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NUCLEAR REGULATORY COMMISSION

IN THE MATTER OF:

DUKE POWER COMPANY  
(Oconee-McGuire)



Docket No. 79-2623

Place - Charlotte, North Carolina

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## On behalf of the Regulatory Staff:

EDWARD J. KITCHEN, Esq.,  
RICHARD K. HOEPLING, Esq.,  
JAMES R. FOURTELOTTI, Esq.,  
Office of the Executive Legal Director,  
United States Nuclear Regulatory Commission,  
Washington, D. C. 20555.

## On behalf of the State of South Carolina:

RICHARD P. WILSON, Esq.,  
Assistant Attorney General,  
Office of the Attorney General,  
State of South Carolina,  
2600 Bull Street,  
Columbia, South Carolina 29201.

On behalf of Intervenor Carolina Environmental Study  
Group:

SHELLY BLUM, Esq.,  
Blum & Sheely,  
730 East Trade Street,  
Charlotte, North Carolina 28202.

On behalf of Intervenor Natural Resources Defense  
Council:

ANTHONY Z. ROISMAN, Esq.,  
Natural Resources Defense Council,  
197 - 15th Street, N. W.,  
Washington, D. C. 20005.

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P R O C E E D I N G S

CHAIRMAN MILLER: The hearing will come to order.

We will hear first a limited appearance statement from Mr. McAfee.

Mr. McAfee, will you come forward, please?

LIMITED APPEARANCE STATEMENT OF RON MC AFEE,

2161 INDIA HOOK ROAD, ROCK HILL, SOUTH CAROLINA

MR. MC AFEE: My name is Ron McAfee. My address is 2161 India Hook Road, Rock Hill, South Carolina.

Electricity can be produced by many methods. With the introduction of nuclear energy came promises of electricity too cheap to meter. Now, we realize this is simply not true. An article in the June 19, 1979, Esquire by Dan Dorfman points this out.

In "For Exxon's Eyes Only," he reports what Dr. Richard Hellman has told him about briefings from Exxon researchers on a 1977 study of the nuclear industry future. Exxon's researchers concluded that:

"....there was no competitive advantage to nuclear power, that the use of coal was at best as cheap or cheaper, and that a meaningful investment by Exxon was questionable until the problems (both in safety and in economics) could be resolved."

That's what Hellman was told in 1977, when he

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met with the research group, and he got pretty much the same gloomy reading in updated conversation just recently.

These hearings have been called to deal with the issue of Duke Power Company's plan to transport nuclear spent fuel along our highways. The dangers which these plans pose will probably never be felt by Duke. Instead, each person along the route will be exposed to a greater amount of radiation than what naturally occurs.

Duke Power Company is protected from liability in nuclear accidents through the Price-Anderson Act. The federal government was so eager to develop nuclear energy for peaceful means as well as nuclear destruction capabilities that it gave power companies a blank check to handle and store nuclear materials in whatever manner they could convince the public of a reasonable amount of safety.

Presently the cheapest means for Duke Power Company to take care of its spent fuel problems is to transport it along our highways to cooler fuel pools. It is not bad enough that we have to live as neighbors to these inefficient radiation-emitting reactors, but Duke wants to put more radioactivity on the road with us.

A spent fuel shipment subjects participants in transport and innocent, unknowledgeable people to even more radiation exposure than is being released through present shipments of radioactive material. The transportation of

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spent fuel from one fuel pool to another is merely the cheapest means of dealing with a problem that will outlive all of us.

I was once an advocate of safe nuclear energy. I was an employee of Duke Power Company at the Catawba Project for nearly two years. During this time I realized that there is no acceptable safe nuclear energy. It was the actions and irresponsibilities of Duke which convinced me that nuclear power is not safe. I became convinced that Duke was primarily concerned with profits, not safety, in the operation of its nuclear power program.

In April 1979, Duke Power News, a story on Margaret Maxey, an expert in bioethics was reprinted from the EPRI Journal. The article was entitled "Wading into the Quagmire of Nuclear Debate." The article states that:

"A consensus must be reached on the answer to the fundamental question: How much safety are we willing to pay for?"

If we are to avoid excessively costly and destructive policy decisions made by regulatory agencies, decisions that are in conflict with the good of many, the public must be educated to reallocate the financial and social costs of safety. Zero risk and absolute safety are indeed costly illusions.

Maxey concludes:

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"The nature of the nuclear waste problem is neither unique nor unprecedented. We have always lived with toxic elements in our environment, and they have not been sequestered with the skill and planning applied to radioactive wastes."

Dr. Maxey and Duke would have us believe that one pound of lead poses the same amount of danger as one pound of plutonium.

The article about Dr. Maxey fairly represents Duke's philosophy. She states that:

"As an ethical imperative...excessive preoccupation with imaginable risks to future generations whose claim on the intellectual and moral responsibility of existing persons has not been clearly defined."

Duke perceives no responsibility to future generations for their actions in the present.

Having been an electrical inspector at the Catawba Project, I saw many violations of QC controls and QA procedures. For instance, all anchor bolts are required to be marked so as to assure that their length may be determined after they are installed. In many cases, these markings were indistinguishable.

Regardless of this, we were told that the bolts were long enough. The reason for this was that it would

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require a NCI report to change them.

Furthermore, the method by which inspectors were certified assured the company of certified but not qualified inspectors. During certification testing, cheating among some of the inspectors was visually obvious and my complaints about this were tacitly ignored.

These are only two examples of Duke's inadequacies in assuring that its nuclear power program is developed and operated with the safety of the public in mind. One bad bolt or one lax inspector is enough to trigger a chain reaction leading to an accident. Then, it takes only one radioactive atom, one cell, and one gene to initiate a cancer.

CHAIRMAN MILLER: Thank you, Mr. McAfee. Your remarks will be included in the transcript.

Will the panel resume the stand, please?

Whereupon,

THOMAS B. COCHRAN,

DIMITRI ROTOW,

and

ARTHUR TAMPLIN

resumed the stand on behalf of Intervenor NRDC and, having been previously duly sworn, were examined and testified further as follows:

CHAIRMAN MILLER: Are we ready to proceed?

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MR. MC GARRY: Yes, Mr. Chairman.

Mr. Chairman, I think as a matter of clarification I would like to condense Applicant's Exhibit 16 which has been marked for identification which, at this point in time, is the survey sheet for the Rancho Seco Facility. I would like to--

CHAIRMAN MILLER: Have we a copy of that?

MR. MC GARRY: I'm going to provide it to you in one moment, Mr. Chairman.

I would submit if we could make Applicant's Exhibit 16, marked for identification, the entire package of the surveys, thereby striking at this point in time Applicant's Exhibit 17, marked for identification, which was the Brunswick-Robinson survey, that will be embodied in Applicant's 16. And at this time I'll just hand copies up.

CHAIRMAN MILLER: All right. You're changing the designation and contents of Applicant's Exhibit 16? Is that it, Mr. McGarry?

MR. MC GARRY: Yes, Mr. Chairman.

(Whereupon, Applicant's 17, having been previously marked for identification, was withdrawn and marked for identification as an addition to Exhibit 16.)

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MR. TOURTELLOTT: Mr. Chairman, I made a motion last night, and I was wondering if the Board would like to make a ruling.

CHAIRMAN MILLER: Yes. Your motion referring to the rank hearsay? Is that the one?

MR. TOURTELLOTT: The motion was that I urged the Board to immediately admit and rule on the motion to strike so that we would not unnecessarily burden the record and take up the time of the parties with testimony that was rank hearsay and did not in any way assist the trier of fact in arriving at their determination.

CHAIRMAN MILLER: Yes, we have read the testimony. The motion will be denied. I think in fairness to the public, the people following this, that we should make it clear that hearsay per se is not inadmissible in an administrative proceeding.

This was urged on the second day of the evidentiary hearing, on the first day of taking evidence, by your colleague who cited to us both the Federal Rules of Evidence and our own regulations, and urged that expert witnesses were entitled to take into consideration the information derived from others, namely hearsay, with which there was no quarrel, by the way. You misunderstood our ruling.

Thereafter, Mr. McGarry had a stock -- I guess the term of art is "routine" in this case -- question he asked

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of all of his witnesses to the effect that any of the data, information, whatever, upon which they based their opinions in whole or in part, was that customarily used by themselves or experts, and so on.

Those were permissible questions and the obvious purpose was to render admissible whatever hearsay underlying data or information was contained.

I think, Mr. McGarry, you asked that of every witness. At least I don't recall any of which you didn't.

It's perfectly apparent, therefore, hearsay evidence is admissible. It has to be reliable, just as any other evidence, and we'll inquire into that. But by making the objection of rank hearsay, it's something that's likely to startle a layman. Lawyers have long since been acquainted with it. Like background radiation, it's all around us.

Look at any of the exhibits here, the documents previously put in. You're not going to have everybody who made a study in, obviously. We don't expect you to. It's admissible.

So I think that we should use our terms a little carefully. We deny your motion. We will give you, of course, leave, or any other Counsel from time to time when appropriate, to make whatever motion you deem necessary, but we don't have before us as yet the ruling upon the evidence. We have explained we intend to do that following the conclusion of

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cross-examination.

MR. TOURTELLOTTE: Mr. Chairman, I certainly don't need a lesson on the rules of evidence, and I know that hearsay evidence is admissible. I made that motion and on that basis I know full well that it's within the discretion of the Board either to grant it or not to grant it because hearsay evidence is admissible during the course of the proceeding.

CHAIRMAN MILLER: If reliable.

MR. TOURTELLOTTE: What I was doing was simply pointing out not that it was just hearsay but that there were other reasons why this hearsay should not be admitted in this proceeding at this time.

CHAIRMAN MILLER: As to that we will --

MR. TOURTELLOTTE: May I finish?

CHAIRMAN MILLER: Well, let me state the basis of our ruling insofar as it affects later matters.

We don't deem that to be before us at this time because we have not yet had introduced -- we have now read but we have not had introduced the evidence and we're not considering it in any substantive way. That's why we're holding that that motion is premature.

MR. TOURTELLOTTE: Well, but the simple fact that we'll go through all this cross-examination is taking up a tremendous amount of time of the parties, and taking a

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tremendous amount of effort. That's one of the things I was talking about, burdening the record. And the procedure-- of course it's up to the Board to set its own procedure, but the procedure of waiting and waiting until cross-examination is over and the motion to strike virtually becomes unnecessary and I can't -- I frankly can't understand why the Board is reserving its ruling on whether it's admissible or not until after cross-examination is complete because at that time it becomes no question at all.

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To get back to my original point, I guess the thing that really bothers me is when the Board chides me to consider more carefully the terms that I use.

CHAIRMAN MILLER: Such as rank hearsay, yes.

MR. TOURTELLOTTÉ: -- when I'm making a motion.

But I made that motion not with any thought at all in mind that hearsay is inadmissible. I was simply saying that the Board should exercise its discretion at this time. The Board saw fit not to do so, and that's quite all right. We'll worry about that later.

But I certainly don't appreciate the characterization of my presentation as being unlearned in the law, because I think I am correct.

And the basis that I was objecting to is not the admissibility of the evidence, but was simply pointing out reasons why I felt the Board should use its discretion and admit at this time and get rid of this witness so that we can get on with the witnesses who are substantive.

CHAIRMAN MILLER: Well now you certainly have a strange way of expressing yourself. You're not contending you're saying that the evidence is inadmissible and yet you want us either to strike it or not to admit it, the distinction is so subtle that it escapes me.

But I do, as Chairman, point out we're following the Rules of Evidence, we're not making our own rules.

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And when you base an objection as an attorney on rank hearsay as though there's ascending hearsay and rank and various kinds of the quality of the hearsay itself made of an issue is going to be decisive, I suggest you're not making a very lawyerlike objection. Now if that offends you, I'm sorry.

But I might point out also a lot of the time that has been consumed, whether fruitful or not, was taken by voir dire examination. The record will show exactly the nature of that voir dire examination, which didn't even get to the merits or the substance of the things that you find offensive.

So we'll proceed from there and the record, indeed, will speak for all of us. Now let's waste no further time upon this matter.

You may proceed, Mr. McGarry.

MR. MC GARRY: Thank you, Mr. Chairman.

Within one to two minutes, I will hand out the document I referred to, which I request be marked for identification as Applicant Exhibit 16.

CROSS-EXAMINATION (Continued)

BY MR. MC GARRY:

Q Mr. Rotow, do you have the Surveys of Utility Spent Fuel Managers Before you that you conducted for each utility?

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A (Witness Rotow) Yes, I do.

Q Just for identification purposes, let's go through them.

The first one I have in the survey for Rancho Seco Station, California, is that correct?

MR. ROISMAN: Mr. Chairman, yesterday there was testimony that there were both a handwritten set of notes and a typed set of notes.

Without the witness having the exhibit that Mr. McGarry has got in his hands in front of him, it may be that they will not get whatever he wants to get for purposes of clarity. Perhaps if he stood with him and they looked at it together --

CHAIRMAN MILLER: He's handing it up now.

(Document handed to the witness.)

BY MR. MC GARRY:

Q Mr. Rotow, whichever is easiest for you, but starting with Rancho Seco, do you have that document before you?

A (Witness Rotow) I do.

CHAIRMAN MILLER: Pardon me. Now, have we established which notes these are?

MR. MC GARRY: That's what I'm planning to do, Mr. Chairman.

BY MR. MC GARRY:

Q Is this indeed your survey for the Rancho Seco?

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A (Witness Rotow) Yes, except that -- well, no, this is not the survey for Rancho Seco, this is a set of typed notes that I prepared for Dave Berrick of the Environmental Policy Council, and there are alterations to the original notes that I prepared for him.

Q Do you have additional comments to make, is that correct, is that the sense of your answer?

A I guess the sense of my answer is -- I should say no is my answer.

MR. MC GARRY: I would note for the record the asterisk on the left-hand column as well as the circle around senior nuclear engineer as well as the other lines are my of my own making and not of --

CHAIRMAN MILLER: They are to be disregarded then on the exhibits. is that correct?

MR. MC GARRY: For this one, Mr. Chairman. We'll go through them very quickly.

BY MR. MC GARRY:

Q Mr. Rotow, looking at that Rancho Seco survey, do you have a similar document before you and is that your survey?

A (Witness Rotow) It's the typed notes that were prepared for Dave Berrick.

Q And this survey for Rancho Seco are your typed notes for the Rancho Seco survey, is that correct?

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A They were taken from the survey. The survey is contained in the two written documents that I entered as testimony.

CHAIRMAN MILLER: Explain that. What is the status of your records and your notes, let's have it clearly explained.

WITNESS ROTOW: Yes, sir.

When I first took the survey, the raw material was in a large collection of handwritten notes that I distilled in several stages.

CHAIRMAN MILLER: Do you have those handwritten notes?

WITNESS ROTOW: I have some of them with me, yes. But in large part they're gone, they were simply thrown out. I thought I summarized the most pertinent information in these notes for Mr. Berrick's purposes.

CHAIRMAN MILLER: Taking the information from your handwritten notes, some of which exist and some of which do not as well as your own memory, is that correct?

WITNESS ROTOW: Yes, that's true, sir. These were actually typed within a day or so of the actual note-taking.

CHAIRMAN MILLER: And was the actual note-taking contemporaneous with the conversations?

WITNESS ROTOW: Yes, sir.

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CHAIRMAN MILLER: How much time then elapsed between the time you had the conversations from which you derived the data or information contained on this so-called survey, which I'm looking at, the notes?

WITNESS ROTOW: The notes.

CHAIRMAN MILLER: You call these the notes?

WITNESS ROTOW: The typed notes.

CHAIRMAN MILLER: How many of your original handwritten untyped notes do you have?

WITNESS ROTOW: I have a stack of notes that corresponds to each one of these. And these were -- these were simply a handwritten summary. Let me give you an example, if I may.

For example, here's one for the Prairie Island 1 and 2. This was in preparation for typing these typed notes.

(Handing document to the Board.)

CHAIRMAN MILLER: We'll have this marked for identification. Does anybody have a desire to be a sponsor?

MR. ROISMAN: Since Applicant's 16 is all the typed ones, why don't we make that Applicant's 17? Then they'll be together as Applicant exhibits.

CHAIRMAN MILLER: If the Applicant agrees.

MR. MC GARRY: I'd like to see it first, Mr. Chairman. I'm sure it will be fine, but --

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CHAIRMAN MILLER: If not, I'll give it a Board number. I simply want it marked for identification.

MR. MC GARRY: Why don't we mark it for identification as Applicant's 17, then. That'll be fine.

CHAIRMAN MILLER: Fine. We'll consider that it is marked Applicant's Exhibit 17 for identification.

(Whereupon, the document previously referred to as Applicant's Exhibit 17 was marked for identification.)

BY MR. MC GARRY:

Q Mr. Rotow, I believe you answered the Board's question that this survey for Rancho Seco is a compilation of your notes and contains the substance of your conversations with Rancho Seco, is that correct?

A (Witness Rotow) Well again, I refer to it as my typed notes but if you want to keep calling it the survey, that's fine, although I reserve the distinction that this is not the survey.

CHAIRMAN MILLER: Well what do you call it?

WITNESS ROTOW: I call it my typed notes.

CHAIRMAN MILLER: Do you have any objection to using his terminology?

MR. MC GARRY: I will refer to them as typed notes.

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The survey indeed is contained in the testimony.

BY MR. MC GARRY:

Q Is that the point?

A (Witness Rotow) Yes.

Q And is this a fair compilation of your notes?

A Yes, I think it's a fair representation. As you pointed out, there are one or two things that are not on here.

MR. MC GARRY: Mr. Chairman, I would request that the Rancho Seco document be marked as Applicant Exhibit 16A, and I'll just run through them very quickly.

(Whereupon, the document previously referred to as Applicant's Exhibit 16A was marked for identification.)

BY MR. MC GARRY:

Q The next one is Brunswick, "Detailed Notes Re: Brunswick 1 and 2 and Robinson 2."

A (Witness Rotow) Yes. And on page two there is again an addendum --

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Q That's correct.

A -- in your handwriting, I believe.

Q My handwriting. On page two, number five, the left-hand column, "Is this information received from C&P," with an arrow is my handwriting and a line.

The other handwriting on that page, page two, is

wit/agh9

your own handwriting. Is that correct?

A Yes, it is.

Q And going back to page one, all handwriting there is your own handwriting, except the language up in the top right-hand corner Staff Deposition Number 5 or 7?

A There's also two checkmarks, both next to the 560/560 -- where it says Full Core Assemblies about one-third of the way down the page: "B-1 equals 560. B-2 equals 560." There are two checkmarks next to the 560's.

Q The checkmarks are my own.

A Then further down the page, in the third line up from the bottom, there's an underlining under 18. Here it says: "162 power assemblies" -- "PWR assemblies."

Then further up the fourth separated paragraph, which is only a single line in this case which says:

"The next discharge at R-2 will be at April 15, 1979 and will be 52 rods."

Above rods is written in --

Q That was my handwriting. "Assembly" is what I wrote.

One further change that I made, the sixth paragraph at the bottom "From R-2," I scratched that out and said "B-2."

A Yes.

Q Should that have been B-2, or is R-2 correct?

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wrb/agbl0

A I really can't say at this point.

There's another correction. Roughly in the middle of the page where there's an indented paragraph, that is:

"BWR capacity, B-1 plus B-2 equals 2772 assemblies. FWR capacity at B-1 plus B-2 equals 1232 assemblies."

And there are two more checkmarks there.

Q They are my checkmarks.

A And as far as I can see from reading through this at this time, those are all the differences.

MR. MC GARRY: I request they be marked for identification as Applicant's 16B.

(Whereupon, the document previously referred to as Applicant's Exhibit 16B was marked for identification.)

BY MR. MC GARRY:

Q Turning to Zimmer-1, I have made no marks on this, does this comport to your document?

A (Witness Rotow) Zimmer-1?

Q That's correct.

A Yes.

MR. MC GARRY: I request that be marked Applicant's 16C.

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CHAIRMAN MILLER: It will be marked.

(Whereupon, the document previously referred to as Applicant's Exhibit 16C was marked for identification.)

BY MR. MC GARRY:

Q Yankee Rowe.

A (Witness Rotow) The next one I have is Hatch 1 and 2.

Q Hatch 1 and 2, fine.

Hatch 1 and 2, I don't believe I've made any marks.

Is that your handwriting in the left-hand column?

A Yes.

Q And are these your notes?

A Yes, they are.

MR. MC GARRY: I'd request that be marked Applicant 16D for identification.

CHAIRMAN MILLER: It will be marked.

(Whereupon, the document previously referred to as Applicant's Exhibit 16D was marked for identification.)

BY MR. MC GARRY:

Q What's the next one you have, Mr. Rotow?

A (Witness Rotow) Yankee Rowe

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Q Yankee Rowe. I believe I have marks on the first large paragraph, under "What are Future Expansion Plans," the line in the left-hand column is mine.

Otherwise, are these your notes?

A Yes.

MR. MC GARRY: I would request that be marked as 16E for identification.

CHAIRMAN MILLER: It will be marked.

(Whereupon, the document previously referred to as Applicant's Exhibit 16E was marked for identification.)

BY MR. MC GARRY:

Q Arkansas, is that the next one?

A (Witness Rowe) Arkansas 1 and 2, yes.

Q Arkansas 1 and 2.

And I underscored the line, the two lines in the large paragraph entitled, "What Are Future Expansion Plans." Otherwise are these your notes?

A Yes, they are.

MR. MC GARRY: I request it be marked Applicant's 16F for identification.

CHAIRMAN MILLER: So marked.

(Whereupon, the document previously referred to as Applicant's Exhibit 16F was marked for identification.)

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agbi3

BY MR. MC GARRY:

Q Is Trojan the next one, Mr. Rotow?

A (Witness Rotow) Yes.

Q I don't believe I made any marks on this one,  
are these your notes?

A Yes.

MR. MC GARRY: Applicant's 15G for identification,  
Mr. Chairman.

CHAIRMAN MILLER: Marked.

(Whereupon, the document  
previously referred to as  
Applicant's Exhibit 16G was  
marked for identification.)

BY MR. MC GARRY:

Q Humboldt Bay, is that the next one, Mr. Rotow?

A (Witness Rotow) Yes.

Q The "and additional," is that your handwriting?

A Yes.

Q And those dates --

A Very light pencilled notes.

Q Very light pencilled notes. Are those your dates?

A Yes, they are.

Q 1960. The next one is 1981. What are those  
three dates, do you know?

A The first one is approximately 1980. The second

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one is an arrow, a logical arrow indicating -- implies 1981.

The third one, again a logical arrow, implies 1986.

Q Are these your notes?

A Yes.

Q -- for Humboldt Bay?

A Yes.

MR. MC GARRY: I request it be marked for identification as Applicant's 16K.

CHAIRMAN MILLER: Fine.

(Whereupon, the document previously referred to as Applicant's Exhibit 16H was marked for identification.)

BY MR. MC GARRY:

Q Is Fort Calhoun the next one?

A (Witness Rotow) Yes, it is.

Q I have placed a line in the left-hand column by "I spoke with." The underscoring is mine. The line in the left-hand column under "What is Utility's Position With Respect to FCR Capability," that's mine. The checkmark by the paragraph "They do not feel," et cetera, is mine.

Otherwise are these your notes on Fort Calhoun?

A Yes.

MR. MC GARRY: I request it be marked for identification Applicant's 16I.

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agb15

CHAIRMAN MILLER: Marked.

(Whereupon, the document previously referred to as Applicant's Exhibit 16I was marked for identification.)

BY MR. MC GARRY:

Q Is Susquehanna the next one?

A (Witness Rotow) Yes, it is.

Q I circled "info officer," I placed the arrow to "info officer," I wrote in the word "only" and underscored it.

With that notation, are these your notes?

A es.

BY MR. MC GARRY: I request it be marked as Applicant's 16J.

CHAIRMAN MILLER: So marked.

(Whereupon, the document previously referred to as Applicant's Exhibit 16J was marked for identification.)

BY MR. MC GARRY:

Q Oyster Creek, is that the next one, Mr. Rotow?

A (Witness Rotow) Yes, it is.

Q Believe it or not, I don't think I marked that.

Can you just --

A So far as I can see, all the handwriting on that

513 030

POOR ORIGINAL

agb16 is mine.

Q Thank you.

And these are your notes for Oyster Creek, is that correct?

A Yes.

MR. MC GARRY: I request it be marked as Applicant's 16K, Mr. Chairman.

CHAIRMAN MILLER: So marked.

(Whereupon, the document previously referred to as Applicant's Exhibit 16K was marked for identification.)

BY MR. MC GARRY:

Q And Diablo Canyon, that's the next one?

A (Witness Rotow) Yes.

Q I circled "senior power project engineer," I put the underscorings under "future expansion plans," as well as the line in the left-hand column and the checkmark.

With those notations, are these your notes?

A Yes.

Q -- on Diablo Canyon?

A Yes.

MR. MC GARRY: I request it be marked as Applicant's Exhibit 16L for identification.

CHAIRMAN MILLER: So marked.

agb17

(Whereupon, the document previously referred to as Applicant's Exhibit 16L was marked for identification.)

BY MR. MC GARRY:

Q Nine Mile Point 1, is that the next one, Mr. Rotow?

A (Witness Rotow) Yes.

Q I don't believe I made any corrections. That's two pages, is it not?

A Yes.

Q And are these your notes for Nine Mile Point?

A Yes.

MR. MC GARRY: I request it be marked for identification as Applicant Exhibit 16M.

CHAIRMAN MILLER: So marked.

(Whereupon, the document previously referred to as Applicant's Exhibit 16M was marked for identification.)

BY MR. MC GARRY:

Q Prairie Island 1 and 2, that's the next one?

A (Witness Rotow) Yes.

Q I've not made any marks. Are these your notes for Prairie Island?

A Yes.

513 032

agbl8

MR. MC GARRY: I request it be marked Applicant's Exhibit 16N.

CHAIRMAN MILLER: So marked.

(Whereupon, the document previously referred to as Applicant's Exhibit 16N was marked for identification.)

BY MR. MC GARRY:

Q San Onofre is the next one, Mr. Rotow?

A (Witness Rotow) Yes.

Q I made no marks on this one. Are these your notes for San Onofre?

A Yes.

MR. MC GARRY: I request it be marked Applicant's Exhibit 16O for identification.

CHAIRMAN MILLER: So marked.

(Whereupon, the document previously referred to as Applicant's Exhibit 16O was marked for identification.)

BY MR. MC GARRY:

Q I believe we're at the last one, that's Maine Yankee.

A (Witness Rotow) Yes.

Q And that is five pages, and I don't believe I made

513 033

agbl9

any notations. Are these your notes?

A Yes.

MR. MC GARRY: I request it be marked Applicant's Exhibit 16P for identification, Mr. Chairman.

CHAIRMAN MILLER: It may be marked.

(Whereupon, the document previously referred to as Applicant's Exhibit 16P was marked for identification.)

endlB 2Aflws

BY MR. MC GARRY:

Q Now turning your attention to Applicant's Exhibit 16B for identification, the Brunswick, at the bottom of paragraph -- at the bottom of the page, you state that Brunswick-1 full core maintainability will be through 1981, is that correct?

A (Witness Rotow) Yes.

Q And Brunswick-2 full core capability through 1982, is that correct?

A With the footnote, yes.

Q And the footnote says: "Contingent on shipping 304 assemblies from Robinson," is that correct?

A Right.

Q Now turning to page two, the paragraph number two says: "running without full core reserve," is that correct?

A Yes.

513 034



agp20

Q Now going to your survey, the column NRDC survey which is set forth in Intervenor's Exhibit 13C, for Brunswick 1 and 2, as opposed to the 1981-82 dates --

A I haven't yet found the exhibit.

Q Excuse .

(Pause.)

C2

A Here it is. I have it. yes.

Q And for Brunswick-1 you have 1987, Brunswick-2 1988, is that correct?

A This is in the middle column?

Q Yes.

A The numbers.

Yes.

Q And these numbers all assume, as you state at the top, the date on which the facility will lose full core reserve, is that correct?

A Yes.

FOUR ORIGINAL

Q Now turning to page two of your Brunswick document, Applicant's Exhibit 15B for identification, there on number five, paragraph five, you have handwritten notes that reflect that Brunswick 1 and 2 get six years if there is no shipment from Robinson, is that correct?

A Yes.

Q And did you add the six years, then, to the 1981 and 1982 dates for Brunswick?

513 035

agb21

A To get 1987 and 1988, no.

Q How did you get those dates?

A I was told that by Mr. Kunita.

Q Well didn't Mr. Kunita tell you that they lose full core reserve in '81 and '82 on the first page?

A As you can see there on the first page, it says:

"Contingent on shipping 304 assemblies from Robinson."

On the second page, it says if no transfer from Robinson occurs, they get six years more.

Q That's my question exactly.

Assuming no transportation from Robinson, which is reflected in reading your note, you get six additional years and if that's what Mr. Kunita told you, so be it.

And what I asked you, assuming no Robinson transportation, you add the six years onto the information received on the first page, that is, we add six years to 1981 to get 1987, and you add six years to 1982 to get 1988, is that correct?

A Mr. Kunita did the addition for me. I asked him to do that just to make sure I understood it so that I was clear.

Q And as I just related, that is what you interpret him as saying?

A Yes.

513 036

agb22

Q Now looking on to Robinson-2, you have the date 1992.

A Where?

Q In your survey.

A In the column labeled NRDC Survey?

Q That's correct.

A No, I have loss FCR with a superscript two footnoted to the following page, which says:

"Loss FCR in 1974-75 but has approval to ship spent fuel to the local reactor owned by the same utility."

Q And Mr. Rotow, what is that other reactor owned by the same utility?

A I believe at the time I understood it to be Brunswick.

Q So indeed your perception is that Carolina Power and Light is shipping Robinson fuel to Brunswick, is that correct?

A No, that's not my perception.

Q What is your perception?

A As of right now I don't know what they're doing down there.

Q At the time of the survey, what was your perception with respect to the transportation of Robinson fuel to Brunswick?

513 037

agb23

A At the time of the survey, it was that they were planning moving the assemblies but that they still were not sure whether or not they could successfully complete the move.

In the reporting in the survey, I reported it exactly as broken down.

Q And Brunswick, you assumed no transportation of Robinson fuel to Brunswick in your survey, is that correct?

A That is incorrect.

Q Well you just stated you have a 1970 date and a 1980 date, is that correct?

A The survey reports are reported in two columns. The first column makes it clear that in this column these dates are that no transshipment -- the second column makes it clear that this is the case if transshipment is assumed.

Q We'll get to the second column. I believe that's the column captioned "DOE Assumption and NRDC Survey," is that correct?

A Well the superscript four.

Q Superscript four. If we could just table our discussion, we'll get to that in a minute.

Just focusing on NRDC survey, that column in your survey, we've gone through the 1987 date for Brunswick-1, we've gone through the 1988 date for Brunswick-2. You indicated that that assumes no transfer from Robinson occurs, is that

agb24

correct?

A That's correct.

Q Now looking at Robinson-2, in the survey under the column NREO Survey, there appears the number 1992 with a superscript two.

A No, sir.

Q -- to footnote two.

CHAIRMAN MILLER: Mine does. 1992.

WITNESS ROTOW: I think you may have as evidence there one of the early drafts and that's a typographical error.

CHAIRMAN MILLER: I have the document Mr. Roisman supplied to us and mine does show it as counsel read.

MR. ROISMAN: Mr. Chairman, the witness is showing me a change that I'm also not aware of. He has another version of the identical document in which, at least so far as I know, this is the only difference, which is that in the column for Robinson-2 it says: "Loss FCR," it has the superscript two and a footnote, the footnote being the footnote which he has already read just a moment ago. And I don't know if that's the only change.

This document that he's showing me, I may have seen in earlier but I'm not familiar with it.

WITNESS ROTOW: That was a change made at least two months ago.

513 039

agb25

CHAIRMAN MILLER: Well we don't know, we're going to have to have the record established now. What changes, if any have been made to the documents that have been filed with the Board and presumably with the parties?

So we'll turn it over to Mr. Roisman, then.

MR. ROISMAN: Do you want me to conduct some direct examination with him at this point?

CHAIRMAN MILLER: Not necessarily. You do not, in your own knowledge, know why we have this difference?

MR. ROISMAN: No. The document that you've got is one that was sent out by me in conjunction with the motion for summary disposition. In our office, this was the copy that my secretary had available when I said send along a copy of the March 26, 1979 survey by Mr. Rotow. His secretary is not the same as my secretary. I assume these changes were made and that version was one that my secretary didn't have or that I didn't know existed.

CHAIRMAN MILLER: Well what are you tendering?

Tell us what you wish the record to show.

MR. ROISMAN: What I would like to tender, Mr. Chairman, is the one tendered with this change in the column as shown so that it is up to date

And having not known of this before, I can't tell you whether there's another change in there. If I could ask the witness a question, I would get that answer in the record.

aqb26

CHAIRMAN MILLER: Go ahead.

MR. ROISMAN: Are there any other changes in this version from the earlier version?

WITNESS ROTOW: To my knowledge, no.

MR. ROISMAN: Then I would like to keep the exhibit which is Exhibit 13C as it is with the change made in column NRDC Survey. Under the date Robinson-2, change that to "lost FCR" with the superscript two.

And then in the next column also opposite Robinson-2, the DOE Assumption and NRDC Survey column, write in 1992, with no superscript.

CHAIRMAN MILLER: All right. We'll consider that the document as tendered by counsel reflects that difference, Mr. McGarry.

Now if you wish to examine on it, you are entitled to do so, if you think it's significant, I don't know.

MR. MC GARRY: Mr. Chairman, if I may just defer on Brunswick, I'll go through the rest of my examination. At the end perhaps we can have a break and I will take several minutes and we can....

CHAIRMAN MILLER: Okay.

BY MR. MC GARRY:

Q Just for the record so I can reflect at the recess, Mr. Rotow, what is the significance of the change that you made in the Robinson-2 line under NRDC Survey in your testimony?

agh27

A (Witness Rotow) It corrects an error made by my secretary in copying this column of numbers from the draft version of this document that I gave her.

Q As I understand it, it's an acknowledgement that Robinson-2 does not have full core reserve at the time you conducted your survey, is that correct?

A It's an acknowledgement that if transshipment is not allowed, Robinson-2 which has lost FCR, remains out of FCR and that if transshipment does occur, the system can be managed at Robinson-2 -- is good for FCR until 1992.

Q And if Robinson-2 does transship to, presumably, Brunswick, then the Brunswick dates in your column NRDC Survey would be reduced, is that correct?

A No, sir.

Q Just the column -- explain, will you, please?

A The NRDC Survey column is the column under one set of assumptions. And I made clear the DOE assumption and NRDC Survey are a different set of assumptions.

Q I thought I would anticipate your answer.  
Just focusing on the NRDC Survey column.

A Yes.

Q -- and keeping out of your mind, for the moment, DOE Assumption-NRDC Survey column, wouldn't the fact that Robinson fuel would be shipped to Brunswick change the Brunswick numbers and reduce them?

513 042



agb28

A Well you're asking me to make two mutually exclusive assumptions.

Q I'm asking you to make that assumption.

A I can't do that.

Q No with respect to the 1992 data for Brunswick and Robinson, does that assume shipment from those facilities to yet another facility?

A No, sir.

Q What does it assume?

A Oh, I'm sorry, it does, shipment to the Harris facility.

Q And what is the status of the construction of the Harris facility?

A I don't know what the status is today.

Q Did you know what the status was at the time of your survey?

A I know what I was told.

Q What were you told?

A I was told that they expected their complex at Harris to come on-line in 1983.

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Class fls 2A

Q Turning to Applicant's Exhibit 16-R for identification, Oyster Creek:-- Do you have that document before you, Mr. Rotow?

A Yes, I do.

Q And what is the present spent fuel storage capacity at Oyster Creek? What was it at the time of your survey?

A I understand it as being 1176 assemblies.

Q And that would take Oyster Creek through what year for the maintenance of full core reserve?

A As they were in the process of reracking, that would maintain FCR through 1980 if the 224 bundles they had at Nuclear Fuel Services' facility were returned to Oyster Creek. Otherwise they would maintain full core reserve until 1982-1983.

Q Did you discuss the likelihood of the return of 224 NFS bundles to Oyster Creek?

A Yes, I did.

Q And what were you told in that regard?

A I don't recall.

Q With respect to the-- strike that.

Did you discuss future expansion with the Oyster Creek people?

A Yes, I did.

Q And did they indicate they were pursuing a course of action in this regard?

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513 044

wb2

A It depends on what you mean by "pursuing a course of action." They were studying it, yes.

Q Had they any designs?

A I don't know.

Q Had they commenced construction?

A I don't know. I don't believe so.

Q If you would turn to Applicant's 16-I, marked for identification. That's for Fort Calhoun.

I'll ask you the same set of questions, Mr. Rotov.

How many spent fuel storage assemblies did Fort Calhoun have at the time you discussed the matter with the Fort Calhoun people?

A They had 157 assemblies in their fuel pool.

Q And when would they lose full core reserve?

A 1985.

Q Did you discuss future expansion plans with them?

A Yes, I did.

Q And did they indicate they were pursuing a specific expansion program?

A They did not indicate they were pursuing a specific expansion program.

Q You don't know if they had any designs with respect to additional spent fuel pool--

A They were making studies.

Q At that time they didn't have any future spent

wb3

fuel pool modifications under construction?

A Not to my knowledge.

Q Who did you speak with at Fort Calhoun?

A Rich Jaworski, Reactor Engineer.

Q Now I believe you indicated in your testimony --and correct me if I'm wrong-- that you attempted in your survey to get to the individual who was on the --quote/unquote -- hot seat.

A Yes, sir.

Q How did you determine whether or not Rich Jaworski was on the hot seat?

A He was the person who was referred to me through a series of phone calls at Omaha Public Power as the person who would know of the status of spent fuel management.

Q Now when you contacted these individuals, when you contacted the person on the hot seat, were you attempting to get the person who was the decision maker with respect to AFRs?

A That would have been helpful. That is generally how I characterized it over the telephone, so that I would not be handed on to some PR flack.

Q Did you feel in each instance that you talked to the person who was on the hot seat with respect to decision making regarding AFR?

A Well, I don't mean to quibble with you, but here

wb4

we get into, what do you mean by hot seat and decision makers.

CHAIRMAN MILLER: How are you using the term?

Don't quibble.

WITNESS ROTOW: Someone knowledgeable, someone who would know.

CHAIRMAN MILLER: The question is, How did you determine in your own belief, at any rate, that you were actually talking to someone knowledgeable?

WITNESS ROTOW: Okay. If, in the course of calling the utility several times over a half hour, or fifteen or twenty minutes, and the phone calls come with such rapidity that the people on the other end could not coordinate to give me a name, but they all agreed that so-and-so is the person who you could speak to who is knowledgeable and responsible in this matter. And I took the consensus that the person who did get on the other end of the telephone line did, with some authority, speak for the utility.

BY MR. MC GARRY:

Q Did you feel you spoke to that individual in each utility?

A (Witness Rotow) I believe the information in my survey was derived from such a person, yes, at each utility.

Q In some instances you spoke to a reactor engineer, and in some instances you spoke to a senior engineer. like at Rancho Seco. At Oyster Creek you spoke to a vice president,

wb5

and then an operator.

In 16-J, in Susquehanna, I believe you spoke to an information officer.

A I wouldn't characterize him as a PR flack.

Q You would?

A I would not.

Q You have identified here on Applicant's 16-0, "I spoke with Bill Baygun, Info officer."

A That's correct.

Q What does Bill Baygun do at Susquehanna? What's his job?

A He's an information officer.

Q Do you know what department Bill Baygun works in?

A No.

Q Is Bill Baygun the only individual you spoke with at Susquehanna?

A Yes, that's true. --aside from secretaries, of course.

Q Now at transcript 1638 -- 1938, I mean, of yesterday's transcript, you stated, "The very first reactor I called, the utility was Susquehanna-1, where the public relations staff was extremely incensed to discover the Department of Energy was saying their reactor was running out of FCR, I believe in 1983, when in fact it could run past 1994."

Now did you get that information from Mr. Baygun?

wb6

A Yes; he was incensed.

Q And did you assume him to be a member of the public relations staff?

A At the time of that transcript, yes.

Q At the time of your survey?

A Yes.

Q Turning to Applicant's 16-C, marked for identification, Zimmer-1. Do you have that before you, Mr. Rotow?

A Yes, I do.

Q And at the time of your survey what was the present storage capacity of Zimmer-1?

A My notes here say "Operating license for 1120; rerack would yield in the neighborhood of 2200."

Q And at the time of your survey when would Zimmer-1 lose its full core reserve storage capability?

A That I did not ask Dr. Chickara directly. I didn't ask him that directly, because he had already started telling me that they had planned to rerack.

Q Do you know if they had any designs to rerack?

A I don't know.

Q Do you know--

A I assume so, though.

Q Did you know if rerack was under construction?

A No.

Q And didn't Dr. Chickara state, according to your

wb7 1 notes that Zimmer would like to rerack to get FCR into 1991-1992?

2 A Yes.

3 Q Turning to Applicant Exhibit 16-F, marked for  
4 identification,--

5 A I'm sorry, I made an error when I said that I  
6 did not ask Dr. Chickara. I just noticed here in my notes  
7 that it says "Current licensing capacity maintains FCR for  
8 'about five years.'"

9 Q And when was Zimmer-1 scheduled for startup?

10 A 1980.

11 Q So Zimmer-1 would maintain full core reserve until  
12 1985, approximately; is that correct?

13 A That sounds right, yes.

14 Q And, again, just to follow through one of these  
15 examples: looking at Zimmer-1, in your testimony, Table 1,  
16 DOE says for Zimmer-1 the DOE date is 1984, and your NRDC  
17 survey date is 1992. And am I to assume that the 1992 date is  
18 derived from your feeling, based on your conversations with  
19 Dr. Chickara, that Zimmer intended, or would like to rerack  
20 and get them to 1991-1992?

21 A No, that's incorrect.

22 Q How did you get the 1992 date?

23 A As it says under "What would utility do if govern-  
24 ment AFR is not available for near term," Dr. Chickara's reply  
25 was emphatically that in the near term they would rerack. The



ebl  
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1 exact quote he gave after telling me directly, very confidently  
2 that they would rereack:

3 "After 1992 we would look to the govern-  
4 ment to provide a repository."

2.230 5 This I remember was in the context of a permanent  
6 repository, not an AFR.

7 Q Now just to clarify the record, going back to  
8 16-K which is Oyster Creek, I believe DOE in your testimony  
9 has the date 1984, and your survey reflect 1987 - '88. I be-  
10 lieve in my questions to you you indicated that if the NFS  
11 bundles were returned the FCR capability until 1980, and if  
12 they are not returned, through 1982 - 1983. Is that correct?

13 A The first figure should be 1980 and one-half.

14 Q I couldn't figure that out. I appreciate that  
15 clarification.

End Bloom  
Landon fls

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19  
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23  
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MR. MC GARRY: I think I'm finished with those documents, and maybe this is the appropriate time, Mr. Chairman, to request that Applicant's Exhibits 16A through P, which have been marked for identification be --

MR. KETCHEN: Was that a "P"?

MR. MC GARRY: "P", Peter. -- be admitted into evidence.

CHAIRMAN MILLER: Which one is that?

MR. MC GARRY: That's this group of surveys that we've just been going through, running from A through P. I think this would be an appropriate place --

CHAIRMAN MILLER: Do you want a 10-minute recess at this point? Whatever is convenient. We don't care.

MR. MC GARRY: I think we can just keep going. I don't think we'll have to come back to --

CHAIRMAN MILLER: All right. Is there any objection to the admission into evidence of Applicant's Exhibit 16A through P?

MR. ROISMAN: No objection.

CHAIRMAN MILLER: Without objection, it will be admitted into evidence.

(The documents heretofore marked for identification as Applicant's Exhibits 16A through P were received in evidence.) 513 052

BY MR. MC GARRY:

Q Now, Mr. Rotow, as I understand the sequence of events, on March 26, 1979 you performed your survey, and NRDC findings were presented to the Department of Energy, is that correct?

A (Witness Rotow) No, sir.

Q Would you correct my understanding of the times?

A Yes. In late February and early March of 1979 I conducted the survey and distilled the results into a report, an early draft report, titled, "NRDC Survey of Utility Spent Fuel Managers." That was the working title of the draft paper. I believe we circulated a copy of that to the Department of Energy.

Q Now, to your knowledge, did the Department of Energy respond to your survey?

A Yes, they did.

Q How did they respond?

A They responded in a letter to -- an April 4th letter, from Worth Bateman to the Honorable John Dingell, D-i-n-g-e-l-l, Chairman of the Subcommittee for Energy and Power of the House of Representatives.

Q Is that a 3-page letter?

A Yes, it is.

Q Does it have attachments to it?

A Yes. It has two tables attached, plus an analysis --

wel 3

quote -- an analysis, dated March 30, 1979, titled, "Analysis of Near-Term Reactor Fuel Storage Problems." There's no author indicated for the analysis.

Q And how many pages is that analysis?

A 11 pages.

CHAIRMAN MILLER: What's this letter dated April 4, 1979 from the Department of Energy to the Honorable John Dingell? Has that been marked, or is it being marked now?

MR. MC GARRY: I'm going to request that it be marked for identification as Applicant's Exhibit 18.

CHAIRMAN MILLER: Thank you. It will be so marked.

(The document referred to was marked for identification as Applicant's Exhibit 18.)

MR. MC GARRY: I believe the witness has identified it, and the witness has indicated it's an April 4, 1979 letter to the Honorable John Dingell from Worth Bateman, three pages, bearing attachments, Table 1 and Table 2, and another attachment, an analysis, bearing the date of March 30, and that's five pages.

BY MR. MC GARRY:

Q Is that correct?

A (Witness Rotow) The analysis?

Q The analysis.

513 054

A No, -- 11 pages.

CHAIRMAN MILLER: Mine only has 5 pages, and then an attachment A, which itself consists of apparently about 6 pages.

WITNESS ROTOW: Yes, sir. I interpreted the attachment as being part of the analysis, for a total of 11 pages.

CHAIRMAN MILLER: All right, if it's designated as an analysis, let's call it that, however many pages that has.

WITNESS ROTOW: Yes, sir.

CHAIRMAN MILLER: Will you state it for the record? The analysis I think consists of pages numbered 1 through 5, does it not, to which there is an attachment A, which contains pages numbered 1 through 6.

Are we talking about the same document?

WITNESS ROTOW: Yes, sir.

CHAIRMAN MILLER: Fine. All right. Go ahead.

WITNESS COCHRAN: Mr. Chairman, that's 1 through 6.

MR. MC GARRY: I believe we properly identified the document.

CHAIRMAN MILLER: Yes.

BY MR. MC GARRY:

Q Mr. Rotow, thereafter, am I correct, you prepared a rebuttal of this document that has been marked for

identification as Applicant's Exhibit 187

A (Witness Rotow) I prepared a reply to it.

Q I wasn't sure if you were going to accept that or now.

And that's embodied in the May 1, 1979 document which is NRDC Exhibit 13C, which is captioned, "No Need for RFPs" by Dimitri Rotow?

A I believe that's 13D.

Q 13D. I'm sorry.

CHAIRMAN MILLER: Are you sure now? I'm showing NRDC 13B as being testimony of Dimitri Rotow. Let's find out.

MR. MC GARRY: I believe --

CHAIRMAN MILLER: That's what it was yesterday.

WITNESS ROTOW: 13A was the testimony.

MR. ROISMAN: 13A is the testimony.

CHAIRMAN MILLER: Well, according to my notes --

MR. ROISMAN: A is the resume, and B is the testimony, and C is the March 26, 1979 study, and D is the one that Mr. McGarry is now asking about, which is the May 1, 1979 study.

CHAIRMAN MILLER: Yes. That's "D" as in Dog?

MR. ROISMAN: "D" as in Dog. And E is the 1-page sheet which is a blank version of the questionnaire which Mr. Rotow used as the basis for asking his questions of the

ilities.

CHAIRMAN MILLER: That's E?

MR. ROISMAN: That's E.

CHAIRMAN MILLER: Very well. That's consistent with the notes the Board has. I take it, then, we're all uniform.

MR. MC GARRY: Mr. Chairman, at this time I would request that Applicant's Exhibit 18, which has been marked for identification, be received in evidence.

CHAIRMAN MILLER: Applicant's Exhibit 18?

MR. MC GARRY: 18, yes.

CHAIRMAN MILLER: Any objection?

MR. ROISMAN: Mr. Chairman, until we know what the purpose of it is, I would like to reserve on an objection. None of the people who are here had any connection with it. If Mr. McGarry wants to claim it under an exception or something, I'd like him to state the basis.

MR. MC GARRY: Yes. It's not coming in for the truth. It's simply coming in for the fact there was a DOE response.

CHAIRMAN MILLER: There was a response?

MR. MC GARRY: There was a response by DOE to Mr. Rotow's initial survey.

MR. ROISMAN: I have no problem with that, then.

CHAIRMAN MILLER: Very well. It will be admitted

into the record.

(The document heretofore  
marked for identification as  
Applicant's Exhibit 13 was  
received in evidence.)

MR. MC GARRY: Mr. Chairman, I think I've  
concluded. Is it possible to have just a minute?

CHAIRMAN MILLER: All right, we'll have a 10-minute  
recess.

MR. MC GARRY: Whatever the Board's pleasure, I'll  
be amenable.

CHAIRMAN MILLER: All right. We'll have a 10-minute  
recess.

end WEL 1  
2WEL

(Recess.)

CHAIRMAN MILLER: Are we ready to resume?

MR. MC GARRY: Yes, Mr. Chairman.

I just have one additional housekeeping item.  
This concerns Applicant's Exhibit 17 for identification,  
which Mr. Rotow handed the Board, which are his handwritten  
notes of Prairie Island.

(Document shown to the parties.)

BY MR. MC GARRY:

Q Mr. Rotow, I hand you a document that you previously  
handed to the Board, which is now marked Applicant's Exhibit  
17. Those are your handwritten notes, are they not,



concerning your survey of Prairie Island 1 and 2?

A (Witness Rotow) Yes.

Q Is that document, Applicant's Exhibit 17 marked for identification, illustrative of the surveys -- the results of the surveys that you've conducted with each one of these utilities?

A No.

Q Can you explain the distinction?

A Yes.

These are the notes for the preparation of the typed summaries.

Q And when were the typed summaries typed?

A Within one or two days after each entry was completed.

Q I note, looking at the Prairie Island typed summary which has now been received in evidence as Applicant's Exhibit 16N, that 16N appears to be more expansive than your typed notes.

Can you please account for that expansion of the typed notes?

A Yes.

CHAIRMAN MILLER: Go ahead.

WITNESS ROTOW: This was simply that before --

CHAIRMAN MILLER: "This" refers to what, Mr. Rotow?

WITNESS ROTOW: This is the written notes.

513 059

CHAIRMAN MILLER: Exhibit number?

WITNESS ROTOW: Exhibit 17. You see, when I had this handful of written notes that I made with things such as names, number, dates, times, and so forth, in order to be able to convert that to a concise summary, I happened, as a matter of convenience, to use the same question guide that I used in the preparation of the survey, just so that transmittal to Mr. Barrett would be more convenient and so that I would know what to type in each particular slot.

I took the time before typing that up to jot down what I thought would be appropriate.

BY MR. MC GARRY:

Q And when did you jot down what you thought would be appropriate? At the time of the phone conversation, after you got off the phone, or --

A (Witness Rotow) After I got off the phone.

Q How long after you got off the phone?

A 10-15 minutes.

Q And then to complete the process you then had the notes typed, and based on the thoughts that were in your head as a result of the conversations, you expanded upon the written notes contained in Applicant's Exhibit 17?

A No, sir, that's incorrect.

Q Explain to me what you did.

A Yes. I typed the typed summaries myself. In

preparing the typed summaries, I used the original set of handwritten notes, which were written at the exact instant of the conversation.

In some cases, these also used this particular questionnaire format. I had photocopied these en masse to use as a convenience, but this particular format that you referred to these handwritten notes were originally stapled to, these are simply the jottings that I made for formatting purposes, for the purpose of producing the typed summary.

Q And the notes you took at the time of the conversations you have since disposed of, is that correct?

A Yes. We're in the process of moving at NRDC.

Q Did you think that those were important documents?

A It depends on -- important for what?

Q Important to you.

A Had I known they would come up as evidence in a court case I surely wouldn't have disposed of them.

Important to me, no, because I felt that the two documents attached as 13C and 13D of the testimony adequately and comprehensively conveyed the substance of the survey's findings. They served the purpose well.

Q In your opinion, wouldn't it be good survey practice, good survey technique, to have the entire data base before you and anybody who was going to use that survey?

A No, sir.

Q Why not?

A Well, there are tradeoffs in terms of -- when you say anybody that's going to use it, I don't feel obliged to maintain every scrap of paper that I produce just against the possibility that sometime in the future someone in the Department of Energy might want to check and recheck, say, the particular numbers that I got, that I was told, for the capacity of spent fuel pools, and so forth and so on.

The intent and the substance of these documents was to reveal that there's strong contradictions and grievous faults in the Department of Energy reports, and that they amply demonstrated.

fls

**POOR ORIGINAL**

513 062

eb1

Q In your opinion?

A Yes, I think so.

MR. MC GARRY: Mr. Chairman, I would request that Applicant's Exhibit 17, marked for identification, be received into evidence. I will endeavor to get the appropriate number of copies and provide them to the Board and the parties.

CHAIRMAN MILLER: Any objection?

(No response.)

They will be received.

(Whereupon, Applicant's 17, having been previously marked for identification, were received in evidence.)

MR. MC GARRY: If I may have one minute, Mr. Chairman?

CHAIRMAN MILLER: Yes.

(Pause.)

c4

BY MR. MC GARRY:

Q Now, Mr. Rotow, with respect to the questions I just asked you, specifically the notes that you took at the specific time that you conducted your conversations, at transcript page 1961 of last night's transcript, didn't you state:

"I don't know what you're looking at there, but I can give you every scrap of paper

ab2

that I ever produced."

A (Witness Rotow) That was an error. I can't give you every scrap of paper I have ever produced.

Q Could you have yesterday?

A No. I haven't flown to Washington and --

Q Mr. Rotow, let's just be precise if you will. I'm not talking about every scrap of paper that you have ever produced; I'm talking about scraps of paper that relate specifically to this survey. Do you understand me? Do you understand my question?

A Yes.

Q And may I ask you that question again in the context that I have just put it.

You stated:

"....I can give you every scrap of paper that I ever produced."

Were you in error?

A If the precise meaning of your question is every piece of paper that relates to the survey, no, I cannot.

Q I'm talking about the handwritten notes that you took precisely at the time that you had your conversations with various utilities.

A If you're talking about precisely every scrap of paper that was taken by manuscript by me at the time, the exact time that I was doing the survey, no.

513 064

B/eb3

Q I'm talking about the notes that you put down on a piece of paper while you were discussing the survey matter with the various utilities.

MR. ROISMAN: That's been asked and answered twice.

CHAIRMAN MILLER: Well, there have been variations. Overruled.

Do you understand the question, Mr. Rotow?

WITNESS ROTOW: I don't believe he finished it the last time. Tony interrupted him.

CHAIRMAN MILLER: Well, he either finished it or he interrupted prematurely.

Let's consider you've been asked whether the notes you took during the telephone conversations, either immediate or immediately thereafter, are susceptible of production in all cases by you today or yesterday.

WITNESS ROTOW: No, sir.

CHAIRMAN MILLER: I think that covers it. It is in error. He says no.

MR. TOURTELLOTT: I think the record should also indicate a few moments ago the witness started to volunteer some information and he said, "I didn't fly back to Washington," and then Mr. Roisman basically touched him and stopped him from continuing with that statement.

CHAIRMAN MILLER: The record may so show, and

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PS/eb4

the record may also show that if Mr. Roisman hadn't, the Chairman probably would. We have asked the witness repeatedly not to volunteer but just to answer questions.

MR. MC GARRY: No further questions, Mr. Chairman.

CHAIRMAN MILLER: Any further examination of Mr. Rotow?

MR. KETCHEN: Mr. Chairman, I have a few questions.

CHAIRMAN MILLER: You may proceed.

BY MR. KETCHEN:

Q Mr. Rotow, I'd like to continue with this line of questions about the notes, and I'm referring to the original set of actual notes that were recorded during your phone conversations that you were just discussing with Mr. McGarry.

Do you recall that I asked to see your notes during the course of my deposition of you taken on two days, May 30th, 1979, and June 1st, 1979?

POOR ORIGINAL

A (Witness Rotow) No.

Q You don't recall that I asked to see your notes?

A That's correct.

MR. ROISMAN: I will stipulate, having been at the deposition, that he asked something to that effect, depending on how precise he wants the stipulation to be, but at least in general that he did ask for some notes at that

513 566



MPS/eb5 time.

CHAIRMAN MILLER: Does the deposition generally reflect the matter?

MR. KETCHEN: I believe it does, sir.

CHAIRMAN MILLER: Well, if it does, that would be the most accurate. If not, then we could ask Mr. Ketchen if he wishes to accept the stipulation and if he does, fine, and if he doesn't, you may then proceed.

MR. KETCHEN: Yes, sir. We'll find that.

CHAIRMAN MILLER: All right.

MR. ROISMAN: Mr. Chairman, in the deposition at pages 106 and 107 there's a reference to some notes being given to Mr. Ketchen by Mr. Rotow. Mr. Ketchen says on 107 at line 4:

"Mr. Rotow is furnishing me with a set of his personal notes and if there is no objection, I would like to mark these as Staff deposition Exhibit Number 7."

CHAIRMAN MILLER: Is that the reference, Mr. Ketchen? You may see it there.

MR. KETCHEN: That's part of the reference but I want the precise question that I did ask on the deposition because I believe I asked for all his personal notes, --

CHAIRMAN MILLER: Go ahead. You may locate it.

MR. KETCHEN: -- the right to look at them, and

MPB/eb6

1 I think the record may reflect it. I may have it right here.

2 (Pause.)

3 BY MR. KETCHEN:

4 Q Before we find that, Mr. Rotow, you indicated  
5 in response to -- along that same line I'm still asking. You  
6 indicated that you had disposed of those notes, those con-  
7 temporaneous notes, and you indicated I believe that NRDC is  
8 moving, or something of that sort.

9 Now could you indicate to me when you disposed  
10 of those contemporaneous notes?

11 A (Witness Rotow) No.

12 Q Obviously it's some time after February, 1979,  
13 but before today.

14 A That's correct.

15 Q And when was NRDC moving? NRDC is in the process  
16 of moving. When is that taking place?

17 A I don't know exactly; at the end of the summer.  
18 We've been getting memos about disposing of all extraneous  
19 memos for the past several months from the office managerial  
20 staff.

21 Q But nobody is physically taking equipment out of  
22 NRDC's offices now and moving them, files, desks, things of  
23 that sort?

24 MR. ROISMAN: Mr. Chairman, objection. What does  
25 our moving schedule have to do with anything? If Mr. Ketchen

513 068

MPB/eb7

1 wants to find out when the notes were destroyed, let him find  
2 that out directly, but the moving schedule seems awfully  
3 tangential and we're already late into this witness as it is.

4 I would like to have Mr. Ketchen examining --

5 CHAIRMAN MILLER: Well, that's true, but the  
6 witness did make some linkage between his destruction of the  
7 original contemporaneous notes and NRDC moving, so Counsel  
8 is entitled to find out if there was a link and if so, what  
9 it was. I hope it won't take too long. Nevertheless, it's  
10 within the scope.

11 BY MR. KETCHEN:

12 Q One more quick question or chat. I don't want  
13 to belabor the point.

14 When did this process of moving start?

15 A (Witness Rotow) I really don't remember.

16 Q That's all on that line, Mr. Rotow.  
(Pause.)

17 CHAIRMAN MILLER: Mr. Riley, you had asked me at  
18 the recess when your testimony might be taken. Your attorney  
19 is here.

20 Mr. Blum, tentatively could we schedule Mr. Riley's  
21 testimony following the completion of the NRDC testimony which  
22 I believe consists of this three-man panel.

23 Is that correct, Mr. Roisman?

24 MR. ROISMAN: Yes, that's correct, Mr. Chairman.

25 CHAIRMAN MILLER: So would it be convenient at or

513 069

MPB/eb8

1 near that point, Mr. Blum?

2 MR. BLUM: We're ready for his testimony at any  
3 time.

4 CHAIRMAN MILLER: He had asked leave for you to  
5 ask the question.

6 MR. BLUM: Mr. Riley's only request is that it  
7 be earlier in the day as opposed to after supper.

8 CHAIRMAN MILLER: I see. Very well.

9 Pardon me, Mr. Ketchen. I just wanted to get  
10 that straightened out when it occurred to me.

11 MR. KETCHEN: That's quite all right.

12 BY MR. KETCHEN:

13 Q Yesterday, Mr. Rotow, I asked a question. I will  
14 read from the transcript at page 1916.

15 "One other question I'd like to ask:" --

16 This is with respect to the survey. Let me go  
17 back and start again. I'm reading from the transcript at  
18 1916.

19 "One other question I'd like to ask:" --

20 CHAIRMAN MILLER: Do you have a copy for the  
21 witness?

22 (Handing document to the witness.)

23 MR. KETCHEN: This is just a background question.

24 BY MR. KETCHEN:

25 Q "One other question I'd like to ask:

MPB/eb9

1 "Did you identify yourself to the  
2 people you talked to on the telephone?

3 "ANSWER: (Witness Rotow) If they  
4 asked me what my name was, yes.

5 "QUESTION: Did you indicate what your  
6 affiliation was?

7 "CHAIRMAN MILLER: Objection sus-  
8 tained.

9 "You're getting into particular sur-  
10 veys. Now if you want to do it in a serious way,  
11 do it on cross-examination."

12 At this point in time I'd like to ask you:

13 Did you ever voluntarily identify yourself as a  
14 consultant for NRDC conducting a survey on behalf of the  
15 Department of Energy?

16 A (Witness Rotow) No.

17 Q Was there any reason that you did not do this?

18 A I wasn't asked.

19 CHAIRMAN MILLER: I think the question fairly  
20 was whether or not you volunteered that information and if  
21 not, why not?

22 WITNESS ROTOW: Oh, I see. I think because it  
23 simply would have extended the main process of getting in-  
24 formation if I volunteered this is who I am, this is what  
25 I'm doing, and what organization or affiliation I have. In

513 071

MPB/wbl

1 my own mind I thought that would have required subsequent  
2 explanations of the organization affiliation or the nature of  
3 our contact with the Department. And basically I didn't want  
4 to intrude on personality and what I was doing, and so forth  
5 and so on; what I really wanted to do was to elicit informa-  
6 tion from the people I was speaking with.

7 BY MR. KETCHEN:

8 Q And you didn't feel that the persons you were  
9 speaking with wouldn't like to know exactly what your affili-  
10 ation was before they started answering questions?

11 A (Witness Rotow) I didn't think it was right for  
12 me to tell them.

13 Q In any case, did they ask you exactly who you were  
14 and what you wanted?

15 A Some people did something very similar to that.  
16 One person in particular in the Maine Yankee survey, after  
17 I'd just told him that his head reactor engineer, Jim Brinker,  
18 had lied to me the day before -- I didn't say he lied to me;  
19 I said he gave me different information. If you want, I can  
20 go back to the exact notes.

21 Q Well, yes, we'll get there, maybe.

22 You said "some people" and then "one person."

23 A One person, yes.

24 Q In all those sixteen cases, and all those people you  
25 contacted, no one ever really pinned you down in your affiliation

513 072

MPB/wb2

1 or what you were doing?

2 A No.

3 Q They didn't ask you at all?

4 A Not at all.

5 Q Didn't you find that curious?

6 A No.

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1B MADELON  
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(Pause.)

Q Mr. Rotow, again along the line that Mr. McGarry was following, I would like to refer you to page 1938 of the transcript again, please.

A Yes, sir.

c4.45

Q In the transcript there at lines 7 and 8 it indicates that:

"The very first reactor I called, the utility was the Susquehanna 1, where the public relations staff was extremely incensed to discover that the Department of Energy was saying their reactor was running out of FCR I believe in 1983"--

A Mr. Ketchen, before you go on --

Q "...when in fact it could run past 1994."

You indicated "public relations staff". Was that a misstatement?

A I'm sorry, my copy of the transcript is missing page 1938.

(Handing transcript to the panel.)

CHAIRMAN MILLER: Perhaps you would rephrase the question so we have it in mind, Mr. Ketchen, please.

MR. KETCHEN: All right, sir.

I really haven't asked it; I was just trying to lay some groundwork here.



mpb2

CHAIRMAN MILLER: All right.

BY MR. KETCHEN:

Q First of all, Mr. Rotow, do you hold yourself out as a psychologist?

A (Witness Rotow) I've never held myself out as a psychologist.

Q Are you an expert on human behavior?

A It depends on what you mean by "expert".

Q All right.

Have you had special training in the evaluation of human behavior?

A Yes.

Q Would you indicate where and when?

A Harvard, 1975.

Q... Would you describe what you mean by "human behavior"?

A The eliciting of unbiased responses from experts especially when subjective judgments are called for.

I've also had some psychology courses at Harvard, mainly one in particular dealing with defense mechanisms and responses.

Q Okay.

Referring to page 1938, the statement -- there is a long dialogue before that, but part of the answer, starting at line 7, reads:

mpb3

"The very first reactor I called, the utility was the Susquehanna 1, where the public relations staff was extremely incensed to discover that the Department of Energy was saying their reactor was running out of FCR I believe in 1983 when in fact it could run past 1994."

The question is:

You didn't mean the public relations staff when you referred to "public relations staff" there, did you?

A Yes, I did mean that.

Q Did you talk to everyone on the public relations staff?

A I talked to Mr. Bacon, who was represented as being the head of the information office, the chief of the information office.

Q So you really meant that by "public relations staff", Mr. Bacon, that individual was the person you talked to?

A Yes.

Q He was the public information officer?

A Yes.

Q And you indicated earlier that you had not ever worked for a utility, is that correct?

A That's correct.

POOR ORIGINAL

513 076

mp. 4

Q Okay.

Do you know of your own experience about utility operation that the public information officer holds the hot seat, so to speak, with respect to making policy?

A Would you ask that question again?

Q In your experience, do you know whether a public information officer in any utility in this country sets policy for the company?

A Yes.

Q Which ones?

A I said I do know.

Q Okay.

Would you now tell me who? Which utilities?

A No utilities.

You asked me whether I know if the public relations office, public relations staff formally sets policies for utilities. I do know, and the answer is no, they don't normally set policy for utilities.

Q Do you know of any public information officer that sets policy for utilities with respect to management of spent fuel?

A No.

Q Incidentally, in this proceeding, are you in any way testifying as an expert in acceptable management techniques for cheap handling and safe storage of spent fuel?

513 077

mpbf

MR. ROISMAN: Mr. Chairman, objection.

We've already testified what he's being an expert for. It did not include that.

CHAIRMAN MILLER: Well, he's entitled to probe. You may answer.

WITNESS ROTOW: Well, I'll tell you honestly, not being an attorney, I don't really know the sense of that in terms of, you know, what constitutes an expert here.

I think, Counsel, you would have to ask Mr. Roisman what.

BY MR. KETCHEN:

Q But I'd rather ask you.

I want to know what your testimony is, and I want to know if in this case your understanding is that you're testifying or not testifying as an expert in acceptable management techniques for cheap handling and safe storage of spent fuel?

A (Witness Rotow) I don't believe that constitutes the particular area in which I hope to testify.

MR. KETCHEN: Mr. Chairman, do I understand I either have a stipulation to that effect or the witness's testimony indicates that? I'm not sure which.

CHAIRMAN MILLER: Well, he's just given you an answer. Isn't that consistent with your understanding?

MR. KETCHEN: All right, sir.

513 078

mpb5

CHAIRMAN MILLER: I understood Mr. Roisman offered something and you preferred to ask the witness, and you did. You got the answer.

Is there any problem with this?

MR. ROISMAN: I want to make clear, my offer only stays open until the party indicates whether they accept them or not. It doesn't stay open until they decide that they may like it.

CHAIRMAN MILLER: We understand that.

MR. ROISMAN: I'm trying to speed it up.

CHAIRMAN MILLER: We appreciate that.

BY MR. KETCHEN:

Q Mr. Rotow, are you an opponent of nuclear power?

A (Witness Rotow) No, I'm not.

Q Have you ever given any speeches either for or against nuclear power?

MR. ROISMAN: Objection.

CHAIRMAN MILLER: Overruled.

MR. ROISMAN: I don't think the witness understands, and I certainly don't understand what he means by "for or against nuclear power". Does he mean commercial reactors, government reactors, nuclear weapons? All of these are versions of nuclear power.

I don't object to the witness being asked --

CHAIRMAN MILLER: I suppose the information would

mpb?

be within the information of the witness, however. He's the man who knows, and he's answered, I think.

WITNESS ROTOW: Yes, I have, I think, in the sense that Mr. Ketchen is alluding to.

BY MR. KETCHEN:

Q Have you ever discussed with anyone in the Natural Resources Defense Council organization the idea of halting the licensing of nuclear power plants?

A (Witness Rotow) Yes, I have.

Q When?

A I really can't recall all occasions.

Q This year?

A Yes.

Q Or since you've been employed as a consultant with NRDC, which I assume was October of '78?

A Yes.

Q With whom have you had those discussions?

A Dr. Cochran, Dr. Tamplin.

Q Mr. Roisman, maybe?

A I don't recall.

(Pause.)

Q Mr. Rotow, are you, with respect to -- Let me start over.

Mr. Rotow, are you against the idea of the licensing of commercial -- Let me start again.

513 080

mpb8

Are you disposed against the licensing -- Let me strike that -- construction and licensing for operation of nuclear power plants?

A I'm not sure exactly what you mean by "disposed".

CHAIRMAN MILLER: Well, of a disposition.

W WESS ROTOW: Of a disposition to be against the licensing and construction of nuclear power reactors? Not from any a priori reasons, no.

BY MR. KETCHEN:

Q For any reason?

A (Witness Rotow) Yes.

If construction and licensing is done in a way that produces unsafe reactors, I certainly am. Or uneconomical reactors, let me add that.

MR. TOURTELLOTTE: I think the record should indicate that the Witness Tamplin is whispering to the testifying Witness Rotow.

CHAIRMAN MILLER: Well, I don't know whether he is or not.

MR. TOURTELLOTTE: Well, I can see and hear it from here.

CHAIRMAN MILLER: If so, I will ask the witnesses to refrain from whispering, signaling, or otherwise communicating.

BY MR. KETCHEN:

513 081

mpb9

Q Mr. Rotow, I don't know where it occurred, but it's my understanding of the testimony as it exists in the record to date that when you were conducting your survey you had indicated that you would adjust your questions depending on who you were talking to at the utility in order to elicit the truth of what you were asking.

Is that correct or incorrect, my characterization of the record? Is my characterization of the record accurate?

A (Witness Rotow) It's getting a little cloudy when you start saying, I'm changing the question to get to the truth of the matter.

It would be more accurate for you to say that if in the course of 'how much capacity of the spent fuel pool' someone says 'Well, we started out with X capacity, but now that we're reracking with higher density racks to maintain FCR through 1994', then obviously I'm not going to follow that up by asking 'Well, are you reracking?' It was that that my testimony earlier hoped to convey.

Q Okay.

Was there any presumption on your part that you wouldn't get a correct and accurate answer if you just asked the questions straight out? For example, the first one in your survey, "How many assemblies in a full core"?

A Generally, unless I noted otherwise --

Q Would you say that again?

513 082



mpb10

A Generally, unless I learned otherwise, I had no presumption that I was being lied to if I asked the questions directly.

Q And you asked them all the way down, even a question -- it looks like the next to the last question:

"What will a utility do if no government-

AFR is available?"

A Yes. Sometimes even if someone had earlier told me, 'Well, we are reracking to do such-and-such', I would get to that question, I would say something akin, 'Well, I'm working from a standard questionnaire, and the question is "What will you do if no government AFR is available? Do I understand that your rerack program is what you will do?"' And they would say something to the effect of 'Yes.'

CHAIRMAN MILLER: A little louder, a little slower.

WITNESS ROTOW: They would say something to the effect of 'Yes, that's what we would do.'

I'm trying to characterize the dialogue for you.

BY MR. KETCHEN:

Q So help me, Mr. Rotow. As I look at these questions down about through the -- one, two, three, four -- fifth question, one through five requires a more objective answer. It asks for a specific number, for example, type of thing, whereas the other questions ask for a judgment.

Is that the distinction between the --

mpbil

A (Witness Rotow) No, I don't think that's an accurate distinction.

Q Then you see no difference between a question like 'How much space filled at present', first, and the next question, 'What is utility's position with respect to FCR capability'?

A I do see a difference. I don't think your characterization of the difference was a good one.

Q Okay.

What's the difference, would you say?

A I think the difference is that the first set of questions are questions which people I was speaking to appeared to be asked and have answered very routinely. And the second set of questions are questions that were asked less frequently and which relate, say, more to plans, but plans can be very concrete, as in the case of the utilities, for example, that have applications pending before the ARC for rerack programs.

Q Mr. Rotow, I'd like to refer you now to NRDC's 13-B.

A 13-B.

Q That's the affidavit -- I assume it's testimony identified as Affidavit of Dimitri Rotow.

A Yes.

Q During the course of the testimony yesterday I

513 084

mpbl?

believe you indicated that on approximately six occasions you met with DOE officials before number 13-C and number 13-D were published.

Is that correct or incorrect?

A No, I never indicated that.

Q Well, when did you meet with the DOE officials?

A Prior to the publication of the May 1st document.

Q Which is that?

A "No Need for AFRs".

Q Is that 13-C?

CHAIRMAN MILLER: D as in dog?

WITNESS ROTOW: D as in dog.

And contemporaneous with the production of 13-C.

I may have had phone calls subsequent to May 1st, I just don't recall the exact timing.

BY MR. KETCHEN:

Q When you say "contemporaneous with", what does that mean? Can you give me a range of something?

A (Witness Rotow) In the same time duration.

Q Is that over a period of one day or three weeks, or what?

A Longer than one day; I think less than three weeks, although perhaps not less than three weeks.

Our document production process at NRDC has to be somewhat of an evolutionary thing.

mpb13

Q Okay.

Again, I'm trying to pin you down on "contemporaneous with".

You had meetings with DOE officials before March 26, 1979, is that correct? Would that be within the realm of "contemporaneous with"?

A Well, no, I don't think that's an accurate way of putting it, because the production process for NRDC Exhibit 13-C has not clearly defined a beginning and end point.

At some point, for example, drafts of the early rough draft were altered to some degree at some point, and finally acquired the title that it has now. And as you can see, we've been editing it as recently as today at the hearings.

There is still an early copy floating around that doesn't have the correction to Table 1.

I'm just saying it's in the general period of, say, before May 1st, but after early March; a span of about two months I think would define the time frame of "contemporaneous".

Q Okay.

Did you have meetings with DOE officials before March 26, 1979?

A Yes, I believe so.

513 086

mpbl4

Q With respect to away-from-reactor storage?

A Yes.

Q Who were those officials?

A Mike Lawrence, Jim Fiori, and I believe our meeting with Worth Bateman was very near to March 26th. But you'll have to ask Mr. Roisman and Mr. Cochran about that. They were also there.

Q Now I understand your testimony is that you also had meetings with DOE officials after March 26, 1979?

A Yes, I believe that to be true.

Q And when? Can you give me any specific dates?

A No.

Q Who with?

A Mike Lawrence, Jim Fiori, Dwayne Sewell, Tom Rainey --

CHAIRMAN MILLER: Slower, slower.

WITNESS ROTOW: Rainey, by the way, is spelled R-a-i-n-e-y.

Mr. Rich Grayson, G-r-a-y-s-o-n.

Dwayne Sewell is spelled S-e-w-e-l-l.

BY MR. KETCHEN:

Q Okay.

And in this series of meetings during this peak period, these are the approximately six occasions you were talking about yesterday?

mpb15

A (Witness Rotow) What do you mean by "this series of meetings"? The meetings with all the names that I've outlined, or those pertaining to AFR?

Q All of the meetings pertaining to AFR.

A That would be roughly in the time frame that I've described, the two month time frame, yes.

Q And you were asked yesterday 'How many meetings?' You said, 'Approximately six'.

A Approximately six.

Q And those six meetings took place sometime prior to March 26, 1979, or sometime after March 26, 1979?

A I think that's --

Q With those people you named?

A No, with the people I named that had to do with away-from-reactor storage matters.

CHAIRMAN MILLER: Mr. Ketchen, we're having a problem. Now you remember I reminded you yesterday that you went extremely far in voir dire. I reminded you you weren't going to be doing it twice. Now you're trying to do it twice or three times.

I think you'd better proceed now with asking him on cross-examination what you wish. Let's not worry about what he said yesterday. Because you were cautioned at the time as to the extent of voir dire and the effect. And you're rapidly approaching that point.

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MR. KETCHEN: Well, sir, I tried to remain within that rule that you specified by reviewing the transcript. But I'm about through with this anyway.

CHAIRMAN MILLER: All right.

WITNESS ROTH: I should point out that I meet with DOE officials regularly.

MR. KETCHEN: Mr. Chairman, I move that that answer be struck.

CHAIRMAN MILLER: I think it was volunteered, wasn't it? I didn't hear a question.

It will be stricken. It was non-responsive. It will be stricken.

Ed Madelon  
WRBloom fls

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BY MR. KETCHEN:

2 Q On page 2 of your testimony, Mr. Rotow, the  
3 second full paragraph, it reads, beginning:

4 "In 1977, the Carter Administration  
5 announced a policy of accepting spent nuclear fuel  
6 from private utilities for storage...."

7 The second sentence goes on to read:

8 "This policy was intended to close  
9 the 'back end' of the nuclear fuel utilization  
10 process and to resolve the deep and far-reaching  
11 citizen concern over perceptions that no disposal  
12 mechanism had been developed for safely managing  
13 radioactive wastes that could be dangerous for  
14 millenia."

15 Did you personally participate in the Carter --  
16 in the development of the policy announced in 1977 by President  
17 Carter?

18 A (Witness Rotow) No, sir, I did not.

19 Q Did you know anyone who was intimately involved  
20 in developing the background in support of the 1977 Carter  
21 Administration announcement of policy?

22 A The spent fuel policy?

23 Q The policy of accepting spent nuclear fuel from  
24 private utilities for storage?

25 A No, sir, I haven't.

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1 MR. ROISMAN: Mr. Chairman, to expedite things,  
2 I would like to strike the paragraph that begins "In 1977"  
3 on page 2 of NRC Exhibit Number 13-D, over to the end of  
4 that paragraph at the top of page 3.

5 CHAIRMAN MILLER: It will be considered stricken.

6 BY MR. KETCHEN:

7 Q Mr. Rotow, I'd like you to refer to page 3 of  
8 your testimony, the first paragraph that begins:

9 "In late 1978 and throughout 1979, I  
10 followed the DOE effort to convince Congress that  
11 an AFR is needed to manage spent fuel storage  
12 problems in the next decade."

13 The next sentence goes on:

14 "This effort...."

15 Let me stop there.

16 Is that sentence a summary of DOE's basis for  
17 supporting away-from-reactor storage?

18 A (Witness Rotow) Which sentence?

19 Q "In late 1978 and throughout 1979, I  
20 followed the DOE effort to convince Congress that  
21 an AFR is needed to manage spent fuel storage  
22 problems in the next decade."

23 A No, that sentence is not a summary of DOE's  
24 basis for AFR legislation.

25 Q Where did you get the basis for that statement,

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1 or what is the basis for that statement?

2 A Because of my own personal experience, I know  
3 that in late '78 and throughout 1979, I had followed the  
4 DOE effort and thus the basis for that is my own personal  
5 experience.

6 Q Going on, the next sentence reads:

7 "This effort has been based on report-  
8 ing to Congress and to the citizens that, based on  
9 utilities' latest plans, if no AFR is constructed  
10 by the government, many utility reactors will  
11 face a shutdown for lack of room in which to store  
12 their spent nuclear fuel."

13 Is that the basis for the previous sentence?

14 A No, sir, it is not.

15 Q Is that the basis for DOE's action?

16 A I think that accurately conveys the basis of  
17 DOE's effort for Congress.

18 Q How do you know that that's the basis for --

19 A Through my discussions with --

20 Q Let me finish my question.

21 How do you know that that's the basis for DOE's  
22 effort?

23 A Well, through my discussions with the Department  
24 of Energy people, most notably Worth Bateman, who is the actual  
25 person with the responsibility of getting this legislation

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eb4

1 through Congress; through letters such as the April 4th letter  
2 to The Honorable John Dingle which has already been introduced  
3 into evidence; through reporting in industry newsletters  
4 such as Energy Daily, Nucleonics Week, and reporting in trade  
5 journals, Nuclear News, and so forth.

6 Q Is that the total basis for DOE's consideration  
7 of away-from-reactor storage problems?

8 A No, I don't think so at all.

9 Q Then you're not absolutely certain that DOE has  
10 not considered expansion of fuel pools in any respect?

11 A I think you're confusing my comment on the  
12 cornerstone, the keystone of the Department of Energy's  
13 strategic effort to get legislation through Congress with  
14 their own motivations in sponsoring this legislation.

15 I was told by Worth Bateman directly the  
16 reason they were trying to get this legislation is because  
17 they were told to by the Administration.

18 Q You have indicated that there's another basis  
19 outside of what you're aware of for the effort, based on  
20 reporting to Congress and the citizens, that:

21 "...based on utilities' latest plans,  
22 if no AFR is constructed by the government, many  
23 utility reactors will face a shutdown for lack of  
24 room in which to store their spent nuclear fuel."

25 You indicated that there's a basis you know and

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eb5

1 that there's another basis.

2 A I don't think I ever indicated that.

3 Q Have you been in contact with each and every  
4 person in DOE responsible for formulating policy for spent  
5 fuel storage?

6 MR. BLUM: Objection, Mr. Chairman. I would  
7 move the Commission -- the panel, or the Presiding Officer  
8 to exercise his authority under 2.757 to expedite this thing.  
9 I think that it's very clear to everybody just what Mr. Rotow  
10 did, who he talked to, how he went about it, and what is in  
11 his testimony, and what its value is is a matter for this  
12 panel.

13 If he's an expert with specialized knowledge  
14 which will assist the trier of fact to understand at least a  
15 portion of the evidence, then we can accept it and go on from  
16 there.

17 But facing another hour or hour and a half, the  
18 time between now and the noon break, of more of this cannot  
19 be of any assistance. I believe you have the power to prevent  
20 this repetitive testimony which is what we're getting, and  
21 I would ask you to do that.

22 CHAIRMAN MILLER: Mr. Ketchen?

23 MR. KETCHEN: Mr. Chairman, it's not repetitive,  
24 and I am distressed at the motion. This witness is not  
25 offered as an expert but yet he tends to -- as an expert on

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1 DOE policy. He was offered as a surveyor with some ability  
2 to convey what his survey showed.

3 Now in his testimony he's telling us what DOE's  
4 policy is, and I'm trying to probe how he knows what DOE's  
5 policy is. He doesn't work for DOE --

6 WITNESS ROTOW: Yes, I --

7 CHAIRMAN MILLER: Just a minute now.

8 MR. KETC. I: -- directly. He's had some con-  
9 versation with some people in DOE, but this testimony talks  
10 about DOE policy. I don't think it is within the scope of  
11 what he was offered for, and that's what I'm driving at.

12 As a practical matter I've sat here for a week  
13 while cross-examination by Intervenor has gone on, and here  
14 I've been on only an hour on cross-examination and I suddenly  
15 start getting 2,757 motions.

16 If you want to interrupt my cross-examination  
17 that's fine but it just eats up time. I think I have a right  
18 to ask my questions and I intend to do so.

19 CHAIRMAN MILLER: Well, you have a right to ask  
20 questions. That's perfectly true and it's perfectly obvious.  
21 And the Board knows it has the power with regard to repetitious  
22 nature.

23 I think the point of the objection Mr. Blum made  
24 was the witness has indicated at least several times, both  
25 yesterday on voir dire examination and today on cross-examination

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eb7

1 that he is basing at least part of his testimony alluded to  
2 here on conversations with DOE officials who have been  
3 named.

4 Certainly you're entitled to inquire into that  
5 out. you haven't been inquiring into that. You keep getting  
6 the list and the lineups, and I suppose in that sense it is  
7 repetitious. You had it in your dire and you have it now.  
8 What are you going to do with it? So in that sense you're  
9 being repetitious.

10 Now if you want something productive, certainly  
11 you're entitled to cross-examine. We're not going to keep you  
12 from cross-examining. Certainly the Staff is perfectly  
13 capable and perhaps they've done so, about securing the  
14 attendance of Department of Energy witnesses, a sister agency.  
15 AND I suppose if the Staff deems it significant and material  
16 that this kind of testimony be presented to the Board, that  
17 they have done or will do so. I don't know.

18 But in any event, you can find out very readily  
19 the source of the information. You've got the names, and  
20 if you wish to pursue that, fine. If you just want to keep  
21 getting the names, that does seem a little tedious.

22 Proceed.

23 MR. KETCHEN: I would like to ask one more  
24 question along that line, --

25 CHAIRMAN MILLER: Very well.

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eb8

1 MR. KETCHEN: -- if you'll bear with me.

2 I might preface that to indicate that this parti-  
3 cular piece of testimony has not been probed yet, but I do  
4 have just one more question.

5 CHAIRMAN MILLER: Very well.

6 BY MR. KETCHEN:

7 Q Mr. Rotow, were you in attendance at the meet-  
8 ings or any meetings where DOE policy was decided?

9 A (Witness Rotow) Where it was decided?

10 Q Yes.

11 A No. I think you mean on APR storage.

12 CHAIRMAN MILLER: You've answered it. Don't  
13 embroider it.

14 BY MR. KETCHEN:

15 Q Mr. Rotow, I'd like to draw your attention to  
16 page 4 of your testimony. I'll be asking you some questions  
17 on that subject.

18 The first paragraph, the ... sentence:

19 "Duke's present effort to embark on an  
20 offsite spent fuel management plan on a step-by-  
21 step basis where onsite management options exist  
22 and where a whole cascade of transshipment is in-  
23 tended has serious, deep implications on a national  
24 level."

25 That seems to me a conclusory paragraph. Can

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1 you identify for me how many of the following paragraphs are  
2 an explanation of that statement?

3 CHAIRMAN MILLER: Why don't you move to strike  
4 it if you think it's improper?

5 MR. KETCHEN: Mr. Chairman, I would like to find  
6 out how many of these paragraphs are related.

7 MR. ROUMAN: I'll strike it, Mr. Chairman.

8 CHAIRMAN MILLER: All right. It has been stricken.  
9 You don't need cross-examination in order to--  
10 I don't know what your purpose is, but the material you find  
11 objectionable, if it is stricken and withdrawn, haven't you  
12 achieved your function as Staff Counsel?

13 MR. KETCHEN: Yes, sir, I think I just did. I'm  
14 happy; I'm satisfied.

15 MR. TOURTELLOTTE: There's another question  
16 that's outstanding, though. The question was: How many of  
17 the following paragraphs relate to that paragraph. And if  
18 that question had been answered first, then perhaps we would  
19 not have only stricken that paragraph but all those that this  
20 paragraph related to.

21 CHAIRMAN MILLER: I don't recall that question.  
22 Is that pending?

23 MR. KETCHEN: Yes, sir. That's the question I  
24 asked.

25 CHAIRMAN MILLER: Okay. Let me hear it. Was

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1 your question related to the paragraph that has been with-  
2 draw?

3 MR. FOURFELLOTT: Yes.

4 MR. KETCHEN: The question was: How many of the  
5 following paragraphs are the basis for the particular para-  
6 graph that was struck.

7 MR. ROISMAN: Let me just say for the record  
8 that the answer to that question couldn't possibly result  
9 in the striking of the subsequent paragraphs. It doesn't say  
10 how many of the subsequent paragraphs depend for their basis  
11 upon the paragraph that has just be struck. And how it's  
12 not relevant which one of those paragraphs are the basis for  
13 the struck paragraph. The struck paragraph isn't there any  
14 more.

15 CHAIRMAN MILLER: That's true.

16 You may proceed.

17 MR. KETCHEN: But if I had had the answer to  
18 that question, Mr. Chairman, before it got struck I may have  
19 had a basis for striking that paragraph and all the following  
20 paragraphs.

21 MR. ROISMAN: Now you understand better why I  
22 struck it.

23 CHAIRMAN MILLER: All right. Let's end the  
24 colloquy.

25 Go right ahead.

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1 MR. KETCHEN: Mr. Chairman, you wanted to save  
2 time. That would have been a good way to get rid of this,  
3 but we can go through it point by point I guess.

4 BY MR. KETCHEN:

5 Q On page 4, Mr. Rotow, the second paragraph,--  
6 I'm sorry.

7 Mr. Rotow, do you consider yourself an expert on  
8 how federal policy and actions are influenced?

9 A (Witness Rotow) In a general sense?

10 Q Can you answer the question?

11 A It depends on what you mean by expert. I know  
12 far more than most people.

13 MR. KETCHEN: Would you read back the answer,  
14 please?

15 CHAIRMAN MILLER: It's very difficult for the  
16 Reporter. Under the circumstances I think we can pretty  
17 well say I think he really means he doesn't know what you  
18 mean by "expert" in that sense but he knows a lot more about  
19 it than most people. That was the substance of his answer.

20 BY MR. KETCHEN:

21 Q Do you have any education or training or ex-  
22 perience that would qualify you to have special knowledge  
23 on which this Board could place reliance?

24 A (Witness Rotow) On influencing federal policy?  
25 Yes, I think so.

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1 Q Will you indicate that special training, educa-  
2 tion or experience?

3 A Largely on the basis of experience. I have  
4 interacted at great length on very serious issues with the  
5 Department of Energy over the past year, and I have in-  
6 fluenced federal policy on several occasions.

7 CHAIRMAN MILLER: You have influenced federal  
8 policy on several occasions?

9 WITNESS ROTOW: Yes.

10 CHAIRMAN MILLER: Did that have reference to  
11 nuclear weapons?

12 WITNESS ROTOW: Yes.

13 BY MR. KETCHEN:

14 Q On which occasions?

15 A (Witness Rotow) Starting in March, I prompted  
16 a review of safeguards policies in the federal government.  
17 I prompted a review of federal policy of declassification and  
18 sale of information to the public.

19 CHAIRMAN MILLER: Sale of information?

20 WITNESS ROTOW: Sale of information through the  
21 National Technical Information Service.

22 MR. ROISMAN: Mr. Chairman, may I ask that the  
23 witness move forward toward the microphone and speak toward  
24 the Reporter?

25 CHAIRMAN MILLER: I think the Reporter is

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1 dependent upon the direct voice. He doesn't get anything  
2 through the microphone, so therefore, look at the Reporter  
3 if you will, and speak toward him. Then I think you will  
4 project automatically.

5 WITNESS ROTOW: I prompted at least some review  
6 within the intelligence community of the treatment of reports  
7 of nuclear thefts, hoaxes, threats, and claims to information  
8 on weapons design.

9 I prompted year-long review and partial shut-  
10 down of the federal library at Los Alamos, New Mexico.

11 I have significantly influenced I believe  
12 federal policy in its formative stages in reference to geo-  
13 logic disposal of nuclear wastes by suggesting an analogy  
14 with the Reference 4 body that I understand has just been  
15 adopted, a draft standard.

16 Most recently, I once again prompted a  
17 complete and total overhaul of federal policy in declassi-  
18 fying and circulating classified information and appear to  
19 have influenced federal policy concerning First Amendment  
20 issues arising out of weapons cases.

21 Finally, I've been told by persons in the en-  
22 vironmental community and in Congress that my writings on the  
23 away-from-reactor issue -- in particular I'm thinking about  
24 Staff Exhibit 13-C and 13-D -- have strongly contributed to  
25 the Congressional disinclination to adopt the Department of

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1 Energy draft AFR legislation.

2 That's all that comes to mind off the top of my  
3 head.

4 BY MR. KETCHEN:

5 Q The next question is-- Would you answer the  
6 same question in a more limited way?

7 Do you have an expert knowledge with respect to  
8 influencing federal policy and federal actions in nation-  
9 wide nuclear fuel management?

10 A (Witness Rotow) Yes, sir.

11 Q Will you give me that?

12 MR. ROISMAN: Mr. Chairman, objection. He just  
13 gave him that in the context of explaining what impact he  
14 felt his AFR reports had. He told him that was the best he  
15 had off the top of his head.

16 CHAIRMAN MILLER: If he has anything further that  
17 he has not already testified to in regard to the question --

18 WITNESS ROTOW: I think also the discussions with  
19 Mr. Worth Bateman where he thought, as he put it, he'd been  
20 had by the short hairs -- the AFR report.

21 MR. KETCHEN: Mr. Chairman, I'm trying to get  
22 from this witness-- The witness gave me a broad answer on  
23 influencing federal policy, and I wanted to narrow it to the  
24 subject matter we have here today, and have the answer about  
25 what his expertise is in influencing federal policy in that

eb15

1 area. That was the nature of the second question.

2 CHAIRMAN MILLER: Well, in his previous answer  
3 and this one, he has given you information --

4 MR. KETCHEN: As part of all that --

5 CHAIRMAN MILLER: -- in the specific area you  
6 inquired about, as well as other areas where he has testified  
7 concerning what he believes to be his influence upon federal  
8 policy.

9 Now I asked him if there was anything in addi-  
10 tion with reference to your second, more limited question. He  
11 gave I think one additional matter and has concluded.  
12 Therefore, I believe we can infer that that's a fair and com-  
13 plete answer as he sees it to both questions. If it is other-  
14 wise, you may inquire.

15 BY MR. KETCHEN:

16 Q I would like to draw your attention, Mr. Rotow,  
17 to the first sentence of the second paragraph:

18 "The actual capacity cited as being  
19 required in a federal AFR has been reduced by a  
20 factor of three over the two years since the federal  
21 push for AFRs began."

22 What is the authority for that-- Strike that.

23 What's the basis for that statement?

24 A (Witness Rotow) Mr. Worth Bateman's statement to  
25 me in our conversation, saying that he had his back to the

eb16

1 wall, that they had already cut the figure from 15,000 tons  
2 in 1977 all the way back to 500 tons, and they've got to hold  
3 the line at 500 tons.

4 Q I'd like to ask you, do you consider yourself  
5 an expert in spent fuel management techniques?

6 A Again that depends on what you mean by expert.  
7 If you mean do I think I have specialized knowledge that might  
8 be of benefit to this proceeding in understanding the evi-  
9 dence before it, I'd say, definitely and emphatically, yes.

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Q Have you ever designed a spent fuel pool?

A No.

Q Have you ever designed the schedules for -- I'm sorry, have you ever been involved in the engineering design changing or reracking a spent fuel pool to add poison racks?

A In an actual pool? No.

Q Have you ever designed an independent spent fuel storage facility?

A It depends on what you mean by designed. I have made conceptual sketches.

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Q Have you ever been involved with a utility in discussing schedules of changing spent fuel pools to expand their capacity versus operating schedules as to when that capacity would be needed?

A It, by your question you mean have I talked with utility officials, I've been involved with utilities and their judgments insofar as reracks and timing of reracks according to various operating schedules of the reactors, yes, I have.

Q You've talked with utilities?

A Yes.

Q But you haven't actually done the work yourself?

A No, I haven't.

MR. KETCHEN: Mr. Chairman, I'd like to move to strike the sentence:

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"The capacity now cited as being required in an AFR is the very minimal figure, capable of justifying the construction of an AFR facility," because I don't believe the witness' answers indicate that he is any expert in spent fuel pool management techniques.

CHAIRMAN MILLER: Overruled.

BY MR. KETCHEN:

Q The sentence here in the second paragraph of your page four testimony which reads:

"To defend this figure (approximately 500 tons spent fuel storage capacity), DOE is basing its figures on what it claims to be the maximum available storage capacity based on current utility plans."

Is this based on your conversations with Worth Bateman, Mr. Lawrence and Mr. Fiore?

A (Witness Rotow) That's based on my conversations with Mr. Worth Bateman.

Q Mr. Worth Bateman alone.

A No, I'd say also Mike Lawrence and Jim Fiore.

Q Was this a recitation of what they told you, or what your conclusion is from what they told you?

A That's what they told me.

Q Can you indicate how you know DOE is basing its

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figures on what it claims to be the maximum available storage capacity based on current utility plans?

A Because that's what they said.

Q Did they say it in exactly this way?

A Nearly exactly, yes.

Q To defend this figure, they said exactly that:

"DOE is basing its figures on what it claims to be the maximum available storage capacity based on current utility plans?"

A Yes. The maximum available storage capacity based on current utility plans occurs in DOE ET-0075, February, 1979, a DOE report.

It also occurs in nearly exactly the same construction but this is the same sense in the March 30 analysis. I'm not sure whether it's the analysis or the attachment but, whatever, the fact is that Worth Bateman sent to John Dingell, and it also occurred in conversations with Mice Lawrence, Jim Fiore and, in particular, with Worth Bateman where he used this characterization of having his back against the wall with the 500-ton figure.

MR. KETCHEN: Mr. Chairman, I'd like to move to strike that sentence. This witness has no capability to read what's on DOE's mind and it's a characterization, it seems to me, of what DOE is thinking. And I do not see how he can know -- and he's obviously characterizing information

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that was given to him. It's not an actual factual representation of what DOE has said but what he has interpreted DOE to be saying. And I think it should be struck.

CHAIRMAN MILLER: Overruled.

Does the Staff intend to bring in any DOE witnesses? Is the Staff going to put on evidence as to what DOE, the Department of Energy's intentions or plans are in this regard?

MR. KETCHEN: At this point, I'll be frank with you, the idea occurred to us last night. It's not out of the question, but it's being thought about.

CHAIRMAN MILLER: Well judging by the vigor of your examination on this aspect, if the Staff believes it to be important and significant in decisionmaking, it would seem that the Staff would have thought of that long since. And if not, then the amount of time devoted to it might also enter into the cost-benefit balance.

He's testifying to what he learned as a result of whatever studies he made or conversations he had with designated Department of Energy officials.

Now if you want to controvert that, you're entitled to do it. If you want to bring it in evidence, fine. But if you're going to limit yourself to a line-by-line cross-examination for a long period of time and just drop there, we wonder how helpful the Staff is being to the Board

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in that respect.

The motion is overruled.

MR. ROISMAN: Mr. Chairman, may I just say one thing?

I realize the Board is not going to cut off all the cross-examination. But, I mean, each case we just keep getting more examples. And we now have in evidence Applicant's Exhibit Number 18 for the purpose of showing that DOE did do an analysis of the analysis that Mr. Rotow did.

If the Board would look at the portion of the document entitled, "Analysis of Near-Term Reactor Spent Fuel Storage Problems," dated March 30, 1979 --

CHAIRMAN MILLER: Where is that, where do we find that?

MR. ROISMAN: That's the third part of Applicant's Exhibit Number 18, the first part being the letter, the second part being two little charts. And this is the five-page part.

CHAIRMAN MILLER: I see. "Analysis of Near-Term...."

MR. ROISMAN: That's correct.

On page four of that document which, incidentally, was provided to the Applicant and the Staff and to the members of the Board by myself in a mailing about a month ago, it contains in it "Basis of Data in DOE ET-7705" and it proceeds

agb6

to show you what assumptions were used.

The middle one, "Current Plan Basing Capacity," and the paragraph that is at the bottom of the page completely corroborates what Mr. Rotow states in his testimony.

5.460

It seems to me that if Mr. Ketchen had read the document he would realize that, whether we talked to Worth Bateman or to the janitor at DOE, the fact is that what Mr. Rotow says in his testimony is accurate.

I quote now from the last paragraph of the document --

MR. KETCHEN: Before we get into this, I think that --

CHAIRMAN MILLER: Wait a minute, Mr. Ketchen, we're into it now.

MR. ROISMAN: May I finish?

"DOE chose the current utility plan capacity" --

CHAIRMAN MILLER: Where are you referring to?

MR. ROISMAN: I'm sorry, the very last paragraph on page four:

"DOE chose the current utility plan capacity as the most reasonable basis for analysis. This case, as opposed to the maximum expansion case, reflects utility judgment on feasibility of expansion in light of licensing

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economics, regulatory considerations, et cetera."

And back under the definition Current Plan Basing Capacity on the same page:

"This figure includes any reracking which the utility has firm plans to make. This category excludes expansion activities which are being analyzed and weighed for possible implementation."

Now obviously the Board and the parties are aware that is the guts of what we're arguing this case about. We had that whole extended cross-examination about plans versus commitments in the Duke System.

And it just seems to me that Mr. Ketchen has been spending an enormous amount of time here talking to Mr. Rotow about the validity of something which is demonstrated by a document which he's had for a month and which is now in evidence.

MR. KETCHEN: Mr. Chairman, this document isn't in evidence.

MR. ROISMAN: Unless he wants to question whether this, in fact, is a statement of DOE policy.

MR. KETCHEN: Mr. Chairman, this document is not in evidence. This document was offered for a limited purpose, as I understood it. Applicant's Number 18 was not in for the truth of the matter, it was in for the fact that there was

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a response to the memo. I don't see how that makes any difference to anything.

CHAIRMAN MILLER: Well are you asking the Board just to blind itself to what is said in the document, if requested to do so by you or any other counsel?

You are Staff counsel, what is your position. We want to get to the merits. We're not trying to quibble. We don't want to have duels between counsel and witnesses. What are the facts?

MR. KETCHEN: Mr. Chairman, I'm just trying to establish a basis for the motion to strike all this testimony, because I don't think the witness is qualified to testify and I don't think the testimony is credible testimony.

CHAIRMAN MILLER: Well what about the exhibit to which attention has been called by Mr. Roisman which is contained in Applicant's Exhibit 13 and the attachments thereto from the Department of Energy to the Honorable John Dingell, Chairman of the Subcommittee on Power and Energy of the House of Representatives.

Now the Staff surely is both aware of this and has some analysis of where it leads, and the Staff surely is aware of its own public interest responsibility.

This is not a contest among lawyers. This is not a purely adversary proceeding. And of course, in the case of both this Board and the NRC Staff, we are independent

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components of the Nuclear Regulatory Commission. We have our own responsibilities but one that we share is a sense of public responsibility. Now in that sense, let's get right down to the merits of this matter.

MR. KETCHEN: Mr. Chairman, this document is not cited by Mr. Rotow anywhere.

CHAIRMAN MILLER: Does it matter?

What are the facts?

MR. KETCHEN: The facts are that --

CHAIRMAN MILLER: What is the Department of Energy's position? What are you going to do about it? Instead of just examining one witness narrowly, what is the Staff going to do in presenting evidence to this Board?

MR. KETCHEN: Mr. Chairman, you asked me whether the Staff was going to present DOE witnesses. I don't know. We may do something about it later but right now this witness here is on the witness stand and he's got a lot of general conclusory statements in here, and I'm trying to probe the credibility of those statements.

CHAIRMAN MILLER: Well regardless of the particular witness, surely the Staff in the discharge of its responsibility has both the knowledge and information and in some sense a public responsibility with reference to the Department of Energy position.

It's been in our pleadings for some time. Portions

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 of it were cited, I think, in Contention 1 of NRDC some time ago. We are now at trial. What is the Staff's position?

I'm not talking about examining Mr. Rotow, however narrow that may be, I'm asking the Staff right now to put on the table what is the Staff's position about the Department of Energy's plans, intentions, testimony or whatever the situation may be so that we know.

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 MR. KETCHEN: Well, sir, we're going to put on our direct case.

CHAIRMAN MILLER: Does your direct case include direct evidence as to the Department of Energy and whatever its actions are in terms of the issues in this case.

MR. KETCHEN: Well first of all, we don't think those issues are in this case.

CHAIRMAN MILLER: Well suppose you're wrong about that? What do you intend to put on. Let's get right down to it, what is the Staff's case with reference to the Department of Energy.

MR. KETCHEN: Our Staff case with reference to the Department of Energy is, the Department of Energy's position on AFR's is not in this case.

CHAIRMAN MILLER: All right. We'll hear from you on that. Tell us why not, and we'll ask other counsel to express their views, so let's find out right now.

There's no sense in having a narrow cross-examination

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of one witness when we can't even seem to get a determination of what issues of fact and of mixed fact and law are concerns.

So let's take the time right now to find out. The Staff may tell us, and we'll ask other counsel to indicate their views.

MR. KETCHEN: Mr. Chairman, we made all these arguments on the first day.

CHAIRMAN MILLER: Then it shouldn't be hard to tell us right now. I think you were overruled on the argument you made on the first day, weren't you, at least referring to the scope of hearings, if that's what you mean.

MR. KETCHEN: I guess we were overruled and not overruled. As I understood the ruling, we were allowed to proceed on both theories of the case.

CHAIRMAN MILLER: Yes, indeed. And your responsibilities will flow therefrom. I'm asking you not to discharge your responsibilities.

MR. TOURTELLOTTE: We don't believe we have any responsibility for the scope of the hearing for the long-term.

CHAIRMAN MILLER: Can you respond to the question I've asked all counsel to address yourselves to, namely, the relationship, if any, of the Department of Energy or any of its plans, intentions, studies and so forth that flow

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from it insofar as it relates to this case, whether under your theory or somebody else's theory?

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MR. FOURTELLOTE: As we indicated when we were making the scope argument, we came to these hearings with a firm belief, both legally and factually, that the proper scope of this hearing was to consider simply the safety and health of the public vis-a-vis the single transshipment of fuel. And although we are certainly aware of DOF's policies and action, we did not feel that that had any particular relevance to this proceeding in terms of resolving the issue as we understood it.

The issues that are raised by the Board we will try to address, one way or the other, but we are only ready at this time, and we've indicated from the very start, we're only ready to proceed with our case on the single transshipment or the single transshipment issue, licensing issue. And we will have to go back after Friday to address the other issue, and to know how to address it either legally or factually.

CHAIRMAN MILLER: Well, I think the Board ruled when you did make that same argument prior to commencement of the taking of testimony, the Board ruled at that time, and it adheres to its ruling, that we believe that the scope of the hearing encompasses the issue of whether or not there is or may reasonably be regarded as a multiple transshipment program which is related to the nature of the application that is pending here.

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We said we were not going to decide that, one way or the other, except to say as a preliminary matter that multiple transshipments or cascading, if that be the term people have chosen to use, was involved as a potential issue in this proceeding and we've asked for the benefit of the parties to proceed to put on their evidence in that regard however they saw fit to do so, and that's what we're doing.

This does not mean that the Staff can make up its own mind as to what the issues are and take the position that that truncates the nature of the hearing. The Staff, like all other parties, abides by the Board's decision. If they wish to appeal, of course the parties have that right, and you are all entitled to protect the record for that purpose.

However, since these contentions, or some of them at any rate, Contention 1 and the portion cited in the latter part of Contention 1 by NRDC, clearly sought to raise certain issues, certainly the admission of Contention 1 as well as the other five contentions of NRDC as a pleading matter established issues.

Now for the Staff to come in and tell us that they're prepared to go as they view it or not, that's a decision made by the Staff. That's not a decision that can foreclose the nature of the evidentiary hearing in which we're involved.

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MR. FOURTELLOTT: We don't intend to foreclose the nature of the evidentiary hearing. We're simply trying to say we came here for this two weeks with the understanding that we would present the case on the transshipment, the single license issue, because it was our understanding that even if the Board should rule on the broader scope that the time that we would be spending here would not be lost vis-a-vis the Staff's case because that is something that the Board would have to consider anyway.

However, we were only prepared to present this much of a case, and what we're trying to tell the Board I think is that the rest of our case is going to have to come later on because we simply haven't had time to prepare it.

CHAIRMAN MILLER: Now you used that term, "understanding." You used it twice. And I don't know what your understanding is based on, whether it's unilateral or other Counsel or what, but there was no understanding by the Board that we were coming here for a truncated hearing or a short hearing.

The Board indicated in a conference with Counsel that if they did not wish to have a two- or three-day pre-hearing conference on the day this hearing was to start and then to commence the evidentiary hearing two or three weeks or 30 days thereafter, that we would come here prepared to conduct the evidentiary hearing.

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There was no understanding on the Board's part that I know of from which the Staff should have inferred that you were just coming down here for a two-week excursion on part of the issues and you were going to go back and do something else. I know of no understanding. Since you use the term, you probably should indicate for the record how that understanding arose and how it affects or binds the Board as the Staff sees it.

MR. TOURTELLOTTE: Mr. Chairman, I guess maybe the word "understanding" is inappropriate in that case.

CHAIRMAN MILLER: I wanted to be sure that the Board --

MR. TOURTELLOTTE: Maybe the understanding was just among the Staff.

CHAIRMAN MILLER: This is possible, and understandable. I just wanted the record to be clear.

MR. TOURTELLOTTE: The way we were proceeding I think was on the basis of the Douglas Point theory, that we had something to contribute to the two weeks because even if the issue were scoped out to be greater than what we thought it was, the matters which the Staff had to present would still have to be presented.

CHAIRMAN MILLER: We understand you. I wanted to be sure that there was no misunderstanding between the Board and the Staff. I think I understand now your position.

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All right, we'll hear now from the other parties.

MR. MC GARRY: I'll be very brief. The question is the relationship of DOE studies and plans as it relates to this case.

Applicant's position is DOE plans and studies do not relate to this case. Like the Staff, we believe in making that position known to the Board. Consideration of DOE policy regarding spent fuel storage is a matter to be taken up with DOE and Congress, and not this Board. And indeed, NRDC has proceeded upon that course, however using this, as we believe, forum to further articulate its concern. We think that's improper.

However, the Board chose to explore the scope, broaden the scope. We have put on a case, we maintain, that addresses that issue and demonstrates that indeed when one does look at the broad scope, there is no -- what we've been talking about -- cascading plans.

So we believe we have addressed the scope issue that the Board has raised.

CHAIRMAN MILLER: You've met it on the merits.

MR. MC GARRY: That's what we believe.

CHAIRMAN MILLER: Do you have anything further to say, pursuing that same issue of presentation of evidence by all parties on the merits with reference to the Department of Energy materials, let me call them?

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MR. MC GARRY: Of course we believe the Department of Energy materials speak for themselves.

CHAIRMAN MILLER: Well, you may have to prod them a little so we hear them. Are you prepared to do that?

MR. MC GARRY: We're not prepared to put on anybody from the Department of Energy.

CHAIRMAN MILLER: Or any publications that you feel bear upon it? I'm not saying you should or you shouldn't. We're simply inquiring now.

MR. MC GARRY: I think at this point in time we have put in-- There may be one or two other documents that we may seek to have identified and put in evidence through the other two witnesses, and I believe they will be Department of Energy documents. Our position is that these documents speak for themselves. We're bringing them to the Board's attention so the Board is aware at least that DOE has spoken on these matters.

CHAIRMAN MILLER: All right. I think the IRG, the Interagency Review Group publication has been identified, at least for the record if not actually incorporated.

MR. MC GARRY: That was an Applicant's exhibit which NRDC kindly moved into evidence, so we brought that to the Board's attention. We brought some other DOE documents and we believe we'll bring further DOE documents, so there will be some DOE documents for the Board's consideration.

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CHAIRMAN MILLER: You're addressing yourself to that point, regardless of what your position on the issues, so at the present you are prepared to and you are addressing them.

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MR. MC GARRY: We try to keep our options open, Mr. Chairman.

CHAIRMAN MILLER: Okay, cascade on.

(Laughter.)

We will take a brief recess and then hear from other Counsel.

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(Recess.)

CHAIRMAN MILLER: Mr. Roisman, I guess you were going to address yourself to the relevance and significance of the Department of Energy matters?

MR. ROISMAN: Yes, Mr. Chairman.

I would first like to look at factor number two among the five factors that the Commission itself outlined as factors that are to be considered in the case, and as it is stated on page 63 of the Environmental Impact Appraisal:

"Is it likely that the taking of the action here proposed prior to the preparation of the generic statement would constitute a commitment of resources that would tend to significantly foreclose the alternatives available with respect to any other licensing actions designed to ameliorate a possible shortage of spent fuel storage capacity?"

Now, our reading of that would say that if the Department of Energy is utilizing the existence of the transshipment proposal by Duke as a justification for one solution to the spent fuel storage problem, AFRs, that it is legitimate for us to get into evidence what it is that DOE is doing and how they are utilizing the fact that Duke is merely asking for the 300 transshipment, rather than coming up with a comprehensive plan for handling its spent fuel storage problems at Oconee through the lifetime of the plant.

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You will remember, in what is marked as Applicant's Exhibit Number 18, the language that I referred the Board to a few moments ago, that the DOE makes this distinction between firm plans and things which the utility is considering as alternatives. And because they make that distinction, the failure of Duke to now have to take a firm planning basis for its entire period, and allowing them to merely get away with doing the transshipment -- in effect, taking the Staff approach to it -- gives the Department of Energy the grist for its mill.

So we would contend that just addressing that factor alone, the Department of Energy's policy -- that is, are we right? Do we accurately describe that policy? -- is pertinent to the question of whether allowing the transshipment to proceed by itself, without regard to its long-range implications for the utility, is an appropriate question.

CHAIRMAN MILLER: How does that relate, however, to the Department of Energy's positions or plans?

MR. ROISMAN: Because the Department of Energy is, itself, proposing the construction of an away-from-reactor storage facility which would be a licensing action designed to ameliorate a possible shortage of spent fuel storage capacity.

CHAIRMAN MILLER: Aren't we looking at, in that context, are we not looking at the Applicant rather than a

either the Department of Energy or any other branch of government?

MR. ROISMAN: No. The reason we have to look at the Department of Energy is to see whether or not approving the Applicant's transshipment proposal will influence that licensing action, or, in the words here, "significantly foreclose the alternatives available."

And in this sense it will significantly foreclose alternatives to the government AFR by giving further weight to the Department of Energy's allegations that we need a government AFR.

CHAIRMAN MILLER: Well, isn't the alternative to be considered, though, the alternative available to the utility, to Duke Power Company here?

MR. ROISMAN: Duke has testified that the availability of a government AFR is one of their alternatives, that it's one of the considerations, a major assumption that enters into the decision as to what to do.

The record will show that they indicated that if there were no government AFR available, it could affect their judgment as to whether they would or would not seek transshipment, and whether they would or would not seek poison racks, and whether they would or would not attempt to build an independent spent fuel storage facility.

CHAIRMAN MILLER: Yes, but how do you get from

that position, that effect upon the Applicant, to a consideration or a determination of the materiality of what the Department of Energy does or doesn't do? How do you make the logical connection, or at least one that we have to consider? Why is it not sufficient if we simply look at alternatives, for example, or whether or not proposed lines of action would foreclose alternatives?

Why do we not look simply to the actions or conduct or planning of the Applicant only, and not the Department of Energy?

MR. ROISMAN: Because the Department of Energy has a proposal to provide one of the alternatives that enters into Duke's planning; namely, the government away-from-reactor storage facility. And the inquiry gets to the Department of Energy, because we have to find out whether or not the Duke action is influencing the choice of alternatives which Duke concedes are sort of part of its arsenal.

If we don't look at the Department of Energy AFR proposal, then we don't have the full range of potential alternatives that Duke is looking at as ways of dealing with a possible shortage of spent fuel storage capacity. In other words, they interact. There's an interrelationship. And that's really the burden of Mr. Rotow's testimony, what DOE does influences what Duke does. We've got that testimony from Duke's witnesses.

Now, Mr. Rotow is testifying that what Duke does influences what DOE does. That is, it influences DOE in making a case for the away-from-reactor storage facility that they have proposed.

I want to emphasize, it's been proposed in legislation, but they have yet to complete the impact statements, and I guess legally speaking they still haven't opened the possibility that they would conclude not to build one. But the proposal is in the form of proposed legislation, and they have testified in favor of it.

DR. LUEBKE: It seems to me I hear you arguing with the Department of Energy position?

MR. ROISMAN: We're only arguing with it because other parties doubt it. I must confess, I don't think the Department of Energy's position is -- the existence of it, as articulated by Mr. Rotow -- is controversial in the real world. It may turn out that counsel, for their own purposes, in this case consider it to be controversial. I would have considered it to be the sort of thing even perhaps that the Board could take official notice of -- although it perhaps doesn't have quite that character.

But it's not disputed. If you had Worth Bateman here I don't think he would dispute Mr. Rotow's statements regarding the fact that DOE does use current utility planning, that the fact that Duke doesn't have -- quote -- plans, in

the firm plans sense of that word, to go beyond the 300 trans-shipment, is an argument that DOE -- or a fact that DOE can use to support the need for an away-from-reactor storage facility.

So we are influencing long-run alternatives by what's being done on this alternative.

I would normally think we wouldn't be fighting about what DOE means, but the other parties are choosing to challenge it.

DR. LUEBKE: Whatever DOE has is in the formative stage, I guess, as I listen to you?

MR. ROISMAN: It's formative, because they have not issued a final impact statement, but it's completed in that they've actually submitted legislative proposals to the Congress and testified on behalf of it.

That, incidentally, is apparently permissible under the Council on Environmental Quality's regulations.

DR. LUEBKE: So it's on the verge of becoming more final, as I listen to you? I mean a few more steps and it gets to be policy?

MR. ROISMAN: Well, I guess DOE would have not objected if the Congress had enacted the legislative proposal, even if they hadn't completed their impact statements, and the proposals are to authorize and provide funding for the DOE to construct an away-from-reactor storage facility.



(The Board conferring.)

CHAIRMAN MILLER: And the question of the fore-closure of alternatives by action-taken here relates to what, in the context of this proceeding?

MR. ROISMAN: In this proceeding, we argue that the proper scope of examination should be what steps should Duke be taking now to deal with the shortage of its spent fuel storage capacity over the lifetime of the facility in question, which is Oconee? McGuire only comes in here because transshipment involves using up some of the McGuire pool and, therefore, one could say, what are you doing since McGuire does not have the capacity as currently planned to handle a lifetime supply of its own?

The linkage between the Oconee and McGuire are somewhat reduced, and we can't see any reracking at McGuire that would allow them, if they didn't take Oconee fuel, to take care of a lifetime, but it would allow them to go substantially into the 1990s without Oconee fuel.

The Oconee scheme, as the Applicant has described it, as we think the record represents, is to take incremental steps based upon assumptions regarding the availability of a government away-from-reactor storage facility, a government permanent waste disposal facility, or a government reprocessing facility.

That, I believe, the witnesses have testified --

primarily Mr. Bostian -- that if we took those assumptions out and assumed they weren't ever going to exist, that the Duke approach to planning would be different. It wouldn't necessarily work out that when a cost-benefit balance, or in terms of what Duke considered to be its best policy, that asking for transshipment would be the right thing to do; at least, transshipment without also being committed to building an independent spent fuel storage facility at the Oconee site.

In fact, I think what the evidence shows is that if the three government options were taken off, so that Duke knew that it had to handle its spent fuel storage problem itself, the choice would then be between an away-from-reactor or an at-reactor independent spent fuel storage facility, and they would choose an at-reactor independent spent fuel storage facility.

Now, the government's policies enter into this, because Duke's decision and the cost-benefit balance related to it relates to whether there's going to be a government AFR or not; and that, in turn, relates to whether Duke is allowed to merely transship without looking at the government AFR implications; or whether the transshipment has to be viewed in the context of it.

So there is an interaction between the two, and that's the burden of Mr. Rotow's testimony, and is what, in

effect, the conversations with DOE and the publications from DOE demonstrate. That DOE finds out what the utility is currently planning. The firm plans of the utility, as Duke has testified, are to some extent influenced by what DOE is going to do. And what DOE is going to do is somewhat influenced by what the utility's firm plans are.

So there is to some extent a little bit of game playing. Each one is saying, "Well, if that's what you're going to do, then this is what I'm going to do." And the other one is saying, "Well, if that's what you're going to do, then this is what I'm going to do."

So what we think that all calls for is that for purposes of Duke, you should have to look at the full term of the plant in question, Oconee, and see what is the best way to deal with their spent fuel storage problem. And, in our judgment, the record so far at least would strongly suggest that the best thing for them to do is to commit to building an independent spent fuel storage facility, so that they do not have to continue to come back into licensing actions, they do not have to continue to think about the cascade plan with its economic and health and safety, and so forth, implications, and they know they have a solution to the problem.

But I don't want to misstate our position. That's what the record looks like to us. We are not, however,

taking a position that that is what they must do. We think that there are analyses that need to be done to make that conclusion.

All we've tried to establish is that it is artificial to isolate the 300 unit transshipment and not see it as part of an overall program. And it's not just an overall cascade plan, because it's also arguably a part of simply a proposal that Duke has in its head, that if it can rerack 1 and 2 under the present reracking, transship to McGuire as needed, rerack with poison racks at the Oconee units 1, 2 and 3, that it will then have bought itself enough time so that the government AFR, or the permanent waste disposal, or reprocessing will occur.

Well, I would assume that one doing a cost-benefit balance would reach one set of conclusions about the wisdom of that approach based upon whether you thought the AFR were or were not going to come to existence; if so, when? Whether you thought the waste disposal were or were not going to come into existence and, if so, when?

MR. TOURTELLOTTE: Mr. Chairman, I hate to interrupt but --

CHAIRMAN MILLER: Let him finish. Do you wish to interrupt?

MR. TOURTELLOTTE: I would like to interrupt, because I guess I want to object to this continual speech

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that seems to be going to just a recitation of what Mr. Roisman wants to present.

CHAIRMAN MILLER: Well, we've asked all counsel -- and that includes you, and you'll get a chance to respond -- we've asked counsel to state their position. And that's what he's doing.

We didn't put any time limit on it. We're going to give the Staff an opportunity to respond. We want to know what the fundamental issues are, because I don't think that we're approaching it by tedious cross-examination of a witness whose testimony is somewhat limited, in view of the overall issues that we understand are controverted in this proceeding.

MR. TOURTELLOTTE: I --

CHAIRMAN MILLER: It's for that purpose that we're asking counsel to be heard.

MR. TOURTELLOTTE: I misunderstood what the Board was asking.

CHAIRMAN MILLER: We expect to have you respond. We're getting right down to what the issues are, as counsel perceive them now, at this stage in the proceeding.

You may continue, Mr. Roisman.

MR. ROISMAN: The point that I was making, which will be the last point I will be making on that aspect of it, is that the transshipment option, viewed in the context of

the total spent fuel storage problem for Ocorea, would be viewed differently as a wise course of action, depending upon what you make about assumptions regarding the AFR and the permanent waste disposal.

We think that a proper analysis has yet to be done of how that comes out. All we think the record will demonstrate at this point is that the proper analysis, if done, could make a difference in the judgment as to whether transshipment was the best thing to do.

That's sort of our point at this point in the case.

CHAIRMAN MILLER: Let me inquire:

Are you factoring in here, without articulating them, possible impacts of the Minnesota decision of the Court of Appeals of the District of Columbia Circuit, as well as its effect, if any, upon such prior holdings of the Appeal Board as the Prairie Island spent fuel expansion case?

MR. ROISMAN: Yes, and in this sense --

CHAIRMAN MILLER: It seems to us that you are, so you might explicate that, and then we'll have our other counsel present their points.

MR. ROISMAN: Yes, I am. I didn't really address it in detail, because it doesn't particularly relate to the DOE thing. To go back to the three assumptions that Duke uses to justify the kind of approach that it's taking to its

1 waste disposal -- or spent fuel storage problem, one of them  
2 is an assumption about the AFR. That's where the DOE data  
3 comes in. Is there going to be one? Is there a need for  
4 one? How is DOE trying to sell it?

5 CHAIRMAN MILLER: You're asking the Board to  
6 consider that as an issue and to make an ad-hoc evaluation  
7 in a particular proceeding, aren't you?

8 MR. ROISMAN: With respect to the DOE?

9 CHAIRMAN MILLER: Yes.

10 MR. ROISMAN: Yes. I think that this record at  
11 this point, without the testimony of any of our witnesses,  
12 would sustain the proposition that what DOE does with regard  
13 to the construction of an AFR influences what is the best  
14 course of action to now follow, and that a judgment has to  
15 be reached on the record about that question, about that  
16 assumption.

17 Now, I admit that that is equally applicable to  
18 perhaps other utilities making similar analyses, depending  
19 upon their situation. But that's not unusual. Boards often  
20 uncover in their own work potential generic issues, resolve  
21 them, and leave to the Commission the job of deciding  
22 whether they want to have it resolved over and over in  
23 individual proceedings, or go back and do a generic one.

24 A second one is reprocessing. I happen to think  
25 that the Commission's statement following the conclusion of



1 the GESMO proceedings, represents the best evidence and that  
2 no more need be said on that. And that is, the reprocessing  
3 option must be assumed to now be unavailable.

4 The third one is the waste disposal -- that is, a  
5 permanent facility, and that, of course, comes directly to  
6 the Minnesota case.

7 The Duke testimony had to do with when they  
8 thought a permanent facility might be available for Duke.  
9 That, of course, is the issue in the Minnesota case.

10 If it is going to be available in the year 1995,  
11 then one set of conclusions would be reached about the  
12 wisdom of the proposed action. If it's not going to be  
13 available until the year 2014, then a different set of  
14 conclusions might be reached about the wisdom of the  
15 proposed action.

16 So, obviously, having the issue that the Court  
17 of Appeals remanded back to the Commission resolved, is going  
18 to be a crucial issue before this case can be determined.

19 That's our position.

20 We feel that the Commission's position at this  
21 point -- at least based upon the representations of counsel  
22 during the course of the oral argument -- as described in  
23 the Court opinion, that they do want to handle the question  
24 generically and that is at least *prima facie* evidence --

25 CHAIRMAN MILLER: I'm sorry, I didn't hear that



1 last part, the generic portion of it.

2 MR. ROISMAN: Okay. During the course of the  
3 oral argument in the Minnesota case, government counsel  
4 represented that the Commission wanted to deal with that  
5 issue generically, and the Court makes reference to that in  
6 its opinion.

7 I think that's at least prima-facie evidence that  
8 the Board should take notice of in declining, itself, to  
9 try to decide when will a government repository be available,  
10 if at all.

11 CHAIRMAN MILLER: You contend that that is one of  
12 the issues that under certain assumptions would have to be  
13 decided before making a judgment upon the instant application?

14 MR. ROISMAN: That is correct.

15 CHAIRMAN MILLER: So you are saying what, then,  
16 in effect?

17 MR. ROISMAN: I'm saying, as I did at the outset  
18 of the hearings, that the Board should defer to the Commission  
19 until it has announced whether it intends to -- I mean, it's  
20 not bound irrevocably to the position that its counsel took  
21 in oral argument, and it could not conclude that it would  
22 like to deal with these issues on a case-by-case basis, in  
23 which case this Board would then have the question. It could  
24 announce that it wishes to deal with it generically, in which  
25 case the Board would have to wait to get the generic decision,

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1 and it could wait to announce its result based upon what it  
2 thought was an adequate record, the S-3 record or some other  
3 documents or data that it has in its possession.

4 I'm not going to the question of legality, because  
5 obviously we have no basis to argue the legality of the  
6 Commission's action to this Board.

7 So those are options. The Commission has indicated  
8 in its statements in the S-3 proceeding, that it at least  
9 has this matter under consideration.

10 I understand there was a Commission meeting --  
11 I've not seen the transcripts of that meeting -- that dealt  
12 with the issue a couple of weeks ago. I would expect at  
13 sometime in the next month or two the Commission will make  
14 an announcement. I don't think the Board can conclude this  
15 hearing until it knows whether it or the Commission has got  
16 to answer the question.

17 I do think the Minnesota case makes clear, and if  
18 didn't, the Duke testimony in this case does, that you must  
19 answer the question one way or the other, that the Court said  
20 had to be answered. And, in fact, the Appeal Board said had  
21 to be answered, in ALAB-465. The question was: Had it  
22 already been answered? And it's been ruled that it has not  
23 been answered.

24 CHAIRMAN MILLER: Is there any relationship between  
25 the action that the Commission took in its initial direction

1 to this and other Boards not to hold up licensing, but to  
2 consider the five factors which the Commission has taken  
3 into consideration on a generic basis with reference to the  
4 transportation or disposition of spent fuel?

5 MR. ROISMAN: I don't think so, because as I read  
6 what the Commission did, it re-established for this Board  
7 the identical criteria that it, itself, had used in concluding  
8 that a generic ban on all licensing was not warranted, and  
9 left to this Board the potential for deciding if the facts  
10 of the case warranted that, for a particular case, a ban  
11 on that proposed action was warranted. And the Board is,  
12 therefore, free, under any of the five factors and in the  
13 balancing of all of them as the Commission did, to reach a  
14 conclusion that licensing should not proceed because of one  
15 of the factors is heavy, and heavy in favor of not allowing  
16 the license to proceed until the generic reviews have been  
17 completed; or that the factors are themselves influenced by  
18 some outside new fact.

19 The Commission didn't suggest to the Board that  
20 the date of facts stop as of the date of their announcement.

21 CHAIRMAN MILLER: Well, assume hypothetically that  
22 the Board came to some such conclusion, in terms of weighty  
23 or heavy, on any one or more of the five factors as a result  
24 of this evidentiary hearing on the record? In that event, is  
25 it your position that the Board would have jurisdiction to

wel 18 1 make a finding to that effect, which would be at that point  
2 despositive of the issues before this Board, and not await  
3 resolution of some of the other matters?

4 MR. ROISMAN: You mean like the Minnesota --

5 CHAIRMAN MILLER: Yes. What's your position on  
6 that?

7 MR. ROISMAN: Obviously, I'd like to say if you'll  
8 come out our way, go ahead; and if you won't, don't.

9 But I know that's not right. It is a two-edged  
10 sword, and I think that you are as much prevented from  
11 ruling in favor of our position until the Minnesota issue  
12 is resolved, as you are in ruling against it.

13 I cannot make you -- at least at this moment I  
14 cannot think of a good reason why you should be allowed to --  
15 I think you could make all of the subsidiary findings. As  
16 you know, I urge that you not do that, because I thought we  
17 would get more direction and the direction of the case  
18 would be better if we had the Minnesota finding here.

19 But I think you could make all the subsidiary  
20 findings, and sort of leave a blank in which you concluded  
21 that here is the place where the Minnesota findings will  
22 fit. We might have to make them ourselves, the Commission  
23 might have to make them for us, when we know.

24 I think the permutations and commutations of the  
25 Commission's decision on the Minnesota case are too great

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1 for you to decide the case in alternatives.

2 I do think you could, if you thought it appropriate,  
3 and if the parties were asked to address it specifically,  
4 indicate what things the Minnesota decision might influence  
5 here.

6 You could say, depending on how the Minnesota  
7 substantive results come out, it could influence this  
8 conclusion, that conclusion -- you know, point them out.

9 So I do think you could do a lot, but I don't  
10 think you could make the ultimate judgment, without waiting  
11 for the Minnesota case.

12 CHAIRMAN MILLER: Thank you.

13 Mr. Blum, you haven't had a chance to be heard.  
14 And after you, we're going to ask for responses from Applicant  
15 and Staff.

16 MR. BLUM: I would associate us with the position--  
17 I think the record shows that Duke Power is waiting for a  
18 governmental deus ex machina, and that has led them to a  
19 potentially dangerous and needless decision as to how to  
20 deal with spent nuclear fuel, which I think has been rubber-  
21 stamped by the NRC Staff without much study or thought.

22 I think what we're left to cope with here should  
23 now be at the state of just picking up the details on the  
24 portions of that relating to dangerous and needless, and the  
25 lack of study or thought.

1 I think we should be able to get on with that in  
2 a minimal amount of time.

3 Thank you.

4 CHAIRMAN MILLER: Thank you, Mr. Blum.

5 Applicant or Staff? We don't care which goes  
6 first.

7 MR. MC GARRY: I'll put in my two cents worth, Mr.  
8 Chairman.

9 Several observations.

10 First, with respect to the originating question;  
11 that is, the role of the Department of Energy -- and I  
12 believe I'm addressing that to some extent, but as I listened  
13 to Mr. Roisman I have an additional comment to make.

14 Apparently the NRDC's position is that every  
15 short-term option tells DOE that the utilities are waiting  
16 for DOE to come up with an AFR. So to put the matter in  
17 perspective, this isn't a transportation issue; it's an  
18 issue with any short-term spent fuel expansion -- reracking,  
19 poison racking.

20 We submit that every case to date that involves  
21 spent fuel expansion has been short-term, has been reviewed  
22 by the Staff, has been approved by the Commission.

23 Now, you raised a question of Minnesota vs. NRC.  
24 In that instance, that Court did not stay, it did not vacate  
25 the Commission's decision.

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1 CHAIRMAN MILLER: No, but it remanded. In the  
2 real world, we have to consider when the Court of Appeals  
3 remands, and in light of the Supreme Court's hands-off, still  
4 they're doing something.

5 MR. MC GARRY: They're doing something, there's  
6 no question. And I think we've spoken to that. So I will  
7 be brief, Mr. Chairman.

8 I guess one point is we maintain that, yes, they  
9 did send it back to the Commission to develop a proper  
10 record to support the reasonable assurance finding.

11 What's curious is that on the 21st : 22nd of  
12 June, about a month after the Minnesota case, the NRC, with  
13 the approval of five Commissioners, granted us the reracking  
14 for the Oconee 1 and 2 spent fuel pool. So they had to --

15 CHAIRMAN MILLER: What are you inferring from  
16 that?

17 MR. MC GARRY: Well, we infer in that regard that  
18 the Commission has decided that they feel that there is  
19 reasonable assurance. You can continue to license, you can  
20 reach a decision, we can go forward, they are going to treat  
21 it generically, they will develop a proper record. But they,  
22 believe it or not, agree with the Applicant's position, that  
23 the --

24 CHAIRMAN MILLER: But only on reracking. Wasn't  
25 that decision to permit -- on Staff recommendation, to permit

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1 the Applicant to go forward with the requested reracking?

2 MR. MC GARRY: What I heard it say is a short-term  
3 spent fuel modification, or a spent fuel -- short-term spent  
4 fuel solution.

5 CHAIRMAN MILLER: Wasn't it just reracking, much  
6 as the other two cases which were decided by the Appeal Board  
7 and not taken up by the Commission, Krotzer and Prairie Island?

8 MR. MC GARRY: That has been the action so far,  
9 Mr. Chairman. This is the first transportation case. I'm  
10 not trying to cloud that issue.

11 What I'm saying is we must look at it as a spent  
12 fuel -- short-term spent fuel storage solution, and that be  
13 our position.

14 I think that pretty much concludes our remarks.  
15 I believe I've addressed it. If the Board has any further  
16 questions --

17 CHAIRMAN MILLER: I might ask you: What is the  
18 jurisdiction of the Board with reference to the various  
19 issues which have been put into play here both the fact and  
20 mixed law and fact?

21 MR. MC GARRY: We think this Board is pursuing  
22 the proper course, you're developing a record. We submit  
23 that we will have an entire record by the close of the  
24 hearings hopefully on Friday.

25 At that point in time, it's our view that you do

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1 not have to wait for any Commission decision with respect to  
2 Minnesota versus NRC. That's our view. The record will  
3 articulate.

4 So this Board can proceed with its determination  
5 of whether or not there's a cascade plan. We submit there  
6 isn't and, of course, we're going to have legal arguments that  
7 that shouldn't even indeed be an issue in this case.

8 If it's an issue in this case, we then submit  
9 that this Board can still render the appropriate decision  
10 because based on various legal standards which are set  
11 forth, one, in the footnote in the Minnesota case concerning  
12 segmentation. Even if you find cascades, you can still go  
13 forth as this is a discrete part of the program.

14 DR. LUEBKE: By your picture, Mr. McGarry, the  
15 DOE policies, whether they're interim or final are  
16 of peripheral. Did I listen correctly?

17 MR. MC GARRY: Absolutely, just have nothing to  
18 do with this proceeding.

19 I submit that Mr. Roisman has addressed the matter  
20 head-on with respect to foreclosure of options at independent  
21 utility. It's our position, with all due respect to  
22 Mr. Roisman, that if we look at the history of the Commission's  
23 decisions when they talk about short-term spent fuel modifi-  
24 fications, they address these issues knowing full well that  
25 DOE was looking at this. DOE's been looking at this for

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several years. It's a Draft Environmental Impact Statement  
out by DOE.

And in each instance the Commission has found  
those independent utility options have not been foreclosed  
and they've been addressing themselves to short-term spent  
fuel storage solutions. That's what this is.

It may be called transportation as opposed to  
repackaging, but it's a short-term spent fuel solution, that's  
our position.

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CHAIRMAN MILLER: That's a short-term solution.

But do you not discern distinctive features from such short-term solutions by virtue of racking and reracking on the one hand, and multiple transshipments on the other?

MR. MC GARRY: Absolutely not, Mr. Chairman.

CHAIRMAN MILLER: You think they are all the same?

MR. MC GARRY: If we look at every facility who have modified their spent fuel pools we must recognize this is the second step -- let's call it a cascade program -- with respect to reracking. Let's call it-- They had an original design that had some racks in that design. They now, because of the problems that they face, they've taken out those racks on the cascade program and they've reracked.

Now the next time when they look at their options they may take out high density racks and put in poison racks.

Now I submit, is that a cascade racking option? We submit -- and this is what the Commission has addressed itself to: you look at the short term options. The Commission in its 1975 document set forth in the Federal Register acknowledged short term solutions while it's looking at the matter generically.

CHAIRMAN MILLER: Provided that...

MR. MC GARRY: Provided that you look at the five aspects.

I'm saying that transportation-- Somehow we've got

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this feeling that transportation is a completely new piece. We submit that it is not; that it's no different from other options that have been exercised by utilities throughout the nation and have been approved by the Commission and the courts.

CHAIRMAN MILLER: What about the ALAB 455 where the Appeal Board, evincing there, and in the Trojan reracking case, some bafflement about failure to come up with some type of waste management, but, nonetheless rejected the Supreme Court decision where the Supreme Court said if they're not asking for a programmatic solution you don't have to look at it, and they pointed out that the Federal District Court had made an expressed finding that there was no programmatic concept for major federal action. But the Appeal Board then went on to say that they found unpersuasive the contention made in those cases that they were not required to make an analysis, with or without NEPA, of the long-range effects, say, of spent fuel storage on site, with or without expanded racking for the lifetime of the plant or beyond, or for an indeterminate period.

As I recall, the Appeal Board decided in that case that because they considered that the Commission had established policy, fortunately they didn't have to go into that, they didn't know what they'd say if they did go into it, but pointed out the necessity of reviewing that when questions were raised which had not been considered or

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decided at the operating license or the construction permit stage. In other words, there had never been any study, NEPA or otherwise, of the safety or the NEPA factors involved in indeterminate post-licensing long term storage on site, in whatever form.

Now doesn't that reasoning have some applicability, conceivably, to this situation, whatever you're going to call transshipment? Has there ever been previously any determination of the full fledged time-related and safety-related aspects of transshipment, however you wish to define the term? Isn't this the first time such matters are really being considered, as such?

MR. MC GARRY: No, Mr. Chairman. Transportation was fully considered in Table S-4, fully considered, all the aspects of transportation. This is not a new matter.

DR. LUEBKE: Ever since there was the possibility of reprocessing there had to be transportation.

MR. MC GARRY: Exactly. And reprocessing has been--

CHAIRMAN MILLER: Well, what's the present status of reprocessing?

MR. MC GARRY: The present status is, right now it's -- quote/unquote -- deferred.

CHAIRMAN MILLER: Well, the necessity of reprocessing, if you kill one doesn't it have some impact on the other?

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MR. MC GARRY: No.

Let's get back to Table S-4 for a moment,

Mr. Chairman. I'm submitting Table S-4, which is embodied in Part 51, did address the whole gamut of transportation and what are the environmental effects of the transportation activity. And that is all set forth in that table.

CHAIRMAN MILLER: That's transshipment as then conceived. But is that the same thing as transshipment assuming that there is a cascading pattern whereby -- or juggling, whatever the terms are used. What about that relationship to ALAB 455 which says if you're going to have a permanent disposition -- I don't care if it's on a merry-go-round or page a, b or c, there's got to be some study both in terms of safety and in terms of NEPA on this as a long range effort. How do you want to define it?

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MR. MC GARRY: Addressing myself particularly to 455, we maintain that Minnesota versus NRC, what's the Commission going to do with that? And I think that's what we should be focussing in on. And we should be getting some guidance in that regard.

Now you've heard my argument. I won't repeat it. We don't think you have to wait for it. But, to address your concern, I think your guidance will come from the Commission with respect to how do you treat whether or not there's reasonable assurance. If they say there isn't reasonable

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1 assurance, then one would logically go back to ALAB-455 and  
 2 then look at that standard and see if indeed, that is going  
 3 to be our guide.

4 But I would feel fairly confident the Commission  
 5 will provide guidance for us, if that's going to be their  
 6 course of action.

7 The other thing I wanted to point out or put in  
 8 the proper context, is in back of transportation we have the  
 9 testimony of Mr. Jones which I believe indicates that there  
 10 have been transshipments of spent fuel assemblies for years.  
 11 This isn't the first one that's going to take place. They've  
 12 been going to California and to Morris, Illinois for years.  
 13 Duke shipped them from here to Lynchburg, Virginia, and from  
 14 here, as we know, to Crystal River, Florida.

15 This is not the first time it's ever happened.  
 16 That's just a perspective on this issue of ALAB-455, and I  
 17 think I've put forth our position on the record.

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CHAIRMAN MILLER: Okay. Thank you, Mr. McGarry.  
 The Staff?

MR. TOURTELLOTTE: The Staff's position isn't  
 really any different at this time than it was at first.

We believe that if Minnesota is going to be used  
 at all in this case, that footnote five controls, and that  
 the proper scope of the hearing is assumed to be transshipment.

And the Board cited 455, and 455 on page 51 says  
 that:

"Neither the Staff nor the Licensing  
 Board need concern itself with the matter  
 of ultimate disposal of spent fuel..."

CHAIRMAN MILLER: Because?

MR. TOURTELLOTTE: "...i.e., with  
 the possibility that the pool will become  
 an indefinite permanent repository for its  
 contents. This being so, the limitations  
 placed by the Board as to the scope of the  
 inquiry were proper and intervenor's attack  
 upon those limitations were rejected."

We believe that the proper scope of the hearing  
 is the single transshipment, and that in terms of the overall  
 Board jurisdiction to consider more than that -- jurisdiction,  
 of course, is the right to speak on the ultimate issue, and  
 if it turns out as it seems to be turning out, that the

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ultimate issue is ultimate disposal of waste, then it is probably beyond the scope of the jurisdiction of this Board.

I would make one other comment -- unless you have some questions about our position --

CHAIRMAN MILLER: It would be the same as that we addressed to Mr. McGarr or Mr. Roisman. And I take it your position is pretty much the same as was articulated by the Staff a week or so ago --

MR. TOURTELLOTTE: Yes.

CHAIRMAN MILLER: -- and presently by the Applicant.

MR. TOURTELLOTTE: Yes.

It hasn't changed.

I would point out to the Board that originally we got into this discussion because of an interruption of Mr. Ketchen's cross-examination of this witness. One of the things that Mr. Roisman said is that -- or said words to the effect that he ought to be cross-examining upon the federal policies that underlie the actions of DCE.

Our view is that, in the first place, if such testimony is capable of being put into evidence, Mr. Roisman has the responsibility of sponsoring it into evidence in the first place.

In the second place, that deals with relevance -- in the second place is he has the responsibility of sponsoring it into evidence with someone who is a competent witness to

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testify.

And what Mr. Ketchen's cross-examination has been going to on a line by line basis of what remains of Mr. Rotow's testimony is Mr. Rotow's competency to testify about DOE policy, and about federal policy in general and the AFR problem. And we believe that those questions are proper and they haven't been done before.

Mr. McGarry directed his cross-examination totally, almost totally to the survey questions and how he conducted the survey and we're talking about the specific lines that he has in the testimony, which, on a couple of occasions, we've already made a motion to strike and it has been overruled.

And actually we received an indication that we can make that motion again when the evidence is finally offered. Well, if we don't cross-examine now when the evidence is finally offered, we're not going to be able to make an effective motion to strike.

So we'd like to be able to continue along those lines.

DR. LUEBKE: And, Mr. Tourtellotte, as I listened to the statement of your case, the DOE policy, interim or final, is not a vital part of it, is that correct?

MR. TOURTELLOTTE: At this point it isn't, and this maybe brings us to a point that is worth discussing

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too.

I know Mr. McGarry had said he had hoped everything would wind up by Friday. I don't see, frankly, how it could possibly wind up by Friday if indeed -- it sort of depends on how the Board treats Mr. Rotow's testimony. But if indeed the Board accepts a major portion of what remains, then the Staff is confronted with the problem of whether, A, we want to subpoena all 15 people, or however many other people Mr. Rotow summarized in the survey, and get their side of the story, because I think we'd almost have to do that in order to make the record really complete and accurate on this point.

And the second point is whether or not we would subpoena anybody from DOE or get their acquiescence in appearing in this proceeding. And those kinds of decisions are really made at a management level in the NRC, which is above mine.

So I really can't -- I can't give you an answer, and I couldn't give you an answer, I don't think, by Friday as to what we would do relative to DOE.

But I do know that assuming that Mr. Rotow's testimony goes in, assuming that the scope of this thing goes further, we would also, it seems to me, have to do what Mr. Roisman has said we have to do and that is go back and make some kind of environmental assessment, and this

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hearing would have to remain open.

CHAIRMAN MILLER: Very well.

MR. ROISMAN: Mr. Chairman, may I just say two things?

CHAIRMAN MILLER: Yes.

MR. ROISMAN: One has to do with footnote five and the Minnesota opinion. It keeps coming up. And all I want to point out is that the footnote specifically references the record made in the Minnesota case before the Commission, and says, in its second paragraph, the second line:

"Minnesota has not pointed to any consequence of future expansion that could not be adequately considered at the time of any request for further expansion."

Of course, that's precisely what we are attempting to show, which is that the transshipment being approved now without any consideration of the broader scope, will give the impetus to the government to build the AFR, which will mean that Duke will not build an independent spent fuel storage facility at the reactor site, but will use the government AFR as its disposal.

Now without saying whether that's now been resolved or not, I think we certainly have the right to make that case, both to make the case that there will be a

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consequence from Duke doing the transshipment on government policy, and in turn, the government policy will influence what Duke does.

And therefore footnote five would not make any difference here.

Secondly, if the Board will look at NRDC Exhibit number 2, which has been received in evidence, which is a memorandum from Mr. Snead to a number of gentlemen, including Mr. Bostian, dated March 24rd of this year, it says down in the bottom paragraph on page 1 -- I might point out, by the way, this is a memorandum of a phone conversation between Duke and people at DOE. Nobody seemed to worry about whether they were talking to these officials or, I think the Chairman referred to Mickey Mouse yesterday.

I just wanted to point out the process of getting information by phone does not seem to be unique to Mr. Rotcw's survey methods.

At the bottom paragraph it reads, and I quote"

"I" -- I assume this must be Mr. Snead --

"I asked Mr. Fiore if DOE would testify, if asked by Duke, in our transportation hearing. He responded that they would testify on safety of transportation and government storage plans. I gather that a request on our part for a particular individual, as Mike Lawrence or Worth

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Eatenan, would be considered. It appears to me such testimony would be beneficial relative to Mr. Rossmann's (sic) contentions 1 through 4. Indeed, our plans are premised on avoiding significant costs of spent fuel storage while waiting for government to act on their plans for storage."

Now, again, maybe NRDC Exhibit number 2 is not dispositive of this question of the linkage between DOE policy and what Duke is doing, but it's certainly good enough evidence to get us all the way to proposed findings of fact and conclusions of law.

That brings me to the second question:

What is the implication of what the Staff, Mr. Tourtelotte, has just said and essentially had said way back when we argued whether the hearing should begin or not.

I continue to be stunned, amazed and overwhelmed by what the Staff position is, as I understand it. They are going to have their cake, they are going to eat it too, and then they're going to serve it on another day. I do not understand.

The Staff has been told by the Board, as I understand it, these two weeks are the hearing weeks. Make your case or go home.

The staff is now telling us that they want to

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cross-examine Mr. Rotow on the assumption that the DOE plans are relevant to the case, but they are not prepared to assume their responsibilities under cases like Scenic Hudson and The United Church of Christ, to produce evidence on a relevant issue when nobody else is producing it, to wit: They're not prepared to bring in the DOE experts, and they want to tell us all that a month or two from now we'll all come back down here again to have the hearing in which the Staff makes the case to finally cover itself. That is, it wants to cover itself on the assumption that it's right and the scope is narrow by not producing anything these two weeks.

It also wants to cover itself on the possibility that it's wrong, and put on a whole other case some other time in the future. And it wants to now have the opportunity to cross-examine the witnesses on issues it believes are irrelevant, but does not want to assume the responsibility of producing evidence or subpoenaing witnesses to address that issue.

I mean, I know that there's a certain latitude to trial counsel in a case in that you can try a case on several different theories, but it seems to me the Staff has found the limit of the doctrine and that they should be held to the principle that when this weeks ends, having been put on notice from Day One by this Board, they are through. If that case won't stand scrutiny, and if they had an obligation

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to do more, than the Board should, when it has the clearance after the Minnesota decision comes down, it should simply deny the application on the ground that there was not an adequate record developed because of the failure of the Staff or on whatever other grounds it might make that ruling.

And we should not be back in Charlotte in late September or something to reargue all of these cases.

The scope issue was resolved at the beginning at the Staff's request so that we would know what we were supposed to be addressing. I think the Applicant has responded to that.

We allowed, in effect, a lot of direct examination to take place orally in order to fill the record up with what the Applicant wanted to present on that point. And I assume the Applicant is satisfied that it's made its case.

We did not press the two weeks advance notice on the evidence. We would have provided the Staff with the same courtesy. I gather their position is now they're going to cross their fingers and go for another hearing. I don't think that should be permitted.

I just wanted to be clear that our position is when you end the hearings this week, unless some witness that should have been cross-examined didn't get reached, the hearings are over.

CHAIRMAN MILLER: Well, let the Board be clear,

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and then we'll hear from the Staff on that.

You believe on behalf of NRDC and apparently the other Intervenor that the hearings should be closed at the conclusion of the taking of testimony this week, that there should be a suspension of judgment until the Board gets guidance from the Commission in some fashion of the impact, if any, of the Minnesota case, that then there should be proposed findings of fact and issues of law presented by the parties, and the Board should write an initial decision.

Is that it?

MR. ROISMAN: Except that I would not object to the Board directing us now to submit our proposed findings of fact and conclusions of law, and to the extent that those proposed findings of fact and conclusions of law can be resolved without awaiting the Minnesota decision, the Board would go ahead and decide as much of the case as it wanted.

You understand, I have made -- and it's now moot -- the Douglas Point argument that I think it would have been better not to have held this two weeks of hearings. But they've happened. And I think the next logical thing to do is get us to give you what we think this record demonstrates, and to identify where we think you shouldn't decide, if any of us do, based on waiting on the Minnesota case.

CHAIRMAN MILLER: Well, your position is that it's only the Minnesota case and its implications that would

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remain undecided.

MR. ROISMAN: Yes, that's right, pointing out that my initial position was that the Board shouldn't have allowed the hearing to take place at all, not only because of Minnesota but because, also, of the absence of a Staff presentation.

The Board voted no, we will go ahead. And I understood the Board to say that we were put on notice that if we wanted to make a case here on any point that we thought was relevant, this was the two weeks to do it.

CHAIRMAN MILLER: Well, that was the Board's contention.

MR. ROISMAN: Okay.

And I have operated on that assumption. That's why I said I didn't think I'd have a lot of cross-examination for the Staff, because, as I understand it, all we're going to do is get up and tell essentially what we think are relevant inquiries have not yet been made by the staff. And that will form an important basis of the proposed findings that we would submit to the Board.

CHAIRMAN MILLER: Let me ask Mr. McGarry, before we hear from Staff on that.

What is your client's position on the finality or lack of finality at the conclusion of taking of evidence this week.

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MR. MC GARRY: Our position is when we walk out of here on Friday, the record is closed. The proposed findings should be filed, and this Board can render a decision.

CHAIRMAN MILLER: In other words, you're the same as Mr. Roisman except you say you don't even worry about the implications, if any, of Minnesota?

MR. MC GARRY: Exactly.

I'm sure both of us will have an Attachment A to our proposed findings which will be a brief on the Minnesota versus NRC case.

CHAIRMAN MILLER: Okay.

Now, Staff, what are your positions, that is if you wish to be heard on it. You may feel you've presented your position. We're not urging you one way or the other.

MR. TOURTELLOTT: Well, I regret that Mr. Roisman doesn't like to come back to Charlotte, but the simple fact is that the way I understood the Board to rule was that there was not a clear ruling that the scope of the hearing was to be commensurate with Mr. Roisman's theory or the Staff's theory, but that the Board was simply going to conduct its hearings and was going to listen to both stories and would make some decision about all of that after they had heard what had been presented.

And it seems to me, proceeding on that basis, that as information comes up, it doesn't really make any

ngbl3

difference whether you consider the NREC case or the Staff testimony case. The simple fact is that we have a right to call rebuttal witnesses if we want, and that during the course of these hearings it's become quite apparent that testimony which we have felt all along was totally incompetent, it has become apparent that there is a possibility that that may be admitted into evidence. And the only thing that we would have to do would be to call rebuttal witnesses.

Now there is no way on Wednesday at noon that we can call rebuttal witnesses for Mr. Rotow from those 15 utilities and get them here in the next day and a half or two days.

And we have the right to present our case in that fashion. But we don't have to have 15 people sitting around waiting for this proceeding to come up with a moment in time when perhaps they can get on. If we had all 15 people, there is no likelihood that we could finish them even if we had them for two full days.

I'm a little bit amazed myself at Mr. Roisman. He never ceases to amaze me --

MR. ROISMAN: Thank you.

MR. TOURTELLOTTE: -- and one of the reasons he doesn't cease to amaze me is because in one moment he has the directness and fortitude to stand up and tell the Board that he doesn't really think that -- He'd like to say that

mpbl4

'you have jurisdiction if you decide my way, but if you decide their way, I'd like to say you don't.' And in the final analysis he says that perhaps the Minnesota case takes a jurisdiction away from you until the Commission decides what it's going to do.

And he has that kind of courage. And then he turns right around and really distorts the procedural picture to accomplish some purpose that only can be characterized as a rhetorical purpose. And it doesn't really serve these proceedings, and ... doesn't really serve his interest in the long run.

CHAIRMAN MILLER: The testimony you alluded to was prefiled testimony which was within the knowledge of the Staff as well as the taking of depositions, was it not, with reference to the NRDC's panel?

MR. TOURTELLOTT: This is true.

But, of course, we were of a very strong conviction that the testimony would never get into the record in the first place.

CHAIRMAN MILLER: Well, how does that affect the difference between the rebuttal testimony and testimony that the parties had the right to expect the Staff to come forward with at this evidentiary hearing? That's why we've raised the question.

Calling something rebuttal doesn't make it

mpb15

rebuttal necessarily. So we're curious as to why the Staff chooses to call rebuttal, and then claim the right to keep the record open, when as a matter of fact the testimony itself in its form was apparently prefiled and you apparently took some depositions.

We haven't read your depositions, but we know they have been filed.

But it would appear to us that the Staff had plenty of information as to what was proposed to be testified by this panel, and that such witnesses as the Staff might wish to put on in opposition thereto would not be denominated rebuttal witnesses in that sense.

MR. TOURTELLOTTÉ: Well, we can put the witness on to rebut their case. We assumed that they would be rebuttal witnesses.

CHAIRMAN MILLER: Well, what has the Staff put on as their case in chief in its normal course? That's why you ask for the right to go last usually, don't you?

MR. TOURTELLOTTÉ: Well, we had no reason to believe that this testimony is going to be accepted in part--

CHAIRMAN MILLER: Well, you mean you'd gamble on whether or not it was admissible to determine whether or not to call witnesses? Is that what you're telling this Board?

MR. TOURTELLOTTÉ: I'm telling you that because of the way this hearing has developed, we are now considering

mpbi calling additional witnesses.

CHAIRMAN MILLER: Well, all right.

We'll take our lunch recess and convene at 1:15, 1:20, an hour and fifteen minutes, approximately.

(Whereupon, at 12:05 p.m., the hearing in the above-entitled matter was recessed, to reconvene at 1:20 p.m., this same day.)

POOR ORIGINAL

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 2:55 PM-1

AFTERNOON SESSION

(1:20 p.m.)

CHAIRMAN MILLER: The hearing will resume.

Whereupon,

THOMAS B. COCHRAN

DIMITRI ROTOW

and

ARTHUR TAMPLIN

resumed the stand as witnesses for and on behalf of Intervenor Natural Resources Defense Council and, having been previously duly sworn, were examined and testified further as follows:

CHAIRMAN MILLER: Mr. Ketchen, I think you were cross-examing.

MR. KETCHEN: Yes, sir.

CROSS-EXAMINATION (Continued)

BY MR. KETCHEN:

Q Mr. Rotow, I think I left off my questioning at page 4 of your testimony, the material on that page.

Is that before you now?

A (Witness Rotow) Yes, it is.

Q The questions now are on the second full paragraph. The third sentence reads,

"If current utility plans indicate that on-site storage is infeasible, this is highlighted as justifying AFR construction."

POOR ORIGINAL

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WRB/wb2

"Current utility plans". Which utility are you talking about?

A In writing that sentence I was speaking in a generic sense.

Q You mean utilities generally?

A Yes.

Q Okay.

There's a statement in there, or a phrase; I'm sorry: "this is highlighted." By whom is this highlighted?

A By the Department of Energy in their presentations to Congress and the American people. I'm thinking, as a particular example, of Figure 1 to NRDC Exhibit 13-C.

Q And by whom is it highlighted specifically?

A Well, by the Department of Energy in documents like DOE/DT-0075 which carries no author, so I can't really say beyond that.

Q So it could or could not be some of those gentlemen that you named this morning that you talked to?

A Yes. I think Worth Bateman has told me that he has certainly made that case.

Q So it could be others as well, other than those three?

A Yes.

Q --who highlight that?

A Yes.

POOR ORIGINAL

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Q The next sentence: "If a utility tells DOE that expansion of on-site storage is infeasible but that transshipment of fuel from one utility to another is a preferred plan, then DOE contends that APR need is justified because on-site expansion is impossible."

Again I need to ask you about the word "utility." Is that again a generic use of the term?

A Yes.

Q And when a utility tells DOE-- When you use the term "DOE" are you thinking of anyone specifically?

A Again, in a general sense, in terms of the organization.

Q So it could be--

A --the organization or to a subcontractor for preparation of studies for the benefit of the Department of Energy.

Q So it could be those people that you named earlier today, as well as others?

A Yes, that's true.

Q I'd like to ask you: Do you know of your own personal knowledge that in absolutely every case, as you describe in this sentence that I just read, that this is the way DOE will react?

A Do I know that of my own knowledge in every case?

Q Yes.

**POOR ORIGINAL**

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Would you like me to repeat it?

A Yes.

Q Do you know, with respect to that sentence we were just talking about, do you know of your own personal knowledge that in absolutely every case, as you describe in this sentence, that this is the way DOE will react?

A With reasonable probability, yes.

Q What do you base this knowledge on, then?

A The very fervent discussion and presentation that Worth Bateman made to me in our long meeting with him, as well as the utilization of utility information that was transmitted to the Stoller Corporation that surfaced in the February 1979 Department of Energy document, and, finally, re-analyzed in the March 30th Department of Energy analysis.

Q I ask you, does this gentleman, Worth Bateman, form policy in absolutely every case for DOE; or does he advise DOE on policy?

A He executes the mandates given to him, or the directives, the orders given to him by the administration.

Q He carries out DOE policy?

A In the sense of getting enabling AFR legislation, yes.

Q So he doesn't form DOE policy?

A Well, if you're talking about DOE policy in regard to how information provided by utilities will be utilized in

wh5           securing AFR, or whether or not you're talking about the policy of trying for an AFR in the beginning in 1977, it's a different case. He certainly does, I think, hold sway over how information that comes from utilities is utilized in the federal push for enabling AFR.

Q           So he does advise on policy?

A           Yes.

Q           --in some capacity?

A           Yes.

Q           --to others in DOE who make decisions?

A           Well, he's the prime decision maker in this matter of getting the AFR legislation through.

Q           Mr. Rotow, can this gentleman, Mr. Worth Bateman, write down a policy for DOE, sign his name to it, and have it go into effect?

A           Again, this depends on which policy. As you yourselves have indicated, there are various levels. I don't think Mr. Worth Bateman can write down a policy that says, We're throwing AFRs out the window. As a practical matter he could; he could go testify before Congress and effectively depth charge the AFR push.

            But if you're talking about his organizational responsibilities, I don't think he has that. That's not within his responsibilities. But here we're getting away from something that, to my immediate knowledge, is something that

POOR ORIGINAL

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Dr. Cochran I believe is better qualified to talk about.

Q Will you explain how we're getting away from your immediate knowledge?

A Yes. Dr. Cochran has worked more closely with the organizational changes, many organizational changes that have occurred within the Department of Energy since its inception. And I'm not sure if you're trying to get at the organizational flow charts or the effective responsibility in policy making that people have.

Q Now I'm addressing my questions basically to the sentence on page 4:

"If a utility tells DOE that expansion...."

You indicated to me earlier that DOE in this context could be others than those you named earlier this morning in response to questions that you were asked, and those people were Mr. Fiore, Mr. Bateman, and one other, Mr. Lawrence, I believe.

A Yes, they certainly could be.

Q So when you respond to my question, then, you indicate that others may affect this DOE policy, others in DOE; is that not an implication from the answer?

MR. ROISMAN: Mr. Chairman, I'm concerned that the witness has testified that there is policy at different levels, and I'm concerned that the questions now, by not distinguishing between them, may create some confusion in the record. And I

POOR ORIGINAL

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think what the witness testified to is that there are broad policies that are set above Mr. Bateman, and there are policies associated with implementing those broad policies which are set at Mr. Bateman's level.

If the questions could just indicate the level of policy it might be possible to make sure we don't have a lot of redirect examination to try to clarify this matter.

CHAIRMAN MILLER: Yes, it might be better, to have the record, for you to indicate which of the two levels of policy making you refer to, Mr. Ketchen.

BY MR. KETCHEN:

Q Well, Mr. Rotow, let me ask you that question:

If a utility tells DOE that-- My understanding of DOE is the Department of Energy, the Department of Energy in its broadest context. Is that what this means?

A (Witness Rotow) I think, Mr. Ketchen, it would be better to read that statement in its proper context as it occurs on page 4, which is in the discussion of the federal push for an AFR, for AFR legislation. And in my mind--

Q Excuse me; where is that, the federal push for legislation?

A That's how the paragraph begins, the opening sentence of that paragraph.

Q Okay.

A So that's the context in which that sentence occurs.

**POOR ORIGINAL**

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If you're asking me--

Q That's enough.

A All right.

Q Okay, let's go on.

Let me just understand your answer to my question. And I apologize for repeating it a little bit.

So it's of your own personal knowledge that absolutely in every case, with reasonable probability, that this sentence describes what you meant by that first sentence up there in the context of the paragraph?

A You're asking me if, with reasonable probability, this sentence describes what the first sentence meant?

Q Well, let me withdraw the question.

Let me direct your attention to page 5. The sentence reads:

"Duke has deliberately sought to conceal the fact that it has a cascade plan DOE and Congress and to use the relatively limited relief provided by the proposed Oconee/McGuire transshipment to justify the need for an APR."

How are you using the term "DOE" in that sentence?

A There it is in the more generic sense.

Q Okay.

Do you know of any particular place that you could point to where DPC -- Duke Power Company; I'm sorry --

POOR ORIGINAL

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has stated that they are seeking to justify the need for AFR?

A I can't cite any document where they say they are seeking to justify the need for an AFR.

Q The next sentence is,

"DOE has accepted these representations and uses the Oconee/McGuire situation as further evidence of the need for an AFR."

How are you using "DOE" in that sentence?

A I'm speaking in particular of the DOE-BT-0075 document which was apparently the forerunner of the Department of Energy fact sheet that occurs as Figure 1 to NRDC Exhibit 13-C, in which the Oconee-1, 2 and 3 reactors figure prominently, being at the top of the list, and two other entries in the list, McGuire-1 and McGuire-2 are Duke Power Company reactors.

Q Let me try to ask the question again. You've been fairly responsive to my others.

Does that mean that, as we discussed a few minutes ago, DOE, as here used in this sense, is being used in a broad generic sense, based on your reference to this particular document?

A I'm not sure I understand.

Q Well the sentence says, "DOE has accepted these representations." Are you talking about the agency, the Department of Energy, that it, as a total agency, has accepted these representations?



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A Well insofar as documents that come out without bearing any authorship, individual authorship and carrying the banner of the Department of Energy represents the thinking of the Department of Energy as an agency, I'd say yes.

Q So your statement is based on your reading of that document?

A Yes.

Q Okay.

A Among other things, like this Fact Sheet also has come out without an author and under the banner of DOE.

Q So you weren't in any meetings, I take it, where this type of thing was discussed and the persons in authority at DOE said, or during the course of that meeting DOE decides to accept these representations, it wasn't anything of that sort?

A No, I didn't say that at all. There was a lot of things of that sort.

Q When?

A In particular, I'm thinking of a meeting that was held in Germantown, Maryland over half a day that I held with Jim Fiore and it was in response to an offer of the Department of Energy to let us go over their data and their -- they said at the time they were going to let us go over their computer programs as well, which resulted in the production of this particular study by this daughter corporation which was the

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subcontractor to the Department of Energy.

And at that time the Department of Energy personnel told us that they and Stoller accepted the representations of the utilities without any critical evaluation. But they did what they were told.

Q They said that, they said We accept these Stoller representations without any critical evaluation?

A They said it in the context of We accept Stoller's representations and we accept the utilities representations. And numerous times during the --

Q That's not the question. Did they use the phrase "without any critical evaluation?"

A I don't recall exactly what phrase they used, but that was the sense of it.

Q But you just said that a minute ago.

A That was the sense of it.

Q That was your conclusion of what they said?

A No, it wasn't my conclusion. I'm telling you I can't quote them directly, it was over four months ago but that's a paraphrase. And they told me that directly, they didn't doublecheck the data or anything, they just accepted it, and this was entirely in the context of Well look, we've got a job to do, we have to get AFR support. And "I've got a job to do," is a direct quote from Jim Fiore.

Q What was the last, I'm sorry.

/sgb3  
A The "I've got a job to do," is a direct quote from Jim Fiore, that's not a paraphrase.

Q Where is that direct quote, did you record that direct quote anywhere?

A No, I didn't. I wrote it down at the time.

Q That's what you recall though as being a direct quote?

A What?

Q You recall that as a direct quote?

A Well I remember it because it does, at times, surprize me when the Department of Energy people are that blunt, that's why I recollect the meeting with Mr. Bateman so well, he was quite blunt.

Q When was this meeting that you just described in Germantown?

A With Mr. Fiore?

Q Yes.

A That would have been slightly before March 26.

Q And do you remember the day?

A No, I don't.

Q Did you tak any notes at that meeting?

A Yes, I did.

Q Are those notes still available?

A No, I haven't the faintest idea of what happened

to them.

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Q Mr. Rotow, the next sentence reads:

"By pointing to Duke's plan, the federal government establishes a precedent for ignoring safe at-reactor storage."

Mr. Rotow, you have already indicated in previous testimony that you're not appearing here as an expert to tell us about the safe at-reactor storage. Is that not correct?

A I don't recall any indications to that effect in previous testimony.

Q Well, then, are you or not?

A I think I can make some judgment about it, yes. Whether or not the Board decides to view that as expert, I can't say.

MR. ROISMAN: We're not offering him as an expert, or his judgment on that, Mr. Chairman.

CHAIRMAN MILLER: Very well.

MR. KETCHEN: Mr. Chairman, I think that's reflected in the record about what his his proffer is and because of that I would move that sentence be struck.

CHAIRMAN MILLER: Which sentence is that?

MR. KETCHEN: At the bottom of page 5,

Mr. Chairman:

"By pointing to Duke's plan, the federal government establishes a precedent for ignoring

eb2

safe at-reactor storage."

-- be struck on the basis that this witness is not being offered to indicate judgments on what safe at-reactor storage is.

MR. ROISMAN: Now, Mr. Chairman, is the sentence before it to indicate that he does. It merely says to the extent that there is safe at-reactor storage, the government is ignoring it, and so forth. It is not intended to be a statement that at-reactor storage is safe; it is intended to be a statement that says if there is safe at-reactor storage, the government is ignoring it.

I admit it may be ambiguous on that, but I don't mind stipulating that it is not being offered as his judgment that at-reactor storage is safe.

CHAIRMAN MILLER: With that stipulation we'll permit it to stand. It's not being offered or received by the Board as the statement of an expert on that subject.

MR. KETCHEN: All right, sir.

BY MR. KETCHEN:

Q Mr. Rotow, I'd like to go back very quickly to the sentence on page 5 that starts out "Duke has deliberately" and ends up with the clause "to justify the need for an APR."

I'd like for you to indicate your basis for the whole sentence, but particularly the part with respect to justifying the need for an APR. What's the basis for that?

POOR ORIGINAL

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A (Witness Rotow) Yes. It seemed clear to me in my participation in the review of documents made available to us under Mr. Roisman's discovery motion that the possible presence of a federal AFR bore heavily upon the internal decision-making in the Duke Power Company and in particular that such a federal AFR seemed to be desired by a considerable number of Duke personnel.

Further, I was thinking when I used the phrase "deliberately" of the memos which have been offered as evidence that indicated that decision-makers at the highest levels -- apparently the highest levels of responsibility here at Duke Power Company were fully aware of the need to be extremely cautious in transferring information to Congress, to the Nuclear Regulatory Commission, and in part to DOE, and that at some points exhorted other employees not to transmit certain types of information. That's what I mean by deliberate.

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Q I wanted you to focus on the words "to justify the need for an AFR." That's the focus of the question.

I believe I asked you earlier if you could point to any document or anything that indicated that to you, and if I recall correctly you answered no, you couldn't point to any specific document.

A No, sir, I --

Q Let me finish.

**POOR ORIGINAL**

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eb4

A Yes, sir.

Q Now I'm asking the question: Well, then, what's the basis for any conclusion here that Duke has sought to justify the need for an AFR?

A Well, sir, earlier I commented that I could recall no document wherein Duke Power Company employees said, "I read something to the effect that"-- said or wrote -- "Let's seek to justify the need for an AFR."

I wasn't thinking, in writing this sentence, of any such crude or blunt statement of the -- of what seemed to me the clear desire of representatives and high-level employees here at Duke to have a federal AFR made available. And it seemed to me at the time I was reading through the documents here from the discovery motion that this desire for a federal AFR and to be able to adopt the transshipment -- the fuel management strategies that revolved around the possible presence of the federal AFR bore heavily upon the intent to restrict the flow of information, of certain types of information outwards from Duke Power Company.

So that both this desire for an AFR in the context of trying to restrict certain types of information flow outward, that made me feel that that sentence was appropriate in summing this up.

Q Would it have been a better sentence if it had stated that Duke has considered the option of an AFR?

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POOR ORIGINAL

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A No, sir.

Q If indeed Duke did have a so-called cascade plan or assume the cascade plan if you want to, isn't it true that conceding the cascade plan would not be the way to justify the need for an AFR? Doesn't it take the pressure off the need for an AFR if you have a cascade plan?

A Well, no, sir, in my judgment, no.

Q Well, give me the basis for your judgment. I'd like an explanation.

A Well, the judgment is that it operates to avoid the responsibility of managing -- of expanding at-reactor storage when that's possible, and to substitute short-term management strategy.

Q But you're advising us today of what your opinion of DOE policy is, and on what they base their judgment. Wouldn't this be the type of thing that DOE would be going the other way and basing their judgment on insofar as the need for --

A In practice, that's not how it has turned out to be.

Q So in other words this sentence is supposed to say that because -- or assuming Duke Power Company has a cascade plan that is concealed, then that's an indication that Duke is somehow justifying the need for an AFR?

A No, sir. It seems clear to me that Duke Power

POOR ORIGINAL

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eb6

Company knew which way the wind was blowing and having dealt with the Department of Energy and the NRC before, and knowing, if they knew which I'm sure -- I feel reasonably sure they did, what type of use DOE makes of information -- As Tony pointed out earlier in his discussion --

Q Wait a minute.

MR. KETCHEN: Mr. Chairman, I don't want to know what Mr. Roisman pointed out. He's not a witness here.

CHAIRMAN MILLER: That's correct.

WITNESS ROTOW: I'm sorry.

BY MR. KETCHEN:

Q Go ahead.

A (Witness Rotow) I'm finished.

Q Mr. Rotow, I'd like to direct you very quickly to page 5, the paragraph that starts out "Implicitly, the cascade depends on either a perpetual chain of newly built reactors --" and goes on.

Have you got that?

A Yes.

Q Isn't it true that if the government should decide the ultimate waste disposal problem by 1981 - 1982 that the cascade plan of Duke Power Company, if it exists, might not ever go into effect?

A If the government does so by 1981 or 1982, yes, it might be prudent.

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POOR ORIGINAL

eb7

Q Can you absolutely foreclose the possibility that the government will not address that problem by 1981 or '82?

A Beyond a reasonable doubt, I guess as they say, as a moral certitude, yes.

Q So your answer to my question is yes?

A Yes.

Q Okay.

I'd like to go to page 6, Mr. Rotov— I'm sorry, the bottom of page 5 and the top of page 6. It's the continuation of a sentence that starts on page 5, and it says:

"By pointing to Duke's plan...."

Particularly I want to talk about the part that starts at the bottom of page 5 which starts with:

"....and establishes a precedent for managing radioactive waste by shipping it through the countryside in some intrareactor nuclear shell game...."

And there are quotes around the word "management."

A Yes.

Q Could you explain your meaning of the term "precedent" as used in this sentence?

A Yes. I don't know what "precedent" means in legal terminology, but in using the word in that sentence I meant "precedent" in the sense of some pre-occurring event

eb7

that when future events were contested, either in this direct line or perhaps in other subjects, could be pointed to as justification for taking a certain policy or a certain strategy or where otherwise justification might not be found.

I'm trying to explain myself as best I can.

Q Well, that's what the question wanted to get at.

You said you are a surveyor. Now, if you're taking a survey and one event happens does that necessarily set some sort of a precedent the way you define it?

A Well, sir, I don't really think of myself as a surveyor, and here we're not dealing with a stochastic process.

Q Say it again.

A Stochastic.

Q Okay.

A We're dealing with the very interactive and subjective political process of getting legislation through Congress and in some cases, as I was taught at Harvard in my game theory course, the existence of seminal events which can serve as fulcrums for reaching a consensus point for ramming through a particular position can be extremely important.

AND if there exists one instance where radioactive waste has been shipped through the countryside as a management technique, then this one instance can serve as

ab8

a seed, the nucleus of a growing federal AFR policy.

Q So in laymen's terms, or in my understanding of what you're saying, the way you use the term "precedent" in the sentence is in the context of opening the door to something that was shut before?

MR. ROISMAN: Objection. If the cross-examiner is going to restate what the witness said he's going to have to restate it accurately. That has got nothing to do with -- The witness didn't say "opening the door." He talked about seminal events. He talked about not just opening the door. And I'm not going to depend upon the witness to remember exactly. I think the cross-examiner must rephrase the question in a way that represents the prior testimony. I don't believe that did.

CHAIRMAN MILLER: Well, it is true that the question must accurately reflect the record.

Do you have the record before you? Are you quoting, Mr. Ketchen?

MR. KETCHEN: No.

BY MR. KETCHEN:

Q Mr. Rotow, could you explain your-- You gave me a technical answer for my question. Could you describe it in laymen's terms, what you meant by your technical answer?

A (Witness Rotow) I believed to be using laymen's terms when I referred to seminal events being important in

eb9  
processes such as those involved in getting legislation through Congress.

Q Are you aware of other techniques such as spent fuel pool expansions for managing spent nuclear fuel?

A Yes.

Q Do you have any idea of how many applications for spent fuel pool expansions have been presented or applied for before the Nuclear Regulatory Commission?

A No.

Q Do you have any idea-- I assume then that means you have no idea of how many such applications, if they have been applied for, have been granted. Is that correct?

A That's correct.

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**POOR ORIGINAL**

• 513 191

1  
2 2F wnb/agbl Q On page six, the middle of the paragraph that  
3 remains which has the (2), there's a statement that says:

4 "This plan gains respectability from  
5 the Department of Energy's focus on current  
6 utility plans for spent fuel management as  
7 evidence for AFR need."

8 Again there you're talking more generically about  
9 utility plans in general and not just Duke Power Company,  
10 is that correct?

11 A Yes, that's true.

12 MR. ROISMAN: Mr. Chairman, the word "plan"  
13 appears twice in the sentence. Could Mr. Ketchen and the  
14 witness make clear which one of those they were referring to?  
15 I'm not sure that the question and the answer necessarily went  
16 to the same place in the sentence where plan appears.

17 MR. KETCHEN: Okay.

18 BY MR. KETCHEN:

19 Q Let's start with the first one, "This plan,"  
20 what did that refer to?

21 A (Witness Rotow) The cascade plan at Duke.

22 Q So that is the Duke plan.

23 And the second "utility plans" in the sentence,  
24 what did that refer to?

25 A That means the current utility plans in the  
generic sense, utility plans which are current.

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Q So again in that sentence that starts out, "This plan," and goes on, what are you indicating to us? Is this a paraphrase of what you have learned from DOE in discussions with them, or is this your own conclusion or what is this?

A I think that's my own conclusion, that it gains respectability.

Q The next part that starts out, the next sentence, the stricken part, "If a utility . . ." are you speaking now of general utilities or with respect to Duke Power Company?

A I'm saying in general. I think this applies to very many utilities.

Q Okay.

And it goes on -- well the whole sentence reads:

"If a utility has calcified an inappropriate waste management technique as a result of organizational inertia, the Department of Energy is not influenced by the existence of actions: rather, they will seize and, in fact, have seized upon any examples of transshipment or other off-site strategy being preferred to on-site expansion by a utility."

The question here again is, is this something that you are paraphrasing to us from discussions you had with DOE personnel?

A Yes.

**POOR ORIGINAL**

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wrb/agb3

2 Q And did they indicate to you that this was the --  
3 well, let me get the nature of this paraphrase. Are you  
4 offering any argument in there, or is this a straight  
5 reporting of fact without any qualification?

6 A I was told by Mike Lawrence and Jim Fiore that  
7 the existence of options doesn't matter to us, it's what we  
8 are told. It doesn't matter how they come to these options  
9 or how they come to their plans and whether they have options  
10 or not.

11 Q So when DOE was telling you this, they phrased  
12 it this way in the sense that the "Department of Energy is  
13 not influenced by the existence of options, rather, they will  
14 seize and in fact, have seized upon any examples of a  
15 transshipment or other off-site strategy being preferred to  
16 on-site expansion by a utility." They presented that to you?

17 A Well Mike Lawrence did it. He didn't come and  
18 say that to me in that sentence. They did say that they're  
19 not influenced by the existence of options.

20 They did say Look, you know, we have to use what  
21 we can get, what we have available to push our plan, our  
22 program.

23 Q And whose thinking went into the part that says  
24 "they will seize and, in fact, have seized," is that theirs  
25 or yours?

A Well they told me they will seize upon examples



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1 of transshipment. And they have, in fact, as you can see  
2 from Figure 1, the Department of Energy Fact Sheet. The  
3 two reactor sites that head the list, the first is Oconee  
4 1, 2, 3, 1978 with an asterisk footnote:

5 "Currently operating without FCR,  
6 plan transshipment to regain FCR."

7 The second one is San Onofre, 1978. San Onofre  
8 is presently shipping to G.E. at Morris, Illinois.

9 Q Let me ask: You mentioned the figure a couple  
10 of times in response to my questions, is that a chronological  
11 listing of utilities on some sort of a basis of when they need  
12 a capability starting from the present and going to the  
13 future?

14 A According to when DOE claims they need AFR  
15 storage, yes.

16 Q Finally there's a sentence here on page six in  
17 the next paragraph that says:

18 "In short, the present scope of review  
19 of the Duke proposal to shift spent fuel from  
20 Oconee to McGuire, which focuses only on the  
21 first step in the cascade plan, is being used  
22 by DOE to justify an AFR."

23 Now is that your conclusion, or is that your  
24 paraphrasing of what DOE has concluded?

25 A It's both.

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1                   And in this context I should say that when you  
2 asked me earlier, in reference to "This plan gains  
3 respectability," you asked me what did plan refer to and  
4 I said cascade, I was miffed slightly because there were some  
5 things stricken there. I should have said just the initial  
6 decision to transship from Duke to McGuire, because that was  
7 in the context of the Duke memorandum relating that this  
8 shipment or transshipment was made in June, 1976.

9                   Yes, I think it is being used by DOE to justify  
10 an AFR, again, with Oconee 1, 2, 3. If on-going rerack --  
11 or if rerack with poison racks were to be done at the Oconee  
12 site, or if an interim spent fuel storage facility were to be  
13 built at Oconee, there would be no need for transshipment  
14 and there would be no need for a federal AFR.

15                   Q       How about would you make the same statement with  
16 respect to stainless steel racks?

17                   A       What do you mean? If there were enough of them  
18 there, sure, at Oconee.

19                   MR. KETCHEN: Mr. Chairman, I would like the  
20 record to reflect that Dr. Cochran is advising the witness  
21 on his answer.

22                   WITNESS ROTOW: He didn't say a thing. He was  
23 leaning over to see what I was reading.

24                   WITNESS COCHRAN: We have a sign on the table  
25 which says slow down and every now and then I reach over and

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1 point to it.

2 MR. KETCHEN: Okay. Thank you, Dr. Cochran. I  
3 appreciate that.

4 MR. ROISMAN: Mr. Chairman, Mr. Fourtallotte and  
5 Mr. Ketchen seem to be intent upon impugning the integrity  
6 of the witnesses with regard to "coaching each other." I'm  
7 beginning to resent the implications of these little, well,  
8 let the record show stuff. And I really think if they've  
9 got something to say here about the integrity of the witnesses,  
10 they've got enough people here, let one of them sit up here  
11 between them, I don't object.

12 Mr. Rotow, I think, it has been testified to, is  
13 young, he's 23 years old, we're trying to make his testimony  
14 as clear as possible. He has a hard time slowing down, he  
15 has a hard time directing his attention to the Reporter, and  
16 I have asked Dr. Cochran and Dr. Tamplin to remind him of  
17 that, so that he will continue to do it right. But I don't  
18 like the record filled with these innuendos by let the record  
19 show sort of stuff. I think the witnesses find it insulting  
20 and I find it insulting.

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24  
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MR. KETCHEN: Well, Mr. Chairman, we won't have any problem with that.

MR. ROISMAN: They're engaging --

CHAIRMAN MILLER: It's just very hard for the Examiner when this happens to know what's going on.

MR. ROISMAN: Well, then, put a watcher up there.

MR. KETCHEN: Dr. Cochran has explained it. We accept that explanation, and we think it's being helpful to the Examiner to have him do that, because Mr. Rotow does go fast.

MR. BLUM: The record will show that.

BY MR. KETCHEN:

Q Mr. Rotow, just a moment ago you indicated that -- you indicated poison reracking and that sort of reactor storage or something called onsite storage, maybe.

Are you testifying that it's NRDC's position that spent fuel should be stored at the site?

MR. ROISMAN: Objection.

CHAIRMAN MILLER: What's the basis?

MR. ROISMAN: NRDC's position is articulated in documents. Mr. Rotow is not being put on the witness stand for the purpose of testifying what NRDC's position is.

I think that's one of the prerogatives that's left to me. And I believe I have stated NRDC's position, and I did it in an oral argument less than three hours ago.

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CHAIRMAN MILLER: Well, I think that is true as far as NRDC's position is concerned, yes.

There are some documents that are attachments and we're not so sure whether the witness may or may not be indicating NRDC's position; but we're not at that point.

MR. KETCHEN: I'm sorry, Mr. Chairman, I apologize, but I did not get the ruling.

CHAIRMAN MILLER: Well, we simply ruled that the witness does not purport, so far as we know, to be testifying to NRDC's position.

If you can show us --

MR. KETCHEN: All right, sir.

BY MR. KETCHEN:

Q Earlier on in this proceeding, I believe you did testify that you were opposed, you, Mr. Rotow, were opposed to AFRs except for the storage of imported foreign fuel, is that correct?

A (Witness Rotow) I don't believe -- I think I testified in the deposition; maybe I've said that in the deposition.

Q You said it yesterday.

A Oh, I did?

Q Yes.

A Okay.

Q Is that your position?

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mpb3

A Yes.

Q And wasn't the sense of that statement that -- or will you tell us whether you support the policy of non-proliferation of nuclear weapons?

MR. ROISMAN: Objection.

What is the policy of nonproliferation of nuclear weapons? And two, what is its relevance to this proceeding at this point?

CHAIRMAN MILLER: The relevance is something for final argument.

What is the relevancy?

MR. KETCHEN: Mr. Chairman, yesterday I believe this witness was asked -- and we can dig it out of the record -- the question, and I believe he answered and brought up the question of, as part of his answer, that he was not against an AFR insofar as that furthered a nonproliferation, a policy of nonproliferation of nuclear weapons.

MR. ROISMAN: Mr. Chairman, I can remember that part of it.

What he testified to was that he was not opposed to the use of an AFR in the United States for the storage of foreign fuel --

CHAIRMAN MILLER: Yes, I do recall that.

MR. ROISMAN: -- to the extent that it favored nonproliferation.

**POOR ORIGINAL**

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CHAIRMAN MILLER: I do recall that discussion as to foreign fuel and its connection with proliferation or nonproliferation.

MR. KETCHEN: That's my understanding of what he testified as articulated.

CHAIRMAN MILLER: Yes.

But how does that relate to your question? We think that is what he testified, yes. But now what is the connection between that and this testimony?

MR. KETCHEN: Okay.

If you'd give me -- I've got four more questions, and then I can tie it in, be done, and then we can get on with it.

CHAIRMAN MILLER: Okay.

BY MR. KETCHEN:

Q And as part of one of your answers today, I believe you mentioned -- and it's my understanding that you had discovered certain documents in the Los Alamos Laboratory relating to the design of nuclear weapons, is that correct?

MR. ROISMAN: Mr. Chairman?

CHAIRMAN MILLER: Yes.

Q. ROISMAN: We're now getting into -- Mr. Rotow was asked a question today, where did he influence policy.

CHAIRMAN MILLER: Yes. That was this morning.

MR. ROISMAN: Okay.

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**POOR ORIGINAL**

mpb5

And I let him answer that question. And he talked about a whole bunch of policies that had nothing to do with this case.

Now Mr. Ketchen wants to talk to him about one of those, and is talking about disclosing documents in Los Alamos library. I don't think Mr. Rotow specifically addressed that. He talked about the library being temporarily shut down and was in the process of being investigated.

I just don't see what it's got to do with anything.

CHAIRMAN MILLER: Well, the relevancy does escape us.

It's immaterial, and we're not here to determine the correct or incorrectness of immaterial issues.

(Pause.)

CHAIRMAN MILLER: Well, we don't hear anything, so we'll sustain the objection. I assume there's a pending objection.

MR. KETCHEN: May we have just a minute?

CHAIRMAN MILLER: Yes.

(Pause.)

MR. KETCHEN: Mr. Chairman, I have two questions. What I'd like to do is, if I can ask this question and the one following, and it's not tied in, just have it stricken from the record. And I can ask the question and tie it up

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**POOR ORIGINAL**



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that way better than I can explain it.

MR. ROISMAN: Mr. Chaikman, we object to that.

I'd like Counsel to make a proffer of the questions. We do not wish this record to contain information dealing with weapons related materials and the Los Alamos library, work, which I might point out, Mr. Rotow did not do in any capacity in connection with the Natural Resources Defense Council.

CHAIRMAN MILLER: Well, we don't know that that's the nature of the question.

We would sustain an objection to any such question. We would regard that to be immaterial. And under collateral inquiry, we're not going to take the time to decide the correctness or incorrectness of collateral issues.

That's a familiar rule, that you can't impeach on an immaterial issue.

We have enough to keep us all busy on material issues. Now when an immaterial issue came out in testimony and so forth, you didn't make a motion to strike as non-responsive or whatever, and maybe it was responsive. But at any rate, we don't chase down every immaterial issue to let you then create artificially an issue of it in this proceeding. This is a normal rule of cross-examination.

MR. KETCHEN: All right, sir.

Let me make an offer, then.

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**POOR ORIGINAL**

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CHAIRMAN MILLER: Yes.

MR. KETCHEN: This witness has testified yesterday, and then in response to a question yesterday, about his position on AFR policies, and he said he's opposed to such policies except in a different kind of circumstance which had to do with nonproliferation of nuclear weapons.

CHAIRMAN MILLER: That was tied in to foreign fuel, wasn't it?

MR. KETCHEN: Yes.

CHAIRMAN MILLER: Oh.

MR. KETCHEN: So he'll accept it, which AFR policy is one of the possible issues in this case. He said he's against AFR policies for storage of commercial fuel, but he's not for storage of foreign fuel.

And what I was trying to probe is the difference in why he makes that distinction.

CHAIRMAN MILLER: Well, then, ask him that.

MR. ROISMAN: Well, wait a second, Mr. Chairman. He's not being offered for his opinion.

CHAIRMAN MILLER: No, but he has testified. He gave some testimony as to whether or not he was opposed to AFRs in terms of the limited amount of use for storage for foreign fuel on a nonproliferation basis.

MR. ROISMAN: If I recall the record correctly, it was for the limited purpose of showing whether the

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**POOR ORIGINAL**

mpb3

witness was biased. That's not -- We don't get anything more about his bias if we find out that the basis for his substantive position is rational or irrational.

And they're attempting to impeach him.

CHAIRMAN MILLER: They have a right to go into questions that bear upon credibility.

MR. ROISMAN: But they're not going to find out anything more about his bias to find out whether his bias comes from a rational or irrational basis on an issue that's essentially irrelevant.

CHAIRMAN MILLER: Well, I'm not too sure that the issue of whether or not he has a bias concerning AFRs is irrelevant.

If he has a bias, that could be shown. If he has a qualified bias, that could be shown for the purpose of credibility.

But the question has to be limited to that, not to the substantive matter.

MR. KETCHEN: Okay.

BY MR. KETCHEN:

Q Mr. Rotow, would you explain why you qualified your answer that way yesterday?

A (Witness Rotow) Why I made the difference between the two?

Q Yes.

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**POOR ORIGINAL**

mpb9

A Well, it's been well known for many years and accepted for many years in the United States government and by many thinkers on problems of nuclear proliferation that the presence of a large number of countries on Earth -- and by "large" here, anything greater than the number of countries which already have nuclear weapons -- would be a destabilizing influence on world peace and could trigger a nuclear holocaust.

I think we're all quite familiar with the consequences of that.

So whereas my own judgment, based on research and reading and various things that I've done over the past year, that an away-from-reactor spent fuel storage facility run by the Federal Government is not necessary for the storage of domestic fuel when the cost and dangers of producing such a spent fuel storage facility so that we may safely hold fuel that has been used in foreign reactors and which contains the potential for the production of weapons useable material here in the United States is weighed against the incredible dangers posed by proliferation among many countries if that fuel is allowed to reside abroad, then I think on the balance that the costs of that danger are worth taking.

I think that's an exceptional and extraordinary case.

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**POOR ORIGINAL**

mpb10

CHAIRMAN MILLER: Well, what's the nature of your bias -- if I may call it that -- against away-from-reactor storage of spent fuel, of domestic fuel?

WITNESS ROTOW: I don't think it's really needed. I think the spent fuel --

CHAIRMAN MILLER: Lack of necessity.

Is that economic?

WITNESS ROTOW: Economic factors as well as safety factors. It seems to me reasonable that if you can store spent fuel onsite at reactors at reasonable cost with reasonable safety, then this is a preferred option to storage at an away-from-reactor storage facility, even if the fundamental policy notion of tying the disposal of waste to this generating site did not exist.

I think in my review of the history of the U.S. nuclear waste disposal effort I've come to believe that if anything, we have been too lax in assuming that disposal of radioactive waste could be undertaken without taking the necessary steps to really determine if that is so.

CHAIRMAN MILLER: Well, I think that's sufficient.

As I indicated, counsel, we didn't want to get into the substance of it. On the other hand, you are entitled to show whatever beliefs and so forth that a witness has.

MR. KETCHEN: One last question, Mr. Chairman.

BY MR. KETCHEN:

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Q Mr. Rotow, have you supported the release of nuclear secrets which may enhance proliferation of nuclear weapons?

MR. ROISMAN: Objection.

MR. BLUM: Objection.

CHAIRMAN MILLER: I didn't hear all of that, but it didn't sound too good. I think we'll sustain it.

MR. KETCHEN: Well, Mr. Chairman, I think his answer might be useful to probe the scope of that last answer.

I think it might be interesting for this Board to have that qualification on his answer. And I think it bears on his credibility.

DR. LUEBKE: You used different words from words the witness used. I don't think he used the words "nuclear weapons".

WITNESS ROTOW: Or "Secrets".

CHAIRMAN MILLER: Well, state it again, then, and let's see where it goes.

MR. KETCHEN: Whether he did or not, I guess the question was -- I don't recall whether he did or not.

The question is:

BY MR. KETCHEN:

Q Have you supported the release of nuclear secrets which may enhance proliferation of nuclear weapons?

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MR. BLUM: Objection.

MR. ROISMAN: Objection.

CHAIRMAN MILLER: Sustained.

MR. KETCHEN: Mr. Chairman, I have no further questions.

CHAIRMAN MILLER: Is there anything further of the witness?

Mr. McGarry?

MR. MC GARRY: I have two questions.

BY MR. MC GARRY:

Q Mr. Rotow, did you ever send the notes of your conversations to the respective utilities to have them verify your understanding of their spent fuel storage plans?

A (Witness Rotow) No.

Q One further question:

Was the purpose of your survey to critique DOE's spent fuel storage plan as it relates to an AFR?

A No.

Q What was the purpose again?

A The purpose of the initial survey was to test the accuracy of the Department of Energy Fact Sheet appended as Figure 1 to NRDC Exhibit 13-C.

Q And you're of the opinion that it was not accurate?

A Yes.

Q Thank you.

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MR. MC GARRY: No further questions.

CHAIRMAN MILLER: Anything further?

MR. ROISMAN: I have a few questions.

CHAIRMAN MILLER: Go ahead.

REDIRECT EXAMINATION

BY MR. ROISMAN:

Q Mr. Rotow, you testified yesterday that when the Rancho Seco people spoke to you and mentioned the possibility of intervenor involvement deterring them from wanting to seek an additional spent fuel storage expansion onsite, that you did not use that as a basis for assuming that they would get no further expansion, but listed the technologically feasible expansion as one of the things that Rancho Seco could do for onsite expansion, to put down a date, I think, of 1992.

Why did you not rate the statement by the Rancho Seco executive about the intervenor interference as a deterrent, a major deterrent to them getting that expansion?

A (Witness Rotow) Well, in my testimony I have done that, in the "No Need for AFRs" document, 13-D. And I should emphasize that this is one reason I appended it as testimony. I explained that quite clearly.

In the original document, which was originally circulated, 13-C, as it was a brief summary of the results of

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the survey, I did not go into every point upon which I felt some objection might be raised and then counter that objection. After all, it was written for use by Congress and as a quick summary for John Deutch.

Now since the Department of Energy took no account of all the various interior activities that are now ongoing in all aspects of the nuclear fuel cycle, I similarly took no account of the concern at Rancho Seco because it seemed that if I wanted to test their conclusions, I should do the study under their same assumptions.

Q Okay.

Now you were asked a lot of questions about the person to whom you spoke with respect to the Susquehanna reactor, and what that person's status was within the organization and why you didn't go further.

I'd like you to take a look at the very last page of Applicant's Exhibit number 13, the last page being the sixth page of the document which is called Attachment A, Individual Reactor Storage Status, which is itself an attachment to Analysis of Near-Term Reactor Fuel Storage Problems, dated March 30, 1979.

(Handing document to the witness.)

Would you just read the top paragraph beginning with the word "Susquehanna"?

A "Susquehanna (DOE-1985) (NRDC-1994)

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"Susquehanna, which is a new reactor that will come on line in 1981, has recently made firm plans to purchase high density racks, which would provide adequate storage until 1994."

Q Mr. Rotow, do you interpret that as meaning that DOE found your statement on Susquehanna to be accurate?

A Yes.

Q Thank you.

When the Department of Energy did an analysis of your March 26, 1979, analysis and then appended it to this letter marked as Applicant's Exhibit number 18, dated April 4, 1979, Letter to Honorable John Dingell, do you know from conversations with DOE how they went about testing the accuracy of your March 26, 1979, analysis?

A Yes, I do.

Q Would you please state for the record what your understanding of their methodology is?

A They went back to the original Stoller Corporation affidavits or reports, took those, and then called up each person that I had called at all of the utilities and asked them 'When would you like to have an AFR'. They confirmed to me that they did not ask 'What are your current plans in the event that you don't need an AFR or that we don't give you an AFR'.

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Q But they did use the telephone survey technique for producing their analysis of your analysis?

A Yes.

And I should point out that several entries in the March 30th analysis that the Department of Energy offered relate to the status of licensing documents -- well, refer to reactors that I had told them already had petitions in NRC for reracks. And I gave them that evidence, and they could have gone to the Public Document Room and checked to see. But they did it instead in the March 30th analysis.

They said things that were obviously untrue. I don't know why they did that.

Q Thank you.

Now looking at NRDC Exhibit number 13-C and -D, which are the two analyses, surveys, first at C, which was done on March 26, 1979, did you do that under any directions to do it in conjunction with litigation?

A No.

Q What about the one dated May 1, 1979, did you do that under any directions to do that in conjunction with litigation?

A No.

Q So the sole reason for doing them is as previously stated, namely to test the accuracy of the DOE assertions relating to the need for AFR?

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A The first one, yes. And the second was largely prompted by Worth Bateman's letter to John Dingell, which contained information that, one, I knew was untrue, and two, could be proved to be untrue by documents in the Public Document Room.

Q When you did these studies did you have any reason to believe that you would be subjected to minute cross-examination of the nature that you have been subjected to over the last 24 hours --

A No.

Q -- in this proceeding?

A No.

Q Did you feel that if a question were raised about the accuracy of any of your recollections of phone conversations that there would be available a way for someone to check that if they wished to?

A Yes.

Q For instance, what could they have done?

A Well, they could have either called the people I had spoken with, they could have checked documents in the Public Document Room. If an application is on file, it's on file.

Q Okay.

When you were conducting your survey, were you at that time aware -- or did you have reason to believe that

mpb18 DOE and any utilities might in some form or another be interpreting utility plans in a way that would tend to support the DOE AFR proposal?

A As I was conducting the survey, yes.

Q Would that in part explain a reluctance on your part to have the questioner necessarily -- I'm sorry -- to have the person whom you were questioning to necessarily relate you to something other than the Department of Energy, if your purpose was to get at the -- quote -- "truth" -- unquote?

A Yes.

Q In the S. N. Stoller report, did they at some time prepare an analysis of the maximum technological possible onsite expansion with regard to the utilities?

A I don't believe so.

Q What is your understanding of the extent to which they prepared or gathered data that went beyond what is reported in the DOE/ET-0075 report?

A The S. N. Stoller Corporation -- and I know this because I've talked with their contract managers, the Department of Energy, I've seen some of the original mailings both from the Department of Energy and in the Duke Power Company files -- sent out questionnaires in 1978 eliciting an incredibly broad variety of information on basin capacities, physical layouts, types of reactors, types of generators,

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mpbl9

that sort of thing.

They then proceeded to manipulate that data utilizing computer models which were not made available to me. So I haven't seen the code itself.

They apparently did some high analysis and some low analysis, and then they defined a base case analysis.

In their document that you referenced in February, 1979, they admit that the base case is not really an economic figure. For example -- I'm quoting from page 5. They're talking about -- well, let me....

(Pause.)

I'll have to just stop right there.

Q You were asked a question about whether or not Duke was taking actions to justify an away-from-reactor storage facility for the Department of Energy. You indicated that that was based upon your reading of documents, although you could not identify any particular documents.

A Yes.

Q First of all, since the time that you made that statement in the record, have you and I spoken other than here in the record?

A No.

Q I'm going to show you a couple of documents and ask you to look at them. One is marked NRDC Exhibit number 2, in evidence, the other, NRDC Exhibit number 2, in evidence.

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I want you to look at those and see if either of those documents are documents from which you draw in part that conclusion. And if so, would you identify in the document the portion that helped you draw that conclusion.

(The witness reading.)

A Yes, very definitely this is one that --

Q You'll have to identify it by the exhibit number, and then, if you would, read the portion of it if there's a specific portion.

A NRDC number 2, the entire letter is very pertinent.

Q Well, it's in there, but you needn't read it if your statement is that the entire letter helps to form the basis. That is adequate.

A Yes.

Q Okay.

And the other document?

(The witness reading.)

A Yes.

Q Can you identify any portion of it?

A It's NRDC number 3. Of obvious interest is the first paragraph and part of the last paragraph.

Q thank you.

MR. ROISMAN: I have no further redirect for the witness.

CHAIRMAN MILLER: Any further questions?

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(No response.)

CHAIRMAN MILLER: I think Dr. Luebke has a few questions, if there are no others from Counsel.

## EXAMINATION BY THE BOARD

BY DR. LUEBKE:

Q Mr. Rotow, periodically you have shown us a folder. I can see from here it says "Fact Sheets" on the front of it.

A (Witness Rotow) Yes, sir.

Q And you have written "Spent Fuel" under it?

A No. I got it with "Spent Fuel" written on it.

Q It suggests -- I just want to see if this is correct:

It suggests there are a series of these issued, and what you have there happens to be in the subject area of spent fuel. Is that the general idea?

A Yes.

Q And these are issued by what office of DOE?

A Apparently the Office of Public Affairs.

Q The Office of Public Affairs.

And so that would be kind of a general information office?

A Yes. In particular this came from the Press Services Division. It's the hand-out package. And there were other things in the package besides the Fact Sheets.

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mpb22

which is a summary of the AFR legislation, and that type of thing, which is given to reporters and other people. It has reference information.

Q In listening to your summary and the work you did in making the survey, it suggests to me that you view this Fact Sheet as having some considerable importance?

A Yes, sir.

Q Could you explain in what way a hand-out from some Office of Public Affairs gains such great importance? I mean, usually they come out by the dozens and get tossed in the nearest can.

A Yes, sir.

That particular list, in almost the same format, occurs in DOE/LT-0075, which is the DOE report on the subject that was being circulated to congressmen and senators, and this particular list actually appeared in Senate hearings, or House hearings.

Q So when it gets into that book, then it really gets a little more important than when it is in that folder.

A I think so, sir. And it was circulated as the same list with the same dates quite widely.

Q Then, as I remember it, you, as a consultant to NRDC, had a contract or have a contract to do this survey that we've been talking about.

A No, sir. I was asked by ~~NRDC~~ ~~I have no oral~~

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mpb23

contract with NRDC to act as their consultant generally in the area of radioactive waste management. And as part of my general responsibilities I was asked to undertake this as well.

Q But in the chain of events here someplace NRDC has a contract with DOE --

A Yes, sir.

Q -- to do this work.

And the net result was that you ended up with the survey and I see a phrase here that says you claimed that DOE list is "wildly inaccurate".

I guess my problem -- or my next question is:

With what part of the DOE is this NRDC contract, do you know?

MR. ROISMAN: Excuse me.

I don't want to keep you from asking the witness, but Dr. Cochran is the one who actually has direct personal knowledge of the contract.

CHAIRMAN MILLER: Is that a written contract?

MR. ROISMAN: Yes, sir, it's a written contract.

I believe the section of it that deals with expanding our general waste work to look at the AFR is based upon an oral conversation with the responsible official at DOE. But Dr. Cochran can answer that.

BY DR. LUEBKE:

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njb24

Q Well, I guess what I'm trying to get at is here is one part of DOE that made a list of numbers and published it through a folder and got it into an orange report, and maybe NRDC has a contract with some other part of DOE which finds this first list to be terribly inaccurate.

Isn't somebody angry about this?

MR. ROISMAN: What I think Dr. Cochran -- I mean, we do have a somewhat unique relationship with DOE, but I think Dr. Cochran can better explain it.

DR. LUEBKE: I'm just puzzled about the arrangement.

MR. ROISMAN: Well, that was one of the questions I was going to ask him on direct.

DR. LUEBKE: All right. Then we'll defer one thing at this point.

BY DR. LUEBKE.

Q Well, then, the other thing is a different line. It is:

Would you please summarize and explain in your view what the connection or relevance is of your survey, your notes, your results, to this proceeding, particularly as it relates to the NRDC contentions we have before us?

A (Witness Rotow) Yes, sir.

And I think in this context we should look at my entire testimony, because the entire testimony attempts

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mpb25

to show -- and the attachments -- how discoveries and development of information causes the Department of Energy reaction, and then funnel back to the utilities which react to the Department of Energy.

And in general it seems clear to me from my experience in the matter that there is an interrelationship, there is a cause and effect relationship between what the Department of Energy does and what utilities do, and vice versa there, not independent factors.

In particular there is this tremendous potential of federally financed and constructed away-from-reactor storage facilities that really makes for this interrelationship.

I think in the present case if -- certainly if one looks at, in the small scale, the proposed transshipment from Oconee to McGuire, the Department of Energy can and will use this as evidence for going away from at-reactor storage modes.

Anything that it perceives as evidence for going away from at-reactor storage modes I was told by Worth Bateman that they would put to use in boosting the federal approach for away-from-reactor legislation.

Once an away-from-reactor facility is adopted or even appears very plausible, that impacts in a serious way in the selection of alternatives that Duke Power Company

POOR ORIGINAL  
POOR ORIGINAL

mpb26

might undertake.

Q And it is possible within the next year that the Department of Energy could get yet another contractor to make another set of surveys which would reinforce either your case or Mr. Bateman's?

A Well, I don't think Mr. Bateman --

Q This really doesn't settle the matter for all times, does it?

A Well, I think it comes close to settling it in that this Board could have the information that the Department of Energy is really backpedaling their original case, and they've already admitted that the reactors, several important reactors on that list in fact do not support their case for AFR legislation at all.

In the summary which I have to NRDC Exhibit 13-D, it is pointed out that of the original 19 listings that we originated, the Department of Energy admitted that NRDC was right in refuting alleged AFR need on four listings and that the original DOE report is wrong. There are various reasons why they're wrong, but they are wrong.

In the fifth listing, although they did not admit an error, documents before NRDC proved that there is no reason for an AFR. This is Maine Yankee where there is a rerack underway.

In five more listings the Department of Energy

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admits that expansion is possible, but utilizes a definition of "planning" that excludes from consideration the plans to expand that haven't been, in various cases, say, actually contracted for, signed, sealed, and delivered.

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And in seven more listings they don't even reply.

In one reactor, Robinson, they quibble on minor points, and in the last, Trojan, they're in agreement.

Rancho Seco is a case that is open, I think, to honest differences.

So of the original 19 instances, we are really left with only three reactors that they could point to. And this is one reason why I think Mr. Bateman responded so strongly to our case.

Q To get back to the contentions, again, I am looking at Contention 1.

In about the middle of it there is a sentence which says:

"Thus, the proposed action cannot be acted upon until completion of impact statements on the proposed program now being conducted by ~~the~~ "

And there are some parenthesis added.

The phrase "proposed program", that's your point of connection. Did I understand that?

A I think one of them, yes, sir.

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mpb28

getting into something that, as a non-attorney, I'm getting out of my depth because I don't know the nature and the interrelationship between points and contentions.

Q But as I look at the contention, I could see the connection, and I was just wondering --

A I think I can see one too.

Q All right.

DR. LUEBKE: That's all I have. Thank you.

CHAIRMAN MILLER: I take it that's all of Mr. Rotow?

MR. ROTSMAN: Yes, Mr. Chairman.

At this time I would like to offer into evidence NRDC Exhibit number 13-A, -B, -C, -D, and -E.

CHAIRMAN MILLER: You're offering NRDC Exhibit 13-A, which is the statement of -- the resume of Dimitri Rotow?

MR. ROISMAN: That is correct.

CHAIRMAN MILLER: Any objection to 13-A?

MR. MC GARRY: Mr. Chairman --

CHAIRMAN MILLER: Yes.

MR. MC GARRY: Let me find 13-A.

CHAIRMAN MILLER: 13-A is the resume, the statement of qualifications, two pages.

MR. MC GARRY: Well, maybe we can just state right in the beginning:

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We have an objection to the entire package.

Does that make it easy?

CHAIRMAN MILLER: Including qualifications?

MR. MC GARRY: Yes.

MR. KEIFEN: The same, Mr. Chairman.

CHAIRMAN MILLER: All right.

MR. MC GARRY: I'll just start off.

Mr. Rotor has been offered, his testimony has been offered or will be offered after I make this objection, for two basic purposes, the survey conducted and the DOE policy I think he just responded to with Dr. Luebke's questions.

Let's take the second matter first, the DOE policy.

He's not an employee of DOE, he's not a spokesman for DOE. He's had limited contacts with DOE. Worth Bateman's name we keep hearing over and over again.

The testimony reflects on transcript page 1918 he met with Mr. Bateman for three hours. Yet that's been the basis of his DOE policy statements.

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LWEL/wel 1

1 We say in respect to DOE his testimony is clearly  
2 hearsay. He's just conveying to this Board what he heard from  
3 DOE.

4 Now, with respect to the survey, in the case of  
5 Pittsburgh Press Club v. United States, 579 Fed. 2nd, 751,  
6 3rd Circuit, 1978, the Third Circuit went into detail about  
7 the use of surveys as evidence.

8 If I may just quote two pertinent portions --

9 CHAIRMAN MILLER: What was the page number of that?

10 MR. MC GARRY: 751, Mr. Chairman.

11 CHAIRMAN MILLER: At any particular page?

12 MR. MC GARRY: I'm going to be quoting from page  
13 758.

14 CHAIRMAN MILLER: Okay.

15 MR. MC GARRY: A very brief quote:

16 "In other words, the survey is admissible if it  
17 is material, if it is more probative on the issue than  
18 any other evidence, and if it has circumstantial  
19 guarantees of trustworthiness."

20 The Court then went on to set forth certain  
21 standards, and I will address those standards.

22 CHAIRMAN MILLER: Very well.

23 MR. MC GARRY: The Court also indicated that -- and  
24 I'm quoting:

25 "The proponent of such evidence, of course, has

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wel 2

1 the burden of establishing these elements of  
2 admissibility."

3 Now, with respect to the standards, one of the  
4 standards is that the person conducting the survey must be  
5 an expert. Applicant maintains the voir-dire examination  
6 clearly demonstrates that Mr. Rotow is not an expert with  
7 respect to taking surveys. Rather, he merely conducted a  
8 telephone survey of various attitudes.

9 Number two: The data must be (1) properly  
10 gathered and (2) accurately reported.

11 Let's take the first part of that:

12 The data must be properly gathered. In the first  
13 instance, Mr. Rotow wasn't speaking with the same level  
14 person in each company. Obviously, that leads to varying  
15 degrees of reliability as to the commitment of the utility  
16 to various spent fuel storage options.

17 Secondly, Mr. Rotow asked to speak to the person  
18 on the hot seat with respect to that person that made the  
19 AFR decisions. And yet in one instance he spoke to a public  
20 relations person, but factored that information into his  
21 survey.

22 The survey questions, Mr. Rotow stated, were  
23 varied. Thus, that is not a good data base for comparative  
24 purposes.

25 Lastly, on this point the witnesses themselves

**POOR ORIGINAL**

wel 3

1 that are contained in the survey were not subjected to  
2 detailed and careful analysis. Rather, they were formulated  
3 within the first six hours after Mr. Rotow embarked upon  
4 this endeavor. And his testimony so reflects that.

5 Now, as to the second aspect of this point; that  
6 is, the data must be accurately reported;

7 We simply call the Board's attention to the  
8 discussion we had in the Rancho Seco survey where the  
9 critical date, 1992, wasn't even reflected in that document.

10 We can belabor the point by going through  
11 additional surveys, but we maintain that that stands out.

12 Another example, the sample design questionnaires  
13 and manner of interviewing must meet the objective standards  
14 of surveying and statistical techniques -- the objective  
15 standards. Mr. Rotow, at pages 1910, 1930, 1933 through 1935,  
16 1938 through 1939, clearly informed us that just the opposite  
17 is the case. Rather than utilizing objective standards, he  
18 formed subjective opinions.

19 Now, Mr. Rotow has never been held out as an  
20 expert with respect to evaluating strategic plans of utilities,  
21 and yet he's using his objective judgment for this precise  
22 purpose.

23 We believe also that with respect to the  
24 objective standard test, bias enters into this consideration.  
25 Mr. Rotow specified on numerous occasions that he was

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1 opposed to the away-from-reactor storage concept, and that  
2 he maintained this view prior to his initiation of the survey.  
3 That is found at transcript pages 1896 and 1907.

4 Lastly, the standard I call the Board's  
5 attention to is that the interviewer must be unaware of the  
6 purposes of the survey or litigation.

7 I asked him the question today on recess, what  
8 was the purpose of the survey? The purpose of the survey  
9 was to test the accuracy of DOE numbers.

10 I said, "Did you consider those numbers to be in  
11 error?"

12 He said, "Yes, I did."

13 Lastly, at transcript pages 1897 and 1898, Mr. Rotow  
14 specifically stated that he was aware that NRDC was in litigation  
15 with Duke and that awareness preceded this survey.

16 We think under these tests as set forth in the  
17 Pittsburgh Press Club case, Mr. Rotow's survey and his testimony  
18 clearly does not comport with the standards and should  
19 be stricken.

20 CHAIRMAN MILLER: Staff?

21 MR. KETCHEN: Mr. Chairman, we would also make  
22 the motion that this testimony not be admitted. We would  
23 adopt the same reasoning that Mr. McGarry has given, but in  
24 addition to that we have additional reasons why we believe  
25 that this evidence should not be admitted.

**POOR ORIGINAL**

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Basically we are applying the rule of hearsay which is admissible in a proceeding --

CHAIRMAN MILLER: Which is what? I didn't follow you. You're applying the rule of hearsay?

MR. KETCHEN: Yes. We're arguing, yes, hearsay is admissible in this hearing or in any hearing, administrative hearing, if it's credible. And we don't believe that the record would reflect that the information that Mr. Rotow conveys by his testimony is credible, based on the reasons Mr. McGarry gives and the additional matters reflected in the record.

We believe that Mr. Rotow has improperly characterized how DOE will react in the future. As I understand his purpose here he was to be on the witness stand to indicate two things:

To find out whether or not DOE representations about the need for an away-from-reactor storage facility were well-founded and what the basis for them was, reading from 1376.

And in addition to that, he was to relate what it was that DOE was attempting to do in preparing their predictions of the need for an away-from-reactor storage facility and how proposals like Duke's limited transshipment proposal gave support for or did not give support for what it was that DOE was attempting to do.

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The sentences I have gone over today with him in his testimony I believe do not reflect or go to the point of how proposals like Duke's limited transshipment proposal gave support for or did not give support for what it was that DOE was attempting to do but go far beyond that in indicating, with some attempt to give it authority, that indeed what Mr. Rotow says will happen will happen as far as DOE policy is concerned.

He has indicated that he knows this from a few short conversations with a few individuals at the Department of Energy. I think in that regard Mr. Rotow's testimony is full of conjecture and speculation about the future, far beyond the scope and purpose of his presentation.

In addition to that I attempted to go through here and ferret out whether in fact Mr. Rotow is conveying sort of fact impressions that he received from DOE, and sometimes his opinion of what these facts were, his characterization of those facts, about what the future policy at DOE will be.

I don't think he is qualified, based on my previous statements, and I think again, to repeat myself, most of his testimony here that I've pointed to is conjecture and speculation, and because of that will not aid the trier of fact in any issue before this Board and therefore, shouldn't be admitted in this proceeding.

CHAIRMAN MILLER: Any other questions to be heard?

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Mr. Roisman.

MR. ROISMAN: Mr. Chairman, first let's be clear. Despite what was said there's no argument made that NRDC Exhibit 13-A or 13-E are not admissible. Nobody addressed it; nobody said anything about it. One is the resume, the other is the form used for the questions.

Applicant raises no objection that relates to NRDC Exhibit 13-B which is not a survey. Applicant's entire objection relates to the survey. So I just want to be clear what the parties are objecting to and what they're not objecting to.

MR. KETCHEN: Mr. Chairman --

MR. ROISMAN: Now I hope I'll be able to conduct this without any interruptions. I've had that problem with the Staff before.

Now with regard to Applicant's objection, based on this case that they cited,-- Of course I have not seen the case. Applicant cited it today for the first time, although I take it we're all aware that Applicant decided it yesterday. It doesn't sound like he found it at the lunch hour.

MR. MC GARRY: I object to that.

CHAIRMAN MILLER: Now why are we having objections? You were each permitted to make your argument, raising your objections. Now why do we change the rules?

Without interruption you will each be permitted



EL/eb5

to address the point. We won't have any colloquy. We won't have any interruptions of any kind.

Proceed, Mr. Roisman.

MR. ROISMAN: As I understood the case, from what Mr. McGarry read of it, and of course we don't know what the type of survey was that was involved in that case either, but let's start with the first standard, the person conducting the survey must be an expert.

I submit that the record of yesterday's voir dire of Mr. Rotow indicates that he clearly is an expert in the conduct of surveys. He's done a number. He's studied with people at Harvard University on the subject of surveys, and certainly of the kind of survey that's involved here, which is a survey regarding what people's opinions are about some things as opposed to, I think at one point in the case that Mr. McGarry cited, he suggested something about a comparative survey. That is, you're trying to sort of get a base case, like checking rats and seeing whether if they take a certain amount of saccharine they'll get cancer and they're trying to establish bases.

This is a different kind of a survey than that. I think his expertise is shown by that.

Secondly, Mr. McGarry's case indicates that a standard is whether the data was properly gathered. I want to make clear there is no evidence in this record other

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than MR. Rotow's own testimony about how surveys are to be conducted, as to how surveys are to be conducted. It's very difficult for me to see where Applicant and Staff Counsel, on the basis of no expertise at all, not even purported expertise, can ask this Board to rule as to whether or not this particular survey was conducted in an expert manner or not, giving their own interpretations of what constitutes an expert survey.

It was certainly available to them to bring in a witness who was an expert on conducting surveys to testify as to what those standards are.

For instance, we're told that different levels of the utilities were checked by Mr. Rotow instead of all the same ones, but nobody has suggested, in my judgment, on this record why the data that was gathered with respect to the utilities was not accurate, irrespective of the fact that different levels of people came in, for instance the public relations person who was used at Susquehanna.

We indicated that in an exhibit introduced by the Applicant the Department of Energy appears to concede that whatever Mr. Rotow's methods were, he found the truth when DOE had not. So at least for the case of the Susquehanna reactor, it looks like Mr. Rotow's techniques are pretty good.

Further, I'd like to quote to the Board if I could from Applicant's Exhibit Number 13, the letter that

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was sent by Worth Bateman and signed by Worth Bateman to Mr. John Dingell.

In the next to the last paragraph of that letter on page 3, I quote:

"In general, the conclusions which NRDC appears to draw are not different from our own. They seem to conclude that if everything is done that physically can be done, there is little need for an early APR. (This argument excludes foreign spent fuel.) As Tables 1 and 2 indicate, we do not disagree. However, we do not think it reasonable to assume that utilities will always be able to tranship...."

a point that we would agree with --

"....or to expand their basins. For one thing, interventions may prevent or at least delay many such actions. The case of the Trojan reactor (also cited by NRDC) illustrates this well. Perhaps more important, there may be sound environmental, health, and safety reasons why maximum density storage at reactor sites is not desirable in every case. Thus, it does not seem wise to pursue such a manner of operation for our planning purposes."

Now what Mr. Bateman is saying there is that in a survey, Mr. Rotow's analysis was, in his judgment and in DOE's

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judgment, accurate.

They disagree about whether or not it's appropriate to look at everything that physically can be done as the basis for making the decision or to take into account difficulties that might occur in preventing the utility from achieving that.

Mr. Rotow is not ordered as a witness with respect to that. He was offered to show that he had conducted the survey and to show the interaction between some of those factors, the difficulty or delays and so forth in DOE actions and in utility actions.

So we've got more verification of the accuracy of the survey from the Department of Energy itself.

Third, we're told that the survey questions were varied, that is, not exactly the same question was asked of everyone and that's not good for doing a comparative survey.

I would point out there's no evidence in the record that suggests that that is not good for doing a comparative survey. There's no expert testimony or even layman testimony on that question.

Fourth, the questions were formulated quickly. Now, I just am not aware, even in layman's terms, that things that are done slowly are more accurate than things that are done quickly. And the fact that Mr. Rotow was able

WEL/ wel 1

to put together the questionnaire in NRDC Exhibit 13E in less than six hours does not have anything to do with whether it's a good survey or not. Nobody that I'm aware of has testified, or even for that matter really cross-examined as to whether there should have been another group of questions on there.

Mr. Rotow I thought gave a fairly rational explanation of why the first questions were somewhat innocuous, and how that related to a good surveyor's techniques, and why other ones were more complicated. The time it took him to formulate it doesn't have any bearing on it, anyway.

Lastly, we're told that the critical date was not available. This had to do with the question of whether or not the data was accurately reported. But the critical date of 1992 was not contained in the summary -- I believe this is right -- of the Rancho Seco, it might have been of the Brunswick, but one or the other -- in the summary that Mr. Rotow had.

The standard is whether or not the surveyor accurately reported what he gathered in the survey, not whether what was a typewritten summary of handwritten notes -- which the witness testified didn't include literally everything in the handwritten notes -- was, itself, accurate.

So I don't see the fact that the 1992 date didn't

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wel 2

appear in the typewritten notes tells us whether or not Mr. Rotow accurately reported the date of 1892 with respect to that utility.

Next, we were told that the survey must meet the objective standards of surveying. Now, Mr. McGarry interpreted that to mean that there was a requirement that the interviewer or the surveyor not be biased.

I interpreted, just from what he read of the case, that there were something called the objective standards of surveying, which, if they had been in evidence, we could test the survey against.

The question of bias doesn't seem to me to come to it all. Mr. Rotow testified what his attitude was about AFPs. Nobody showed that the existence of that attitude caused him to select a certain group of questions or to interpret data a certain way, or in any other way to allow it to be biased.

All that Mr. McGarry has been able to demonstrate in the record is that Mr. Rotow has opinions. If that's a standard for disqualifying people conducting surveys, the number of surveys in the country will go down tremendously. So will the number of judges and hearing board members also.

The question is whether the existence of the opinions have influenced the survey. No connection was made in the cross-examination to show that

Lastly, he indicated that the person who was being

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asked the questions must be aware that the purpose of the survey was for litigation. We had in redirect Mr. Rotow indicating that when he prepared the survey, he didn't know that its purpose had anything to do with litigation. He avoided talking to the Duke people because he knew of this case. That was not because the survey was going to be used in the case, according to Mr. Rotow's testimony. It was because since we were in litigation, it was my judgment that any contacts with the Applicant's experts had to be through the Applicant's counsel, and not a direct contact between one of our experts and one of their experts, without clearance.

So we just took out of the case.

**POOR ORIGINAL**

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So I don't see how there would have been any way to meet that standard. So I think the surveys are accurate. At least they have not been proven to be inaccurate under the standards in the case cited by Mr. McGarry.

Now the Staff's objection is they don't think Mr. Rotow had enough conversations with the Department of Energy people to accurately ascertain what the Department of Energy's policies were to which he's testified. All I can suggest is this, that number one, I think Mr. Rotow indicated the conversations were frank. The statements of DOE policy involved here are not complicated. There's no reason to believe that they could not have been articulated by Mr. Worth Bateman in a three-hour meeting or, for that matter, a 30-minute meeting.

There's no evidence in the record to suggest that that wasn't sufficient time to obtain the information. The record speaks for itself. If the Board is concerned, it can obviously look at that record to see whether they think Mr. Rotow's credibility or accuracy of reporting what he heard in conjunction with the discussions with Mr. Worth Bateman were or were not accurate.

Lastly, a point raised I think both in the Staff's and maybe in something the Applicant said had to do with this question essentially of whether there's better information. If we want to know what the DOE policy is, we want to

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know what the utilities' policies are with regard to waste management and spent fuel storage, is there better data?

And we concede that there is but we do not concede that we are obligated to bring it forward. We have brought forward a witness who has testified and presented both oral and written testimony, indicating what we think is a reliable and essentially unassailed assessment of what utility plans were, what a utility would do under certain circumstances, and what it is that the Department of Energy policy is and how utility plans influence DOE plans and vice versa.

If someone believes that there is a better piece of testimony on that point or that they can disprove it with a witness, they've had that option. They have known of Mr. Rotow's analyses for quite some time. They have known of the affidavit which forms the foundation of his testimony for quite some time.

We have a memorandum -- I believe it's NRDC Exhibit Number 2 -- indicating that the Applicant in March of this year contacted DOE and inquired as to their availability to be a witness in this case.

The Staff could have called those witnesses. They could have contacted the utilities. If someone has a complaint with what Mr. Rotow has included and thinks better evidence was available, more power to them. Quite frankly,

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we did not have the resources to pay the witness fees and travel costs to subpoena the people with whom Mr. Rotow spoke, or the DOE people.

We do not believe under cases that we've cited in earlier memoranda to the Board that we should have the obligation to do that. At a very minimum, if one wanted to reduce all of Mr. Rotow's testimony to the very minimum, we have met in spades any conceivable threshold test laid down in the Vermont Yankee case to require that something be inquired into further.

If the Board agrees with us, the testimony that Mr. Rotow has given is to a relevant issue, if it is uncertain as to whether it gives the correct data we don't have any objection to seeing the -- quote -- "first-hand people" brought in here and let them testify. The obligation to do that under existing law is on the Regulatory Staff of the agency. We simply cannot afford to do it.

We feel the testimony is reliable and useful and helps develop the case we've presented.

MR. MC GARRY: Mr. Chairman, may I have just one quick observation?

Mr. Poisman has stated that there is no independent evidence in this proceeding with respect to one of the standards to evaluate the survey. As much as there is no independent evidence as to the survey, Mr. Rotow's

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testimony must stand.

I submit that examination of the Pittsburgh Press Club case indicates that indeed there was no independent evidence. Rather, the court was faced with evaluating evidence similar to Mr. Rotow and took that head-on and evaluated that testimony by virtue of applicable legal standards, not independent survey testimony.

Those standards are set forth, as the court said, in the Judicial Conference Study Group's Handbook of Recommended Procedure under "Trial Protracted Litigation." That's in 25 FPD 351. So that's where the standards are set forth.

This Board can decide this matter for itself and does not need independent survey information.

MR. KETCHEN: Mr. Chairman, I did not mean to interrupt Mr. Roisman in his argument but I misunderstood his beginning. He indicated that the Staff had not indicated that it had opposed the admission of Mr. Rotow's testimony, including the attached documents.

I just wanted to indicate Staff's motion goes to all the documents presented by Mr. Rotow.

MR. BLUM: Mr. Chairman, may I have a minute?

CHAIRMAN MILLER: Yes.

MR. BLUM: I really feel it's a very strange argument to be making before an administrative board composed

WEL/eb5

of three experts. I think that the testimony, basically because Mr. Rotow explained what he did and everybody can understand exactly what he did and what his results were, would probably be admissible under the new Federal rules in front of a jury.

I think that it meets the Rule 403 test. It's more probative than it is confusing, although everyone seems to have done their best in that regard.

It meets the 700 series test regarding expertise.

It meets, if nothing else, the 803-23 hearsay exception.

Everything everybody seems to have said about Mr. Rotow goes to the weight that his testimony is to be given, and that's all that they seem to have challenged.

In my regard of what he said or whatever he did, it's very clear what he did and the Board can use that in light of what he didn't do or should have done, whatever they feel.

CHAIRMAN MILLER: Are you speaking of the survey?

MR. BLUM: Both parts of what he did, talking to people and his survey. I think both parts should be admissible for whatever they are.

CHAIRMAN MILLER: Whatever they are. What is the second one?

MR. BLUM: His expertise with regard to DOE

**POOR ORIGINAL**

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attitudes and policies.

CHAIRMAN MELLER: Why should the Board be considering the DOE attitudes?

MR. BLOM: Mr. Chairman, that is one of the things that Applicant is depending on, the away-from-reactor facilities. It's a deus ex machina but they're expecting that to pull them out of the storage problem, and I think that it does affect that particular aspect of this case, but in a very marginal way.

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CHAIRMAN MILLER: Why do you consider it to be a marginal way?

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MR. BLUM: His testimony about it is marginal in light of what their own memoranda have shown previously.

CHAIRMAN MILLER: Well are you suggesting that the issue itself is marginal as well?

MR. BLUM: No, sir. But I think their basic attitudes are shown by their own memoranda as to what they expect the government to do.

Mr. Rotow at least commented on what he expects the DOE to do.

CHAIRMAN MILLER: Well, what we're asking you is, what difference does it make what either one of them expects the government to do in deciding this particular application?

MR. BLUM: Well it has been our view that this particular application goes far beyond this particular application to move 300 units, it goes to the whole issue of whether there is a cascade plan.

CHAIRMAN MILLER: Well assume that there is a cascade plan. Still, what difference does it make what either the Department of Energy does or what the applicant expects the government to do in that regard?

MR. BLUM: Applicant-- Well, I think it enters into the whole cost-benefit analysis that applicant has decided to strike here. If they can look forward to a govern-

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ment solution to the fuel storage problem, then they can go for short term solutions. If they cannot look forward to a government solution, then the independent spent fuel storage facility becomes a much more viable option.

In other words, if they're going to have to build it ultimately, as they should, they probably would, I think, choose to build it now.

CHAIRMAN MILLER: Well why isn't that an economic decision best left to the utility involved, or the state regulatory agencies which do have cognizance of economic matters? And why should it be within the purport of this Board or this Nuclear Regulatory Commission?

MR. BLUM: The problem is that if they are going to -- if they're going to have to build that independent facility at some point, then they need not incur whatever -- possibly marginal, possibly real -- dangers there are in transporting the fuel, the spent nuclear fuel from Oconee to McGuire. If they're going to have to build it at some point they might as well keep it where it is and build it now, rather than incur whatever risks there may be.

CHAIRMAN MILLER: Then you settle upon the risk factor of radiological exposure; is that the basis of your position in this matter?

MR. BLUM: Well, we have always said that there is a risk. And, whatever the nature of that risk, since the best

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alternative we feel, economically, in the long run--

CHAIRMAN MILLER: You're back to economics.

MR. BLUM: Well it's all one whole ball of determination. I think the one enters into the other.

CHAIRMAN MILLER: The cost-benefit balance that you speak of is to be made by the Staff initially and by the Board, isn't it, rather than be the utility?

MR. BLUM: Well, I'm--

CHAIRMAN MILLER: I'm trying to get your basic reasoning.

MR. BLUM: I don't think the Staff has done anything like that. The Board is welcome to attempt to draw those based on the data that has been presented and will be presented.

CHAIRMAN MILLER: We'll take a short recess.

(Recess)

10.040

CHAIRMAN MILLER: The hearing will resume.

The Board has taken into account the objections to the testimony of Mr. Rotow which consists of NRDC Exhibit 13-A through E. The Board will overrule the objections as to admissibility; with one exception -- or two, which I'll go into.

The Board is not certain to be able to rule on it for you, as to the applicability of some of these matters, but we're not going to rule now as a matter of law.

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As to the survey, that seems pretty clear to us that, whatever the deficiencies may be stated to be, whether it be on the basis of the case that Mr. McGarry cited, or otherwise, we think the survey at least is before you, that the notes are there, that they were made contemporaneously, and that it is adequate for purposes of producing a survey and the results therefrom. It remains open to any of the parties to challenge with specificity any of the utilities whose results are shown. If there's some egregious error, we have no doubt it's within the capabilities of counsel. And we think also that the exhibit which Mr. McGarry quite fairly put into evidence, Exhibit 18 of the applicant, does show that in general the conclusions which NREC appears to draw are not different from our own. Mr. Worth Bateman, the Acting Principal Deputy Assistant Secretary for Energy Technology apparently has sufficient status and authority at least to represent the views of the Department of Energy to the House of Representatives of the Congress. And he goes on to note that "they seem to conclude that if everything is done that physically can be done there is no need for an early AFR (this argument excludes foreign spent fuel). As Tables 1 and 2 indicate, we do not disagree; however we don't think it's reasonable to assume that utilities will always be able to transship, and the like."

We think this is sufficient corroboration by the Department of Energy, particularly, that the conclusions, the

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results of the survey are really not significantly different from those that the Department of Energy found.

Now, of course, the way it's handled is different, and so forth, as the Department's letter makes clear. But looking at it simply as a survey, we think there is sufficient testimony, prima facie at any rate, to render admissible the survey and the results.

With regard to the balance of the testimony, as I say, the Board is not that clear on how it will, or could be used, nor matters of weight, and that kind. But nonetheless we believe that in fairness to all parties as a matter of admissibility in an administrative proceeding that we should give parties and counsel fair and reasonable opportunity to make their record so that it's available for consideration. If we start trying to second and third guess now before all the evidence is in, before we've had a chance to analyze it and make a determination as a matter of law, that this would not really be fair to any party. So we're going to adopt that view, and with reference to the testimony which is Exhibit 13-B of Mr. Rotow and the accompanying attachment.

On page 5, we will sustain the objection to the last sentence, "By pointing to Duke's plan," and so forth, the third line from the bottom of page 5 and continuing over on the next page, we will sustain the objection and sustain that entire sentence, as well as the following sentence which

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commences with "(2) The actual time," and so forth, and the second sentence under (2), starting "Internal Duke memoranda." So we're striking, in effect, the commencement of the last sentence on page 5, starting "By pointing to," and extending down through "The decision to tranship was made in June 1976," which is the 7th line of page 6. Those will be stricken.

The objections are overruled as to the admissibility of the balance of NRDC-Exhibit 13.

(Whereupon the document referred to heretofore marked Natural Resources Defense Council Exhibit 13-A thru D for identification was received in evidence.)

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MR. ROISMAN: Although these witnesses are presented as a panel, they've been handled individually, and inasmuch as Mr. Rotow has been examined, cross-examined, direct and redirected, may he be excused?

CHAIRMAN MILLER: Yes, he may be excused.

(Witness Rotow excused.)

MR. ROISMAN: Mr. Chairman, we would like Dr. Cochran to go next. There's one piece of testimony that he and Dr. Tamplin did together, but there are also pieces of testimony that he's doing by himself.

It would be our intention that the parties would cross-examine him as to any and all of that testimony and that to the extent that they crossed into something that Dr. Tamplin had said in his affidavit that he and Dr. Cochran jointly prepared, that Dr. Tamplin is available to answer that.

CHAIRMAN MILLER: In other words you wish to proceed initially with --

MR. ROISMAN: With essentially Dr. Tamplin but it would include the right to conduct cross-examination of him with respect to NRDC Exhibit Number 14 which is a joint exhibit.

CHAIRMAN MILLER: Any objection to that procedure?

MR. TOURBELLETT: I'm a little confused. I thought that Tony started talking about Mr. Cochran and then he said he was going to proceed with Mr. Tamplin.

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MR. ROISMAN: If I said that I misspoke. All I'm saying is NRDC Exhibit Number 17, NRDC Exhibit Number 18 are pieces of testimony done exclusively by Dr. Cochran.

In addition, NRDC Exhibit Number 14-A is testimony in which Dr. Cochran was a major participant and it's a joint piece of testimony.

What we would propose is next to have Dr. Cochran be available with respect to 18, 17, and 14.

Now on questions in 14, there is no way of distinguishing between Dr. Cochran's and Dr. Tamplin's contribution so to the extent a party asks a question with respect to 14, if Dr. Cochran can't answer it, we would like Dr. Tamplin to be able to answer it.

CHAIRMAN MILLER: All right.

MR. ROISMAN: That's all I'm suggesting.

CHAIRMAN MILLER: It seems reasonable. Let's try. If it gets awkward, why then we'll....

MR. ROISMAN: Let me explain then, Mr. Chairman, what I would like to do is offer Dr. Cochran for voir dire to any party, and then when that is completed, I have some brief direct examination for him.

I would like to make one change in the testimony. NRDC Exhibit Number 17 is an A and a B. We are going to withdraw B, and only leave NRDC Exhibit Number 17-A.

CHAIRMAN MILLER: Do that again, will you please?

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MR. ROISMAN: Yes.

NRDC Exhibit Number 17, we are dropping ---

CHAIRMAN MILLER: 17-A?

MR. ROISMAN: We are withdrawing 17-B, which is an analysis attached to it.

And on page 2 of NRDC Exhibit Number 17-A, the fifth line from the bottom begins, "A study completed by NRDC...." to the end of the page, we are also deleting.

CHAIRMAN MILLER: Okay. That is then six pages of testimony?

MR. ROISMAN: You mean the part that is being deleted?

CHAIRMAN MILLER: No, the part that's being retained.

MR. ROISMAN: Yes, that's correct, Mr. Chairman.

CHAIRMAN MILLER: Then what I have marked "Analysis of Space Available...." and so forth, which I have marked NRDC Exhibit 17-B for identification, is that withdrawn?

MR. ROISMAN: Yes, it is.

CHAIRMAN MILLER: In its entirety.

Is it likely to surface again?

MR. ROISMAN: I have no way of making a prediction on that, Mr. Chairman.

CHAIRMAN MILLER: In other words you won't give me leave to file it?

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MR. ROISMAN: I wasn't aware that I had the power to do or not.

CHAIRMAN MILLER: You can do so with a word. I'm trying to reduce my file. If we might be using it I would rather retain it.

MR. ROISMAN: I don't anticipate that I would be using it.

CHAIRMAN MILLER: All right.

(Whereupon, NRDC Exhibit 17-B, having been previously marked for identification, was WITHDRAWN.)

CHAIRMAN MILLER: It is now NRDC Exhibit 17 for identification, which is essentially the testimony of Dr. Thomas B. Cochran.

MR. ROISMAN: That's correct.

(Whereupon, NRDC Exhibit 17-A previously marked for identification, was remarked as NRDC Exhibit 17.)

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CHAIRMAN MILLER: Do we have Dr. Cochran's qualifications?

MR. ROISMAN: They're attached to NRDC Exhibit 14-C.

CHAIRMAN MILLER: All right. Is that what you're going to do first then?

MR. ROISMAN: Yes.

I had one piece of direct examination to ask him with regard to his qualifications, and I could do that before voir dire.

CHAIRMAN MILLER: Would you do that now?

MR. ROISMAN: Yes.

Dr. Luebke, do you wish to have Dr. Cochran now also address the question with respect to the nature of this contract?

DR. LUEBKE: If it's a convenient place.

MR. ROISMAN: Fine. I'll ask him after I ask the one additional question on qualification.

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## DIRECT EXAMINATION (Resumed)

BY MR. ROUSMAN:

Q Dr. Cochran, would you briefly describe your experience as a participant and an observer of nuclear waste management policy by the Federal Government?

A (Witness Cochran) Yes. In 1971, I was hired by Resources for the Future, a non-profit organization in Washington, D.C. to do a study of the residual management of the entire nuclear industry. And by residual management, I mean effluents which would include the waste materials.

I was contracted to write up a monograph on residual management. In the course of that two-year investigation at Resources for the Future, I actually ended up writing a book on the economics and environmental aspects of the breeder reactor program.

But in conjunction with that and also since the following nuclear developments, I have -- came and studied the nuclear waste policy of the nuclear industry and the Federal Government.

I then in April of 1973 went to Natural Resources Defense Council, where I've been ever since. I've worked for Natural Resources Defense Council since those days. Since the time I arrived, I've been actively examining and following the nuclear waste issue.

Much of the work that NRDC has done on the waste



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1 issue early on was done in our West Coast office in Palo  
 2 Alto and San Francisco. However, much of the legal work was  
 3 handled out of the Washington office, and so I had some  
 4 familiarity with the waste issue in those earlier days through  
 5 that work.

6  
 7 Subsequently, well, from 1973 through about 1975,  
 8 most of my time was devoted to working on nuclear issues  
 9 related to the breeder reactor, plutonium recycle and the  
 10 nuclear weapons proliferation issue.

11 When the Carter Administration in 1977 moved to  
 12 indefinitely defer plutonium recycle, then some of my activities  
 13 shifted to monitoring how the nuclear industry and the  
 14 federal bureaucracy would manage the spent fuel which no longer  
 15 would go directly to the reprocessing plant but to the --  
 16 but more likely, in my view, directly to a geologic  
 17 repository.

18 So from about that period I became very interested  
 19 in following -- and spent a fair amount of time following  
 20 the spent fuel policy of the Federal Government.

21 I attended, for example, the DOE press conference  
 22 in October of 1977 where the DOE spent fuel policy was first  
 23 enunciated. I interacted with numerous people in the Federal  
 24 Government, both with respect to that policy and with respect  
 25 to the larger nuclear waste policy of the Federal Government  
 as it was developed through the course of the Interagency

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1 Review Groups' preparation of the documents that have been  
2 filed in this case relative to the management of nuclear  
3 waste.

4 I've had communications with, fairly frequent  
5 communications with Dr. John Deutsch, who, upon arriving  
6 on my employment at the Department of Energy, first, as the  
7 Director of Energy Research, basically took charge of the  
8 Department of Energy's nuclear waste policy. He brought in  
9 as his deputy Worth Bateman.

10 And as Dr. Deutsch took on a larger policy role  
11 in the Department of Energy -- in fact, he started wearing  
12 more than one hat. He was not only the Director of Energy  
13 Research, but for a while he was Acting Director of Energy  
14 Technology, and now he's Acting Undersecretary of Energy.

15 As he started wearing more hats, Mr. Bateman  
16 followed along as his deputy in each of these roles. And as  
17 Dr. Deutsch took on more responsibilities, the responsibility  
18 for the Department of Energy's spent fuel policy more and more  
19 rested on Worth Bateman's shoulders.

20 And during this period I've had extensive con-  
21 versations with both Dr. Deutsch and Worth Bateman and have  
22 sat in on one of the principal meetings that was discussed  
23 earlier in testimony by Mr. Rotow.

24 I have also interacted with the principals that  
25 had responsibility for the preparation of the Interagency

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1 Review Group report on nuclear waste management, particularly  
2 the four key players who refer to themselves as the Gang of  
3 Four, who did most of the drafting of that document.  
4

5 These would be: Ted Greenwood at the Office of  
6 Science and Technology Policy; Jerry Brubaker, Council on  
7 Environmental Quality; Roger Lagasse from the Department of  
8 Energy, who reported to Dr. Deutch; and a woman who works  
9 for Andrus at the Department of Interior, and I'm embarrassed  
10 to say her name escapes me for the moment.

11 As Senior Staff Scientist at Natural Resources  
12 Defense Council, I bid on a contract or a proposal for a  
13 nuclear waste management contract that the Department of  
14 Energy published in the Federal Register and I presume also  
15 the Commerce Business Daily, and won that contract, NRDC  
16 won that contract. And that was the contract that was referred  
17 to earlier.

18 I hired Mr. Rotow to be a research assistant and  
19 help with that work. And he did a very admirable job on that  
20 effort.

21 If I might just get into that contract --

22 Q Wait. I'll ask you a separate question on that.

23 A Okay.

24 Back on my expertise, part of this issue relates  
25 to -- at least the federal AFR policy relates to the return  
of foreign spent fuel.

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One of the other areas that I spend a considerable amount of time on at NRDC is the nuclear weapons proliferation issue, particularly the horizontal proliferation, the spread of nuclear technology to other countries.

And as one who works on both the waste issue at NRDC and the proliferation issue, I have interacted with -- in meetings, small meetings, with the Deputy Undersecretary of State. It was for a while Joseph Nye and now Thomas Pickering, the gentleman that essentially played one of the largest roles in setting up the non-proliferation policy of the State Department, and also people like Charles Van Dorn at the Disarmament Agency, he worked with the State Department on this same issue.

And so we have discussed the relationship between the foreign -- the non-proliferation policy aspects in their relationship to the domestic waste management policies of the Federal Government.

I could name other names in the bureaucracy, some at EPA and some more at CEQ that I've interacted with on this issue, others also in the Department of Energy.

Q Thank you, Dr. Cochran.

Now with regard to the question that Dr. Luebke had asked, can you briefly describe the scope of the contract that you just referred to -- the contract that the Resources Defense Council had that contract came to become

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involved with the question of AFR policy.

A. Yes.

As initially set forth in the AFR, the Department of Energy was seeking a waste management study that would provide to some extent an assessment of the views of the environmental community on nuclear waste issues and how and why they differ from those of the administration or the Department of Energy.

And this contract was not meant to be -- and, in fact, was so stated in the contract in any way any sort of Intervenor funding or part of an adversarial -- to be used as part of an adversarial process with the Department of Energy.

The Department of Energy recognized that we had oftentimes been in an adversarial role with them on some nuclear waste issues. And this contract was -- one of its purposes was to, for the Department of Energy's benefit, to give them an understanding of essentially where we were coming from with respect to nuclear waste issues.

Now in the course of that study from time to time I would interact with Dr. Deutsch on other nuclear issues, and he encouraged me to provide him short -- one, two or three page statements on various nuclear issues and do it under the contract.

Since I was essentially a contractor of the Department of Energy,

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provide information on our views of waste issues, he interpreted the contract more broadly to provide his technical assessments of -- that would benefit him in making policy decisions.

On one occasion, I provided him an assessment of the Department of Energy's nuclear fission energy strategy as a letter, and the letter stated that this was work done under the contract.

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Shortly after the Department of Energy's press presentation and -- I'm referring now to the Fact Sheet that was offered for identification. It had in it the figure that there were these 22 reactors that were running out of storage space and were part of the justification of the need for an AFR.

When that paper, that Fact Sheet was released, it was in connection with, I guess, I'm not certain but, to the best of my recollection, there was a report released and there was a press conference held and briefings of environmental groups, briefings of industry people and so on.

I attended one of those briefings and that figure was given, was presented in a slide presentation by Dr. Deutsch and Worth Bateman.

I, at the time, questioned Mr. Bateman about the accuracy of the numbers in that table, and subsequently spoke with Mr. Deutsch on the telephone about the -- and

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voiced my concern about the accuracy of that table and the fact that it was my opinion that they were not being completely honest or candid in the presentation of the data to support their case for an AFR.

And at that time Dr. DeVitsch said well, put it in a -- you know, give me your position in a two- or three-page letter and do it under the contract. And so I said I would.

Let me go back and give you just a little bit of history -- well, I'll give you that afterwards.

I then asked Mr. Rotow to undertake this telephone survey of people at the utilities to check the data that were presented in this particular figure. The reason I did that was because, several years earlier, we at NRDC had been involved in the licensing action on the Barnwell case.

And at the time, the Staff had -- I guess it was the AEC in those days -- prepared an environmental analysis which purported to show that it was essential that -- or it was necessary that Barnwell, the spent fuel receiving and storage facility, be licensed separately from licensing the whole facility because, if they didn't, there would be certain reactors that because they were short on spent fuel storage space would maybe be forced to shut down, and there were six reactors listed in that particular report.

And I, myself, did the same sort of survey that

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Dimitri Kotov #11. I called at each of the utilities until I found the person that I thought was responsible for spent fuel management or was in a position to state what the spent fuel situation was accurately with respect to each of those reactors.

And in each case I found that the utility was relying on the license, the granting of the license for Barnwell but had some contingency plans and was taking care of its own spent fuel needs if, in the event Barnwell wasn't licensed.

It stands to reason that given the testimony we have heard or that was presented earlier on how expensive it is to do without a reactor, that it behooves the utility to try to get in a situation where it is forced to shut down a billion dollar plant for lack of a \$10 million swimming pool or spent fuel storage pool. And it was my view at the time that each of these utilities would sense that and had contingency plans and were going to insure that they weren't forced to shut down in the event Barnwell was not licensed.

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In effect, what I found in that case was the Staff document or report that purported to show that there was a need for this licensing action at Barnwell was in fact not the case, and those data were presented to the Staff as part of NRDC's comments on that environmental statement.

So, in interacting with Dimitri, back to more recent days, I asked him to do the same sort of surveys and gave him some guidance on how to do it. He prepared the questions, I interacted with him to some extent on the preparation of the questions, but they were largely his work. But I gave him some guidance on what sort of questions he ought to be asking, and basically turned him loose to gather the data that he gathered.

I wouldn't refer to it as a survey. I guess I would refer to it as a study of whether or not there was a need for spent fuel storage at a licensed reactor spent fuel storage place.

MR. ROISMAN: Doctor Luebke, has he given you all the information you needed, or if there are other questions maybe it would short-cut it if you just asked him directly.

DR. LUEBKE: I might summarize and see if I have the gist of it.

You have sort of an open-ended contract, as I listened to you, and you add to it conveniently?

WITNESS COCHRAN: It's closed now, but it was.

DR. LUEBKE: It was then open, and you could add to it with letters, or whatever?

WITNESS COCHRAN: Yes.

It was for the purpose --

DR. LUEBKE: And you were doing it as a study for the same man or section that did the original one, and it could be, then, in the category of an improvement, rather than competitive?

WITNESS COCHRAN: That's correct. It was not done-- it was not designed for a , sort of adversarial relationship. It was done to provide them with useful technical input, so he could make better decisions, and it was simply that when they presented what was basically a report of the work of the Stoller Corporation, and relying on that to defend their AFR policy, I challenged that work.

So Dr. Deutsch said, well, put it in writing. Give it to me in writing, and let's see where we are. And he would do with it what he wished.

I'm sorry about this whole conflict, about the study of the contracts, and so forth. I think it's overblown. I mean we had a very small, \$37,000 contract to do this waste management study. And, frankly, doing these other chores was an additional burden, above and beyond what we originally contracted to do.

DR. LUEBKE: You kept adding to the work, and you

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to the price?

WITNESS COCHRAN: That's right.

And it was never meant to be an adversarial challenge to DOE. It was meant to, in that particular case and the previous one on strategy, to give him guidance to improve the policy.

Unfortunately, with respect to the AFR policy I think the Department of Energy was sort of locked in by the previous Presidential decision, which we can go into later, or --

DR. LUEBKE: Well, I think it's clear to me now. I asked the question, because as we said earlier in this hearing, we heard that the racking and reracking is a dynamic proposition. It's not unreasonable that in a year or two there will be another updating of the situation. This doesn't mean to be the final word.

MR. ROISMAN: Doctor, there is, and I think you made reference to it before, in Bateman's letter to Congressman Dingell, a quotation from NRDC regarding the figures of DOE being "wildly inaccurate."

Now, those words do not appear in any of the surveys or studies that we've introduced here in evidence. Do you have any interest in knowing, because the witness can tell you what the source of that was. You seemed to be concerned about that part of DOE was fighting with the industry.

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part.

DR. LUEBKE: Yes, I got that impression. Yes, I'd like to have that clarified.

MR. ROISMAN: Well, now, I don't know if he knows of his own personal knowledge. I may be the one that knows of my personal knowledge. But before we get into the problem of having me give you evidence on that, perhaps he can answer it as to where that was and why you don't see it in the versions that are here in evidence.

WITNESS COCHRAN: I think I know. My recollection is not that good that I'd swear to it.

After we did this study and we sent it not only to DOE but we sent it to some staff people on the Hill that were reviewing the legislation that had been proposed by DOE, the spent fuel legislation, so there was some interaction between us and staff people on the Hill and Congressmen and Senators, and testimony on this issue.

Also, there's been interaction between Congress and Mr. Bateman on this issue, and some of the statements like "wild and inaccurate" were ever made in one of these communications by letter or orally, but I don't recall. I don't recall which.

MR. ROISMAN: Doctor, I can give you a little more elucidation on that, if the board will allow me to say so. If it's controversial, I guess I can always be sworn

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on it.

DR. LUEBKE: The Chairman says he'd rather not.

MR. ROISMAN: Okay.

All right, then, if you have no further questions on that, I have no further questions prior to the voir dire, and the witness is available for voir dire.

CHAIRMAN MILLER: All right. Both witnesses, or Dr. Cochran?

MR. ROISMAN: Well, I'd rather we started with Dr. Cochran.

CHAIRMAN MILLER: All right. Dr. Cochran, whose resume has been marked as NRDC Exhibit 14C, and who has testified, may now be examined on voir dire as to the qualifications as an expert and for the giving of expert testimony.

Mr. McGarry?

MR. MC GARRY: Just a point of clarification with respect to Mr. Rotow. Did I understand the Board to say in the event the parties seek to present rebuttal testimony we will be afforded that opportunity?

CHAIRMAN MILLER: Well, we didn't say rebuttal testimony, but I guess, once again, we assume that since that testimony had been on file, that the testimony in opposition to it, if sought, would be forwarded.

MR. MC GARRY: It may be.

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CHAIRMAN MILLER: I don't know. The Board wasn't expressing any view of rebuttal as rebuttal. We assumed that if there was anything flagrantly derelict in the presentation of the study, that counsel would make the testimony available. But I wasn't using rebuttal in any technical sense.

MR. MC GARRY: I'm just alerting the Board and the parties that the Applicant may well choose that course of action.

CHAIRMAN MILLER: When did you have in mind?

MR. MC GARRY: Friday.

VOIR-DIRE EXAMINATION

BY MR. MC GARRY:

Q Dr. Cochran, let's get this straight for the record: You're not employed by the Department of Energy, is that correct?

A No, sir. I am an employee of Natural Resources Defense Council.

Q And you don't hold yourself out to be an official spokesman for the Department of Energy, is that correct?

A No, sir. Excuse me. With respect to that previous answer, I am on the Energy Research Advisory Board of the Department of Energy. They don't pay anything.

Q I was going to say, are you a paid employee of the Department of Energy? Does that make it easier?

A No, sir, I am not a paid employee.

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Q Are you an official spokesman of the Department of Energy?

A No, sir.

Q If I can just explore the contract very briefly, who at the Department of Energy did you enter into the contract with?

A Essentially it was Dr. Deutsch. But the handling of it was actually done by Roger Lagasse, who reported to Deutsch.

The way you phrased the question. . . actually, their contracting offices are different than the policy people, and I don't know their names.

Q I was speaking of policy people.

What was the time of that contract? When was it let?

A It began on October 1, I believe, of last year.

Q And who was in charge of the administration of spent fuel storage at the Department of Energy at that time?

A Well, let me give you a little bit more history.

Before Dr. Deutsch came on board at the Department of Energy the President had already announced his April 7, 1977 nuclear policy, which was essentially a non-proliferation policy, which had waste management implications to it because of the stoppage -- or indefinite deferral of reprocessing and the non-proliferation policy implications.



Subsequently, the so-called President's Spent Fuel Policy was announced.

Now, it's never been officially revealed who was responsible for formulating that policy, but I think it would be fair to say the trade press reviews, and certainly my views and the views of people who are in responsible positions related to waste policy, believe that Secretary Schlessinger was largely responsible for that, and probably did that with the President on his own.

And that was done with -- I believe we have testimony to the effect -- that that was done without the preparation of any environmental impact statements, as required under NEPA.

Now, Dr. Deutsch came on board after that policy had been established. He then, shortly after coming on board as Director of Energy Research, felt that the nuclear waste management policies or program was not being well directed.

And so he basically decided to take charge. And so in a sense he was responsible, ultimately responsible for nuclear waste policies.

Now at the time, the Director of Energy Research -- the waste management program was actually under the Assistant Secretary for Energy Technology which at the time was headed by Robert Thorn, so Robert Thorn wore the hat but Deutsch



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called the shots, so to speak. And Worth Bateman was Deutsch's deputy, as I mentioned earlier.

And Thom resigned and Deutsch became Acting Director of Energy Technology, so then he wore both hats. He still essentially called the shots on waste management, but turned over much of the responsibility for implementing this policy that had already been announced before he came on board to Worth Bateman.

That's why Bateman's name, I believe, appears on the communications with Congressman Dingell, and that's why Bateman spends a lot of time on the Hill testifying on AFR policy.

Now, under the Assistant Secretary for Energy Technology, Sheldon Meyers is head of the waste management. And under him, is this Mike Lawrence, who is essentially responsible for the spent fuel policy.

So in the meetings on spent fuel policy that we had with the Department of Energy, that's why Mike Lawrence was there, and then you skip over and Sheldon Meyers and Bateman was there, and Deutsch was not there, probably because he was too busy.

We have had subsequent meetings on the waste issue with both Bateman and Deutsch in attendance.

Q Some brief questions on the contract:

Are you the project officer, or were you the

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project officer and the principal investigator with respect to that contract?

A Yes, sir.

Q And were you responsible for the Rotow study or survey, or however you want to characterize it?

A Yes, sir.

Q Would you characterize your efforts in the Barnwell case as you've related them to the Board and the parties as a study or a survey?

A I would characterize them -- these are fairly loose terms. As I use them I would characterize it as a study, or an assessment, or an effort to determine whether there was a real need for, in that case, licensing of the Barnwell spent fuel storage pool.

Q You don't hold yourself out as an expert opinion pollster or someone that --

A Not like Mr. Rafshoon, or the CBS New York Times opinion polls, but without flattering myself, I do feel like I have some expertise on the spent fuel management issue.

Q On the issue itself, is that correct?

A And the policies in the Department of Energy and at the White House, and the Council on Environmental Quality, Environmental Protection Agency, Interior, NRDC, and other environmental groups, on nuclear energy.

Q Aside from the Barnwell survey, study, have you

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conducted any similar surveys or studies?

A Not really of that nature.

Q Do you hold yourself out as an expert economist?

A Well, I have not had any formal economics training in college or graduate school. I was an engineer and a physicist in graduate school. My first real contacts with economic issues was -- in this connection -- was when I joined Resources for the Future.

Resources for the Future is a non-profit, environmental -- or a non-profit organization that is made up predominantly of social scientists. And of those, it's heavily weighted with economists and in the same building with the Brookings Institute. And, as you know -- well, you may not know -- there is some discussion now about joining Brookings with Resources for the Future.

I worked directly under Dr. Allen Kanese. Dr. Kanese is now at the University of New Mexico, but he is probably one of the leading environmental economists in the country.

So I sort of learned my economics sort of on the scene at Resources for the Future.

The book I wrote on the breeder reactor program, which is identified in my resume, half of it is an economic analysis of the U. S. breeder reactor program, essentially along the lines of a cost-benefit analysis. That book was

published by Resources for the future, and to that extent they considered the amount of economic theory I needed to do that type of work sufficient to publish the book.

While I don't purport to have a college degree in economics, I think my testimony offered in these hearings as it pertains to economics, is fairly limited. And I think my training is adequate for the extent or the depth of the economic theories that I get into in the testimony.

Q Have you ever been directly involved with the actual design or construction of a nuclear power facility?

A I would answer that no, and the Y's have to qualify it.

I have, you know, a fair amount of knowledge about nuclear reactor designs, and so forth, through my studies of the nuclear industry, studies of light-water reactor safety, and particularly studies of breeder reactor safety.

I know what a spent fuel pool looks like, what purpose it serves.

But I have not, as a member of a utility or an architect-engineering firm, or a firm like Bechtel Corporation or anything, participated in the actual design of reactors or reactor components.

I have taken courses in reactor engineering school at Vanderbilt University.

Q Have you ever derived an actual design or

construction schedule that was utilized in the design and construction of a nuclear facility?

A No, sir. I have reviewed some that other people had done, but I have never done any myself.

MR. MC GARRY: I have no further questions.

CHAIRMAN MILLER: Staff?

MR. KETCHEN: No questions.

CHAIRMAN MILLER: Anyone else?

(No response).

CHAIRMAN MILLER: Very well. We accept the statement of qualifications and the testimony on voir dire as to expertise.

You may examine the witness in that area.

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MR. ROISMAN: Mr. Chairman, I'll make the offer of the evidence at the end of the testimony. But just for clarification, NRDC Exhibit Number 14A, Number 17 and Number 18 are available for cross-examination.

CHAIRMAN MILLER: What is 18?

MR. ROISMAN: Number 18 is Dr. Cochran's affidavit as it relates to the question of the adequacy of the Staff analysis of alternatives in conjunction with this ALARA considerations in this proceeding. It was originally attached as an affidavit to a motion on May 1, 1979 dealing with that contention.

CHAIRMAN MILLER: Very well. The exhibits in question now have been offered in evidence, is that correct, Mr. Roisman?

MR. ROISMAN: Yes, Mr. Chairman, or I can wait and simply formally offer them after cross-examination.

CHAIRMAN MILLER: I think we prefer to do it that way.

Do you have any questions in addition to the proffered written direct testimony?

DEFECT EXAMINATION (Resumed)

MR. ROISMAN: I just have one for Dr. Cochran.

BY MR. ROISMAN:

Q Doctor, you did participate in some of the conversations with the Department of Energy dealing with how they go about developing their policy and what their policy is

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on spent fuel, is that correct?

A (Witness Cochran) Yes, that's correct.

Q And was one of those the conversation with Worth Bateman?

A I've had more than one conversation with Worth Bateman or meeting with him in that connection. I think you're referring to the particular conversation where Mr. Rotow was present and I was also present at that meeting.

Q You have been present during the course of the examination of Dimitri Rotow?

A Yes.

Q I'm going to show you ERDC Exhibit 13B, an evidence, which is Mr. Rotow's testimony and ask you to look particularly at pages three, four, five, six and seven, noting that the portions I'm showing you that are crossed out have either been stricken or deleted by stipulation. Have you seen those pages before and are you familiar with them?

A I have and I'm familiar with them.

Q To the best of your knowledge, based upon your personal contacts with Mr. Worth Bateman, are those true and correct statements with regard to Department of Energy policy and how it's formulated on the spent fuel issue.

A If I may, I would like to just briefly go through this.

Q Sure. Sure.

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A On page 3, beginning with the first full paragraph, second sentence, "This effort has been based on reporting to Congress . . . may utility reactors..." it says, "will face a shutdown..."

I would change that to "may face a shutdown." And with that change I would agree with that.

I would agree with that entire -- with both sentences in that first full paragraph, the first two sentences.

I would say that with respect to the change of "will" to "may," I think the way the Department of Energy tries to present its arguments in the most forceful manner leads one to believe that they are arguing that they will face a shutdown, but I think that in fact Mr. Bateman would argue more along the lines of the statements you read from the letter that he wrote to Mr. Dingell.

I concur with the statements on page 4, on page 3, the first paragraph -- that hasn't been removed, that is actually the second full paragraph on the page, I think is a correct statement, to the best of my knowledge.

The next paragraph relates to whether Duke Power Company deliberately sought to conceal facts. I think my knowledge of this is based on my reading of the memoranda that were obtained under discovery, and I think those documents speak for themselves.

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I won't try to put words in their mouths.

Some of the information reported on page 6 relates to private conversations that Mr. Rotow had with Mr. Mike Lawrence, and I was not privy to those conversations other than as were told by Mr. Rotow, and as presented here.

Here I'm referring to the portion of the sentence in about the middle of the page where it says, "They will seize, and in fact have seized, upon any examples of a transshipment or other offsite strategy," referring to on-site expansion by the utility.

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I would, in that regard, say that's consistent with the conversations that we had with Mr. Bateman. And some reference to information presented in those conversations are here in the same testimony where it's stated that the Department of Energy has reduced the need for an AFR from something like 15000 metric tons down to 500. That's, I think, an accurate statement of, or paraphrase of the statements that Mr. Bateman made to us at that meeting.

And I would like to come back and elaborate on that. I will go ahead -- well, I think with that notation I would concur with the statements on pages six and seven that have not been deleted.

I would like to amplify on that with respect to our conversations with Mr. Bateman.

It was fairly clear to me that -- because I attended the press conference where -- the October, 1977 press conference where the spent fuel policy was first presented, and also attended this later meeting with Mr. Bateman -- that the following has occurred as the Department of Energy's spent fuel policy has been unfolding.

In October of '77, the Department of Energy simply announced that it had titled to utility spent fuel for a one-time fixed fee on a voluntary basis and would provide storage space for that spent fuel as an interim measure until the final repository was built at a government-owned away-from-

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reactor spent fuel storage facility, which I will simply refer to as an AFR.

Now at that time there were projections made as to how much spent fuel would be -- spent fuel capacity would be needed, and they were simply based on looking at how much spent fuel was generated by the utilities, and assumptions that many of the utilities or most of the utilities would take advantage of that policy and, therefore, we would simply look at the production of spent fuel and subtract off how much could be stored at the existing at-reactor spent fuel pools.

And then subsequently and, I believe, in part because of our interaction with the Department of Energy, they -- and by they I mean Mr. Bateman and Mr. De -- -- became convinced that it was in the interest of the Federal Government to minimize the use of the government AFR by encouraging the utilities to build spent fuel pools at the reactors, build additional space at the reactors.

But in my opinion, DOE was kind of caught between a rock and a hard place. On the one hand, they had this policy that had been stated by the President and Mr. Deutsch and Mr. Bateman and, I assume, other officials in DOE above them, believed it was their responsibility to implement the policy.

It was sort of a standard operating procedure in the government, at least in this administration that was the President has made his decision, you can change all the

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other policies but you don't change the ones that the President has stated because then it would appear that the President doesn't know what he's doing.

And so DCE wanted to ---

MR. KETCHEN: Mr. Chairman, I move that that be struck.

CHAIRMAN MILLER: Wait just a moment.

What's your objection?

MR. KETCHEN: Mr. Chairman, he's getting into sort of that everybody knows what everybody in the Federal Government does. I think that's well beyond the scope of his direct examination and expertise for what he's offered for here. And I would just interject that point here and object to it as not relevant.

CHAIRMAN MILLER: Let's see, what is the question that he's addressing?

WITNESS COCHRAN: I would withdraw it and rephrase it, if it would help.

CHAIRMAN MILLER: All right. Let's consider it withdrawn.

But what is the question for the witness?

MR. ROISMAN: He was simply explaining one aspect of the extent to which he was agreeing with or not agreeing with the written testimony of Dimitri Rotow, and there was one part of that that he wanted to elaborate on to make clear in

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that way he was agreeing with it. That essentially is the question that's on the table.

CHAIRMAN MILLER: Let me make a further deletion of that direct testimony on the Board's own motion. It's one that we've reconsidered.

On page five, the beginning of the paragraph as indented at the bottom of the page starting off, "Duke has deliberately," and so forth, the Board will delete the word "deliberately." Then following the word "sought," we'll delete the following words: "...to conceal the fact that it has a cascade plan from DOE and Congress and...."

That's the end of the deletions, and we'll continue then for it to read as it has, which is:

"Duke has sought to use a relatively limited relief..." and the like.

The Board would do that on its own motion.

MR. ROISMAN: Let me just note my objection to that, Mr. Chairman.

CHAIRMAN MILLER: Yes.

MR. ROISMAN: We have evidence in the record to the effect that that's precisely what Duke was doing.

CHAIRMAN MILLER: Yes, but that is a matter that the Board will consider whatever inference there from the document and not the witness, and so in effect I think Dr. Cochran has indicated that he himself is looking to the

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documents, but not seeking to make anything purposely -- we're just cleaning it up.

WITNESS COCHRAN: Should I...

CHAIRMAN MILLER: Yes, you may proceed.

WITNESS COCHRAN: I was trying to make the point that my observations of the way the federal bureaucracy works, or staff members in the agency work on many occasions is that when the President has stated a policy, that policy is not subject to further review and alteration by the agency, or by the agency's staff, but they are more or less constrained by those policy statements.

And the point I was making was, I felt it my belief based on my discussions with Mr. Bateman and Mr. Deutsch is that they themselves feel constrained to implement the President's policy, even though they might have misgivings about it.

I have heard statements to the effect Well I wasn't here when the policy was implemented. So what they have done is in an effort to--as I said, after the October statement of policy was enunciated, they have agreed with us, or came to the conclusion independently, that they should minimize the use of the federal AFR and they, in their view, they could try to do that. They had their own ideas about how they should encourage the utilities to maximize that reactor storage.

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They could not -- Mr. Bateman, I believe, did not feel that he could take these reactors, particularly the 22 -- and this was after we had done our own assessment of the need for APR's and compared our data with his and we'd more or less resolved where there were differences -- he could not, because the President had already stated the policy, go so far as to agree with us and say Well there are only three reactors or only one reactor that needs away-from-reactor storage in this area before 1985, because if he did that, there was no way in the world he felt he could sell the policy before the Congress.

He essentially intimated to us that he couldn't go below these 22 reactors, you know, if he started whittling away beyond the 22, that he'd never get his policies through Congress.

And so I think the differences between the way DOE articulates the need for the APR and our analysis of the need can be explained by that observation.

MR. ROISMAN: No further direct for the witness.

MR. MC GARRY: I would just move that the last colloquy be stricken. It seemed to me it rambled on and went beyond the scope of the direct.

CHAIRMAN MILLER: Well it's an explanation of his observation from whatever vantage point he occupies of how the Federal Government works, for whatever interest it may

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MR. MC GARRY: For the record, I note my objection.

CHAIRMAN MILLER: It will be noted.

MR. ROISMAN: He's available for cross.

CHAIRMAN MILLER: All right.

MR. TOURTELLOTE: Is the objection to what he said  
or how the Federal Government works?

(Laughter.)

MR. MC GARRY: The former, I assure you, Mr.  
Chairman.

MR. ROISMAN: We could stipulate on the latter,  
perhaps.

CHAIRMAN MILLER: Objection overruled. (The witness  
is available for cross-examination. Who wishes to go next?

MR. MC GARRY: I'll start.

CHAIRMAN MILLER: Mr. McGarry.

MR. MC GARRY: I just wish to inquire into one  
matter very briefly with respect to the material the Board  
has just stricken on page five of Mr. Rotow's testimony.

CHAIRMAN MILLER: Yes.

CROSS-EXAMINATION

BY MR. MC GARRY:

Q I would just like to ask Dr. Cochran is he aware  
of the fact that Duke responded to Congressman Moss.

MR. ROISMAN: Objection, I don't think there's  
evidence in the record of that fact. If he takes the word



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"fact" out --

CHAIRMAN MILLER: There's been no examination.

I don't know what he's hypothesizing, but it is cross-examination

MR. ROISMAN: It's just the use of the words "of the fact," the objection is to the form of the question.

CHAIRMAN MILLER: Well cross-examination is an art and you have a skillful witness.

You may answer it.

WITNESS COCHRAN: Would you restate it, please?

BY MR. MC GARRY:

Q Are you aware of whether or not Duke responded to Congressman Moss' inquiry with respect to his request for information regarding spent fuel storage at Duke Power Company?

A (Witness Cochran) I don't have any recollection of that at this time. And the reason I hesitate, I'm not sure whether it was in some of the discovery documents that Dimitri had copied and I subsequently saw.

Q On page three of Mr. Rotow's testimony, you indicated that you would change the word "will" to "may." What was the basis for that change in your mind?

MR. ROISMAN: Asked, answered by the witness in his direct.

CHAIRMAN MILLER: Well he may answer.

Do you understand the question?

WITNESS COCHRAN: Yes, the basis --

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CHAIRMAN MILLER: Insofar as you have previously indicated, you may put a different gloss on it if you wish.

WITNESS COCHRAN: In the way Mr. Bateman is now formulating the justification for the domestic AFR, the AFR for use by domestic utilities, is that while he will not quarrel with the fact that they can expand the at-reactor storage, that there may be cases where the utilities -- for example, some of these 22 reactors or 23 cases where, for one reason or another that they won't get their act together in time and then would need the government's AFR.

And so I didn't want to indicate that I thought DOE was saying that they believed that absolutely so many reactors would have to shut down if this government AFR were not built, only that some subset of them, for one reason or another, might have to maybe be forced to shut down.

BY MR. MC GARRY:

Q When you said getting their act together, will you define that, please?

A (Witness Cochran) Well implementing their expansion of the reactor, which means or reracking or expanding the pool, getting it licensed, getting it through the various regulatory bodies that had some responsibility.

Q Perhaps it would help me just in the cross-examination, was that response given to indicate DOE's view, or is that response indicating NRDC's view?

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A That response is to indicate DOE's view. That's not my view.

Q What's your view? And I ask you, you as a witness for NRDC.

MR. ROISHMAN: Does he mean, therefore, what's the NRDC's view?

MR. MC GARRY: Yes.

CHAIRMAN MILLER: Well now you are outside the area of inquiry. The witness has offered whatever he knows so far and now if you are rejecting still a third element, his own expertise, DOE -- or what he knows of DOE or what's before us now, and if you go beyond that into NRDC you are expanding his shoes.

Do you really want to do that? Is this something you are to expand because of some necessary purpose?

MR. MC GARRY: No I clearly do not want to expand.

CHAIRMAN MILLER: Then I think you might want to reconsider or perhaps limit slightly your question.

MR. MC GARRY: I may want to reconsider, I'm just having a little bit of difficulty, since the Robow -- this modification just came up, I'm having a little bit of difficulty trying to put that in context.

CHAIRMAN MILLER: I think the testimony is that this is the view of Dr. Cochran as to the Department of Energy. The "will" may change.

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BY MR. MC GARRY

Q Dr. Cochran, with respect to your testimony concerning the as low as reasonably achievable --

A (Witness Cochran) I don't have that in front of me.

MR. ROISMAN: I can give it to him.

MR. MC GARRY: I'm not really going to go through it; I'm just telling him the subject matter.

MR. ROISMAN: Okay.

(Handling document to the panel.)

MR. ROISMAN: For the record, I'm giving the witness a copy of NRDG Exhibit number 18.

BY MR. MC GARRY:

Q What's your definition for "as low as reasonably achievable"? What does that term mean to you?

A (Witness Cochran) Well, that's a term that's embodied in the Federal Radiation Protection Standards and in the NRC Regulations in 10 CFR Part 20.

It's also embodied in the recommendations of other national and international bodies that make recommendations with respect to radiation protection. It derives from a previous statement which is essentially the same thing, as low as practicable. And I don't quite understand, but the wording was changed slightly.

It essentially implies that in the context of

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radiation protection standards generally that once you have met the existing limits on exposure -- let's take for example the limit on occupational exposure to workers which would be three rems per quarter, and the 5 x (W-18) formula for computing cumulative exposure -- that once you've met those limits, because of the view held by most people in the radiation protection community that any amount of radiation, however small, is harmful or detrimental, that one should go beyond those limits to ensure that the exposures are kept below the limits as low as practicable, as low as reasonably achievable.

And subsequent to that, there was the -- I'm sure you're familiar with the establishment of the Appendix I regulations with respect to effluents from light water reactors. There was an attempt made to give a cost-benefit balancing process to determine when you've met the as low as practicable or as low as reasonably achievable standards.

MR. MC GARRY: Mr. Chairman, if I may just have a moment?

CHAIRMAN MILLER: Surely.

(Pause.)

MR. ROISMAN: Mr. Chairman, may I speak to the witness?

CHAIRMAN MILLER: Yes.

(Counsel conferring with the witness.)

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CHAIRMAN MILLER: I would ask, so far as the Staff, do you have any estimate at all -- we won't hold you to it in a binding sense -- as to the approximate length of cross-examination of these witnesses? We're trying to schedule our evening session.

MR. TOURTELLOTTE: Mr. Chairman, I never really have much difficulty saying how long my cross-examination is going to last. The difficulty I have is knowing how long the answers will take.

CHAIRMAN MILLER: I see.

Well, suppose we keep the answers reasonably short?

MR. TOURTELLOTTE: Supposing that the answers are fairly direct and short, my guess is about 30, 30 minutes to 45 at the outside.

CHAIRMAN MILLER: Now, let's see, who else will be examining?

MR. ROISMAN: Mr. Chairman, I don't know the question that Mr. Tourtelotte was answering. Was your question how long for both gentlemen, or just for Dr. Cochran?

CHAIRMAN MILLER: About how long for both.

Are you going to have separate testimony?

MR. ROISMAN: Well, as you know, Dr. Tamplin has some affidavits that are his alone, and then he and Dr. Cochran share one affidavit, Dr. Tamplin having done some of the in effect cascading calculations.

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CHAIRMAN MILLER: I suppose the answer was actually with reference to Dr. Cochran.

MR. TOURTELLOTTI: No, my answer is to both.

CHAIRMAN MILLER: Oh, it is to both?

MR. TOURTELLOTTI: I have some sort of general questions to ask. I have a few specific questions of each one, and that's it.

CHAIRMAN MILLER: Is anybody else going to be cross-examining?

State of South Carolina?

MR. WILSON: We don't intend to, no, sir.

CHAIRMAN MILLER: What we had in mind was to recess about 5:30 for two hours, resume at 7:30, in an effort, if we could, to complete tonight.

We recognize that everybody gets tired; we're trying to accommodate the requirements of everybody so far as we can.

MR. ROISMAN: Mr. Chairman, could I make a counter-proposal?

CHAIRMAN MILLER: We're open for suggestions.

MR. ROISMAN: First of all, we have sort of broken now. That is, we're having this conversation now. Perhaps we could take the dinner break at this time, and that we only break for an hour and a half.

Quite frankly, what I'm concerned about is not

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how long we have to eat dinner, but how fatigued we'll be at ten o'clock. In fact, the longer we have for dinner, it may increase the amount of tiredness we have, depending on what most people do at dinner.

(Laughter.)

CHAIRMAN MILLER: Well, on the other hand, the benefit-cost balance, if the examination is of the order of magnitude indicated by Mr. Tourtellotte, it might well be that we don't have to stay that late.

MR. ROISMAN: I didn't hear what Mr. McGarry's answer was as to how long his examination would be.

CHAIRMAN MILLER: He hasn't stated yet.

MR. MC GARRY: I think I'll probably be shorter than Mr. Tourtellotte. I don't think I'll be much longer with either one of these witnesses.

MR. ROISMAN: Then I'd like to propose: Go, and get it done.

Let me just speak with my witnesses.

(Counsel conferring with the panel.)

CHAIRMAN MILLER: What was your estimate, Mr. McGarry?

MR. MC GARRY: Of both witnesses combined, less than a half-hour.

CHAIRMAN MILLER: And yours is maybe 45 minutes?

MR. TOURTELLOTTE: At the outside; maybe 30



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minutes to 45 minutes.

CHAIRMAN MILLER: Very well.

Why don't we just run for an hour and see how we do?

MR. ROISMAN: The witnesses have indicated that they can do that and don't feel the need for a dinner break. We could even run up to as much as eight o'clock before they took that kind of a break.

CHAIRMAN MILLER: I think running until eight might be a bit of an imposition on Counsel and the parties.

MR. TOURTELLOTTE: Is it my understanding that if we do finish these people that we'll go with Mr. Riley tomorrow morning and not tonight?

CHAIRMAN MILLER: That's correct.

MR. TOURTELLOTTE: And we'll all get a night's rest?

CHAIRMAN MILLER: And we all will.

However, we're not pressing you because counsel we know have problems. We've tried lawsuits, and we don't want you to do things that you feel are prejudicing yourself as counsel or your case. We're not really pressing you hard, we're just trying to see if we can negotiate a little bit.

(Pause.)

MR. MC GARRY: Mr. Chairman, do you wish me to proceed?

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CHAIRMAN MILLER: Yes.

BY MR. MC GARRY:

Q Dr. Cochran, turning to NRDC Exhibit 17--

CHAIRMAN MILLER: 17?

MR. MC GARRY: 17, Mr. Chairman, the affidavit of Thomas B. Cochran, Ph.D.

CHAIRMAN MILLER: Oh, yes.

BY MR. MC GARRY:

Q Do you have that document before you, Dr. Cochran?

A (Witness Cochran) Yes, sir.

Q On page 1 of that document, the second paragraph, you indicate that in October 1977 the Department of Energy announced a spent fuel storage policy; is that correct?

A That's correct.

Q Is that October '77 spent fuel storage policy set forth in any DOE document, to your knowledge?

A Yes, it was set forth in press releases at the time that that policy was announced.

Q I hand you a copy of a document entitled "Department of Energy Information."

(Distributing documents)

If you would just take a minute to read that, and see if that is the press release you are referring to.

(Witness reading)

A Yes.

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MR. MC GARRY: Mr. Chairman, I would request that this document bearing the caption "Department of Energy Information," dated October 18, 1977, be marked for identification as Applicant's Exhibit 19.

CHAIRMAN MILLER: It will be marked.

MR. MC GARRY: Thank you.

(Whereupon the document referred to was marked for identification as Applicant's Exhibit 19.)

MR. MC GARRY: Mr. Chairman, I would request that, inasmuch as the witness has identified this document, that Applicant's Exhibit 19 be received into evidence; again, not for the truth of the statements, but for the fact that this document does exist.

MR. ROISMAN: No objection.

CHAIRMAN MILLER: Any objection? Staff?

MR. TOURTELLOTTE: No.

CHAIRMAN MILLER: The document, Applicant's Exhibit 19, will be received in evidence for the purpose of stated by counsel.

MR. MC GARRY: Thank you, Mr. Chairman.

(Whereupon the document referred to, heretofore marked for identification as Applicant's Exhibit 19, was received in evidence.)

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BY MR. MC GARRY:

Q Dr. Cochran, on the bottom paragraph, the large paragraph on page 1, the second sentence. You state that, "DOE proposes...." and then you continue. What is the basis of that statement?

A (Witness Cochran) Excuse me; are we on my--

Q Your testimony. Not the press release.

I'll repeat the question for you .

Page 1 of your testimony, the bottom paragraph, the second sentence that begins, "DOE proposes to build," and then continues. Let's just take the first two lines before the semicolon: "DOE proposes to build and operate temporary spent fuel storage facilities away from the reactor (AFR);"

What's the basis for that statement?

A Well, up to the semicolon I think that's essentially the-- The basis is the policy as announced in this information in October 1977, and as it has been subsequently evolving ever since.

Now do you want me to continue on?

Q Well perhaps you could direct my attention to the press release where it specifically states that DOE proposes to build and operate a temporary spent fuel storage facility.

A All right, let me clarify that.

The statement says "build." I think it would be more accurate to say "build or buy or ~~buy~~ one". Well, let's

**POOR ORIGINAL**

mpbl refer back to the information sheet that you just handed me,  
flws where it says on the first paragraph:

wb3 "The Department of Energy today  
announced that the Federal Government  
is proposing to accept and take title  
to used, or spent, nuclear reactor  
fuel from utilities..."

For the Department to do that at the time of  
October 18th, to the best of my recollection, they didn't  
specify whether they would actually -- I'm not sure. Let  
me put it this way:

I'm not sure whether they specified that they  
would actually build a facility. Subsequently there have  
been numerous negotiations by the Department of Energy, by  
Deutsch, with corporations -- Well, General Electric  
Corporation -- to somehow buy space from the Morris facility,  
to buy the West Valley facility, and to buy Barnwell and so  
forth, and with TVA.

I shouldn't have implied that DOE would necessarily  
build the facility itself. It could buy it or contract  
someone else to build an additional facility; that's un-  
resolved.

Q Is it unresolved also that, at this point in  
time, neither DOE nor private concerns that would operate  
jointly with DOE has any firm plans to build an AFR?

**POOR ORIGINAL**

mpb2

A Well, the Department of Energy cannot build or purchase a facility without legislation. And to the extent that they have not gotten approval from Congress either for funds or to purchase the facility, it's unresolved.

Q The same line of questioning with respect to the following three lines:

"With respect to a proposal to take possession of and title to all spent fuel shipped to these repositories and will enable the utility to pay a one-time fixed fee for this government service and for all permanent waste disposal."

And that phrase in those several lines, again at this point in time there is no specific definite plan to take possession and title of all spent fuel, et cetera, is that correct?

A That's correct.

And I want to emphasize, as I stated earlier, that DOE viewed this as a voluntary program, and subsequently my judgment of the way they've been moving is that they would like to -- they would prefer to minimize away-from-reactor storage, although -- because they're constrained to this policy, they do want to have at least an away-from-reactor storage facility for domestic use.

Q How is DOE attempting

**POOR ORIGINAL**

mpb3

storage?

A Well, here you're getting into an area where the policy has not been finalized within DOE. So one must rely on one's judgments about the direction people like Mr. Bateman are taking.

And based on my conversations with them, they would wish to minimize the use through the charge arrangement, the use primarily by placing a charge high enough that it would give a utility an incentive to build the storage capacity on its own.

There is also some room for redefining the one-time charge so that it more closely resembles a two-time charge, and that would have the same effect.

Q The storage ability that you refer to, would that be spent fuel pool modifications?

A I'm sorry, the storage of the utilities?

Q Yes.

As I understand your answer to the question, DOE --

A I would think that would mean the entire spectrum of options.

Q So a utility would have to consider these various options, and that's what DOE policy in your mind appears to be driving at, is that correct?

A That's correct.

wrb flws

**POOR ORIGINAL**



PM-1  
 WRB/wbl  
 RBloom fls  
 Adslon

Q On page 3, Dr. Cochran, of your testimony--

A Excuse me; could I go back and make one further clarification on the "Take possession of" statement?

The spent nuclear fuel policy, of course, refers to not only the interim storage but the permanent storage, and so ultimately, in DOE's views, they would ultimately take title to all the spent fuel, and possession of all the spent fuel.

Q DOE will; is that correct?

A Well, the Federal Government, and presumably DOE.

Q On page 3 of your testimony, on the bottom of the first paragraph you state, "We are not aware of a single nuclear reactor now under construction or planned for which adequate; i.e., lifetime; spent fuel storage capacity is being built."

How many plants have you reviewed in order to make this statement?

A It's difficult for me to answer that the way you have framed the question. I have not searched the Public Document Room, for example, of all seventy-five reactors to prove that case, to prove that statement. --to prove the statement that there are no nuclear reactors under construction with lifetime capacity. I simply mean that I would, with my following this issue, would have come across that information in the course of my daily activities. Had a utility announced such a policy it probably would have shown

POOR ORIGINAL



WRB/ 12

up in Nucleonics Week or Nuclear News or other trade press or other journals that I follow.

Q Dr. Cochran, I refer you to Applicant's Exhibit 16-S which is the survey conducted by Dimitri Rotow for the Yankee Rowe facility.

A I'm sorry; I don't believe I have that.

(Document handed to the witness)

You really have a keen eye.

Q I was going to say, Would an examination of that document cause you to change your statement?

A I would change it from 72 to 71.

DR. LUEBKE: You lost one.

MR. ROISMAN: Mr. Chairman, let me just make sure the record is clear on this.

The witness' statement is that he's not aware of a single nuclear reactor now under construction or planned for which adequate spent fuel storage capacity is being built. Just for the record, we should be clear that what has been shown to him is a reactor that is neither under construction nor planned, but one already in operation. And it doesn't say that anything is being built, but that they're seeking approval.

I don't have any objection to the witness making the correction. I think the sense of what he said is changed by this statement. But I don't want it to appear that the

**POOR ORIGINAL**

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wb3

actual words are contradicted by the exhibit.

CHAIRMAN MILLER: I think the record is clear.

WITNESS COCHRAN: I would also exclude those reactors that, for one reason or another, are not operating any longer and, therefore, no longer have a spent fuel storage problem.

CHAIRMAN MILLER: All right, you may exclude those.

BY MR. MC GARRY:

Q Dr. Cochran, at page 3 there's a quote that appears in your testimony, and you indicate that came from the Department of Energy document DOE/ET-0055, entitled "Preliminary Estimates of the Charge for Spent Fuel Storage and Disposal Services." Is that correct?

A (Witness Cochran) That's correct.

Q I show you page 2 of the document I've just identified, and does the quoted information on page 3 of your testimony appear at the bottom of page 2?

(Handing document to the witness)

A Yes, it does.

Q Will you read the first paragraph on page 3 in the DOE document into the record, the paragraph under the caption "Section 1.2 Spent Fuel Storage Program?"

A "The Department of Energy spent fuel storage program is responsive to the fact that electric utilities which operate, or plan to operate nuclear power reactors, are facing

**POOR ORIGINAL**

513 308

wb4

a problem with regard to the availability of adequate facilities for the storage of irradiated fuel. Many utilities are expanding their storage basin capacities through reworking for compactness. Others are transferring fuel from one basin to another within their own system. New nuclear plants are being built with larger and more compact basins. While the increased storage basin capacities will provide relief for a number of nuclear plants, some plants still face the prospect of inadequate basin capacity for annual fuel discharge. If this happens the reactor must shut down."

Q Thank you, Dr. Cochran.

MR. MC GARY: Mr. Chairman, I have finished with NRDC Exhibits 13 and 17. If I may just have a moment?

CHAIRMAN MILLER: Yes.

MR. MC GARY: NRDC Exhibit 14 is, I believe the testimony of Dr. Tamplin and Dr. Cochran.

MR. ROISMAN: Yes, it's the combined testimony of Drs. Cochran and Tamplin.

I do have some few questions on direct, however we can wait and have the voir dire before that; if that's not crucial.

MR. MC GARY: I don't know whether it is or not, but it seems to me to be reasonable to go ahead and voir dire Dr. Tamplin, because if I do ask questions Dr. Cochran may say it's Dr. Tamplin's area. It might be more expedient.

513 309

wb5

MR. ROISMAN: Mr. Chairman, in that case, if that's all right with Staff counsel, then I would indicate that Dr. Arthur Tamplin is available for voir dire. His statement of professional qualifications is NRDC Exhibit No. 14-B.

6.110

CHAIRMAN MILLER: Very well. You may voir dire.

## VOIR DIRE EXAMINATION

BY MR. MC CLARY:

Q Dr. Tamplin, I think these questions might be familiar to you, since you've heard me interrogate Dr. Cochran.

Are you employed by DOE?

A (Witness Tamplin) No, I am not.

Q Are you an official spokesman for DOE?

A No, I am not.

Q Do you hold yourself out to be an economist?

A No.

Q Have you ever been directly involved with the design, construction or the scheduling of a nuclear facility or related structures?

A If you mean by "directly involved" have I been employed by a utility company or an architect-engineer, no. I have been involved indirectly in terms of activities associated with construction of nuclear power plants, and, in particular the Clinch River Breeder Reactor as an intervenor.

Q You have not been involved in the actual construction

**POOR ORIGINAL**

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wbs

activity of any nuclear facility or related structures?

A No, I have not.

Q Or the design of a nuclear facility or related structures?

A Not as a designer; that's correct.

Q Or as one who develops schedules for the timing of when certain construction projects will be completed?

A No, I have not.

MR. MC GARRY: I don't have any other questions, Mr. Chairman.

CHAIRMAN MILLER: The Staff?

MR. TOURTELLOTT: No voir dire.

CHAIRMAN MILLER: Anybody else?

(No response)

CHAIRMAN MILLER: All right. We accept the qualifications.

MR. ROISMAN: Mr. Chairman, then both Drs. Tamplin and Cochran are available for cross-examination on NRDC Exhibit 14-A, and Dr. Tamplin is available for cross-examination on NRDC Exhibits Nos. 15 and 16.

MR. MC GARRY: Mr. Roisman, do you have any corrections to make to Dr. Cochran's testimony or to any of the direct testimony?

MR. ROISMAN: I think we did all the corrections way back, and I have no direct for Dr. Tamplin.

**POOR ORIGINAL**

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MR. MC GARRY: I'm sorry; I meant Dr. Tamplin. I misspoke.

MR. ROISMAN: For Dr. Tamplin we also did the corrections. I guess-- Well, as a matter of fact I guess I should ask him, because he was going to explain and had not had a chance to explain how the modifications made in NRDC Exhibit No. 15, how those actually came about.

I could do that now.

DIRECT EXAMINATION (Resumed)

BY MR. ROISMAN:

Q Do you have a copy of NRDC Exhibit No. 15, which is your testimony?

A (Witness Tamplin) Yes, I do.

Q Would you just very briefly explain the nature of the changes made on pages 4 and 5 of that testimony, and what caused the changes to be made?

A Well, subsequent to preparing this testimony I learned that Duke Power Company had indefinitely postponed the construction of Cherokee Unit No. 3, and that it had shifted the dates for Cherokee Units No. 1 and 2 by two years, and that the Perkins construction was deferred indefinitely.

So the modifications here are to accommodate that two-year shift in the startup of the Cherokee reactors, the elimination of Cherokee Unit No. 3, and the subsequent elimination of the Perkins reactor. So all the changes are related to that.

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MR. MC GARRY: Is that all, Dr. Tamplin?

WITNESS TAMPLIN: Yes.

MR. ROISMAN: That's all. It's available for cross-examination.

CHAIRMAN HILLER: Very well. You may cross-examine, Mr. McGarry.

MR. MC GARRY: With the Board's permission, I would propose to go to the testimony of Dr. Tamplin, NRC Exhibit 15, and then I would like to have about two or three minutes to collect my thoughts with respect to Exhibit 11, and I think I could move more expeditiously.

c7

CROSS-EXAMINATION

BY MR. MC GARRY:

Q Dr. Tamplin, turning to page 2 of the testimony, the first sentence, what assumptions did you make concerning alternatives with respect to that first sentence?

A (Witness Tamplin) The first sentence on page 2 of 15?

Q That's right. It begins:

"Even if we allowed Duke Power's estimates of the dates of commercial operation are valid, this cascade plan would only carry them to 1995."

What spent fuel storage option did you assume Duke would follow to take them to 1995?

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eb2

A The cascade plan was simply shuffling the fuel amongst the reactors until all the reactors' basins were filled in successive order, from Oconee to McGuire to Catawba to Cherokee to Parkins.

Q And what spent fuel pool size did you assume?

A The spent fuel pool size which I assumed is given on page 1, and as I indicate there, that came from the affidavit supplied by Spitalny and Glenn of NRC.

Q Do you know whether Duke has other spent fuel storage options available to it?

A Well, yes. It has the option which we suggest which is onsite storage at Oconee.

It also has some reracking possibilities, I assume at McGuire and also at Oconee.

Q If these various alternatives which you've just identified were pursued, what date would Duke be able -- to what point in time would Duke be able to maintain its own spent fuel within its system?

A Indefinitely. It could build sufficient fuel storage pools onsite and maintain them for a hundred years.

Q If Duke did not build an independent spent fuel storage facility but, rather, utilized poison racks and high density rack modifications if that were available to it, how far in the future could it maintain its spent fuel within its system?

**POOR ORIGINAL**

513 314



abj

A Well, we asked Duke an interrogatory with respect to that, and that was presented in our Exhibit 14. According to the answer which was given to NRDC Interrogatory 16 of the Applicant, without an independent spent fuel storage facility at Oconee, they could go to 1987 and at McGuire, to 1999.

With an ISFSF at Oconee, they could go to 1998. Of course that depends on how big the ISFSF is. And with an ISFSF at McGuire they can go to 2010.

Q I've learned something today, Dr. Tamplin. ISFSF? Is that how we refer to it?

A Well, I don't know. If I tried it any other way I'd spit so....

(Laughter.)

Q Dr. Tamplin, in paragraph 2 of page 2 you state, according to a Nute memorandum --

MR. ROISMAN: Could you identify the exhibit? We have just been on 14.

MR. MC GARRY: I'm staying with NRDC Exhibit 15 throughout.

MR. ROISMAN: Thank you.

MR. MC GARRY: It's on page 2 of NRDC Exhibit 15, the second paragraph. It says:

"According to a Duke Power Company memorandum...."

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**POOR ORIGINAL**

ab4

BY MR. MC GARRY:

Q I take it that's the Glover memorandum?

A (Witness Tamplin) Yes, it is.

Q Do you know if Mr. Glover is a corporate officer of Duke Power Company?

A No, I know nothing at all about the Duke Power power structure.

Q Dr. Tamplin, turning to page 3 of your testimony, you state in the third sentence:

"There is little reason to assume that Duke Power's spent fuel storage problem will be resolved by this time."

Isn't there a possibility that reliance upon the alternatives that we have just discussed may provide Duke with adequate storage until the time that you make reference to?

A What alternatives among those that we've discussed? I mean building an independent spent fuel storage pool at Oconee? Yes, that would satisfy it.

Q How about building a poison rack, installing poison racks in the Unit 1 and 2 spent fuel pool?

A According to your answer to our Interrogatory 15, that would only get you to 1987.

Q How about building a poison rack in the Oconee Unit 3 spent fuel pool?

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**POOR ORIGINAL**

eb5

A Well, I assume that's what the answer to Interrogatory 16 implied.

"If Coonse and McGuire are reracked to the above capacities and either had or were without an ISFSP, PCR at two sites would be lost as noted below."

071

That's the answer to our Interrogatory 16.

And at Coonse without an independent storage facility, it would be lost in 1987, according to your answer to our Interrogatory 16.

Q And in answer to Interrogatory 16 --

MR. ROISMAN: Excuse me.

Let the record show I'm going to give the witness a copy of the Applicant's answer to Interrogatory 16 so he'll have it in front of him.

CHAIRMAN MILLER: Very well.

(Handing document to the witness.)

MR. MC GARRY: I thought he did. I was amazed by his responses.

MR. ROISMAN: He has it in his testimony but he didn't have the whole answer.

BY MR. MC GARRY:

Q And what did the response reflect with respect to McGuire, Dr. Tamplin?

A (Witness Tamplin) At McGuire, without a.

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**POOR ORIGINAL**

eb6

independent spent fuel storage facility, they would lose full-core reserve in 1999.

Q Now, Dr. Tamplin, concerning the alternatives that we have been discussing, have you given any consideration to the prospect of the advancement of spent fuel storage techniques such as thin storage or other new means of spent fuel storage?

102

A No, I haven't, not in this. The neutron absorbing racks which is the information which we could elicit from Duke Power and their capacities of the neutron absorbing racks.

I'd say the responses which I did give here, I now have the total answer to that interrogatory and it does imply neutron absorbing racks at Oconee 1, 2 and 3, and at McGuire.

Q We've identified the high density racks and the poison racks, as well as the independent spent fuel storage facility as options with respect to spent fuel storage. Are you aware of any new techniques that loom on the horizon with respect to spent fuel storage?

A No, none that aren't in place.

Q Are you familiar with pin storage?

A I've heard of that. I haven't looked at it in detail. I understand it.

Q Multitiered storage? Does that ring a bell with

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**POOR ORIGINAL**

eb7

you?

A No.

Q Do you maintain there will be no raw advancements from now until 1992 with respect to spent fuel storage?

A No, I don't maintain that.

Q Do you think there will be?

A I have no crystal ball to consult.

Q On page 3, the bottom paragraph just before the chart, Dr. Tsaplin, the reference to the 18-month re-fueling cycle, --

A Yes?

Q -- you say it will involve a smaller yearly spent fuel discharge.

Smaller relative to what?

A Smaller relative to a yearly discharge. If you discharge each year your yearly discharge rate will be higher than -- or at the end of three years you will have discharged more than at the end of two 18-month cycles.

Q Do you know the batch burnup rate at Oconee on an 18-month cycle versus a 12-month cycle?

A The figures which I have here came from Duke Power's thing. I don't remember what the 18-month cycle would be as opposed to what the 12-month cycle was. So I didn't use any batch burnup rate numbers, I simply used the figures that were available.

eb8

Q I'm sorry, I'm a little bit confused. You say the figures you have here are Duke Power Company figures? Is that correct?

A Yes. At this moment I'm not absolutely sure whether these came from the Duke Power or from the, you know, some NRC material. But what I was using was the-- I don't understand why I didn't reference it here, the discharge rate at Oconee on a 12-month and then on an 18-month cycle.

I simply ratioed those and they came out to be three-quarters.

Q Let me just ask you, Dr. Tamplin: Do you know if these yearly discharge rates will indeed occur at Oconee?

A No, I don't, because it depends on whether or not Oconee goes to an 18-month cycle. And I used the 18-month cycle because that meant, according to the data that I had, that the total yearly discharge rate would be lower.

So this makes the spent fuel storage problem less critical on a long-term basis. If I had used the 12-month cycle, all the transshipment numbers would have increased and all spent fuel storage pools would have been filled up sooner, so that I would have come to an earlier date when Duke Power would have run completely out of spent fuel storage space, so it would shove that period to an earlier date.

Q Dr. Tamplin, in your testimony, you stated that the

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**POOR ORIGINAL**

eb9

based on these numbers, I would like to inquire as to where you got these numbers. I'll just ask the question once more.

A I'm sorry at this point that I didn't reference the precise document from which I obtained them.

Q Let's just look at page 4, the first sentence. It says:

"These values...."

And I assume you're referring to the values at the bottom of page 3. Is that correct?

MR. ROISMAN: Excuse me. For the aid of the witness I'm showing, I'm a section of Applicant's answers to interrogatories which contain a discussion of the 18-month fuel cycle for Oconee.

(Handing document to the witness.)

I also said to him that I think it starts down there, and I don't know what the actual numbers are.

MR. MC GARRY: I want the record to reflect that I did not comment that Counsel was talking to the witness.

CHAIRMAN MILLER: Your forbearance is duly noted.

MR. ROISMAN: I'd like the record to note that Mr. Tourtellotte appears to be nearly asleep.

CHAIRMAN MILLER: Well, we've given him leave. He's going to have to start working pretty soon, and he's entitled to a rest period.

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**POOR ORIGINAL**

EEL) 10

BY MR. MC GARRY:

Q Are you prepared now?

A (Witness Tamplin) Yes.

In response to Interrogatory -- that begins with Interrogatory 5 and goes through 6 and 7, there is discussion of the different cycles which would be employed or possibly be employed at these reactors.

And in response to Question Number 6, they indicate at Oconee 1 and 2 that on the yearly discharge there will be some 68 fuel assemblies discharged. That's in response to Interrogatory Number 6.

As we move on to Interrogatory Number 8, the response there is following an 18-month cycle, Oconee 1 will discharge 72 and Oconee 2 will discharge 72. That's 18 months as compared to the 68 which was for one year.

So if I divide the 72 by -- or multiply it by two-thirds, I get 48 which is about three-quarters of the 68 on the yearly discharge.

Q Do you know the difference between cycle burnup and batch burnup, Dr. Tamplin?

A Cycle, as I interpret it, was each refueling cycle.

Q And what was batch burnup?

A Batch burnup? I assumed-- To tell you the truth, I don't know. I didn't come across the words

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**POOR ORIGINAL**



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"batch burnup" in this stuff. There's fuel burnup cycles and so forth.

Q Do you know which term governs the spent fuel discharge rate?

A Since I don't understand-- Since I haven't heard of "batch burnup" I don't really know.

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MR. MC GARRY: Mr. Chairman, if the Board will just bear with me, my technical expert is helping me out on this one.

CHAIRMAN MILLER: That's perfectly all right.

(Pause.)

BY MR. MC GARRY:

Q Dr. Tamplin, how do you know whether an 18-month cycle would yield a larger or smaller spent fuel discharge rate than a 12-month cycle?

A (Witness Tamplin) The assumption that I would make is that the fuel pins would be in the reactor for a longer period of time under the 18-month cycle.

Q Would a greater amount of spent fuel be discharged in the 18-month cycle when it is refueled?

A Well, according to the calculations which I made here, I obviously assumed that less fuel per year would be discharged. The total amount of fuel discharged in any one refueling would be larger, but when you convert that to a yearly basis, it becomes smaller, if I make the ratio to a

**POOR ORIGINAL**

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eb12

yearly basis discharge.

I only did this in order to get, you know, to make my table simple. I could have made my tables up on an 18-month cycle.

Q You're not sure for certain then with respect to these yearly discharge figures, are you, that they're correct?

A I'm sorry, I didn't hear the question.

Q I said you're not absolutely certain that these yearly discharge rates are correct? Is that correct?

A Unless I have missed something, my assumption is they are correct.

Q Turn to page 4 of your testimony, the second paragraph:

"The following tabulation accounts for the storage capability at Cherokee...."

Does the Cherokee storage capability presently exist, to the best of your knowledge?

A To the best of my knowledge, it does not because the reactor hasn't been constructed yet, or hasn't finished its construction.

Q Are you aware of whether or not Duke can expand the storage capability at Cherokee at this time, physically expand that storage?

A Physically expand the storage?

**POOR ORIGINAL**

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b13

Q The size of the spent fuel pool?

A I would assume that that was possible; so long as there was no spent fuel in the pool it could be expanded.

Q If the on-line schedule date slipped for Cherokee, you will have reduced demand for storage. Isn't that correct?

A If the --

Q If the on-line scheduled operation date for Cherokee slips --

A Yes?

Q -- you will have a lower demand for storage until such time as Cherokee comes on line, yet you will have the availability of the Cherokee spent fuel pool some time shortly before it comes on line. Isn't that correct?

A Well, what I did in making the corrections on the table on page 4 was, looking at the fact that the Cherokee on line date had slipped by two years and in fact one reactor had been deferred indefinitely, and it turns out it makes the situation worse rather than better. Because in 1993, the transshipment from McGuire cannot be allowed where if it hadn't slipped, it could have been.

Q Why is that? Why wouldn't the McGuire shipment be allowed in 1993?

A Because you'll run out of full-core reserve if you ship from McGuire to Cherokee under the present plan.

**POOR ORIGINAL**

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eb14

where you have dropped Cherokee 3 and have moved the start-up dates to 1988 and 1990, the reason for this being that Unit 3 is being delayed indefinitely, and the storage spaces that would have been available at Unit 3 are no longer available.

Q On page 6 of your testimony, Dr. Tamplin, you make reference in the second full paragraph that:

"This represents only 2 percent of the three billion dollar cost of the Oconee facility."

What's the basis for that statement?

A That a nuclear power plant costs about a billion dollars.

Q Do you know what the Oconee Nuclear Power Plant cost?

A No.

Q Will you accept \$481 million?

A Today?

Q No, when it was built.

A Well, I've got no reason for doubting that.

MR. MC GARRY: Now with the Board's permission I would like to have just a minute.

CHAIRMAN MILLER: All right. Why don't you take three?

(Brief recess.)

CHAIRMAN MILLER: Come to order, please.

Mr. McGarry, you may resume.

**POOR ORIGINAL**

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eblS

BY MR. MC GARRY:

Q Mrs. Cochran and Samplin, referring to Staff Exhibit 10, your joint testimony, page 1, I have several questions concerning the IRG report which is Applicant's Exhibit 5, and I believe it was moved into evidence by NRDC.

MR. ROISMAN: That's correct.

BY MR. MC GARRY:

Q With respect to the last sentence on the first paragraph:

"The IRG report indicates that, depending upon the waste management strategy chosen, the earliest date for the opening of a high-level radioactive --"

A (Witness Cochran) Excuse me. I'm not with you. Oh, all right. I have it.

Q "...the earliest date for the opening of a high-level radioactive waste repository is in the range from 1988 to 1995."

Do you have a copy of the IRG report before you?

A Not before me.

Q I'll had you a copy.

(Handing document to the witness.)

I ask you to look at page 12, Exhibit 3. On the left-hand side of that Exhibit there is a column which appears to be a column of a second page.

**POOR ORIGINAL**

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eb16

"Potential Away from Reactor Spent Fuel Storage Facility."

Now doesn't this document in general, and this exhibit specifically, assume that if the repository-- well, let me ask you:

The repository they're referring to is the final federal repository. Is that correct?

A (Witness Cochran) That's correct.

Q Doesn't it say that if the repository opens in 1992, under two cases there will be three AFRs necessary? Is that correct?

A That's what that table purports to show. That's correct.

Q And then just running through the remaining categories it says:

"If repository opens in 1992, under Case 1 and 2, six AFRs will be necessary."

Is that correct?

A That's correct.

Q "And if repository opens in 1996, under Case 1, eight AFRs will be necessary, under Case 2, nine AFRs will be necessary."

Is that correct?

A That's correct.

Q And then the final category:

"If repository opens in the year 2000,

**POOR ORIGINAL**

p. 17

under Case 1, twelve AFRs will be necessary and under Case 2, fourteen AFRs will be necessary."

Is that correct?

A That's what the table says.

Q Now, Dr. Cochran and Dr. Tamplin, again on page 1 of your testimony, beginning with the second paragraph it says:

"The IRC did not recommend, much less choose, any of the strategies set forth in the IRC report."

And I direct your attention to page 99.

There on page 99 there's a section bearing the caption "Institutional Issues Related to the Waste Types, Subcategory Spent Fuel." There are three lines that are underscored, and they're underscored in the text.

Would you please read those lines into the record?

A "The IRC recommends that the implementation of the President's spent fuel policy should be pursued vigorously and appropriate legislation be submitted to Congress."

Q Thank you.

A I have a comment, as you raised that, in connection with the last sentence in the first paragraph and the first sentence in the second paragraph.

POOR ORIGINAL

eb18

Q Let me just say one thing.

A I wish to elaborate on what I understand to be misunderstanding or a misleading interpretation of these statements.

Q Please go ahead.

A Well, first of all with respect to the second -- the first full line in the second paragraph:

"The IRG did not recommend, much less choose, any of the strategies set forth. . ."

We are referring there to the waste management strategies for the final repository, the implementation of the final storage of the spent fuel, and not to imply that the IRG did not endorse the President's spent fuel policy.

The purpose of this section, this discussion, in the first part of this affidavit was simply to show that the determinations that have to be made before we will know how the wastes will finally be disposed of and when it will finally be disposed of have not been determined yet, and much of the federal policy on an interim planning basis, which means until they have completed their environmental reviews, will be decided by a Presidential memorandum, and the President -- be decided by the President, based on the Decision Memorandum that is presently before him, and that that decision has not been made.

Now the purpose in this -- what we tried to

**POOL ORIGINAL**

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b19

show was that-- Well, let me back up and give you some numbers.

As a rule of thumb, a 1,000 gigawatt reactor will put out 33 tons of spent fuel annually, and that means over a 30-year lifetime it will put out roughly 1,000 tons of spent fuel.

Now we're looking in this IRG report and in some of my affidavits at projections of nuclear capacity that range from 148 to 380 gigawatts, and the other day I mentioned that the current DOE figure for nuclear growth to the year 2000 is more along the lines of 300. It's come down from the 380.

But nevertheless that implies for each of those reactors, if you're putting out 1,000 spent fuel -- 1,000 tons of spent fuel for each gigawatt, that over the lifetimes of those reactors you're talking about in the neighborhood of -- if you used the upper limit number, of 300,000 tons of spent fuel.

And if you look in the IRG report you see -- and previous DOE publications, that a nominal size waste repository by DOE standards will only handle 100,000 tons of waste. That's based on a 2,000 acre salt repository.

Now as to how much it would actually hold is a wide-open question because none of the waste disposal criteria have been determined yet, and basically any expert's numbers are as good as any other expert's numbers.

**POOR ORIGINAL**

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eb20

And so if you take, for example, the California Energy Commission number, they have a more conservative design. It only hold 35,000 tons. That means that if you look at the total number of reactor that are in the pipeline and are projected, that it will take not just one final repository but we may need, by DOE estimates in the IRG report what are in here, somewhere -- two or three repositories to handle -- I believe it is on this same page --

Q Page 12?

A Page 12. We will need, it says under "Geologic Repositories for Commercial High Level Waste," in the Case 1 and Case 2, five repositories and then you've got to add another -- in each case another one for defense wastes.

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So according to DOE estimates we would need anywhere from three to six geologic repositories.

The purpose of my testimony here is to show that Duke Power Company cannot count on, through this cascade program, having a final repository available in the early '90s or the mid-'90s because it's not going to be one repository that's going to take care of the spent fuel but by DOE estimates, anywhere from three to six.

And if you use the more conservative designs like three 35,000-ton repositories then you have to multiply these numbers again by three. So we're talking then anywhere from nine to eighteen repositories.

**POOR ORIGINAL**

ch21

Well, that is of great concern to me because I think we will get to the point with repositories like we got to with respect to reprocessing, where we discover we are unable to license repositories fast enough to meet the spent fuel storage needs, and that any policy that exacerbates that by creating a false sort of solution to the waste disposal problem, like this government AFR policy, they take it away from the utilities, the utilities then behave as if there is no spent fuel problem because the government is taking it off their hands, taking title to it, physically removing it from the reactors and so forth --

Q Can I just interject here?

A I want to finish, though.

These types of policy will-- I mean the government AFR program that removes the fuel from the reactors, removes the waste issue from the decision-making process involving licensing new reactors and so forth, will exacerbate this longer-term problem.

And that's the case we're trying to present in this particular affidavit.

Q I don't dare ask you to repeat the answer, Dr. Cochran.

CHAIRMAN MILLER: You'd better not.

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**POOR ORIGINAL**

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File 3B  
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MR. MC GARRY: I believe I have about one or two more questions, Mr. Chairman.

(Pause)

MR. MC GARRY: Thank you, Mr. Chairman. I don't have any further questions.

CHARLES MILLER: Thank you.

The Staff:

MR. TOURTELLOTT: Yes, Mr. Chairman.

BY MR. TOURTELLOTT:

Q Dr. Cochran, you're not prejudiced -- I'm sorry; you're not biased against the use of commercial nuclear reactors in the United States, are you? --or are you?

A (Witness Cochran) Mr. Tourtelotte, if the Nuclear Regulatory Commission turned down a license for a particular nuclear activity you wouldn't infer from that that they were biased against nuclear power.

I have certain views about certain activities that relate to nuclear power. For example, particularly with respect to implementation of the current administration's breeder reactor program and the recycle of plutonium in light water reactors. And I have certain views with regard to how the nuclear wastes should be managed.

I have never taken a position for a moratorium with regard to operation or construction or licensing of light water reactors.

**POOR ORIGINAL**

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RB/wb2

I do have a view that in light of many difficulties with light water reactors, both with respect to the implications that program has in terms of proliferation of nuclear weapons, the reactor safety issue, and the waste issue, that that means of generating electricity over the long term should be phased out in a responsible manner.

One can argue, Well how fast can one responsibly phase nuclear power out.

I would make similar statements with respect to coal technology.

Q Well is there anything left you've gotten rid of light water reactors?

A I'll be happy to give you a lesson in energy policy. I don't see that--

Q I'm speaking of nuclear power itself. Is there anything left after you've got rid of -- after you've phased out light water reactors?

A Electricity is produced by --

MR. ROISMAN: Wait a second.

Mr. Chairman, I think the witness isn't clear as to the question.

Do you mean, Is there any more nuclear power left? I think the witness thought, Was there any power left at all.

BY MR. TOURTELLOTT:

Q We're still talking about nuclear power.

**POOR ORIGINAL**

wb3

You indicated you have a predisposition about light water reactors, and I'm simply trying to get on the record what maybe both of us know, but what your view is if you phase out light water reactors and nuclear power. Then what do you have left for the purposes of generating electricity?

A (Witness Cochran) You have pressure tube reactors such as the heavy water reactor, the CANDU reactor of the Canadians; you have gas cooled reactors; you have light water breeders; you have an infinite number of combinations of fuel and coolants and other technologies.

Q I take it that you're not opposed, then, to the construction and operation of facilities along those lines?

A I have opinions about many of those other concepts. To give you a fair and direct answer to your question, I'm generally in favor of a strong energy conservation program, particularly with respect to electricity production. And I feel like in the short run -- and by that I mean in the next twenty years -- that's basically the only alternative to adding new units of capacity for generating electricity.

I don't think you can replace the technology rapidly for electricity production in this country. So that in the short run energy conservation is really the principal alternative. And I must say it's logical to do it in that area.

**POOR ORIGINAL**

wb4

In the longer term, I think in terms of electricity production it's where the technology is available to you in this period beyond around twenty years. It depends on your energy R&D priorities, how you're going to spend your R&D dollars. And I've taken the position for a long time -- actually since I was at Resources for the Future -- that the energy R&D budget was, the priorities were misplaced and that the priorities should be shifted away from nuclear and toward some of the more benign technologies.

I think we have seen -- we are seeing, in the interim, a major shift in U.S. energy policy along that direction. I think it could be speeded up considerably more.

Q When this question was asked to your colleague, Mr. Rotow, earlier today he said he didn't have any particular objection, so long as the plants were safe. Does that summary fit your feelings, or are your feelings more elaborate than that?

A Well, my feelings are more elaborate than that. I think with respect to the nuclear issue I think there are certain types of issues that would not cause me to argue to phase out the technology, but, rather, to simply restrict myself to trying to improve the technology.

There are other issues that together, I think, are of sufficient concern to cause me to want to phase the technology out in some responsible manner, and those issues I would

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say basically involve reordering of priorities: the issues related to nuclear weapons proliferation, the horizontal proliferation; reactor safety is next, and the waste issue is third.

Q Those three issues make you want to phase out commercial nuclear reactors?

A Because of the unresolved problems with respect to those issues I would argue to -- I mean, I have argued that the U.S. policy should be to try to -- you know, to try to phase those out in a responsible manner. And that doesn't mean I'm in favor of shutting down existing reactors in the short term, because really the only handle one has in the very short term is energy conservation.

Rather than argue whether nuclear is better than coal for base load electricity generation or vice-versa, I would try to encourage people to focus on ways to avoid having to add new units of capacity by load management, various ways to increase energy productivity, and other conservation measures.

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Q Dr. Tamplin, how would you answer the same question; that is, do you have a bias about the use of nuclear power through commercial operation for the production of electricity in the United States?

A (Witness Tamplin) I have a concern about the use of nuclear power. It's a long-standing concern that began back in 1969.

I am concerned that the nuclear power industry expanded far too rapidly, that what the industry has been doing is essentially building experimental reactors, and building far too many of them. That the rate at which they were being built caused a situation where the poorly-understood technology became poorly constructed; where the regulatory mechanism was never able to keep up with the pace that the industry was developing; that many of the important research programs that represented an integral part of the development program, were not done.

And that's why the reactors are basically experimental, why there is so much backfitting that has to go on.

I was concerned back in '69 with the situation, the compromise between safety and reliability, where we would, in order to -- where we'd get so dependent on nuclear power that we would have to sacrifice safety in order to keep the nuclear power plants on line, because we needed the electricity

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they were generating.

I think we find ourselves basically in that situation today, and I don't think anyone would argue that we can shut all nuclear power plants down where, in Chicago, 50 percent of their electricity comes from nuclear power.

So I am concerned. I don't have a bias, exactly, about nuclear power. I am very concerned that it has developed far too rapidly, that it has many unresolved problems in it, one of the major of which is this whole problem of waste disposal, which has never been factored in to the cost of the whole nuclear power equation, and which, in the present, extant situation Duke Power refused to factor in to costs. They want to talk about away-from-reactor storage facilities, which are no solution to the waste problem. They're cosmetic. Nobody knows how much they're going to cost.

If the cost of spent fuel storage in government facilities is too high, then Duke Power won't go to ship it there, and will want to build its own.

So you've got all these questions and problems and uncertainties, which have just hung on and gone along until you've got a monstrosity that finally even the Congress wonders whether it's possible to regulate it -- and they seem to have thought for a long time that anything could be regulated.

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I'm not convinced that any nation or the United States can have a very large number of nuclear power plants operating safely, not for a long time. Not until we develop the regulatory and inspection process, not until we get really good at quality control, and this sort of thing.

So, yes, I have a concern about it. I was concerned. I don't know when, if ever, I would like to see a large commercial plutonium industry, partly because plutonium is highly toxic, radioactively, but also because it's a material from which nuclear weapons can be made.

So I have a strong bias right at this point against that which, up until President Carter was all part of the nuclear picture and --

Q Excuse me, Dr. Templin. I'm not sure I understood what you said. Did you say I would or I wouldn't want an industry that dealt with plutonium?

A I would not want to see a commercial -- plutonium becoming a significant item in the commercial sector of society.

Q Well, all of the concerns that you've enumerated here, have they brought you to the conclusion, any conclusion, about whether or not we ought to build any more commercial reactors in the United States?

A At this particular point in time, my own opinion is that we should not issue any construction permits

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these problems are resolved.

That's my own opinion. And that's something which up until the last year or so, I didn't hold strongly. But I now basically feel that it's time not to issue any more new construction permits.

Q So the question in your mind does not exist as to whether they should be authorized to be built and operated if it can be done safely. You just feel that the circumstances have brought us to a point in time where, regardless of whether they can be built safely, they simply shouldn't be built at this time?

A No. I am not convinced -- as a matter of fact, I'm convinced just the opposite. There is not an effective regulatory and inspection program in force within the United States to guarantee that the meticulous attention and detail in design, construction and operation of these plants is carried out.

That's my feeling.

Q Are you saying, then, that it's your opinion that the present regulatory structure and atmosphere is such that safety cannot be assured?

A I even go further than that, and say it has not been.

Q Has not been and cannot be?

A Not under -- not at the present time.

**POOR ORIGINAL**

to that, there are unresolved problems.

You know, you don't build a city without a sewage disposal plant, or at least you shouldn't.

And if you're going to have a city, you've got to have garbage trucks. You know.

Your waste disposal problem is just totally unresolved, and it's not clear at this point whether it indeed can be resolved satisfactorily, and also it's not clear as to how much it's going to cost.

None of this has ever really been put together into the public decision-making process, so that one can say, "Yes, nuclear power is a good thing, and it's economical."

Right now you can't even say it's safe, let alone economical.

Q Dr. Cochran, I notice that both you and Dr. Tamplin made the remark that you don't want to limit the operation of existing plants, but I'm not sure that I got from you the information -- or that I asked you the question that I just asked Dr. Tamplin.

Does that mean that you, or in spite of what you say about existing reactors, do you have a position because your uncertainties about the three items that you indicated earlier, that no new plants should be authorized to be built or operated?

A (Witness Cochran) I didn't so state that. Let me

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say I can sort of take the easy way out on that question by saying that I think in the foreseeable future the light-water reactor program in this country is dead, and you're not going to license any significant numbers of new plants. There just aren't going to be any -- I won't say any, but there won't be any significant numbers of new construction permits and new orders placed by utilities.

So the issue of whether or not there should be a moratorium on new construction, in my view, is -- I don't have to sort of get out on the courthouse steps and argue one way or the other, because I don't think -- I think it's a moot point at this time.

And in the near term, I think I've taken essentially, prior to the Three Mile Island event, the position that one should focus on energy conservation measures and load management, and so forth, to try to avoid building new units of capacity, whether nuclear or coal, as opposed to just arguing for a flat moratorium on the safety issue.

Q I appreciate all that, Dr. Cochran, but the real question is not what you believe to be likely to happen, or what you can perceive to be a moot issue. The real question is -- well, to digress a moment, you do recognize the fact that the NRC is still authorized to grant construction permits and licenses, operating licenses, do you?

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A Yes.

Q And so the question is: Do you have any disposition about whether that should be done today and in the future, in the near future, based upon the three items that you listed earlier?

A Basically, you're asking me a hypothetical question. If I were on the Commission and had to rule on whether --

Q No, I'm not asking you that hypothetical question at all. I'm asking you how you personally feel about whether or not construction permits and operating licenses should be issued for the construction and operation of new nuclear plants, given the concerns that you've indicated?

A I have not in the past, and probably don't see any reason to right here, take the position that I am absolutely for a moratorium on new construction. I would work very hard, though, to ensure that new construction of reactors or coal plants was not necessary because I don't think it's needed.

I mean it's more than just a safety issue. I think the reactors are unsafe. I think they lead to proliferation of nuclear weapons. I don't think you have a solution to the waste problem.

I think in theory the waste problem can be solved. In practice, I think it's a wide-open question.

I think that policies in this instant case, and

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policies or decisions made by this Board will have an influence on whether wastes are ultimately disposed of safely, and I could go into the reasons why.

Q I think you've answered my question.

I notice in your qualifications that you've worked for NRDC apparently for some time, and that you are in some position where you review energy policy, is that correct?

A Yes.

Q And you're a direct employee of the NRDC?

A That's correct.

Q And are you senior enough in the organization that you have anything to do with the policy of NRDC?

A Yes. Dr. Tamplin and myself and Mr. Roisman are all members of the senior staff.

Q Are there any other members of the senior staff who help you formulate the policies of NRDC?

A Yes.

Q Who are they?

A The executive director is John Adams. Do you want me to list them all? It might be embarrassing.

Q How many are there? I'm not really interested in--

A 14 or 15.

Q 14 or 15.

A And some four new ones coming on.

Q Do you have meetings from time to time in this

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group?

A Yes. We have staff meetings and we have meetings with the board of directors where the staff is present.

Q Have you ever discussed at any of those meetings or heard anyone discuss strategies for either stopping or slowing down the growth of nuclear power in the United States?

MR. ROISMAN: Objection.

CHAIRMAN MILLER: He may answer.

MR. ROISMAN: Mr. Chairman, the reason for the objection is that there's a somewhat unique status within the Natural Resources Defense Council. We're incorporated under the laws of New York and authorized to practice law in our own names.

The question that is now being asked may well involve privileged communication between attorney and client; to wit: between the attorneys who work at the organization and the client, which is the organization itself.

If I could get some idea of what the purpose of the examination is on that question, we might be able to obviate it without having to ask the question in quite the form it is asked.

CHAIRMAN MILLER: The witness is now a lawyer, is he?

MR. ROISMAN: No, but he participates with

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lawyers in the development of policy, and could be being asked to communicate information which is privileged information between lawyers and clients.

CHAIRMAN MILLER: I don't think he's been asked that, yet. I think he's been asked whether he's been present at the meetings where strategy to slow down nuclear power has been discussed.

MR. ROISMAN: I think it does involve a privileged communication as to whether we have discussed such strategy.

CHAIRMAN MILLER: Well, the fact that it's discussed, that's hardly confidential in the attorney-client sense, is it?

MR. ROISMAN: If the Chairman of our Board were here, he would say it was.

CHAIRMAN MILLER: Is he a lawyer?

MR. ROISMAN: Yes, he is.

CHAIRMAN MILLER: Well, I think we'll allow this one question. I do think you should not get into attorney-client confidential situations, Mr. Tourtelotte.

WITNESS COCHRAN: Would you re-state your question?

BY MR. TOURTELLOTTE:

Q While present at any of these meetings, have you ever heard discussed a strategy for stopping or slowing down the growth of nuclear power in the United States?

A (Witness Cochran) I have, since 1973 roughly -- and

my views have developed over this period -- but essentially been working to kill the plutonium industry, or the plutonium economy.

I personally am actively working as a member of the NRDC staff to try to redirect the nuclear industry program so that it doesn't rely on plutonium fuel.

Now, the nuclear industry -- many spokesmen for the nuclear industry have articulated a view that the nuclear industry is dead if they don't have a breeder reactor or plutonium, and so forth. But I personally don't hold that view, and have argued as a member -- well, that's getting away from the direct answer to your question.

I have participated in discussions of strategy, and so forth, to stop the plutonium, stop the use of plutonium, stop the use of the breeder reactor.

I have not participated in any strategy to kill nuclear power, or whatever your words were.

What were your words?

Q To either stop or slow down the growth of nuclear power in the United States.

A Well, slow down -- when you say slow down the growth, I think that's kind of -- can be broadly -- I think some of my activities would be interpreted broadly to mean that the policies we were pursuing, if implemented, would slow down the growth.

I want to make it clear that NRDC, as a corporation, and I personally as a staff member, have never taken a position to -- a moratorium position or a position to kill nuclear power, and I do have a "Stop Nuclear Power" tee shirt that I've worn at a picnic on one or two occasions, if you want to include that as an articulation of strategy.

Q You didn't buy that in Harrisburg, did you?

A No.

A (Witness Tamplin) May I add to that?

I know that was --

Q Please do.

A Well, since it did apply to the organization, so far as the nature of your question that was asked, I can say to you I have never personally been involved in any discussion with NRC -- or NRDC that was associated with "Let's Stop Nuclear Power."

Most of the discussions have revolved around issues in nuclear power. For example, whether or not NRDC should intervene in the Duke Power application to ship from Occochee to --

CHAIRMAN MILLER: Don't get into matters involving litigation now.

WITNESS TAMPLIN: Well, let's say basically that's the nature of the thing. I mean -- but we don't have any, as far as I know -- the organization has never had any fi m

policy, and to some extent that's because the number of individuals in the organization, and some of them, like myself, left the Atomic Energy Commission because the Atomic Energy Commission had a policy I didn't like.

Fortunately, that's a flexible situation at NRDC, and there are areas in which we disagree.

Q Dr. Cochran, I want to invite your attention to page 2 of 17A.

A I have it before me.

Q You do have it?

A Yes.

Q Okay. Down about the 7th line there, the one that says, "... it should neither build nor allow to be built any AFRs except under very strict guidelines." And there I think you're talking about the government in general.

I ask you: What do you mean by very strict guidelines? If you think you've already answered this, will you let me know? I don't want to repeat anything, for Heaven's sake.

(Laughter.)

CHAIRMAN MILLER: To the extent that you haven't previously answered that, Dr. Cochran.

WITNESS COCHRAN: I don't mean to imply here that the regulatory requirements that pertain to the safety of the pools, and so forth, which I would, of course, argue

that it should apply there as well, but the reference here is to my viewpoint that there are some occasions where I would not -- there are some conditions or criteria under which I would not object to building a government AFR.

Some months ago, Mr. Reisman and I, in discussing this matter and discussing the implications of the kinds of policies that Duke is pursuing, and the policies that the Federal Government is pursuing, are exacerbating the long-term waste disposal problem.

We sat down and discussed it, and formulated a set of criteria that we believed that if these criteria were required or binding by law, then we could support an AFR.

These criteria were essentially designed to ensure that the AFR would be a part of what we conceived to be a balanced, long-term waste disposal program, and would be there in the event that the utility, in trying to develop lifetime fuel storage capacity at the reactor sites, if it ran into some sort of an unforeseen technical difficulty or timing difficulty, that they could use the government AFR for a short duration until they had developed their lifetime storage capacity.

But at the same time that government AFR could not be used as in the present case as a means for the utility to simply move the waste problem out of the regulatory decision-making process with respect to operating and

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licensing a plant, on sort of a voluntary basis, and avoid --  
meeting a spent fuel storage obligation by building its own  
spent fuel storage capacity, lifetime capacity.

BY MR. TOURTELLOTTIE:

Q To digress for a moment, in your capacity at NRC  
are you ever asked to make speeches anywhere?

A Yes.

Q Do you make speeches?

A Yes.

Q Have you ever made any speeches that urged the  
use of nuclear power since you've been with NRC?

A No.

Q Would you make such a speech if you were asked,  
in favor of new construction or --

A No, I can't imagine. Not in the foreseeable  
future.

Q Isn't it true that on the first page of your  
affidavit you indicate --

MR. POISMAN: Which number?

MR. TOURTELLOTTIE: I'm sorry. 17A.

BY MR. TOURTELLOTTIE:

Q (continuing) -- you indicate that the government  
has iterated a policy that it will ultimately take the waste  
from nuclear reactors.

A (Witness Cochran) Yes.

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And I don't object to that policy.

Q And hasn't that also been the Commission's policy?

A That the government will ultimately take title and possession of the waste?

Q Yes.

A Yes.

Q Let me ask you this:

Do you want lifetime storage built at the reactor initially? Is that what you're after here?

A I want safe management of high-level radioactive waste, and I think that we are creating a situation by a set of federal policies, particularly DOE policies, that are designed primarily with the objective -- and this is my personal view -- of ensuring the survivability of the nuclear option, as opposed to ensuring the health and safety of the future generations.

We are designing a situation that will make it exceedingly more difficult to safely dispose of the high-level radioactive waste, and we are doing that in part by the Federal Government providing what is, in effect, an interim solution that takes the waste issue out of the decision process related to the licensing and construction of new facilities that will produce new wastes.

And by doing so, and doing so in the way that in effect subsidizes those activities that waste production

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activities, the reactors, it artificially creates an illusion on the part of the people that have to make decisions about whether they want to create more waste, the illusion that the waste problem is solved, that the waste problem is no longer a utility problem, it's no longer a problem for the decision makers that decide -- the whole chain of decision makers that decide on whether or not that new capacity is added.

And by creating this illusion and creating the subsidy to this particular activity through these interim measures -- for example, the government's AFR program -- that this, in effect, leads to an artificial stimulus to create more waste, create more generating capacity, and further exacerbate this longer term problem.

My personal view is we already, with the reactors in the pipeline, have committed ourselves not to one repository, but to anywhere from -- something in excess of 10 repositories, just through what's in the pipeline, through the year 2000.

I don't believe that the U.S. or the Nuclear Regulatory Commission, or this Board, should adopt policies that exacerbate that problem, by creating these illusions and these subsidies.

Q Let me see if I understand what you said, or at least see if my characterization for my purposes is accurate.

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What you're saying, what you're telling me, is that-- I guess I'm asking this in a question, I'm not making a statement -- but is what you are telling me that coming up with interim solutions to waste disposal, without confronting the issue of ultimate disposal, really takes the heat off and, therefore, makes it possible for those in a decision-making position not to resolve the ultimate disposal question?

Is that what you're saying?

A In part. Let me --

CHAIRMAN MILLER: Try to keep your answers a little terse now, would you, please? You've covered quite a bit, and we are trying to accomplish all of the testimony. So your cooperation in shortening your replies would be helpful.

WITNESS COCHRAN: One of the things that I fear is that you build an AFR, you adopt a policy now, and this policy, this question, the federal AFR policy is undecided, it's undecided in the Congress, and what this Board does today -- or in conjunction with this case, I think will have a major implication on how that policy is decided, or could have.

If the government adopts an AFR policy, this will be, in my view, the camel with its head under the tent. You've sort of given the license for the government to build additional AFRs, and once they get the track greased for the first one, the second, third and fourth ones will come very

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easy.

Then, once you've established the respectability of this type of an interim solution, then you've paved the way for the utilities to commit to more capacity, to generate more waste, to further exacerbate the long-term problem.

I'm in favor of preserving the linkage between the decisions on production of waste and whether or not you have a complete, balanced and well constructed long-term waste program.

BY MR. TOURTELLOTTE:

Q Don't you think that the October decision, the October '77 decision, was a decision that was a positive move toward resolving the ultimate waste issue?

A (Witness Cochran) No, I don't, because I think the better policy would be for the utilities to build lifetime capacity at the pools, which I think is physically doable, and that this policy, this federal policy, would simply take the AFR -- to me, it means afar from sight, afar from mind -- take it out of the utilities' decision-making process, out of the regulatory decision process, and then you just pave the way for production of waste.

Q What you're saying is, then, that you want the ultimate disposal of the waste to be at the reactor site where it's generated?

A I want the interim storage of waste to be at

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the reactor site. I don't think it makes sense to exacerbate this longer term problem. I don't think it makes sense to exacerbate the transportation problem, by building AFRs and storage sites away from the reactors, you just have to double shift everything, you're doubling your numbers of --

Q Doctor, I don't want to cut you off, but you know, I've been getting that answer over and over again, and I don't mean to be sharp with you, or anything, in making that point. It's just that it's late, and if we keep from repeating ourselves, both you and me, maybe we'll get to eat dinner sometime.

But the point I was making is: I was not referring to the part of the 1977 policy that dealt with the interim handling of spent fuel, but rather the part of the policy that said that the government is going to solve the ultimate waste problem, and that the government will take the ultimate waste.

Now, I'm asking you: Isn't that a positive step toward resolving the ultimate waste issue?

A Well, part of this contract we worked on was to help the government solve the ultimate waste problem. The opinions of myself and government experts, the IRG report writers, is that there is no ultimate solution, and the question is in hand. There are various strategies that are being discussed, and various options at present. The issue

is: What do you do in the interim, and I think in the interim you should adopt a plan that doesn't exacerbate the ultimate disposal problem, and I think the government building away from reactor storage and Duke transshipping it, and so forth, exacerbates the longer term problem.

So, in that sense I do not think that the government policy as it applies to the interim measures, is helpful. I think the government policy, to the extent they get their act together on final disposal, would be most beneficial. I mean it's 30 years too late, but . . .

Q But they did make a positive statement that at least this was their goal in the October '77 ---

A It's an admirable goal to solve the waste problem.

Q All right. And that was -- setting that goal is a positive step towards a solution of the problem, isn't it? Don't you have to set a goal before you can solve a problem?

A I think we have no quarrel on the issue of the ultimate disposal.

Q Okay. Then my point is that during the time that the October decision was made, and later on when legislation was proposed for ultimate disposal of spent fuel, all this time interim solutions have been going on. We've had reracking of various pools, and transshipments, and the like.

Now, doesn't that --

**POOR ORIGINAL**

general view that if we don't store all the fuel right at the site where it is, that we're not going to ever get around to ultimately solving the problem?

A No. I think the contrary is true, that if you leave the fuel at the reactors, there will be more pressure to solve the final problem.

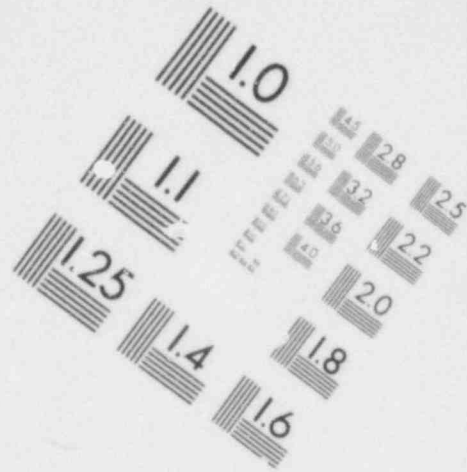
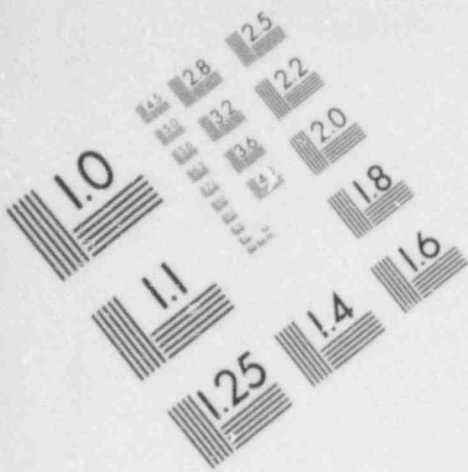
Q Then are you intimating that the problem is that the public should not disassociate psychologically the problem of waste from the reactor, is that it?

A That's part of it.

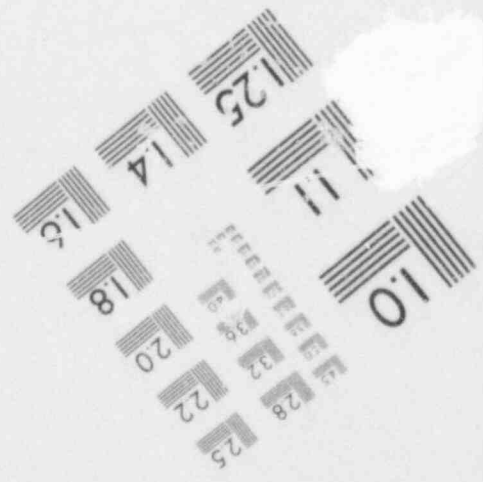
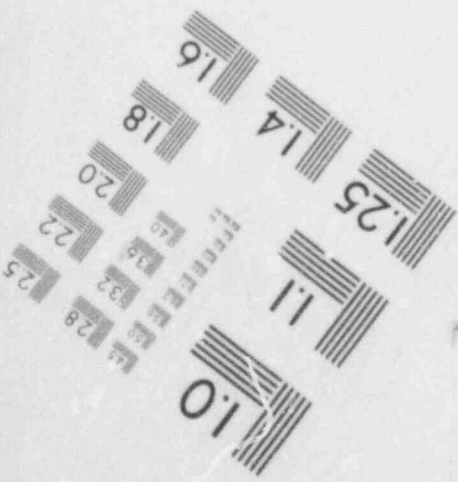
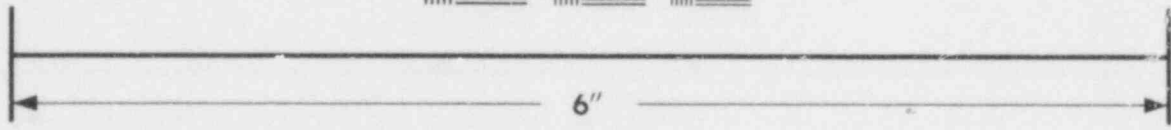
I don't think you can reduce my case to one sentence, but that's a part of it. I mean it's not just a psychological problem. It's a very real problem.

**POOR ORIGINAL**

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





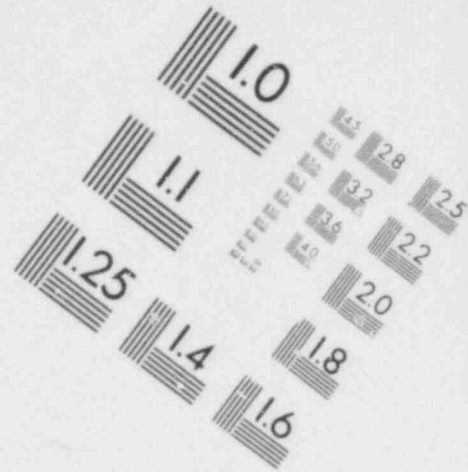
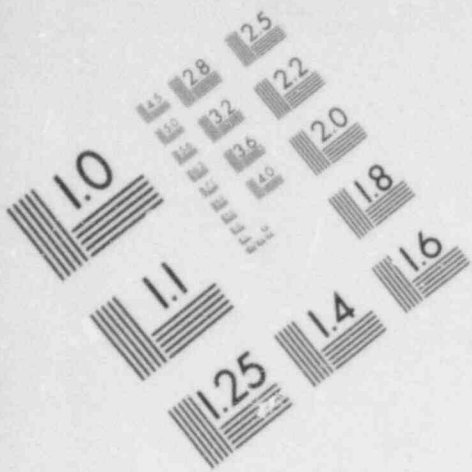
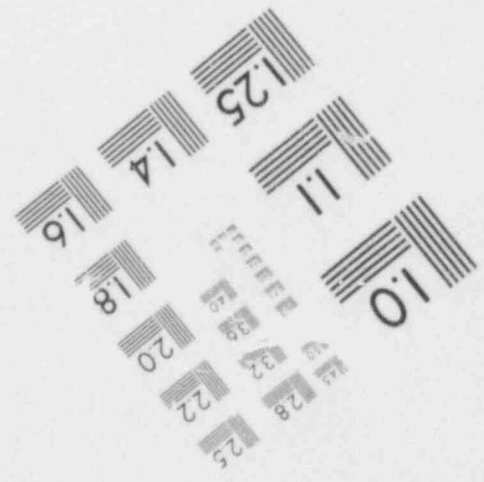
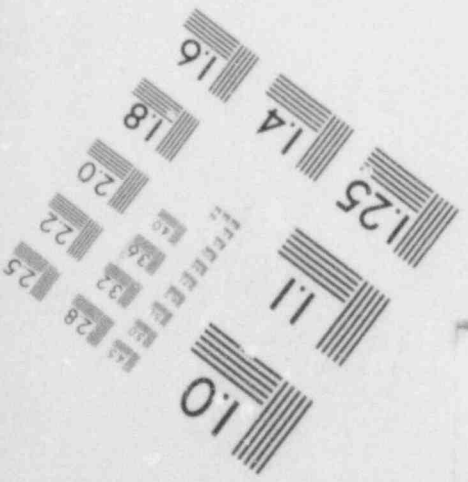
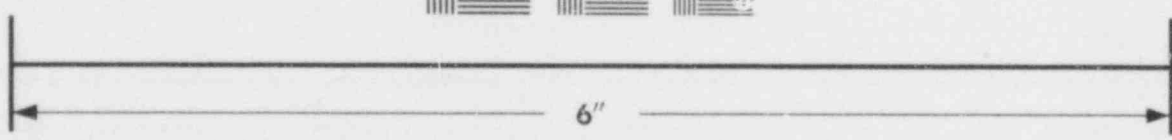
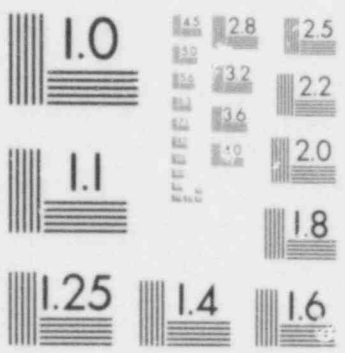


IMAGE EVALUATION  
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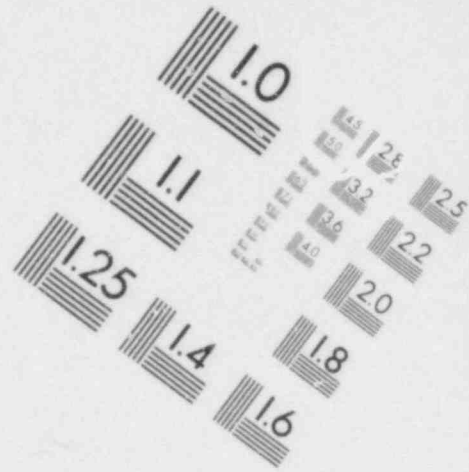
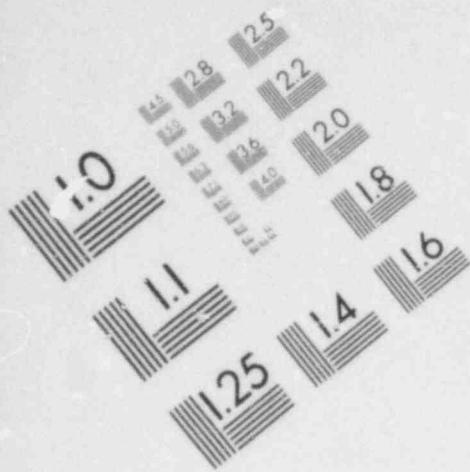
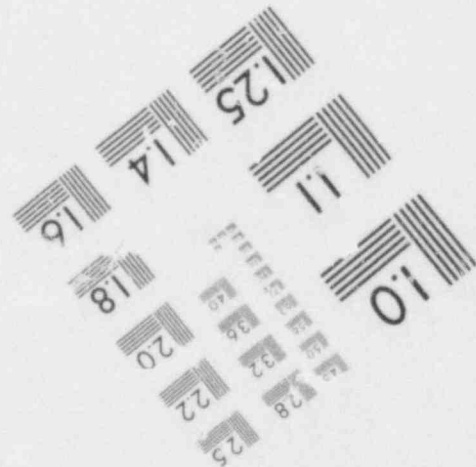
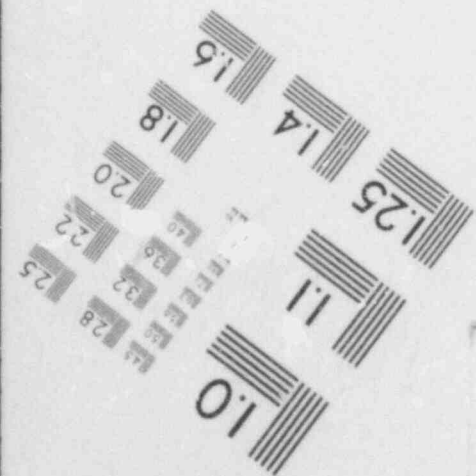
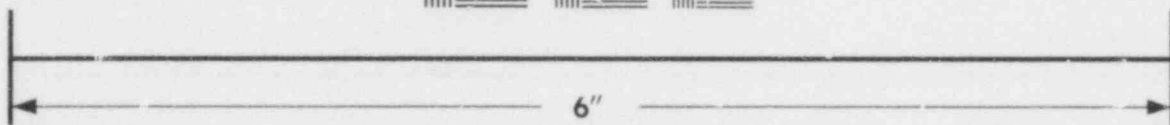


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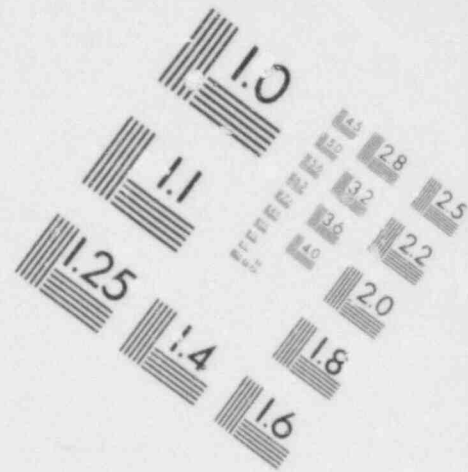
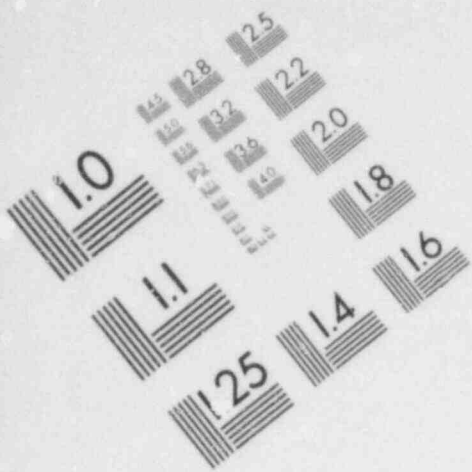
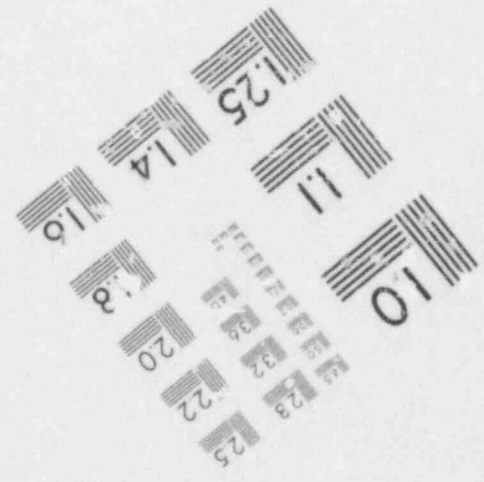
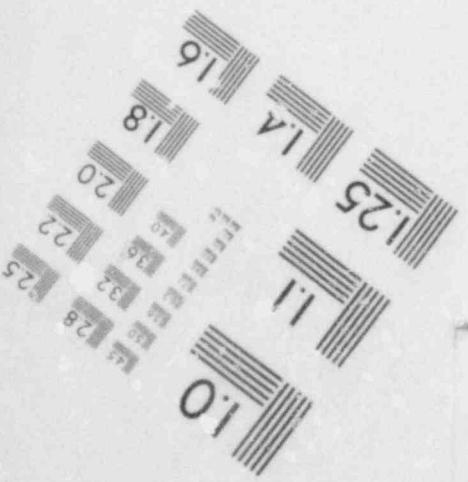
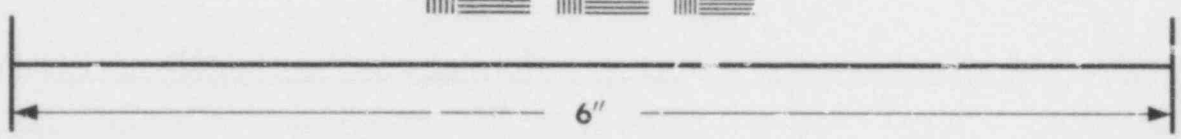
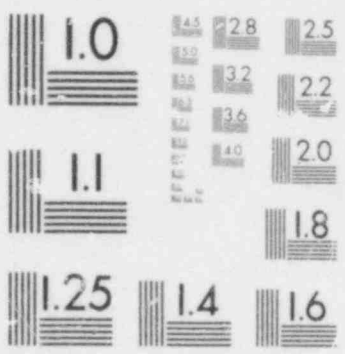


IMAGE EVALUATION  
TEST TARGET (MT-3)



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wel/egbl

Q Have you ever discussed with anyone other than your attorney strategy of forcing waste to be stored at the site so that it would strengthen your initial position against construction of new plants?

A That is not the purpose at all.

Q You've never discussed that with anyone?

A No.

Q As a strategy?

A I've never discussed that as a strategy with anyone, and it's not my strategy. In fact, it is some people's strategy and I've argued against it. I'm disinclined to try to screw up the long-term waste problem as a means for killing nuclear power. And I do believe that view is held by a limited number of people.

Q Can you identify any of them?

CHAIRMAN MILLER: I think we're spending an awful lot of time now on this.

BY MR. TOURTELLOTT:

Q Have you heard about the DOS policy set off in H.R. 2586?

A (Witness Cochran) I probably have but my recollection of this particular bill --

Q Let me see if I can refresh your recollection.

Do you recall whether in the bill -- and you don't have to recall the specific section or page, but I'm going to --

**POOR ORIGINAL**

wel/agbl

A I would like to see the bill in front of me.

Q -- whether Section 2, page two, lines one and two,  
the following call for:

the ultimate disposal of spent fuel  
from foreign and domestic reactors" --

MR. ROISMAN: Objection. The witness asked to see  
Madelon the bill. P.'s now being asked about a line in the bill.  
filws He clearly can't answer.

**POOR ORIGINAL**

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(PREMIUM)

MR. TOURTELLOTT: I'm asking if he has any recollection. If he doesn't have any recollection of ever having heard that, all he has to do is say he doesn't have any.

CHAIRMAN MILLER: I understood him to say that he didn't, he didn't know one way or the other.

MR. ROISMAN: He said he doesn't know any built by that number. The question would be irrelevant.

WITNESS COCHRAN: I've read many nuclear waste bills, I can't keep track of them by the House of Representatives numbers and I couldn't begin to give accurate recall of specific lines in any of them.

BY MR. TOURTELLOTT:

Q Well on page five, line 18 ---

MR. ROISMAN: Of what?

BY MR. TOURTELLOTT:

Q Page five of 17A, seven lines up from the bottom you make a statement that:

"Like any medicine that treats only symptoms (the spent fuel backlog) and not the causes (the absence of a permanent waste disposal solution), it can seriously damage the patient in the long run."

Are you saying simply that there is no technological solution in existence there, or are you saying that none has been effectuated or are you saying something else?

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POOR ORIGINAL  
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premium

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A (Witness Cochran) Well I'm saying that providing an interim solution without consideration of the implications that has on the long-term problems could ultimately be counter-productive. It could cause more harm than good.

Q Dr. Cochran, do you have any background in health physics?

A Yes, I do.

Q And where did you study health physics?

A Vanderbilt University and at Oak Ridge National Laboratory.

Q And Dr. Tamplin, do you have a degree in health physics?

A (Witness Tamplin) I have a degree in biophysics.

Q And are you a health physicist?

A You mean a registered licensed health physicist?

Q Yes.

A No.

Q Are you a registered health physicist, Dr. Cochran?

A (Witness Cochran) No. I'm a member of the Health Physics Society.

Q How do you get to belong to that society?

A I joined in 1965 or 1966 and I don't recall. Basically I don't recall whether you have to be sponsored by two individuals or not. My recollection is yes, but I won't swear to it. I won't swear to it.

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POOR ORIGINAL

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Q Do you have to pay dues?

A Yes. They're tax-deductible, though.  
(laughter.)

Q Dr. Tamplin, I invite your attention to NROC Exhibit 16, which is a one-page document dated the 4th of June, '79. There are two paragraphs there.

A (Witness Tamplin) Yes.

Q And the second statement in that paragraph reads:

"The BEIR Committee and most radiation health physicists agree that it must be assumed there is no safe level of radiation and that even that very small doses must be assumed to be harmful."

Is that statement true and correct?

A It's true and correct to the best of my knowledge.

Q Did the BEIR Committee make that statement without reservation?

A Yes.

Q Isn't it true that the BEIR Committee stated that the linear hypothesis provides the only workable approach to numerical estimations on risk in populations?

A That's one of the things they said. I think it's unequivocal with respect to genetic effects.

Q Didn't it also state that --

**POOR ORIGIN**

mpb/agb

A You're referring to 1972 BEIR Committee report?

Q The BEIR 1.

A Well, I don't know what BEIR 1 is. I know that there's a 1972, November, 1972 report.

Q Yes.

Did it also state that for regulatory purposes it's the only hypothesis that could be used?

A To the best of my knowledge, that's what it says, yes.

Q And isn't it also true that the Committee recognizes that there may be no effect from exposure to low dose rates and low linear energy transfer radiation?

A Not in the context in which those kinds of statements were made. I think one has to read the entire section you're referring to, and that is just as a low-order possibility, and it's even less significant when you look at the BEIR 3 report.

Q Well what you're saying is that there is no safe level of radiation then, is that correct?

A Precisely, yes.

Q And then it would follow in your mind that there -- well let's follow that logic out a little bit.

Every nuclear plant that operates in the United States has some form of radiation associated with its operation, does it not?

**POOR ORIGINAL**

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A That's true.

Q ...and, therefore, using the first argument or the first statement that any radiation is unsafe and since nuclear plants that operate all have radiation, then no nuclear plant could be safe in your mind.

A Applied to its ridiculous extreme, yes.

Q Well, is that a ridiculous way to apply it?

A Well you're using qualitative words, and I have to assume that -- yes, I think -- In other words, your question didn't have any meat to it, and I almost don't know how to answer it.

Q Well I guess my problem is how do you explain that radiation that is in a nuclear plant is safe but that any radiation that you might receive is unsafe?

A I say there is no safe level of radiation and even very small doses must be assumed to be harmful.

Now one of the ways that the plant could be considered safe is that although it contains a large amount of radiation, none of it gets out or none of it -- it's all shielded, so no one is irradiated by it.

Q Well isn't that really unlikely? Isn't it likely that there will be during the course -- some time during the course of the operation of a nuclear plant that someone will get a dose?

A Yes. In other words, if you're asking me do I

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**POOR ORIGINAL**

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think that nuclear power plants are risk-free, my answer is  
no.

Q That isn't what I'm asking.

A Are you asking me are they safe?

Q Yes.

A No, they're not.

Q And the radiation levels, whatever they are in  
nuclear plants are simply not safe? Whatever dose anybody  
gets is not a safe dose.

A It is not without risk, that's correct.

Q And it is not safe?

A No, it is not safe.

Q Is that true no matter where they get the radiation  
in their body?

A Yes.

Q It is?

A Yes.

Q What if they get ionizing radiation on a dead  
layer of skin?

A Well if it's a dead layer of skin it has probably  
fallen off.

Q Well would that be harmful, can you kill a dead  
layer of skin?

A No. You can beat a dead dog but you can't kill  
a dead layer of skin.

**POOR ORIGINAL**

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(Laughter.)

Q How about fingernails?

A Wh... about them?

Q If you get an ionizing radiation on your fingernail, does that kill anything, kill a cell in your body?

A If it goes through the fingernail it will.

Q If it doesn't go through a fingernail, does it?

A I don't know. I don't know whether there is something -- nobody's ascertained -- something that develops in the fingernails like the cataracts that develop in the eye. The fluid within the eye is sort of fingernail-like, it's kind of dead. But cataracts develop into it because they undergo some kind of a polymerization mechanism which is poorly understood. But maybe your fingernail will grow up instead of out, I don't know.

Q You don't want to subscribe to the view that there are some non-sensitive areas within the cells? Some areas that are not sensitive to radiation?

A Oh certainly, I agree that there are some areas that aren't as sensitive to radiation as others. If we were talking about the induction of cancer, non-dividing cells generally don't develop into cancer. You never have cancers associated with neurox but you do have brain tumor cancers associated with glial cells and other dividing cells in the brain.

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**POOR ORIGIN**

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Q           ve you, since your deposition of June 5, read the BEIR III Report regarding the use of the Mancuso data?

A           No, I have not read that specifically. I have heard that they felt it wasn't sufficient to cause them to change their estimates. I haven't determined the basis for that, nor do I agree that that was an appropriate judgment for them to have made.

I will have to study it in more detail.

Q           Are you suggesting that because -- or would you suggest, I guess, that because any form of radiation may be harmful and is unsafe, that in no circumstance should anyone ever subject themselves to radiation?

A           No. I only made the statement that the BEIR Committee and most people who study radiology state that it must be assumed that very small doses of radiation are harmful, that there is no -- quote -- "safe level of radiation".

I think that's what I said.

Q           Dr. Cochran, isn't it true that if your plan of handling interim storage by at-reactor storage were followed through, that the ultimate disposal -- when the ultimate disposal issue is resolved, that it would require transshipment?

A           (Witness Cochran) Yes, from the reactor storage site to the final repositories, not as many transshipments

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POOR ORIGINAL

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as the alternative of away-from-reactor storage would require.

Q And, Dr. Cochran, have you made any calculations on dose or health effects from the proposed single transshipment from Oconee to McGuire?

A No, and I believe that was covered in my deposition.

Q Dr. Tamplin, I ask you the same question: Have you made any calculations on the dose or health effects of the proposed single transshipment from Oconee to McGuire?

A (Witness Tamplin) No, I have not.

Q And how long would it take you to make that kind of a calculation?

A You mean if I had to start out from scratch, or if I used somebody else's numbers for dose?

Q Well, if you were going to make a calculation upon which you felt you could reasonably rely, how long would it take you to do it?

A Well, it would take some time because I'd have to get the measurements relative to what the dose would be associated with the transportation of the cask.

Now if I had all those dose numbers, I could convert the man-rem into effects fairly quickly.

Q And when we took your deposition June 5, and you indicated you could make that calculation in an hour, is that

**POOR ORIGINAL**

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it you were referring to the fact that you could use figures already in existence --

A Going from dose to effect; getting the dose would be a more difficult problem.

MR. TOURTELLOTT: I have no other questions.

CHAIRMAN MILLER: Anybody else have questions?

MR. ROISMAN: I have redirect.

CHAIRMAN MILLER: Very well.

MR. ROISMAN: Mr. Chairman, with your permission, may I stand and do this?

CHAIRMAN MILLER: Yes.

MR. ROISMAN: I'm afraid I'll end up with a broken back if I have to sit any longer.

CHAIRMAN MILLER: You may.

REDIRECT EXAMINATION

BY MR. ROISMAN:

Q Dr. Cochran, the Applicant has shown you a copy of a DOE Press Release in October of 1977 announcing the spent fuel storage policy.

Do you remember who was the spokesperson for the Department of Energy when that policy was announced, who articulated the policy that day?

A (Witness Cochran) There were several people on the stage. No, my recall is not that good. I think it was Dr. Deutsch, but my recall is not that good.

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Q Okay. Thank you.

On that statement, is it your interpretation of what DOE is stating with regard to building of spent fuel storage facilities, charging a one-time fee for it, that that represents a firm commitment of what DOE will do or something less than that?

A Well, at the time that was announced I believe it represented a firm commitment on the part of the administration that the government would take title to the spent fuel for a one-time fixed fee on a voluntary basis, and that -- Let's don't mix up the word about "build" again -- and that they would provide spent fuel storage capacity, either buy it or build it.

Q You're talking about interim spent fuel storage?

A Interim spent fuel storage.

Q Dr. Tamplin, let me direct your attention to NRDC Exhibit number 14, pages 5 and 6, where you've essentially stated based upon -- Here, I can show you a copy.

(Handing document to the panel.)

-- based upon an answer to the Applicant from Interrogatory 16, what the capacities would be for Oconee and McGuire with and without an independent spent fuel storage facility assuming reracking with so called poison racks.

Can you tell me, did that calculate include an

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assumed transshipment of any spent fuel between Oconee and McGuire or not?

A (Witness Tamplin) That was without transshipment.

Q Okay. Thank you.

Now, Dr. Tamplin, again taking a look at page 3 of NRDC Exhibit number 15, where you include some yearly -- calculate some yearly discharge rates with respect to Oconee and McGuire reactors of spent fuel under assumptions involving the fuel cycle, where did you get the calculation as to how much spent fuel would be discharged if the Oconee reactor and the McGuire reactors were operated on an 18 month cycle?

A Well, I got that from the Applicant's response to our interrogatories, number six and number eight.

Q And how did you get from their number of spent fuel assemblies to be discharged in 18 months down to the number that could be treated as the equivalent of discharge per year?

A On an answer to question seven, they indicated that Oconee 1 and 2 were going on to an 18 month cycle, and in answer to interrogatory eight, they indicated that in 1981 Oconee 1 and 2 would discharge 72 assemblies apiece, whereas in -- that was in the 18 month cycle. And in response to question six they indicated on the present yearly cycle they would be discharging 83 assemblies.

Q And how did you get from 72 down to the number



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A Well, I simply said that I'll just do it on the basis of "per year" although it would be 18 months. So I simply divided 2 by 18 and multiplied by 12 to get a yearly rate.

Q Okay.

Dr. Cochran, I'm going to show you what has been received in evidence as Applicant's Exhibit number 5, which is the IRG report.

(Handing document to the panel.)

I direct your attention to page 12, Exhibit 3, where Mr. McGarry asked you some questions about the number of away-from-reactor spent fuel storage facilities based upon the assumption that a final repository opens at certain dates.

Do you see that here?

A (Witness Cochran) Yes.

Q Can you tell me--just read the caption before we get down to the listing of the individual amounts of spent fuel facilities, away-from-reactor spent fuel facilities that would be required, starting with the word "Potential".

A "Potential away-from-reactor spent fuel storage facilities."

Q Is it your understanding that that was intended to indicate that if you had a repository that opened on those

**POOR ORIGINAL**

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dates you would have to have that many away-from-reactor storage facilities?

A No. It just implies that it may, but their estimates take up to that many depending on what the policy turned out to be.

Q And is it in your judgment that if the utilities expanded their capability for storing spent fuel at the reactor site to the maximum technologically feasible that the number of away-from-reactor facilities could be substantially less based upon the assumed dates of the operation of the repository?

A My assumption is it would be zero. And I don't think there's any disagreement between myself and the Department of Energy on that.

Q All right.

Drs. Cochran and Tamplin, you were asked extensively what your views were on nuclear power. I want to ask you some questions which I like to believe can be answered yes or no; if you can, I hope you will say so.

I'll start with you, Dr. Cochran, and go all the way through the questions, and then you, Dr. Tamplin.

Dr. Cochran, do you personally favor the limited use of away-from-reactor storage facilities, if at all?

A Yes.

Q The fact that you have opinions regarding the

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use of light water reactors and plutonium, does that make you more inclined to want to see the nuclear waste problem handled one way rather than another way?

A No.

Q In your judgment, is there a nuclear waste problem that needs to be solved in this country?

A Yes.

Q Are you in favor of its solution?

A Yes.

Q Have you worked to develop a solution?

A Yes.

Q Have you worked to develop the solution in lieu of allowing the government to continue to mess up the problem?

A Yes.

Q If you are successful in your efforts --

MR. TOURTELLOTTE: Excuse me, Mr. Chairman.

That's an objectionable question, or characterization.

CHAIRMAN MILLER: You mean the terminology?

MR. TOURTELLOTTE: Yes. Well, it's a conclusion that the government messed up the situation. I'm not sure that that's an issue in this proceeding, in the first place.

**POOR ORIGINAL**

And in the second place, I'm not really sure that there is evidence that supports that or that that's

mph9

even supposed to be a finding of this Board.

CHAIRMAN MILLER: Well, I'm not sure either; but we'll let it stand.

BY MR. ROISMAN:

Q Dr. Cochran, if you were successful in getting a rational sound solution to the nuclear waste problem implemented, would that tend to encourage -- strike that -- would that tend to make nuclear power more or less acceptable as a source for generating energy?

A More.

Q Are you opposed to the development and use of an away-from-reactor storage facility because in your judgment that would exasperate the waste disposal problem?

A The final storage problem, that's correct.

Q Do you oppose the transshipment proposed here by Duke Power Company because you believe it will increase the likelihood that we will have to use away-from-reactor storage facilities?

MR. TOURTELLOTTE: I object to that question because he's leading his own witness.

CHAIRMAN MILLER: It is leading.

BY MR. ROISMAN:

Q Why do you oppose the transshipment here?

A (Witness Cochran) I oppose the transshipment of spent fuel by the Duke Power Company in this case --

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MR. TOURTELLOTTTE: May I interrupt at this point, Mr. Chairman?

It seems to me that that question has already been asked and answered, and I don't really know why it should be asked again on redirect.

I don't really have a problem with the question; my problem is that I'm afraid that the answer may take us a while.

CHAIRMAN MILLER: See if you can keep it a short answer.

WITNESS COCHRAN: I oppose the transshipment of spent fuel from Oconee to McGuire because I think it will be used by the Department of Energy in part -- along with other data -- to justify the Department of Energy's program of trying to implement an away-from-reactor storage -- implement essentially the DOE spent fuel policy as announced in October. And I think that would exacerbate the long term waste disposal problem.

MR. TOURTELLOTTTE: Mr. Chairman, just to remake a point, it seems to me that all that we're going through here is the same thing that Dr. Cochran has put in his original testimony, what he has given in answers on cross-examination. And I would just suggest that Mr. Rollman might check his list and make sure that he's not including that kind of information.

**POOR ORIGINAL**

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MR. ROISMAN: I have two more questions on the yes-no list. I don't know that it's repetitive. I must confess at this time of night if something was said five minutes ago, I would not swear that I could remember it.

I'm merely trying to get a clean record.

CHAIRMAN MILLER: All right.

Ask your next question.

BY MR. ROISMAN:

Q Dr. Cochran, is it your opinion that the size of the waste problem affects the likelihood of its solution?

A (Witness Cochran) Very definitely.

Q Did the IRG agree that that could be the case in its final report?

A Yes.

(Distributing documents.)

MR. ROISMAN: Now I have handed to the parties, to the Board, to the Reporter, a document, two-pages, a letter dated March 7, 1979, to Worth Bateman from H. T. Snead, signed by R. Michael Glover, which I would like to have marked as NRDC Exhibit number 19.

CHAIRMAN MILLER: All right.

(Whereupon, the document

referred to was marked

as NRDC Exhibit No. 19

for identification.

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BY MR. ROISMAN:

Q Dr. Cochran, would you please look at the paragraph that is the next to the last paragraph on the page, and would you please read the paragraph?

A (Witness Cochran) "I would like to take a opportunity to criticize one aspect of the attached sensitivity study. It is my understanding that in times past DOE middle-management has suggested publicly that "within utility" transshipment should not be allowed as a routine planning mode; that in absence of government provided AFR storage spent fuel should be stored at the site of production. Similar statements have been made by NRC middle-management. Such statements have simply added "fuel to the fire", so to speak, on behalf of the anti-nuclear critic. Furthermore, these statements will be referred to religiously in all public hearings on spent fuel transportation as will be the case in Duke's pending hearing on shipping Oconee fuel to McGuire. It is readily apparent that if the intervenor can constrain the

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utilities options for handling spent fuel storage that several reactors will soon shutdown. He recognizes, just as the utility recognizes, that the time required for the government to implement facilities is long."

Q Now, Dr. Cochran, is your opposition to the proposed transshipment here based upon an effort on your part to see the Oconee reactors shut down?

A No, quite the opposite.

Q It is your belief that if the Duke Power were to handle its spent fuel storage problems as you've proposed, namely by building an independent spent fuel storage facility to hold its lifetime discharge, that that would improve the chances that the reactor would continue to operate rather than reduce them?

A I believe it would improve the chances that the reactor would continue to operate, and also would improve the final waste disposal.

Q You were asked -- Let me stop there for a second. Dr. Tamplin, you've just heard the questions and answers that were put to Mr. Cochran.

If you agree with all of those, please state it; otherwise I'll go through them with you. If you agree with his answers to the questions, then we can --

POOR ORIGINAL



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A (Witness Tamplin) I essentially agree with his answers to the questions, except for one, which was relative to the IRG report, and I would have to state with respect to that one that, you know, I'm not familiar with that statement.

Q All right, Fine.

Dr. Cochran, you were asked the question about whether the Department of Energy in October of 1977 adopted a waste management, permanent waste management plan -- strike "plan" -- approach that would tend to improve the waste situation.

Do you remember that question that came from Mr. Tourtellotte?

A (Witness Cochran) Yes.

Q In your judgment between October 1977 and today, do you think the waste management problem has gotten better, that is, are we closer to a solution now or is it getting worse?

A That's hard to say. Some things are getting better and some things are getting worse.

Q Well, let's take some examples -- I'm sorry.

A I wanted to clarify the statement that you interpreted that I made earlier.

I don't mean to imply that any long term policy that was adopted would be an improvement. I mean, obviously,

**POOR ORIGINAL**

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DOE could adopt a bad policy as well as a good one.

Q All right.

In the last couple of years has there been -- going back to this question of whether the waste management problem is getting closer to solution or further away, are you aware of any growing pressure for the right of states to veto the placement of a waste repository within their borders?

A Yes.

Q Do you think that if such veto rights existed that that would hurt getting a good solution to the problem or help in getting a good solution?

MR. MC GARRY: I object.

CHAIRMAN MILLER: What's the basis?

MR. MC GARRY: We're now getting into the states' feelings with respect to waste repositories. If anything, Dr. Cochran is here speaking about DOE policies.

MR. ROISMAN: I intend to link it by asking the witness whether in his judgment the transshipment of waste tends to increase the likelihood that the state would want to exercise a veto.

CHAIRMAN MILLER: We'll overrule the objection.

Do you remember the question?

WITNESS COCHRAN: I believe so, but I would prefer to have it rephrased.

**POOR ORIGINAL**

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BY MR. ROISMAN:

Q The question was whether the existence of a state veto would tend to make the waste problem more difficult to resolve or less difficult to resolve.

A (Witness Cochran) I'm inclined to think that it could go either way. I am inclined on balance to think that it would make it more difficult. The implementation of a state veto in some cases, for example, where the final repository were located in that state -- and again, it depends on how the veto was characterized -- a state veto could provide additional oversight to prevent bad solutions from being implemented.

On the other hand, irresponsible exercise of the veto to simply eliminate potentially good solutions to the waste disposal, eliminate potentially good solutions to the waste disposal solutions would be counter-productive.

With respect to exercising a veto over interim storage, I think that would be counter-productive.

Q Do you feel that the transshipment of nuclear spent fuel tends to increase the pressures for states wanting to have the right to veto?

A Yes.

**POOR ORIGINAL**

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Q Dr. Tamplin, you were asked the question whether you felt that it was safe for a nuclear reactor to operate given that it discharges radioactivity. Am I correct that what you said was you thought that it was not safe?

A (Witness Tamplin) That is correct.

Q Does that mean that you believed for that reason alone that the plants should not be allowed to run or are there other considerations that would enter into that?

A That does not mean that I thought that the plant should not run. There will be other considerations.

Q All right.

The last question, Dr. Tamplin, during your deposition which was taken on June 5, 1979, you were asked essentially the same question you were today by Mr. Tourtelotte as to whether you could do this calculation of the health effects if you had the given doses for the transshipment and how long it would take you. And I believe at that time you indicated not very much time.

I later asked you the question why you wouldn't do the calculation for purposes of this proceeding.

If your answer which you gave at that time is still your answer to the question, would you just read the answer?

A Yes, that is still my answer.

Q Would you just give the answer of the deposition

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you're reading from, please?

A Yes, it's page 104 and my answer was:

"Well one of the major reasons is that in order to do the analysis properly and to support the approach which one would use in the analysis would require the development of a large amount of material that's in the literature and an analysis of what.

"But more recent studies which just came out such as the Mancuso and LaGrota, some other reports, are all part of the construction of the appropriate way to make an estimate of the biological effects.

"We are fully anticipating developing that during the NRC hearings on our petition to attempt to develop that, those arguments" -- They wanted me to identify the petition, that's our petition on occupational exposure. It says:

"Could you identify which petition?"

This is the petition we discussed during the deposition, our position to reduce the occupational exposure.

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 Ms Madelon

"We plan to thoroughly develop that during these cases, and to try to develop it also in the Duke Power situation stretches our resources beyond control. My feeling is, to develop what the best thing for us to do is consolidate our resources and put our best foot forward in the hearings on occupational exposures."

Q Thank you, Doctor.

MR. ROISMAN: I have no further redirect, Mr. Chairman, at this time.

CHAIRMAN MILLER: Are there further questions?

MR. MC GARRY: I would move that the reference to the March 7th, 1979 Duke Power Company document be stricken from the record. There was no foundation laid for that document.

CHAIRMAN MILLER: Mr. Roisman?

MR. ROISMAN: I'll call Mr. Snead to the stand. He's here.

CHAIRMAN MILLER: The witnesses may be excused.

(Panel excused)

CHAIRMAN MILLER: Mr. Snead, come forward, please.

MR. MC GARRY: Mr. Chairman, I submit Mr. Snead has been on the stand. He's been excused.

CHAIRMAN MILLER: ~~Now~~ you asked for a foundation. The document does purport to be, the copy I have on Duke

**POOR ORIGINAL**

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Power stationery, signed by -- or it contains the signature of H.T. Snead, Manager, Nuclear Fuel Service, and is signed by R. Michael Glover, and it's to Mr. Worth Bateman, the Department of Energy. All these names have been mentioned before.

MR. MC GARRY: Mr. Chairman, I know it's late, it's ten after eight. If Mr. Snead hadn't been here we would not even have gotten into this. We submit Mr. Snead is now an observer. He's been on the stand, he's been cross-examined, his time has come and gone. And now to get a document through him at this point in time we think is highly improper.

CHAIRMAN MILLER: You may come forward, Mr. Snead.

MR. KETCHUM: I have a point of procedure. Is the identified document just the letter part?

CHAIRMAN MILLER: Yes.

Mr. Snead, you've been previously sworn, so you're still under oath.

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Whereupon,

H. T. SNEAD

was called as a witness for and on behalf of the Intervenor Natural Resources Defense Council and, having been previously duly sworn, was examined and testified further as follows:

DIRECT EXAMINATION

BY MR. ROISMAN:

Q Mr. Snead, I'm going to show you a copy of what has been marked as NRDC Exhibit No. 19, a letter dated

**POOR ORIGINAL**

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March 7, 1979.

(Handing document to the witness)

Would you look at that and tell me if that is a letter which was prepared by you or under your supervision?

A. Yes. This letter was prepared partially by me and the remainder under my supervision.

CHAIRMAN MILLER: Do you recognize the signature of R. Michael Glover, your assistant?

THE WITNESS: Yes, sir.

CHAIRMAN MILLER: Do you have any reason to doubt the authenticity of this letter?

THE WITNESS: No, sir.

CHAIRMAN MILLER: Thank you.

MR. ROISMAN: Mr. Chairman, I have nothing further for Mr. Snead.

CHAIRMAN MILLER: Any questions for Mr. Snead?

(No response)

CHAIRMAN MILLER: You're excused, Mr. Snead.

(Witness excused)

CHAIRMAN MILLER: What is the status of NRDC Exhibit 19 for identification?

MR. ROISMAN: Mr. Chairman, all we used it for was for the purpose of having Dr. Cochran address whether or not he was of the mind of the kind of person identified in the letter with regard to his opposition to this assignment.

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CHAIRMAN MILLER: We think the record would be more complete if the entire document were put into evidence.

MR. ROISMAN: We will offer it, Mr. Chairman.

CHAIRMAN MILLER: Any objection?

MR. KETCHEN: That's just the two pages of the letter?

MR. ROISMAN: That's correct.

MR. KETCHEN: No objection.

MR. MC GARRY: Mr. Chairman, I notice everyone is getting up. NRDC has not moved its exhibits into evidence.

CHAIRMAN MILLER: That's true. Well, we will accept the NRDC Exhibit 19 into evidence.

(Whereupon the document referred to heretofore marked for identification as NRDC Exhibit 19, was received in evidence.)

MR. ROISMAN: I would now move, Mr. Chairman, that NRDC exhibits 14-A, B and C, 15, 16, 17 and 18 be received in evidence.

CHAIRMAN MILLER: Any objection?

MR. MC GARRY: I'll go through them quickly, Mr. Chairman.

CHAIRMAN MILLER: Okay.

MR. MC GARRY: 14, we submit that is totally speculative; not based on facts, based on legal conclusions.

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15 is conclusory; full of conjecture; argumentative. We don't object to 15.

CHAIRMAN MILLER: What was that?

MR. MC GARRY: That's the one-page testimony of Arthur R. Tamplin.

CHAIRMAN MILLER: Oh, yes.

MR. MC GARRY: 17. From just any reading of the document, it's totally argumentative; conclusory. Every page of notes say "conclusory." Irrelevant, argumentative. I think anybody upon inspection or reading this document, it becomes obvious that what we're seeing here are proposed findings of fact as opposed to testimony.

Exhibit 18 relies upon information that has not been placed in evidence. It raises the legal argument with respect to as low as reasonably achievable, which standard should be applied. Again, that's conjecture; legal argument; proposed findings material.

If the Board wishes, I could go through paragraph-by-paragraph. But that sums up our legal position.

CHAIRMAN MILLER: Any other objection?

MR. TOURTELLOTTE: We object to the introduction of all the documents on the grounds previously stated by counsel for the applicant, and, in summary fashion, would simply state that they're not competent, relevant or material to the proceedings in the view of the Staff's case that we feel should

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be properly presented before the Board.

MR. MC GARRY: One further comment. Excuse me, Mr. Chairman.

We also maintain that the witnesses aren't qualified to speak to DOE policy. That seemed to us to be the nature of the thrust of their testimony.

CHAIRMAN MILLER: Anything else?

(No response)

CHAIRMAN MILLER: The objections will be overruled. The documents will be admitted.

(Whereupon the documents referred to, heretofore marked for identification as NRDC Exhibits 14A,B,C; 15; 16; 17 and 18, were received in evidence.)

MR. MC GARRY: Mr. Chairman, I have one other matter, and that goes to Dr. Garrick. We're attempting to work out a stipulation and perhaps we won't have to call Dr. Garrick back here Friday. We hope to inform the Board tomorrow. And I would like some feeling perhaps from the Board, Does the Board have questions of Dr. Garrick?

CHAIRMAN MILLER: No, I don't believe the Board does.

MR. MC GARRY: Fine. We'll attempt to work it out with the parties.

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CHAIRMAN MILLER: Fine.

I think in the morning when we reconvene that  
Mr. Riley will testify.

MR. ROISMAN: Yes.

CHAIRMAN MILLER: Eight o'clock.

MR. KETCHEN: Give us a break.

CHAIRMAN MILLER: Eight-thirty?

MR. KETCHEN: That's better.

CHAIRMAN MILLER: All right. Eight-thirty in the  
morning.

(Whereupon, at 8:20 p.m., the hearing in the  
above-entitled matter was recessed, to reconvene  
at 8:30 a.m., Thursday, 23 June 1979.)

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