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administration of Duke's -- executing Duke's fuel contracts, planning for spent fuel storage, implementation of spent fuel rack capacity additions in operating facilities and support of various reactor calculations that are required for the operating nuclear stations.

Q Mr. Glover, by whom are you employed?

A (Witness Glover) Duke Power Company.

Q In what capacity are you employed?

A I'm employed in the nuclear fuel services section and I report directly to Mr. Snead.

Q How long have you been employed in that capacity?

A Four years.

Q Would you please briefly describe what your job and responsibilities entail?

A My capacity with Duke is to evaluate the costs and feasibilities of the various alternatives presented as far as spent fuel storage.

MR. MC GARRY: Mr. Chairman, at this time I propose to ask direct questions of Mr. Bostian.

CHAIRMAN MILLER: Are these questions in the form of those posed to an expert, and will he be giving opinion testimony?

MR. MC GARRY: Primarily these will be fact questions, Mr. Chairman.

CHAIRMAN MILLER: Very well.

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MR. MC GARRY: At this point in time I cannot think offhand of any opinion testimony. However, if that situation eventuates, perhaps we can come to grips with that at that time.

CHAIRMAN MILLER: Yes. Let us know and we will then see about the establishment for the record of the appropriate expertise on voir dire if desired.

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

CHAIRMAN MILLER: Thank you. You may proceed.

POOR ORIGINAL

BY MR. MC GARRY:

Q Mr. Bostian, as manager, you are responsible for the overall supervision of spent fuel storage planning for Duke Power Company; is that correct?

A (Witness Bostian) That is correct.

Q Does Duke Power Company have spent fuel storage plans to accommodate future spent fuel needs?

A We have certain plans that include the application that we have before this Board. We are looking at several options. One, we have received, as was announced yesterday at 9:30 a.m., the approval from NRC to rerack the Oconee Units 1 and 2 spent fuel pool.

We are looking at the possibility of replacing the Oconee racks with poison racks. We have just completed some studies updating a 1975-1976 study for an independent spent fuel storage pool at Oconee. We are looking at all of these alternatives.

As we make our decisions, we will firm up the plans for Duke's spent fuel storage.

Q Speaking of firming up your plans, does Duke have any firm commitments to any of these alternatives you have just discussed?

A The only commitment we have is the transshipment. We are looking forward to that. We have the alternative of replacing the high density racks at Oconee with the poison

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racks. Other than that, we have no commitment.

Q Mr. Bostian, will you please tell us something about Duke's planning process as it relates to spent fuel storage. What are the assumptions that underlie spent fuel storage planning; what is the thought process that goes on in Duke Power Company in this regard?

A The operation of Duke's nuclear reactors is simply one component of the operation of all of Duke's generating units. The nuclear fuel services section is responsible for the design of the reloads for the Oconee Units.

They in turn work with the production engineers and our department's operating and maintenance section to produce the refueling schedules and utilizing the design cycle data and the refueling schedules for the various units, they determine the quantity and schedule on which spent fuel will be discharged.

Underlying the assumptions or the underlying assumptions that we are following at this time with regard to the disposal of that fuel is the capacity of our existing pools, the options that are available to us for expansion of those pools and for the utilization of government APR storage when and if available.

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Q Mr. Bostian, what are the alternatives presently available to you to accommodate spent fuel?

A The alternatives that are available to us today,

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first of all, are the spaces in the existing pool. The second alternative is to expand the capacity of that existing pool by the replacement of high density racks with poison racks.

Another alternative is the construction of an independent spent fuel storage pool. Another option is the compacting of the fuel pins in standard fuel assemblies in what is known as pin storage. This permits a compaction of about 60 percent. In other words, an increase in storage capacity of about 60 to 70 percent within a given envelope.

Another alternative is perhaps the pool at the Barnwell Reprocessing Plant. That plant is not licensed but we certainly haven't counted out reprocessing.

We still believe that that is the prudent route for this country to take.

Another option and that is the option we are pursuing before this Board, is the transshipment of fuel to McGuire.

Q What do you foresee as the alternatives that will be possible available to you in the future?

A All of these options will be available to us in the future. There is another option that might be available and that is the caisson burial of spent fuel assemblies in the ground.

Q Mr. Bostian, am I correct in assuming that you

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continually evaluate the merits of those alternatives?

A That is correct.

Q Is it safe to say that the management of spent fuel is a fairly dynamic area?

A It certainly is.

Q Mr. Bostian, when was Oconee brought into operation?

A The first unit started in 1971.

Q What was the initial spent fuel storage capacity of the Oconee facility?

A The Oconee facility is comprised of three generating units, nuclear generating units. Units 1 and 2 share a common spent fuel storage pool. It has the capacity of 336 spaces. The Unit No. 3 pool is a "standby pool" and it originally contained 216 spaces. Beginning in 1975 and being completed in the late summer of 1976, we expanded the capacity of that pool from 216 to 474 spaces.

Q Directing your attention to the initial capacity of the spent fuel storage pools at Oconee, why was that capacity selected?

A We were seeing a delay in reprocessing. We had a reprocessing contract with the Allied General Nuclear Services --

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Q Mr. Bostian, may I interrupt you for a second. Directing your attention to the initial situation at Oconee,

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when Oconee became operational, why was the original pool sized the way it was sized?

A The original pool size at Oconee in both of the pools was sized on the basis of the rule of thumb that was prevalent in the industry at that time. That is that the spent fuel pool would accommodate a full core discharge plus one normal reload batch.

Q What was the prevalent thinking in the industry and in Duke in particular as to what would happen with that spent fuel when the plant reached a point where it could no longer accommodate the spent fuel?

A The prevalent thinking was that it would be reprocessed.

Q Has that reprocessing situation eventuated?

A No.

Q Now, Mr. Bostian, you made reference to a modification of the Unit 3 spent fuel pool; is that correct?

A That is correct.

Q Why is that modification embarked upon?

A At that time, we were seeing delays in the licensing and startup of the Barnwell Reprocessing Plant.

Q And again, what was the size of that modification, Mr. Bostian?

A That pool was increased from 216 to 474 spaces.

Q Why was the 474 figure selected?

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A That was the quantity that could be accommodated within the existing envelope of the spent fuel pool.

Q Mr. Bostian, what was Duke's thinking as to what would happen with the spent fuel at the Oconee Station after the Oconee Station spent fuel storage capacity reached a point where it could no longer accommodate the spent fuel given the modification to the Unit 3 spent fuel pool?

A We would have to look at other options that were available to us at the time. One of those options would have been to replace the racks in the Oconee 1 and 2 pool. At that time, we were still thinking in terms that we would, in fact, get approval of reprocessing.

Another option that we thought might be available to us would be to transship Oconee fuel to McGuire.

Q Have events transpired that have caused you to seek further spent fuel storage modes at Oconee?

A Yes; we have seen the indefinite deferral of reprocessing. We have seen the failure of other spent fuel storage proposals to materialize.

Q With respect to that latter point, I believe you stated earlier that one of the factors that you had considered was a government away-from-reactor facility; is that correct?

A That is correct.

Q Has that situation eventuated?

A It has not.

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Q Has that situation caused you to seek additional measures at Oconee?

A Yes.

Q And what additional measures have you taken?

A We are now replacing the racks in Oconee 1 and 2.

Q Is this instant application an example of an additional measure you have taken with respect to Oconee?

A That is correct.

Q By my calculations then, Mr. Bostian, am I correct with respect to Oconee, you have pursued five different options in the six-and-a-half years of Oconee operation?

A Yes.

Q I make reference to the reprocessing, the modification of the Unit 3 spent fuel pool, to the away-from-reactor storage, transportation and reracking of Units 1 and 2?

A That is correct.

Q Am I correct in assuming that this is a fact that supports your statement that storage of spent fuel and its management is a very dynamic area?

A That is correct.

CHAIRMAN MILLER: Maybe the witness ought to define "dynamic".

WITNESS BOSTIAN: Constantly changing.

CHAIRMAN MILLER: Is that all?

WITNESS BOSTIAN: Very much so.

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BY MR. MC GARRY:

Q Mr. Bostian, assuming reroacking and transportation eventuated at Oconee, how long can Oconee spent fuel be accommodated so as to enable Oconee to operate?

A If reroacking and transportation are effected -- was that your question?

Q Yes, both options.

A Both options. If reroacking and transportation are effected, we should be able to operate Oconee until -- let's take that separately. If we transport only, we should be able to go until December of 1981. If we reroack and don't ship, we should be able to go until September of 1982.

Q That assumes a full core reserve, does it not, Mr. Bostian?

A That is correct; yes.

Q Thereafter, has Duke committed itself to a course of action?

A It has not.

Q How will you determine what course of action to pursue thereafter?

A We will just have to take a look at the situation at each decision point and decide what is the best for us.

Q Can you make a reasonably projection at this time as to what Duke's next course of action will be with respect to accommodating Oconee spent fuel?

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A I cannot.

Q Duke has other facilities, does it not, nuclear facilities?

A That is correct.

Q Has the treatment of spent fuel in any of these facilities been revised from the initial design?

A It has.

Q And would you please briefly explain such revisions?

A The spent fuel pools at the McGuire Nuclear Stations were originally designed with the open lattice work. That rack had a capacity, I believe, of 219 spaces. It has been redesigned to the high density configuration with a capacity of 502 spaces each.

The Catawba pool was in the early design stages when we took a look at it and we enlarged that pool by simply expanding the pool 50 feet in length.

Q And that is the sum total of the revisions that have been made with respect to spent fuel?

A That is correct.

Q Why were these revisions made, Mr. Bostian?

A The revisions were made because of the uncertainty in the back end of the fuel cycle at that time.

Q And what was the objective of these revisions?

A To provide additional space.

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Q Am I correct in assuming then that each spent fuel

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Storage action taken by Duke was directed in an effort to solve the problem of solving a current or anticipated spent fuel storage problem?

A That is correct.

MR. ROISMAN: Objection; that is a stipulation.

CHAIRMAN MILLER: Could you break in from here a less leading form, Mr. McGarry? This is a non-objectionable witness.

MR. MC GARRY: Certainly, Mr. Chairman.

BY MR. MC GARRY:

Q Mr. Boscian, again for context, the purpose please for the revisions made by Duke with respect to spent fuel storage?

A To provide additional space.

Q And was this revisions directed to solving a problem at either an existing facility or a planned facility?

A That is correct.

Q And the problem I refer to is a spent fuel problem.

A That is correct.

Q Mr. Boscian, in light of the experience Duke has had in the spent fuel area with respect to all of its nuclear facilities, can it be said that Duke is committed to a specific course of action with respect to spent fuel storage?

A It cannot.

Q Mr. Boscian, is Duke committed to the transshipment

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eakll alternative which has been characterized as the cascading option?

A It is not.

Q Mr. Bostian, is it reasonable to conclude at this time that Duke's selection of future means to accommodate spent fuel will necessarily involve transshipment?

A No.

Q At this point in time, in your mind, Mr. Bostian, has Duke foreclosed any spent fuel storage options?

A It has not.

Q I maybe repeating myself, Mr. Bostian, but for the record, focusing on cascade, would you please define that term?

A Cascade is the term -- frankly I don't know the origin of it or when it exactly came into the picture -- but cascade as used in the context here yesterday and in the context of Duke's planning, was that we would move fuel from an operating reactor to another reactor storage pool and upon perhaps filling of that, on to the next pool.

Q Has Duke considered cascading with respect to accommodating spent fuels?

A It has.

Q Please tell the Board when Duke first considered cascading?

A I would say the first time that we considered it

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sak12 was probably in 1975 as we were replacing the racks in
 Cooney No. 3. We were considering the movement of spent fuel
 from 1 and 2 over to No. 3.

Q Mr. Bostian, why did you consider cascading at
 that time?

A At that time, we believed it was impractical to
 replace the racks in Cooney 1 and 2.

CHAIRMAN MILLER: Was that when you were reracking
 No. 3 at Cooney?

WITNESS BOSTIAN: That is correct.

CHAIRMAN MILLER: You had not reracked Units 1 and
 2 and determined for some reason you didn't feel it
 practical to do so?

WITNESS BOSTIAN: That is correct.

BY MR. MC GARRY:

Q During that period of time were you also
 considering other spent fuel storage alternatives?

A That is correct.

Q During this, what I will characterize as the
 early consideration of cascading, did you hold numerous
 generalized discussions concerning cascading?

A We did.

Q And did you and your staff generate internal
 memoranda concerning cascading?

A Yes.

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CHAIRMAN MILLER: Was that more than one or one?

I didn't catch the question.

MR. MC GARRY: More than one. Is that correct, Mr. Bostian?

WITNESS BOSTIAN: That is correct.

BY MR. MC GARRY:

Q Mr. Bostian, did there come a time when Duke advanced its thinking on cascading beyond this initial stage that we have just been discussing?

A I would say the point in time at which we were most enthusiastic about cascading was mid-1977. At that point we were in contact with DOE regarding their interest in taking spent fuel and we felt like that was a very viable option to the spent fuel storage situation and in order to facilitate our exercise of that option, transshipment looked very attractive.

CHAIRMAN MILLER: I am not sure I understood that. Would you explain to me again the connection between the DOE, whatever it was doing as you understood it, and how it related to your enthusiasm at that time in consideration of the cascading option?

WITNESS BOSTIAN: Okay. In mid-1977, DOE approached us. Prior to that time, we were looking at storing our own fuel.

CHAIRMAN MILLER: In what fashion?

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WITNESS BOSTIAN: Either in existing pools by expansion or by transshipment. All right, sir. When DOE came to us and began talking to us about taking spent fuel, then there was another alternative. And by exercising that alternative, that minimized or eliminated the necessity to transship. So we thought the transshipment on the short term basis and the availability of DOE storage would take care of our spent fuel storage problem.

CHAIRMAN MILLER: In other words, the DOE concept with which they approached Duke at that time was taking the spent fuel for storage or some such purpose? At least you would be absolved of the responsibility for it?

WITNESS BOSTIAN: That is correct.

CHAIRMAN MILLER: It was in that context that you considered the transshipping option most viable from Duke's point of view?

WITNESS BOSTIAN: That is correct.

CHAIRMAN MILLER: As a temporary measure?

WITNESS BOSTIAN: That is correct.

CHAIRMAN MILLER: Because of the availability of those at DOE who would accept the responsibility?

WITNESS BOSTIAN: That is right.

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CHAIRMAN MILLER: How did that relate to the unavailability of the disposal method through DOE or anybody else? What did it do to your transshipment option or did it

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change in character?

WITNESS BOSTIAN: It changed the character so that instead of needing to transship in large quantities, it reduced or eliminated that.

CHAIRMAN MILLER: If you had the DOE option?

WITNESS BOSTIAN: If we had the DOE option.

CHAIRMAN MILLER: If you didn't have the DOE option, how would that affect your thinking in regard to transshipments, long or short term?

WITNESS BOSTIAN: Certainly on the long term, we would have had to consider pool expansion and independent storage pools at Oconee and perhaps other reactors.

CHAIRMAN MILLER: What about short-term transshipment?

WITNESS BOSTIAN: Short term, it would certainly not eliminate or even reduce transshipment. We would have to go ahead and begin our expansion programs and in the meantime, transshipment would have accommodated that.

CHAIRMAN MILLER: It would be a different kind of transshipment than that you were contemplating enthusiastically if you had the DOE option; is that correct? If not, straighten me out.

WITNESS BOSTIAN: Our enthusiasm when the DOE people came was that transshipment was a short-term aid to implementation of the DOE option.

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CHAIRMAN MILLER: In the absence of that or some similar kind of option, what you would be left with is that? That is to say, the transshipment as you have been discussing it would be less attractive?

WITNESS BOSTIAN: That is correct.

CHAIRMAN MILLER: I think I follow you. Thank you.

DR. LUDKE: This DOE option, did you get a picture of what it was? Where were they packing fuel? What would they do with it?

WITNESS BOSTIAN: At that time, they were in the early stages of developing their concept for government AFR storage. That culminated in their announcement, I believe in October of '77, that the government would take -- accept and take title to utility spent nuclear fuel.

DR. LUDKE: It was rather an official thing.

WITNESS BOSTIAN: We felt like it was an official thing.

CHAIRMAN MILLER: You may resume. Thank you, Mr. McGarry.

BY MR. MCGARRY:

Q Mr. Bostian, when did Duke make application for this subject transportation amendment that is before this Board?

A In March of 1978.

Q And why was that transshipment option selected?

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A That transshipment option was selected because the two Oconee pools were rapidly filling and we had space available at McGuire. And our analysis of the alternatives indicated that that was the most economically attractive.

Q Was that selection, was that option selected, Mr. Bostian, solely or as part of a cascade program?

A It was not.

Q Since applying for the instant licensing amendment, Mr. Bostian, has the situation changed to cause the cascading concept to become more or less viable?

A Less viable.

Q Can you please explain?

A Several situations have developed that certainly in our way of thinking make the cascade or transshipment less viable. One is the changing political climate in which we were operating.

The second thing that has developed is the new NRC regulations with regard to security.

Q Mr. Bostian, during this timeframe that we have been discussing, from some time in 1975 to the current time, we have been focusing on cascading in the last several minutes; during this timeframe, has Duke continued to consider all spent fuel storage alternatives?

A We have.

Q Can you give us examples of that consideration?

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Q Several examples are the independent spent fuel storage pool, the dry storage tank I referred to earlier. We have talked with the Exxon people, the AMCO people, the Savannah River people and of course, we have talked to the DOE people.

MR. MC GARRY: Mr. Chairman, if I may have one more minute, I think I am just about completed.

BY MR. MC GARRY:

Q Mr. Bostian, I ask you, based on your knowledge, can it be said with a reasonable degree of assurance that Duke's cascade program, plan, was so solidified that it is an option that will be implemented?

A It cannot.

MR. MC GARRY: That completes my direct questioning, Mr. Chairman.

CHAIRMAN MILLER: Thank you. Cross examination?

MR. KETCHUM: Mr. Chairman, I have no questions at this time.

CHAIRMAN MILLER: Mr. Roisman?

CROSS EXAMINATION

BY MR. ROISEMAN:

Q Mr. Bostian, in your testimony, you made reference to an update of the 1976 independent fuel storage study that has just been completed by Duke.

A Yes.

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Q Do you have a copy of that with you?

A I do not have it up here. I have a copy with me.

MR. ROISMAN: I would like that that copy be made available before this panel leaves the witness stand.

CHAIRMAN MILLER: I assume this is no problem.

MR. MC GARRY: I apologize. Could you repeat that?

MR. ROISMAN: Update of the 1976 independent spent fuel storage study. I would like a copy of that before they leave the witness stand.

CHAIRMAN MILLER: Mr. Bostian identified the copy. He said he doesn't have it with him but it is available. Would you let him have it so it will be available to the witness? Maybe you have to tell him where it is or you can go get it.

MR. ROISMAN: I need to look at a copy also. I have not seen the document.

CHAIRMAN MILLER: I understand; that is why we are asking for the production of it so that everyone will have an opportunity to be familiar with it.

If the witness would like to take the notebook or file with him, it may expedite things. We will not have him turn it over en masse.

MR. MC GARRY: I have one clarifying question, Mr. Chairman.

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FURTHER DIRECT EXAMINATION

BY MR. MC GARRY:

Q Mr. Bostian, with respect to the document you have before you, what is the caption of that document?

A (Witness Bostian) The caption of the document -- it is a letter to Mr. W. O. Parker, Attention: R. W. Bostian. I report to Mr. W. O. Parker, who is vice president of steam production.

The subject is Cochee 1 through 3, McGuire 1 through 3, Spent Fuel Storage, with a number of file numbers.

CHAIRMAN MILLER: What is the date?

WITNESS BOSTIAN: June 15.

CHAIRMAN MILLER: Of what year?

WITNESS BOSTIAN: This year, 1979.

CHAIRMAN MILLER: We would like to have that marked for identification. The Board will put it in if nobody else wants to. The Board would like it marked. Do you wish it to be called an Applicant's exhibit?

MR. MC GARRY: Yes.

CHAIRMAN MILLER: Applicant's Exhibit 1, for identification.

(Applicant's Exhibit No. 1, was marked for identification.)

BY MR. MC GARRY:

Q Mr. Bostian, is this the report that was referenced

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A This is the update of that 1976 independent spent fuel storage study. It gives the current cost of an independent spent fuel storage facility at Oconee.

CHAIRMAN MILLER: Anything further, Mr. McGarry, in the way of foundation for this document?

WITNESS BOSTIAN: Let me make one comment about the document. This is a copy of the original that was addressed to me. I have not received the original which will come to me, I believe, with a letter of transmittal from Mr. Hager. I have not received that as yet.

CHAIRMAN MILLER: This is the only copy, I take it, that is in your possession, sir?

WITNESS BOSTIAN: This is the only copy in my possession.

CHAIRMAN MILLER: In the event we need to have other copies perhaps you could arrange for the reproduction of it.

MR. MC GARRY: Certainly, Mr. Chairman.

CHAIRMAN MILLER: Since it is marked for identification we would like the usual number turned over to the reporter.

Are you able to continue your examination?

MR. BOYSMAN: Oh, yes.

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CROSS EXAMINATION(Continued.)

BY MR. ROISMAN:

Q Mr. Bostian, as I understand it, you did not prepare the document?

A (Witness Bostian) I did not.

Q Have you read it?

A I have read it and that is all.

Q You did not review it then either while it was in preparation?

A I did not.

Q Who did prepare it?

A It was prepared in our design engineering department.

CHAIRMAN MILLER: Keep your voice up.

WITNESS BOSTIAN: It was prepared in our design engineering department.

BY MR. ROISMAN:

Q My question was who and not where.

A It was prepared under Mr. Hager's supervision. I don't know who prepared it.

CHAIRMAN MILLER: Let me suggest to all witnesses. The natural thing is for you to look at the lawyer interrogating you and vice versa and pretty soon your voices drop down and you achieve a level of intimate conversation not shared by the rest of us. Look at the Board from time to time, please.

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WITNESS BOSTIAN: I am sorry. I will look at you.

BY MR. ROISMAN:

Q You just indicated to me in the preparation of this particular study which was done by people who work for you, you saw the study when it was finished. Would that be your standard method of operation say with regard to the studies that Mr. Glover has done with respect to estimated costs of various options that Duke is looking at with regard to spent fuel storage?

A (Witness Bostian) Let me clarify a point. This document was prepared under Mr. Hager's supervision in our design engineering department. I am in the steam production department. These are two entirely different departments.

We interact, of course, but I do not supervise or have direct knowledge of the preparation of this document.

Q Would that equally well apply to studies of the economic costs of the feasibility of pin packing?

A It does not.

Q Who does the supervision of pin packing studies?

A I would do that right here with these gentlemen.

Q Who would prepare the study?

A These gentlemen.

Q What would your involvement be with regard to the preparation of those studies?

A I would be aware of the initiation of those studies.

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I would be aware of the studies as they progress and I would be aware of their results of those studies.

Q Would you have personal knowledge of the basis for various cost estimates that were contained in the studies?

A Quite likely.

Q How would you get that?

A From these gentlemen.

Q You mean in oral conversations or memoranda?

A Both.

Q Would you make judgments about things that were in the studies, where there was a high and low estimate of cost?

A We would consult from time to time and make certain judgments; yes.

Q So that if I have here copies of studies that have been prepared on via packing, that were prepared in Duke, it would be a fair assumption that you would be able to attest to the validity of statements contained in there from your own personal knowledge?

A I should be able to ascertain the validity of statements in there.

Q What do you mean by "ascertain"? You mean you could talk to those two gentlemen who are sitting next to you?

A That is correct.

Q Would they know better than you?

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A They might know more detail. But I don't know
that they would know any better than I.

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Q What about studies on the feasibility or economics of racking?

A I would be aware of that, yes.

Q Again for the same reasons as with regard to pin packing?

A Well, let me say one thing about racking. Racking studies, the cost estimates covering the design and construction of the racks are conducted in the design engineering department under Mr. Hagan. After they complete their study they would transmit the results to us, just as they have done so here.

Q What about studies of the feasibility or economics of transshipment, where would those be done?

A They would be conducted by my group.

Q Would your relationship with respect to those studies be essentially the same as you described to me with respect to pin packing?

A That's correct.

Q In answer to questions from Mr. McGarry you talked about plans. I want to get some better understanding of what you mean by the term "plans" and what you mean by the term "commitment". And to do that I'm going to ask you some questions about other things that Duke plans and makes commitments to.

Let's take the construction of the Cherokee

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Nuclear Plants as a point of departure, all right?

Two years ago did Duke have plans for the date on which they would complete construction of the Cherokee facilities?

A That's correct.

Q And were they committed to completion of the plants on those dates?

A That was the target schedule.

Q Well, but were they committed in the sense that you use that term in response to Mr. McGarry's question?

A Two years ago I would say that all of the Duke activities were directed toward completion of the plant on that schedule.

Q I'm sorry, but I'm trying to get you to use the same terminology. Are you unwilling to use the word "committed" or to say it was not a commitment?

Were they committed two years ago to the completion of the Cherokee plants on the schedule which was then part of the plan for Cherokee?

A To me the word "commitment" means that that's hard and fast, you're going to complete it on that schedule.

Q Give me an example of a commitment that Duke has with regard to the production of power from nuclear plants in any respect at all, something so I can get some idea of how you use the term.

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A All right.

With regard to nuclear power plants we have a commitment to the North Carolina Power Agency number 1 to operate the Catawba Nuclear Unit number 2 on their behalf.

Q In other words, you have a contractual obligation.

A We have a contractual commitment.

Q Is that what you mean by a "commitment", where you have a contractual obligation?

A Not necessarily, but that's a type of commitment.

Q Well, can you give me something less formal that would be a commitment in the sense in which you use that term than a contractual obligation?

A For example, we're in our budget process right now for the years 1980 and beyond, and we have certain commitments to produce certain components of the budget on a certain schedule. And we are committed to produce those components on that schedule so that the overall corporate budget can be completed on the target date.

Q You mean, in other words, superiors of yours up the line in the company have said by July 1 we want to see these numbers and we've got to see them because we've got to have our budget completed by July 30, or whatever. And in that sense you mean you're committed.

A That's correct.

Q But then you would say you did not have a commitment

mpb4

to the completion of the Cherokee Units on a particular date two years ago?

A Not a commitment in that sense, no.

Q All right.

You also do not have a commitment to a cascade plan, is that correct?

A That's correct.

Q Nor to a reracking plan.

A That's correct.

Q Nor to an independent spent fuel storage plan.

A That's correct.

Q Do you have a commitment to keeping the Duke reactors operating?

A To the best of our ability, yes.

Q And does that commitment include a commitment to make sure that you have some space to store the discharged spent fuel when it's discharged?

A The discharge of the spent fuel necessitates a place to store it, and so it's a commitment in that sense, yes.

Q So you do have a commitment to making sure there is space available?

A That's correct.

Q But what you do not have a commitment to is necessarily making sure it's available in one particular way.

mpb5

A That's correct.

Q Do you have a commitment to making sure that it's available through the lifetime of the reactors?

A That's a necessity. We have certainly an obligation to do that, but we have no commitment of meeting specific needs.

Q I understand that.

But you are committed to making sure there is something there?

A That's correct.

Q Would it be a fair statement that your current thinking is that the way to meet that commitment is to -- quote -- "leave your options open"; is that a fair statement?

A That's correct.

Q Would it be a fair statement to say that therefore Duke's plan for handling its spent fuel storage commitment is to leave its options open?

A To maintain as much flexibility as possible to enable the exercise of the available options at the prudent times.

Q At this particular point in time is transshipment of the spent fuel from Oconee to McGuire the best way to achieve your plan of keeping the options open to meet your commitment to have spent fuel storage space for your reactors?

mpb6

A At Oconee, yes.

Q All right. What's right, at Oconee.

Have you at any time had a plan to ship spent fuel other than transship spent fuel from Oconee -- other than the plan to ship the 300 fuel rods from Oconee to McGuire that are the subject of this application?

A Other than the 300?

Q Yes.

A From Oconee to McGuire?

Q Right.

A Mr. Roisman, we have planning schedules, planning tools, but we have no firm plan beyond this 300.

Q I seem to remember that in your application for this transshipment you asked for permission to ship 400 or 420 spent fuel rods from Oconee to McGuire.

Am I mistaken in that?

A I believe the number 420 is somewhere in the application.

Q Was it your intent at the time that you filed the application that you would ship 420 spent fuel rods from Oconee to McGuire?

A The number 420 came out of the study to determine how many assemblies would have to be shipped from Oconee or stored elsewhere to permit the first internal inspection of Oconee number 1, which is scheduled now for December of 1982.

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POOR ORIGINAL

mpb7

Q My question is:

Did you have an intent to ship 420 -- assuming you get approval -- 420 spent fuel assemblies from Oconee to McGuire?

A That was our plan at that time.

Q So you had a plan that included more transshipment than your current plan includes, is that correct?

A That was a possibility.

Q Now would you say that at the time you had the 420 in your head and it was your plan, that you were committed to transshipping 420?

A We were not committed.

Q So you draw a definite distinction between things that you're planning to do and things that you're committed to do?

A That's correct.

Q At any time in the development of Duke's thinking of this plan to keep your options open, have you ever considered whether taking a step will reduce the available options in the future?

A Not to my knowledge.

Q In other words, you have never factored into the plan to keep your options open whether taking a particular action at a particular moment would foreclose an option available to you in the future?

mpb8

A Have we taken that into consideration?

Q Yes.

A Yes, we're trying to keep all of our options open.

CHAIRMAN MILLER: Pardon me.

That really wasn't the question to which you previously answered the opposite.

The question, I believe, sir, is whether or not the responsible officials of Duke in making decisions and having the intention of keeping the options open, whether they have considered or given heed to the fact that the selection of certain methods, whatever they might be, could have the effect of foreclosing other possible options.

WITNESS BOSTIAN: We have.

CHAIRMAN MILLER: You have.

Thank you.

WITNESS BOSTIAN: May I ask a question here? Are you hearing me now? My hearing is not the best in the world and if I don't look at him directly I can't hear him.

CHAIRMAN MILLER: I'm hearing you fine, sir, no problem.

It's really more of a question of raising your head and projecting your voice.

WITNESS BOSTIAN: One problem I have is this chair is too high for me.

CHAIRMAN MILLER: Okay.

mpb9

BY MR. ROISMAN:

Q Mr. Bostian, I'm going to show you a letter that you wrote -- well, I guess it's a little hard to tell, it's an internal letter and it may be a memo.

CHAIRMAN MILLER: Could we have it marked for identification before showing it to the witness?

MR. ROISMAN: Yes. I'm going to give copies, as soon as I get it out of here, to the parties.

CHAIRMAN MILLER: I think we'll take a short recess at this time, and maybe this will enable all counsel to organize their materials and give the witnesses a chance to take a breath.

About ten minutes, please.

(Recess.)

CHAIRMAN MILLER: All right, the hearing will resume.

Will someone inform Mr. Bostian that we are ready for the testimony -- Oh, here he comes. Fine.

The Board apparently has copies of a document dated November 10, 1977, and it is signed by Mr. Bostian.

Has that been marked for identification?

MR. ROISMAN: No, not yet, Mr. Chairman.

CHAIRMAN MILLER: What number would you like to give it?

MR. ROISMAN: Let's make it NRDC number 274 175

mpb10

CHAIRMAN MILLER: All right. for identification
NRDC number 1.

(Whereupon, the document
referred to was marked as
NRDC Exhibit number 1
for identification.)

BY MR. ROISEMAN:

Q Mr. Bostian, would you please take a look at a
letter signed by you dated November 10, 1977, and now marked
for identification as NRDC number 1.

If you remove the handwritten word "Secrets" at
the top of the page and the line on the right-hand side of the
page about two-thirds of the way down, is that a true and
correct copy to the best of your knowledge of the document
signed by you and dated November 10, 1977?

A (Witness Bostian) It is.

Q I want to refer you to the portion that does
have the little line along it, and I quote:

"I am particularly concerned that our
response to the questionnaire will give
information on our shipping program provid-
ing for transfer of spent fuel assemblies
from Oconee to McGuire and from McGuire and
Oconee to Catawba."

Can you tell me what shipping program you were

POOR ORIGINAL 4 176

mpbl1 referring to in that sentence?

A The program referred to there is simply the plans that we had at that time.

Q And those plans, would you call that the cascade plan?

A It's been referred to as the cascade plan.

Q And is it your testimony today that that is not now a plan?

A It is not a firm plan and never has been a firm plan.

Q Was it a plan on November 10th of 1977?

A It was a plan on November 10th, 1977, in the context that I have used it.

Q Is it a plan now?

A It is not a long term fixed plan; it is one of our planning tools.

Q Well, wait. Do you mean you do not have a commitment to it?

A We do not have a commitment to it.

Q Are you now planning that fuel from Oconee and McGuire will be shipped to Catawba?

A That is one alternative, but there is certainly no commitment to that.

Q Do you have any alternative that is number one among the alternatives that you are now looking at for what

mpb12

you will do with the McGuire and Oconee fuel when the space in the facilities is used up?

A We have no number one alternative.

Q None that is preferable to any others?

A Not at this point.

Q Mr. Bostian, I want to direct your attention to the Applicant's Answers to Interrogatories submitted by the Natural Resources Defense Council, second set. The date of the answers is May 7, 1979.

I wonder if you could ask your counsel to provide you with a copy of those so that I can ask you a question about it.

(Handing document to the panel.)

Q I'd like you to look at pages 13 and 14, please, of those -- I'm sorry, 13, 14 and 15.

First, would you look at page 15 and verify for me that you are one of the people who indicated you took responsibility for the answer there given?

A That's correct.

Q All right.

Now looking back on page 13 under H.H., would you read for me the first statement down to the colon?

A "The basis for our belief that trans-shipment is cheaper or in any cost-benefit sense better than on-site expansions is as

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mpb13

such:"

Q Then read me the Arabic 1, the first sentence following the colon.

A "Transshipment provides full core reserve storage through 1991 at Oconee, McGuire, and Catawba. The cost for providing this storage at the three stations has been estimated at \$4- to \$4.5 million in 1979 dollars."

Q Now, Mr. Glover, would you take the document that Mr. Bostian has and look at the memo attached that relates to this subject, which I believe is a memo dated April 26, 1979, and signed by you.

A (Witness Glover) April 7?

Q April 26, 1979. It is almost at the very end of the document. It is the last thing on all of this except for your affidavit.

A The memorandum I have is dated April -- Oh, I'm sorry, I've got you, April 26.

Q All right.

And would you read me the subject title of that, please?

A "Subject: Cascade Program Cost,
File No. GS-514.26."

Q And would you read me the two sentences that

mpbl4

appears before your signature?

A "The attached tables show our present transfer plans between Oconee, McGuire, and Catawba. An estimate of the per assembly transfer cost is included to analyze the entire program cost."

Q What did you mean by the words "present transfer plans"?

A Well, Mr. Roisman, in my job with Duke it is required that we evaluate various alternatives. In this document, as in various others, what I have attempted to do is to analyze different methods of providing storage on systems through certain time periods and evaluate the ramifications of each of these.

In this specific document I am saying that as I was evaluating a transshipment scheme through the entire ability to store that at another facility, the cost would be as shown.

What I was attempting to do was to use this in comparison with any other alternative method of storage, specifically reracking, independent storage facilities, and things of that like.

Q I'll ask the question again:

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What did you mean by "present" -- in fact, let's add one more word in, "our present transfer plans"?

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A Just that in my dealings with developing schemes for providing storage at our facilities, one method of doing this is to be able to ship fuel from facilities that require storage to facilities that have storage that is not being used.

DR. HAND: Can I interrupt?

Why do you now say "scheme" when Mr. Roisman is emphasizing "plan"?

WITNESS GLOVER: Well, "plan", let me use that word.

CHAIRMAN MILLER: Are they synonymous as you use them?

WITNESS GLOVER: Yes, sir.

In other words --

CHAIRMAN MILLER: I'm not sure that I still have a direct explanation of the question.

Would you read the words that Mr. Roisman was asking you about, something with "our", the four words?

WITNESS GLOVER: "The attached tables show our present transfer plans between Oconee, McGuire, and Catawba."

CHAIRMAN MILLER: All right.

"Our present transfer plans." Without getting into reasoning and justification, just tell me very plainly what those words meant as you used them.

mpb16

WITNESS GLOVER: As I used them in this document, it was to show if we were to implement transshipment through our system through 1991 using McGuire and Concho what would be the required transfers, to develop in this document what would be the cost of such shipments.

It is not to say that these are, you know, the concrete plans that we would use. They are just a development of a cost estimate on such a scheme, such a plan.

CHAIRMAN MILLER: Yes, but the words themselves say "our present transfer plans".

I take it "our" means Duke in some form, doesn't it? Or does it mean a department or division of Duke?

WITNESS GLOVER: It means specifically our group's development of this plan.

CHAIRMAN MILLER: What did your group consist of when you said "our present plan"?

WITNESS GLOVER: Nuclear Fuel Services, the Steam Production Department.

CHAIRMAN MILLER: And what was the next word, "our present"?

WITNESS GLOVER: "...transfer plans between Concho, McGuire" --

CHAIRMAN MILLER: Well, was the word "present" in there?

WITNESS GLOVER: "Present".

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mpbl7

CHAIRMAN MILLER: Well, all right.

Let me write it down. I seem to be having trouble.

Our, O-u-r, present, p-r-e-s-e-n-t, transfer, t-r-a-n-s-f-e-r, is that "plan" or "plans"?

WITNESS GLOVER: "Plans."

CHAIRMAN MILLER: "Plans", plural.

Okay.

Now you told me who "our" is. Now what was the date of that document?

WITNESS GLOVER: April 26, 1979.

CHAIRMAN MILLER: April 26 of this year, 1979.

Now "present" I take it has some reference possibly to that date of April 26, 1979.

WITNESS GLOVER: In that I was looking at it on that date to determine if we were to institute such an alternative as to transship through this time period, what number of shipments would be entailed in such a plan.

CHAIRMAN MILLER: Then the word "present" is used there referring to the date of April 26, 1979, with regard to the Duke division you were talking about.

"Our present" meant your group's plans as of that time, "present".

WITNESS GLOVER: Right.

CHAIRMAN MILLER: That's a time factor, right?

WITNESS GLOVER: Yes.

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mpb18

CHAIRMAN MILLER: All right.

Now the next word is "transfer". Or if you think it's more logical to consider "transfer plans" together, I don't mind. But at that time in your group you were discussing "present transfer plans".

Now what did you mean by "transfer plans" with reference to this so-called cascade, a term that apparently counsel made a precedent memo of.

WITNESS GLOVER: As I stated before --

CHAIRMAN MILLER: No, I don't want it as you stated it before. I want to know that transfer plans are transfer plans unless something appears in the document differently, unless you're going to tell me that you're using it in a different sense. And that's all I'm trying to find out.

Never mind the justification. You'll be asked about that.

WITNESS GLOVER: Right.

CHAIRMAN MILLER: Okay.

WITNESS GLOVER: What I'm trying to say here as far as "transfer plans" is if we were to institute --

CHAIRMAN MILLER: Well, you were going to do something when you said "present", not "if" you were going to. There was no condition contrary to fact, if I'm understanding the use of the grammar.

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mpb19

"Our Duke present" you've already got established, unless you want to disclaim the use of the terminology.

WITNESS GLOVER: Perhaps, then, it's a poor choice of words.

CHAIRMAN MILLER: I see.

WITNESS GLOVER: What I'm attempting to convey in this document, rather, is to just show if we are to institute such a shipment plan what would be the cost of that and the number of shipments involved.

CHAIRMAN MILLER: In other words, "Our present transfer plans" as used there doesn't really mean in the normal sense of the use of the English language 'Duke's present transfer plan as of April 26, 1979', is that what you're telling me?

WITNESS GLOVER: It's the plan as I developed it for an alternative method of storing fuel, which would be to ship fuel off.

CHAIRMAN MILLER: I think I understand you.
Thank you, sir.

You may resume.

BY MR. ROISMAN:

Q So, Mr. Glover, let me see if I understand correctly.

Then you could equally well say 'Our present independent fuel storage plans' and do a cost estimate of

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that.

A (Witness Glover) Right.

Q And you would describe that as "our present independent spent fuel storage plans"?

A Or should we say, just as I have in this, that the alternative method of providing storage for our facilities should we use independent storage facilities, should we use transshipment, would be this number of dollars and this amount of time.

Q Well, sir, in other words, what Duke has is a series of plans. You have a transfer plan, you have an independent spent fuel storage plan.

A What Duke has is many alternative methods of providing storage. It's not to say that we have developed what even our next step past this reracking and transshipment is to be, as Mr. Sostian has stated.

Q You mean you haven't committed to it.

A We have not committed to it.

Q But you do have, according to this document we've just been looking at, you do have a transfer plan and you can evaluate the economic costs of that.

A We have developed, if we were to be able to ^{274 186} institute through licensing procedures, whatever, if we were to be able to do that, what would be the number required. It is just a prudent planning basis for any sort of a management

POOR ORIGINAL

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decision to be able to say if we go this way what's going to be the cost, what's going to be the requirements, rather than just be able to, you know, have something much less to base your decisions upon.

Q In other words, you're preparing the economic costs for each of these plans in order to decide which plan you want to follow.

A Correct, for our next step, whatever that may be. We're going to need to evaluate the costs, the feasibilities, problems that may develop with any of these.

Q Mr. Bostian, when is the next step?

A (Witness Bostian) The next step will be we believe the lead time decision point necessary to implement additional storage.

Q Mr. Bostian, let's go back to the document and the answer to the question itself.

You concluded that transshipment between Oconee, McGuire and Catawba is cheaper or in a cost-benefit sense better -- these are your words -- than onsite expansion.

Does that mean that at this time transshipment is the preferred plan?

A It is the economically attractive plan. It may not necessarily be the preferred plan.

Q What other factors would enter into that decision?

A I mentioned two earlier. One is the political

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consideration and the other is the new NRC regulations.

CHAIRMAN MILLER: Security regulations?

WITNESS BOSTIAN: Security regulations.

BY MR. ROISMAN:

Q Can you tell me what are the political considerations you had reference to?

A (Witness Bostian) The political considerations are the local concerns that have been expressed to us by cities and counties along the transfer route.

Q Are those considerations such that if you could rerack Oconee 1 and 2 in time to not lose full core reserve that you would abandon transshipping between Oconee and McGuire?

A I don't think I could answer that yes or no at this point. I think we will have to see the implications of the new NRC regulations, see to what degree they allay the concerns of the communities through which this will be going.

If the opposition that we have seen developing subsides, then we would certainly consider transshipment, but if it continues to develop we would certainly have to consider other alternatives.

Q Well, let's go back to your answer to the question now in the interrogatories.

You said "in a cost-benefit sense better". Do I understand now that that cost-benefit sense is purely an

POOR ORIGINAL

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economic cost-benefit sense and does not include any of these factors you're now talking to me about?

A That's correct.

DR. HAND: While Mr. Roisman is looking, how have you become aware that local cities and counties are concerned?

WITNESS BOSTIAN: Through our personal contacts with government officials along the route, and through our reading of certain resolutions passed by those cities and counties.

CHAIRMAN MILLER: NRDC Exhibit 2 for identification is a letter dated March 23, 1979, "Subject: Spent Fuel Storage/Transportation", apparently signed by Mr. H. T. Snead, Manager, Nuclear Fuel Services.

(Whereupon, the document referred to was marked as NRDC Exhibit number 2 for identification.)

BY MR. ROISMAN:

Q Mr. Snead, you have in front of you a document now identified as NRDC number 2, dated March 23, 1979, which purports to be a letter signed by you and addressed to Mr. Bostian and several other gentlemen, I assume all at Duke, "Subject: Spent Fuel Storage/Transportation".

With the exception of the hand-written language in the upper right-hand corner, "Linkage to Govt AFR", and the

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line on the right-hand side of the page near the bottom of page 1, does this appear to be a correct copy of a document that you in fact did sign?

A (Witness Shead) Yes.

Q I want to direct your attention to the portion of the document at the bottom of the page one where the little line is.

It says:

POOR ORIGINAL

"Indeed our plans are promised on avoiding significant costs of spent fuel storage while waiting for government to act on their plans for storage."

Now first, do you mean to say by that that the economic considerations are a significant or paramount consideration in the spent fuel storage planning by Duke?

A The economic considerations are significant.

Q Would you say they are primary?

A From my personal standpoint, economic considerations are primary. I think, however, though, that you look at other factors conditionally in considerations like this.

Q Now you refer to "our plans are promised". What do you mean by "our plans"?

First, who's the "our", and what are the "plans"?

A I have a tendency to use "ours" interchangeably with Duke and Nuclear Fuel Services. Of course, a plan from

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our section would be a section plan, it would never be a Duke plan until that plan is approved first by Mr. Bostian and then by the executive committee of Duke Power Company.

In this particular case, all of the alternatives that we have considered have not been approved by Duke Power, and so the use of the word "our" here would mean things that we have looked at in the Nuclear Fuel section.

Q And "plans"?

A Relative to the subject of the letter, the plans that I am referring to are all-encompassing plans. They are plans for all types and manners of spent fuel storage, including the transportation of spent fuel.

Q Your testimony, then, is that as of March 23rd, 1979, when you said "our plans", you were not referring only to transshipment?

A That's correct, sir.

Q And your plans included what other items? Do you know what they are?

A Well, as Mr. Bostian and Mr. Glover have testified, we look at the full gamut of spent fuel storage problem-solving ideas. We look at can racks, high density racks, poison racks, transshipment of spent fuel, transportation, in-storage, the moving of fuel between the Unit 2 pool and the Unit 3 pool, which is certainly a form of transshipment, although it's onsite. We've looked at reprocessing facilities,

mpb26 we've looked at offsite storage of spent fuel for all systems -- or all systems storage of spent fuel in such locations as Morris and various plans of getting into spent fuel storage and reprocessing.

We've looked at, of course, the government plans for building reactor spent fuel pools.

Q In your judgment, what is the least expensive one of all of those plans for Duke to pursue?

A Well, on our economic calculations I think today I've indicated that spent fuel transportation generally has less economic impact than the other alternatives. Certainly we have to look at the impact of the new NRC regulations on transportation.

Q Have you looked at those costs of transportation?

A We've made some tentative looks at cost on transportation. It doesn't appear like from the standpoint of economics that the costs of the new regulations would displace the standing of spent fuel transportation from the standpoint of economics.

Q Is it correct that your studies show that the total cost per shipment per assembly will run in the neighborhood, even with the safeguards applied, between 2500 and 3000, and that the lowest next option available, namely the reracking, is going to be around 8000 per assembly?

A I believe that's correct. I think my tentative

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mpb27

look at the impact of the new regulations and the cost of spent fuel transportation is \$2000 to \$3000 cost per fuel assembly.

Q So that regulation itself doesn't appear to be a significant cost addition that is likely to change the relative ranking of the alternatives that Duke is now looking at where economics are the consideration, is that correct?

A At this time that's correct.

Q So that, then, leaves us with Mr. Bostian's political considerations as the only other factor that might displace transshipment as the preferred option, is that correct?

A That's correct from the standpoint of displacing it with regard to expanding economics, yes, sir.

CHAIRMAN MILLER: Are there other factors that you're not considering in that regard, then?

I want to be sure that I understand you. Are there other factors besides the two Mr. Bostian mentioned which enter into your thinking of making such a comparison whether on a cost or any other basis?

WITNESS SNEAD: Certainly.

CHAIRMAN MILLER: All right.

Describe those, would you, please?

WITNESS SNEAD: There are schedule difficulties associated with transshipment, for instance, in the operation

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of a nuclear reactor, particular Oconee where there are three units at the site, there's only a limited amount of time, for instance, in a year when one has the opportunity to make shipments. And, of course, the refueling schedule is changed from year to year.

The goal of the group is to not let spent fuel storage plans impact on the operation of the units. And of course, if that goal were to continue, then the way the units operate could impact back on your transportation plans in the future.

There are other considerations. There are labor considerations. For instance, we're using truck shipments when we ship fuel from Oconee, and there is to some extent a labor problem down in Oconee. So we would have to factor that in when the time came. And I'm sure there are other items too that we must consider. The availability of equipment, for instance, service on your reactor crane could have an impact on your plans for shipment because you need that crane, of course, to lift the cask.

WITNESS BOSTIAN: Mr. Chairman, may I comment on the political considerations?

CHAIRMAN MILLER: Surely.

WITNESS BOSTIAN: There's one consideration that I'm reluctant to admit, and that's the action of Louisa County in Virginia where the North Anna Plant is located.

POOR ORIGINAL 274 194

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They have passed an ordinance that simply bans the storage of spent nuclear fuel in that county that is not produced in that county. So that is one consideration that negates even the cost-benefit analysis.

CHAIRMAN MILLER: Thank you.

BY MR. ROISMAN:

Q Mr. Glover, I have just handed you and distributed to the parties a memorandum with no signature or date on it, hand-written, two pages, the top line of which is "Alternatives to Keep Oconee Running".

I will readily admit that I am not a handwriting expert.

CHAIRMAN MILLER: Well, let's have it marked NRDC Exhibit 3 for identification, please.

MR. ROISMAN: All right, NRDC number 3.

(Whereupon, the document referred to was marked as NRDC Exhibit number 3 for identification.)

BY MR. ROISMAN:

Q However the handwriting appears remarkably similar to handwriting on memoranda that have the initials RMG at the bottom, which are your initials.

Can you tell me, did you prepare NRDC number 3, with the exception of the hand-written materials on the upper

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right-hand corner and the line alongside the first paragraph
and the last paragraph?

A (Witness Glover) Yes, I did.

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POOR ORIGINAL

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Q Do you remember when, roughly?

A (Witness Glover) This was roughly prepared in the December '78 time.

Q Okay.

Would you please read the first sentence of the memorandum beginning, "Duke's plan. . ."

A "Duke's plan to alleviate the problem of an overabundance of spent fuel assemblies until the government develops a program of its own, is to ship these assemblies to the most recently completed Duke facility."

Q Can you tell me, is that what we commonly call the "cascade plan"?

A What I am trying to develop in this document similarly to that other one, is something which really is not conveyed in this sentence. If you would -- if for a minute, I could just continue, this document is to discuss various alternatives that even though which may seem --

CHAIRMAN MILLER: May I suggest, it might take a little time, but I would like for handwritten documents to be perfectly clear and legible in the record. I think you are the expert on this document; you have already read the first sentence. Would you read the balance of it as far as handwritten portions go, and take your time so the reporter can get it in the record.

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WITNESS GLOVER: "Alternatives to transshipment exist and most likely will be considered in the near future to solve storage problems which may arise. The alternatives developed to date are:

"1. Additional modifications to the existing pool at Oconee. Poison or nonpoison racks can double or quadruple respectively the storage capacity at a pool, but they require at least a year lead time. The 400 additional storage locations that would be provided at Oconee 1 and 2 by using nonpoison high-density racks, would allow another two and a half years of operation, but would be more expensive than shipping the required number of assemblies during that time period to keep full core reserve, FCR. Another modification which could provide possibly enough extra spots for one annual refueling would be to remove the transfer stand area and rework it with a freestanding module.

"2. After the unit 3 refueling in 1980 there will be at most 15 spots remaining between the two pools. To keep the plant running the following rather unconventional methods could be used:

"A. At the Oconee 3 refueling in 1980, load as many assemblies as possible to enable the unit to run on a long cycle. This could add four months

POOR ORIGINAL 274 198

mm3

of power.

"B. Run the plants at a reduced power level to stretch out their available power. Enough time can be provided here to allow another four or five months of operation. During this time additional capability could be developed.

"C. Share fuel between the three units in the form of reinserts. The use of reinserts will allow a one-for-one savings in requirements in any one cycle of operation for fuel assemblies. This is though, only a short-term solution since only one cycle of operation can be garnered from most assemblies of this type.

"D. Increased the planned burnup level of a batch of fuel assemblies. If programs now being developed should prove successful, fuel that is now being burned to 30,000 megawatt days per metric ton, mwd/mtu, could reach levels of 50,000 megawatt days for mtu, mwd/mtu. With this increase in burnup, a five-batch annual refuel scheme could be developed as compared with today's three-batch, which would result in a 13 percent reduction in a reactor's annual fuel requirements. This method will require a number of years to develop and will be the subject of extensive licensing reviews.

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"E. Bring in a rail cask for temporary storage of approximately ten assemblies. This method has its advantages and disadvantages. It is good in that small additional requirements could be filled quickly and relatively inexpensively. However, rail casks are in short supply and could be difficult to contract for in a moment's notice.

"F. Move the inservice inspections at Oconee back. These inspections will prove to be the most troublesome item in planning for storage if provisions to keep Oconee's full core reserve, FCR, are not established immediately. If plans are made in 1979 to develop an ISFSF, independent spent fuel storage facility, due to a loss in the transportation hearings, it may be necessary to move these inspections back so that this storage is made available prior to the tests."

CHAIRMAN MILLER: Thank you.

BY MR. ROISMAN:

Q Now, Mr. Glover, going back to the first sentence, let's just take the first two words, "Duke's plan."

What did you mean by that?

A (Witness Glover) Duke's plan as far as keeping Oconee running in the short- to long-term time period is as follows.

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Q And Duke's plan is to ship these assemblies to the most recently completed Duke facility? That is the plan?

A The plan as we have developed for McGuire specifically as far as transshipment goes, has been shown in our economic studies to be the most cost effective and least environmentally burdensome method of providing that storage.

Should we assume that the climate as it exists today continues, which is somewhat presumptuous as far as the dynamic aspect of this area, it is hard to say. But what I am trying to convey here is that the plan as far as Oconee, keeping Oconee running and transshipping fuel is that transshipment is the most economic alternative in terms of Oconee to McGuire. Okay?

And in the future, if this situation continues as it is today, that may be the case. We can't say. We haven't made that second step.

Q You are saying here that Duke's plan is to ship the assemblies to the most recently-completed Duke facility.

Would that include Catawba when it becomes the most recently-completed Duke facility?

A Should we determine that that alternative method of storage is the proper method to take, it is possible. We can't say.

But if I might also point out, this is a document that I kept in my own internal files; something that doesn't

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really impact anyone else in our group. It was something I was doing as a plan and purpose for myself to develop something on other ways that we could keep Orange running. I was trying to cover as far as something that I would go back to later, as far as, you know, things that we have looked at.

These statements here at the first are, you know, as far as what I was trying to convey to you. As far as today's climate, we see Orange's shipboard to McGuire as the best method of providing storage for the Orange requirements that will develop.

It is not to say that in the future that may be the same. It may be, it may not. It depends what the climate that could develop as far as costs, regulatory requirements, public opinion. It is hard to say ten to fifteen years from now what the ability of Duke will be to ship fuel.

CHAIRMAN MILLER: Have you projected your thinking whether personal or corporate, fifteen years into the future in that regard?

WITNESS GLOVER: I would prefer -- that I am more like a management type --

CHAIRMAN MILLER: I know this is a memo to you and I am just wondering if you were using it in that sense to extend it ten or fifteen years.

WITNESS GLOVER: Yes. I was looking here in terms

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of short- and long-run solutions, alternatives you know, to keep Oconee running. And I was just developing specific methods that we could look at.

CHAIRMAN MILLER: I understand.

I'm just inquiring in the same sense in which you prepared this memorandum, NRDC Exhibit No. 3 for identification, did you prepare other memorandum of a similar nature, or did you think about the situation from Duke's point of view as to the spent fuel storage situation say fifteen years from that date?

WITNESS GLOVER: What I'm assuming in all the documents that I may have developed on this, is that the situation then is the same as it is today.

CHAIRMAN MILLER: I see.

Your assumption, underlying assumption is that the situation fifteen years from now is essentially the same as you view it today?

WITNESS GLOVER: That's correct.

CHAIRMAN MILLER: Thank you.

WITNESS GLOVER: All the cost estimates, all the feasibilities are based on a climate similar to today's situation, which as most of us would, I'm sure, be glad to say you can't be certain of.

CHAIRMAN MILLER: I understand.

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BY MR. BOSSNER:

Q ... is a current statement about the fuel
burn planning for the next 20, 30, 40 years into the future
in trying to figure out what courses of action we should
be taking now?

A (Witness Answer) It is my job to look at various
ways of providing this coverage, with or without long term with
and without government facilities, with and without independent
reactor fuel storage facilities, with and without burnishment.

There are just, you know, numerous ways that
storage can be provided, and as a result there are many ways
that you can develop strategies on providing that storage on
your system.

A (Witness Answer) Mr. Miller, may I take a point?

CHAIRMAN MILLER: Go right ahead, sir.

WITNESS SHEAR: When we go out and buy a reactor
we recognize that a reactor life-time may be 30 or 40 years.
We don't go out and buy 30 or 40 years' worth of fuel with
a reactor.

We generally look forward to a reasonable period
of time and contract the fuel on that basis.

Now the same thing is true about spent fuel storage.
We know what goes into that plant in terms of fuel has to come
out the back end of that plant in terms of fuel.

Similarly, we don't provide a lifetime supply of

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storage for the plant. Nevertheless we do look out into the future and we do look at what our system capacity for spent fuel storage out in the future is.

That doesn't mean, however, that there are firm plans associated with that look. It is a very similar analysis to the way we go about fueling our plants. Even though we buy the plant we don't provide it with a 30-year lifetime. When we look at our uranium requirements for that plant, which we do look at, we simply calculate those requirements as being filled from some market contract that we might call contract X for instance.

CHAIRMAN MILLER: Well now, let me inquire further then.

Since you do make these assumptions when you look at one plant, what assumptions does your company make when you look at one plant in terms of the management or disposition of the spent fuel generated during the lifetime from that one plant?

WITNESS SNEAD: Well, we have to make the assumption in the plant, just like we do on the assumption that there will be fuel available.

CHAIRMAN MILLER: Well, what assumptions do you make from the safety or storage or other aspects for the lifetime of that plant with regard to the spent fuel generated from that one plant?

WITNESS SNEAD: We do not make assumptions on the

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safety with regard to the spent fuel.

CHAIRMAN MILLER: Does anybody look at safety factors when you look at spent fuel generation and disposition in some fashion?

WITNESS SNEAD: We look at the safety factors in the license application, when we go to file the license application. But our group does not look at safety per se when we look at long-term planning.

CHAIRMAN MILLER: What you are telling me is you look in terms of the cost, in terms of availability of fuel and certain other things.

You do look at -- your planning group looks at 30, 40 years, the life of the plant. But when it comes to spent fuel management or disposition of that particular plant, it is someone else's responsibility, not your group, is that correct?

WITNESS SNEAD: No, we don't look at safety factors in planning for fuel supply. We look at demands and supply.

CHAIRMAN MILLER: Handling of fuel, I suppose you look at safety factors, don't you?

Maybe not as seriously as irradiated fuel, but still don't you have safety in mind even at the planning stage of your groups?

WITNESS SNEAD: Only in terms of our contractual

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supply, and then our objective is to place that risk on the vendor.

CHAIRMAN MILLER: On the vendor, the manufacturer, the seller?

WITNESS SNEAD: That's correct.

CHAIRMAN MILLER: Well until some point I presume that the risk factor is transferred from the vendor, whoever that might be, to the vendee, which is the Duke Company, isn't it?

WITNESS SNEAD: That's correct.

CHAIRMAN MILLER: At what point is that?

WITNESS SNEAD: When the fuel is delivered to the site.

CHAIRMAN MILLER: When the fuel is delivered to the site, used or becomes irradiated or spent fuel, whose responsibility is it then to start looking at safety factors with regard to whatever disposition or whatever management is to be made of that spent fuel?

WITNESS SNEAD: Those safety factors are included in the construction permit and operating license application.

CHAIRMAN MILLER: It is, in other words, what NRC in its licensing tells Duke, rather than the reverse?

WITNESS SNEAD: That's correct.

CHAIRMAN MILLER: And your group then would have no

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role than or function in that kind of planning?

WITNESS SWEAD: That's correct.

CHARLES MILLER: Whether it be long-term or short-term?

WITNESS SWEAD: That's correct.

CHARLES MILLER: Thank you.

WITNESS BOSTON: Mr. Miller, may I comment?

CHARLES MILLER: Yes, go right ahead.

WITNESS BOSTON: My group really has nothing to do with the direct handling of the fuel at the nuclear station. This is handled by the station under the station manager. The staff group in the steam production department that interfaces with the nuclear station.

With respect to the handling of the fuel and safety aspects of handling the fuel is the production and operation group. We know what is going on, but we are not directly active with those people.

CHARLES MILLER: Your planning group doesn't get involved then in their activities, the activities of this other group whose planning and whose activities are related to safety factors short-term or long-term.

Is that correct?

WITNESS BOSTON: We are certainly involved with them to the extent that we work with them on certain task handling operations, the pipe program, things of that nature.

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We would be involved with them, for example, in a compaction program in one of the pools at the nuclear station. But the overall operation is outside our group.

CHAIRMAN MILLER: Let me just inquire generally then.

What role, if any, would you or your group have if one were to look at the storage on site of spent fuel for the life of the plant in some form or fashion and the question of whether or not that could be done with safety to the public and to anyone involved?

Would you have any role at all in that consideration or analysis?

WITNESS BOSTIAN: We would have this role -- first of all, we would be the group that is determining that it looks like it is attractive to build.

CHAIRMAN MILLER: Let's assume that you are going to build, you are going to be on site -- it is going to be for some 30, 40 years or the life of the plant. Now the question, can that be done safely if in the meantime we assume that there is no other option, government or otherwise, available?

Who is going to make that --

WITNESS BOSTIAN: There will be other groups within Duke Power Company, both the production department and steam production department. Once we begin to --

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CHAIRMAN MILLER: Just finding whose responsibility it would be now in making such an analysis with safety factors, securing on site for the life or even beyond, assuming that was to be the situation in Duke, first of all whether or not your group would have any role, and whether or not it would, what other persons or groups would make such an analysis?

WITNESS BOSTIAN: The other groups -- we would be involved in it in the planning stage. It leads up to a point where we believe that this is going to be the viable option.

At that point we begin to --

CHAIRMAN MILLER: Suppose you are not weighing to see what is viable or not. Suppose that is the only option that you have for whatever reason.

WITNESS BOSTIAN: Okay. At that point we would certainly go to our management to get their approval to proceed. This is a large expenditure of funds.

CHAIRMAN MILLER: Yes, it is. Who would you go to? Names. Give me the specifics.

WITNESS BOSTIAN: We would go to our executive committee, the president of the company, Mr. Lee; Mr. Thies who is the senior vice president in charge of production; Mr. Owen, senior vice president engineering and construction; Mr. Booth, retail operations; Mr. Hicke, corporate affairs; Mr. Grigg, general counsel finance. Those people comprise

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the executive committee and certainly are the only group within Duke that can authorize the expenditure of funds of that magnitude.

We present to them the picture as we see it, and we get their questions, we respond, and out of that meeting we get some guidance as to whether or not we are going to proceed on that course of action.

Once we get their guidance and their direction, that then brings all of the forces of Duke Power company into that project and that includes the steam production department, the design engineering department and the construction department. And all of the forces within those departments begin to address themselves to all aspects of that project, including safety.

CHAIRMAN MILLER: Thank you.

You may continue.

BY MR. ROISMAN:

Q Mr. Snead, let's go back to NRDC No. 2 for a moment.

In the portion that is marked with the little line on page 1, you refer to "avoiding significant costs of spent fuel storage."

I want to get some parameter on that. Let's look at it in terms of ratepayers for a moment. Would a \$5 a month added to the bill of your ratepayers, would you call that a significant cost?

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A (Witness Check) Yes.

Q \$1 a month?

A Yes.

Q 50-cents a month?

A (Pause)

Q You are entitled to have a gray area. On the law that is --

A All right. I think that's a fuzzy area. I think that question when we get down to 50-cents a month is better directed towards the rate department.

I certainly consider \$5 a month and \$1 a month a significant cost to our customers.

Q 8-cents a month?

A You know I'm not really sure about 8 cents. I think the question is better directed to the public, which is the rate payers, as to what they consider significant.

Q You had used this here: "Our plans are premised on avoiding significant costs of spent fuel."

I assume you must have some concept of what it is, so you know what to avoid.

A Yes. I have some concept of the amount of money that we spent so far on spent fuel storage, and I think that is significant. I think the amount of money -- now I might not be up-to-date with regard to the latest step that we've taken in the 1 and 2 pools, but I believe it is something like

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\$12 or \$18 million in spent fuel storage. I think that is significant, yes.

Q But if that turns out to be only a few cents a month to your ratepayers, isn't the ratepayers the place where you want to test it?

I mean it is significant to them. Obviously if it is \$12 or \$18 million out of your pocket, it would be a lot more significant.

A Of course the expenditure of that money to Duke doesn't guarantee 100 percent that the ratepayers will be asked to absorb, or required to absorb that cost.

Q Do you mean to tell me that you are saying that Duke is not going to ask the ratepayers to absorb the cost of spent fuel storage?

A I'm not saying that. We certainly will ask the ratepayers to absorb that cost.

What we are hoping to do, however, is to limit the cost that we have to ask the ratepayers to absorb.

Q But what I'm trying to get is some measure -- I mean, you used the concept of "significant cost." I'm trying to find out, while the absolute dollar numbers might look big if you were thinking about it as an annual salary, whether when it gets distributed to the ratepayers it is still a significant cost, the difference between \$10 and \$20 million when it is translated into the terms of rates. And that is

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what I am trying to get from you.

Now as I understand it, you say the public is the place where one would want to go to measure the significance of the cost.

MR. KETCHEN: Mr. Chairman, may I interpose an objection based on relevance and materiality?

CHAIRMAN MILLER: Yes.

MR. KETCHEN: I thought we were having a rather limited proceeding on what Duke's planning and the cascade plan was all about today.

We are really getting deeply into what I would, myself, envision as the direct case, depending on the Board's ruling later.

The objection is there, and the basis is there.

MR. MC GARRY: Mr. Chairman, Mr. Ketchen beat me to the punch. I was about ready to object also.

I really don't see the relevancy of the rates. I can understand how Mr. Roisman has tied the two together, but how that impacts on whether or not the cascade --

CHAIRMAN MILLER: Well, in the first place I don't think while the subject matter may be limited in terms of possible subject matter, I don't regard the first phase of the hearing that we are in itself to be limited as to depth.

Now the question is whether or not inquiries concerning the cost of spent fuel storage while

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waiting for the government to act in the context of the cascade plan certainly seems to be within that context.

You are considering alternatives. That is the company was allegedly considering alternatives, and their alternatives apparently within their own thinking at least, based upon NRDC's Exhibit 2 for identification certainly does have the concept of the plan's being premised on avoiding significant costs of spent fuel storage while waiting for the government to act. It can be within the range of the papers that are within this Board, and it seems clear to us that the witnesses are the ones who are the most knowledgeable on this subject, these being their own documents at the moment.

So I think that we have overruled the objection, but I have indicated that the fact that we are taking evidence in order to determine the nature of the so-called cascade plan, or program in terms of the issues that this Board is to look at, that is to say whether we are to look at simply and solely the transfer of 300 or 400 spent fuel units from Oconee to McGuire or whether we are to consider it as part of a more extensive or multiple kind of program which has been denominated shorthand, some sort of cascade plan, that decision can be made by the Board only upon a full development, it seems to us, of the evidentiary record in which all plans, all alternative plans are included, not

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limited to the cascade plan.

MR. MC GARRY: Mr. Chairman, just a point of clarification.

CHAIRMAN MILLER: Yes?

MR. MC GARRY: Of course we abide by the Board's decision and we concur with the Board's decision, that certainly significant costs in this sentence and its relationship to government storage is subject to cross-examination as Mr. Reisman is proceeding.

Our objection goes to, really, we are getting a little far afield when we are reaching down now, looking at the ratepayer. That was the nature of our objection.

CHAIRMAN MILLER: Well, I was about to interject, not because of relevance. I was about to ask, what is the approximate cost of a facility that is involved?

In this case, I guess it would be Oconee, and it would be one particular unit you are thinking of, in whatever form. What kind of original capital cost are we talking about, first of all? I want to get some basis of perspective on costs, since you had used the term "significant cost in spent fuel storage," and I am starting by saying, what was the cost of this facility? I know it was extensive. What was your approximation?

WITNESS SNEAD: My approximate cost would be, for a three-unit station, cost \$1 billion.

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CHAIRMAN MILLER: All right. Then when you are talking about avoiding significant costs, put that into some kind of proportion for us now with the concept of what this facility is, and let's understand your own kind of reasoning because I do think maybe there is a valid objection according to ratepayers.

I don't think ratepayers determine in your mind what is a significant cost. But you are really looking at it in terms of what it costs for the plan, what it costs for operation, what it costs -- your particular problem, your cost of alternatives. Isn't that the way your reasoning ran?

WITNESS SNEAD: I don't believe that the cost of spent fuel storage has any relationship whatsoever to what the facility cost originally.

CHAIRMAN MILLER: Well, what does it have a relationship to then?

I, apparently, am not understanding you. That's why I wanted to ask you significant costs. Now there is significant and insignificant. Those are comparative terms. What are you comparing to what?

WITNESS SNEAD: I think I am prepared to answer that question.

CHAIRMAN MILLER: Fine. Go ahead.

WITNESS SNEAD: And I would like to answer the

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question that any cost in the future associated with spent fuel storage, whatever that alternative be, is significant.

CHAIRMAN MILLER: Well wait a minute. You haven't answered the question I asked you.

I asked you to give me some basis for understanding the difference between "significant" and "insignificant costs" as you were using the term "insignificant costs" in this document. And your answer doesn't anywhere approach clarifying for me.

I'm just not understanding you, perhaps. You can do it on a comparative basis, you can do it on a money basis, you can do it anyway you want to. But what I am asking you is when you say your plans are premised on "avoiding significant costs for spent fuel," where do I find the dividing line between "significant costs" in that context, and "insignificant," the difference between them, what your basis is. Any way that is easy for you to explain, but the terms are there and I would like your clarification.

WITNESS SNEAD: I think I would characterize an insignificant cost relative to options that we are looking at -- that's what we are referring to --

CHAIRMAN MILLER: Yes, that's what we are referring to.

WITNESS SNEAD: -- to be on the order of probably --

CHAIRMAN MILLER: Order of what?

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WITNESS SNEAD: -- probably 25 to 50 percent of what it would cost to transport the fuel.

CHAIRMAN MILLER: Wait a minute. "Our plans are premised on avoiding significant costs of spent fuel storage."

And they would be significant then if they approached the order of 25 to 50 percent of the cost of transporting this fuel?

WITNESS SNEAD: Yes.

CHAIRMAN MILLER: Well then what approximate cost was there to transporting this fuel?

WITNESS SNEAD: I previously testified that to my knowledge that cost is between \$2- and \$3000 per fuel assembly on a truck shipment basis.

CHAIRMAN MILLER: How many assemblies were you contemplating in that regard?

WITNESS SNEAD: Well, it can be contemplated on a per-fuel-assembly basis. The license application in this specific proceeding is for a shipment of 300 fuel assemblies from Oconee to McGuire.

CHAIRMAN MILLER: Use that as a multiplier to see what the cost was, as to which you were then comparing 25 to 50 percent. Is that correct?

WITNESS SNEAD: Yes.

CHAIRMAN MILLER: Okay. I understand.

Proceed.

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BY MR. ROISMAN:

Q Let's see if I understand you.

What spent fuel storage plan is there that will cost 25 to 50 percent less than transshipment?

A (Witness Sneed) We have no alternative at the moment I believe that would cost 25 to 50 percent of what transportation costs would be.

Q So do I understand the sentence then should read, "Indeed our plans are premised on avoiding something which we cannot avoid while waiting for the government to act on their plans for storage"? Would that be an accurate restatement of the sentence?

A Yes. Certainly, recognizing that we have to move on some of these alternatives in the future to keep the station operating. That in some respects is undesirable.

Q Mr. Bostian, you indicated to me that one of the things that you considered to be a commitment was if the management told you to get the budget in by July 1. Okay, and I can understand that. I work for people, too.

If the management called you up on the phone today and said, "What are we going to do with the spent fuel from the Oconee plants in the year 1990 and beyond," could you give them an answer?

Would you give them an answer?

A (Witness Bostian) 1990 and beyond?

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Q Yes.

A I can give them the alternatives.

Q What if they said, "Which one are we going to do? What's your best judgment as to which one we are going to be doing in 1990 and beyond for Oconee?"

A The only answer I could give at this point is going to be probably a combination of things.

Q What would those be?

A Independent spent fuel storage pool, government, AFR, reprocessing, expanded pool, any combination of that.

Q In short you would tell them you don't know?

A I'll be frank with you and say I don't know.

Q So you are now generating --

A I have told my management I don't know on a number of occasions. There are some things that you just can't pin down at any given point in time.

Q So let me be clear. You are generating the waste at Oconee, but you don't know where you are going to store it or how, in 1990 and beyond?

A We have no firm plans for storing it.

Q I asked you, do you know?

A I do not know.

Q What about 1985 and beyond?

A I do not know what we would be doing.

Q 1982, June and beyond of that year?

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A I do not know.

Q January 1, 1980.

A January 1, 1980? If we get approval from this Board to move fuel from Oconee to McGuire, we will be storing some of the Oconee fuel at McGuire.

If we complete the reracking that we received approval for yesterday, we will be storing the balance of it at Oconee.

Q If you get the reracking approved before the next refueling at Oconee, if you get it installed and ready to go, will you transship anyway? If you have the approval to do so?

A We would like to have the option to transship.

Q That's not what I asked you.

Will you transship if you have the approval to transship, but you have completed the reracking at Oconee as of the next refueling at Oconee?

A Yes.

Q Is that because you have a plan to prefer transshipment over using on-site storage?

A We need to transship to give us the flexibility at Oconee to permit the exercise of our options later.

Q What does that mean?

A For example, installing poison racks. 274 222

Q In other words, although you have now gotten

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permission to, and I assume begun to rerack Occnee with nonpoison racks, you are thinking that you might rerack it a second time with poison racks?

A That is a possibility, yes.

Q That is one of your possible plans?

A (Nodding affirmatively)

Q You indicated something about the government's -- the Department of Energy's AFR policy as of October '77.

How is your understanding of who will pay the cost of the construction and operation and transportation to the facility that the government builds?

A The user.

Q So that Duke would incur an expense if it used the government AFR?

A That's correct.

Q Have any of you three gentlemen done an analysis of what you think that cost will be per assembly, assuming a location and existence of such a facility by the government?

A (Witness Snead) We are aware of the Department of Energy Impact Statements and Fee Impact Statement I believe made on the charges for interim spent fuel exposure.

I believe, Mr. Miller, that is what Mr. Roisman is inquiring about.

Q No, I'm inquiring whether you have done any study. I'm aware of the Department of Energy one, also.

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Q Was Duke prepared a study to figure out what the economic cost would be to you of using a government RTB if we assume one were built and available?

A No.

Q Can you tell me why, in light of all the emphasis that you have been placing on the use of that government facility if it were available and your emphasis on minimizing the economic costs?

A Mr. Miller, I have said we would use a government facility. I think that we would take a long and hard look at the use of a government facility, specifically for Oconee.

We would take a harder look at Oconee than we would our other reactors.

CHAIRMAN MILLER: Why is that?

WITNESS SNEAD: Sim because Oconee is an operating plant. It has been in operation, as Mr. Boston testified, since 1973. Storage additions are harder to come by at Oconee than they are at the other facilities, so therefore it is natural that we would consider very strongly snapping Oconee fuel to the government.

When we looked at our other facilities we would make the same comparisons against the government away-from-reactor facilities that we make among our own alternatives before we elected to use their facility.

We would have to do that for the very reason that

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we look at costs associated with these other facilities, that is, we are responsible to our ratepayers to what monays we spend in this area.

So we would be obligated to look at the --

CHAIRMAN MILLER: Pardon me. Let me inquire a little bit on that last statement.

I suppose you look at ratepayers both present and future, do you not?

WITNESS SNEAD: Yes.

CHAIRMAN MILLER: And in that sense, do you consider from your own position that if there were a government-away-from storage interim, permanent, whatever facility, that there would be anything comparable that would be available to Duke other than that?

WITNESS SNEAD: I'm sorry. Would you repeat the question?

CHAIRMAN MILLER: If you assume that there is at some time an away-from-reactor facility run by the government for which it makes a charge, whatever the terms might be, would there be any other kind of spent fuel management disposition, whatever you want to call it, available to do other than that on a permanent basis is what I'm really inquiring about.

WITNESS SNEAD: I think it is a question of whether or not there would be at aOcone.

CHAIRMAN MILLER: Or any of your other facilities.

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WITNESS SNEAD: At Catawba those spent fuel pools are designed for 20 years of operation at that facility. So it would be natural then that we would compare the utilization of that storage space to utilization of the government storage space, if the government facility becomes available.

CHAIRMAN MILLER: Would that be limited to the use of Catawba generated spent fuel or would that include possibly spent fuel from some of the other Duke facilities?

WITNESS SNEAD: I believe that if the government facility would become available and we elected, which I tend to believe that we would, elect to ship Oconee fuel --

CHAIRMAN MILLER: I'm inquiring if you have any realistic alternative is what I am really asking you. Would that not be your only realistic alternative if there was such a facility to become available?

WITNESS SNEAD: We would store Catawba fuel at Catawba in that particular case.

CHAIRMAN MILLER: I know. For the entire life of the plant, all of the fuel there and do it with safety. Think about it. We will have a ten-minute recess.

But what I am asking you is to see if there are other realistic kinds of alternatives so that you will describe them for me.

MR. KETCHEN: Mr. Chairman, before we recess, with all due respect to the Board, I think the record needs to be

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clarified, and I would like to interject here --

CHAIRMAN MILLER: Go right ahead.

MR. KETCHEN: -- to make sure that I understand your question. I don't know whether the witness does, but are you talking about ultimate disposal or are you talking about interim storage?

CHAIRMAN MILLER: I am talking about long-range. You might call it interim, or you might call it ultimate, but both in terms of long-range, not ten years, twenty years. The terms have been used in varying senses and I am trying to give it the long range, beyond longer than lifetime of plant, so that the witness will be able to understand the context in which I am asking him to analyze it.

WITNESS BOSTIAN: Did you say beyond the life of the plant?

CHAIRMAN MILLER: Yes. A period longer than the lifetime of the plant. Interim in that sense, which is pretty long-range interim.

MR. KETCHEN: Are you making the distinction between interim storage and ultimate disposal?

CHAIRMAN MILLER: I am talking about perhaps interim management. Remember, these terms have different coloration, but I am trying not to go on to semantics with the witness.

Do you have any difficulty understanding the concept I am asking you to look at?

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WITNESS SNEAL: No. I believe what you are asking is, what would we store at Okauchie for the long term, if government-away-from-reactor facilities were available.

CHAIRMAN MEMBER: That's correct, that's the question.

We will take ten minutes.

(Recess.)

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CHAIRMAN MILLER: We will resume.

MR. ROISMAN: Do you want to go another hour?

CHAIRMAN MILLER: We will recess for lunch at 12:30 for an hour, hour-and-fifteen-minute, hour-and-a-half, depending on our consensus.

You may proceed.

MR. ROISMAN: I think Mr. Snead had an answer.

CHAIRMAN MILLER: Yes; he did. Did you have a chance to think about it?

WITNESS SNEAD: I will repeat the question and answer the question.

CHAIRMAN MILLER: Fine.

WITNESS SNEAD: The question was what would we do at Catawba in the future if the government away-from-reactor storage facility were available. I would say that what we would do would be to store Catawba fuel at Catawba. Of course, there have been no plans relative to Catawba fuel except to store it at Catawba.

If there is a final repository available in the future, we would ship Catawba fuel to the final repository. Both of those contemplations, however, carry with them a third contemplation.

We would certainly hope that reprocessing would be available in the future and we would ship Catawba fuel to the reprocessor.

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CHAIRMAN MILLER: Why would you choose reprocessing over ultimate management or disposal by the government.

WITNESS SNEAD: If there is reprocessing available at that time, the waste that would go to the ultimate repository would be those wastes from the reprocessing facility as opposed to spent nuclear fuel assemblies.

CHAIRMAN MILLER: Well, at Catawba you would have spent nuclear fuel assemblies. If you had a choice then, I think you told me you would send it to some reprocessing facility, whether it be government, private or mixed, in preference to sending it to some ultimate waste disposal or management facility, assuming probably government at that point; is that correct?

WITNESS SNEAD: That is correct.

CHAIRMAN MILLER: Why would you make the choice of reprocessing over ultimate management or disposal?

WITNESS SNEAD: Because the reprocessing facility turns around recyclable fuel for use in the reactors. It minimizes volumes associated with waste. Potentially, it offers positive dollars to the ratepayers in that the fuel may have, say, a positive value as opposed to a negative value.

CHAIRMAN MILLER: I think the testimony was originally that when the planning was first made as to what to do with the spent fuel, that reprocessing was one of the original contemplations.

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WITNESS SNEAD: Yes.

CHAIRMAN MILLER: It remains so, then, if feasible?

WITNESS SNEAD: Yes.

CHAIRMAN MILLER: And because it may result in either more dollars to the utilities or less dollars detriment than some alternative type of ultimate disposal or management that would be the preferred choice still at Duke, if I understand?

WITNESS SNEAD: Further reprocessing?

CHAIRMAN MILLER: Yes.

WITNESS SNEAD: Yes.

CHAIRMAN MILLER: Thank you.

MR. ROISMAN: Mr. Chairman, let me say most of what Mr. Snead said about why reprocessing is good we disagree with. It is not in the context of this case. I would not put a witness on to that effect, although my witnesses will coming down would testify to it. I didn't want my silence to suggest that that was an accurate description of reprocessing.

BY MR. ROISMAN:

Q Mr. Snead, Duke does have a spent fuel storage plan. That is, you would use reprocessing for spent fuel storage if it were available; is that correct?

A (Witness Snead) We would use reprocessing for the reprocessing of spent fuel assemblies if it were available; yes.

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Q That would handle your spent fuel storage problem?

A If it were available in sizable quantities it would handle the spent fuel storage problem.

Q If the magnitude were sufficient, it could take the stuff?

A Yes.

Q Would you say Duke is committed to that, if reprocessing is available?

A We have a contract now which is a commitment on reprocessing with the Barnwell facility.

Q Is it a commitment that you must ship or a commitment that they must accept?

A From my perspective it is a contractual agreement. Legally, whether that agreement is enforceable, I guess, would have to be argued by the Duke lawyers or by the AGNS lawyers.

Q If the reprocessing is not available, it is your testimony that you do not have a plan to use a government away-from-reactor storage facility, if it were available?

A I previously testified that I believe we would ship Oconee fuel to a government away-from-reactor facility, if it were available.

Q So, then, that is another plan that you have? at least with respect to Oconee fuel, you do plan to ship to a government AFR, if one is available?

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A Yes; that is correct. There would be -- we would have to look at, however, what the Department of Energy would charge for that service.

Q So, it is a plan with a contingency, namely, cost?

A Well, one never really has a plan until he looks at all of the details that would be associated with a government offer to us to take our spent fuel.

Q So, you want to change your testimony and say it is not a plan?

A No; I said that I believe that we would ship Oconee fuel to the government away-from-reactor facility. Then, I qualified that to the extent that those terms and conditions offered to us by the government are satisfactory to Duke Power Company.

Q Would you believe that you would use transshipment in the cascading sense, in the same way you said you would believe you would use a government AFR if we assume there is to be no AFR available until 1990?

A I believe that if there is no away-from-reactor facility available until 1990, we are going to continue to explore all of our alternatives. As we previously testified, in that interim time period, every one of our storage plans is amenable to implementation between now and 1990, if the government facility is not available until 1990.

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CHAIRMAN MILLER: Do I understand you to say every one of your facilities or plans for use of the facilities or storage alternatives is and would be available? I understood you to say they would be available.

WITNESS SNEAD: We would review all of those plans.

CHAIRMAN MILLER: I thought you said be available?

WITNESS SNEAD: I am sorry, if I did. I meant we would continue to keep all of those options alive.

BY MR. ROISMAN:

Q Let's be clear then. Earlier when the discussion was had on keeping the "options" open and the statements I think were made probably by all three of you -- I know at least by your and Mr. Bostian -- that you wanted to evaluate beyond this 300 fuel assemblies transshipment that we are looking at here, what you would do as you got closer to the date. I think Mr. Bostian you talked about the decision point being the time at which it was too late, you start dropping options off; that is when you would start making your decision.

When you said that, there were two options that you didn't really leave in the uncertain case. Option 1 which would be your preferred, is you would be able to ship for reprocessing and you would feel you would do that. In fact, you have a contract to do so, at least at Barnwell.

Option 2 would be the use of the government ^{274, 234} ~~274, 234~~

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which you believe you would use if it was available, although you have studies left to do. And those are on a higher level than all of the other options: transshipment, re-acking, pin packing, building of a Duke-owned independent spent fuel storage facility at the reactor site or away-from-reactor sites.

Am I correct? Have I summarized that correctly, Mr. Sneed?

A You will have to repeat the last part of your question.

(The reporter read the record as requested.)

WITNESS SNEAD: Yes; I believe you have summarized it correctly.

The government away-from-reactor storage facility is another alternative. I think it has a higher importance relative to the Oconee Nuclear Station than it does to our other nuclear stations.

BY MR. ROISMAN:

Q Why is that?

A Simply because of the fact that Oconee is already operating and has a large quantity of spent fuel present already at that station.

MR. ROISMAN: The beeper distracted me. Would you answer the question again. I was distracted in hearing it

WITNESS SNEAD: Simply because Oconee is

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operating. At Oconee we have implemented certain provisions to increase the capacity of the spent fuel pools. We will certainly implement other provisions to provide supplemental storage for Oconee as we have made application on this transshipment.

Somewhere down the road, however, at Oconee, with the exception of the independent spent fuel storage facility, we will run out of these other options, if they are all implemented. In that particular case, the government away-from-reactor storage facility does have a higher importance to the operation of Oconee than it does to the operation of the other Duke reactors, simply because the other Duke reactors are not into the operation mode yet; they are into the design mode and there are other options.

Basically all of the options are available to the reactors in the design status.

BY MR. ROISMAN:

Q You mean that with respect to McGuire, Catawba, Cherokee and Perkins, one option that is still open is that the facility could be made capable of holding a lifetime of spent fuel at the site? That is one of the options that is still open there?

A At Catawba, there is in place 20 years of storage capacity for that station at the moment. At McGuire, we couldn't certainly provide within the existing envelope a

sak9 lifetime of storage. But the option is available that we could increase the storage as McGuire within the present confines of the pool envelope.

Q Your counsel calls me you have a copy of the Applicant's answers to our interrogatories, the first set and if you do, I would like you to take a look at that and particularly page 9 of your answers. Page 9 is a part of the answer to Question 10.

MR. KETCHEN: Could you give us the date?

MR. ROISMAN. The date of the response is March 27.

WITNESS SNEAD: I don't believe I am at the -- page 9 is 24 or 3?

MR. ROISMAN: I am sorry?

WITNESS SNEAD: I am not sure I know where you are.

MR. ROISMAN: I am on page 9 of the document. It is Question 10. But what is on the top of page 9 is a 6. You have subparagraphs in there.

MR. MC GARRY: Mr. Chairman, may I assist the witness?

WITNESS BOSTIAN: You said first set of interrogatories?

MR. ROISMAN: Your answers to our first set.

CHAIRMAN MILLER: Mr. McGarry, can you locate it for the witness?

WITNESS SNEAD: Okay.

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MR. MC CARRY: Mr. Roisman, what page was that, please?

MR. ROISMAN: Nine.

BY MR. ROISMAN:

Q Mr. Snead, I believe if you look over at page 10, you will see that under d, you are listed as one of the people responsible for that answer and I want you to now look at the bottom of the paragraph 6 on page 9, the third sentence from the bottom, beginning "Poison rack".

Would you read that sentence, please?

A (Witness Snead) Yes; "Poison rack usage for the McGuire 1 pool has not been planned because transshipment is considered the best means for handling the spent fuel until either reprocessing and/or government waste storage facilities are made available.

"McGuire Unit 2 racks have not yet been installed. Additional storage capacity at this pool is under consideration.

Q Now, is it a correct statement that that -- those sentences that you read mean that with regard to Oconee, Duke is committed to using a government away-from-reactor storage facility if and when it becomes available?

A I have not said that Duke is committed to use of a government away-from-reactor facility. What I have said is I believe that Duke would ship fuel from Oconee to a government away-from-reactor facility and then I qualified

eak11 that to the extent that we would have to look at the terms and conditions.

Q As I understand it, have you have made a specific plan based upon the assumption that you would ship it from Oconee to an away-from-reactor storage facility, if available.

Isn't that correct? Didn't you say here you wouldn't do poison racking in Unit 1 because transshipment is the best means given the assumption you would go to reprocessing or a government waste storage facility if it were available?

A You are referring to poison racking usage in McGuire Unit 1?

Q I am referring to your foregoing an option based upon your perception of what you would do if a government AFR were available. I am saying, didn't you forego an option here on the assumption that you would, in fact, use the government away-from-reactor storage if it were available for Oconee fuel?

A I don't think we have foregone that option as of yet. I think that option is still available to us regardless of the outcome of this proceeding.

And state, however, that we have no plans at the moment for putting poison racks into McGuire Unit 1 and we do not have any firm plans at the moment for not putting poison racks into McGuire Unit 1.

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Q Isn't it true that if you once put Oconee fuel into McGuire Unit 1 spent fuel pool that it would be more expensive to put poison racks in there than it would at the beginning?

A I think it will make the job somewhat more difficult. I am not sure whether or not it would make the job that much more expensive.

Q Would it make it more expensive?

A There would be some additional cost associated with poison rack installation at McGuire if the pool is filled with water.

Q Would it also include losing the expenses incurred in putting in non-poison racks and then having to take them out and dispose of them?

A Yes; but the racks in McGuire 1 are already in the pool. If we take them out with the pool dry, we are still going to have to -- I am not sure what we would do with those racks up there now.

Q Isn't it a difference if they have once been subjected to radiation? Don't they become a waste as opposed to merely a surplus?

A Yes.

Q You would have to throw them away if you ever put the Oconee fuel into McGuire 1 but if you took them out now and put in poison racks you might be able to find another

eak13 reactor who would buy them from you?

A I can't visualize another reactor that would want to buy the McGuire racks. I would say they would become scrap. We would also use them for rebar to pour concrete around.

Q Which you couldn't do if they were waste?

A That is correct.

Q What has been done, right?

A I am not sure.

Q Not Duke.

Would you have more worker exposure if you rerack McGuire with poison racks after you have put Oconee fuel in there than if you reracked with poison racks without Oconee fuel in there?

A I would say there would be some dose considerations in reracking the McGuire 1 pool with poison racks if we proceeded on that option after we put Oconee fuel in.

Q Let's go back to the question. You have made a decision about how to use the McGuire 1 pool based upon an assumption that shipping Oconee fuel to a government AFR storage facility is a preferred option; is that correct?

A No; I really don't think that is correct. What we have made a decision here to do in this application is simply share some of the Oconee burden with the McGuire Unit 1 pool.

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Q But doing so has some disadvantages to the company which you felt were outweighed by the advantages associated with ultimately being able to use a government AFR if one were available; isn't that true?

A Yes; and I would say that we weighed those disadvantages relative to the poison racks that we have just previously talked about.

Q And yet -- one more question. You did testify earlier that for you, at least, a major and even primary consideration in deciding which of the spent fuel storage options you should pursue would be the economic considerations; is that correct?

A Certainly.

Q Yet, didn't you just testify that you have never done an economic analysis yet of what the cost of the Government AFR would be to Duke and therefore, how do you know that that is such a preferred option? Why are you so in favor of it?

A Well, what we would like to do is continue to keep the government away-from-reactor facility available as an option for Oconee fuel. The fact remains that that could be our lowest cost option with regard to handling Oconee fuel and we would simply like to keep that as one of our alternatives.

Q My question was -- we have already gone through

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this now. I hate to keep going through it again.

You indicated you gave up something in order to take the transshipment option over the reracking with poison racks option at McGuire. You did it because the government AFR facility would be better for you and transshipment would be better for that option than any other thing that was available.

You say you haven't done any cost studies on the government away-from-reactor storage facility. How do you know it is so good to preserve that for Oconee that you give up reracking of McGuire with poison racks, with the disadvantages associated therewith for it?

A What we are giving up at McGuire is relatively minor in terms of the disadvantages and the costs. When we would move to give up the option of government away-from-reactor storage facilities, that would be a very substantial move. Who knows, the government may require us to ship this fuel to a government away-from-reactor facility.

Q Are you telling me by transshipping from Oconee to McGuire is the only way you could make it possible for Oconee to utilize a government AFR, if one were available?

A The answer is no.

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Q Do you have any reason to believe that the cost of a government AFR per fuel assembly would be less than building an independent spent fuel storage facility at Oconee

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eak16 for Duke to store its Oconee fuel in?

A No; we are aware, however, that those costs would be spread out over a number of years so there would be far less impacting capital requirements on Duke as opposed to Duke financially trying to raise several millions of dollars to build an independent spent fuel storage facility.

Q In other words, there is an economic advantage in your judgement to the use of the government AFR over Duke building its own facility with the same storage capabilities?

A Inherently, there are advantages to capital needs when they are spread over a number of periods of years, than if they are required on a one-shot basis.

Q Isn't the October '77 statement by the Department of Energy regarding this to the effect that there would be no subsidy given to the utilities for the use of the government AFR?

A (Witness Boston) There would be user charges to cover cost.

Q If the user charges cover capital being made available, wouldn't you have to pay more for having the government pay the capital up front for you, if you were to avoid the subsidy?

A The user charges would be paid at the time the user commits to receive the storage capacity. What Mr. Snead is saying is our commitment of those user storage charges

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on a step-by-step basis as we need the additional capacity would be less than if we had to make it all in one lump sum to build an independent spent fuel storage facility.

Q As I understand it, the government will have had to pay for the facility with up-front money, right? And if they are to be reimbursed for their cost, wouldn't they have to get you to pay them for the carrying charges they had, having put their capital up in 1986 for a facility you don't start using until 1987?

A (Witness Boston) That is correct; but we would use a smaller portion of that government AFR and we would use it on a step-by-step basis. Mr. Sneed is saying that we would have to put all of our money up front to build our own independent pool.

Q You would use less of a government AFR than you would use of your own independent spent fuel storage facilities if you built them for your plants?

A When you talk about a government AFR, you are not talking about just one. You are talking about more than that. That capacity would be built on an incremental basis. We would contract for our needed increments on a step-by-step basis.

Q I am trying to get at volume, though. If a government AFR were available by 1985, would the volume of nuclear wastes that you shipped to be stored in it or in the

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numbers of them that are available, be different than the volume of spent fuel which you would be storing at your reactor sites in an independent fuel storage facility, if there were no government AFR?

A The volume would be the same.

Q Same number of assemblies?

A That is correct.

Q Mr. Bostian, in NRDC Exhibit No. 1, for identification, the sentence that I have marked with a little line along the side begins with, "I am particularly concerned that our response to the questionnaire will give information on our shipping program."

What do you mean? What were you concerned about?

A First of all, we had not made any public announcement about the plan we had at that time to move Oconee fuel to McGuire.

We have a very careful program under which we are certain that all of the internal Duke departments are aware of impending NRC submittals. We were not ready to submit a submittal at that time.

We just weren't ready for that information to get out to the public.

Q Does this go back to your concern with the political considerations? That is that you feel there might have been some adverse political fallout if you were to

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have had it be known that you were planning to ship Oconee and McGuire fuel to Catawba at that time?

A Where could have been; yes.

Q Are those also considerations in your preference for the use of a government AFR, that is political considerations?

A There are some political considerations there. I think one point we ought to make with regard to Oconee, with Mr. Sord's reference to shipping Oconee fuel to a government AFR, you mentioned 1985 as the availability date. Oconee will be 12 years old at that point.

Q Happy birthday.

A And you have to look at the remaining life of the plant as to what you decide the best method of disposing of the fuel for that plant is.

Where we are looking at the government AFR over a shorter period of time, it may be more attractive than building an independent pool for Oconee.

Q What are the factors that make that possible? The pool can be sized to the lifetime of the plant, can't it, even if it is 12 years old?

A Yes; but you need a smaller pool than you would for a full-life plant. It may be that you can get that space cheaper with a government AFR. See, that is one of the factors that I think he was referring to.

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Q Let's test that for a moment. You have three units at Oconee. What will the number of assemblies be that you will need if we assume it will have a 30-year operating life, 18 more years after 1985? Wouldn't that already be as large as the government AFR module, 1500?

A Yes; again, but I go back to my analogy whereby we are contracting for that government space on a step-by-step basis as we need it, as compared to building a single large independent pool at Oconee.

Q The potential economic advantage of the government -- I say potential because we have all conceded there hasn't been a study done by Duke on this -- is the extent to which you reduce capital requirements at a particular time and stretch them out?

A That is correct.

Q And if the government found some way to eliminate that advantage by jacking the charge up so there would be no incentive for you to wait for them in an economic sense, we might end up with it being in terms of economic considerations alone, no different to Duke whether it used the government facility or built its own.

A There is one other consideration I think you should consider and that is the ultimate disposal of those fuel assemblies.

Q By ultimate you mean in a permanent repository?

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A That is correct. Yes. That enters into it as well.

Q You mean when that is going to happen?

A Well, when it is going to happen and how it is going to happen.

Q But is it my understanding that Duke considers it might be a political advantage not to have the spent fuel that its reactors are generating stored within the Duke system and that it would be politically advantageous to have it stored out of the Duke system in a government AFR? Just political advantage now.

A No; I don't think that is correct.

Q You think it would be a political advantage for you to keep it in the Duke system?

A I don't think it makes any difference. You phrased the question, is it a political advantage if we get it out of the Duke system into a government AFR. I don't think that is a political consideration.

Q You don't think it hurts you politically one way or another in the context we have been talking about political considerations here?

A No.

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Q Mr. Glover, in NRDC No. 3, this opening sentence on page 1 says, "Duke's plan to alleviate the problem of an over abundance of spent fuel assemblies until the government

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develops a program of its own is to ship the assemblies to the most recently completed Duke facility."

What do you refer to when you say "until the government develops a program of its own"? What did you have in mind by that government program?

A (Witness Glover) Mr. Roisman, one aspect of our planning as far as what I am looking at in terms of alternatives, costs and feasibilities is what sort of spent fuel storage requirements we might need on our system depending upon some sort of a date that you might establish for such a facility.

Q I am still trying to find out what facility you mean. Define for me what "government develops a program" means? What kind of program?

A In this context I am speaking of an AFR facility or a permanent repository. Something available to the United States utilities for the storage and/or disposal of spent fuel assemblies.

Q So you are assuming there that Duke would ship to a government AFR if one were available?

A What I am saying there is that as far as what we have looked at --

Q Answer my question. Are you assuming that Duke would use a government AFR if one were available? Is that what you mean when you say "until the government develops a

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program of its own?"

A Yes.

MR. ROISMAN: I would like this marked as NRDC No. 4, please, for identification.

CHAIRMAN MILLER: It will be so marked.

(NRDC Exhibit No. 4, for identification, was marked.)

BY MR. ROISMAN:

Q I have handed you, Mr. Glover, a document dated October 12, 1978. With the exception of the penciled phrase at the top "Duke blunders" -- I am sorry -- these are my internal notes --

A (Witness Bostia) What was the phrase?

Q "Duke blunders." I want to make sure Mr. Glover isn't testifying he wrote that up there. With the exception of that, is this document a correct copy of a document prepared by you?

A (Witness Glover) Yes.

Q Would you direct your attention to the first page after the cover which has at the top, "Latest NRC Questions". The last line of 1, would you read the last line, please?

A "Thus we could have kept our full core reserve, FCR, capability until Catawba became available if we had completely reracked earlier."

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Q Are you saying by that, with the obvious benefits of 20/20 hindsight, that it would have been preferable to have reracked earlier and thus have been able to wait until Catawba had become available?

A Not necessarily.

Q What is the significance of your putting that down? Why did you write that down at all?

A The reason I wrote this is in response to a question, as to that specific question at the top of that statement. If Duke had completely reracked Oconee 1 in 1976 or 1977, could we have avoided shipping to McGuire. What I was attempting to do here was to develop a number of assemblies as far as reracking capacity that would be necessary to allow us to avoid any sort of a transshipment, if that was to be the case, if we were to have reracked the 1 and 2 pool at that time.

Q Is it your judgment that in ter of keeping options open, having not chosen to rerack Oconee earlier did to some extent foreclose the option of avoiding transshipment to McGuire?

A Not necessarily. We have stated in our documents that should we rerack the Unit 1 and 2 pool this year, it may be possible that shipments to McGuire could be avoided. However, we have requirements for operations at Oconee which may necessitate those shipments; even in this case, the da e

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that we are looking at here for some supposed Catawba
availability is say mid-1981.

If we were to assume now that that date is somewhat
in question, then this memorandum may be somewhat outdated.

Q If Catawba were not available by mid-1981, you
might have to ship to Mobile even if you got reracking
completed before the next refueling outage at Connee?

A If we assumed that that was the economically
feasible alternative, that we would discuss within our
group. That is a possibility.

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Q Economic and political.

A I'll discuss political.

Q Well the politics start above your level.

A Yes.

Q Okay. I won't ask you about politics.

MR. ROISMAN: I have a document I would like to have marked as NRDC Exhibit number 5, please.

(Whereupon, the document referred to was marked as NRDC Exhibit number 5 for identification.)

BY MR. ROISMAN:

Q Mr. Glover, this is another one of yours. It's dated December 8th, 1978, Memo to the File, Subject: Contingency Plans for spent fuel storage, File Number 0S51426.

With the exception of brackets around the first paragraph and the large A in the margin, is that a correct copy of a hand-written memorandum by you to the file?

A (Witness Glover) Yes.

Q Now in it you make an assumption regarding the period of time that it might take for the license, design, construction and testing of an independent spent fuel storage facility of 32 to 44 months, is that correct?

A In this document, those numbers do appear.

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Q Okay.

And is it correct that you then, on the second page of the document, make a calculation based upon which one of those would be the actual number of months that it would take for all those things to be completed of the "latest date decision to go on an ISFSP can be made"?

A No, that's not true.

Q All right.

Would you explain to me, then, what Table 1 purports to be?

A Yes.

What your statement was is that I attempted in the second page to determine which of those dates -- which number of months is correct as far as developing.

Q I'm sorry if I left you with that impression. I did not mean to say that. All I meant to say was that you did try to relay the assumed construction completion time to a date on which a decision would have to be made if you wanted it to be completed assuming reracking of Occonee.

A That's correct.

Q So in other words, when one looks at an independent spent fuel storage facility, one of the things that you do is what you've done here, you calculate what's my lead time and then what the deadline is for me to make a decision on whether to go with it.

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POOR ORIGINAL

mpb3

A That's correct.

Q Can you give me a judgment based upon analyses that you have done, is the deadline for building an independent spent fuel storage facility at Oconee still in the future, or has it already been passed?

A In my judgment, that's already past.

Q When did it pass, in your judgment?

A If you will note, on the first page, in the development of this 32 to 44 month value that I estimate for an independent spent fuel storage facility, design, license and construction time, I have assumed the current licensing and construction. Mr. Hager, who has developed testimony for this proceeding, has estimated 60 months for this on a preferred basis, 45 months on a rush basis.

If you would look at my 29 month figure that I have there as far as design and construction of such a facility, add to that some three to six months for testing time, and instead of including concurrent licensing provide instead licensing prior to construction, you would find that that construction time would be more in line with what we and others in the industry most like to feel you would be faced with in the development of one of these types of facilities.

CHAIRMAN MILLER: I think you were asked when did the time pass.

mpb4

WITNESS GLOVER: If we assume it's a 60 month schedule, which seems more reasonable in these days and times, it would be 60 months prior to May of 1982, five years prior to that. That would have been the date that you would have had to have made the decision to go with such a facility to have it ready by that time. And that's assuming that you had at that time decided to rerack your Unit 2 pool with high density type racks as well.

CHAIRMAN MILLER: That date would then be 1977?

WITNESS GLOVER: Yes, some time in 1977.

CHAIRMAN MILLER: What month?

WITNESS GLOVER: It would be May of 1977.

CHAIRMAN MILLER: May of '77.

Thank you.

WITNESS GLOVER: Also, if you further take his rush schedule that he would present, I'm sure you would see 45 months prior to that May 1982 date as the date that you most likely would have had to begin the design, licensing and construction to be able to have it available at that time.

If you'll note, Mr. Roisman, here also what I tried to do here is to develop something at this time period and back in December of last year what I would consider to be the times that you could develop on these.

Now I considered concurrent licensing and construction to give it, you know, your most optimistic time schedule.

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POOR ORIGINAL

mpb5

MR. ROISMAN: Mr. Chairman, the witness is going off anticipating that I want to set him up against Mr. Tager because the numbers come out differently. And I may want to do that, but today isn't the day.

And I wish you would answer my question --

CHAIRMAN MILLER: Well, we'll rule that the latter portion of the answer is not responsive. We'll ask you to direct your next question, please.

Just answer your question and if another explanation is required you may make it briefly.

Next question, please.

WITNESS BOSMAN: Mr. Chairman, may I consent?

CHAIRMAN MILLER: Well, we're getting into a little trouble procedurally because we want all the evidence to come out, but you are being cross-examined as a panel. Now, I don't know, you may be opening up avenues that the examiner doesn't want.

So I wish to deal with you courteously, and I will say before you leave you will be able to give us the comment. But at the moment I think I had better leave it to the discretion of the cross-examiner.

WITNESS BOSMAN: Thank you, sir. 274 258

BY MR. ROISMAN:

Q Mr. Glover, if we assume that the 300 spent fuel assemblies proposal for transshipment is approved for Oconee,

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and that the reracking is completed, and you utilize that, and that your full core reserve capabilities were preserved through May of '82 and that you utilize all the 300 spent fuel assembly transfers that you get out of this action, if it's approved, what would the deadline then be for making a decision on whether the next step for Oconee is to build an independent spent fuel storage facility? When does the deadline date come then?

MR. KETCHEN: Mr. Chairman, I must interpose another objection of relevancy and materiality.

I just think we're getting in -- again we're getting far afield of what this is about. I think those types of questions should come later in the case, depending on what the Board ruling is. Those types of things seem to me to be the essence of the case once you get past this first hurdle.

And we're just, it seems to me, getting way into the substance of the case and not talking anything about a set Duke plan to do something. I just can't understand where we're going. And that's the basis of my objection.

I think it's interesting and should come out later, but for our purposes here today I just question the line of questioning and answering.

Once again, it's an analysis of alternatives, and I think that's to come up later.

(The Board conferring.)

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CHAIRMAN MILLER: Will you give us a statement of the relevancy in terms of the consideration of the cascading plan versus other alternatives, Mr. Roisman?

MR. ROISMAN: Yes, Mr. Chairman.

The witnesses have stated that Duke, at least in some sense, doesn't have any plans and that they've "only planning to keep all their options open".

What I'm trying to discover is the credibility of that statement. Are they already planning not to keep the independent spent fuel storage option open. That will depend upon Mr. Glover's answer to this question that tells us -- We know they've already passed one date when they might have been able to do it. Now I'm looking for another date.

Does this transshipment proposal automatically mean there's got to be another transshipment or a poison racking and that independent spent fuel is out of the question as the next option?

DR. LUEBKE: And how does that relate to the issue that we must decide of whether cascading is a viable plan, and if we decide that the Staff has certain consequences from such a decision?

274 260

MR. ROISMAN: Our purpose is to show that -- We're testing the credibility of the witnesses. You've heard them this morning testify that although through documents they used the word "plans", they didn't mean the word "plans".

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And I'm now trying to find that out.

If I can show that they allowed -- Mr. Bostian testified that there were critical decision points, that the decision points were the points at which all the options were still open, and then they would decide. And those haven't come.

DR. LUEBKE: So we're on to language and definitions.

MR. ROISMAN: We're on to whether or not they really do have a cascade plan in their head and whether or not they really do favor the use of the cascade plan as a holding action for government AFR rather than their opening statements, which were that all they really want to do is get a 300 spent fuel assembly transfer approval and they'll keep all their options open and we shouldn't be worried.

DR. LUEBKE: Okay.

(The Board conferring.)

CHAIRMAN MILLER: The objection will be overruled.

We do ask that you screen very carefully your questions, but we do think that this is proper for the purpose of testing and probing in a manner that the cross-examiner is entitled to in this particular kind of inquiry.

Now proceed.

BY MR. ROISMAN:

Q My question was:

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mpb9

If you assume that Duke gets and uses the reracking at Oconee and gets and uses the right to transfer 300 spent fuel assemblies to McGuire, when would the deadline be for deciding whether the independent spent fuel storage facility would be the next thing you did at Oconee?

A (Witness Glover) Well, Mr. Roisman --

CHAIRMAN MILLER: What was the question now? When?

MR. ROISMAN: Yes.

CHAIRMAN MILLER: When you have a "when" question, give him a "when" answer. And then define.

WITNESS GLOVER: I would imagine at this time we have not passed that decision point if we assume 300 shipments on top of this present rerack.

BY MR. ROISMAN:

Q What does that give us in terms of years, how many is 300 given?

A (Witness Glover) Somewhere in the neighborhood of two years.

Q So that would be two years beyond May of 1982, roughly?

A Roughly.

Q So May of 1984?

A Possibly.

Q And if we assume 60 months, Mr. Hager's preferred

274 262

mpbl0

route, when would the deadline be for a decision on the independent spent fuel storage facility for Oconee?

A If you assume Mr. Hager's 45 month --

Q I'm sorry, I said Mr. Hager's preferred 60 month.

A Then we would have indeed passed that by one month.

However, the schedule is such -- I do not have right in front of me as to when we would lose full core capability with the shipment addition. I have it somewhere. I could probably develop it. But it's not to say that we have not passed the point where we could develop an independent storage facility with transshipment and with reracking. It may be necessary in the future to rerack further with the poison racks to be able to do it.

Q I understand.

Now I was just looking at the things which you've already committed to do. I realize you could stretch the time out. You could shut the Oconee units down for a while. That would stretch your time out. You have a lot of these options discussed in one of these exhibits.

But I'm just trying to get clear with what you've already committed to do when the deadline date passes.

CHAIRMAN MILLER: Well, I think the answer was, now using the preferred 60 months, that it would have passed by one month as of today's date.

274 263

WITNESS GLOVER: If we assume two years as a

POOR ORIGINAL

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specific amount.

CHAIRMAN MILLER: Yes.

MR. ROISMAN: Okay.

BY MR. ROISMAN:

Q Now, Mr. Bostian, does your department -- Your part of the company now have a plan for making a decision on whether you're going to order an independent spent fuel storage facility any time within the next six months?

A (Witness Bostian) The first step in that plan is the document you received from me this morning. You asked for it this morning, and it was identified as Applicant's Exhibit number 1.

Q All right.

And have you identified a date on which you were going to make a decision about whether you are going to seek an independent spent fuel storage facility for the Oconee site?

A We will make a decision on the next step for expanding the Oconee capacity just as soon as we can after this proceeding is closed.

Q Why is it geared to when this proceeding closes?

A Because people are involved in it who are tied up in this proceeding.

Q So you mean that even within maybe one or two weeks after the hearings have ended Duke might make an

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announcement one way or another about whether they will or will not seek an independent spent fuel storage facility for the Oconee site?

A They may or may not, because in that document this morning there is the two step expansion that would be accomplished. The first is replacing the existing racks with the high density poison racks, and then the second step beyond that is the independent pool that would take that station out to the year 2000.

Q Gentlemen, I'm going to ask some questions and I'd like you to answer them individually, but I want all of you to answer the questions. They relate to how you put your testimony together for this proceeding this morning.

Will you tell with whom did you consult in the preparation of your answers to the questions that were asked this morning on direct examination, if anyone?

A (Witness Bostian) Did I consult with anyone?
No.

Q Mr. Sneed?

A (Witness Sneed) On the answers this morning?

Q On the answers to the direct questions, the ones that were asked by your counsel of you. It's called the direct testimony.

Did you consult with anyone with respect to those answers before you gave them this morning?

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A The specific answers?

Q Yes.

A No.

Q Mr. Glover?

A (Witness Glover) No, sir.

Q Did you review with anyone what questions you would be asked in order to prepare in your own minds what it was that you wanted to answer?

Mr. Bostian?

A (Witness Bostian) Yes.

Q Mr. Snead?

A (Witness Snead) Yes.

Q Mr. Glover?

A (Witness Glover) Yes, sir.

Q Did anyone explain to you the legal ramifications of the concept of "plans", "commitments", and other terminology that's been used in the course of both your direct and your cross-examination?

Mr. Bostian?

A (Witness Bostian) No.

Q Mr. Snead?

A (Witness Snead) No.

Q Mr. Glover?

A (Witness Glover) No.

Q Do any of you have any concept of what it means

mpbl4 Legally as to whether Duke is considered to have a plan or not
a plan for spent fuel storage with respect to Occanee?

Mr. Bostian?

A (Witness Bostian) No.

Q Mr. Snead?

A (Witness Snead) No.

Q Mr. Glover?

A (Witness Glover) No, sir.

Q When you wrote the memorandum that constitutes
NRDC Exhibits number 1, 2, 3, 4, and 5, in many of them anyway
you used words like "plan".

Did you at the time you wrote them have any
understanding of any legal implications that might attach to
the use of those words?

Mr. Bostian?

A (Witness Bostian) No, sir.

Q Mr. Snead?

A (Witness Snead) No, sir.

Q Mr. Glover?

A (Witness Glover) No, sir.

MR. ROISMAN: Subject to the right to recross, we
have no further questions.

CHAIRMAN MILLER: Very well.

We'll take our lunch recess.

The witnesses are returning. We're not excusing

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the witnesses. They will return after lunch.

MR. KETCHEN: Mr. Chairman, did you make a decision on exactly when we're coming back yet? There was a variation.

CHAIRMAN MILLER: Well, what do you recommend?

MR. KETCHEN: It's kind of hard sometimes. Maybe quarter of two.

CHAIRMAN MILLER: All right.

MR. ROISMAN: When was that? I'm sorry.

CHAIRMAN MILLER: 1:45.

(Whereupon, at 12:30 p.m., the hearing in the above-entitled matter was recessed, to reconvene at 1:45 p.m., this same day.)

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ALTER

AFTERNOON SESSION

1:45 p.m.

Whereupon,

R. BOSMAN

H.T. SNEED

and

A. GLOVER

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

CHAIRMAN MILLER: Okay, the hearing will resume.

I believe, Mr. Roisman, you stated you had concluded your cross-examination at this time.

MR. ROISMAN: That is correct, Mr. Chairman.

CHAIRMAN MILLER: I think the State of South Carolina may have some questions.

MR. WILSON: Thank you, Mr. Chairman.

CROSS-EXAMINATION (Continued)

BY MR. WILSON:

Q Mr. Bosman, earlier you made reference to the fact that this transshipment as an option was the most economically attractive plan. And I think Mr. Glover later on stated, in looking at that option, there was no consideration made on the safety factors from your standpoint, from the Nuclear Fuel Services Department.

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In that context, could you tell me whether there was any consultation with anyone regarding safety factors in arriving at transshipment as a viable option?

In determining whether it was viable, was there any safety consideration given?

A (Witness Bostian) We have had many interactions with the State of South Carolina and the State of North Carolina regarding the safety of transportation of spent nuclear fuel.

I certainly didn't intend to imply that we had not had those considerations. As I understood it when Mr. Miller queried me on the question of safety, I was thinking in terms of plant safety in handling the new fuel and the fuel handling system and the spent fuel at the station.

It didn't enter into my thinking that the question was directed towards the transportation. But, safety is the major consideration.

We have also had interaction with the Department of Transportation.

Q All right.

And this is, I presume, in regard to the specific 300 fuel assembly shipment we were considering originally?

A One or any number.

Q Or any number.

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Is that correct?

A (Nodding affirmatively.)

Q Can you tell me whether dose levels to the public that you estimate from those shipments have been based on the lone shipment, or some series of shipments?

A I'm a little shaky when I start talking about dose shipments.

The EIA as I understand it in this case is based on the 300 shipments, to the best of my knowledge. I think that will come out later in the testimony on the case itself.

MR. WILSON: Mr. Chairman, that basically was all I really wanted to explore at this time.

CHAIRMAN MILLER: Thank you.

Any further cross-examination?

MR. KETCHEN: Yes, sir, I have a few questions that were raised by the other cross.

BY MR. KETCHEN:

Q Mr. Bostian, I believe you were asked questions about your definition about some words. I would like you to give me your definition of some words based on your previous testimony today in this case.

Now I am asking for a distinction in the words.

Is there any distinction between the phrase "contemplation of a plan," and "having a plan"?

A (Witness Bostian) Contemplation of a plan and

and

having a plan.

Q Yes. Is there any distinction?

A There is a distinction.

Q Would you provide your distinction in short?

A My idea of contemplation of a plan is just sitting down and thinking what you can put on paper to give you some idea of what might be accomplished.

And the plan itself is an idea on paper.

Q Mr. Bostian -- well, let me go to Mr. Sneed.

I would like to hear your answer to the same question.

A (Witness Sneed) Contemplation of a plan versus having a plan?

Q Yes.

A Well, I guess I would read the words "contemplation of a plan" would mean that I have an idea about a certain way of handling a plan and I want to explore it briefly.

As opposed to having a plan, I would think that I had fully explored details and know exactly what it is that I'm going to do.

I think in contemplation of a plan you really don't know what you are going to do.

Q Fine. Thank you.

Back to Mr. Bostian. Do you have a definition in your mind of the term "research" as it relates to the questions

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you were asked this morning?

A (Witness Bostian) I don't understand the question.

Q With respect to your --

CHAIRMAN MILLER: I don't recall any research type of question. Maybe you should refresh my memory on that, Mr. Ketchen.

MR. KETCHEN: There was no research type of question.

CHAIRMAN MILLER: Oh, I misunderstood you then.

MR. KETCHEN: But, if you want to know where I'm going --

CHAIRMAN MILLER: No, I'm not inquiring where you are going. It was where you had been.

BY MR. KETCHEN:

Q What is your definition of "research" then?

A (Witness Bostian) Research?

Q Yes.

A That, to me, is looking at a question that you don't understand, trying to arrive at some better understanding of the question.

Q Okay.

What is your definition of a study?

A Of a study?

Q Yes.

A That is looking at a particular set of circumstances, trying to assemble those circumstances in some orderly fashion,

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and perhaps drawing some conclusions.

Q And what is your definition of a proposal?

A Of a proposal? Well, there is certainly a legal definition, and that is a document on which one party proposes to another certain conditions under which he will fulfill certain obligations.

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Q Mr. Sneed, I would like to run through the same series of questions with you.

Do you have a definition for research?

A (Witness Sneed) Well, I guess my mind may be prejudiced about research that we do in fuel. I would tend to answer it very similarly, I think, to the Witness Bosnian, answer it, research implies that you have a need for answers and you establish a program to get to those answers.

Q Okay.

Would you answer the same question with respect to what your definition of a study is?

A Well, if I were to define a study, I would say it was a look at a particular set of circumstances, maybe, that possibly could include some recommendations and conclusions, but not necessarily so.

Q Okay.

The same question with respect to proposal. What is your definition of a proposal?

A Well, I tend to, being a fuel contracts man, I

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tend to define a proposal that comes before a contract, and that's basically the extent of my definition of a proposal.

I guess it is a document that you would make, that two parties would sit down and strive to achieve an agreement.

Q Could it also be a recommendation to your superiors to take an action?

A Yes. Yes, it could be a recommendation to superiors to take an action.

Q Mr. Snead, I would like to call your attention to Duke Power Company's response to NRDC discovery, and it is Question 10, and the response was on -- that I want to talk about -- is on page 9 under item 6. It is dated March 27, 1979.

(Counsel McGarry handing document to witnesses.)

And you have been furnished a copy of that document, I see.

On page 9, you were asked some questions about the sentence that starts out:

"Poison rack usage for the McGuire 1 pool has not been planned because transshipment is considered the best means for handling the spent fuel until either reprocessing and/or government waste storage facilities are made available."

Was that conclusion based on, in your interpretation, research or a study?

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A It is based on a study.

Q All right.

When you used the term "government waste storage facilities" in the term "either reprocessing and/or government waste storage facilities," are you talking about ultimate waste disposal?

A I would tend to believe that we would be talking about either the ultimate repository or interim spent fuel storage facility.

Q Do you believe that?

I need to know what you mean by that term, what the precise meaning is.

A I would say the precise meaning is one or the other. Or both.

Q Or both.

Then your assessment of "best means" -- let me rephrase that.

Is your assessment of -- or use of the term "best means" based on interim storage -- I'm sorry, the availability of interim storage provided by the government?

A Interim storage or the final repository or reprocessing.

Q So it is either or both as far as your judgment of the "best means" is based on that definition?

A Yes, sir.

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Q Thank you very much.

CHAIRMAN MILLER: Is that all, Mr. Ketchen?

MR. KETCHEN: Yes, sir.

CHAIRMAN MILLER: Thank you.

Does anyone else wish to cross-examine before we turn to Mr. McGarry who has the right of redirect?

MR. BLUM: Yes, sir.

CHAIRMAN MILLER: All right, go ahead.

BY MR. BLUM:

Q Mr. Glover, is cascade, is that your term?

A (Witness Glover) I believe in the testimony this morning that we have seen, it is a term that has developed within the industry and has been picked up somewhat within Duke Power memoranda.

Q Are you the person who coined it in terms of Duke Power's proposal?

A No, I am not.

Q But you have used it?

A Yes, sir.

Q Are you basically the person who conceived of the cascade plan?

A No, I am not.

Q Who was that?

A I think that would be better answered by Mr. Snead.

Q Mr. Snead?

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A (Witness Snead) I certainly was one of the parties that conceived of transshipment or the cascade plan, or interstation transfer, or what have you as one of the alternatives for handling spent fuel storage problems.

Q Who else at Duke participated in that idea? Creating that idea?

A As I recall at that particular time we were performing these various studies, we involved my section, Mr. Hager's section in civil engineering department of our design engineering department; Mr. Elliott's -- John Elliott's section in the mechanical engineering section of design engineering. And I believe those were the various departments involved in formulating these types of alternatives.

Q Mr. Snead, is this based on the fact that Duke is in a rather unique position with regard to utilities, in that it has a whole series of plants under construction or proposed?

A Certainly we have a whole series of plants under construction. There is no contemplation however, of helter-skelter type cascade plan involving all thirteen of those units as has been implied.

Q Well, did you not at one point plan on moving spent nuclear fuel into the Catawba -- well, into the Cherokee and Perkins plants when their fuel pools were completed?

A We do, indeed contemplate those sort of things. Specifically, however, the executive committee of this company

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has directed us to isolate Cherokee and Perkins from any fuel shipments from Cooper's nuclear station.

Nevertheless, we sit back in our cubbyhole and contemplate that sort of thing.

Q Well, when did you receive that directive from your executive committee?

A In 1976.

Q Nevertheless you went ahead and worked out contingency plans that would utilize the stored -- the spent nuclear fuel storage pools at those plants?

A Certainly.

Q Now you had planned on an away-from-reactor government facility up until early 1977, is that true?

A I'm sorry?

Q You had planned on an away-from-reactor government facility until early 1977?

A Well, it was early 1977 that President Carter stood up and said, you know, gang, we are going to defer reprocessing and at the same time we are going to take your spent fuel.

Then along about October the Department of Energy came out with their spent fuel offer to the utilities.

So no. I wouldn't say that we were counting on the government away-from-reactor storage facility in early 1977.

Q But up until early 1977 you had counted on that as

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an alternative.

A Up until early -- no, no, no. We had been counting on reprocessing.

Q Well, as I said, up until early 1977 you had planned on an away-from reactor government facility as a repository of some sort for fuel.

A No, I just said that this particular problem wasn't officially created until -- depending on how you look at it -- either by Mr. Fox's statement in October 1976, or Mr. Carter's statement in April of 1977.

So, no one was contemplating away-from-reactor interim spent fuel storage facilities until the problem was created.

Q But up until whatever, April of '77, let's say, you thought the government was going to deal with spent nuclear fuel in one way or another, reprocess it up until that date, right?

A No.

We, with respect to the reprocessing issue, we certainly would not object if the government would get into that, get into that segment of the industry at this particular moment. However, we feel that reprocessing is better left to the private sector of the nuclear fuel cycle.

Q When did you conceive the cascade plan, Mr. Snead?

A Mr. Blum, I will pass over the use of the word

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cascade plan. We have looked at transshipment on and off several different times. I would say throughout year '74 potentially '75, probably '76, '77, '78, '79 and we will look at it again next year.

Q When did it become -- when did transportation of spent nuclear fuel become your first option in dealing with the fuel at Oconee?

A We have stated that the economics of spent fuel transportation at the moment appeared to be very favorable. We moved to implement transportation option in March of 1978 when we filed application to move Oconee fuel to McGuire.

Q You moved on the cascade plan, or the transportation from one reactor site to another basically after the government had failed to follow through on either reprocessing or storage.

Isn't that true?

A Yes. We would like to see the government live up to the mandate given to them by President Carter.

Q Your answer was "yes"?

A Yes.

Q And it is true that your plan in the entirety was -- is still to use the Catawba spent nuclear fuel pools to store fuel from McGuire as well as Oconee?

A Well the Catawba pool is very large, a very large pool and we will certainly keep open our alternative and

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our option of using that pool to solve our spent fuel storage problems.

Q Do you have a plan to that effect?

A We do not have set in concrete, absolute, unwavering plan that we will ship spent fuel to Catawba nuclear station.

Q Mr. Snead, do you have on paper, a contingency option alternative to use the Catawba fuel pool for the storage of Oconee and McGuire spent nuclear fuel?

A I have stated that where the circumstance is necessary down the road to utilize the Catawba pool for the storage of Oconee fuel specifically and for the storage of McGuire fuel, that we would not hesitate to make an application for that pool to be available to store those two units' fuel.

We do not at this moment have a concrete move underway to make that a course of action.

Q Do you have a draft application?

A A draft application?

Q Yes.

A Similar to this application?

Q Yes.

A Not that I am aware of.

Q Whose section would that come from?

A Well, any draft application of this particular type would originate in our licensing group. I assume that

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I would be aware of that sort of thing.

Q Mr. Bostian, are you aware of any draft application with regard to storage of spent nuclear fuel from other plants at Catawba?

A (Witness Bostian) I am not.

Q Are you aware of any application regarding the conversion of the Oconee spent nuclear fuel pools to poison racks?

A I am not.

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Q You are now reroacking Oconee, Mr. Bostian, in high-density racks, Oconee 1 --

A Oconees 1 and 2, yes.

Q Why are you not reroacking them in poison racks now?

A The reason that we are not reroacking Oconee 1 and 2 in poison racks was essentially one of inability to secure the poison racks and install them on the available schedule.

Q You have not foreclosed the option of reroacking Oconee in poison racks?

A We have not.

Q By what factor would that extend the Oconee capacity?

A The Oconee capacity, I believe, would go out to the poison racks, to about 1989.

Q Let me, if I can, go back to Mr. Snead.

I take it that since Cherokee and Perkins have been

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delayed -- well, let me ask you first of all if Cherokee and Perkins have been delayed in the beginning of the construction at least of their spent nuclear fuel pools?

A (Witness Sneed) I'm sorry, I didn't get the question out of that.

Q Have the Cherokee and Perkins plants been delayed?

A It is my understanding that recently the Cherokee and Perkins stations have been delayed. I understand that's been printed in the newspaper. I haven't seen a newspaper for several days and I haven't seen a Duke Power correspondence on that matter.

Q The delay of those plants, if that is a fact, would not affect your calculations about transportation of spent nuclear fuel since those plants were not to be used in any case.

Is that what you are saying?

A Well, when we take our hypothetical looks at system storage capacity, we will just reflect that delay into those hypothetical looks. But those units stand on their own at the moment with respect to spent fuel storage.

Q Now why is it -- and I'm not sure who is the proper person to ask this of -- probably Mr. Bostian -- why is it that you have not reracked or racked McGuire in poison racks at this time?

A (Witness Bostian) The reason we did not rerack

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McGuire 1 in poison racks at this time is that we are incorporating the storage of Oconee fuel in McGuire 1 as noted in the application before the Board.

The future rerecking of McGuire 1 with poison racks is not precluded.

Q Are you saying that the only reason you haven't put poison racks in McGuire is because of your proposal to transport from Oconee to McGuire?

A That's correct.

POOR ORIGINAL

Q And you wouldn't be able to get poison racks there on time?

A The decisions made to go with titanium stainless steel high-density racks at a point in time before -- when I say we I am speaking of Duke Power Company -- were satisfied with the viability of poison rack designs.

Q You were not satisfied. Is that --

A When we made the decision to go with the high-density racks, in other words to replace the original racks, Duke was not satisfied with the viability of poison racks, so we went with the high-density stainless steel racks.

Q And you haven't pulled out the high-density racks and put in poison racks, or haven't started that because you want to have some racks in there to receive the Oconee fuel?

A That's correct.

Q If it were not for that -- the Oconee fuel --

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Ocone fuel's impending arrival if you get a license, would you change those high-density racks to poison racks?

A Mr. Blum, we would have to take a look at it. Those are fairly large racks for the McGuire units, good for about seven years. And I think we would have to take a look and make a decision when we felt like it was at the decision point with respect to either high density or an independent fuel storage facility.

Q Do you have any racks in the McGuire 2 pool at this time?

A We do not.

Q When will a decision be made about what kind of rack you want to put in there?

A We have been looking, of course, like we have discussed previously this morning, at all of our spent fuel storage situation, and we are again not at the decision point.

Q Do you know when that decision point will be reached?

A I can't tell you specifically.

Q Well, Mr. Snead, Mr. Glover, can you give me a date on either of them.

A (Witness: Snead) On when we will make our next decision --

Q When will you make your decision about what type of rack to put in McGuire 2 fuel pool?

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A I can't tell you exactly when we'll do it. I could hazard a guess that it will not be far off.

That is a poor choice of words. It will not be very long before we will make a decision on McGuire.

Q And now, Mr. Bostian, I think you testified about your feelings about a government away-from-reactor storage facility as opposed to Duke building its own facility, as Duke hoping to save lump-sum costs in that regard.

Is it basically your financial position that you want to save current money, current Duke money in the hope that the government will build something that will pull you out of this dilemma?

A (Witness Bostian) All we are doing, Mr. Blum, is trying to maintain our options so we can best evaluate future storage alternatives, and government storage is one of the alternatives.

Q Isn't it fair to characterize your whole plan as saving as much money in the present that you can, in hopes that the government will bail you out some way in the future?

A I don't agree with the term of "government bailout," as Mr. Poisman and I discussed this morning.

Government storage will be made available to users on a full cost recovery basis, including advance payment. So I don't see that as a government bailout.

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Q Well, is it not true that you want to spend as little money as you can at present, in hopes that there will be a government-funded solution in the future?

A We want to see if that government facility -- not government-funded -- I think you will find it will be utility-funded -- we want to see if that goes forward and the terms and conditions under which that space will be available.

Q Mr. Glover, have you factored into your transportation option cost, the potential cost of the second or third transportation of the same fuel?

A (Witness Glover) Nowhere in my studies of this alternative will you see specific fuel assemblies referred to as being transferred from one facility to another, and that same specific assembly being transferred to another.

Q But the movement of Ocone fuel to McGuire is made with the contemplation of moving some other spent fuel at some other -- well, it is made in contemplation of a second movement of that same fuel to another facility at some point, is it not?

A In my evaluation of alternatives, I have looked at the ramifications of a complete transshipment plan and I have developed costs on that plan. And what I stated earlier is that, you know, in a planning mode that I have gone through to develop the costs to compare with other types of ways of providing storage at your Duke facilities, I have not specifically

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broken out, you know, one specific fuel assembly going from here and that same fuel assembly going to another class.

Q Isn't it true that every fuel assembly move from Oconee to McGuire is going to have to be moved again for some kind of permanent or long-term storage?

A That's a possibility.

 We are hoping that in the future there will be alternatives available such as reprocessing, such as waste repositories, such as AFRs.

A (Witness Sneed) I would like to point out, Mr. Blum, down at Oconee we have moved fuel so many times I feel like I know each fuel assembly personally, and not one has left the site yet.

Q Do any of you happen to know how much -- Mr. Bostian, I suppose, should know -- how much fuel was in Oconee at the time of the 1975-76 reracking?

A (Witness Bostian) There was no fuel in unit No. 3 and I would say that Tom and Mike can correct me, probably one reload at discharge from unit No. 1.

Q Mr. Bostian, do you know what happened to the Department of Energy away-from-reactor storage site plan?

A They withdrew that offer and prepared a Draft Environmental Impact Statement and we have been tied up in this -- I can't tell you the precise status of the statement.

Do either of you know?

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A (Witness Snead) What was your question again?

Q What has happened to the DOE away-from-reactor plans?

A That legislation which is an Administration Bill, not a Department of Energy Bill, and Administration Bill -- that means it came from the President of the United States of America -- is in Committee in the Senate.

CHAIRMAN MILLER: Mr. Blum, I believe your interrogation is getting repetitive and probably unnecessary.

MR. BLUM: I am moving, I am trying to go along as fast as I can.

CHAIRMAN MILLER: You are not listening to me.

The Board thinks we have had just about enough evidence. We have another witness. There is no sense in prolonging the decisionmaking process, is what I'm trying to tell you, or indicate to you.

So we suggest maybe five minutes should suffice for your purposes.

BY MR. BLUM:

Q Did you ever consider the physical enlargement of Oconee No. 3 fuel pools?

A (Witness Snead) You mean the fuel pools?

Q Yes, sir.

A (Witness Glover) Mr. Blum, our design engineering department in conjunction with this updated study of the

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independent spent fuel storage facility of varying sizes and the costs associated with that, have also looked at the development of such a facility adjacent to Unit 3 pooling and that will be developed in the evidentiary hearing, I suppose.

Q Do they use the same machinery, or do you know?

A I don't know.

Q Are you preparing an application for an independent spent fuel facility at Oconee now?

Any of you?

A (Witness Snead) You mean for submittal to the Nuclear Regulatory Commission?

Q Yes, sir.

A No, sir.

Q Have you done any preliminary work along those lines?

A I think Mr. Bostian has talked about some work that has gone forward.

Q And the decision on application could be made in as little as two weeks or three weeks from now?

A That work is not on a draft application to the Nuclear Regulatory Commission.

Q Mr. Bostian, how long would it take you to prepare such an application from what you have?

A (Witness Bostian) I would say that we are just in

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the very, very early stages of making decision -- a decision as to whether or not we would opt for the independent spent fuel storage facility.

A (Witness Snead) I would like to point out, I don't know if the NRC knows whether or not there is even any in-place criteria on what sort of licensing action it would take to build an independent spent fuel storage facility.

Q Mr. Bostian, if there is a stay on the McGuire license as there is, and it is not lifted for a year or so, how would that affect your ability to store fuel there, and what would that do to the costs involved?

A (Witness Bostian) When you say a "stay on the license," McGuire license, you are not talking about this proceeding?

Q No, I'm talking about the other, the Part 50.

A The Part 50 proceeding?

Q Yes.

A Well this is a Part 70 proceeding, and as I understand it, it is independent of a Part 50 proceeding.

Q Have you been told that unless McGuire is granted an operating license and the stay is lifted, that the Staff would not agree to fuel being stored there?

MR. MC GARRY: Mr. Chairman, I am just going to raise an objection.

I don't see how this is getting to the cascade

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program that is before us.

CHAIRMAN MILLER: I doubt if it is really.

Mr. Blum.

We will sustain the objection.

MR. BLUM: I have no further questions.

CHAIRMAN MILLER: Any further cross-examination?

MR. KETCHUM: Yes, sir.

Mr. Blum's questions have raised a question in my mind Mr. Chairman. I thought I was through, but before we go to Mr. McGarry for redirect, I think if we could get it all before the Board, it would save him time.

CHAIRMAN MILLER: Very well.

BY MR. KETCHUM:

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Q Mr. Shead, are you aware of the operating license application for Catawba?

A (Witness Shead) I have recently been made aware of the operating license application for Catawba.

Q Do you know that that's been filed with the Nuclear Regulatory Commission?

A Yes.

Q Have you read that application?

A No.

Q Have any of your gentlemen read that application?

A (Witness Glover) No.

A (Witness Bostian) I have not.

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Q Have you been told, or do you otherwise know whether or not that application discusses storage of Oconee fuel at Catawba?

A I'm aware that there is some reference in there. I don't know the exact wording, but there is some reference to the storage of Oconee and McGuire fuel.

Q At Catawba?

A At Catawba.

MR. KETCHEN: That completes my questions.

CHAIRMAN MILLER: Thank you.

MR. ROISMAN: Mr. Chairman, the procedure just used was a little unusual to me. Do I understand if something that one of the other parties' cross raised --

CHAIRMAN MILLER: For the limited purpose of this inquiry. Yes, we are sort of modifying the normal usual courtroom procedure rules.

Do you have some more cross?

MR. ROISMAN: I have only two questions, but I didn't know if I would have to wait and hope Mr. McGarry stumbled into them in redirect.

CHAIRMAN MILLER: No.

BY MR. ROISMAN:

Q Mr. Bostian, is it the current Duke plan that you would not --- an action which would be inconsistent with leaving open your ability to utilize a government AFR if one

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were constructed and made available to you?

A (Witness Bostian) Would you repeat that, please?

Q Is it correct that Duke's current plan is not to take any action that would be inconsistent with Duke utilizing a government AFR if one were built and made available for Duke sometime in the future?

A I don't think the actions that we have taken or are contemplating are inconsistent with availing ourselves of government AFR storage.

Q That wasn't my question. I appreciate that answer.

What I am trying to find out is, is it your present plan not to take any actions that would be inconsistent with Duke being able to take advantage of a government AFR if one were made available in the future.

A Is it our plan not to take any action inconsistent with our availing ourselves of government AFR storage in the future?

Q Yes.

A Yes, we are not going to do anything that would prevent us from taking -- making ourselves -- taking availability of government AFRs.

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CHAIRMAN MILLER: Further than that, is it Duke's plan not to do anything inconsistent with that aim or objective?

WITNESS BOSTIAN: I would say yes, at this point.

BY MR. ROISMAN:

Q You answered earlier that as soon as these hearings were over and you could get back to doing your normal routine, you were going to focus on the question of whether or not you want to go with the independent spent fuel storage facility at the Oconee site. It is only this period of time that the hearings are taking up that is keeping you from getting to it right away.

Is that a fair summary of what you said earlier?

A (Witness Bostian) I think that is a fair summary. I said earlier and you have it in Applicant's 1, there are two plans for expansion at Oconee. First is poison racks replacement of high density racks.

Q That is what is discussed in the memorandum?

A That is what is discussed in the memorandum that we will be looking at.

Q Okay. If these hearings were suspended for six months for any reason, would that give you the opportunity in that suspension to address the issue? Would there be something --

A I don't think the suspension of this hearing would

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make a great deal of difference in looking at this.

Q I didn't mean would it affect the outcome. Would it give you a chance before the six-months suspension were over to have completed your analysis and reached a decision as to the option presented to you in that Applicant's No. 1?

A I still don't understand the question.

Q As I understood your earlier testimony just a moment ago, it is the presence of the hearings, these few weeks that the hearings are set aside, that is keeping you from getting down to the business of reading that memorandum carefully, discussing it with the rest of the people you would normally consult with and making a recommendation in regard to what action to take in light of the data contained therein.

I am asking you if the hearings went into suspension for six months, would you then be able to have the time to address that and to give an answer rather than having to wait until the hearings were over.

You are not waiting for us physically to complete the hearings to do it. You said that. It is just the timeframe; isn't that right?

A Yes; but the hearings ought to be over within the next couple of weeks.

Q If they proceeded without suspension that is a possibility. If we left here today and didn't come back for

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six months, would you be able to address this independent spent fuel storage and poison reprocessing at Oconee and have a decision on what before we get back here six months from now?

A I don't think it is necessary that we get a decision within six months, looking at the timetable as I mentioned earlier, where we make our decisions at the decision lead point time.

Q I thought we had from Mr. Glover a statement earlier that at least under Mr. Rager's preferred option of 50 months, we may be close to the time on making the choice if all you were going to do was go with the independent fuel storage facility and not go with the poison reprocessing?

A That is true if you're looking solely at the independent spent fuel storage facility.

Q Do I understand your testimony about reserving time to make a decision is not going to be reserving time to make a decision exclusively for an independent storage facility, but to reserve a time to make a decision on a combination of two things, which as you let the time pass, automatically forces you to do both of them or neither of them?

A That is correct.

Q In effect, you have to plan with regard to how you do an independent spent storage pool facility at Oconee only

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after you first rerack with poison racks; is that correct?

A That is correct.

MR. ROISMAN: I have no further questions.

CHAIRMAN MILLER: Redirect?

REDIRECT EXAMINATION

BY MR. MC GARRY:

Q Mr. Bostian, this morning the discussion focused on the distinction between plans and commitments. Do you recall that examination?

A Yes.

Q I ask you the question, Mr. Bostian, bearing in mind the cascading discussion, what is the status of cascading in relationship to the discussion between plans and commitments?

A Cascading is simply an alternative.

Q Could you expand upon that a little bit? What do you mean by an alternative?

A An alternative that has been considered. There is no certainty that the cascade program will be carried out beyond the current transshipment application or beyond.

Q Would the cascading as an alternative be in the same position as the independent spent fuel alternative, as the poison rack alternative, as the reracking alternative, as one of your alternatives?

A That is correct.

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Q The question was asked, Mr. Bostian, whether or not you have firm plans to take care of spent fuel in the 1990s. I believe you indicated you did not.

A That is correct.

Q To the best of your knowledge, Mr. Bostian, is Duke Power Company able to accommodate spent fuel in the 1990s?

A That is correct.

Q And how could it accommodate it?

A Through the various expansion programs that we have carried out and the other programs that will be available plus the transshipment application that we have here.

Q Discussion focused upon the poison rack option at McGuire Unit 1 and whether or not that had been precluded. Has that option been precluded?

A It has not.

Q Mr. Bostian, discussion also focused upon the cost associated with a Department of Energy away-from-reactor facility. Are you aware of DOE projected costs for such a facility?

A We are aware of the DOE projected costs and proposed charges.

MR. MC GARRY: May I have a moment, Mr. Chairman.

(Pause.)

MR. MC GARRY: I have no further questions, Mr. Chairman.

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CHAIRMAN MILLER: Thank you. I take it that concludes the testimony at this time of your panel?

MR. MC GARRY: That is correct, Mr. Chairman.

CHAIRMAN MILLER: You may step down.

(Witnesses Bostian, Glover,
Snead excuse^d.)

CHAIRMAN MILLER: Do you call that you have another witness or Staff has a witness?

MR. MC GARRY: Applicant has no further witnesses.

MR. KETCHEN: We have a witness, Mr. Chairman.

Staff calls Brett Spitalny.

Whereupon,

BRETT S. SPITALNY

was called as a witness on behalf of the NRC Staff and, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. KETCHEN:

Q Would you state your name and address and occupation?

A My name is Brett Spitalny. I work for the Nuclear Regulatory Commission in the Fuel Reprocessing and Recycle Branch. In that position, I am project manager for the Duke Power Company license action. I am also the project manager for the CE Morris spent fuel facility renewal.

Q Mr. Spitalny, I would remind you of the Board's

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admonition this morning. I am in a funny position and it is difficult to look both ways. Try to address yourself to the Board. I think the recorder can hear you and the Board can hear you that way.

During the course of yesterday's proceedings, we were asked to provide some information, I believe by Dr. Luebke, about the number of cracking applications and spent fuel pool modifications that have been approved. Could you give that information to the Board at this time?

A Yes, I can.

The numbers are not as easy as just giving you X amount and Y approvals. It is broken down into the number of operating reactors, the number of utilities under construction permits and the number of ones that are under application for construction permits.

It is an involved answer but I will continue about it. There are presently 67 reactors, light water reactors with operating licenses.

This does not include presently Indian Point 1, Humboldt Bay or Fort St. Vrain, which is a helium gas reactor.

Of the 67, 52 applications have been received from these operating reactors. In that 52, this includes six applications from reactors that have come in for a second time. Forty of the 52 applications have been approved.

That 40, those include the decision on the Oconee 1 and 2

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rerack applications.

I would also at this time like to make one clarification on an issue that was brought up yesterday and I think was mentioned once this morning, with regard to who that decision was made by, whether or not it was Mr. Denton or the Commission.

If I can clarify that, what that was, was the NRC Staff did their analysis of it and came up with their evaluation. Mr. Denton at that point, in light of the Minnesota case, wrote a letter to the Commission, to all five Commissioners, saying that we have evaluated the case and we are prepared to issue an amendment to the operating license to allow for the expansion.

That letter was given to the Commissioners. A poll was taken of the Commissioners. I do not know the exact number but obviously it was a favorable decision.

The Commission is aware of the licensing application. Continuing on, the 46 first-time applications, this is excluding those six, affect the storage capability of 50 of the 67 light water reactors.

The remaining seven are broken up in different ways. Dresden 1 presently moves fuel from Unit 1 to Unit 2 and 3. There are four facilities which received approval to increase the capacity before they received an OL. Two facilities presently have not come in with any requests for an increase in capacity at all.

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For construction permit, basically there are 90 construction permits that have been issued. There have been 19 applications to increase capacity that affect 33 of the reactors. 33 of those 90 construction permits. The review of those 33 -- excuse me, of the 19 applications, are being folded into the overall review of the licensing -- review for the CP -- for the OL, excuse me.

There are 32 applications for a CP, construction permit, presently. Six have been received to increase capacity over what was initially proposed. That would affect the storage at 11 reactors. Basically, that breaks it down.

That is an in-depth look at it but those are the numbers.

Q Does that complete your answer on that?

A Yes; it does.

Q It has come up a number of times -- first of all, let me ask you this question: In your capacity as project manager, would you explain the development of the environmental -- let me ask this. Was the environmental impact appraisal assembled under your direction and supervision?

A Yes; it was.

Q It has come up a number of times today and I believe yesterday about the number of spent fuel assemblies that have been reviewed in this case with respect to the Oconee

eak10 transshipments. Would you explain how that number of 300 spent fuel assemblies comes into this case?

A Yes; I will. I don't believe you will find anywhere in the Duke application, any reference to a specific amount of assemblies to be shipped. The number 420 does not appear in that application.

The way that we arrived at the number 300 is in Section 16 of that application is the safety analysis in which Duke did perform calculations for heat-up rate of the spent fuel pool at McGuire.

They made some assumptions in doing that and the assumptions they took were that they were shipping five batches of 60 assemblies. Basically, I am not saying -- they are not shipping 60 at one time but they are being shipped at the frequency of one per day in batches of 60 and ending up with 300.

That was the analysis they performed. During the course of the review I myself did an independent calculation for the heat-up rate and also took that number 300 and performed the calculation.

We then realized to put a bounding limit on this thing, we have to put a limit on the amount of assemblies that can be received in the pool. If we say we are doing calculations for 300, if you put 301 assemblies in there, the calculations are no longer valid.

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At that point, we contacted Duke in written correspondence and asked them if they had anticipated to ship more than 300 assemblies for them to respond in writing as an element set to the application.

They chose not to do so. Subsequently we have put a licensing condition on 300 assemblies on that application.

Q You indicated the EIA was assembled under your supervision and direction. When was it completed?

A December 1978.

Q When did you know about the so-called cascade plan?

A I was aware of intentions to ship fuel back in the early stages of the review. I cannot recall a specific date. It was as a result of communication with Duke.

To put a rough time on it, it was six or seven months prior to the issuance of the document. I just hesitate to say I was totally aware of what the cascade plan is because I don't know if my definition of the cascade plan is consistent with what Duke's definition of the cascade plan is.

CHAIRMAN MILLER: We would like to have an explanation of that.

MR. KETCHEN: That is the next question.

BY MR. KETCHEN:

Q As you first came to know the Duke Power Company cascade plan, would you define your understanding of the cascade plan; what you understood it to be?

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A Yes; basically they were anticipating shipping Oconee fuel to McGuire and they were also anticipating shipping Oconee and McGuire fuel to Catawba. It did stop at Catawba. There was no mention or I was not aware of anything going beyond that to Cherokee or Perkins.

If that was the definition of a cascade plan, it did go to Catawba.

Q Would you state whether or not that was the basis of your at least guideline in assembling and supervising and directing the environmental impact appraisal?

A You say was that the basis for determining the guideline of developing --

Q You don't understand. Let me rephrase it. Would you tell us how you took account of that so-called cascade plan in doing your review of the Duke application?

A Basically we became aware, and when I say "we" I mean the Staff, became aware that at some date there would be more than 300 shipments. We did have to make an analysis of what was actually going on here and if we were getting ourselves into something we shouldn't be licensing.

We had to make some assumptions -- not really assumptions -- but we had to find out some specifics about it in determining what we were going to do about reviewing the application, if we were going to limit it to 300 assemblies or request -- or if we had to look at more.

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Basically we decided to look at the exact action that was being pursued. What is happening in this proposal is you are taking fuel and moving it from point A to point B. Coonce to McGuire. If you break it down into small sections and look at each area, you are taking spent fuel out of a spent fuel pool which is licensed to hold that spent fuel.

That is out of the Coonce pool. You are taking that fuel and putting it into a cask which is certified to receive the spent fuel.

The cask is certified by the Commission and is capable of receiving the fuel. The cask is also governed by the Department of Transportation regulations for the shipment of radioactive material.

We are now complying with regulations both of NRC and DOT in moving the fuel. The Commission has also addressed transportation. They have an environmental statement on transportation of radioactive material.

There is also in the regulations, in Part 51, Table S4, which addresses transportation of spent fuel. The transportation in that particular table sets some limits with regard to dose and frequency. It does, however, address it as if it were sending fuel from a facility to a reprocessing plant.

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In this particular action, we are not bound by Table S4 because we are not sending it to a reprocessing

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However, subsequently, after reviewing this thing, we have determined that the impact we will come up with is less than those in Table S4.

Continuing down the path, we are now moving the fuel in a certified cask. It now is received at McGuire. At this particular point, McGuire does not have a license. That is where it does require continual review to determine if McGuire can be licensed to receive it.

At that point, we did a safety evaluation to determine that we are not introducing anything new into McGuire other than what has already been reviewed in the safety evaluation report and the environmental statement with regard to the McGuire operating license.

The fuel, physical makeup of the fuel at Ocone, is very much identical to the makeup of the fuel at McGuire. The fuel that we are shipping has a decay time of 270 days on it. The cask is capable of receiving fuel of 120 days.

As we increase the decay time, you lower the radioactive and thermal levels. So, we are now putting fuel, 270 days old, into a pool which is capable of receiving fuel which is freshly discharged from the reactor.

Basically we can end up with a full pool at McGuire from subsequent annual discharges plus an immediate core offload and the pool is designed to handle that.

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Obviously we are not introducing anything new with this action. Keeping that in mind, the overall view -- everything is governed by documents or addressed by some means--we did take a look to see what this cascade plan was going to result in.

I did not go beyond the capabilities of Catawba. I did not do a final or thorough evaluation as such, putting out an environmental statement of the cascade plan. I did look at it close enough to determine how many spent fuel assemblies would have to be shipped over the duration of time we are talking about.

You are talking a period of time from the present until early 1990s. Looking at that, the fact that transportation is normally acceptable, the impact on an annual basis is lower than -- I would say equal to or less than the impacts we are seeing here in this licensing action.

My only reason for saying equal to is because I haven't actually gone out and done a full analysis of it, but looking at it just very simply, the transportation distances from McGuire to Catawba are less than that of Oconee to McGuire. The fuel age as we proceed on to 1990 becomes older and older. Every little facet you look at would show we have lower parameters involved and therefore, the impacts would be lower.

We are also not in a high population area as we

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are here with Charlotte.

On that judgment we decided to evaluate the 300 assemblies by themselves. If at some later date, Duke decided to go on with this cascade plan, that would have to be evaluated at that time and the impacts would have to be determined.

Basically, I think that is it.

Q You just said if Duke decided later to go on with their cascade plan, then that would have to be evaluated at that time. Is that an indication in your mind to us of what in your mind the status of the so-called cascade plan that you knew Duke had was?

That was a very obtuse question. Let me rephrase it.

You just said if Duke later came in with the cascade plan that you would have to evaluate it at that time. I would like to know what in your mind the status of the cascade plan was insofar as your review was concerned?

A The status of the cascade plan at that time or at the present time.

Q At that time.

A Basically it was a viable option. I have to say that Duke is in a unique position, I think, which is not present in a lot of other utilities.

That is, many of the utilities and their facilities

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do not have the option of going -- or have the alternative of transshipment. They are either faced with cracking or building an ISFSE, something along that nature.

Duke does have the option to look at transshipment. I think basically the determination on any alternative is to evaluate it and determine what the impacts are.

If they are considered to be insignificant, the decision by the utility may be made by the management of that utility. It is not governed by regulation at that point.

Q Let me ask the question again. I would like to know your evaluation of the plan as you first came to know it, of what you understood it to be in relative terms, as to being fixed or something contemplated?

A I believe as I came to know it, I think it was for all practical purposes, Duke was anticipating to continue shipment. I hesitate to use the word fixed because I believe there are many options that are available to all utilities, not just looking at Duke, and the thing is changing continually.

So, I would try to stay away from the word fixed but I believe that that was their anticipation.

CHAIRMAN MILLER: That what?

WITNESS SPITALNY: That that was their anticipation at that time. I would like to make a distinction now that

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I am recalling from facts and we are looking back about a year ago.

And I am not trying to state what their anticipation is today, but what it was at that time.

CHAIRMAN MILLER: As you understood it.

WITNESS SPITALE: That is correct.

BY MR. KETCHEN:

Q You have been in the hearing room all day today, have you not?

A Yes, sir.

Q And since you first came to know the -- first became aware of the cascade plan during the course of your environmental impact assessment, you have become aware, have you not, of additional details with respect to the cascade plan?

A That is true.

Q As you have heard the cascade plan as it has been described today or between today and back to the time you first heard about it, would you reach any -- arrive at any different conclusions than those you have expressed today?

MR. ROISMAN: Objection.

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CHAIRMAN MILLER: Sustained.

MR. KETCHEN: May I hear the basis?

MR. ROISMAN: From me or from the Board?

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MR. KETCHEN: I would like to rephrase; is it as to form?

CHAIRMAN MILLER: You may rephrase. For one thing, you started off backwards. Are you attempting to go find out whether there was some evolution or change in this so-called cascade plan from the time he first became aware of it down to and including the present? If so, we will permit that answer.

MR. KETCHEN: No; that is not it.

CHAIRMAN MILLER: Then, you don't need our permission.

BY MR. KETCHEN:

Q Have you heard the testimony that was presented today by Duke Power Company's witnesses with respect to the cascade plan?

A Yes; I have.

Q Do you have an opinion as to the effect of the cascade plan vis-a-vis the environmental impact appraisal?

MR. ROISMAN: Objection.

CHAIRMAN MILLER: Sustained.

BY MR. KETCHEN:

Q Would you state whether or not you have an opinion with respect to the cascade plan as it has been described in these hearings by Duke Power Company witnesses today?

eak2?

A Yes; I have an opinion.

Q Would you give us that opinion, please?

MR. ROISHAW: Objection.

CHAIRMAN MILLER: Sustained.

MR. KETCHEN: May I have direction from the Board. I am not sure --

CHAIRMAN MILLER: For one thing, it isn't proper to ask one witness in the guise of an expert, therefore giving his opinion, on other testimony. That isn't the kind of testimony we expect from a fact or opinion witness.

If you want to direct his attention to certain aspects of factual testimony without usurping the Board's responsibility as to credibility and the like, that may be one way to do it.

The area you are going into is in the Board's judgment an improper area. The Board will make the evaluation as to what they said, why they said it and where it leads.

If there are aspects of it that you feel are in the competence of this witness, as a fact witness or as opinion testimony from an expert, after laying foundation, we will at least hear you.

Mr. Ketchen, would it help if you made a proffer to the Board of what areas of interrogation you would like to get into?

MR. KETCHEN: I will make the proffer. I am not

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sure I need that answer. The Board -- this person is the project manager and he has told you what he knew a year ago. To me, that is good enough. We can stop right now. The Board might want to ask this question itself. I would think it would probably want to know what the status of the Staff's evaluation is.

CHAIRMAN MILLER: I am not sure. If we do, we would ask it after everybody got through asking questions.

MR. KETCHEN: Maybe you don't. Evidently the facts have changed and he is going to be later brought on as the expert to give his opinion on the cascade plan. He had a position a year or so ago or whenever he first knew about it.

Obviously, as has been testified, it is a dynamic situation.

CHAIRMAN MILLER: Dynamic in the sense of changing frequently and nothing more.

MR. KETCHEN: Obviously as time has passed he has done more evaluation and you may want an update of what the factual testimony is with respect to the cascade plan.

I got the answers I wanted. I was trying to tie it up and bring it to the logical end.

CHAIRMAN MILLER: The Board appreciates your offer. The Board would ask it if it desires to know that. It would be at a later time.

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MR. KETCHEN: Fine; we will stop there, then.

I do have another question on another area. That completes the questions along that line. We have been asked for other information. In part the answer was given during the course of Mr. Spitalny's direct presentation, but I wanted to get the question directly and have him respond directly.

BY MR. KETCHEN:

Q I would like, Mr. Spitalny, for you to give us your basis for evaluation of the application to store McGuire spent fuel -- I am sorry -- Oconee spent fuel at McGuire -- let me start again.

I would like to know what your scope of evaluation was of the application to store Oconee spent fuel at McGuire vis-a-vis whether an operating license would be issued for the McGuire facility.

A I see two areas to the question you are asking. I think one is a question that has been raised again a number of times throughout the day, whether or not McGuire would have to have an OL prior to receiving Oconee fuel.

Basically, the answer is no. There are some justifications for that answer.

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The reason that this entire licensing action was pursued under Part 70 was because of the fact that McGuire did not have an operating license. We did have to sit down

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and evaluate what areas would be required to support the receipt and storage of spent fuel at McGuire in that an OL would not be issued.

Basically, it falls back to the safety evaluation report and in which case, we did an evaluation of the systems at McGuire to see if it would be capable of receiving the Oconee fuel. Again, we decided we were not introducing anything new other than what the pool was designed for.

Although we did an evaluation we came to the bottom line that it was acceptable. There were a couple other considerations that have to come into account here.

One is of Price Anderson, for example. An operating reactor has Price Anderson coverage for maintaining spent fuel on site, fuel generated at that site and normally does not have coverage to store spent fuel generated at any other site.

That issue has been addressed by the Commission. It has been addressed in -- by means of a Federal Register notice that has gone out requesting public comments. It is being looked at presently and there is a paper right now being prepared by the Staff, going to the Commission, specifically addressing Duke.

It is also addressing Commonwealth Edison who is pursuing a similar type of action. In all respects, it looks like the recommendation of the Staff is that it will be

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eak24 covered. That came into consideration also without having an operating license.

We would not issue an amendment to the Part 70 license until we have confirmation from ISE, Inspection and Enforcement office, of the NRC Staff to the effect that the systems at McGuire are operational.

The approval would be conditionable on the NRC Staff determining that it is capable of receiving the fuel. At that point, it could receive the fuel prior to issuance of the OL.

MR. KETCHEN: We were asked a question yesterday about the number of casks available to transship spent fuel.

DR. LUEBKE: We were of the impression there were not very many yet.

MR. KETCHEN: Is this an appropriate time for that?

CHAIRMAN MILLER: If he has the information, fine.

BY MR. KETCHEN:

Q Would you indicate to us the number of casks available for shipping spent fuel?

A There are presently six authorized designs of spent fuel casks for pressurized water and boiling water reactors. They are broken down. There are a number of manufacturers for the casks.

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The NFS, Nuclear Fuel Services, presently has

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six spent fuel casks which are capable of holding one PWR, pressurized water reactor, assembly. For the purpose of this analysis, I will hold it to PWRs only, rather than confusing it with BWRs.

They also have one under construction.

NL Industries has a truck cask. That NFS-4 is a truck cask also.

NL Industries has a truck cask capable of holding one spent fuel assembly. They have fine in existence.

Transnuclear has one -- they have two casks presently constructed which are capable of holding three PWR assemblies and two under construction.

General Electric has the IF-100 that is capable of carrying seven assemblies. There are four of those casks in existence.

NL Industries also has a rail cask, NLI-1024 which is capable of holding ten PWR assemblies. There are two of those casks in existence.

If you add up the total number there are 22 casks which are capable of holding the PWR assemblies for a total capacity of 72 assemblies.

That is including ones under construction, assuming that they are to be completed.

DR. LUEBKE: There is a designation NAC-1. Is that synonymous with one of those?

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WITNESS SPITALNY: It is synonymous with the NFS-4. The design of the package was designed by Nuclear Fuel Services. It was subsequently sold to NAC, Nuclear Assurance Corporation. Basically, NAC has the rights to manufacture casks to the NFS design. They are synonymous terms and are used NAC-1 or NFS-4.

BY MR. KETCHEN:

Q Your information here covers the United States?

A That is correct. This is the entire United States.

MR. KETCHEN: Mr. Chairman, that completes my direct examination.

CHAIRMAN MILLER: Very well. Any cross examination?

If not, you are excused.

MR. WILSON: I have one question. I was waiting for Mr. Roisman.

CROSS EXAMINATION

BY MR. WILSON:

Q Mr. Spitalny, are you familiar with the Catawba application.

A Yes; I am.

Q Does that make reference to future shipments of fuel from Oconee and McGuire as indicated by Mr. Bostian earlier?

A The Catawba application does make reference to Oconee and McGuire spent fuel in that the pool is to be evaluated such

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that if that decision was made at any given date, it would be capable of receiving Oconee or McGuire fuel.

Q Am I to understand, then, that down the road, should the Catawba application be approved, they could at any time under authority of that application, receive fuel from those other installations?

A That would be correct, assuming that the other obstacles presently in the way are cleared. That would be that of Private Anderson.

Q There would be no need to come back and have a new application to amend their operating license or otherwise go to a proceeding like this?

A No; there would not.

MR. ROISMAN: That raises one question I would like to ask.

BY MR. ROISMAN:

Q Do I understand correctly if the Catawba licensing proceeding is completed and the evaluation you have just talked about is done and approved, there will not have to be any licensing action taken for Oconee to ship fuel to Catawba in the future?

MR. KETCHEN: Mr. Chairman, I am going to have to interpose an objection.

CHAIRMAN MILLER: That is about what you witness said.

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MR. KETCHEN: It calls for a legal conclusion.

CHAIRMAN MILLER: Your witness seemed to be a valiant man. I think he said it well.

MR. KETCHEN: He did. I might have to have his answer stricken.

CHAIRMAN MILLER: I may have to appoint someone to defend him.

The witness has answered and he is entitled to be asked on cross examination. I didn't see any dispute about it.

MR. ROISMAN: I will take it as his position and not necessarily the law. I want to find out what his position is.

MR. KETCHEN: Another problem is on my direct of this witness, I didn't ask any questions about Catawba. He needs to be asked background questions as to whether he read the application, knows what it says.

CHAIRMAN MILLER: He was asked by counsel for the state if he read it and he said yes.

WITNESS SPIRALNY: He asked if I was familiar with it.

MR. KETCHEN: He asked if he was familiar with it. He is familiar with it.

CHAIRMAN MILLER: Catawba?

MR. KETCHEN: He has maybe talked to the project manager about the application but I don't know -- I don't

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really know myself whether this witness has read it or not.

CHAIRMAN MILLER: You don't want to impeach your own witness, do you? He was perfectly willing to answer questions and your objection seems to be impeaching.

MR. KETCHEN: I don't want to clutter up the record.

CHAIRMAN MILLER: He is not a lawyer. Whatever deficiencies are accepted. The gentleman has testified and I will not have the record show he didn't. If there are imperfections in his answer, capabilities or what not, if it becomes material and essential, we would give you leave to put on whatever evidence you felt was necessary.

It is not necessary at this point.

MR. ROISMAN: An affidavit signed by Mr. Spitalny and identified as Affidavit 3 attached to the Staff's motion for summary disposition contains on page 8 a statement, "Further the Applicant in its request for an operating license for the Catawba station has requested approval to store fuel generated at Oconee and McGuire Nuclear stations. Catawba has been designed with excess capacity to allow for the storage of this fuel."

I assume he has some knowledge of the Catawba application sufficient --

CHAIRMAN MILLER: Who signed the affidavit.

MR. ROISMAN: Mr. Spitalny and Mr. Glenn. The one I have is signed only by Mr. Spitalny.

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CHAIRMAN MILLER: Did you sign the affidavit? Is there any question about that.

WITNESS SPITALNY: No, sir.

MR. KEFCHEN: I am not trying to make a big issue out of this. It should be clear as to what the scope of the testimony is. I don't think it makes a difference.

CHAIRMAN MILLER: If we felt it prejudiced the staff or counsel, we would give you solace. I don't think it would be harmful -- the facts are established by the affidavit anyway. It is not earthshaking. We will not rewrite history.

MR. KEFCHEN: I tend to agree. If it suddenly opens up Mr. Spitalny as an expert on the Catawba location, I would want to point out he is not.

CHAIRMAN MILLER: We will take a recess now.

MR. ROISMAN: I didn't get my answer.

BY MR. ROISMAN:

Q Is it your understanding that there is no further licensing required for the shipment of spent fuel from Oconee to Catawba if the Catawba application results in an approval of this storage at Catawba?

CHAIRMAN MILLER: This is your opinion.

WITNESS SPITALNY: Let me address it this way.

As far as I know, it is my opinion that is a true statement.

However, the review for the Catawba OL will involve addressing

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that issue. That is handled under Part 50 in contrast to this particular action being handled under Part 70.

There may be other obstacles that the reviewer may come up with as a result of actually going through that application. If the final verdict is the application is approved, my opinion is yes.

MR. ROISMAN: Thank you. That was it.

CHAIRMAN MILLER: Very well. We will recess for ten minutes. The Board will then announce its decision with respect to the scope of the proceedings.

(Recess.)

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CHAIRMAN MILLER: The evidentiary hearing will reconvene.

The Board wishes to rule at this time upon the first broad issue which has been submitted by the parties, namely what is the scope and extent of the hearing. More precisely, is the hearing and evidence to be restricted to that relating solely to the shipment of 3- or 400 units, whatever it is, from Coofee to McGuire, or does it or could it reasonably encompass a more extensive multiple transshipment operation of some kind or character.

Having heard the evidence thus far, the Board wishes to make its finding that the hearing will proceed on the broader basis of the two. It will be grounded in the fact that in the Kleppi case, where the supreme court considered the extent to which there must be consideration given both under NEPA and other specific statutes to proposed action, proposed federal action, which in this case the proposed federal action would be the issuance of the license, the licensing of certain activities by a private utility which itself is not bound by NEPA as such, but the federal agency, the Nuclear Regulatory Commission is.

As the appeal board noted in the Oregon States Power Company case, ALAB 455, that we've had reference to, at page 48, the report 7NRC 41 at page 48, our appeal board stated that as the supreme court noted in Kleppi the district

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court had -- quote:

"...expressly found that there was no existing or proposed plan or program on the part of the Federal Government for the regional development of the area..."

and so forth.

Similarly in this case at this stage of the evidentiary record, this Board could not make an express finding that there is no existing or proposed plan or program with reference to the multiple transshipment of spent fuel which has been called the cascade plan in whole or in part.

We need go no further. We're not trying to rule upon the weight of the evidence.

We realize that the entire evidentiary record has not been made. But at this stage and for the purpose of determining the nature and extent of the issues, we will permit the introduction of evidence as to the nature, extent, ramifications, and impact of the so called cascade plan in whole or in part, which may be addressed by all parties, and upon which the Board will make the judgment and the decisions both on that major aspect and on such minor or lesser principles as are necessarily involved in that ultimate decision.

So it will obviously have some impact on NRDC's contention 1 as to the nature of the proposed action,

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contention 2, whether or not it's a major federal action and what has to be done. The Staff's witnesses and all witnesses will be heard on this point and we'll take the evidence as it comes.

But our ruling is that the cascade plan will be the subject of consideration in our evidentiary record.

Now going forward, since we have witnesses, since we have a number of contentions, issues and the like, I'll ask Mr. McGarry:

I assume that the Applicant will continue to present evidence first in order. If you are prepared now to put on your next witnesses, whether it be individual or a panel, whether or not you might want to indicate the flow of witnesses so the other parties could plan. But that's up to you as counsel for Applicant.

MR. ROISMAN: Excuse me, Mr. Chairman. May I ask you a question?

CHAIRMAN MILLER: Yes.

MR. ROISMAN: In terms of the Board's holding on the question of scope, in your reference to NRDC's contentions 1 or 2, is the Board also indicating that the scope of 274 329 alternatives to be considered to the proposed action either under the ALARA standard, under the EIA limited look, under an impact statement if that is ultimate determined to be required, or under Section 1022E of NEPA, would include

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alternatives that have at least a reach comparable to what the cascade plan might have?

CHAIRMAN MILLER: Yes.

MR. ROISMAN: And that that's part of what would be a legitimate look?

CHAIRMAN MILLER: Yes.

This is permissible. We don't say it's mandatory, but it is within the scope of the issues that would be considered factual and legal implications that flow therefrom.

MR. ROISMAN: We would like to ask -- I guess it would be in the nature of a motion. I understand it's oral.

But we would like to present to the Board -- which we cannot do now in the form of a written document -- but what we would like to do in a written document, bringing the authorities together -- a basis for the Board to make a decision on whether it is appropriate to go ahead at least with the phase of the hearing that is affected by the scope until such time as the Staff itself has prepared its case coexistent with that scope.

That would mean taking the Barnwell decision, and there are a couple of other cases that followed it, applying them to the facts in this case and making the arguments about the significance or not the significance.

By the same token, we would like to try to do that in a way that doesn't automatically prejudice what

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the outcome is, that is automatically end up with suspending the hearing, which is where we would go with that position.

To do that we would make the following proposal:

That the Board proceed to take evidence on those issues in which NRDC is not directly involved and that are not directly affected by the scope question. In other words, there will remain in the case, irrespective of the Board's scope determination, the lesser considerations, the environmental impacts of, the health and safety implications of the proposed shipment of 300 spent fuel rods from Oconee to McGuire.

CHAIRMAN MILLER: We haven't determined what the scope is.

MR. ROISMAN: No, I understand that.

CHAIRMAN MILLER: We just heard preliminarily evidence which leads us to believe that it should not be limited to the initial position. We made no finding beyond that, and we expect to take evidence from all parties concerning that.

MR. ROISMAN: All right.

But the question then is what are the -- if the Board is not ready to rule it out, then what are the duties of the Regulatory Staff with respect to producing evidence on that issue, what are our rights with regard to what the Staff is required to do.

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CHAIRMAN MILLER: Well, you'll recall under the New England Power case that the board does not tell the Staff what to do, how to perform its duties. While we are both segments perhaps of the Regulatory Commission, nonetheless we each perform independently.

Our performance duty is adjudicatory. We don't tell the Staff what to do, and we don't tell them what not to do. We'll listen and we'll consider it in an adjudicatory framework, what evidence the Staff presents, what documents it presents, what studies it presents.

MR. ROISMAN: That's right.

But the Board is authorized to make a judgment as to whether or not the proceeding is to go ahead or not to go ahead in the absence of the Staff doing something.

Now it doesn't --

CHAIRMAN MILLER: We don't know what the Staff has done.

MR. ROISMAN: But we've got the proposed evidence. We have Mr. Ketchen's statement yesterday --

CHAIRMAN MILLER: Well, we don't base it on counsel's statement, we just want to look at the evidence.

MR. ROISMAN: Well, we know what their evidence is. It's prefiled. Its scope is limited --

CHAIRMAN MILLER: It hasn't been admitted. You're telling me things, yes, and I'm hearing you, yes. But you're

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1 not doing it in an adjudicatory fashion.

2 MR. ROISMAN: Well, then, I would request that
3 the Staff now be asked to offer its affidavits and proposed
4 testimony as evidence so that they will then be in evidence
5 as basis for me to present to you the argument that the
6 Staff's evidence is less than what is required and less than
7 what we are entitled to before we have to go ahead with our
8 part of the case, including our cross-examination.

9 CHAIRMAN MILLER: Well, your going ahead with
10 your part of the case is optional on your part. As far as
11 what the Staff is concerned with, there is some meager
12 testimony so far by Mr. Spitalny as to what he did and what
13 further scrutiny or analysis he made we don't know until we
14 get some evidence, documentary or otherwise, by the Staff.
15 By this I don't mean statements or remarks of counsel.

16 We don't know what they've done or what they're
17 prepared to do, either the adequacy of it, or if inadequate
18 what should be the result.

19 MR. ROISMAN: Well, but we would object.

20 I mean for the purposes of this morning and the
21 early afternoon hearing we waived the normal requirement with
22 regard to prefiled testimony. But we would certainly object
23 if now we did not have the right to prefiled testimony from
24 the Staff that goes beyond their already prefiled testimony.

25 CHAIRMAN MILLER: Well, I don't know that prefiled

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1 testimony is either a right or a duty. It's provided for by
2 the regulations. I think it is subject to reasonable discre-
3 tion on the part of the Board.

4 I'm not at all sure if either you as counsel or
5 if the Staff as counsel wanted to offer some non-prefiled
6 testimony that the Board wouldn't have the jurisdiction to
7 consider it. I don't think it has to be prefiled, in other
8 words, and we would certainly look at the underlying reason-
9 ing. We'd try to be fair.

10 MR. ROISMAN: All right.

11 What I'm saying, Mr. Chairman, is that at this
12 point, at this moment, at quarter to four this afternoon, I
13 don't feel that I can make to you the arguments that I need to
14 make to you, whether it's based upon the prefiled testimony
15 that the Staff has already submitted or Mr. Ketchen's repre-
16 sentations on behalf of the Staff or otherwise.

17 I'd like an opportunity to do that. I can't do
18 that if I'm here also conducting cross-examination of the
19 Applicant's witnesses on the issues with which I am concerned,
20 trying to come up with a proposal that I do not think is
21 prejudicial to the hearings going on, which is merely to
22 define that at this point the hearings go on with those issues
23 in the presentation of evidence from those parties related to
24 the issues other than the questions that NRDC is seeking to
25 raise dealing with the broader set of alternatives, the broader

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1 set of impacts, the need for an impact statement based upon
2 those arguments, that part of the case. That then, when the
3 hearings resume next Tuesday, we will have been able --

4 CHAIRMAN MILLER: Tuesday?

5 MR. ROISMAN: Well, I'm sorry. Again I'm basing
6 this on conversations with your secretary.

7 Are you going to --

8 CHAIRMAN MILLER: Oh, please don't regard that
9 as evidentiary.

10 (Laughter.)

11 MR. ROISMAN: No, no.

12 CHAIRMAN MILLER: This is Wednesday, isn't it?

13 MR. ROISMAN: Yes.

14 CHAIRMAN MILLER: Our intention is to run
15 Thursday, Friday, Saturday, Monday, Tuesday, Wednesday, until
16 the end.

17 MR. ROISMAN: Okay, fine.

18 Then as of next Monday to have already provided
19 the Board and the parties with the written document in which
20 we laid forth the legal basis for our position that we should
21 not be required to go forward.

22 Now what I'm asking for is a right to have enough
23 time to do that. And I'm trying to come up with a method that
24 is not necessarily prejudicial to the other parties who have
25 witnesses and arguments and want to go ahead. Now that doesn't

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mpbl0 1 mean that you might not run out of all the other issues
2 before the end of the day on Saturday. But it would give
3 me an opportunity to make my arguments to you on those points
4 and then devote next week -- if I'm unsuccessful with my
5 motion -- to the hearing on the NRDC scope of the issues and
6 any other issues that remain after the end of this week.

7 And that will give me an opportunity to win,
8 which I can see at this point may look a little slim, but one
9 is always hopeful on that score.

10 CHAIRMAN MILLER: What is it that you want to win
11 now, Mr. Roisman?

12 MR. ROISMAN: I would like to have the Board rule
13 that we should not be required to proceed with the issues
14 that NRDC is raising until the Staff has been required to
15 develop its own position and testimony on that, whether it's
16 in the form of an amendment to the EIA, the preparation of
17 an impact statement, or simply the preparation of additional
18 direct testimony for the case.

19 CHAIRMAN MILLER: By that statement I take it
20 then you wish to withhold or have the Board withhold from the
21 taking of evidence at this time on your NRDC Contentions
22 one through six?

23 MR. ROISMAN: Well, six would fit into the category--

24 CHAIRMAN MILLER: Six is your vulnerability to
25 sabotage.

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MR. ROISMAN: That's right, and that one is not affected by the scope question directly.

CHAIRMAN MILLER: I think as far as a NEPA study or a major federal action, I think that was raised by one of the other intervenors.

Isn't that right, Mr. Blum?

MR. BLUM: Yes.

CHAIRMAN MILLER: So yours is not alone.

MR. ROISMAN: That's correct.

But the principal contention that is really outlined in our motion for summary disposition which has been denied is that if the scope of the proceeding is this wide rather than this wide, then there's a whole body of evidence that has yet to be presented that will enable the Board to make an assessment of whether an alternative to the proposal to transship 300 spent fuel rods from Coconee to McGuire should be adopted.

We believe the Staff should have to develop that. We think we've met our threshold test on that. And whether they have to develop it as an ALARA or as a NEPA or as an EIA or as an Administrative Procedure Act requirement is irrelevant.

It's irrelevant to us why, as long as they do have to do it. But we're entitled to forestall the development of our position formally on which is the right alternative.

mpbl2 1 and forestall the presentation of our case until that has been
2 done.

3 Now I understand the Board at this point is
4 inclined to say No, we don't have that right. And I'm asking
5 for an opportunity to prepare that position by essentially
6 being excused from the hearings between now and 9:00 a.m. on
7 next Monday morning, and then being able to provide to the
8 Board, which I would do before the end of the day on Friday,
9 at least to the offices in Washington of the Board and the
10 other participants, a brief on that issue. And then, of
11 course, I would abide by the Board's ruling on that next
12 Monday morning.

13 CHAIRMAN MILLER: Well, first of all, you speak
14 as though the Board is going to sort through alternatives and
15 say 'Do that one'. And we don't understand that to be our
16 function.

17 We look at alternatives in the NEPA sense and the
18 ALARA sense and we make the balancing that exists in those
19 two situations. But the Board doesn't tell the utility what
20 to do.

21 MR. ROISMAN: That's right.

22 CHAIRMAN MILLER: We're asked to license. We
23 either grant the license, amend it, or we don't.

24 MR. ROISMAN: You could turn this one down in
25 that it's not the best course of action to follow and not

mpbi3 1 follow any of the other ones.

2 AIRMAN MILLER: Or there are other possibilities.
3 But we only do that which we have jurisdiction
4 over.

5 Now in that context we're not at all certain
6 what the position of the Staff is. We'll hear from the Staff.
7 We don't know that the Staff is capable of coming forth
8 with some of the matters that you feel they should have done
9 and you allege they have not done in their papers, I presume.
10 But nonetheless we don't really know the status of that
11 until we hear some evidence or at least hear from counsel.

12 It is possible under some circumstances for a
13 NEPA statement, for example, to be amended, added to, modified
14 by a Board. Now admittedly there are limitations. I mean,
15 there's fairness, what's necessary under NEPA for comment,
16 and the like.

17 MR. ROISMAN: But that all goes to the Barnwell
18 decision --

19 CHAIRMAN MILLER: Yes.

20 MR. ROISMAN: -- saying it depends upon how
21 significant the omission is.

22 CHAIRMAN MILLER: And Peachbottom.

23 MR. ROISMAN: That's right.

24 And I take it that here --

25 CHAIRMAN MILLER: We don't know. We're agnostic,

mpbl4 1 like you, in that regard, at this moment on the record that's
2 before us, which is still rather meager.

3 MR. ROISMAN: Well, but that was no different than
4 Barnwell.

5 What the board was looking at was the applicant's
6 -- I'm sorry, the Staff's environmental impact statement.
7 We have what is the equivalent of their impact statement here
8 in the EIA, supplemented by their proposed testimony.

9 We would propose to show that what is physically
10 within that doesn't reach the level of the potential scope
11 here.

12 CHAIRMAN MILLER: This is an issue. And you would
13 certainly be permitted -- Well, as far as your motion is
14 concerned, Mr. Roisman, we're not inclined to grant you your
15 motion to remove a number of very significant contentions
16 which have been brought forward and developed by you and your
17 client until Monday because none of us really want to spend
18 two weeks on matters that are not necessary.

19 We all are busy, including yourself and all other
20 counsel and the Board. But nonetheless we're up here. We're
21 scheduled. We took the reading as to what the majority, at
22 any rate, wished to do; in order to accomplish all that we
23 have to do we have scheduled a Saturday hearing. We intend
24 to hold a Monday hearing, and the like. And we don't want
25 to have any suspension.

mpb15 1

2 It would occur to us that your professional
3 competence which you have demonstrated in this and other
4 cases would indicate if we gave you reasonable time to prepare
5 a motion and we would allow you to do it orally -- which is
6 permissible in a course of a hearing, but no doubt you wish
7 to have something in writing. We don't think it's going to
8 take you six days, five days, four days, Mr. Roisman, frankly.

9 MR. ROISMAN: No, no. But it will take me access
10 to my law library back in my office. I don't have the
11 citations here.

12 I have none of the NRC decisions. I can see --
13 That's why I said I could do it by the end of the day Friday,
14 but I can't do it without the law cases. I could do it by
15 tomorrow morning if there were --

16 CHAIRMAN MILLER: Don't you have any associates in
17 other cases? Haven't we seen other counsel besides yourself
18 in NRDC?

19 MR. ROISMAN: No, not in terms of any of the
20 nuclear work at all. There are no other --

21 CHAIRMAN MILLER: Ms. Karen Sheldon?

22 MR. ROISMAN: She is in my law firm, but --

23 CHAIRMAN MILLER: Your former law firm, and
24 you're now NRDC?

25 MR. ROISMAN: That's correct.

CHAIRMAN MILLER: Do you suppose she could give

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mpbl5 1 you some citations over the phone?

2 What we're saying is we know that you're quite
3 knowledgeable in the field, Mr. Roisman. If you were in-
4 experienced counsel, if you hadn't been accurate in the field
5 we might have been taking a different view. But we really
6 want to proceed. We want to give you some reasonable time.
7 And it isn't going to be a great deal of time.

8 MR. ROISMAN: I have two partners. One is on
9 sick leave, she was in the hospital, Ms. Weiss, and the other
10 is on maternity leave.

11 CHAIRMAN MILLER: Well, we can't do much about
12 either, can we?

13 MR. ROISMAN: I don't have any other lawyers to
14 do that legal research for me, and I don't usually operate
15 that way because I want to read the cases myself.

16 CHAIRMAN MILLER: Well, we appreciate that. But
17 we think we'd rather have you with us and then work on it on
18 the weekend, to do that.

19 MR. ROISMAN: Oh, yeah. I mean, that's not any
20 problem.

21 But I feel that -- Well, let me say this and then
22 I'll quit arguing with you. I mean, I know when I've lost
23 one.

24 One, I think you're prejudicing my ability to
25 present my case by even denying me the opportunity to make

mpbl7 1 my case to you.

2 CHAIRMAN MILLER: Aren't you a little happy,
3 though, that you're in that posture now?

4 (Laughter.)

5 MR. ROISMAN: Well, better off than I would have
6 been.

7 (Laughter.)

8 MR. ROISMAN: Secondly, I'm substantively concern-
9 ed that I'm being asked to start conducting cross-examination
10 of witnesses that the Applicant will put on the witness stand
11 in areas in which NRDC has not had the benefit of the kind of
12 analyses and work that the Staff would have had to do on
13 these alternatives, and that that is precisely where we lack
14 the resources and where we couldn't do it.

15 And I just want to be clear that we want to
16 reserve our right to ask all those witnesses to be recalled,
17 and if necessary the hearing to be reopened on the basis of
18 an adequate presentation from the Staff of the various con-
19 siderations that enter into weighing all of these alternatives.

20 And, third, that my technical people will not
21 have had the benefit when they come on the witness stand next
22 week of having that analysis. So that our case inevitably
23 has to be a case based upon the need to see what the
24 alternatives are rather than a case in which we can authori-
25 tatively say we are convinced that this is the right

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mpbl8 1 alternative and therefore that the proposed action should be
2 rejected.

3 We are inhibited in our ability to make the
4 ultimate case against the Applicant because we don't have
5 the benefit of the independent studies that the Staff would
6 do given the proper scope.

7 And all I'm saying that for is to preserve my
8 rights. And the Board now understands that.

9 (The Board conferring.)

10 CHAIRMAN MILLER: I think that your hunch was
11 correct, Mr. Roisman. I think the Board prefers to go ahead.

12 We would like to give you some time for your
13 motion, your citations. We'll have it in mind. We do
14 realize, however, that there have been a number of motions
15 filed, including your own for summary disposition, your
16 prefiled testimony. We think that your witnesses as well
17 as those of others are reasonably knowledgeable, and we'll
18 just have to take the risk that, maybe if not 100 percent,
19 it looks as though it is rather substantial.

20 Now as far as the pace of the proceedings is
21 concerned, the Applicant I take it will go forward.

22 About how many witnesses to you have, Mr. McGarry,
23 approximately?

24 MR. MC GARRY: We have nine witnesses.

25 I have a comment, Mr. Chairman, if I might make it?

mpbl9 1

CHAIRMAN MILLER: Yes, you may.

2

MR. MC GARRY: I hate to wade in here --

3

CHAIRMAN MILLER: That's all right. Don't worry.

4

MR. MC GARRY: -- but I feel that I must.

5

CHAIRMAN MILLER: Go ahead.

6

MR. MC GARRY: It's by way of seeking clarifica-

7

tion.

8

CHAIRMAN MILLER: Okay.

9

MR. MC GARRY: As we understand the Board's

10

ruling -- Let me back up for a second.

11

The Applicant's posture is we have nine witnesses.

12

We intend to put them on. I'll list those now.

13

First we intend to put on an alternative panel.

14

That will be comprised of Mr. Bostian, Mr. Hager, Mr. Sterrett,

15

and Mr. Lewis.

16

We then have what we refer to as a cask panel.

17

Mr. Jones, Mr. Rollins, and Mr. Garrick.

18

We then have a health effects panel, Mr. Lewis,

19

again, and Dr. Hamilton.

20

And finally we have a sabotage expert --

21

CHAIRMAN MILLER: Well, that's ten, then, except

22

maybe you had overlaps.

23

MR. MC GARRY: It's nine, but Lewis appears twice.

24

CHAIRMAN MILLER: I see.

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MR. MC GARRY: Double-time.

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CHAIRMAN MILLER: Four, three, two and one, with the one overlap.

MR. MC GARRY: Now, Mr. Chairman, we would anticipate putting these witnesses on.

As we understand the Board's ruling, what you're saying to us and the parties is that inquiry can be made not solely to 300 shipments but what if other shipments --

CHAIRMAN MILLER: Reasonable likelihood.

MR. MC GARRY: Reasonable likelihood.

What we submit to you and what we submit our witnesses said this morning is we had no plan. Therefore we had no plan to submit to the Staff, so therefore there is nothing for the Staff to evaluate. There is no plan.

However, as we understand the Board's ruling -- this is why I'm seeking clarification -- as I understand the Board's ruling what it's saying to the parties is 'Parties, if Mr. McGarry stands up and objects to Mr. Roisman's question because Mr. Roisman is asking about matters beyond the 300; I can't stand up now and object because this Board has ruled that the scope of this hearing is beyond those 300.

CHAIRMAN MILLER: That's correct.

And it's available for testimony or evidence by all parties.

MR. MC GARRY: Then I would make one further observation with respect to Mr. Roisman's motion.

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mpb21 1

2 Curiously, Mr. Roisman was the individual whose
3 client was the party that was seeking this broader develop-
4 ment of the record. If that be the case, one would think
5 that Mr. Roisman had confidence in himself that he was going
6 to be successful. And then the logical conclusion is if he
7 were to be successful, he should be prepared to discuss those
8 broader issues today.

9 So with that in mind, we are now prepared to put
10 on our first panel.

11 MR. ROISMAN: Let me just say something.

12 Mr. McGarry grossly distorted what I said. I'm
13 prepared to cross-examine his panel until doomsday. But what
14 I am saying is that I am entitled to the benefit of the Staff
15 analysis of the impacts on health effects, on economics, on
16 the --

17 CHAIRMAN MILLER: What if the Staff hasn't made
18 those analyses? Or suppose you have the benefit of what
19 they've done, and then that's it, what is the result?

20 MR. ROISMAN: If what they have done is what it
21 appears they have done, then I think they are required to do
22 more before we are required to go ahead with the issues.

23 CHAIRMAN MILLER: Well, you would go ahead with
24 what they have done. If they were capable of doing more,
25 they would tell you, and at that point we would make a judg-
ment.

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mpb22 1

MR. ROISMAN: No.

2

Now let me be clear:

3

I will not conduct cross-examination beyond the scope of the direct. I cannot cross-examine the Staff on issues that they don't have in their direct, and they don't have anything in their direct about the broader implications. I don't have anything to ask questions about --

4

5

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8

CHAIRMAN MILLER: I don't know about it. I haven't read it, I don't intend to read it. I want to take the evidence as it comes here.

9

10

11

If it's written direct, I'll read it at the time because I find it very confusing to start reading what's in affidavits, what's in prefiled testimony, and then the witness testifies.

12

13

14

15

I, myself -- and I don't bind my board to this -- but I prefer to get it once and for all at the time that the witnesses are here, whether by direct or not.

16

17

18

So in that event I'm saying there is no evidentiary record as far as I'm concerned beyond what we've had yesterday and today.

19

20

21

MR. ROISMAN: And all I'm saying is we are ^{274,348} entitled under the administrative laws and others that I have cited here to have the agency in question develop an evidentiary record on a contention which we raise and do a threshold test on. And we've done that on our issues. We

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POOR ORIGINAL

mpb23 1 have not had that benefit.

2 So I've got the Applicant telling me that the
3 cost of an independent spent fuel storage facility is \$34,500
4 per assembly. I have one document also produced as a result
5 of discovery from the Applicant that says the cost is \$19,000.
6 I've got no studies, I've got no economists, and we don't have
7 the resources to do any of those to find out where the truth
8 lies between those numbers or even outside those numbers.

9 The Staff under the Administrative Procedure Act,
10 NEPA and the Atomic Energy Act, once we define that as being
11 a relative consideration in this case, has the duty to find
12 out. And we are entitled to wait for that, and to have the
13 record made on the basis of Staff analysis. We're not getting
14 that.

15 So I can't do the same level of cross-examination.
16 So I have stated before, I want to just reserve my right
17 to ask to do the cross-examination of the same set of witnesses
18 again once we have the benefit of that information from the
19 Staff.

20 CHAIRMAN MILLER: Well, based on your assumption
21 that the Staff's evidence and testimony is going to be in-
22 adequate, that might be the result.

23 MR. ROISMAN: Okay.

24 CHAIRMAN MILLER: I don't know. But nor do I
25 know what the status of the Staff's evidence is.

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MR. ROISMAN: I understand that. Okay.

MR. BLUM: Mr. Chairman?

CHAIRMAN MILLER: Is there anybody else I can get into this?

(Laughter.)

MR. BLUM: I've had, as you directed, the revised written version of contention number two to make explicit that we do intend to -- we have a contention on sabotage. I've had this here all morning, but have been too mild mannered to jump in the middle of this to distribute it.

CHAIRMAN MILLER: You're a wise man probably.

(Distributing documents.)

MR. KETCHEN: Mr. Chairman, I hesitate, like Mr. McGarry, to get into this --

CHAIRMAN MILLER: All right, come on in.

(Laughter.)

MR. ROISMAN: I didn't hesitate. Why should they be so nervous.

(Laughter.)

MR. KETCHEN: I just want to complete the circle on what the Staff position is.

We will proceed under your order. But I think the kinds of things Mr. Roisman is talking about are the kinds of things that I understand, in my experience with the proceedings, are things that go in your proposed findings of

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1 facts and conclusions of law after all the evidence is in.

2 So I think that's what you concluded. And by my
3 silence I didn't mean to indicate in any way that we were
4 going to do a study dictated by Mr. Roisman, or that we were
5 giving up our position as expressed in the EIA.

6 And those are just my comments.

7 CHAIRMAN MILLER: Well, more than one case has
8 been tried, especially in court on conflicting theories --
9 in almost every criminal case there is a theory of guilt by
10 the district attorney, there's a theory of innocence by the
11 other side. So it's not unusual to be proceeding on two
12 tracks.

13 We intend to just keep right on proceeding. We
14 realize there are several tracks, and we will see what it
15 consists of. At some point it may be that somebody will have
16 to stop and do something, I don't know. But why anticipate
17 it?

18 At least we know we've got nine witnesses,
19 through the courtesy of Mr. McGarry, and related exhibit
20 We know that next, I suppose, in order of proof would come
21 the Interveners.

22 Does the Staff wish to go last, or does the
23 Staff wish to come in following Mr. McGarry's witnesses?

24 MR. KETCHEN: Go last.

25 CHAIRMAN MILLER: All right. Then the Staff will

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mpb26 1 go last.

2 Next would come Mr. Roisman, Mr. Blum and Mr.
3 Riley. I guess that covers the intervenors. And they will
4 or will not put on evidence. They will always, of course,
5 have the right to cross-examine. And we would then come to
6 the Staff's witnesses, documents, and so forth, and then see
7 where we are.

8 As far as motions are concerned, we do want to
9 preserve your right, Mr. Roisman, to both make your motion.
10 We would like to give you the chance. We know that you're
11 going to be occupied if you honor us with your presence
12 tomorrow and the following day, as we have witnesses. But if
13 we can work something out for your convenience, I think we
14 do have the option to take oral motions, if that's any
15 assistance to you.

16 If you have a citation that you want us to read,
17 we may have to be telephoning our secretaries too. And we'll
18 do the best we can.

19 MR. ROISMAN: Okay.

20 CHAIRMAN MILLER: All right.

21 Mr. McGarry, do you want to go this afternoon?

22 How do you feel? How do your witnesses feel?

23 MR. MC GARRY: I think the witnesses are ready to
24 go ahead.

25 I would like to just note for the record our

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1 objection to the Board's ruling.

2 CHAIRMAN MILLER: Yes.

3 MR. MC GARRY: And I'm now prepared to call the
4 witnesses to the stand.

5 I would note one thing: Mr. Sterrett is not here
6 at this time. We just called him. He should be here shortly.

7 MR. ROISMAN: Mr. Chairman, I had previously
8 requested Mr. McGarry on the area that he's now putting
9 witnesses on to make Mr. Snead and Mr. Glover available.
10 I still would like them up there. I think their testimony
11 this morning indicates --

12 CHAIRMAN MILLER: All right. They're available
13 witnesses. I'm sure there's no problem in that regard.

14 You may call your witnesses.

15 MR. BLUM: Mr. Chairman, there was a new document
16 which was -- the document that Mr. Bostian had this morning
17 which was the subject of -- would have been the subject of
18 discovery had it existed.

19 Do you have copies of that?

20 MR. PORTER: Yes.

21 CHAIRMAN MILLER: Which document is that, Mr. Blum?

22 MR. MC GARRY: That's Applicant's 1 for identifica-
23 tion, Mr. Chairman.

24 CHAIRMAN MILLER: All right.

25 (Distributing documents.)

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CHAIRMAN MILLER: Did we get copies of that,

2

Mr. McGarry?

3

MR. MC GARRY: Mr. Porter is handing them out

4

now.

5

CHAIRMAN MILLER: Oh, I see.

#10

6

MR. MC GARRY: Mr. Chairman, at this time I

7

would call Mr. Bostian, Mr. Snead, Mr. Glover, Mr. Hager,

8

and Mr. Lewis to the stand.

9

CHAIRMAN MILLER: This document you've handed me

10

is dated June 15, 1979, signed by Mr. T. L. Bradley. Is that

11

Applicant's Exhibit 1 for identification?

12

MR. MC GARRY: That is correct, Mr. Chairman.

13

CHAIRMAN MILLER: Very well. It will be so

14

marked.

15

Will the witnesses come forward, please?

16

MR. MC GARRY: Mr. Chairman, Mr. Snead, Mr. Glover

17

and Mr. Bostian were previously sworn.

18

I would ask at this time that Mr. Lewis and

19

Mr. Hager be sworn.

20

CHAIRMAN MILLER: Yes.

21

Whereupon,

22

M. GLOVER

23

and

24

R. W. BOSTIAN

25

resumed the stand as witnesses on behalf of the Applicant,

mpb29 1 and, having been previously duly sworn, were examined and
2 testified further as follows:

3 and

4 Whereupon,

5 S. B. HAGER

6 and

7 L. LEWIS

8 were called to the stand as witnesses on behalf of the
9 Applicant, and, having been first duly sworn, were examined
10 and testified as follows:

11 MR. MC GARRY: Mr. Chairman, I might note for the
12 record that Mr. Snead is not sitting with the panel at this
13 point in time. My understanding is we will endeavor to get
14 him.

15 I also indicated that Mr. Sterrett, who is the
16 last member of the panel, is on his way over. I apologize
17 to the Board for the size of the panel in that it might
18 appear somewhat cumbersome. But it is our view that this
19 is a reasonable group to discuss alternatives, and I think
20 it will facilitate.

21 DIRECT EXAMINATION

22 BY MR. MC GARRY:

23 Q I'll ask the gentlemen to please identify them-
24 selves for the record.

25 A (Witness Lewis) Lionel Lewis.

mpb30 1 A (Witness Bostian) Ralph Bostian.

2 A (Witness Hager) S. B. Hager.

3 A (Witness Glover) Mike Glover.

4 Q Gentlemen, with the exception of Mr. Glover, have
5 you prepared statements of professional qualifications for
6 use in this proceeding?

7 A (Chorus of "Yes.")

8 Q And have you examined those statements of
9 professional qualifications?

10 A (Chorus of "I have.")

11 Q Do you gentlemen have any corrections or addit-
12 ions to make to those statements of professional qualifica-
13 tions?

14 A (Chorus of "I do not.")

15 Q Do you adopt them as your statement of professional
16 qualifications for use in these proceedings?

17 A (Chorus of "I do.")

18 MR. MC GARRY: Mr. Chairman, copies of the
19 professional qualifications preceded the testimony of these
20 gentlemen. It has been prefiled with the Board and the
21 parties. 40 copies of these statements have been provided
22 or will be provided momentarily to the Court Reporter -- I
23 believe 30 copies is the requisite number -- and I would ask
24 that these statements be incorporated into the record as if
25 read.

mpn31

1 We have simply a logistical problem. They are
2 appended to the testimony. We can wait at this point in time
3 to see what transpires with respect to the qualifications and
4 then when we reach the testimony it can all come in at that
5 particular point in time in the record, or we can put it in
6 the record at this particular point in time, with the clear
7 understanding that the testimony has not been received into
8 the record at this point in time as I read.

9 CHAIRMAN MILLER: Is there any objection?

10 MR. ROISMAN: Mr. Chairman, I think we're going
11 to object to Mr. Bostian's testimony, not to his statement of
12 qualifications. That's going to create some ambiguity in the
13 record because Mr. Bostian's statement of qualifications
14 laps over at least one page of the substantive testimony to
15 which we will object.

16 So I would like to suggest at least with regard
17 to Mr. Bostian that nothing be received in the record at this
18 point because it's not easily divisible by the Reporter.

19 It's not merely the first two pages, but it also
20 includes part of page 3, as I understand where his statement
21 of professional qualifications ends.

22 MR. MC GARRY: I think that's correct, Mr.
23 Chairman.

24 CHAIRMAN MILLER: Well, does his statement of
25 professional qualifications extend beyond page 3?

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mpb32 1 seem to have a page 2.

2 Is there a page 2? The copy I have seems to just
3 go from 1 to 3, and 4 is the table and so forth. Does it go
4 beyond the statement of qualifications, Mr. McGarry?

5 MR. MC GARRY: The statement of qualifications
6 ends with number six on page 3.

7 CHAIRMAN MILLER: It ends with number six on
8 page 3?

9 MR. MC GARRY: On page 3, which is the second line.

10 CHAIRMAN MILLER: Yes, I see that.

11 Well, now, Mr. Roisman, is it your contention that
12 pages 1, 2 and the first two lines of paragraphs five and six
13 on page 3, and the statement, the so called testimony of Mr.
14 Bostian relates to more than his qualifications?

15 MR. ROISMAN: No, no.

16 CHAIRMAN MILLER: You have no objection to that
17 portion of it, then?

18 MR. ROISMAN: I have no objection to that portion.
19 But it happens that my objections begin then on the middle of
20 page 3, and just the binding in the record creates the differ-
21 ence.

22 CHAIRMAN MILLER: All right.

23 We'll have the record indicate, then, that the
24 qualifications and statement thereof in the testimony of
25 Mr. Ralph Bostian shall be limited to the first page, the

mpb33

1 second page, and the two lines numbered five and six on page
2 three. That shall be the extent of the proffered qualifica-
3 tions of Mr. Bescian.

4 The other witnesses' qualifications will be as
5 indicated in their prefiled statement of qualifications.

6 But there appears to be no objection to the
7 qualifications as filed and offered into evidence. There
8 are no objections. I hear none.

9 They will therefore be accepted into evidence
10 and bound into the transcript of the proceedings.

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

12 (The documents referred to follow:)

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of)
)
DUKE POWER COMPANY)
) Docket No. 70-2623
(Amendment to Material License)
SNM-1773 for Oconee Nuclear)
Station Spent Fuel Transportation)
and Storage at McGuire Nuclear)
Station))

TESTIMONY OF LIONEL LEWIS

My name is Lionel Lewis. I am the System Health Physicist for Duke Power Company. My job in the General Office in Charlotte, North Carolina is to establish and direct the Radiation Safety program for all of Duke's nuclear power stations.

I received a BA degree from the University of Vermont and an MS degree in Biophysics from the University of Rochester, after completing an Atomic Energy Commission Fellowship in Radiological Physics.

I have over 25 years experience as a Health Physicist in the nuclear industry, including Brookhaven National Laboratory, the Martin Company, and Combustion Engineering where I also served at the U. S. Navy SLC Submarine Prototype Reactor. Before joining Duke Power Company, I was Health Physics and Safety Coordinator at the Carolinas-Virginia Tube Reactor (CVTR)

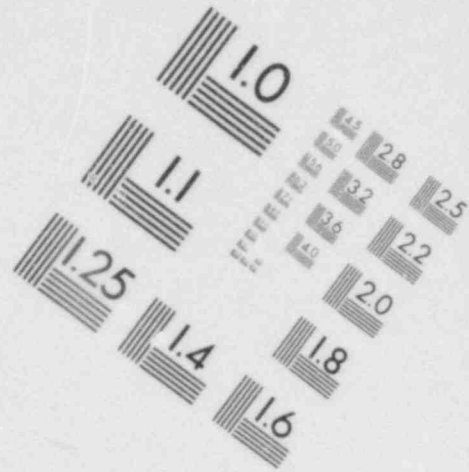
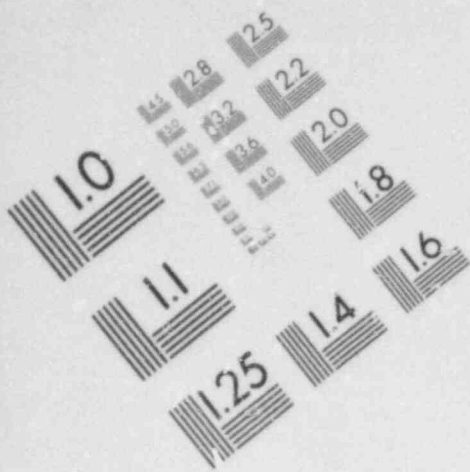
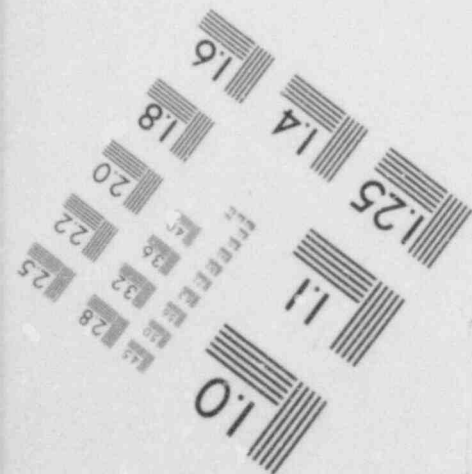
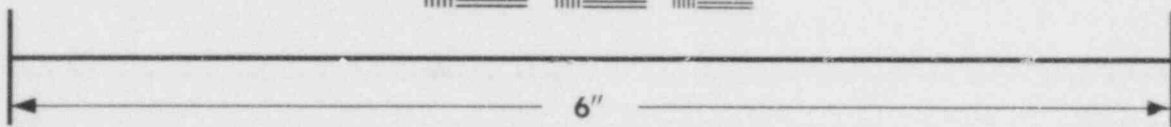


IMAGE EVALUATION
TEST TARGET (MT-3)



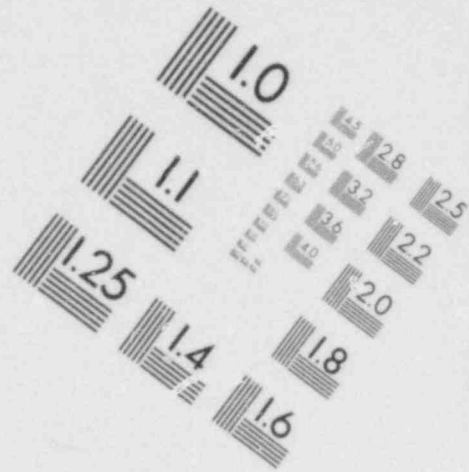
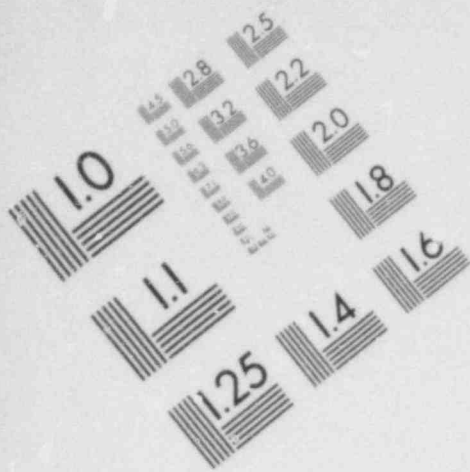
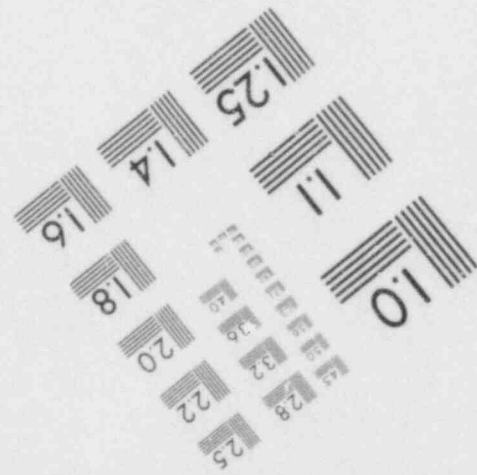
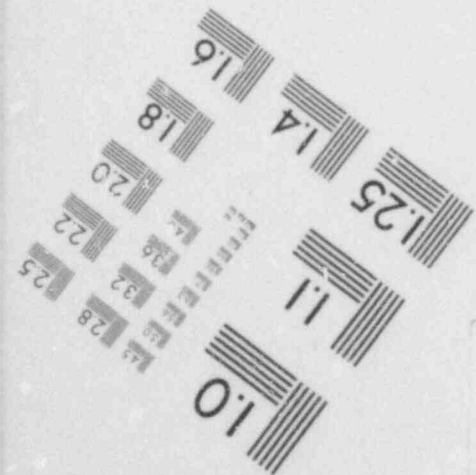
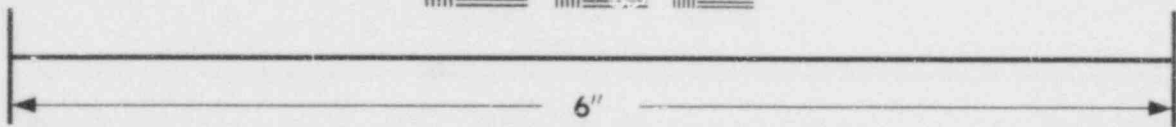


IMAGE EVALUATION
TEST TARGET (MT-3)



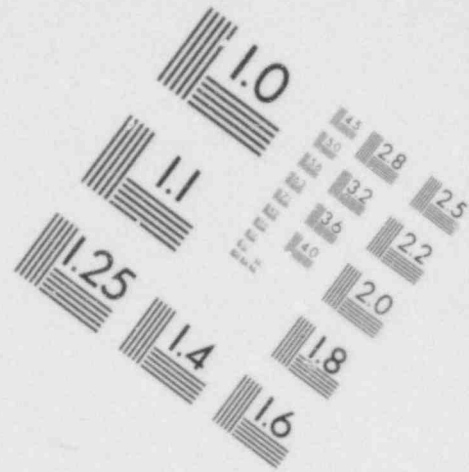
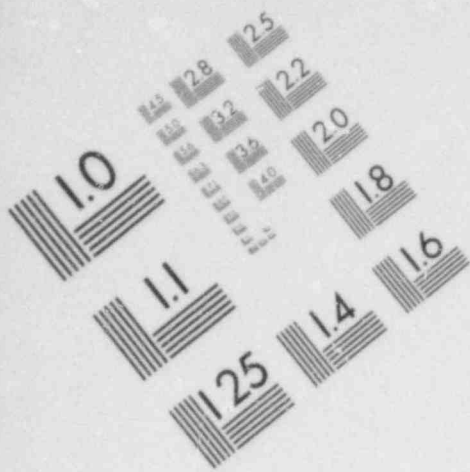
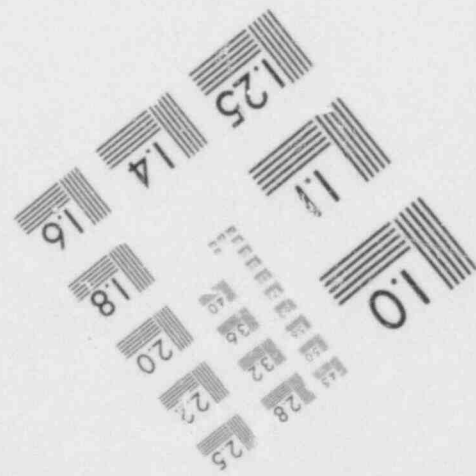
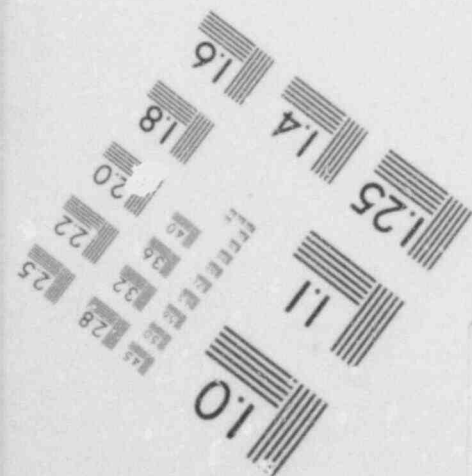
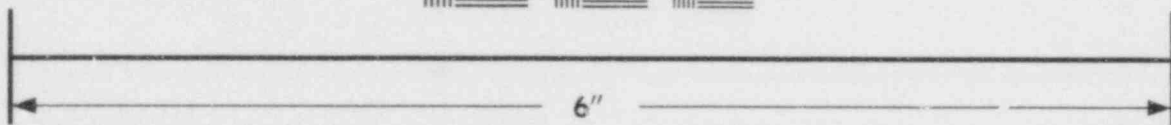


IMAGE EVALUATION
TEST TARGET (MT-3)



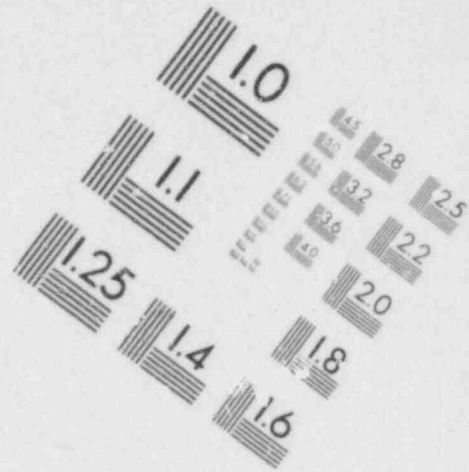
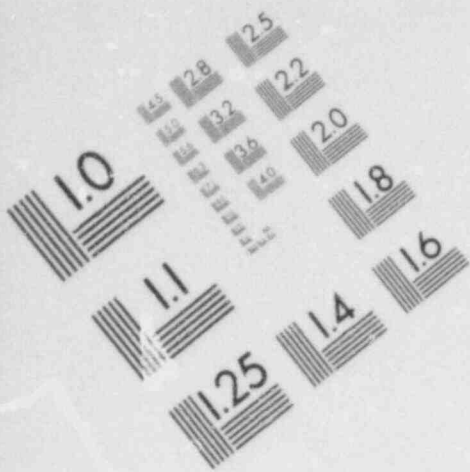
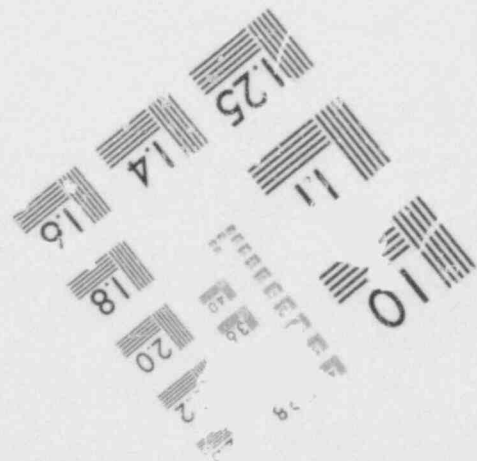
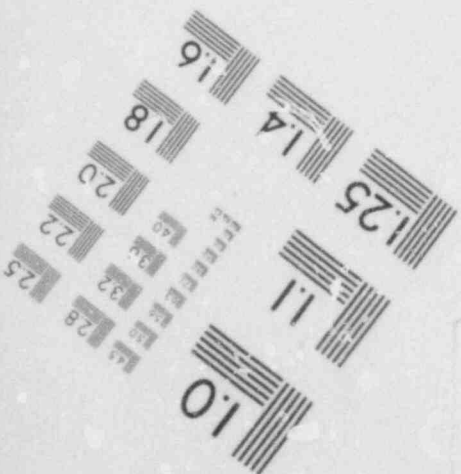
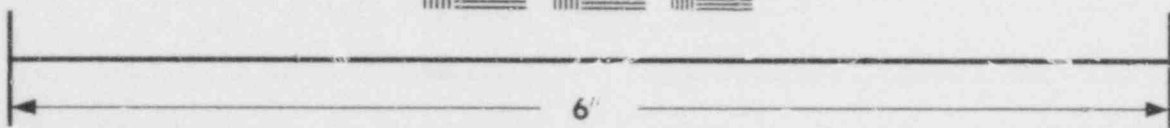


IMAGE EVALUATION
TEST TARGET (MT-3)



in Parr, South Carolina which was the first nuclear power plant in the Southeast. I also served as Plant Superintendent at the CVTR for the first year of power operation.

I have served on Scientific Committee 46 of the National Council on Radiation Protection (NCRP), and am presently a member of the American Nuclear Society, the Health Physics Society, the American Industrial Hygiene Association, the American Public Health Association, and the EEI-Health Physics Task Force.

I am the author of numerous technical papers over the years; one of which was included in the First Geneva Conference on the Peaceful Uses of Atomic Energy and have more recently served on a technical committee that prepared a safety guide on radiological protection at nuclear power plants for the International Atomic Energy Agency in Vienna, Austria.

I am Certified in Health Physics by the American Board of Health Physics.

This testimony addresses the various contentions concerning the radiation dose aspects of shipping spent fuel and the alternatives to shipping. It includes a comparison of dose to occupational workers and the public for the proposed actions and for the alternatives. This testimony also addresses emergency response plans.

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I have reviewed and estimated the dose aspects involved in the proposed action and the alternatives. The following table, based on the shipment of 400 spent fuel assemblies, summarizes my conclusions in this regard.

<u>Viable Alternatives</u>	<u>Total Dose</u> (person-rem)	<u>Dose Differences</u> (person-rem)
1. Modification of Existing ONS Spent Fuel Pool, Unit 1 - 2	83	36
2. Installation of Poison Racks, Units 1, 2 and 3	107	59
3. Construction of Separate Fuel Storage Facility at Oconee	48	0
4. Construction of Separate Fuel Storage Facility away from Oconee but not at McGuire	72	24
5. Shipping/Storage at McGuire	56	8

The economic value of a person-rem for exposure of the public can be as much as \$1,000 and we at Duke Power Company have generally been using a value of \$1,500 per person-rem for occupational exposure considerations. Reviewing the dose table and considering the economic cost of the various alternatives shown (such as approximately 4 million dollars for alternative 1; and approximately 7 million dollars for alternative 2; and about 44 million dollars (1976 dollars) for alternatives 3 and 4; versus about \$984,000 for alternative 5) it can be seen that even assigning a value of as much as a million dollars per person-rem for the differences in radiation exposure received will still make

shipping the spent fuel to McGuire and storing it there, the best alternative, despite the approximately 8 person-rem higher dose over the lower dose alternative, that of a Separate Fuel Storage Facility at Oconee.

The specific transportation doses to the public which are included in the total dose in the above table are as follows:

For alternative 4 - 1.13 person-rem; avg. dose 0.003 mrem

For alternative 5 - 0.14 person-rem; avg. dose 0.003 mrem

The doses to the public can be put into perspective by comparing them to the annual average dose that a person (or the people along the route) receives from natural background radiation in North and South Carolina, which is approximately 140 mrem per year. Therefore, the average dose that members of the public living along the route might receive from 400 shipments of spent fuel to McGuire is only about 1/42,000th of the dose they receive annually from natural background radiation. Correspondingly, the highest individual dose for 400 shipments is 0.01 mrem which is only about 1/10,000th of the natural background dose to that individual. The transportation dose is, in my opinion, as low as reasonably achievable, ALARA.

The highest total dose that any given person might receive such as in a car or a school bus closely following a spent fuel shipment along the highway for 10 hours is 0.4 mrem. The corresponding dose to a person in a car or bus remaining immediately alongside the spent fuel shipment at a traffic jam or accident scene for as much as 10 hours would be at most only 30 mrem.

If the truck carrying a loaded spent fuel cask was involved in a traffic accident such that the truck overturned, persons involved in the tasks of removing the cask and transferring it to another truck, if that were necessary, might receive doses as high as 400 mrem (assuming 40 mrem per hour maximum dose rate on surface of cask for as much as 10 hours). Doses received for this job would correspond to occupational exposure where the dose limits routinely permissible are 5,000 mrem per year and 1,250 mrem per quarter. 10 C.F.R. 20.101(a). Occupational doses up to 12,000 mrem per year and 3,000 mrem per quarter are also permitted by present NRC regulations under certain conditions. 10 C.F.R. 20.101(b).

The States of North and South Carolina have emergency response capabilities for radiological accident situations as do local civil preparedness agencies. The State of North Carolina has an emergency radiological response plan

which involves the Radiation Protection Section of the Department of Human Resources. Duke Power Company, System Health Physics personnel are local members of the North Carolina Emergency Response Team. In the past, Duke personnel have responded to two incidents involving radioactive materials on behalf of the State of North Carolina.

The Charlotte/Mecklenburg Office of Civil Preparedness has also developed a response plan for accidents involving radioactive materials which utilizes many city and county agencies.

As part of the State plans, Highway Patrol personnel in both states are trained in the proper procedures to follow in a highway accident involving radioactive materials. They are usually among the first to arrive at an accident scene and have demonstrated their ability to protect the public in actual accident situations where radioactive materials were involved. Duke Power Company will also make Health Physics personnel from Oconee and McGuire Nuclear Stations and from the General Office staff available to help local authorities in any such accident situation involving the spent fuel shipments.

There have been eighty-one incidents involving the transport of radioactive materials in North Carolina. Eleven of these incidents have occurred since 1976. The only incident involving transportation in the Charlotte area occurred April 24, 1975

in Huntersville, North Carolina. None of these incidents involved spent fuel or posed a threat to the public health or safety since source integrity was maintained. The State response time for these emergencies depends on their evaluation of the information available from the Highway Patrol.

Generally, a two person survey team is mobilized within 30 minutes during working hours and within one hour at other times. The team determines if a hazard to the public health or safety exists and takes action to correct any existing hazards. The duration of this corrective action may be a few minutes to several days as occurred with a train derailment near Rockingham, North Carolina in 1977.

Dated: June 4, 1979

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of)
)
DUKE POWER COMPANY)
) Docket No. 70-2623
(Amendment to Materials)
License SNM-1773 for Oconee)
Nuclear Station Spent Fuel)
Transportation and Storage)
at McGuire Nuclear Station))

TESTIMONY OF S. B. HAGER

My name is S. B. Hager. My business address is 422 South Church Street, Charlotte, North Carolina 28242. I am Chief Engineer, Civil and Environmental Division, Design Engineering Department, Duke Power Company.

I graduated from North Carolina State University in 1960 with a Bachelor of Science degree in Civil Engineering.

From July 1960 to January 1961, I was employed by the Veterans Administration in Washington, D.C. in the Structural Division.

From January 1961 to July 1961, I was on active military duty with the U. S. Army in Ft. Eustis, Virginia as Operations Officer attached to the Corps of Engineers.

From August 1961 to present, I have been employed by Duke Power Company in the Design Engineering Department. Assignments have been in civil engineering design work on thermal and hydro plants. In November 1972, I was promoted to Principal Engineer in the Civil and Environmental Division which included responsibility for structural, hydraulic, and earthwork of

specific assigned projects in the Design Engineering Department. In May 1978, I was promoted to Chief Engineer of the Civil and Environmental Division of the Design Engineering Department which includes responsibility for civil, architectural, and environmental design work of Duke's generating stations.

Since graduation from North Carolina State University in 1960, I have attended various continuing education and technical courses.

I am a member of the American Society of Civil Engineers, member of the American Nuclear Society, and a registered professional engineer in North Carolina and South Carolina.

My testimony, contained herein, presents economic and scheduling data pertinent to Mr. R. W. Bostian's response to contentions concerning alternatives to transportation of Oconee fuel to McGuire. The alternatives are addressed as follows:

a) Modification of existing Oconee spent fuel pools:

The Oconee Nuclear Station was designed and constructed with two spent fuel storage pools, one shared by Units 1 & 2 with 336 storage locations, and one for Unit 3 with 216 storage locations.

In 1976, the capacity of the Unit 3 Spent Fuel Pool was expanded from 216 to 474 locations by replacement of the existing racks with the Combustion Engineering, Inc., supplied High Capacity Fuel Assembly Storage Rack. The

structural geometry of the pool was unchanged. The work was completed in 1976 at an actual cost of \$2,388,000. On a per storage location basis, this cost equates to approximately \$9000 per additional spent fuel storage location.

Duke is currently pursuing the approval of a license amendment to allow the installation of high density racks in the Oconee Units 1 & 2 pool. This expansion, if approved, will increase the storage capacity from 336 to 750 locations. The modification consists of replacing the existing storage racks with the Combustion Engineering, Inc., supplied High Capacity Fuel Assembly Storage Rack without changing the structural geometry of the spent fuel pool. The cost of this expansion is estimated at \$3,514,000 (1979 dollars). On a per storage location basis, this cost equates to approximately \$8,400 per additional spent fuel storage location. Pending a June 1979 approval of the proposed license amendment, this work is scheduled to be completed in late 1979.

Based on current discussions with Poison Rack Suppliers, the estimated cost of poisoned racks for the Oconee pools is approximately \$7,000,000, and the estimated delivery time is 12 to 15 months. We are currently performing a study to determine the feasibility of installing poisoned racks.

b) Construction of a separate storage facility at Oconee:

Support systems for a separate spent fuel storage facility at Oconee would have to be independent of the existing station, since those systems were sized and designed for the existing spent fuel pools. The most feasible location on the site would be in an area where interference with existing structures is minimized. A possible location adjacent to the Uni 3 Spent Fuel Pool was evaluated and deemed less suitable because of confined working conditions during construction.

The cost of this facility, an Independent Spent Fuel Storage Facility (ISFSF), was estimated at \$44,315,000 (1976 dollars). On a per storage location basis, this cost equates to \$29,500 (1976 dollars) or \$34,500 (1978 dollars) per additional spent fuel storage space. The estimate includes costs for materials, equipment, engineering, field labor, field and general office overhead, contingencies, and interest during construction. The estimate considers a fully self-contained, Category 1 facility with a capacity of 1500 spent fuel assemblies located so as to avoid interference with existing structures.

The time to design and construct this facility on a "rush" basis is estimated at 45 months; however, the estimated time is 60 months on a preferred schedule.

The environmental impact resulting from the construction of this facility at Oconee would be minimized since construction would be in an area adjacent to the existing Oconee station.

- c) Construction of a separate storage facility away from Oconee but not at McGuire:

As compared to the facility described in part b, the cost of an ISFSF sited at a location other than a reactor site would be greater due to additional property, roadway, and security costs. The licensing and design time would likely be extended due to additional investigations required as a result of the location of the facility in an area where the geology and demography have not been evaluated. This facility would require a significant volume of earth to be displaced. Also, the environmental impact associated with the clearing of property, construction of roadways, power lines, and other utilities, the potential destruction of farmland and/or forest, and the potential displacement of residents may be significant.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)
)
DUKE POWER COMPANY)
)
(Amendment to Materials License) Docket No. 70-2623
SNM-1773 for Oconee Nuclear Station)
Spent Fuel Transportation and Storage)
at McGuire Nuclear Station))

TESTIMONY OF RALPH W. BOSTIAN

My name is Ralph W. Bostian. I am the Manager of the System Results and Fuel Management Group of the Steam Production Department of Duke Power Company. I graduated from North Carolina State College in 1949 with a Bachelor's Degree in Mechanical Engineering. After a short period of employment in a power plant of the Springs Cotton Mills in Lancaster, South Carolina, I was employed by Duke Power Company in October, 1950 and assigned to the Cliffside Steam Station near Cliffside, North Carolina. In January, 1951 I was transferred to the Buck Steam Station near Spencer, North Carolina. In August, 1951 I was promoted to Test Engineer at Buck; this being my first supervisory assignment. It was in this role that I first participated in the construction, check-out and start-up of a new generating unit, Buck No. 5. In December, 1956 I was transferred to the Allen Steam Station, then under construction, near Belmont, just a few miles west of Charlotte. Here, first as Plant Engineer, then as Assistant Superintendent and finally as Superintendent I became involved in all aspects of power plant operation and maintenance.

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In April, 1971 I was transferred into the General Office of the Steam Production Department as System Production Engineer. Here, it was my responsibility to coordinate the operating and maintenance activities of all Duke's thermal stations to assure that the system's load could be met reliably and efficiently. Beginning in June, 1971 I was given an additional assignment of coordinating the completion and start-up of Cliffside No. 5, a 600 MW coal-fired unit designed and constructed by non-Duke forces. This unit was placed in commercial operation in mid June of 1972, essentially on schedule. January, 1973 brought me into a new activity, nuclear fuel - as Manager, Fuel Utilization. A departmental reorganization in October, 1974 placed me in my present position, Manager, System Results and Fuel Management Group. This group has a variety of duties:

1. Production statistics
2. Thermal performance of generating stations
3. Special testing
4. Nuclear fuel management
5. Fossil fuel management including recycle of coal ash and the burning of solid waste.

I have represented the company in several industry nuclear fuel activities. Among these are:

1. Edison Electric Institute - Nuclear Fuels Committee
(Chairman - Administrative years 1977-78, 1978-79)
2. EEI Enrichment Study - 1974
3. EEI Nuclear Fuels Supply Study - 1975-76
4. The Uranium Enrichment Problem: An Assessment of Options -
July, 1977. EEI, Tennessee Valley Authority, Electro-Nucleonics,
Inc., Duke Power Company

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5. Utility Waste Management Group

6. Nuclear Transportation Group

It is the contention of several intervenors in this proceeding that the modification of the existing pools at Oconee is preferable to the proposed shipping campaign as a way to handle the spent fuel storage requirements of Oconee. An economic comparison of these alternatives does not show this to be the case. This comparison is set forth in Table 1, Page 4.

TABLE 1

Situation	Cost		Time When Oconee Station Will Lose FCR	Time When Oconee Units Will Lose Thermal Output
	Total	Per Assembly		
Shipment of 300 Oconee Spent Fuel Assemblies to McGuire No Rerack	\$738,300	\$2,461	August 1981	12/82 - 10/83
Reracking Oconee 1, 2 Pool with High Density Non-Poison Racks	\$3,514,470	\$8,489	September 1982	10/83 - 11/84
Reracking Oconee 1, 2 Pool with Poison Racks *	\$4,000,000	\$8,000	April 1986	11/87 - 5/88
Reracking Oconee 3 Pool With Poison Racks *	\$3,000,000	\$11,000	November 1984	3/86 - 8/86
Reracking Roth Oconee Pools With Poison Racks *	\$7,000,000	\$9,000	March 1988	7/89 - 12/90

* Assumes no cost for any required transfers of spent fuel to perform the spent fuel pool modifications. These are preliminary figures; complete engineering cost estimates should be complete by June 15, 1979 and will revise these values accordingly. Also, poison reracking assumes that the Oconee 1, 2 high-density reracking in 1979 has been completed. These dates are based on a February 1979 refueling schedule with Oconee 3 on an annual refueling cycle.

These figures by themselves indicate the value of shipment as opposed to reracking the existing pools in that the cost to the rate payer is much less.

It should be noted that regardless of which of the above alternatives is selected, additional spent fuel storage space for Oconee spent fuel will be necessary. It should also be noted that Oconee fuel could be shipped to other Duke nuclear facilities. Duke has determined that such a course of action would give Oconee, as well as the other stations involved, full core reserve capability until 1991 and would cost \$4 - \$4.5 million, including the estimated cost of the newly established NRC transportation safeguards program.

A further contention of some of the intervening parties is that the development of an ISFSF at the Oconee site is preferable to shipment. On the basis of cost, this again can be shown to be incorrect. An independent storage facility at Oconee has been estimated to cost \$44 million (1976 dollars) and it has recently been estimated that it will take about five years to design, license and construct the facility. In today's economy this type of facility could be expected to cost much more. The cost of shipment has been estimated at \$2,000 per transfer (1978 dollars). Even with the new NRC security requirements for spent nuclear fuel shipments, we do not expect this cost to exceed \$2,500 per transfer. It is evident that this is the preferred economic method of handling the increasing quantity of spent fuel until reprocessing, government storage, or government disposal facilities are provided. It should also be noted that design, licensing and construction of an ISFSF at Oconee most likely could not be completed prior to the date the station would run out of storage space as presently planned. It would require the installation of poison racks (which would most likely require shipment) at the Oconee

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pools to provide Duke with sufficient onsite storage to hold all spent fuel generated by the station until the new facility was completed and ready to accept fuel. Mr. Hager's testimony addresses the physical expansion of the pools. Radiation doses resulting from the various alternatives is addressed by Mr. Lewis.

A contention similar to the one just described has also been presented. It is the belief of the intervenors that an ISFSF away from the Oconee site is preferable to shipment. Once again, I would disagree with this on economic grounds. The cost of such a facility if built anywhere on the Duke system other than Oconee would be at least \$44 million (1976 dollars). This has been shown to greatly exceed the cost of shipment. The dose to the workers would be similar to that presented for the shipment of Oconee fuel offsite or to an AFR at Oconee. The dose to the driver would depend upon the location and distance traveled. The dose to the public for spent fuel shipments, whether they be to an ISFSF away from Oconee or to McGuire, has been found to be very small, thus no matter if the fuel is kept onsite at an ISFSF at its own pool, shipped to an offsite ISFSF, or shipped to a spent fuel pool away from the site where that spent fuel assembly was produced, the incremental dose to the public is negligible. It should be noted that this option would require shipment and reracking of the Oconee pools with poison racks to enable Oconee to continue full power operation.

Another contention in this hearing is that transportation of spent fuel will result in an increased radiation dose to the persons living in the vicinity of the transportation routes. Mr. Lewis presents the dose data in his testimony. I would point out that the planned route is as described in the Environmental Impact Appraisal developed by the NRC staff. This route has been chosen to provide the safest avenue for the

fuel to travel; it minimizes travel over two lane highways, intersections and railroad grade crossings. The number of people described in the EIA and those located in the factories, schools and hospitals indicated in that report are subjected to an insignificant level of radiation from the shipments in normal, delay, or accident situations. Within the staff's EIA and Mr. Lewis's testimony the dose to persons traveling over the transportation routes concurrently with the spent fuel shipments is evaluated. Once again, the dose is shown to be negligible regardless of the route taken. Finally, the dose to those persons in the vicinity of an accident or exposed to a delay in transit are evaluated in the staff's EIA and in Mr. Lewis's testimony. The probability of the accident case is sufficiently low to label the risk of such an event as small. The case of a delay in transit would produce doses well within those established as safe by the NRC. Alternate routes using two lane non-interstate, non-limited access type roads have been examined and while the net population along the route may be somewhat less than that over the proposed route, the dose in this case is still negligible. Thus, a comparison of shipping on rural two lane roads passing through numerous smaller towns and the associated schools, factories and hospitals versus shipments on the limited access interstate highways would show an insignificant difference in dose to the public. However, I believe that the shipments of spent fuel can be made in a safer manner by transporting them on the limited access interstate highways, I-85 and I-77.

One of the contentions is that the proposed action cannot be approved until completion of various generic environmental impact statements. I would choose not to speak to the legality of this point but I would note out that transportation has been found to be the most cost effective method

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of providing storage for spent fuel at Duke until reprocessing, government storage, or government disposal is made available. The use of this method of providing storage does not rule out the modification of existing pools or development of interim spent fuel storage facilities (ISFSF) on the Duke system but rather has been found at this point to be the least burdensome method in terms of cost to our rate payers and at a negligible environmental impact to all concerned. The use of the transfer scheme will provide Duke with the flexibility it needs to continue to provide reliable electric service to its customers.

Another contention, similar to ones discussed above, is that Duke has failed to consider several alternatives to shipment. As previously stated, Duke has examined a number of ways to increase the storage capacity at its pools. These include, but are not limited to, reracking of the existing pools with poison racks, use of pin storage, and design, licensing and construction of an ISFSF at or away from Oconee but on the Duke system. In 1976 Duke decided to utilize high density non-poison racks at each of its spent fuel pools then under construction or design. Scheduling problems have prevented us from using poison racks at Oconee so far but we are evaluating their use for the near future. It should be noted that with poison racks installed at Oconee, full core reserve storage is estimated to be available only until sometime in 1988. Thus, to provide full core reserve storage thereafter would require the design, licensing and construction of an ISFSF or shipment. The cost of an ISFSF has been estimated at \$44 million (1976 dollars) with a 1979 dollar cost of \$34,500 per space.

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The timing of these alternatives is of importance in planning for spent fuel storage as well. Our planned reracking of Oconee 1, 2 with the high density, non-poison racks is scheduled for completion by late 1979. As the award date for this project was December 1, 1978, the total project time is about one year. This includes an abbreviated licensing review by the NRC. The poison rack option is estimated to require additional time in that a lengthier licensing time is expected, more rack locations must be fabricated, and the production and testing requirements on these extremely close spaced racks are more stringent. We estimate approximately 2 years from award date to completion of installation for this option. Finally, the design, licensing and construction of an ISFSF is estimated to take five years to complete. As no facility built specifically for this purpose has been developed in the United States there is scarce experience to draw on.

It is important to analyze the storage capacity afforded by these options. The following Table 2 describes the storage available with the storage options discussed above assuming no transshipment between plants.

TABLE 2 - SPENT FUEL STORAGE

<u>Plant</u>	<u>Rack Description</u>	<u>Rack Spacing</u>	<u>Rack Spaces</u>	<u>Total</u>	<u>Date Plant Loses FCR*</u>
Oconee 1, 2	Original	21"	336	532	10/77**
3	Racks	21"	216		
McGuire 1	High	15.5"	500	1000	1987
2	Density	15.5"	500		
Catawba 1	High	13.5"	1418	2836	2004
2	Density	13.5"	1418		
<hr/>					
Oconee 1, 2	High	13.75	750	1224	1982
3	Density	14.09	474		
McGuire 1	Poison	10.50"	-1200	-2400	1999
2	Racks	10.50"	-1200		
Catawba 1	Poison	10.25"	-2800	-5600	past 2005
2	Racks	10.25"	-2800		
<hr/>					
Oconee 1, 2	Poison	10.5	-1250	-2000	1988***
3	Racks	10.5	-750		

* No offsite fuel shipments--no transshipment.

** If Oconee 3 had not been reracked in 1976 to 474 spaces, Oconee would have lost station FCR on this date.

*** This indicates that we maintain FCR through 1987 but lose it sometime in 1988.

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The storage capacity afforded by these options is important in the analysis of which option is best. The following Table 2 describes the storage available with the storage options discussed above assuming no transshipment between plants.

The technical problems Duke is aware of at this time on alternatives to shipment are varied. Some of the major problems involved in backfitting plants today with additional spent fuel storage space include, but are not limited to, keeping radiation doses to divers in underwater projects low, removal and disposal of the old racks, leveling methods, and backfitting the cooling capacities of the existing pool. Poison racks are being implemented by utilities as some of the problems with earlier designs are corrected. Offgassing hydrogen and the ability of the poison materials to withstand the effects of water and/or radiation are still of some concern, however we feel that in time this "maximum" type capacity will be available at a lower risk. Also, poison racks require a more lengthy technical review which adds some uncertainty to scheduling.

It is also asserted that Duke has not adequately considered utilizing existing space to its maximum capacity and also that the justification provided for not expanding the Unit 1, 2 pool is insufficient. I would once again disagree on these points for several reasons. The scheduling problems were the primary reason for deciding to rerack the Oconee 1, 2 pool with non-poison rather than poison racks. However, it should be noted that when the present reracking is completed, Duke will have spent approximately \$6 million in adding 672 spaces to the initial capacity. We are, at this time, once again reviewing the cost and feasibility of reracking Oconee pools with poison racks. We have evaluated the costs and environmental effects of shipment versus reracking and find shipment to

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be justified by the lower costs and negligible environmental effects of this method of providing storage on the Duke system.

The last contention proposed is that Duke should be bound by its full core reserve (FCR) standard or demonstrate that this capability is more valuable than the costs of shipment offsite of one core of spent fuel. Duke is familiar with needing full core reserve space to accommodate the full discharge required for a vessel inspection. Oconee 2 required defueling from February 20, 1974 to April 5, 1974 to remove loose parts. All three Oconee units required full core discharges in 1976 for removal of specimen hold tubes. Oconee 1 was down from April 18 to May 31 for its work, Oconee 2 was down from April 7 to July 12, and Oconee 3 was down from September 18 to November 11.

Fortunately, in each of these four (4) defuelings full core storage space was available, thus there was no added cost incurred because of the lack of FCR. In each of these four defuelings there would not have been a hazard to the public health and safety had the FCR not been available. Had the FCR not been available, the fuel would have remained in the core with the unit out of service until the FCR was restored in the pool or sufficient storage space secured elsewhere. Thus, in these four defuelings the question of FCR or lack thereof is simply one of cost, not reactor safety. Indeed, it is difficult to envision FCR as anything other than a question of cost.

From a cost standpoint it becomes one of replacement power cost - what does it cost to generate the power lost from having an Oconee unit idle because of the lack of FCR. This added production cost will depend upon where the replacement power is generated or purchased. Mr. Sterrett will address this in detail. As a general planning tool our Production

Engineers are using \$165,000 per day as the replacement power cost of an Oconee unit - when it is available within the Duke system.

As another general rule, an additional 8000 tons of coal will be burned each day an Oconee unit is idle - that is if there is sufficient coal-fired capacity in reserve. If not and purchase power is unavailable, it is then necessary to operate oil-fired combustion turbines. Duke's twenty-four combustion turbines consume 930,000 gallons of No. 2 fuel oil per day when operated at full load. Neither alternative is attractive.

Pickard Lowe and Garrick has recently conducted a Full Core Removal Study for the Edison Electric Institute. The Draft Report, issued May, 1979, reports that a light water reactor has a mean FCR occurrence frequency (occurrences per reactor-year) of .145 - or once every seven years.

Based on our experience, the results of the Pickard Lowe and Garrick study and cost considerations we believe our plan to maintain a single FCR if possible is good operating practice.

On May 22 the Nuclear Regulatory Commission announced it is amending 10 CFR Part 73 providing additional physical protection of spent fuel in transit. The April 18, 1979 memorandum from Mr. William J. Dircks, Director, Office of Nuclear Material Safety and Safeguards, to the Commissioners proposing the amendment notes that implementation guidance will be furnished on a case-by-case basis. Internal planning has already been initiated to assure that Duke can comply with the regulations when shipments commence.

Since the route proposed for the Oconee-McGuire shipments lies within the Duke Power Company service area we foresee no difficulty in assuring that law enforcement agencies are ready to respond to emergencies or calls for assistance.

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Charlotte is identified in the NRC Interim Guidance for implementing these security regulations as a city of over one hundred thousand population which should be avoided by shipments of spent nuclear fuel. The guidelines does indicate that shipments can transit such as under certain conditions with additional security precautions. We believe the I-85/I-77 route to be the safest and preferred route.

The short distance (170 miles) to be traveled should permit the shipments to be scheduled without overnight stops. Large truck stops are spaced at appropriate intervals along the route which should be appropriate for meal and rest stops. We are investigating safe havens along the route for use in event they are needed.

Tri-State Motor Transit, Inc. of Joplin, Missouri has been selected as the carrier for this initial movement. Tri-State is a nationally known hauler of hazardous materials. Procedures for coping with threats and safeguards emergencies will be developed in conjunction with Tri-State. Tri-State has vehicle immobilization procedures to be followed in the event certain of its shipments are jeopardized.

Driver and escort training is being planned to include route information and emergency procedures. The escort will be provided with a Duke Power Company two-way radio operating on established assigned frequencies. It has been determined that continuous contact over the entire route can be maintained through base stations at Oconee, Spartanburg Operating Center and the Central Operating Center in Charlotte. Overall training of driver and escorts will be coordinated through the Training and Safety Services Group in the Steam Production Department.

We foresee no difficulty in meeting these new security requirements.

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1 MR. MC GARRY: I might note for the record, just
2 as we are procedurally correct in this regard, that Mr. Glover
3 has previously testified as to his place of employment and his
4 position, and I would submit that his statement of professional
5 qualifications have also been proffered to the Board and the
6 parties.

7 CHAIRMAN MILLER: Right, and the record will so
8 indicate.

9 Now are you offering these witnesses as experts,
10 and are you offering their opinions as expert testimony?

11 MR. MC GARRY: I would imagine that would be the
12 case, yes, Mr. Chairman. There are many facts that would be
13 discussed, but I would think that we would also get to
14 opinions.

15 CHAIRMAN MILLER: Are there any requests for
16 voir dire examination as to the qualifications of any of the
17 experts or as to their qualifications for the area of expertise
18 in which opinion evidence will be sought?

19 MR. ROISMAN: No, Mr. Chairman.

20 CHAIRMAN MILLER: Very Well.

21 You may proceed.

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

23 MR. ROISMAN: On the assumption that the testimony
24 represents what Mr. Bostian's expertise goes to, then we
25 would want to question him, and also the other witnesses, as

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mpb2 1 to whether or not they are the people who should be testify-
2 ing as to what it is that's contained in there.

3 CHAIRMAN MILLER: That doesn't, I take it, go,
4 however, to their expertise, or to the materiality of their
5 asserted expertise to the subject matter of the opinion evi-
6 dence, or does it?

7 MR. ROISMAN: Well, to Mr. Bostian's case,
8 particularly in light of his testimony this morning, it's
9 still not clear to me what expertise he has other than as a
10 manager.

11 Now what he purports to be doing in his testimony
12 here is going through the contentions, essentially our conten-
13 tions, and summarizing the testimony of other witnesses. We
14 object to that as a procedural matter.

15 CHAIRMAN MILLER: Well, there is going to be an
16 objection, I take it, to the admissibility of his testimony
17 or portions of it.

18 MR. ROISMAN: Right.

19 CHAIRMAN MILLER: Now what I want to find out
20 once and for all now is whether anybody wants to interrogate
21 as to the qualifications of any or all of these gentlemen.
22 I'd like to get the qualifications of the witnesses establish-
23 ed before we start considering any of their testimony and the
24 admissibility of it.

25 MR. ROISMAN: Then I guess the answer to that is

mpb3 1 yes.

2 CHAIRMAN MILLER: Very well.

3 You may proceed. Who do you wish to voir dire?

4 MR. ROISMAN: I'll start with Mr. Bostian.

5 CHAIRMAN MILLER: Mr. Bostian.

6 VOIR DIRE EXAMINATION

7 BY MR. ROISMAN:

8 Q Mr. Bostian, in the course of your formal educa-
9 tion, have you had any education in the areas of economic
10 analysis, any specific courses on economic analysis?

11 A (Witness Bostian) Yes, in college I had a course
12 in business economics.

13 Q And what did that consist of? Did it give you
14 the ability to analyze what the forward cost would be of a
15 projected facility to be constructed?

16 A Yes.

17 Q And how did you -- Is that a single course you
18 took in college?

19 A As I recall, that was a single course, some time
20 ago.

21 Q And that was some time between 1945 and 1949?

22 A That's correct.

23 Q In your employment since that time where have you
24 had occasion to utilize those skills?

25 A I have had occasion both as superintendent of

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1 Allen Steam Station in the system production engineer position
2 and in my present position.

3 Q And can you describe to me how often you have had
4 occasion to do an economic analysis of the forward cost of a
5 proposal?

6 A On my own, or through the work of my group?

7 Q Let's talk about you on your own for right now.

8 A Not on a frequent basis.

9 Q In conjunction with the analyses, for instance
10 the one that is marked as Applicant Exhibit number 1 for
11 identification, or in the precursor of that, the so called
12 1976 ISFSP study, did you do economic analyses in conjunction
13 with that?

14 A I did not personally, but it was done under my
15 group.

16 Q I'm just trying to find out what you personally
17 did.

18 What about economic analyses of the cost of
19 transshipment, did you personally do economic analysis of
20 the cost of transshipment?

21 A It was done in my group.

22 Q Can you just answer my question?

23 Did you personally do economic analyses of the
24 cost of transshipment?

25 A No.

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1 Q Did you personally do economic analysis of the
2 cost of racking either with more dense racks or poison racks?

3 A No.

4 Q Did you do economic analyses of the cost of so
5 called pin packing?

6 A No.

7 Q Did you prepare any independent evaluations of
8 studies done by other people in any of those areas I've just
9 identified?

10 A No.

11 Q Now, with respect to the consideration of the
12 health and safety effects of various options, do you have any
13 specialized training for evaluating what the numbers of
14 rems that a worker might receive if he engaged in any activity
15 associated with spent fuel storage would be?

16 A No.

17 Q Do you have any experience with making such calcula-
18 tions?

19 A No.

20 Q Have you done any such calculations in conjunction
21 with work at Duke?

22 A No.

23 Q What about evaluating the health consequences of
24 such exposures, have you had any training in that area?

25 A No.

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1 Q Have you done any studies in that area?

2 A No.

3 Q Have you done any evaluations of studies in that
4 area?

5 A No.

6 Q In conjunction with the time that it takes to
7 implement a spent fuel storage option, that is physical
8 construction work, licensing work, obtaining approvals from
9 communities or federal agencies, as the case may be, have you
10 had any specific training for the purpose of being able to
11 make those kinds of evaluations?

12 A No.

13 Q Have you done any independent studies on your
14 own of the time that might be involved in getting a license
15 for or approval for something or the time needed to physically
16 construct a particular facility?

17 A I have had no direct work in licensing as far as
18 estimating times. I'm certainly aware of what goes on within
19 Duke Power Company regarding such estimates.

20 Q But I guess what I'm asking you is if someone
21 proffered you a proposal, would you have an independent
22 judgment as to how long that proposal might take to get
23 licensed, or would you have to go to somebody in Duke and
24 say to them 'What is your judgment as to how long this would
25 take to be licensed'?

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A Have them do it again.

Q Now what about with respect to how long it would physically take to build something or to acquire the materials to perform some function related to spent fuel storage, do you have any special training with respect to that?

A Mr. Roisman, I've had many years experience in that type activity.

Q Well, let's get training. I'll give you a chance to tell me about experience. What about in terms of training?

A No.

Q Okay.

Now tell me about experience. What kind of experience have you had?

A My work with Duke over a period of many years up until I became involved in my particular activity, I had much experience, direct experience in estimating the length of time necessary to carry out construction projects.

I am not doing them on a personal basis at the present time.

Q How long has it been since you have been doing that, on a personal basis?

A I've been in this position for six and a half years.

Q And it's since you came to the present position that you stopped doing it on a personal basis.

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A On a personal basis.

Q Does that mean, then, that to the extent that any estimates are made in testimony presented by Duke in this case, or documents that relate to things that were completed within the last six and a half years you did not independently make the estimates as to how much time would be involved?

A I did not.

Q People perhaps working for you did?

A My own people or the design engineering Department.

Q How do you have direct personal knowledge as to what factors Duke will use in making a judgment as to what spent fuel storage options it should or should not pursue?

A Yes.

Q Is that your area? I mean, is that one of your specific responsibilities?

A Yes.

Q Does that include some knowledge as to how the executive committee of Duke will react to proposals for specific spent fuel storage options?

A Yes.

Q What is that knowledge based upon? In other words, would you be able to answer a question 'what will Duke do' on the basis, given that you can't make the decision yourself but have to go to the people above you in the chain to

mpb9 1 get that decision, what will be the basis for you to answer
2 a question like that?

3 A The basis will be my number of years of experience
4 in dealing with the executive committee.

5 Q In other words, you will give us your opinion as
6 to what you believe they will say.

7 A Yes.

8 Q Will you be giving us your opinion as to what
9 factors they will give more weight to and what factors they
10 will be giving less weight to?

11 A That would be opinion on my part.

12 Q But I mean you will be giving us -- you would be
13 able to give us in your judgment opinions about those things?

14 A I believe so.

15 Q If you were to pick one person from the executive
16 committee who would be the one most likely to have the judg-
17 ments upon which you would be giving opinions to sort of take
18 the lead, who would that person be, or is there only one?

19 A There are three individuals on the executive
20 committee who are knowledgeable in this area and in this
21 activity. Mr. Lee, Mr. Theis and Mr. Owen.

22 Q And is their decision sufficient, for instance, on
23 whether or not Duke should build an independent fuel storage
24 facility, or do they themselves have to go to yet another
25 person?

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2 A Expenditure of that magnitude would require the
3 approval of the full executive committee.

4

5 Q But not anyone other than the executive committee?

6

7 A No.

8

9 Q Other than outside agencies; I meant within Duke.

10

11 A That's correct.

12

13 Q Now in terms of how Duke has gone about making
14 its plans with respect to what to do with spent fuel storage,
15 are you the person who has been making those plans personally
16 and directly, or have the people who work for you been
17 making those plans and you've merely been making sure that
18 they got the thing done within the time frame required?

19

20 A Prior to 1973, January of 1973, I have had
21 nothing to do with the plan for Duke's spent fuel storage
22 capacity. That includes the initial capacity of the Oconee
23 Nuclear Stations.

24

25 After January of 1973 I have been aware of Duke's
26 activity both in design engineering with respect to the design
27 of new stations and the expansion programs that we have
28 carried out since that time.

29

30 The work that led up to the decisions to conduct
31 the expansions was carried on in my group under my direction.

32

33 Q All right.

34

35 But were you -- I'm trying to distinguish between
36 someone who makes sure the work gets done as opposed to

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mpb11 1 someone who directly and personally is involved in doing the
2 work.

3 Which of those were you with regard to the planning
4 work on the spent fuel storage capabilities for Oconee?

5 A Both.

6 Q And is that equally true for McGuire?

7 A Yes.

8 Q Catawba?

9 A Yes.

10 Q Cherokee?

11 A Yes.

12 Q Perkins?

13 A Perkins.

14 MR. ROISMAN: Mr. Chairman, on the basis of the
15 answers given, I would have no objection to Mr. Postian
16 providing an opinion regarding the planning that Duke would
17 do with regard to spent fuel storage at his level in the
18 company.

19 I would object to his providing an opinion on the
20 basis of because it would be hearsay --

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1 CHAIRMAN MILLER: Opinion on what?

2 MR. ROISMAN: An opinion on the executive
3 committee's reaction to those on the basis that it would be
4 hearsay.

5 CHAIRMAN MILLER: Well, you asked him about that,
6 I didn't even know he was going to testify to hearsay.

7 MR. ROISMAN: I don't know either, but what I am
8 trying to do is scope out the places in which I am going to
9 object if opinion evidence is sought there. And I think there
10 are questions that will legitimately be raised about what
11 is Duke going to do as part of our discussion about alternatives
12 and what's available.

13 And I just want to make it clear that I don't
14 think Mr. Bostian, and as best as I can tell, none of the
15 other witnesses would be qualified to answer that, and the
16 ones who would be qualified would be the three identified
17 members, Lee, Thies and Owen, members of the executive
18 committee.

19 CHAIRMAN MILLER: Or, perhaps others that counsel
20 might proffer.

21 MR. ROISMAN: Yes, that's possible.

22 But I thought Mr. Bostian sort of settled for us
23 who those three would be, the executive committee would be
24 the right place.

25 In addition I would object to his submitting

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1 to X money which he purports to do here, which essentially
2 is the form of "a study was done at Duke that concluded
3 that."

4 CHAIRMAN MILLER: You probably would object to
5 anybody doing that, wouldn't you?

6 MR. ROISMAN: Yes. But I've only got Mr. Bostian
7 now.

8 CHAIRMAN MILLER: All right.

9 MR. ROISMAN: And that essentially covers these
10 areas in which he indicated he did not do them himself and
11 he does not have special qualifications, economic analyses,
12 the timing, licensing time, scheduling, that sort of thing.

13 CHAIRMAN MILLER: Mr. McGarry?

14 MR. MC GARRY: Yes, Mr. Chairman.

15 I have several responses, and perhaps the best
16 way to handle this is if I can direct some questions to
17 Mr. Bostian.

18 CHAIRMAN MILLER: Fine.

19 FURTHER DIRECT EXAMINATION

20 BY MR. MC GARRY:

21 Q Mr. Bostian, do you have the overall responsibility
22 for the company with respect to this instant project which is
23 before the Board for consideration?

24 A (Witness Bostian) Yes.

25 Q And has the accomplishment of this project to date

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1 been done under your supervision?

2 A Yes.

3 Q Under your direction?

4 A Yes.

5 Q Have you met with the individuals who have been
6 doing the day-to-day work routinely?

7 A Yes.

8 Q Have you discussed this application and their
9 work with them?

10 A Yes.

11 Q And do you feel that you have a total familiarity
12 with this project?

13 A Yes.

14 CHAIRMAN MILLER: What is this project?

15 MR. MC GARRY: The instant application that is
16 before this Board, Mr. Chairman.

17 CHAIRMAN MILLER: I see. Thank you.

18 LBY MR. MC GARRY:

19 Q Mr. Bostian, with respect to this particular
20 project, have you been designated as the spokesman for Duke
21 Power Company?

22 A (Witness Bostian) Yes.

23 MR. MC GARRY: Mr. Chairman, I am having a
24 procedural problem at this point in time.

25 In addition to Mr. Bostian's testimony we would

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1 also like to introduce what we would mark as Applicant's
2 Exhibit 2 for identification.

3 That is indeed the March 9, 1978 application
4 that is the subject of this proceeding.

5 CHAIRMAN MILLER: You are certainly entitled to
6 mark it for identification.

7 MR. MC GARRY: If we could at this time perhaps
8 that would be helpful. Three copies have been provided to --

9 CHAIRMAN MILLER: It will be so marked.

10 MR. ROISMAN: Are you providing copies to the
11 parties?

12 MR. MC GARRY: I believe the Parties have copies
13 of this document.

14 CHAIRMAN MILLER: We either have it or we've seen
15 it, and I'm sure portions of it will be shown to us.

16 (The document referred to
17 was marked Applicant's
18 Exhibit No. 2 for identification

19 BY MR. MC GARRY:

20 Q Mr. Bostian, directing your attention to the
21 March 9, 1978 application --

22 MR. ROISMAN: Excuse me, Mr. Chairman, could we
23 have it identified so that we know we have got the
24 right number of pages, cover pages and the like?

25 CHAIRMAN MILLER: Yes. Would you describe it for

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1 the record. Is this Applicant's No. 3 for identification?

2 MR. MC GARRY: I have already identified it as
3 Applicant's 2.

4 CHAIRMAN MILLER: Applicant's 2 for identification?

5 MR. MC GARRY: Yes.

6 CHAIRMAN MILLER: Very well.

7 Would you describe for the record date, number
8 of pages and so forth so that we can identify it in case
9 there be any question of the physical ---

10 MR. MC GARRY: I was planning to do that with
11 Mr. Boston, Mr. Chairman. But I would be glad to identify it.

12 It is a document dated March 9, 1978. It is a
13 letter to Mr. Edson G. Case from Mr. William O. Parker, Jr.,
14 two pages, with a attachment entitled "Duke Power Company,
15 McGuire Nuclear Station, Information Supporting Storage of
16 Once-Used Spent Fuel at McGuire, March 9, 1978".

17 The Table of Contents follows that page. The
18 Table of Contents consists of three pages running from
19 No. 1, Introduction, to No. 19.2, Analysis and Bar And
20 the material referenced in the Table of Contents follows the
21 Table of Contents.

22 MR. ROISMAN: Mr. Chairman, we do not have the
23 document.

24 We have a document dated March 9, 1978, a letter to
25 Clifford B. Smith, subject Duke Power Company application

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1 for license to store Oconee Nuclear Station fuel at
2 McGuire Nuclear Station, to which is attached a document
3 called "Duke Power Company, McGuire Nuclear Station,
4 Information Supporting Storage of Oconee Spent Fuel at
5 McGuire, March 9, 1978."

6 And ending on page 19-3. That is not the same
7 document that Mr. McGarry just described.

8 CHAIRMAN MILLER: Just a minute.

9 The 19 page 3 hyphen is shown on page 3 of the
10 Table of Contents as page 19-1. But I think what was
11 identified by Mr. McGarry as Section had 19.2, Analysis
12 and Basis, which indeed does seem to be consistent with --
13 yes, 19-1 is where 19.1 or where 19 --

14 MR. ROISMAN: Okay. I thought he was telling us
15 the last page of the document.

16 CHAIRMAN MILLER: He didn't say which, but in
17 following it we note that the section was correct. If it
18 were a page, it would have been incorrect.

19 MR. MC GARRY: Just to clarify matters, I would
20 like to strike the reference to the accompanying letter and
21 I would now like the record to reflect that Applicant's
22 Exhibit 2 marked for identification bears the caption,
23 "Duke Power Company, McGuire Nuclear Station, Information
24 Supporting Storage of Oconee Spent Fuel at McGuire,
25 March 9, 1978." And then I believe the document has already

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1 been identified on the record.

2 CHAIRMAN MILLER: All right. We will have the
3 document as you described it from the Duke Power Company,
4 McGuire Nuclear Station, Information Supporting Storage of
5 Oconee Spent Fuel at McGuire, March 9, 1978 and successive
6 pages have been marked for identification, Applicant's Exhibit
7 2.

8 BY MR. MC GARRY:

9 Q Mr. Bostian, are you familiar with Applicant's
10 Exhibit 2 marked for identification?

11 A (Witness Bostian) Yes.

12 Q Mr. Bostian, are you the individual at Duke
13 Power Company who had the responsibility for the preparation
14 of this document?

15 A Yes.

16 Q Was this document prepared under your direct
17 supervision?

18 A Yes.

19 Q And was this document prepared pursuant to the
20 Commission's regulations?

21 A Yes.

22 MR. ROISMAN: Objection.

23 CHAIRMAN MILLER: Sustained.

24 The answer will be stricken.

25 He may state his understanding.

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1 BY MR. MC GARRY:

2 Q Mr. Bostian, to the best of your knowledge -- I
3 will repeat it for the third time for the Court Reporter --
4 Mr. Bostian, to the best of your knowledge, was this document
5 marked for identification as Applicant's Exhibit 2, prepared
6 pursuant to the Commission regulation?

7 MR. ROISMAN: Objection.

8 CHAIRMAN MILLER: Overruled.

9 WITNESS BOSTIAN: Yes.

10 MR. MC GARRY: Mr. Chairman, pursuant to the
11 Appeal Board decision at Pilgrim, ALAB 83 -- I am looking for
12 the date -- I don't have it, but one can well imagine it was
13 sometime ago -- that the Appeal Board therein stated the
14 admissibility of the FSAR into the hearing need be tested only
15 by identification as a document prepared pursuant to
16 Commission regulations and submitted to the Commission as
17 part of the application.

18 In Trojan Appeal Board 531, March 21st, 1979,
19 footnote 13 on page 16, discussing the license amendment
20 application involving the spent fuel pool modification,
21 the Appeal Board indicated that the report, "Basically the
22 equivalent of a Final Safety Analysis Report," was before
23 the Licensing Board and the Appeal Board.

24 Pursuant to the Pilgrim decision I would move that
25 Applicant's Exhibit 2 marked for identification, be received

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1 into evidence.

2 MR. ROISMAN: Objection.

3 CHAIRMAN MILLER: What is the basis for the objection?

4 MR. ROISMAN: Several.

5 One, I do not believe Mr. Bostian has been
6 identified as the author of the document. The fact that he
7 may have supervised its preparation based upon his earlier
8 testimony of what consists of his supervision which is, he
9 make someone else do the job, doesn't mean he is in a position
10 to testify as to the truth or accuracy of the statements
11 contained therein.

12 My suspicion is that on this panel, if not in
13 this room, there are people who were directly involved in
14 writing the document. The best evidence rule would suggest
15 that they should sponsor it.

16 Third, and most significantly is, if this is to
17 be allowed in, I do not want it allowed in under this PSAR
18 thing from a 1912 Appeal Board decision that is based upon
19 the assumption the document was prepared in compliance with
20 the regulations.

21 We have no evidence on that. What we have is the
22 opinion of the witness who has no basis to make an opinion
23 on the subject that to the best of his knowledge, which is
24 essentially zero, that it was.

25 Number two, we have a contention in the case

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mml0 1 that there should have been an impact statement done here.
2 If that is so, this document which contains in it a discussion
3 of alternatives would be, in part, illegal under the
4 regulations because it does not conform with the requirements
5 for preparing an environmental impact statement by an
6 Applicant. I believe they call it Environmental Report.
7 And that would bother me.

8 Now, let me be clear on what wouldn't bother me.
9 Having the document sponsored by the people who directly
10 prepared it and wrote the words, and not having it classified
11 as an FSAR or the equivalent thereof, so that we can get the
12 information that's in here, which I think is arguably
13 relevant to the case and to the record. It is the way
14 Mr. McGarry is trying to do it, not the actual presence of
15 the document in the record that I object to.

16 CHAIRMAN MILLER: Staff?

17 MR. KETCHEN: Mr. Chairman, I have no objection.

18 I would ask a point of clarification on a citation
19 to the record about Mr. Roisman's pointing to the requirement
20 for an Environmental Report. I would just like to know for
21 the record what requirement he is pointing to.

22 CHAIRMAN MILLER: Mr. McGarry, why is it necessary
23 to call this an FSAR, or the equivalent to it, and to have
24 it sponsored -- if you are using that term -- by Mr. Bostian?

25 MR. MC GARRY: Mr. Chairman, I was just anticipating

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1 Mr. Roisman's objections, and I was attempting to lay a
2 foundation following the Appeal Board's language in the
3 Pilgrim case, and then seeing very nicely that the Trojan
4 Appeal Board referred to a similar application that we have,
5 to the one we have, as being equivalent of an FSAR.

6 It seemed to me to lend itself rather nicely to
7 that argument.

8 We would be just as glad, having asked the
9 pertinent questions, and we think we have received the
10 appropriate responses from Mr. Bostian, that we would just
11 move that the document, aside from the FSAR logic, be received
12 in evidence.

13 CHAIRMAN MILLER: Well, the Appeal Board in the case
14 that you cited, the ALAB 531 Trojan indicates that in
15 support of its License Amendment Application, the Applicants
16 submitted a "Design Report," which inter alia described
17 the design of the proposed modification of spent fuel pool
18 and the manner in which the pool would be operated as modified.
19 And the footnote to which you refer states that the report,
20 basically the equivalent of a Final Safety Analysis Report,
21 also contains safety and radiological evaluations of the
22 expansion of the fuels capacity. Following two revisions, it
23 was introduced into evidence as Applicant's Exhibit No. 2.

24 I don't know the Design Report, whatever that is,
25 which the Appeal Board found to be basically the equivalent

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1 of a Final Safety Analysis Report is necessarily the
2 same, identical with, or closely analogous to the
3 application, if I understood correctly, what you are proffering
4 as your Applicant's Exhibit 2 for identification.

5 MR. MC GARRY: Yes. And I can represent to the
6 Board, having examined the Design Report to the Trojan Case,
7 it is analogous to the document that we are now --

8 CHAIRMAN MILLER: Was there any objection in the
9 Trojan case?

10 I don't see any, and my recollection is that there
11 wasn't. I don't think it was a real issue before the Appeal
12 Board.

13 MR. MC GARRY: I don't recollect it. I can't
14 recall it, Mr. Chairman.

15 And in addition, it was not an issue based on
16 my examination of the case.

17 CHAIRMAN MILLER: Now, who has the floor?

18 MR. ROISMAN: I think Mr. Ketchen asked for the
19 citing. He asked me to give the cite.

20 Section 51.40(c) of 10 CFR for the obligation to
21 do an Environmental Report.

22 MR. KETCHEN: What was that again, please?

23 MR. ROISMAN: 51.40(c).

24 But I want to make clear, I don't object to
25 getting this piece of paper into the record.

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1 CHAIRMAN MILLER: I'd just as soon not spend a
2 lot of time on non-objections. How can we get it resolved?

3 MR. ROISMAN: Have it sponsored by the people who
4 actually wrote it and forget about calling it the equivalent
5 to an FSAR, or legally in compliance with the regulations.

6 I don't want any characterizations on it.

7 MR. MC GARRY: Mr. Chairman, I think this gets back
8 to a point that you had raised with respect to the FSAR
9 analogy. If I might read just one paragraph from the Pilgrim
10 decision. It says:

11 "The FSAR was introduced in evidence through
12 the testimony of an Applicant witness (Mr. Howell
13 the Applicant's Nuclear Project Manager) who had
14 responsibility for the preparation of the documents,
15 and under whose direct supervision the documents were
16 prepared."

17 That says to me, and based on my experience --
18 I know the Board is quite familiar with this -- that in
19 complex cases such as this, the Administrative Procedure Law
20 does not contemplate that we will bring in every imaginable
21 individual who worked on the document, but rather it is
22 acceptable to have a sponsoring witness for the document
23 and the document can come in under that sponsoring witness's
24 appropriate responses. 275 049

25 . - We have asked the questions we feel they were

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1 appropriate, we have received the responses we feel are
2 appropriate. Therefore, the document should be able to
3 come through Mr. Bostian.

4 If at some point in time, and this takes us through
5 cross-examination, that Mr. Roisman feels that it is important
6 to ask a question, we might object to it.

7 If the Board indeed agrees with Mr. Roisman, we
8 will then put on the appropriate individual. But, to bring
9 in the X number of people who worked on this document and
10 have them collectively all stand up and raise their hand
11 and move for the admission of this Applicant's Exhibit 2
12 seems to us to be quite far removed.

13 CHAIRMAN MILLER: We are going to admit it.

14 If it becomes an issue as to identification or
15 expertise of a particular witness as to particular statements,
16 we will take that up.

17 At the moment we are admitting it into evidence
18 upon the representation that this is as testified to by
19 Mr. Bostian, a report prepared under his supervision, at any
20 rate. And we take it that you are not going any further at
21 the moment with representations of his participation or
22 vouching for any particular portions of the exhibit.

23 Is that correct?

24 MR. MC GARRY: That is correct, Mr. Chairman.

25 CHAIRMAN MILLER: With that understanding, it will

mm15 1 be admitted into evidence.

2 (The document heretofore marked
3 Applicant's Exhibit No. 2 for
4 identification, was received in
5 evidence.)

6 MR. MC GARRY: Mr. Chairman, just to complete the
7 panel -- I know we are getting late in the day but
8 Mr. Sterrett is here and Mr. Snead has also returned and I
9 would like them just to come up to the panel so we have
10 the panel impaneled in toto.

11 CHAIRMAN MILLER: Very well. Will you gentlemen
12 come forward, please.

13 Whereupon,

14 H.T. SNEAD

15 was recalled as a witness on behalf of the Applicant, and
16 having been previously sworn was further examined and
17 testified as follows:

18 and

19 DONALD H. STERRETT

20 was called as a witness on behalf of the Applicant, and
21 having been first duly sworn, was examined and testified
22 as follows:

23 MR. MC GARRY: I would note, Mr. Chairman, that
24 again, recalling this morning's events, Mr. Snead has
25 been previously sworn.

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1 CHAIRMAN MILLER: He has been sworn, remains under
2 oath.

3 MR. MC GARRY: He has also informed us of his
4 qualifications.

5 CHAIRMAN MILLER: Very well. Proceed.

6 BY MR. MC GARRY:

7 Q Now I would ask the newest member of the panel
8 to please identify himself.

9 A (Witness Sterrett) My name is Donald Sterrett,
10 I am manager of systems planning.

11 Q Mr. Sterrett, have you caused to be prepared a
12 statement of professional qualifications for use in this
13 proceeding?

14 A I have.

15 Q Do you have a copy of that statement before you
16 at this time?

17 A I have.

18 Q Have you read that statement?

19 A I have.

20 Q Do you have any additions or corrections to make
21 to that statement?

22 A No, sir.

23 Q Is it true and correct?

24 A It is.

25 Q Do you adopt it as your statement of professional

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1 qualifications for use in this proceeding?

2 A I do.

3 MR. MC GARRY: Mr. Chairman, similarly to the
4 other gentlemen, Mr. Sterrett's statement of professional
5 qualifications is appended to his testimony and will be,
6 would imagine, like the other witnesses, perhaps giving
7 opinion testimony in addition to fact testimony, and I
8 would proffer him.

9 CHAIRMAN MILLER: Any objection to the statement of
10 professional qualifications of Mr. Sterrett?

11 (No response)

12 Any request for voir dire examination?

13 MR. ROISMAN: I am going to voir dire them all.
14 We are still on Mr. Bostian, but I don't have any
15 problem with the statement of qualifications going in.

16 CHAIRMAN MILLER: I thought you had completed with
17 Mr. Bostian.

18 MR. ROISMAN: We don't have any ruling yet.
19 Mr. McGarry was asking him some questions and then was going
20 to make his argument as to why he was qualified.

21 Did we have a ruling?

22 CHAIRMAN MILLER: How did we get there?

23 MR. ROISMAN: Mr. McGarry started off. Then he
24 wanted to stick this document in and we got off on the
25 document.

mm18

1 But, as I understood, he still was trying to
2 make his point through answers from Mr. Bostian.

3 CHAIRMAN MILLER: I guess that is right.

4 MR. MC GARRY: I believe that is where we are,
5 ... Chairman, and I acknowledged a procedural problem that
6 led us to Applicant's Exhibit 2.

7 CHAIRMAN MILLER: Very well.

8 Well, we got your exhibit in, but we still have
9 problems with the witness.

10 MR. MC GARRY: I guess that's true.

11 I would request that Mr. Sterrett's testimony --
12 Mr. Sterrett's statement of professional qualifications be
13 bound into the record as if read.

14 CHAIRMAN MILLER: All right.

15 There being no objection it will be
16 admitted into evidence and it will be bound into the
17 transcript as if read.

18 (Document follows:)

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the matter of)

DUKE POWER COMPANY)

(Amendment to Material License)
SNM-1773 for Oconee Nuclear)
Station Spent Fuel Transportation)
and Storage at McGuire Nuclear)
Station))

Docket No. 70-2623

TESTIMONY OF D. H. STERRETT

My name is Donald H. Sterrett. I am Manager of System Planning, Duke Power Company. I received a Bachelor of Science degree in Electrical Engineering from Duke University in 1944. Following graduation, until May, 1946, I served as a line officer in the U. S. Navy, in the capacity of Engineer Officer on a destroyer-escort.

In July, 1946, I was employed by the Duke Power Company in the Relay Department. My responsibilities were primarily in power plant relaying, and included both the design of relay protection systems and field testing of installed facilities.

In December, 1949, I was transferred to the System Planning Department, where I participated in long-range planning studies which included power plant siting, transmission studies, and the economic evaluation of alternative plans. In March, 1967, I was appointed Production and Transmission Planning Engineer; in May, 1974, Manager, Projects Planning; and, in March, 1977, Manager, System Planning. In my present capacity, my responsibilities include the planning of all generation, transmission, and distribution facilities necessary to meet the future demand for electricity in the Duke service area.

Since 1969, I have been a member of the System Planning ²⁷⁵⁻⁰⁵⁵ Committee of the Edison Electric Institute (EEI), and am currently Vice Chairman of that committee. I am a Senior Member of the Institute of Electrical and Electronics Engineers (IEEE), and for a number of years have served on the System Planning Committee of the Power Engineering Society. At present, I am serving on the System Planning and Operations Task Force of the Electric Power Research

Institute (EPRI), and on the Technical Advisory Committee of the Southeastern Electric Reliability Council (SERC). I am a registered professional engineer in North Carolina.

My testimony will relate to several contentions of the Natural Resources Defense Council which comes within my area of responsibility within the Duke Power Company.

Contention 3: Failure to consider the following alternatives:

3a: Oconee as a last-on, first-off plant.

This contention implies that operation of the Oconee units should be changed from that of a base load plant to cyclic operation, in which the units are placed in operation as the system load increases during the daily load cycle, and removed from service as the system load decreases.

The Oconee units are not designed for this mode of operation, and are constrained by operating limits. In addition to shortening the life of the turbine rotors because of the transient thermal conditions encountered with cyclic operation, the build-up of Xenon in the reactor core under these operating conditions has been well documented. A return to full load while the Xenon level is high cannot be accomplished.

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From an operating standpoint, the physical constraints on the Oconee units are such that the units could not follow the system load, should such an attempt be made. From about 20% capacity, a minimum load level, the Oconee units can be increased in loading 744 MW in an hour and a half, 1000 MW during the next four hours, and 234 MW in three more hours. This represents an increase in loading on the Oconee units of 2008 MW in an eight and a half hour period, or an average of about 236 MW per hour. The system load will increase during the morning periods at a rate of about 500 MW per hour. The Oconee units, therefore, would be unable to change with the system load, should such operation be attempted.

It should be pointed out, in addition, that operation in a cyclical manner would be very costly in terms of system production expense. Operating the

Oconee units in base yields the lowest total system production cost under economic dispatch, and operation in any other mode requires more energy to be produced from units burning coal, at a considerably higher fuel cost. For example, if it is assumed the Oconee units operated in base, but at a level of half their capability instead of at full capability, the additional expense in the year 1980 alone would be \$111,412,000. The increase in cost resulting from cyclical operation would be even greater.

Economic dispatch of a power system is a complex procedure in which each generating unit is operated at that point on its load curve which, when combined with all the other units in operation on the system, will yield the lowest net total system production cost for that system load level. It is not a matter of fully loading one generating unit, then bringing the next unit on line, but rather of operating each unit as a function of its incremental cost curve, recognizing its relationship with the other generating units and the system load requirements. Even during valley load periods, the number of units on line, and their specific loading, are determined by incremental load curves, by the physical constraints on the units themselves, and by the need to meet specific system load requirements. The concept of "last-on, first-off" generation dispatch is a simplistic approach which simply does not exist in the real world.

3b: Cost of increased purchases of power due to Oconee shutdown is speculative.

The shutdown of Oconee becomes expensive in terms of replacement power in two ways. The energy not produced by Oconee would have to be replaced insofar as possible by energy produced from other generating units on the Duke system, which burn either coal or oil; and, that energy which could not be provided from within the Duke system, would have to be purchased from sources external to the Duke system.

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The cost to produce the energy on the Duke system can be determined with a considerable degree of certainty. The average variable O&M and fuel costs for Duke's base-load units have been calculated to be the following in 1979:

Unit(s)	Cost in \$/MWh	
	Variable O&M	1979 Average Fuel
Belews Ck. 1 & 2	.192	12.80
Marshall 1 & 2	.366	16.55
Marshall 3 & 4	.431	16.28
Allen 5	1.082	13.66
Oconee 1, 2, 3	.525	4.44

The cost to purchase energy is speculative in the sense that Duke has no contract at present by which such energy could be purchased. However, based on experience with short term power purchases which have been made in the past, a reasonable estimate of the cost of purchased power can be made.

The probable cost of firm capacity would be between \$3.25 and \$3.75 per kW-month plus the cost of energy which would be no less than 20 mills per kWh. Based on an average value of \$3.50 per kW-month, the cost of a one-year contract to replace the Oconee capacity would be \$108,360,000. Assuming a minimum energy cost equal to that of the Duke system fossil-fuel units, the total cost of purchased energy would be \$257,514,000. The total cost of purchased power to replace Oconee for one year, therefore, would be \$365,874,000.

Actually, in the light of the current status of units which have been removed from service for environmental or other regulatory reasons, and in view of the delayed start-up dates of units on neighboring systems, there is no assurance that firm power could be contracted for at any price.

Contention 5: Applicant should be bound by its full core discharge standard or demonstrate (cost/benefit) that this capability is more valuable than costs of shipment off-site of one core of spent fuel.

Applicant's response to Intervenor's Contention 3 pointed out the very considerable impact of Oconee on the Duke system operating costs. Although full core discharge capability becomes extremely important should a shutdown of the entire Oconee plant be required for generic or other reasons, Applicant

cites the cost of not operating an Oconee unit, a minimum of \$165,000 per day, as a sound reason for keeping all the Oconee units in service for as much of the time as possible. The cost of transporting the fuel to maintain full core discharge capability is insignificant when compared with the alternative of shutting Oconee down.

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1 CHAIRMAN MILLER: Now we resume your interrogation
2 of Mr. Bostian, I believe, on voir dire, as to qualifications.

3 MR. MC GARRY: Mr. Chairman, I might need just
4 a minute or two, if you don't mind, just to collect my
5 thoughts.

6 CHAIRMAN MILLER: Do you want a recess?

7 MR. ROISMAN: Mr. Chairman, what is your plan in
8 connection with the time for the evening?

9 CHAIRMAN MILLER: I was just going to roll on
10 until they kick us out.

11 Do you have some problem?

12 MR. ROISMAN: It is only a question of fatigue,
13 it has nothing to do with time.

14 CHAIRMAN MILLER: Well, how do you feel? I get
15 stronger as the day goes on, you see, so you have to remind
16 us.

17 MR. ROISMAN: Would you be willing to set an
18 outer limit at 6 o'clock on these days where there is one
19 person, which has been me, has been doing most of the cross-
20 examination.

21 I am agreeable. Would you like us to help on
22 this examination?

23 MR. ROISMAN: You have already done an excellent
24 job, and I would be glad to have you participate in any way
25 you want.

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CHAIRMAN MILLER: All right. We will recess at
6 o'clock, or if the management says sooner, we will.

But I believe they are extending us the courtesy.

Let's take ten.

(Recess.)

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CHAIRMAN MILLER: Mr. McGarry?

MR. MC GARRY: I was directing questions to Mr. Bostian, I believe, to update the record. I asked him whether or not he had overall responsibility for the project.

CHAIRMAN MILLER: I bet he answered yes.

MR. MC GARRY: Yes. Maybe I don't have to go through this, Mr. Chairman.

CHAIRMAN MILLER: I doubt it. I think the record is reasonably clear. Any objection to the testimony so far? We have admitted now the Exhibit 2.

MR. MC GARRY: That is correct.

CHAIRMAN MILLER: What else are you trying to prove?

WITNESS BOSTIAN: Refresh my memory on Exhibit 2.

CHAIRMAN MILLER: The application.

MR. MC GARRY: The status of this panel at this point in time is we have moved that each of the gentlemen's statement of professional qualifications be bound into the record as if read.

CHAIRMAN MILLER: Those have been admitted and bound into the transcript.

MR. MC GARRY: Now, the next step is to go through the testimony of each of these individuals. We would like that to be bound into the record as if read.

MR. ROISMAN: What happened to the ruling on Mr. Bostian's voir dire and his qualifications on opinions and

asked then I would like to do the same with the other gentleman.

CHAIRMAN MILLER: I think that the Board had or will rule that the qualifications extend to the points as described by the witness -- there are matters of economic testimony where Mr. Roisman admittedly did not have expertise or direct supervision -- this is no reflection on you, in any way -- we know you are an experienced executive of Duke Power Company.

Your expertise is in certain fields and not in others. You had responsibility in some areas and not others. This is the same basis as our rulings will be as to all experts.

We will sustain the objection insofar as it applies to expertise in the specific field, economics and the like. The balance of that as to demonstrated expertise, I doubt if there is objection to that and the witness' qualifications in those areas where he has direct knowledge or had the direct responsibility will be deemed sustained as far as the qualifications are concerned.

We will then rule on any objection to testimony the same as we do with all others, depending on the substantive nature of it.

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Is that understood?

MR. MC GARRY: Yes, Mr. Chairman.

MR. ROISMAN: May I make a suggestion to make it

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eak3 move more smoothly. If Mr. McGarry would offer next Mr. Bostian's testimony, then we could raise our objections to the admissibility of that testimony.

CHAIRMAN MILLER: That might be easier, Mr. McGarry. We will do it witness-by-witness.

MR. MC GARRY: Sounds reasonable to me.

BY MR. MC GARRY:

Q Mr. Bostian, have you prepared testimony for use in this proceeding?

A (Witness Bostian) I have.

Q Do you have a copy of that testimony before you?

A I do.

Q Is it captioned, "Testimony of Ralph W. Bostian."

A It is.

Q And how many pages is that, Mr. Bostian?

A 15 pages. 14, excuse me.

Q Mr. Bostian, is this the same document that we referred to earlier that the first three pages contain your statement of professional qualifications?

A Up to the top of page 3, yes.

Q Mr. Bostian, with respect to that portion on page 3, and then the remaining pages that comprise your testimony, have you read it?

A I have.

Q Do you have any additions or corrections to make to

ask4 it?

A Several corrections.

Q Would you please make those at this time?

A On page 7, last line, bottom of the page, the first word "out"; delete that word.

On the bottom of page 8, the sentence, "Million (1978 dollars) with a 1979 . . ." Change that to 1978.

At the top of page 11, the first paragraph, delete; it is redundant.

MR. ROISMAN: Delete the whole paragraph at the top of page 11?

WITNESS BOSPIAN: That is correct; it is redundant. This morning, Applicant's No. 1 was entered and I think you have been given copies of it this afternoon. I do not have a copy here. May I have a copy?

In Table 1 on page 4, going down the column under cost, where it says, "Total," the third figure there is \$4 million. Change that number of \$3,555,000.

The next number below that, \$3 million, change that to \$2,563,000.

And then the last figure in the column which is \$7 million, change that to \$6,213,000.

And these numbers will now agree with the numbers presented in the Applicant's No. 1.

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BY MR. MC GARRY:

Q Mr. Bostian, as corrected, is this testimony true?

A (Witness Bostian) Mr. McGarry, as a result of the entering of Applicant's Exhibit No. 1 into the record, we have changed the cost of the reracking of Oconee 1, 2, 3 with poison racks. The per assembly cost will change; the time when Oconee station will lose FCR will change; and the times when Oconee units will lose thermal output will also change.

It will take up perhaps overnight to modify those numbers.

Q With that provision, is your testimony true and correct?

A Yes.

Q Do you adopt it as your testimony for use in this proceeding?

A I do.

MR. MC GARRY: At this time, I would move that the testimony of Ralph W. Bostian be bound into the record as if read, received and bound into the record as if read.

MR. ROISMAN: Objection. First, a point of clarification. There was an affidavit of Mr. Bostian attached to the Applicant's response to our motion for summary disposition. Is the Applicant intending to offer that also as Mr. Bostian's

eak6 1 testimony?

2 MR. Mc GARRY: I would like to think about that
3 in light of the Board's ruling.

4 CHAIRMAN MILLER: Think about it overnight.

5 MR. ROISMAN: Okay. I just wanted to be
6 clear.

7 CHAIRMAN MILLER: We will have an indication,
8 Mr. McGarry, tomorrow and if not, you are entitled to use
9 it in whatever fashion is permissible. As far as the motion
10 for admissibility of the testimony, there being an objection,
11 we will defer ruling until the conclusion of the cross
12 examination.

13 MR. ROISMAN: Are you at all interested in the
14 basis for the objection. It can be ruled on on the face.

15 CHAIRMAN MILLER: All of your objections?

16 MR. ROISMAN: Essentially, the objection I have
17 at this point can. It is basically one objection.

18 CHAIRMAN MILLER: Normally if there is an
19 objection, we wait until the conclusion of cross because
20 matters of explanation come in, further cross examination
21 or objections may be eliminated. If on the other hand you
22 tell me it is more practical to rule now, we have no
23 objection to that.

24 MR. ROISMAN: Let me explain the objection and
25 the Board can make its own assessment. If one reads Mr.

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eak71 Bostian's testimony, starting with page 3, it is a summary
2 of the testimony of other witnesses or studies done by
3 other persons. Because Mr. Bostian has not done them
4 himself--in fact Table 1 got modified on the basis of
5 number contained in a study which earlier today Mr. Bostian con-
6 ceded he did not prepare but only read once -- that is the
7 nature of the testimony.

8 We object to having summary testimony in that
9 summarizes other witnesses' testimony. We would rather
10 have the testimony be directly from the person who did the
11 study or analysis.

12 As an example, beginning on page 3, after the
13 first sentence of the paragraph, it says, "And economic com-
14 parisons of these alternatives does not show this to be the
15 case. This comparison is set forth in Table 1, page 4."

16 The comparison he is referring to is not one
17 prepared by Mr. Bostian. That tone continues throughout
18 the testimony. It might take a lot more time for me to go
19 through each of these, identify the sentence, ask the witness,
20 have him tell me he has not done the study, raise an
21 objection and ask to have it stricken.

22 CHAIRMAN MILLER: It is easier to do it in advance
23 because you object to the testimony in its entirety?

24 MR. ROISMAN: That is correct. For instance, I
25 don't object to him saying it is a contention of several

25ak31 Interveners that such and such. But that is a prelude.

2 CHAIRMAN MILLER: That seems to be correct. I
3 want you to be able to address it. It is the Board's belief
4 that actually it is a summary of the work of others.

5 In some places it tends to be argumentative rather
6 than testimony as to fact. We are inclined to sustain the
7 objection in its entirety. You should know the basis
8 and perhaps you would like to segregate portions of it.

9 MR. MC GARRY: I suggest indeed we do move on
10 with the cross examination of this testimony as the Board
11 suggested and as Mr. Roisman goes through this testimony,
12 I believe other members of the panel, if we get to that point,
13 can answer questions that Mr. Roisman would direct to Mr.
14 Bostian.

15 That is one of the advantages of using this entire
16 panel approach.

17 CHAIRMAN MILLER: It may be. But it also obscures
18 the effect of our ruling. If the testimony is not admissible,
19 whether he gave it orally or in writing, if it is not
20 admissible because it is not based on his own knowledge,
21 it being essentially a summary of the work of other witnesses
22 -- and if anything it is in large proportion not factual
23 but rather conclusory, if not argumentative -- what is there
24 to cross examine.

25 MR. MC GARRY: I think we should let the cross

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1 examination bring that out. We maintain that much of this
2 testimony of Mr. Bostian is the work produce of Mr. Bostian
3 and he can provide the factual input. Mr. Roisman may think
4 otherwise and maybe we look at Table 1 and maybe Table 1
5 indeed was based on a study from another individual --

6 CHAIRMAN MILLER: Take page 3. It is not
7 the function of any witness to tell us what the contentions
8 of Intervenors are. We know what they are and we don't
9 want it to be argued.

10 That is not testimony. It is out. The economic
11 comparison is in by its fingernails because it will be
12 changed tomorrow.

13 The basis of the change is as a result of another
14 exhibit which I didn't recall the witness directly prepared
15 or had responsibility for.

16 I will defer ruling on that until we see. I didn't
17 think Mr. Bostian said he prepared it or had
18 personal knowledge of it. We will see in the morning.

19 That table is suspended by his own request. We
20 get to page 3. We have already discussed the areas of
21 expertise on the economic questions. It is quite clear
22 it should be noted. This is argument, Mr. McGarry. This
23 isn't testimony under oath of a witness.

24 MR. MC GARRY: The first paragraph, it seems to me
25 the figures by themselves indicate the value of shipment as

oak10¹ opposed to the reracking, existing pools and that the cost
2 to the ratepayers is much less.

3 CHAIRMAN MILLER: Figures which themselves are
4 no longer accurate, which are not shown to be the work product
5 or direct knowledge or computation of the witness himself.
6 And the conclusion as to what they indicate is not the
7 subject of testimony which has any foundation in the world
8 as it stands.

9 MR. MC GARRY: We submit it does, that Mr. Bostian
10 as the responses he has made indicate, is the spokesman for
11 Duke Power Company in this regard. He has overall
12 supervision.

13 CHAIRMAN MILLER: The fact the man is an overall
14 supervisor doesn't mean he has or doesn't have expertise
15 to make opinion testimony or give certain factual evidence.

16 MR. MC GARRY: I submit what we have before
17 the Board today is our application to treat a spent fuel
18 storage problem at Oconee. Mr. Bostian is in charge of treating
19 spent fuel storage problems.

20 He is the most expert man at Duke Power Company.
21 Therefore, I would submit that he can speak authoritatively
22 to that position.

23 CHAIRMAN MILLER: How can he possibly give the
24 figures which are not accurate figures, which is the basis
25 of the very first paragraph you invited our attention to.

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2 Whatever his title in the company, whatever
3 his role, what possible connection does he have to these
4 purported figures?

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MR. MC GARRY: First of all, with respect to accurate figures, those figures were accurate when he prepared this testimony. As we indicated in the testimony of Mr. Bostian and the testimony of Mr. Hager, we were endeavoring, we had a study ongoing. We didn't hide this from anybody. It is stated in the prefiled testimony.

We now have completed this study. We think we had an obligation to the Board and parties to update this.

CHAIRMAN MILLER: We appreciate that. What does Mr. Bostain have to do with it?

MR. MC GARRY: He is the individual at Duke Power Company who has to get this information and make the decisions as to which option Duke Power Company will elect to solve its spent fuel storage problem.

CHAIRMAN MILLER: How did he obtain these figures?

MR. MC GARRY: We will find that out through cross examination.

CHAIRMAN MILLER: All right. We will start cross examination, if you wish to do it that way. Mr. Roisman, proceed with cross examination at the very beginning.

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CROSS EXAMINATION

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BY MR. ROISMAN:

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Q Mr. Bostian, let me direct your attention to page 3.

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In the first paragraph you say, "It is the contention of several intervenors in this proceeding that the modification of existing pools . . ."

5

6

7

What do you base your statement on as to what is the contention of the intervenors?

8

9

A (Witness Bostian) The contentions themselves that we had not considered certain alternatives.

10

11

Q Did the contentions say that one of the alternatives was preferable? Let's take an NRDC contention, No. 3, which is one that deals with alternatives.

12

13

14

Was NRDC one of the intervenors you had in mind?

15

A Item No. 3, there, yes.

16

Q Did the contention say NRDC considered one of the alternatives preferable?

17

18

A "C; Expansion of Oconee spent fuel pool capacity to hold all fuel until permanent storage facility is established.

19

20

Q What is the wording of the contention under which C appears? What does it say?

21

22

A "Failure to consider the following alternatives."

23

Q Does it say that one of them is preferable? Does it say that one of the alternatives that failed to be considered is preferable to the proposed action?

24

25

275 073

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A Not in this particular case; no.

2

MR. ROISMAN: Mr. Chairman, the witness has not shown a basis for making the statement. I move the first sentence be stricken on page 3.

4

5

WITNESS BOSTIAN: May I comment, please, sir.

6

CHAIRMAN MILLER: If you have anything further to testify to, yes.

7

8

WITNESS BOSTIAN: One of the CESG contentions

9

is: "More acceptable alternatives to shipping exist."

10

A is "Modification of Oconee spent fuel pool."

11

MR. ROISMAN: The testimony was that NRDC was one of

12

the intervenors he referred to as "several intervenors"

13

in the case. Contention 3 was one of them. The statement

14

as read and testified to by the witness is incorrect.

15

CHAIRMAN MILLER: Well, since there is at least

16

one contention, CESG's, that does go to preference, I think

17

the witness is probably not straining it.

18

MR. ROISMAN: Secondly, we object on the ground

19

that the contention of the intervenors speak for themselves

20

and the witness is no better qualified than the Board to

21

read the contentions and see what they say.

22

BY MR. ROISMAN:

23

Q "An economic comparison of these alternatives

24

does not show this to be the case." Who prepared the

25

economic comparison, Mr. Bostian?

eak 1 A The conomic comparison is Table 1, which is
2 a comparison of the cost of the various alternatives that
3 were considered.

4 Q Who prepared the table?

5 A The table was prepared under my direction.

6 Q I am sorry; who prepared the table?

7 A The table, I believe, as prepared by Mr. Glover.

8 Q Who prepared the data that produced the numbers
9 that appear in the table?

10 A The first item there, the shipment of 300 Oconee
11 fuel assemblies to McGuire, that number was prepared in
12 Mr. Snead's section. The --

13 Q Do you know who prepared it? If I wanted to
14 know how the number got calculated, who would give me that
15 information? Who would I go to?

16 A Mr. Glover.

17 - The second item, reracking Oconee 1 and 2 pool
18 with high density non-poison racks, the number 3,514,470
19 is the number of dollars that were expended in the completion
20 of that project. That came from our financial statement,
21 accounting department.

22 Q In other words --

23 A That is a factual number based on dollars expended.

24 Q Depending on accounting department's definition
25 of what constitutes an expense?

1 A Dollars expended, yes.

2 Q Am I incorrect or do you know whether accountants
3 sometimes treat something -- you have whether the money
4 is treated as expended or expensed. Aren't there different
5 ways of differences of opinion as to what constitutes an
6 expenditure?

7 A That was the cost of the installation of the
8 racks.

9 Q But what I am asking you is do you know whether
10 or not from an accountant's perspective that represents
11 actual dollars spent, dollars obligated to be spent, whether
12 the same number appears in the Duke statement of its costs
13 as filed with the appropriate public utility commissions?

14 A That is the actual cost of the project in dollars
15 expended. It was the capital investment.

16 Q You know that because you personally checked
17 it or because that is how the accountants would have
18 calculated it?

19 A That is the number that was given to us by the
20 accountants.

21 Q Do you know how they calculated it?

22 A I do not.

23 Q What about the next number?

24 A The next number was given --

25 Q The next three numbers?

1 A The next three numbers were given in Exhibit No. 1
2 that I presented this morning. I mentioned that that was
3 prepared by the design engineering department under Mr. Hager's
4 directive, that this was a copy of that letter, but it
5 was not the official transmittal to me because it did not
6 contain the transmittal letter over Mr. Hager's signature.

7 MR. ROISMAN: Mr. Chairman, it appears the
8 numbers here are not numbers that the witness will be able
9 to testify as to how they were developed. The witnesses
10 who prepared them at least arguably are present, except
11 in the case of the accountants with respect to the
12 amount spent on reracking Oconee 1 and 2.

13 I would have some questions for those
14 accountants if I wanted to really argue with the number
15 because I wouldn't know how all of the money could have
16 been spent when the reracking only got approved yesterday
17 morning.

18 I assume it hasn't started yet. I have some
19 experience with accountants and I don't want to prejudge
20 how they made their calculation.

21 WITNESS BOSTIAN: May I correct the record. That
22 is design engineering's estimate of the cost of that
23 project. I was thinking of Oconee 3. 275 077

24 MR. ROISMAN: Mr. Hager's office?

25 WITNESS BOSTIAN: That is correct.

POOR ORIGINAL

1 BY MR. ROISMAN:

2 Q The four figures below the 738,000 are all done within
3 Mr. Hager's office, if not necessarily by Mr. Hager?

4 A That is correct.

5 Q And per assembly is merely a mathematical calculation?

6 A That is correct.

7 Q And the next column, when Oconee station will
8 lose full core reserve?

9 A These numbers were produced in my group.

10 Q By you?

11 A No.

12 Q And the next column, time when Oconee units will
13 lose thermal output?

14 A Same case.

15 Q Not by you but in your group?

16 A Not by me personally.

17 Q Do you know how the numbers in the last two
18 columns were actually calculated, what was used in the
19 assumptions in making the calculations?

20 A The assumptions used in making the calculations
21 are those. The number of spaces added by the revision, by
22 these revisions; The second assumption is a fact and that
23 is the number of spent fuel assemblies in the pool.

24 The third assumption is the refueling schedule
25 which incorporates the existing operating schedule of the

ank 1 detectors and the design, reload, number of assemblies to
2 be discharged in each cycle.

3 Q Do you know if it took account of changes being
4 proposed by Occnee in terms of going from 12 to 15 to
5 18-month refueling cycles?

6 A Yes; it does.

7 Q What other assumptions?

8 A Those are the only assumptions.

9 Q And the physical calculation was done by
10 somebody in your shop?

11 A That is correct.

12 Q What about the paragraph at the bottom which
13 is the asterisk paragraph. Is that paragraph now going to
14 be changed in light of the changes that have been made
15 to the figures in those columns?

16 A That paragraph will be correct. Those numbers,
17 estimated numbers were changed and work completed by
18 June 15 as indicated at the top of the letter entered
19 as Exhibit No. 1.

20 Q Now, this last statement, these dates are based
21 on a February 1979 refueling schedule with Occnee 3 on an
22 annual refueling cycle? Is it not correct that Occnee 3
23 is actually going to a 15-month refueling cycle starting in
24 1980?

25 A We have no firm plans at this point.

275 079

POOR ORIGINAL

eak1

Q But --

2

A There are plans but we have not submitted the reload design that puts it in 15 months.

4

Q Are you intending to submit it?

5

A Yes.

6

Q Would that then change the numbers with respect to the reracking of Coonee 3 pool with poison racks as they go out across under cost, time and so forth?

9

I don't know if it changes cost or not.

10

A It would not change cost and I would be very much surprised if it changes the numbers.

12

Q How would you find out if it changes the numbers?

13

Ask someone in your shop to do the calculation?

14

A That is correct.

15

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MR. ROISMAN: I do not feel the witness is the best one to testify to all of this. In the case of most of the numbers, the witnesses are here. I would want to ask them and I don't want the witness' testimony in here when I have someone who knows it better.

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13M.BLOOM
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1 MR. MC GARRY: Mr. Chairman, I think the position
2 we find ourselves in -- we appreciate Mr. Roisman's situation
3 -- is that we need someone to pull this together, to put this
4 testimony into perspective. Mr. Bostian is that individual.

5 We provided the individuals the backup that
6 Mr. Roisman wishes to cross-examine. We're not attempting
7 to get them, but we're trying to make this manageable.

8 We'll provide the individuals that Mr. Roisman
9 thinks he needs to give him the answers. We need someone
10 to put the matter into context. That's Mr. Bostian in this
11 instance.

12 So I would submit that we go forward with
13 Mr. Bostian's statements and his testimony. That testimony
14 that he cannot support, then that doesn't come in through
15 Mr. Bostian, and that testimony doesn't come into this
16 record unless it is challenged and we put another individual
17 on the stand who will adopt that testimony and support that
18 testimony. Then that testimony comes in through that individual.

19 But it seems to us we're finding ourselves in a
20 procedural manageable problem at this point in time. And
21 it just seems from our point of view that the best way to
22 handle it is through Mr. Bostian in the first instance.
23 We'd be more than willing to provide any witness that we
24 think is reasonable. We may argue about who are the
25 appropriate witnesses, and we have Mr. Snead and Mr. Glover

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POOR ORIGINAL

Feb 2

1 and Mr. Hager who would be the individuals who would be
2 involved with this table.

3 And I think Mr. Roisman I'm sure is not interested
4 in delaying this proceeding, and we can just ask these ques-
5 tions to these individuals and move forward the proceeding.

6 That's why I thought it would be fruitful to go
7 through the document, Mr. Chairman, in the first instance
8 and let Mr. Roisman begin to get the flavor of what his
9 concerns were. And it seems to me just going through this
10 table -- ask, the first number, 'Is this your number, Mr.
11 Bostian?' He says, 'No.' 'Well, whose number was it?'
12 Answer: 'Mr. Hager.'

13 Now obviously I could come back on redirect and
14 say to Mr. Bostian, 'whose number was that?' And on
15 rebuttal or on other direct examination I could bring up
16 that individual because we feel it's necessary to support
17 these numbers.

18 So that's basically our position.

19 CHAIRMAN MILLER: Okay.

20 I think there's a fundamental difference of view
21 in the way these things are being handled. We regard this
22 prefiled direct testimony as being equivalent in every
23 significant area as being the same as oral direct testimony
24 by a witness in an adjudicatory proceeding.

25 MR. MC GARRY: That's how we view it, Mr. Chairman.

275 082

POOR ORIGINAL

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1 And if it were not prefiled, I would have asked a similar
2 question to Mr. Bostian. I would have asked him those ques-
3 tions and he would have given me those responses.

4 CHAIRMAN MILLER: Well, the very first question
5 you would have asked would have been about the table. It
6 would certainly at that point be subject to inquiry, if not
7 voir dire by the Board as to what is the basis for the prepara-
8 tion of the table which is the exhibit.

9 Upon appearing that he doesn't have personal
10 knowledge, he didn't do it himself, the objection would be
11 sustained. So the first question would go out.

12 Now your next question is going to be very much
13 the same. The objection would be sustained. This is not
14 testimony. You couldn't possibly pretend that this is
15 testimony.

16 "It should be noted in regards to the
17 above alternatives of additional fuel...."

18 This is argument; this is not sworn testimony
19 of fact by a witness or an opinion by an expert witness.

20 MR. MC GARRY: Mr. Chairman, with all due respect
21 to your experience and my experience in these proceedings,
22 testimony very similar to this testimony comes in regularly.

23 CHAIRMAN MILLER: Over objection?

24 MR. MC GARRY: Sometimes over objection, sometimes
25 not.

275 083

POOR ORIGINAL

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1 I think it's just the court. It's the nature of
2 these administrative proceedings.

3 CHAIRMAN MILLER: Well, these are administrative
4 proceedings. We never said that sworn testimony could be
5 conclusory, argumentative, non-factual, and not opinion as
6 far as the basis is concerned. I don't know of any case,
7 administrative or otherwise that says that. Maybe I'm over-
8 looking that. Maybe I'm overlooking something.

9 I'm applying the same test that we do of a
10 witness sworn. You're not going to change the spots by say-
11 ing it's a panel or he's the man responsible, or he is testify-
12 ing directly under oath.

13 It's as though you asked him direct questions,
14 not leading questions, and he gave responsive answers. And
15 we would rule as you proceeded.

16 MR. MC GARRY: And I would ask him the question,
17 'What is the total cost for shipment of 300 Cconee spent fuel
18 assemblies to McGuire assuming no reracking?' And he would
19 respond --

20 CHAIRMAN MILLER: Wait a minute. There would be
21 an objection. There's no sufficient foundation to show that
22 the witness knows. And we would say 'Show your foundation
23 proof, Counsel.' And you go ahead and lay your foundation
24 proof.

25 Go ahead and do it. We'll just find out if this

275 084

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mpb5 1 is testimony or not.

2 MR. MC GARRY: I'll be glad to do that, Mr.
3 Chairman. I'm not hesitant, but I'm just saying that we can
4 go through each one of those, and I would imagine there were
5 going to be objections to some of this testimony --

6 CHAIRMAN MILLER: You'd already know that there's
7 objection to all of this testimony, so called. You've heard
8 the objections.

9 Well, all right, go down through. We've been
10 through pages 3 and 4. Go down with 5 and show me where you
11 believe that there is legitimate direct testimony that you
12 could ask a question and get the answer, the response under
13 oath by the witness.

14 MR. MC GARRY: Well let me just say this, Mr.
15 Chairman:

16 Obviously I believe that it's all legitimate
17 direct testimony because I have a responsibility to this Board,
18 and I'm not going to --

19 CHAIRMAN MILLER: We have no criticism of you
20 professionally, but nonetheless you're going to have to have
21 the testimony by the witnesses who are either qualified to
22 speak, who have done the computations, who have the expertise
23 to give an opinion, and it does not appear that this is a
24 witness for anything that we've seen so far of what you're
25 calling your direct testimony. And we're trying -- Do you

275 085
POOR ORIGINAL

mpb6 1 want to take the time either now or overnight to either
2 indicate -- we would give you leave to ask questions orally.
3 We won't bind you to prefiled because this is prefiled --
4 Well, it's scarcely in testimonial form, let me put it that
5 way.

6 However this doesn't mean to say that there may
7 be some areas that you could ask. But don't rely on the fact
8 that you've got a panel there. Ask the gentleman himself.
9 He's knowledgeable, he testified this morning. We know you
10 can ask him questions and he'll give you information.

11 But this isn't in testimonial form, I'm afraid.

12 MR. MC GARRY: Now one of the other things you
13 mentioned, Mr. Chairman, is opinion. Much of this we would
14 maintain is fact, and we could ask him what the fact is.

15 CHAIRMAN MILLER: Well, if it's fact, if he knows
16 of his own knowledge, fine.

17 MR. MC GARRY: Getting back -- I know you'll get
18 to the foundation question, and I'll contemplate this over
19 the evening and get back to you, but as a fact 'Do you know,
20 Mr. Bostian, what that number is?' 'Yes, I know what that
21 number is.'

22 CHAIRMAN MILLER: Which number is that? 275 086

23 MR. MC GARRY: That's the 7 -- I know the number
24 is 738,300 on Table 1. It's a fact question: 'Do you know
25 what that number is, yes or no.'

POOR ORIGINAL

mpb7

1 CHAIRMAN MILLER: Is that correct, Mr. Bostian,
2 do you know that number?

3 WITNESS BOSTIAN: Yes.

4 CHAIRMAN MILLER: That 700,000 -- let's see,
5 what is it -- \$738,300?

6 WITNESS BOSTIAN: Yes, sir.

7 CHAIRMAN MILLER: And what is that based on?

8 WITNESS BOSTIAN: That's based on shipment of 300
9 Oconee spent fuel assemblies to McGuire and no reracking of
10 Oconee.

11 CHAIRMAN MILLER: And how do you know of your own
12 personal knowledge that that is the correct figure, your
13 personal knowledge?

14 WITNESS BOSTIAN: My personal knowledge. That
15 is the product of 300 times the cost per assembly which is
16 \$2461 each.

17 CHAIRMAN MILLER: All right.

18 So arithmetically you multiply the two and you
19 get that figure.

20 WITNESS BOSTIAN: That is correct.

21 CHAIRMAN MILLER: Now where do you get the 2461
22 that you multiply? 275 087

23 WITNESS BOSTIAN: The 2461 is comprised of three
24 items --

25 CHAIRMAN MILLER: Well, where do you get the

POOR ORIGINAL

mpb8

1 information? However many items it's comprised of, where do
2 you, yourself, get the information?

3 WITNESS BOSTIAN: The first item is the freight
4 charge --

5 CHAIRMAN MILLER: No, where do you get that informa-
6 tion? That's what I'm asking.

7 WITNESS BOSTIAN: That particular charge comes
8 from the carrier --

9 CHAIRMAN MILLER: I know who it comes from, I
10 know what you're telling me. But I'm saying how do you know
11 that?

12 WITNESS BOSTIAN: It's in my briefcase over there,
13 and it's the purchase order between Middle Power Supply
14 Company and Tri-State Motor Transit of Joplin, Missouri.

15 CHAIRMAN MILLER: And you, yourself, have
16 personal responsibility for those items, is that it?

17 WITNESS BOSTIAN: I have responsibility for the
18 execution of that agreement between Duke and Tri-State, and
19 the freight charge is \$1.85 per mile.

20 CHAIRMAN MILLER: And so it appears on our docu-
21 ment that you have here.

22 WITNESS BOSTIAN: That's correct.

23 CHAIRMAN MILLER: And these other charges appear
24 on documents there, and they are within the scope of your
25 duties.

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WITNESS BOSTIAN: That's correct.

CHAIRMAN MILLER: All right.

Get the documents and we'll just go through it item by item to see if this is really based on your personal knowledge or if it comes from reports of the accounting and other departments, which is usual in a corporation.

Now you can tell us which it is. And I don't really care; but to the extent that you've got numbers and figures here, I understood you to testify before that at least some of them came from your accounting department, others came from --

WITNESS BOSTIAN: Well, all four of those numbers are from our design engineering department.

CHAIRMAN MILLER: From Mr. Hager.

WITNESS BOSTIAN: That's correct.

And let me comment on that. Duke Power Company is a very large corporation, and our design engineering department is responsible for estimating the cost of our large capital improvement projects, and the steam production department, the other departments of Duke Power Company do not on their own make these estimates. So when we need a cost figure representing the cost of racking Oconee 1 and 2 pool with poison racks, the official Duke number will be the number produced by our design engineering department.

CHAIRMAN MILLER: Well, being produced by somebody,

mpb10

1 I suppose, within the department who's done the work and has
2 the personal direct knowledge, won't it, when you get right
3 down to it?

4 WITNESS BOSTIAN: Yes.

5 CHAIRMAN MILLER: All right.

6 Was this Mr. Hager, by the way?

7 WITNESS BOSTIAN: Yes.

8 CHAIRMAN MILLER: All right.

9 Then we could get this information directly from
10 Mr. Hager who knows the figures and could handle it, couldn't
11 we?

12 WITNESS BOSTIAN: That's correct.

13 CHAIRMAN MILLER: I think that's all that we're
14 really saying. We're not in any way saying you're not an
15 accomodating witness. We are saying we want the direct
16 information and we want it from the man who has the direct
17 either responsibility or did the work. That's the only
18 point.

19 And I think for the most part that these figures
20 here do come from other persons, don't they, other than
21 yourself directly?

22 WITNESS BOSTIAN: That's correct.

23 CHAIRMAN MILLER: It's understood.

24 MR. MC GARRY: Mr. Chairman, our point is that
25 number would not have been calculated unless Mr. Bostian had

mpbl2 1 get to that person.

2 But I submit that that would be a proper founda-
3 tion.

4 CHAIRMAN MILLER: Well, I submit that getting
5 a number in response to a direction of an executive, being
6 handed back a number in no way indicates whether or not that
7 number is accurate, what the process was that was undergone,
8 what the underlying data was and so forth. It doesn't
9 indicate one way or the other. It's not a foundation for
10 anything except that the man requested it and an executive
11 got back a paper that had various numbers on it which he
12 no doubt believes to be correct. It's his job.

13 But we're going now on the evidentiary record,
14 and if there's a question raised as to the foundation proof,
15 who has the knowledge as to the accuracy. It's the man who
16 has some direct, as distinguished from indirect, knowledge.
17 And the indirect knowledge doesn't lay the foundation for
18 the accuracy, authenticity, and the like.

19 MR. MC GARRY: Mr. Chairman, again with all due ^{275 092}
20 respect, I think we have a perfect analogy here.

21 Mr. Bostian talked about the freight charge.
22 Mr. Bostian said those freight charges were \$1.85. How did
23 he know that? Because a trucking company told him.

24 CHAIRMAN MILLER: No, it's because it's in his
25 briefcase.

mpbl3 1

MR. MC GERRY: But he got that number from a
2 trucking company, or he got that number from Mr. Hager, or
3 he got that number from Mr. Glover. But he got that \$1.85
4 from the trucking company. I submit --

5 CHAIRMAN MILLER: He said he got it from the in-
6 voice.

7 Is that correct?

8 WITNESS BOSTIAN: No, no. It was on the face of
9 the purchase order for the service.

10 CHAIRMAN MILLER: He got it from the purchase order
11 which is a document which Duke uses in the course of business,
12 a purchase order. And then that purchase order was fulfilled
13 in some way.

14 Or was it?

15 WITNESS BOSTIAN: It has not been fulfilled
16 until we move the 303 --

17 CHAIRMAN MILLER: I see.

18 So it's just a purchase order at the moment. The
19 purchase order hasn't been fulfilled in any commercial sense.

20 Is that right?

21 WITNESS BOSTIAN: That's right.

275 093

22 CHAIRMAN MILLER: Well, what's in your briefcase?

23 WITNESS BOSTIAN: The purchase order.

24 CHAIRMAN MILLER: It's an order for somebody to do
25 something.

POOR ORIGINAL

1 WITNESS BOSTIAN: That's correct.

mpbl4
2 CHAIRMAN MILLER: And your foundation there is
3 even kind of poor.

4 We're going to have to clear up a lot of papers.
5 There's going to be a meeting here. I'm told we can leave them
6 in the back of the room, to the left. But we'll give a few
7 minutes.

8 Mr. McGarry, I do think you'd better give it some
9 thought because the Board isn't going to change the rule of
10 evidence just because we have a difference of view. However
11 it may well be -- You do apparently have the witnesses and
12 you will probably get this information and this data in if
13 you wish to do it. But we're not going to let a witness who
14 doesn't have the knowledge take the overall responsibility,
15 just because of that bring in evidence without a proper founda-
16 tion.

17 So we might as well get that settled. 275 094

18 MR. MC GARRY: Mr. Chairman, I appreciate that.
19 And I would give it quite a bit of thought this evening.

20 I would just hope that all the parties would
21 give thought to how we can best expedite this because we
22 don't want to belabor this matter. We have the witnesses and
23 we will present them. And we would like to move forward.

24 CHAIRMAN MILLER: So far as there is no objection,
25 the Board isn't likely to raise one itself unless it's

mpb15

1 something really flagrant. So it may well be that there's
2 an area there.

3 We will also exercise our discretion and give you
4 leave to answer direct questions where you don't have any
5 direct written testimony if it's something you think is
6 proper. We have discretion on that matter. We're not going
7 to cause you problems.

8 MR. MC GARRY: Mr. Chairman, just to alert the
9 parties of a possible course of action -- we're not committing
10 ourselves to this -- but perhaps it might be tomorrow with
11 respect to Mr. Bostian's proffered testimony that we would
12 ask about four or five witnesses to collectively sponsor
13 that testimony, identify the portions of that testimony --

14 CHAIRMAN MILLER: If they are the people who did
15 it, who have direct knowledge, I think you will find we don't
16 have much problem, assuming that the evidence is there. If
17 it isn't there, then neither you nor I can create it.

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

20 I heard Mr. McGarry say that the reason for the
21 Bostian testimony was to pull the whole thing together.

22 CHAIRMAN MILLER: I know, I know.

275 095

23 MR. ROISMAN: And it seems to me that what
24 frightens us about Mr. Bostian's testimony and why we object
25 to it is that he wants to use what is really a limited

POOR ORIGINAL

mpbl6 1 appearance statement as evidence.

2 We have to cross-examine every word in it to make
3 sure that it doesn't come cited back to us as unobjected to
4 during the course of the proposed findings of fact and
5 conclusions of law.

6 The conclusions that are contained in here
7 presumably come from witnesses who were in this panel. And
8 I'm not going to let them put these conclusions in which we
9 now hear are Mr. Bostian's words into Mr. Snead's mouth and
10 Mr. Glover's mouth and Mr. Hager's mouth and Mr. Sterrett's
11 mouth.

12 I don't know why we don't go with their testimony.

13 CHAIRMAN MILLER: Mr. Roisman, to be very clear
14 about it, conclusory testimony probably is going to be denied
15 admissibility on anybody's part. This is the function of
16 the Board to perform that. And insofar as counsel, for what-
17 ever reason, have argued on conclusory matters, the fact that
18 it's written direct doesn't make it testimony, and the Board
19 will sustain objections to it.

20 So if this is in some of the direct written
21 testimony and goes to it, figure out how you can get it in
22 applying the rules of evidence reasonably. 275 396

23 We're not as rigid as the court, but on the other
24 hand we apply them largely concerning the spirit of it. We
25 will use our discretion to give you leave to let the

POOR ORIGINAL

mpbl7 1 witnesses supplement the written answers if indeed they are
2 subject to such objections so that you will be able to get
3 your evidence in.

4 But, gentlemen, you're going to have to get it
5 in in a lawyer-like fashion. And I don't care how many
6 thousands of times you've been able to do it in some other
7 way. Let's just settle on the fact that we're having an
8 evidentiary hearing followed by an analogy of the rules of
9 evidence and certainly our own rules of procedure and the
10 rules of evidence.

11 So let's get on with the hearing and we'll move
12 expeditiously if we approach it in that spirit. And the
13 Board will cooperate with you to get them in in a proper
14 fashion. But we're not going to have this kind of thing
15 called testimony when it isn't. And it doesn't matter who's
16 proffering it.

17 Okay. Please clear off your desks. I hate to
18 sound like a school teacher. But we do have a meeting here
19 tonight.

20 (Whereupon, at 5:55 p.m., the hearing in the
21 above-entitled matter was adjourned, to reconvene at
22 8:00 a.m., the following day.)

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