

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:  
James P. Gleason, Chairman  
Frederick J. Shon  
Dr. Oscar H. Paris

In the Matter of	)	
	)	
CONSOLIDATED EDISON COMPANY OF	)	Docket Nos.
NEW YORK, INC.	)	50-247 SP
(Indian Point, Unit No. 2)	)	50-286 SP
	)	
POWER AUTHORITY OF THE STATE OF	)	
NEW YORK	)	February 1, 1983
(Indian Point, Unit No. 3)	)	
	)	

MEMORANDUM IN SUPPORT OF LICENSEES' MOTION FOR  
EXPEDITED ORDER COMPELLING PRODUCTION OF DOCUMENTS

Despite the Atomic Safety and Licensing Board's (Board's) requirement that all documents upon which witnesses are relying in their testimony be produced, see Transcript of Proceedings at 6462-63 (Jan. 20, 1983), FOE/Audubon has refused to produce documents upon which Dr. Charles Perrow, one of its witnesses on Commission Question 1, is relying.

On January 24, 1983, Consolidated Edison Company of New York, Inc. and the Power Authority of the State of New York, licensees of Indian Point Units 2 and 3, respectively, took the deposition of Dr. Perrow, who is scheduled to "testify on the difficulties in predicting accidents in complex systems such as nuclear reactors, and in performing proba-

bilistic risk assessments [sic] on such systems."<sup>1</sup> Supplemental Response of FOE/Audubon To Licensees' First Set of Interrogatories and Document Requests Under Commission Question 1 To Intervenor, Dated June 16, 1982, at 1 (Dec. 17, 1982). FOE/Audubon refused to produce two manuscript chapters that Dr. Perrow is preparing, one of which is titled "Why Have We Not Had More Three Mile Islands," although Dr. Perrow had brought it with him to the deposition, and stated that he will rely in his testimony upon material in those chapters not otherwise available in his writings. Transcript of Deposition of Dr. Charles Perrow at 28-29 (Jan. 24, 1983) (Perrow Deposition); see id. at 32 ("This chapter I am using as notes.").<sup>2</sup>

As evidenced by his reading from his notes for the chapter, and by his responses to questions, Dr. Perrow is clearly relying upon material in his manuscript in his testimony.<sup>3</sup> Thus, as the Board has recognized, the

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1. The relevant pages of the deposition transcript are appended to this memorandum.

2. In addition to stating that he was relying upon portions of the manuscript, Dr. Perrow read, in response to a question from the Power Authority's counsel, from what he characterized as "notes . . . for a chapter that I am working on." Perrow Deposition at 90-91. Dr. Perrow explained that this chapter was one of those referred to earlier. Id. at 91.

3. The licensees are willing to stipulate that the use of Dr. Perrow's manuscript and notes will be limited to this proceeding.

licensees are entitled to any notes and draft manuscript chapters for use in their preparation for the hearings on Commission Question 1. FOE/Audubon's refusal to produce this material prevents the licensees' complete preparation for Dr. Perrow's testimony, and therefore denies them administrative procedural rights and due process of law.

Respectfully submitted,

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Dated: February 1, 1983

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

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In the Matter of	:	
CONSOLIDATED EDISON COMPANY OF	:	
NEW YORK (Indian Point Unit 2)	:	Docket Nos.
	:	50-247-SP
POWER AUTHORITY OF THE STATE OF	:	50-286-SP
NEW YORK (Indian Point Unit 3)	:	

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Deposition of DR. CHARLES PERROW,  
an expert witness, taken by Licensees pursuant  
to notice, at the offices of Consolidated  
Edison Company of New York, Inc., 4 Irving  
Place, New York, New York 10003, on  
January 24, 1983, at 10:00 a.m., before  
Samuel Singer, a Shorthand Reporter and Notary  
Public of the State of New York.

*Commerce Reporting Company, Inc.*  
*Forty One East Forty Second Street*  
*New York, New York 10017*

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Q Now I understand from discussions with your counsel last week that you have an unpublished manuscript which will deal, at least in part, with accidents at nuclear facilities; is that correct?

A Yes. And I should correct my last statement to add another publication which is substantially the same as publication number 33, but more extensive and longer, which appeared in -- I will have to get you the reference, I don't know it offhand.

It is a longer version of item 33.

Q And that, just for the record, is the article, "Normal Accident at Three Mile Island," in Society Journal?

A Yes. This one is in the International Year Book of Organization Studies, I believe, but I am not sure of the title.

In regard to the other question, yes, I am preparing a manuscript.

Q And what portion of that manuscript is devoted to nuclear reactors?

A Two of several chapters.

Q Do you have any portion of that manuscript with you today?

A I have a rough draft with me, yes.

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Q A rough draft of the two chapters that has to do with nuclear accidents?

A No, just one of them, one of the two.

Q What are the subjects of those two chapters?

A The first one, which I do not have with me, is analyzing the accident at Three Mile Island.

And the second one is tentatively entitled "Why Have We Not Had More Three Mile Islands," and the subject of that is the history of nuclear power plant operation in the U.S., and occasionally France, India and other countries.

Q And you have that with you?

A Yes.

Q Can I make a copy of that?

A I don't know about that. I would rather not. It is in rough draft form.

MR. HARTZMAN: Off the record.

(Discussion off the record.)

MR. HARTZMAN: Being a work in progress, it is subject to change and modification, and there may be errors in it that he hasn't picked up.

We do object to that.

MR. SOHINKI: I understand.

BY MR. SOHINKI:

Q Let me ask you another question.

Will you be relying in any way on the material in that manuscript in your testimony?

A Well, yes, of course. I mean, I wrote it so it is part of my long term and short term --

Q Let me ask you this question:

Are you relying on material in that manuscript that is not otherwise available in your other writings?

A Yes. If I understand your question.

MR. HARTZMAN: Objection.

MR. SOHINKI: We already have an answer to the question.

MR. KAPLAN: Can we have a moment, please?

(A recess was taken.)

MR. HARTZMAN: In both -- you know, it is not clear what we mean by "reliance" here, and I think we ought to be clear on it.

There are documents, you know, there is a draft on work on some testimony and he is also working on a manuscript covering similar

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2 material. And both these documents I presume  
3 are relying on the same factual background, and  
4 that may be thoughts and ideas that he has  
5 developed which will be appearing in both the  
6 testimony and the manuscript, but that doesn't  
7 mean he is relying on the manuscript for  
8 developing the testimony, as I understand it.

9 THE WITNESS: That is correct.

10 MR. HARTZMAN: There should be a  
11 clarification on what we mean by "reliance."

12 THE WITNESS: I am relying upon  
13 things that are not in the manuscript, also.

14 MR. HARTZMAN: That's the basis for  
15 my objection.

16 MR. COLARULLI: For the record, if  
17 Dr. Perrow is relying upon the two chapters of  
18 his unpublished manuscript, which he has  
19 referenced, in any way, including any thoughts,  
20 any facts, any conclusions, in any respect, if  
21 he is relying upon those chapters for his  
22 testimony, then we make a formal request of you  
23 to produce those chapters to us.

24 And I would add that Judge Gleason  
25 recently, I believe it was last Thursday, at the



hearing made it very clear that documents that are being relied upon by the witness must be produced to the other side.

MR. KAPLAN: If I may, I think the question evolves about the word "reliance."

I think maybe we can get the doctor to clarify what he understood you to mean so he can use the term. Obviously, I -- it seems to me the question whether or not both documents stem from the factual basis and it is the factual basis upon which he is relying, or whether or not one precedes the other.

You simply cannot rely upon something that is not extant. So I think we need a clarification as to the definition, what he means when he uses the word "reliance" to see if it comports with your understanding.

Obviously, I don't think we can object, assuming there is reliance in the sense that we generally use the term, something exists and you are using it as a predicate for subsequent testimony or writings.

MR. COLARULLI: The definition we are using is the one upon which we would request Dr.

1  
2 Perrow to respond, that is, using "reliance"  
3 in its broadest sense, if there are any, as I  
4 stated before, any thoughts, any facts, any  
5 conclusions, any impressions --

6 MR. KAPLAN: Used as a basis.

7 MR. COLARULLI: -- that are in the  
8 manuscript which are going to later appear in the  
9 testimony, if the testimony in any way draws  
10 upon anything in the manuscript we consider  
11 that to be relying upon that manuscript for his  
12 testimony.

13 And we would ask that question of  
14 Dr. Perrow: Given that definition, is there  
15 anything in the two chapters that you have  
16 referenced on which you are going to rely in  
17 your testimony?

18 THE WITNESS: Let me put it this way:

19 I brought the -- this chapter for  
20 convenience in order to give you references in  
21 case you wanted a reference. This chapter I am  
22 using as notes.

23 In my testimony I would -- could  
24 come and probably will come with notes rather  
25 than the chapter. I will rely upon those notes.

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lines and come up with an analysis such that operators could be trained to respond to such --

A Yes, that's true, I believe that.

Q Earlier you were describing your concept of tightly coupled, and I am not sure that you completed the different factors.

As I recall, you listed two factors. One concerned the time consideration being very tight; second concerned buffers not being able to be inserted, to intervene.

Were there other factors that you would describe in a tightly coupled system?

A Yes. I would like to refresh myself by looking at some notes which I believe you have, Mr. Hartzman.

THE WITNESS: Do you have them -- let me see what you got of mine.

(The witness examined documents.)

MR. SOHINKI: Let the record reflect that by "you," Dr. Perrow is referring to Mr. Hartzman.

A Yes, delays in processing are not possible in a tightly coupled system. The sequences are more invariant.

And let me pause for a moment and say I am talking about not absolute values here, but relative values, so that delays in processing in tightly coupled systems are not nearly as possible as they are in loosely coupled systems. Okay, so it is relative. It is not an absolute distinction.

There is only one method to achieve the goal, the end result in a tightly coupled system, whereas in a loosely coupled system there are alternative methods available. There is little slack, slack being excess resources, in supplies, equipment, or personnel in tightly coupled systems.

The buffers and redundancies that are used in these systems are designed in and deliberate rather than fortuitously available, as they are in loosely coupled systems. And substitutions of supplies, equipment and personnel is limited, and limited to those substitutions that are designed in by the designer.

And that's a summary statement of tight coupling characteristics.

Q Can you tell us from what documents you have been referring?

A These are notes I have for a chapter that

I am working on.

Q And this is one of the chapters that you referred to earlier?

A Yes.

Q Can you go back to one of the items where I believe you said that the process was not invariant?

A Yes.

Q Could you just briefly explain what you mean?

A Yes.

In a -- to make the comparison simpler, in a smelting operation you may want to produce something of a certain degree of acidity, or having certain chemical components, and if one -- if the normal method fails, you can have other ways of doing this.

THE WITNESS: Excuse me. Off the

record.

(Discussion off the record.)

BY MR. COLARULLI:

Q I believe we are discussing invariant sequences.

A In assembly lines you can put the door on the car later if the doors are defective or out of stock. The sequence is not invariant.

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quite a few. It is hard for me to think of them all.

Q Have you received any negative comments back from any of these people to whom you have sent the manuscript?

A Yes. There has been a rather persistent complaint that I should get a better word than "complexity" for interaction, and I should call it "interactiveness," because "complexity" means other things.

Q Has anyone challenged your concept of applying the system accident to a nuclear power plant setting?

A No.

Q And I believe you earlier stated, to your knowledge, no one else has, in fact, done this kind of application and published it; is that right?

A Yes. There are none that have been published, and I am delighted to say so.

Q Have you reviewed any manuscripts that are in progress that also address the same issues that you have, other manuscripts?

A No, I haven't.

MR. COLARULLI: Mr. Hartzman, so the record is clear, it is clear, at least in the

2 Power Authority's view, that based upon our  
3 definition of "reliance" and based upon Dr.  
4 Perrow's responses in his testimony, that we are  
5 entitled to receive copies of the manuscript,  
6 the two chapters that he has referred to.

7 I think we have stated all our  
8 reasons, and I won't repeat them all. As I  
9 understand it, it is your position that we are  
10 not entitled to those documents; is that  
11 correct?

12 MR. HARTZMAN: That is correct.

13 MR. SOHINKI: For the record, Con  
14 Edison joins in the view expressed by Mr.  
15 Colarulli.

16 MR. HARTZMAN: You want to add  
17 something to the previous answer?

18 THE WITNESS: Yes, about review by  
19 others of this concept of system accidents.  
20 Could I add something there?

21 BY MR. COLARULLI:

22 Q Sure.

23 A An early version, and much more imperfect  
24 version of the idea of system accidents was reviewed  
25 by approximately ten reviewers in connection with a

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CERTIFICATE OF SERVICE

I hereby certify that on the 1st day of February, 1983, I caused a copy of the Licensees' Motion For Expedited Order Compelling Production Of Documents, and memorandum in support thereof, to be hand delivered to those parties marked with an asterisk, by Express Mail to counsel for FOE/Audubon, and by first class mail, postage prepaid to all others.

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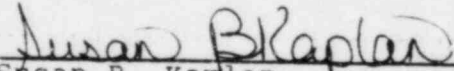
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