road and Route 2 back through Long Beach, Sand  
9 Beach rather.

10 That was I think in January. I don't know the date.

11 Q I would also like to ask you have you ever seen the  
12 snow when it cuts across from the lake and blows in sheets so  
13 penetrating that you weren't able to see to run a tractor?

14 A I think there are times like that. I usually wait  
15 until the storm is over to make it possible to go through  
16 with it. We have a problem along the lake on the roads along  
17 the lake, because of the wind blowing, so much area over the  
18 lake with no blockage.

19 And the first thing is the Sand Beach Road or roads  
20 running parallel to the lake, and they serve as a snow fence  
21 and this puts the cottages to serve as a snow fence and puts  
22 snow on the road. And I think a lot of this is caused from  
23 the wind blowing out of the north with the whole lake surface  
24 frozen surface to carry the extra snow.

25 Q Would you say, Jim, you really don't need a lot of

ln5 1 snow there to make these pileups and drifts in that particular  
2 area?

3 A No, it does not take too much. I don't know how  
4 much we had this last one, there was less than two, Weather  
5 Bureau said six-tenths, something between two and six-tenths  
6 inches.

7 Q Yet there are people stranded on Sand Beach now?

8 A Yes, there were fairly good drifts all of the way  
9 through.

10 MR. LAU: I believe that is all of this witness,  
11 thank you.

12 Willis Rapparlie, please.

13 Whereupon,

14 WILLIS RAPPARLIE

15 was called as a witness on behalf of Intervenor Lau and,  
16 having been first duly sworn, was examined and testified as  
17 follows:

18 DIRECT EXAMINATION

19 BY MR. LAU:

20 Q Mr. Rapparlie, will you state your full name,  
21 your occupation and place of residence?

22 A My name is Willis Rapparlie, I live at Sand Beach  
23 on Sand Beach Road, Russell Road, about a quarter of a mile  
24 from State Route 2.

25 Q I would also like to point out that this is the



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1 road that I referred to as north and south, rather than east  
2 and west Sand Beach Road.

3 Mr. Rapparlie, how long have you lived in this  
4 area?

5 A I have lived in this area approximately 30 years.

6 Q How far do you live off the road, your home?

7 A Off of the road my driveway is approximately  
8 300 yards.

9 Q Would you please describe in the most vivid manner  
10 some of the complications that you have had during snowstorms  
11 in your area?

12 A We only live actually a quarter of a mile off of  
13 State Route 2. But I have seen County Road 128, Russell Road,  
14 blocked so badly that there isn't any equipment that gets in  
15 for about a half day or so.

16 Q Have you ever personally experienced the fact that  
17 the velocity of the wind and the snow coming across there was  
18 so bad that you could not drive, proceed to go out into it?

19 A Well, I have seen some storms that unless wore  
20 goggles or some kind of protective clothing, you would have a  
21 hard time standing up in it.

22 MR. LAU: I believe that is all of this witness.

23 Thank you.

24 Mr. Chairman, I have testimony here from Mr. Trenchard  
25 who is in South Carolina. He sent this testimony and said

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1 that he would be available if the time would permit to come  
2 here to be cross-examined. And he requested it be read into  
3 the record.

4 CHAIRMAN SKALLERUP: Does it add anything to the  
5 testimony we have heard from the witnesses?

6 MR. LAU: I think it does, because he lives in a  
7 different area, and he is probably one of the most, in one  
8 of the most remote areas as an individual citizen.

9 I think he should be considered and his testimony.  
10 It is only two paragraphs.

11 MR. CHARNOFF: If you are looking at me,  
12 Mr. Chairman, I would like to see the statement first.

13 MR. LAU: I would like to ask the Chairman, is  
14 this a proper procedure?

15 CHAIRMAN SKALLERUP: We will see whether the  
16 Applicant has any objection. Normally a statement, even if  
17 it is in evidence form, would not be admitted in evidence if  
18 the individual is not available for cross-examination.

19 However, the Applicant and the Commission Staff may  
20 permit it to be offered in evidence if they believe that they  
21 do not want to cross-examine him.

22 MR. CHARNOFF: If he were to deliver that statement  
23 tonight, we would have no cross-examination for him, so we  
24 have no objection to that statement being included in the  
25 record, Mr. Chairman.

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2 MR. ENGELHARDT: Mr. Chairman, I have reviewed that  
3 letter. We would have no cross-examination of that witness  
4 either, and we would have no objection to the Board granting  
5 the motion.

6 CHAIRMAN SKALLERUP: I will read the statement.

7 "To whom it may concern. My name is George Ogden Trenchard.  
8 I am a farmer and live on my 240-acre farm on the south side  
9 of the Tusaind River, about three-fourths mile southeast of  
10 the proposed Davis-Besse nuclear power plant.

11 "I have owned my farm since early 1956. During  
12 the years of my ownership there has been hardly a year when  
13 we have not been snowed in for at least one or two days. In  
14 the last five years, we have been snowed in twice for three  
15 to six days."

16 It is signed "George Ogden Trenchard, sworn before  
17 me this second day of February, 1971, Virginia E. Richardson,  
18 Notary Public."

19 CHAIRMAN SKALLERUP: That is admitted as Lau  
20 Exhibit No. 6 in evidence.

21 (The document referred to was  
22 marked Lau Exhibit No. 6 for  
23 identification and received  
24 in evidence.)

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MR. LAU: I feel at this time, because it is growing late, that I will ask my wife to step aside as far as a witness. What we have to offer is basically what Mr. Green has said. I have some testimony myself, I am not prepared to testify at this point simply because I cannot refer to the records that I need to. Other than that, I would say that I will rest my case for this evening, other than the motion I would like to make.

CHAIRMAN SKALLERUP: Have you any other witnesses you want to call?

MR. LAU: Not at this time. I just would like to reserve the right to testify.

CHAIRMAN SKALLERUP: Testify yourself?

MR. LAU: Yes.

CHAIRMAN SKALLERUP: Would you make your motion?

MR. LAU: The motion is that the Applicant provide witnesses to verify their statements made on 1649 and 1650 in regard to the comments and remarks that they have made in regards to these people concerned.

CHAIRMAN SKALLERUP: Do you understand the motion, Mr. Charnoff?

MR. CHARNOFF: I don't know which people Mr. Lau is referring to specifically. We have made arrangements, as I indicated, with Mr. Papcun to appear here tomorrow and we hope that he will certainly be here. I don't know whether

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1 these other people are now available in the time frame that  
2 we now have and I would have to object to the motion as  
3 such. I don't think it is particularly relevant at this  
4 point. The issue I think that has to be established is  
5 whether or not it is feasible to evacuate people in the ver-  
6 unlikely event that should be necessary over a reasonable  
7 period of time following the maximum hypothetical accident.

8           The issue now is not what is the specific plan that  
9 the Applicant will propose and that the AEC will have to approve.  
10 Before we apply for an operating, or before we receive an  
11 operating license, we will have to have established a very  
12 detailed emergency plan including arrangements for emergency  
13 evacuation. The details of that plan will have to be included  
14 in our application for an operating license. The AEC will  
15 have to check that it is valid and that it works. This we  
16 would expect to do roughly two to three years from now.

17           The record, Mr. Chairman, is very clear that there  
18 is a commitment to have the details of such a program  
19 arranged before the plant goes into operation. Even if we  
20 were not to make that commitment, the AEC would require us  
21 to do so under their regulations. But Mr. Roe's testimony  
22 and prior testimony in this case have established that there  
23 are a variety of means for accomplishing the necessary  
24 evacuation.

25           I think part of the difficulty here tonight is

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1 that the testimony -- I might say I am not intending to  
2 cross-examine any of Mr. Lau's witnesses -- the testimony has  
3 certainly established that this area suffers from heavy  
4 snows, and occasional large and storms and that things can  
5 sometimes be very difficult. And I have to admit, Mr. Krueger,  
6 I was wondering why you do live here, but I can also under-  
7 stand why you appreciate living in an area like this as well.

8 The testimony has also established, I think, by  
9 the same people that when they have had to get out of their  
10 homes they have been able to get out of their homes, not  
11 necessarily with the use of their own vehicles and not  
12 necessarily in the most convenient way, but milk has been  
13 picked up, people have walked on the sand, people have  
14 walked on the snow, people have walked on the ice.

15 I think what the population has to understand  
16 is that we are not talking about an instantaneous evacuation  
17 of the entire low population zone. The simple issue is  
18 whether the population can be evacuated and it is the population  
19 in that limited sector of the population zone that might be  
20 affected by the accident.

21 Whether that population can be evacuated over some  
22 reasonable period of time.

23 MR. LAU: Mr. Chairman, I object.

24 CHAIRMAN SKALLERUP: Please don't interrupt,

25 Mr. Lau.

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MR. CHARNOFF: We do intend to present rebuttal

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testimony tomorrow to support what has already been stated

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on several occasions, but to make this very clear.

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1                   Now I think too that the population also is  
2 entitled to understand that what we are talking about is a  
3 most, most, most remote possibility. But I won't get  
4 into that now. I think the simple issue that the Board is  
5 entitled to receive testimony on is the feasibility of  
6 evacuation. We have presented certain commitments, we  
7 have presented certain testimony. We hope Mr. Papcun  
8 will be able to confirm that testimony tomorrow. We will  
9 also establish in our rebuttal testimony more indications of  
10 the nature of what an emergency evacuation program consists  
11 of.

12                   I don't know whether this requires the avail-  
13 ability and presence of each of the individuals from each  
14 of the local establishments that have been contacted  
15 to determine their willingness to cooperate in the develop-  
16 ment of a program. In every case that I know of, Mr. Chairman,  
17 such contacts are made on a preliminary basis. They are  
18 reported in the record of the hearing and then the proof  
19 of the pudding has to be met, certainly, but it is met in  
20 the details of the program that has to be established and  
21 approved at the operating license stage.

22                   Accordingly I think we would have to object  
23 to Mr. Lau's motion because without knowing whether people  
24 are available, we might be inviting a delay in the hearing.  
25 So we would object to the motion as it was offered by Mr. Lau.



1 CHAIRMAN SKALLERUP: Mr. Englehardt?

2 MR. ENGELHARDT: Mr. Chairman, the Commission  
3 requires applicant at the construction permit stage to  
4 provide us with the preliminary information regarding his  
5 emergency plan. One of the elements of an emergency plan,  
6 of course, is the availability of or at least a showing of the  
7 feasibility of a plan to provide emergency notification to  
8 appropriate public bodies and individuals if necessary to  
9 assure evacuation of an area in the event of an accident.

10 At the construction permit stage of a proceeding,  
11 the development of this information is not required to be  
12 available in detail. The information is required to be  
13 available at the operating license stage.

14 In a situation such as we have heard tonight  
15 regarding the weather conditions in a particular area close  
16 by this plant, the Atomic Energy Commission will, of course,  
17 follow the development of this plant, the emergency plan  
18 of the Applicants, with great interest and in great detail.

19 However, for the purposes of this proceeding, the  
20 information which they have provided to date is sufficient  
21 for us to reach a conclusion with regard to this matter of  
22 the adequacy of these preliminary plans for the plant.

23 Hence, in our view the testimony which might be  
24 offered by the individuals who were covered by Mr. Lau's  
25 motion would not for our purposes be necessary at this construction

rms 3 1 permit stage to complete this record. And we would see no  
2 particular purpose served at this stage in requiring such  
rms 3 3 individuals to appear with regard to the details of some  
4 plant which as yet has not been fully developed  
5 by the Applicant.

6 CHAIRMAN SKALLERUP: Do you wish to reply, Mr. Lau.

7 MR. LAU: Yes, I do. I want to say something  
8 that has not been considered here. There is a possible  
9 chance this utility has picked the wrong site. And now they  
10 are going to make us live with it and we are not going to  
11 be shanghaied. We are not going to be forced to get on  
12 the Titanic. They have made statements which are outright  
13 lies. One of the men is here from the Division of Wildlife  
14 that has to do with the boats that they refer to. As you  
15 will find out from Mr. Papcun's testimony this is wrong.  
16 Now what I am asking the Board is there is a possible chance  
17 that a mistake has been made in picking this site. There  
18 is a possible chance that these people cannot be evacuated.

19 Now if it wouldn't be for these things already in  
20 testimony, I wouldn't be offering this as a motion. But  
21 it is in testimony and it speaks for itself. They tried to  
22 influence the Board that there are no problems that pre-  
23 vail, that they can get the people off in two hours, it  
24 says that right there. And yet you will find out differently  
25 from the testimony.

1 Now I submit to you again that the other people  
2 here, because of the discretion of what has been said,  
3 should be brought forward. This is a matter of life and  
4 death. And it is nothing to fool with. I think I have  
5 proved and the people have proved that this is an unusual  
6 area and perhaps an unusual circumstance and perhaps the  
7 utility did not come forward and do enough preliminary research  
8 that should have been done back in public hearings or in other  
9 places to bring out the point.

10 Maybe this site is not adequate for a nuclear  
11 power plant. This could be possible. If there is only a 5  
12 percent chance of that being right, we have to explore it.  
13 The only way we can explore it right now is there have been  
14 statements made. I asked in my motion that these people come  
15 forward and give testimony to support Mr. Roe. And you  
16 will find out that that support is not in regard to what is  
17 on these two pages.

18 (Applause.)

19 CHAIRMAN SKALLERUP: The Board will go off the  
20 record.

21 (Discussion off the record.)

22 (See Exhibit No. 1, previously  
23 marked for identification,  
24 was received in evidence.)  
25

1 CHAIRMAN SKALLERUP: I am going to try to explain  
2 some of the background that we take into consideration in  
3 ruling on Mr. Lau's motion.

4 One of the witnesses for the Applicant stated that  
5 the Applicant had been in touch with a number of public  
6 officials and that they had indicated a willingness to  
7 participate in the emergency evacuation procedures.

8 Further, this witness testified that the Ottawa  
9 County engineer was of the opinion that certain things  
10 could be done within a given period of time. Mr. Lau has  
11 moved that the Board direct that the individuals other than  
12 the Ottawa County engineer, be made available for examination  
13 tomorrow. The Ottawa County engineer is planning to be  
14 here at 2 o'clock.

15 Now that is the first general thing that I wanted  
16 to mention.

17 The second is that at this stage of the proceeding  
18 what the Atomic Energy Commission requires of the Applicant  
19 is to show that it is feasible to evacuate people from a  
20 given area within the vicinity of the plant. It is the  
21 burden of the Applicant to show that the emergency evacuation  
22 procedures are feasible. And the Applicant can use such  
23 witnesses as he deems necessary to make his case, and either  
24 he makes his case or he doesn't make his case.

25 We have informed the Applicant that based upon

1 the testimony that Mr. Lau has given tonight, Mr. Lau's  
2 witnesses have given, that there is a serious question in  
3 the Board's mind whether the information that has been  
4 disclosed thus far by the Applicant really meets this test  
5 of feasibility.

6 Now the Applicant tomorrow will provide rebuttal  
7 information to further substantiate its case, that in the  
8 light of the testimony given by Mr. Lau's witnesses tonight,  
9 such an emergency evacuation plan is feasible.

10 Now the third thing that I want to mention that  
11 is important here is this: The precise evacuation plan  
12 under the regulations of the Atomic Energy Commission, the  
13 actual plan for evacuating a given area within the given  
14 time frame does not have to be provided at this stage of  
15 the proceeding, that is, whether or not the construction  
16 permit should be grant. The actual plan that has to be  
17 a fool-proof plan is required at the time that the  
18 operating license is sought by the Applicant after the plant  
19 has been constructed.

20 Now in view of these considerations, namely,  
21 that the regulations require at this time a showing of  
22 feasibility, and in view of the fact that the burden is on  
23 the Applicant to show feasibility, it is the Board's view that  
24 it should be the Applicant that decides who his witnesses will  
25 be and therefore the Board is not directing the Applicant to

1 bring in these witnesses which Mr. Lau asked us to bring in.

2           Tomorrow when the Ottawa County engineer testifies  
3 Mr. Lau will have an opportunity to examine him to see  
4 whether he testified as the Applicant's witness said the  
5 Ottawa County engineer testified. Mr. Lau also will be  
6 able to cross-examine the Applicant's witness and get further  
7 details with respect to the degree of involvement that they  
8 would be able to give in the course of participating in  
9 any emergency evacuation plan. And this is where we stand  
10 at the moment.

11           Accordingly the Board denies Mr. Lau's motion.

12           Inasmuch as there are no further witnesses to  
13 be heard tonight, we will adjourn the meeting until 9:30  
14 tomorrow at the Methodist Church across the street.

15           (Whereupon, at 10:50 p.m., the hearing was  
16 adjourned, to reconvene at 9:30 a.m., Thursday, 11 February  
17 1971.)

End #

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