UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

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In the Matter of :

LONG ISLAND LIGHTING COMPANY : Docket No. 50-322-OL

(Shoreham Nuclear Power Station) :

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Bethesda, Maryland

Wednesday, Nov. 17, 1982

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

BEFORE:

LAWRENCE BRENNER, Chairman
Administrative Judge

JAMES CARPENTER, Member
Administrative Judge

PETER A. MORRIS, Member
Administrative Judge

APPEARANCES:

On behalf of Applicant:

T. S. ELLIS, Esq.
Hunton & Williams
707 East Main Street
Richmond, Va. 23212

On behalf of the Regulatory Staff:

BERNARD BORDENICK, Esq.
Washington, D.C.

On behalf of Suffolk County:

LAWRENCE COE LANPHER, Esq.
ALAN DYNNER, Esq.
Kirkpatrick, Lockhart, Hill,
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C O N T E N T S

E X H I B I T S

RECESSES:

Morning - 14,295

Noon - 14,324

Afternoon - 14,390

P R O C E E D I N G S

(9:05 a.m.)

JUDGE BRENNER: Good morning. We are on the record. Let's finalize the Torrey Pines procedure. Yesterday, we invited comments of the parties. We are prepared to receive them now.

MR. ELLIS: Judge Brenner, we think the procedure suggested by the Board is appropriate. We offered some observations yesterday. The Board commented on those and we understand the Board's comments. We hope the Board's comments with respect to those observations will be included or reflected in some manner in the Board's order.

JUDGE BRENNER: We are not going to issue an order. We will do it on the basis we said yesterday. One thing left hanging in terms of LILCO getting back to us, we discussed why we did not think it useful to pursue a deposition of the county's witnesses as early as the week of the 22nd, given the county's representation that they don't know the answers yet. You are nodding in agreement.

MR. ELLIS: Yes, sir.

JUDGE BRENNER: County?

MR. LANPHER: Yes, Judge Brenner. Although I wasn't here yesterday when you made your initial

comments, I did have an opportunity this morning to review the transcript.

JUDGE BRENNER: That's one reason we bifurcated it. It's not the only reason. But I would prefer you were involved, given your prior involvement, so this is your chance.

MR. LANPHER: I do have the county's comments on the proposal. The Board's proposal, in our view, does not come to grips with the factual impossibility described in our November 16, 1981 filing entitled "Suffolk County Filing Regarding the Torrey Pines Report."

That factual impossibility is that described in that filing and concerns Mr. Hubbard's schedule. He has been working on a more than full-time basis on the current QA/QC hearing. He is working on a full-time basis preparing to present his own testimony, perhaps as early as tomorrow. He is working to assist us in our cross examination of the NRC witnesses.

Accordingly, we think the proposal for us to take meaningful depositions next week is, frankly, illusory. We are not in a position to take meaningful depositions. And similarly, given Mr. Hubbard's schedule and his necessary involvement in this matter, he is not in a position to provide meaningful direct

testimony on December 7th.

I want to emphasize the county, as described in our November 16th filing, believes the Torrey Pines data are significant. We think the Board was right to recognize that. We want an opportunity to review those data. And if the review indicates that depositions would be useful, we want an opportunity to pursue those depositions, and if appropriate, present direct testimony in the matter.

The schedule proposed by the Board yesterday will bar the county from that kind of participation. We think that is a detriment to the Board. We think the county might have some views that would be useful. We think it is a detriment to the public, also. We can perceive no good reason for the accelerated time schedule which the Board proposed yesterday. I think it is an arbitrary and artificial limitation which does not come to grips with the fact that that schedule will bar our meaningful participation.

We think it important to note also that one reason we see no need for this is the fact that we will face a similar situation, presumably, with the Teledyne report which will become available. We hope the Board will similarly want the views of parties on that. Accordingly, we respectfully oppose the schedule

proposed yesterday. We ask the Board to reconsider it along the lines of our November 16th filing.

If you reject that filing and that schedule, or a schedule along those lines, please tell us why it is necessary for us to have a schedule which, based upon our representations, will preclude our meaningful involvement.

JUDGE BRENNER: All right. The schedule you are talking about will not get us to hearing on the Torrey Pines factual matter until the end of January at the earliest, and more likely, February. We are talking about waiting until the staff's testimony is complete. That will be very close to the end of December. We are then talking about further time for discovery, or if we do not permit discovery, further time for preparing the testimony and then time after that for parties to review the testimony filed; at least a week. And that will get us very quickly to the end of January or February.

The Torrey Pines findings have been available for a month -- they will have been available for a month by the testimony filing date we are requiring of December 7. We appreciate that Mr. Hubbard is under a tight schedule, but we can't stop the hearing for one person.

In addition, the county is bootstrapping the

length of time they have taken on quality assurance matters and will continue to take -- a length of time we agree has been or should be necessary, and then you are piggybacking on that time to extend this other matter. Again, all for one person.

We would be more sympathetic if we were talking about information importantly within the grasp of Mr. Hubbard. However, in this case, the information is primarily if not solely in the possession of LILCO and its client's agents; that is, the Torrey Pines people.

We did take consideration of your comments that Mr. Hubbard would not be ready to answer questions on the week of November 22nd, and we have, therefore, departed from what we had earlier proposed to order. That is, that depositions be taken then, which would be admitted to the hearing along with some supplemental direct testimony pulling the depositions together, and then having witnesses appear before us for further questioning by the Board and the parties.

We accept your statement that Mr. Hubbard will not be ready. That doesn't mean we disagree that the county could not and should not have been responsible for having its witness ready on that date. The fact of the matter is you don't have a witness that will be

knowledgeable by that date, so there is no county witness that the deposition can be taken by then.

To counter that and relax the schedule, we changed the procedure by requiring LILCO to file testimony on December 7th. It is the party with the burden; it is the party being charged with pulling the testimony together. We could have left it at that with the addition which we have included of permitting the parties, the county and staff, to file testimony on December 7th.

However, in addition, recognizing that the knowledge is largely within LILCO's witnesses' abilities, in the first instance at least, we are strongly encouraging the county to take a deposition of LILCO's witnesses, at which we would also permit questions by the staff and redirect questions by LILCO on the schedule we indicated. It would be a discovery deposition by the county, but we then would permit any party to file whatever portions it wished along with the direct testimony. This was an added benefit. You say he has trouble getting things together. Have some expert there of whom you can ask questions and find out what the situation is.

In addition, although the Torrey Pines reports are thick, the subject is not as complicated as you make

out. We want to find out what they did, how they did it and what the significant results were. It does not take much time to prepare for a deposition, at least in order to inquire into that. The county, in our view, would be immensely benefited by taking that deposition in preparation of the county's own testimony, as well as in preparing for cross examination at the hearing.

We think, as we said yesterday, it will benefit us also in terms of the record before us and our knowledge of the situation. We do think the Torrey Pines report is important and potentially very useful. However, because is something is very important and the document is thick doesn't mean everything else has to come to a halt before meaningful preparation can take place.

For reasons I have just discussed, we disagree that that is the case. I take it you are saying you don't want to take the deposition for the reasons you have indicated.

MR. LANPHER: I didn't say I did not want to take a deposition. I said, as we said at page 3 of our filing on yesterday, that we are not prepared to take that deposition.

I disagree with the Board, respectfully, that we can be prepared to take that deposition meaningfully

without Mr. Hubbard's assistance. I think it is very important for him to have an opportunity to review and work with counsel to prepare for that deposition. It is not that we don't want to take a deposition. We would want to. We would want to participate in a process of making sure that the important matters in the Torrey Pines report become available and are understood by the Board and everyone.

We think the Board is right; it is important. We are not in a position to take a deposition next week, as proposed by the Board.

JUDGE BRENNER: We strongly encourage it, then, so you would be able to use it in the preparation of your own testimony. And if you don't take it next week, you will be deprived of the opportunity. Whether we allow another deposition after the testimony is filed is something we will consider but it may not occur.

MR. LANPHER: I don't want to bring LILCO witnesses to a deposition which would be nothing more, in my opinion, Judge Brenner, than a fishing expedition where I have not focused or had an opportunity to focus with my expert, who is essential to assisting in this matter. That is why, in the county's view, certainly we could take a deposition. It would not be meaningful, it would not be useful, in our view.

JUDGE BRENNER: I don't know what your experts have been doing since the report has been made available. It's that simple. You have Mr. Bland, you have Mr. Inskeep, you have Mr. Bridenbaugh, you have Mr. Minor in addition to Mr. Hubbard. I understand that Mr. Hubbard is the one the county sees fit and is involved primarily in QA/QC matters, but he is not the universal man or the only person in existence who can assist you in this regard.

We have known for a long time this is a schedule which was coming, which was why we talked about it three weeks ago. So we are not springing this on you at the last moment, and we have tried to avoid that in this proceeding.

MR. LANPHER: Messrs. Bridenbaugh and Minor are not available to assist in this and this is not their expertise at all. That is why they were not included in the witness panel on this. They are involved in other matters in this case on a full-time basis themselves.

Messrs. Inskeep and Bland, as set forth in our filing yesterday, are reviewing this work but their work has not been sufficient at this time to prepare us. Mr. Hubbard's participation, in our view, is essential.

JUDGE BRENNER: We will not stop the entire

proceeding because one person is busy; it's that simple. We want to get this testimony in as a part of the QA/QC matters or shortly thereafter and see what the situation is. If there is a problem with the Torrey Pines result or if we feel we don't have sufficient information, we want to have the opportunity to ask more and probe further. That's another reason we don't want to delay things until the end.

It's true the Teledyne report information, if it comes in, will come in late but it is not of our choosing. Had we had a preference we would have taken that earlier, also.

MR. LANPHER: Judge Brenner, if I may inquire, one last aspect of this. Assuming that the Board described its view of the county's schedule, putting us in hearing I believe you said in late January or early February, I would like to inquire of the Board why -- assuming that is the fact; my calculations make it a little sooner, but let's assume that is the fact -- I would like to ask why that would be unacceptable.

JUDGE BRENNER: Because we want to finish the QA/QC matters, pull it together to the extent the information is available and start the findings schedule on it. We are going to be doing possibly Phase I emergency planning matters in the timeframe you are

talking about.

I also want to get to it while things are fresh in our minds. We have been talking about QA/QC issues and conformance with design documents, walkdowns, verifications and audits for some time now, and I don't want to get diverted on other issues and have to come back to it if the information is available. If the information were not available, we would have to delay.

But in this case, the information is available. It's not information that is equally in the area of the county or any other party; that is, technical information that would be up for grabs for all expert witnesses to present their views. The primary bearer of the information is LILCO and Torrey Pines, and we are requiring it to be filed by them. We even dispensed with the requirement for you to identify by this time the areas you would inquire into in the deposition, so we are giving you a free rein. If you pass up the opportunity for a deposition you may find when you get to cross examination that you will be limited more closely to the direct testimony and our view of what is important, and to witnesses who are not ready in the other areas the county thinks is important.

MR. LANPHER: I read that aspect of the transcript yesterday and I understand the Board's

position on that. I must stress again that we are not willingly passing up what the Board refers to as a golden opportunity for the reasons I previously indicated.

JUDGE BRENNER: I repeat, the report is not that complicated. Even I understood the basic findings and what they did, and I have no technical expertise. And a combination of a thorough review by you or some other lawyer representing the county, along with the opportunity to check things with your expert before going into the deposition, in my view, will still give you a very valuable opportunity to inquire into the significant results reported by Torrey Pines and why Torrey Pines drew the conclusions it drew, given those results.

So I think you are making a big mistake by not taking the deposition. It is that simple. I will not require a deposition. It's your deposition.

MR. LANPHER: All I can say, Judge Brenner, is that the preliminary review by our experts is that it is not as simple as you indicated from our point of view.

JUDGE BRENNER: Take the deposition and then follow up on it in preparing your testimony. That is what I advise.

One reason we encourage the deposition so

strongly is, as we said yesterday, you will assist us if you do that. If there are matters where there's more than meets the eye or it's quite complicated, you can highlight that in the deposition and follow up in the preparation of testimony, pointing out where the county believes the uncertainties are, or the holes or the missing pieces of analysis. Things of that nature. Then we'll be able to see it before us and you will be able to probe further in the hearing before us. We would like your help.

MR. LANPHER: Judge Brenner, I would be happy to offer my help if I thought I could do a job, but without the review of Mr. Hubbard, I don't believe I can do that. So it's not in any sense a desire on our part to thwart information going to the Board. But in my review, without the consultations of my experts, I will not be prepared. It's a matter of timing.

In the response to the direct question posed in the transcript yesterday: Does the county intend to take a deposition next week on this matter, the answer is no.

JUDGE BRENNER: All right. The staff will inform us as soon as it knows, by Friday, of whether or not the staff is pursuing in its review any further matters which the staff feels needs to be raised by

Torrey Pines, and also, whether the staff will present testimony.

MR. BORDENICK: That is correct, Judge Brenner. Additionally, I believe you asked by today that the staff advisory board, as now appears the case, if the county did not proceed to take a deposition, would the staff do it independently. The answer is no, we do not plan to take depositions.

JUDGE BRENNER: And we will hear later this week on the other matter.

MR. BORDENICK: Yes.

JUDGE BRENNER: All right, thank you.

Even though the county, for the reasons it has stated, is passing up the opportunity for formal discovery, we fully expect the parties to continue the spirit of what we have always encouraged take place in this proceeding. And that is, if the county has some questions along the way, what does this mean, or explanatory, clarification questions, informal conversations through between the technical people should take place so the county can understand anything it does not understand as it reads the report. And if the staff is going to have any formal meetings as a part of its review on Torrey Pines, of course, notice should be given to the county so they can attend if they wish.

We have no other preliminary matters. We, therefore, are prepared for Mr. Dynner to continue his cross examination.

MR. LANPHER: If I could get back to you, Judge Brenner, on one matter of yesterday concerning the designation of documents or portions thereof. I did speak to Mr. Earley yesterday afternoon by phone. He indicated that the other documents circled on my list were categories of documents. A more detailed breakdown would be provided today. So I don't believe any kind of ruling from the Board is required at this time, at least.

JUDGE BRENNER: I don't think a ruling is required. We appreciate knowing that. I was going to assume everything was okay, because when things are not okay, people have a habit of telling us. But we appreciate knowing that.

I don't know if you saw this question in the transcript yesterday, Mr. Lanpher. I did allow Mr. Earley the possibility that as late as tomorrow morning he might, in his last finalization -- you recognize what we have been doing; it was the same thing for the county.

MR. LANPHER: I was there for that. I will be delivering later today -- I have it in the other office -- a listing of those audit findings from last week to be moved into evidence; a revised listing which Mr.

Farley has had a chance to review. At some point when you are taking up miscellaneous matters, if you will schedule that, I would appreciate it.

JUDGE BRENNER: You might want to profer those you want to move in as a separate list. If you want a record of that we will be pleased to mark it as an exhibit.

MR. LANPHER: I would have thought we had a pratty good record from last Friday on that.

JUDGE BRENNER: All right. It's 9:30. We will see what occurs in approximately this next hour, and we are going to have some questions also, and then we will break and decide whether we will continue with this examination or terminate it.

Whereupon,

EDWARD J. YOUNGLING,
ARTHUR R. MULLER and
JOSEPH M. KELLY,

the witnesses on the stand at the time of recess, resumed the stand and, having been previously duly sworn, were examined and testified further as follows:

CROSS EXAMINATION -- Resumed

BY MR. DYNNER:

Q Good morning, gentlemen. If you will return back to QAPS 2.1, which we were reviewing yesterday.

For the Board's convenience, this will take us to page 4, last paragraph of the cross plan. Gentlemen, yesterday, we began to discuss paragraph 5.5 of this procedure, which sets forth the QA indoctrination and training of station OQA personnel. Do station OQA personnel also receive the general employee training referred to yesterday in accordance with the plant procedure?

A (WITNESS MULLER) Yes, Mr. Dynner. In addition to the station OQA indoctrination.

Q Is it the company's practice notwithstanding the introduction of the general employee training, to continue to provide QA indoctrination and training of station OQA personnel pursuant to this procedure?

A (WITNESS MULLER) Yes, Mr. Dynner, we will augment the general employee training for station OQA personnel through this procedure.

Q There are no specific standards or criteria set forth in this procedure as to the contents or depth of training required under paragraph 5.5, are there?

A (WITNESS MULLER) Mr. Dynner, there are specific requirements. Paragraph 5.5.2 addresses some of those specific requirements, as they indicate content of the courses.

Q Yes. And if we look at paragraph 5.5.2 for a

moment, it provides in the first paragraph that for station QQA personnel, quality assurance indoctrination and training requirements shall include familiarization with the following; and then it lists the four items there. There is no definition, standards or criteria as to what level of understanding is required to provide "familiarization," is there?

A (WITNESS MULLER) Mr. Dynner, within Section 5.6 it is noted that the indoctrination and training requires a lesson plan. Those lesson plans provide the level of familiarity. And by that I mean they outline the lesson plan.

Q And you are referring, aren't you, to paragraph 5.6.1.B on page 6 of this procedure? Is that correct?

A (WITNESS MULLER) That would be A, B and C.

Q But it's true, isn't it, that paragraph 5.6.1 deals with the issue of when station QQA personnel present QA indoctrination and training, and not with the issue of when they receive it, isn't it?

A (WITNESS MULLER) Mr. Dynner, paragraph 5.5.3 requires that the training be documented. The lesson plan --

Q May I have an answer to my question, though, please, Mr. Muller?

(Pause.)

A (WITNESS MULLER) Mr. Dynner, could you repeat the question?

Q You indicated your assent to my statement that in referring to lesson plans you were referring to paragraph 5.6.1, and I then pointed out to you and asked you to confirm that paragraph 5.6.1 by its terms applies to when station QQA personnel are assigned to present QA indoctrination; not the requirement for when they receive QA indoctrination. Isn't that correct?

A (WITNESS MULLER) I verified that paragraph 5.6.1 does apply to the presentation. Receipt of the training would include documentation of the training. The training course would be performed per a documented outline.

Q So there's no requirement that lesson plans be used in QA indoctrination and training of station QQA personnel, is there?

(Pause.)

A (WITNESS KELLY) Mr. Dynner, Section 5.6 refers to training given by station QQA personnel, and that subparagraph requiring a lesson plan would be applicable to any training courses conducted by station QQA personnel that are given to station QQA personnel.

Q And subparagraph B that you refer to reads,

"If necessary, prepare lesson plans (including examinations)," and there are no standards and criteria in this procedure to determine when that is necessary and when it is not, are there?

A (WITNESS MULLER) Mr. Dynner, it is not necessary to prepare a lesson plan if a lesson plan exists. That is a criterion.

Q Aside from that subparagraph B which says if necessary, station OQA personnel shall prepare lesson plans, there's nowhere else in this procedure that contains a requirement or a pseudo-requirement for the preparation of lesson plans for this training, is there?

A (WITNESS MULLER) Mr. Dynner, it is also the responsibility of the OQAE -- in reference 5.6.2, the OQAE shall review the results of the training. In order to review the results, the OQAE would have to know what was taught, and he would review any lesson plans. Lesson plans that were prepared by other local informations or other formal training organizations would have to be reviewed in order for the OQAE to understand what was actually taught.

Q Well, if you require lesson plans, Mr. Muller, why don't you come out and say it in this procedure instead of requiring the reader to go through this oblique analysis to come out with the fact that a review

by an OQAE engineer means you have to have lesson plans?

A (WITNESS MULLER) Mr. Dynner, it is well understood by the OQAE that lesson plans are required, and the other organizations such as the plant staff that perform training are required to perform and prepare lesson plans for their training.

Q If it's well understood, Mr. Muller, why don't you document that understanding in these procedures?

A (WITNESS MULLER) It is documented as far as I am concerned.

Q Mr. Muller, is there a provision in this procedure which sets forth who actually presents QA indoctrination and training of station OQA personnel?

A (WITNESS MULLER) Mr. Dynner, paragraph 5.1 provides that guidance.

Q And as you read that paragraph, how do you interpret it to say who is to present the training?

A (WITNESS MULLER) It could be presented by outside agencies, programs developed by internal LILCO agencies or on-the-job training.

Q Is there anything in this procedure, Mr. Muller, that indicates what qualifications personnel presenting QA indoctrination and training to station QQA personnel must have?

A (WITNESS MULLER) There is no specific reference to anyone or any special requirements. However, the training courses are given by qualified people. We know that because we sit in on some of the courses. I have given some of the courses myself. The other people who work for me give the courses. They are well aware of the procedures we work through. They are qualified, they understand the QA program and have been through the QA program indoctrination and training.

A (WITNESS KELLY) In addition, as far as those courses given by outside agencies, the review that is done would be a review of the course outlines to see if the outlined material would cover the material necessary for the station QAPS person. It would also involve the

review of the instructor's qualifications and his resume, which is typically enclosed in the brochures for these courses.

We send people to various courses outside, such as Kodak for radiography, ASME, the courses in section 11, AWS for courses in welding, the American Society of Nondestructive Testing and any others that we feel can contribute to the added training of our quality personnel.

Q Now, gentlemen, if you look at paragraph 5.5.2, that paragraph sets forth matters which shall be included as to famliarization. And in the middle of that paragraph there is a statement that, "In addition, quality assurance indoctrination and training should include familiarization with as many of the following documents directly related to the job they are specifically assigned to perform," and there is a further list of six items.

And although you have testified that the station procedures form an important part of the QA program and that there are literally hundreds of these procedures, there is no requirement in paragraph 5.5.2 for familiarization with station procedures, is there?

A (WITNESS MULLER) Yes, Mr. Wynner, there is. That is item 5 on the second paragraph.

Q That is the item which reads "Plant-project (during the preoperational test program) administrative procedures," isn't it?

A (WITNESS MULLER) That is what is in the parentheses. However, those plant procedures would be the same procedures that would be used during operations.

Q So it's your testimony that that item means precisely the same as all of the station procedures or SPs we have been talking about?

A (WITNESS MULLER) Mr. Dynner, the project procedures are the procedures that exist during the preoperational test program. Plant procedures exist now, and they will exist during operations.

Q Yes, Mr. Muller. My question was whether it is your testimony that item 5 includes all station procedures -- SPs, as we have been referring to them throughout this cross-examination.

A (WITNESS MULLER) It applies to specific administrative station procedures. It does not include all 1,400 stations. As part of the QQA indoctrination and training we include a minimum of 16 station procedures in the administration section, and we include references to other series of procedures so that the QQA individual can become familiar with different sections of the station procedure manual and the sections therein.

Q Now, Mr. Muller, there is nothing in this procedure that provides for how often station QQA personnel must receive QA indoctrination and training pursuant to paragraph 5.5, is there?

A (WITNESS MULLER) Section 5.8 provides that guidance.

Q Which paragraph of section 5.8 are you referring to, please?

A (WITNESS MULLER) The three sections of 5.8 provide the guidance.

Q All three of them?

A (WITNESS MULLER) Yes.

Q Let's take a look. Paragraph 5.8.1 covers only station management personnel who have met the requirements of paragraph 5.4.2, doesn't it?

A (WITNESS MULLER) It does refer to that paragraph. However, as we testified yesterday, the indoctrination and training concerning QQA with the QA program is performed on an annual basis under the general employee training program that is required for management personnel as well as union personnel.

Q But you made a distinction, as I recall, this morning -- and correct me if I am wrong -- that in addition to the annual general employee training program which is given annually and contains about 20 percent or

so QA portions, that station OQA personnel, pursuant to paragraph 5.5, are given additional training, didn't you?

A (WITNESS MULLER) Yes, I did. And what I meant by that is that is their initial trairing. Their refresher training is a part of the general employee training.

Q So is it your testimony that station OQA personnel only receive this specialized QA indoctrination and training as outlined in paragraph 5.5 once and that there is no other requirement for refresher training in this procedure for them?

A (WITNESS MULLER) There is a requirement, and paragraph 5.9 references that.

A (WITNESS KELLY) Also, Mr. Dynner, we are talking about station quality personnel who are daily dealing with quality matters. We are not talking about someone who attends a course and then is drifting into oblivion. We are talking about people who are constantly using station QAPS, interfacing with station procedures, interfacing with the NRC inspection people. That is all taken into account.

It is also an assessment on the station OQAE additional training if he should want to expand the area of expertise of one of his personnel.

They discussed yesterday an inspector in a

mechanical area might want to additionally provide training in the electrical area. This would now require familiarization with regulatory guides and standards he was not necessarily previously familiar with in detail. So now those particular reg guides and those particular standards, that training necessary would be given.

Q So your testimony, Mr. Kelly, is that there is an ongoing process of training of QQA personnel both on the job and other, it's just not documented in the procedures; is that correct?

A (WITNESS KELLY) I don't know if I would characterize that the way you did. There is on-the-job training, there is certification and qualification of personnel to perform job functions.

During the preformance of the job functions for which they are certified and qualified, they are using those materials that are outlined in paragraph 5.5. They are utilizing the QA manual. They are utilizing the requirements. Consequently of Appendix B. They are utilizing the station QQA procedures and instructions. They are knowledgable about the FSAR requirements as relates to that area.

Further, the reg guides for the particular assignments they are on, they know those reg guides, they know the particular ANSI and ASME standards

applicable to the job task. They are familiar with the plant's project administrative procedures involved int that particular work functions and likewise the requirements for startup manuals. They are involved in that activity. So it is an ongoing daily involvement.

Q Mr. Muller, was an initial QA indoctrination and training training program given for station QQA personnel within the last year?

A (WITNESS MULLER) Yes, Mr. Dynner. Whenever a new employee comes to QQA or transfers to QQA, he goes through indoctrination and training. We don't always wait for a formal course to be given. We give our own course. Our own course is given from a prepared lesson plan to a prepared outline. We specify what the individual is required to read, what he is required to go through as far as oral training, and we specify his on-the-job training. After that, we give him an examination to make sure that he in fact knows what he has to know.

Q And when you speak of your own course, Mr. Muller, are you referring to a course you give pursuant to QAPS 2.1?

A (WITNESS MULLER) That is correct. That is just for the indoctrination phase.

Q Yes. Now, you testified that you have given

at least one of these courses over the last year. Do you know how many people you have actually presented this course to in the OQA section in the last year?

A (WITNESS MULLER) Everyone that has been assigned to the section. I am not sure I could give you an exact number.

Q Does that include contract personnel?

A (WITNESS MULLER) Most definitely.

Q Do you recall how many courses were necessary to cover all of these personnel?

A (WITNESS MULLER) No, Mr. Dynner. We have had people come in -- well, we haven't had people come in on a lump-sum basis. We had to provide that course for everyone. We may have had two or three in a course, we may have had one in a course. It is required before they can become certified to perform any function in OQA.

Q Did you yourself ever serve as an instructor for one of these courses?

A (WITNESS MULLER) Yes, I have.

Q When was that course given?

A (WITNESS MULLER) I don't remember giving any this year. Late last year, I think, was about the last one I have given.

Q How long does this specialized OQA section course take to present?

A (WITNESS MULLER) The complete course takes over 2 weeks to go through. But that is just for OQA personnel. It involves much more detail than the GET course. Mr. Dynner, I would also like to add that that includes field orientation.

Q Could you describe what you mean by "field orientation"?

A (WITNESS MULLER) The personnel are taken in the plant by experienced and qualified individuals. In the field they are to spend time witnessing actual operations after reviewing the appropriate procedures.

Q And within the last year has there ever been a refresher indoctrination and training QA course for station OQA personnel pursuant to this QAP-S-2.1?

A (WITNESS MULLER) The requirements of 2.1 are met with the general employee training as far as the refresher course is concerned. And, Mr. Dynner, that also includes some of the contract personnel.

Q So that I understand, your testimony is that the refresher course was not specifically designed under 5.5, paragraph 5.5 of this procedure, but was the general employee training course which is given annually; is that correct?

A (WITNESS MULLER) The general employee training is part of the requirement of 5.5; not actually

5.5, but section 5.

Q Is my question correct, my statement in the question correct?

A (WITNESS MULLER) The GET does meet the intent of 5.5. However, 5.5 does not note refresher training. That appears in section 5.8.

Q What I am trying to clarify, Mr. Muller, without quibbling, is whether the refresher training for OQA personnel as to QA indoctrination and training has been given solely through the use of the annual and general employee training program?

A (WITNESS MULLER) Yes, Mr. Dynner, and that course is sufficient.

Q Thank you. Now, gentlemen, let's turn to page 6 of this procedure, paragraph 5.5.3. It still deals with the QA indoctrination and training of station OQA personnel. That paragraph permits all of the training to be provided only by on-the-job training, doesn't it?

A (WITNESS MULLER) Are you referencing paragraph 5.5.3?

Q Yes.

A (WITNESS MULLER) Mr. Dynner, if what you mean is on-the-job training would not include the indoctrination courses, no, we cannot use solely on-the-job training.

Q Well, let me refer you to the specific language of 5.5.3, which says, "The operating QA engineer may assign the methods of initial QA indoctrination and training from the following: One, formal courses taught by local or other companies; two, on-the-job training; three, equivalent."

Doesn't that indicate to you that since you may, if you wish, assign the method of training from any of those three possibilities, that you could, if you wanted to, assign the method of training solely as on-the-job ttraining?

A (WITNESS MULLER) Yes, I could, if it met the requirements.

Q All right. If you could use on-the-job training only and that is the only requirement, there is no requirement here that you use anything other than on-the-job training, how would you go about instruction for familiarization of the items listed in 5.5.2 by the use of on-the-job training only?

A (WITNESS MULLER) I would consider that as part of on-the-job training.

Q You can instruct someone in the regulatory guides by the use of on-the-job training only; is that your testimony?

A (WITNESS MULLER) If --

MR. ELLIS: Mr. Dynner, I think Mr. Kelly wants to add something, but I don't know whether you want your question in before he adds something or not.

JUDGE BRENNER: Let's get the answer to the last question and then we will back up.

(Pause.)

WITNESS MULLER: Mr. Dynner, as far as on-the-job training goes, yes, we could train someone on the job as far as regulatory requirements go. What we would have them do is go through somebody else, the reg guides and how they apply to the station. That would not be a one-on-one type of thing. An individual would not go out in the field and learn by himself how to use the reg guides.

WITNESS KELLY: The purpose of paragraph 5.5.3 is to detail the methods available to the QQA engineer to implement 5.5.2, the various mechanisms. In some cases, on-the-job training might be the best and most appropriate way to reinforce one of those items. In other cases, the only appropriate way may be a formal course. In other cases, such as "equivalent" in item 3 there, that may be the appropriate method may be self study with an examination to follow.

That is the purpose of that paragraph, that in each individual case the QQA will assess which is the

best way for that training to be given. And that will vary from item to item.

BY MR. DYNNER: (Resuming)

Q So the method of training used by the QQA section is entirely within the discretion of the QQA engineer, is it not?

A (WITNESS KELLY) This procedure outlines what training, what indoctrination and in what areas must be given. The criteria is in this document. It also requires that the results be documented. As far as a determination of the best way to accomplish that, yes, that is the QQA's decision. Based upon his training and experience, that is also -- this area is also audited to verify that that assessment is proper; that is, that people are in fact trained and do know how to perform their job functions.

And the QQAE is constantly assessing the ability of his people. If someone does not seem to be performing up to par, he will be given additional training.

Q What we are going to, Mr. Kelly, at this point is not the ability of the people under the QQA engineer but the ability of the QQA engineer himself in the exercise of his discretion, and in that context how often is the discretionary choice of method of training

by the QQA engineer audited?

A (WITNESS KELLY) Compliance with the requirements of this procedure is audited on a minimum by the LILCO QA department once a year. There would also be additional assessments, as I said, in the other areas that we would audit to verify that the man was capable of performing his function.

When we are doing an audit of QQA in the area of, say, receipt inspection, it would become quite obvious and apparent if the station QQA personnel performing that function was not adequately trained, knowledgable in the procedures and requirements. So in reality, there is an ongoing assessment performed.

JUDGE BRENNER: Mr. Dynner, do you have a lot more on this procedure?

MR. DYNNER: What I have is generally indicated in the cross plan you have, Judge Brenner.

JUDGE BRENNER: Do you consider whether you are getting bogged down on this one procedure now after all of the questions you have asked, given the purpose of this contention and the purpose of your cross on this one aspect of this contention so as not to preclude you from moving somewhere else?

It is 10 after 10:00, and some of your questions, while relevant, have started to get a little

more collateral than the direct immediate point; that is, whether the procedure is part of the total written screen and the circumstances fill out sufficiently how LILCO would comply with Appendix B. I thought you asked everything in your cross plan and this procedure. That is one reason I jumped in.

MR. DYNNER: Well, I have not, but let me quickly review the cross plan and determine whether I can accept your guidance and move on.

(Pause.)

JUDGE BRENNER: It is not a reflection on whether we agree or disagree. Your decision will be whether you have already made whatever point you want to make. I guess while you are thinking I will ask you which area you want to go to next.

MR. DYNNER: I would like to go through this, and then I will be able to make a judgment on that, if you don't mind.

(Pause.)

MR. DYNNER: Judge Brenner, we can move to page 3, Roman numeral III at the top of the cross plan.

JUDGE BRENNER: That is exactly the one I would have suggested.

MR. DYNNER: It looks as though finally after all of these days you and I have agreed on the proper

priorities.

JUDGE BRENNER: It wasn't a matter of priority, it was a matter of something we could get to now.

BY MR. DYNNER: (Resuming)

Q Gentlemen, if you can now turn, with relief, to QAPS 16.2, again paragraph 4.1, which references the QA manual, does not contain a specific reference, does it?

A (WITNESS MULLER) There is no specific reference to the QA manual section in paragraph 4.1. However, it refers to section 15 specifically, paragraph 15.3.11.

JUDGE CARPENTER: Excuse me, Mr. Muller, where did you find that information?

WITNESS MULLER: I had looked through the QA manual. It does not appear on QAPS 16.2 specifically.

JUDGE CARPENTER: Thank you.

The question was with reference to item 2, and you are saying that you have looked through all of 16.2 and it doesn't appear anywhere in 16.2?

WITNESS MULLER: Judge Carpenter, the specific reference to section 15 of the QA manual does not appear in QAPS 16.2. We do reference the QA manual but not a specific section to it.

JUDGE CARPENTER: Thank you.

JUDGE BRENNER: This is a departure, is it not, from all of the previous unspecified references where you always said it was easy because it keyed into the same chapter number in the manual as the first portion of the QAPS manual?

WITNESS MULLER: I am not sure we said it always does. Most of the time it does. I would say 95 percent of the time it does. Section 15 is the nonconformance section.

JUDGE BRENNER: Would a LILCO employee used to your system and using the procedures, when he sees an unspecified manual reference in a QAPS something procedure, be likely to turn to section 16 of the QA manual?

WITNESS KELLY: Judge Brenner, this particular procedure would be used by station QQA personnel. They would be quite familiar with the LILCO QA manual. We had no trouble finding the referenced section in that manual.

JUDGE BRENNER: You are not everyone who uses it, but I will let it go by that.

WITNESS KELLY: This will be used by QA personnel.

JUDGE BRENNER: Why don't you put the

reference in?

WITNESS KELLY: If you want it in, we will put it in.

JUDGE BRENNER: Why, in your own decision-making process, didn't you put the reference in, particularly since it's apart from the majority of the similar sequencing previously mentioned?

WITNESS MULLER: Judge Brenner, I would like to note within the body of the QAPS we do refer to LILCO deficiency reports, we do refer to corrective action requests, and we do refer to audit reports. So we could reference three sections of the QA manual right there.

JUDGE BRENNER: Why don't you?

WITNESS MULLER: The individuals who use the procedure know enough that when you mention LILCO deficiency reports to obtain specific information on how the OQA section uses those reports, we would go to our QAPS 15.1 or 15.2, and that would refer you to section 15 of the manual.

JUDGE BRENNER: This isn't in the category of where the information might change, and if you included it, you would have to keep changing the manual or the procedures, is it?

WITNESS MULLER: It could happen that way.

JUDGE BRENNER: Do you mean the subject of

section 15 may end up in some other section of the QA manual?

WITNESS MULLER: Not section 15, but if we referenced a specific paragraph and included another paragraph, the paragraph numbers would change and the reference in the QAPS would be incorrect.

JUDGE BRENNER: But you could reference the section of the QA manual without fear of change; isn't that correct?

WITNESS MULLER: I would think that would be correct.

JUDGE BRENNER: Unless they changed the criteria listing in Appendix D; is that right?

WITNESS MULLER: We still wouldn't have to change our manual.

WITNESS KELLY: I guess the main reason is we really feel based upon the familiarity specifically with the station QQA personnel who use this procedure, that that direct tie is not necessary, they know the reference.

JUDGE BRENNER: Not when you get someone new you are first training; correct?

WITNESS KELLY: That's what we have in the indoctrination and training. One of the items in that list and I believe paragraph 5.5.2 of procedure QAPS 2.1

requires familiarity with the QA manual.

JUDGE BRENNER: Wouldn't this be a nice symbiotic support for the training program to have it specified here and vice versa?

WITNESS KELLY: Well, in reality, our personal belief is that it is not necessary. The particular actions and functions that are carried out in this procedure would not be typically those you would give a brand-new employee as far as assessing audit reports, corrective action, licensee event reports, and such. This would be more typically done by someone who is more experienced in the organization as opposed to someone who was just going through the initial QA indoctrination and training.

JUDGE BRENNER: I will go back to you, Mr. Dynner.

BY MR. DYNNER: (Resuming)

Q I have one general follow-up this line because it is something that has puzzled me. And that is, if these cross-references aren't necessary because everyone is so familiar with the program who is in the QQA section anyway, why do you sometimes include cross-references, many of which are nonspecific, such as here where you refer to the QA manual, and at other times you don't have any cross-references? What is the

standard you apply for deciding when and when not to include cross-references?

MR. ELLIS: Mr. Dynner, Judge Brenner, he indicated in his question that sometimes no references are provided. I didn't recall in the testimony, and perhaps it is that we have been on the testimony so long that I don't remember one where no reference at all was given.

JUDGE BRENNER: No cross reference? I understood the question. I will let the question stand. The witnesses can answer.

WITNESS KELLY: I think it is simply a matter of the references are put in with the detail we feel is necessary for the user of the document. If we feel it is appropriate as far as the reference of the LILCO QA manual, because of the familiarity of the station QQA personnel with the QA manual. It is a judgment, like I said, that is made, and we feel it is a valid judgment.

BY MR. DYNNER: (Resuming)

Q And if you look, in fact, at Section 15.3.11 that you referred us to in the QA manual, that subsection doesn't require that trends be reported to the "plant manager and QA Department manager" as stated in the reference of Paragraph 4.1, does it?

A (WITNESS MULLER) Mr. Dynner, for the purposes of the QQA section, the plant manager and the QA Department manager are appropriate management.

Q That may be, but all I am pointing out to Mr. Muller and asking you is, you have referred the reader in Paragraph 4.1 to a section of the QA manual that you say and that this paragraph says states something, and when you look to that paragraph, it doesn't specifically state the details contained in that paragraph at all, does it?

A (WITNESS KELLY) That is not true, Mr. Dynner. If you read QAP S 16.2, it says Reference 2.1, which is the LILCO quality assurance manual, requires that the operational quality assurance organization review applicable reports for possible adverse quality trends. We go to Section 15 of the manual. It says nonconformances shall be periodically reviewed and analyzed to determine quality trends. I think there is a pretty good correlation there.

Further back into the QAP-S, it says the reports of such trends to the plant manager and the QA plant manager with recommendations for necessary corrective action, et cetera. And Section 15 of the manual says that these reports shall be sent to the appropriate management. In this procedure, the appropriate management is determined to be the plant manager and the QA manager as a minimum. I see that as a perfect tie-in.

Q I agree it is a tie-in. It is just the QA manual does not in fact refer to the plant manager or the QA department manager, specifically, does it?

A (WITNESS KELLY) It says the appropriate manager. If we felt that someone else in addition was appropriate, that person would get the report, too.

JUDGE BRENNER: Mr. Kelly, when you were quoting from the manual, your first quote before you got to Section 15, where did that come from in the manual?

WITNESS KELLY: From Section 15 of the manual I was quoting, or the procedures?

JUDGE BRENNER: I guess that is where I'm confused.

WITNESS KELLY: I started with a quote from QAP-S 16.2, where I said reference to .1, which is the QA manual. I started there and read up to the comma. Then I went back to Section 15 of the manual and read a sentence from Paragraph 15.3.11, which says nonconformance shall be periodically reviewed and analyzed to determine quality trends. I said those tie in. Then I went on after the QAP-S, the continuation of that sentence, and tied that in with the remainder of that subparagraph in Section 15 of the manual.

JUDGE BRENNER: All right. I have it now. Thank you.

BY MR. DYNNER: (Resuming)

Q Gentlemen, would you turn for a moment to Paragraph 5.3 of this procedure, which is entitled "Analysis"? There are no requirements contained in Paragraph 5.3 regarding analysis, are there?

A (WITNESS KELLY) I think that paragraph outlines the various methods available to the QQA organization for the handling of trends.

Q So your answer is no, there are no requirements; is that correct?

A (WITNESS KELLY) No, my answer is there are requirements. It outlines the various methods available, as I said, to the QQA organization to do this analysis as appropriate.

Q All right.

Subparagraph 5.3.1 is what you have referred to as a "should" requirement, that is, a recommendation only. Isn't that correct?

A (WITNESS MULLER) If you mean by recommendation -- it does say "should," and the reason why it is "should" is the QQAE or the QQA personnel could use other documents to extract data from.

Q They don't have to use anything. This is only a recommendation, as you testified yesterday when you referred Mr. Muller to the definition of "should" in

ANSI, in 18.7-1976, to which you have testified LILCO is committed; isn't that correct?

A (WITNESS KELLY) If, in fact the QQA personnel did not utilize A through E, as you suggest, they would have it very difficult meeting Paragraph 5.2, which says they shall prepare an annual trend report. They in fact do look at all of these items.

Q Can you answer my question, then? To refresh your memory, my question was: 5.3.1 is a recommendation only, isn't that correct, because it only states they should do these things?

A (WITNESS KELLY) As Mr. Muller stated, the "should" is there because there may be additional documents that would be used in the review for trends, and we didn't want to preclude that. There is a "shall" requirement that the analysis be done, as stated in 5.2.

Q There is nothing in this procedure that indicates which documents QQA personnel shall extract data from, is there?

A (WITNESS KELLY) Paragraph 5.1 states that the trends adverse to quality are monitored on a continuous basis by the operating QA engineer from his review of LILCO deficiency reports, corrective action reports, audit reports, inspection reports and surveillance

reports. That statement is "all monitored."

Q Yes. And where does it say in this procedure what documents QQA personnel forming the analysis shall extract data from?

A (WITNESS KELLY) As I said in Paragraph 5.1, if you are monitoring on a continuous basis for adverse trends, that is the extraction of the data.

JUDGE BRENNER: Mr. Dynner, we are going to let you finish this procedure, at least, but we want to interrupt you so that we can ask some questions before the break and collect our thoughts during the break. Your time is up, but we will let you finish this section. Based on my view of the cross plan, that should just be 10 or 15 minutes, I would guess.

BOARD EXAMINATION

BY JUDGE CARPENTER:

Q I would like to ask a couple of questions before the break as perhaps food for thought during the break.

Let's go back to Section 12 of the QA manual that we were looking at yesterday. Is it true that Section 12 really quite deliberately is an attempt to be responsive to Section 12 of Appendix B? The numbering indicates that is the attempt. It is a flashing out, if you will, of Criteria 12.

A (WITNESS KELLY) Yes, sir.

Q 12.1.1 states that this section is going to apply to measuring and test equipment that are used for measurement, inspection and monitoring of safety-related structures, systems and components. I am trying to get this from a common sense point. How many such pieces of equipment are there?

A (WITNESS YOUNGLING) Judge Carpenter, I will estimate that at about 250.

Q Under 12.2.1, I read that to say that the various organizations involved in the program will develop their procedures and will be responsible for carrying out this program. Is that a fair paraphrase?

A (WITNESS MULLER) That's correct.

Q Is it also true it is the responsibility of the QQA engineer to audit their performance to see if they are carrying out their responsibility?

A (WITNESS MULLER) For the QQA engineer, this would apply only at the station, so the answer is yes. Mr. Kelly has something to add.

A (WITNESS KELLY) For those organizations measuring test equipment that are not located at the station, that area is audited by the QA Department, such as when we talked about our Meter and Test Department. The QA Department does the auding of that organization.

Q So it is even more complicated than I was implying. Two groups have to look at 250 items.

A (WITNESS KELLY) I believe the 250 was a figure for the station, but that is the majority of the items. We are talking about operations during normal steady operation as opposed to if we had any extensive modification work going on at some future date for some unforeseen reason and we had to bring in large numbers of contract personnel. Obviously, we would have additional measuring and test equipment that would be utilized for that activity.

Q Does the Nuclear Regulatory Commission review this quality assurance manual at all? Has it been reviewed, if you know?

A (WITNESS KELLY) I believe it has. Especially, I would say, the resident inspector. This manual is available to him at all times and there are various personnel on the staff who have control copies. At least one I know of has a control copy of the manual.

Q Going to the point of the sequence of questions to illustrate my thinking, I don't see the virtue in not having a list in this manual of what items of equipment this program applies to. They are defined in 12.1.1. It is pretty clear what the boundaries of such a list would be, and if in order for LILCO's

quality assurance office at the manager level to look at the dimensions of the program, or for the NRC to review it, I don't see what they're reviewing absent such a list. What is the elephant? There is no definition here.

A (WITNESS YOUNGLING) Judge Carpenter, there is a rather precise definition. Within the plant staff, as I testified earlier, there are four sections or organizations that have measuring and test equipment, the maintenance section, health physics, chemistry and INC. They have procedures that say what those instruments are. They list them. The QQA Section from their auditing process looks at those lists to see that we are controlling them properly.

Mr. Kelly's area in Hicksville in the Meter and Test Department, they have a similar list available, and he goes in and looks at those. Each one of those pieces of measuring and test equipment has an individual calibration card on it so we know when it has been calibrated, what its calibration record is, and that is available for audit also.

Q Mr. Youngling, you are going beyond my question. We spent a fair amount of time talking about the independence of the QA organization, and I think I see clearly there are a number of organizations involved

in carrying out this program. It is the QA organization's responsibility to oversee that, and I'm trying to see what the yardstick is, the definition of what it is that QA people are responsible for in looking at it. In looking at the list of items present in a number of different organizations being handled in detail, perhaps, in a number of different ways, I am trying to get at why not define the program just in the terms of 12.1.1 as to what items of equipment you are going to identify as being within the program and what items of equipment are outside the program. That is where I am having trouble.

A (WITNESS YOUNGLING) The QA manual would not be the place for us to write down that we have three 8000-series fluke meters. That isn't the spot for something like that, and I think that is what you are asking. That listing as to the fact that we have three of those meters and five pressure gauges and three rollers is contained in the other procedures I mentioned. The QA manual is not the place for that.

A (WITNESS KELLY) The commitment is there in 12.1, as you said, as far as describing what types of items have to be in the program. We wouldn't want to be in a situation where if we buy a new piece of equipment, we have to keep on revising our QA manual. The

appropriate place for that is in the implementing procedures where you have a detailed procedure that will discuss and outline the calibration of that item.

The other procedures that that organization would have would control the storage, the recall systems, the bagging, the numbering systems. That would all stay the same. So that type of specifics we don't feel are appropriate here. We are in the review cycle as far as all of those other programs, the QA Department and the QA Section. In addition to being the review cycle, we also have the auditing and inspectin program to verify that that program is being carried out in all aspects, from the procurement of the item through the use of the item, and all in-between steps.

Q Let me see if I can refocus you now. I appreciate the detail and complexity of the use of any particular measuring or test instrument within the organization using it. What I am trying to understand is how the QA Department knows the definition of the program relative to safety-related definitions that you must look at. How do you know which corners to explore in your audits without just a simple list of the items? No more detail than that, but a list of what is in the program and what is not in the program.

A (WITNESS KELLY) Okay. As far as a list of

the items, such a list exists in each of those organizations, so the scope is easily determined.

Q Now you are getting to my point of confusion. Why don't you have a list? Why doesn't the QA have a list to put up against their list to see if there is agreement about the program?

A (WITNESS KELLY) Okay, fine.

Q Nuts and bolts.

A (WITNESS KELLY) We are not the ones who would purchase the equipment. Let me try to explain. Say, for example, the Meter and Test Department. They have a list specifically that addresses each of the items they have in their program. We know what that list is. I have no way of knowing what in the future they might want to buy or what new and exotic equipment might develop.

If it was determined they [illegible] make a purchase, a purchase requisition would be issued and the necessary reviews made, and based upon the requirements of the procedures, that item would be placed in the program. And as I said, we were part of that cycle, that review cycle and that auditing cycle to make sure it all works. It is really not, as far as that part of the program goes, really not that complex. This organization has a list and that organization has a

list. If they decide to buy a new piece of equipment, it goes onto that list. It is purchased according to the necessary procedures, gets the necessary reviews, gets plugged into the system, they use it, do an inspection, we do an audit.

MR. ELLIS: Judge Carpenter, at great risk, may I ask one question that goes to what I think is the heart of what you are getting at?

JUDGE CARPENTER: Be my guest.

MR. ELLIS: How do you know their list is right? Is that it ?

JUDGE CARPENTER: Yes, sir.

WITNESS KELLY: Number one, there are requirements. As I said, the initiation of the purchase order, that's how they get the equipment. There are requirements in the procedures as far as that first step. No one makes generous contributions to LILCO; we have to buy it all, and those requisitions get reviewed. So it starts right there. What we do during our audits is take samples to verify that that list is good. Typically what would happen during the field work, typically either a QA Department personnel or a Station QQA personnel would verify that the instrument being used by the plant person was, in fact, an item that was in the program and that was within the proper

calibration due date. So it is an ongoing, continuous assessment of the system, just from that aspect alone.

JUDGE CARPENTER: Did you hear an answer to your question?

MR. ELLIS: Yes, sir, I think I understand it.

WITNESS MULLER: Judge Carpenter, may I add one thing? If I were performing an inspection and the procedure required that a specific measurement be taken during the procedure step, in order to verify the measurements, I would make sure that the individual performing that measurement had a tool that was properly calibrated. This is where we pick this up on a day-to-day basis. We have an inspection point. We perform the inspection.

If it requires a measurement of any sort, whether it be distance, voltage, current, time, we require that the instrument being used be a calibrated instrument which would include its unique identification, measuring and test equipment number, its last calibration date and its future calibration date. That is how we would check on a daily basis whether or not the equipment being used is, in fact, in the measuring and test equipment program.

Q I would like to turn briefly to one other item also in Section 12, Section 12.3.9, which indicates that

measuring and test equipment used to calibrate installed operating instrumentation shall have a tolerance no greater than that specified for the installed instrumentation. Is that a statement that comes from some other document, some other standard?

A (WITNESS YOUNGLING) Judge Carpenter, that language in that step is similar to the language we used in the FSAR in our correspondence back and forth with the Commission on measure and test equipment. We just carried that response over to here.

Q Well, specifically in answer to my question, you don't know of an ANSI reference or some other reference? I am looking at it from the point of view of industry practice.

A (WITNESS YOUNGLING) Judge, I would have to look at the response to see if we did reference an ANSI standard or not.

Q Would you agree with me that the way it is stated, then, the tolerance for the operating piece of equipment is double the nominal tolerance; the reference standards tolerance is equal to the tolerance limits of the device being calibrated. Then the uncertainties add. The final uncertainty is the sum of those two uncertainties.

A (WITNESS YOUNGLING) Judge Carpenter, if what

you are saying is if we have a one percent accuracy gauge in the panel and we calibrate it with a one percent accuracy piece of measure and test equipment, if we are outside the tolerances on both, there is a potential we could be two percent off.

Q Yes.

A (WITNESS YOUNGLING) Yes.

Q And that is acceptable to the NRC?

A (WITNESS YOUNGLING) That response we made to the NRC was endorsed, yes, and we did incorporate that response into the FSAR.

Q This to me is surprising when you look at most standardization procedures, where your reference has got to be considerably better than the thing you are trying to document so that it does not contribute. I am thinking, for example, of a pressure gauge used to set a safety relief valve, where the requirements are to me as a layman surprisingly tight, and then to have my reference gauge that I am testing my working gauge against only be as good, I end up with this increase.

A (WITNESS KELLY) We don't say, number one, that it is only. We say no greater than.

Q I realize what it says.

A (WITNESS KELLY) And we also --

Q But it allows the condition I have just

described to occur.

A (WITNESS YOUNGLING) Yes, it could go as high as that. In the particular case you cited, we don't set the relief valves or test the relief valves with those kinds of wide tolerance type gauges. We use a much tighter test gauge, a Heise gauge, which has a quarter-percent accuracy.

Q But by the manual I cannot discover that that is your intent.

A (WITNESS YOUNGLING) Yes, sir, you are right. All I am doing is saying what we do in practice.

Q I was hoping you would say that, but I don't understand why the manual does not tell me that. I am having trouble with this manual in terms of what it tells me.

A (WITNESS YOUNGLING) Judge, there are times when we cannot get a better improvement on the accuracy between the installed equipment and the actual equipment because of the state of the art, and we have to have that capability in our program to give us that kind of leeway.

Q I certainly agree. I just want to make sure it is clear that by doing so, the resulting tolerance is double. The safety significance of that would have to be looked at.

A (WITNESS YOUNGLING) Yes. And as I understand the tech specs that have come out now, there is allowance in there for tolerance and allowable values, that set point tolerance is all taken into account now in the new technical specifications, the standard tech specs, as I understand it. So some of your concern or a lot of your concern is taken up in those numbers in the tech specs.

JUDGE CARPENTER: Thank you.

JUDGE BRENNER: I have a few questions before we break.

BY JUDGE BRENNER:

Q When you put this manual together, what guidance did you use? Was there some standard format for quality assurance manuals? What did you use?

[Pause.]

I don't know what you are looking at. You should either know or not know.

A (WITNESS KELLY) As far as I know, Judge Brenner, it is written around the structure of the FSAR and the Appendix B criteria.

Q I understand it is intended to meet Appendix B criteria and FSAR requirements; but when you sat down to write it, did you look at a standard format, did you compare it with QA manuals with other plants or what, if

you know? And if you don't know, I would like to know that.

A (WITNESS KELLY) We definitely looked at other manuals from other plants, and the way it is structured, each of the sections reflects each of the criteria of Appendix B.

Q Yes, but in terms of choosing how to express things in the manual, either specifically or nonspecifically with cross-references or without cross-references in the sequence of the subsections within a section, how was this approached by LILCO?

A (WITNESS KELLY) We can get further definition for you, but I believe it was done based upon our knowledge of how other programs were written, other acceptable programs were written; but we can provide additional detail on that for you.

Q If you can find out today, I would like to know.

A (WITNESS KELLY) Sure.

Q I infer there is no such thing as a standard format for manuals, QA manuals for nuclear power plants down to the kind of detail as to what to put in it. I understand what requirements it is supposed to meet, but I am talking about practical guidance for the QA manual writer, if you will.

A (WITNESS KELLY) I am not personally aware of anything that goes into the detail saying you have to have every procedure cross-referenced, if that is what you mean.

Q When the QA manual was reviewed, did the reviewers compare it to other QA manuals recently prepared for operational QA? And I emphasize "recently," that is, with in the last year or two.

A (WITNESS KELLY) Basically, Judge Brenner, we were cognizant of other manuals that existed, but as far as the format and the level of detail, it is similar to our previous manual as far as level of detail.

BY JUDGE BRENNER:

Q I guess I'm not sure what you mean by your previous manual. Do you have previous manuals for operating QA? Do you mean earlier drafts of this manual or a totally different manual? I'm not sure what you mean?

A (WITNESS KELLY) Yes, sir. We did have a previous manual that was for operating quality assurance before the determination was made to incorporate the engineering quality assurance department and the headquarters operation quality assurance department into one operation.

Q I guess I have the same overall questions about the administrative procedures. I'm not talking about the station emergency procedures -- we have been through those in other contexts -- but the administrative procedures that come referenced in your testimony in part as we look at how the manual is implemented, including the OQA procedures, also the station administrative procedures.

How do you decide how to write those and the sequence of what is contained in them and the detail? Are there standard formats for those?

A (WITNESS YOUNGLING) Yes, Judge Brenner. The station procedures are written in compliance with Reg

Guide 1.33 which endorses the ANSI 18.7, and in there there is specific guidance as to the level of detail and how the procedure should look commensurate with what you are trying to achieve.

Q How about the QAPS procedures, some of which we have looked at in testimony here?

A (WITNESS MULLER) We do provide our guidance from our own procedures. We use similar guidelines.

Q What guidelines do you use when you write the QAPS procedures? I'm not talking about overall general goals, about wanting to implement Appendix B criteria and so on and other such patriotic endeavors. I am talking about writing the particular words and what detail is included and the way they are sequenced, the type of work the writer has to perform when he sits down to write.

A (WITNESS YOUNGLING) We are just checking the reference book.

Q I didn't understand Mr. Youngling's answer to apply to the QAPS procedures, so I am asking what would apply to the QAPS procedures.

MR. ELLIS: Judge Brenner, so there's no misunderstanding, I had a different understanding. Could you ask Mr. Youngling that question?

JUDGE BRENNER: I am asking that now. That's

one reason I put them in, to inform them of how I feel. They can correct it, add to it or clarify it.

WITNESS MULLER: Judge Brenner, I was just looking for a specific reference, but in the QA Manual we do commit to Reg Guide 1.33, and that provides the guidance which endorses ANS 3.2 or ANSI 80 and 7.

BY JUDGE BRENNER: (Resuming)

Q I don't know what Reg Guide 1.33 looks like. Can you paraphrase what kind of guidance it provides? Does it just have general goals? Does it have details as to the level of detail that should be in the QAPS procedure?

A (WITNESS MULLER) It specifically references the operating procedures emergency plan, that type of thing. We don't have the same types of operations in all our procedures. We have to use general guidance. We can't have the same sections that apply to an operating procedure. We use that as a basic guidance. We don't have a precaution section, that type of thing.

Q Well, let me return to my basic question. When you or someone else sits down to write the QAPS procedures do you have some sort of standard format outline of how to sequence the information in them and what detail to contain to include in them? And from what you ade telling me, I don't understand how having

Reg Guide 1.33 in front of you will give you that, but maybe I am wrong. Or whatever the reference is in Reg Guide 1.33, the ANSI standards.

A (WITNESS KELLY) You are referring to a document other than our own LILCO documents, is that correct?

Q Yes.

A (WITNESS KELLY) In each of the organizations there's a procedure that outlines the structures of the procedures in that organization as far as format and contents.

Q I'm talking about a pace document, but I'm specifically now talking about the QAPS procedures, which as I understand, is just the QQA organization.

MR. ELLIS: Judge Brenner, maybe I am the one who is missing. Mr. Kelly just said are you asking for a document outside of LILCO.

JUDGE BRENNER: And the answer is yes. I want to know who, if anyone, invented the wheel in writing these procedures. You keep telling us, just to summarize very broadly and perhaps inaccurately when trying to be simplistic, that everything you have written is fine and dandy and is easily sufficient to show how to run things. And I'm trying to figure out if you people can run things with less guidance than other

people or if other people have successfully run things using the same detail. And eventually we will find out from the staff what review they have performed of your manuals and procedures and what standard figures to calibrate their conclusions.

WITNESS KELLY: While he's getting a specific reference out I can say that based upon my review of other utilities' procedures I would say that as a generality the type of detail you see both in our manual and also in our implementing procedures is quite typical of the industry.

BY JUDGE BRENNER: (Resuming)

Q Are you talking about recent procedures and recent QA Manuals?

A (WITNESS KELLY) "Recent" meaning the manuals I have seen over the last couple of years, yes.

Q Not when you've seen them. When the manuals were written.

A (WITNESS KELLY) Typically in a procedures manual you will have a procedure written possibly five years ago and one written six months ago as far as the age. You have revisions, so I have to go with the time frame in which I looked at the manual, what was current at that utility at that period of time, if you know what I mean.

JUDGE BRENNER: Okay. I do understand what you mean. Well, we can break, and you can consider what standard formats, if any, you have used for the QA Manual as well as the procedures, and come back, not necessarily immediately after the break, but hopefully while we are still focused on this subject.

The answer may be none. I don't mean by my questions to imply that you had to have used it. I just wanted to inquire as to whether it was the case.

Let's take a break until 11:25. When we come back, Mr. Dynner, you will be able to finish up 16.2, which is where you were when we interrupted you.

MR. ELLIS: Judge Brenner, does that mean you would like the ISEG panel about 15 or 20 minutes after we come back?

JUDGE BRENNER: I don't know yet.

MR. ELLIS: I just wondered whether they should go out to lunch or stay in.

JUDGE BRENNER: We might want them.

Are you asking me am I going to let Mr. Dynner run me beyond the already addition to the allotted time? And that's what I don't know yet.

MR. ELLIS: I think I will keep them here.

(Recess.)

MR. ELLIS: Judge Brenner, we have some of the information on the last question you asked.

JUDGE BRENNER: Let's get it all together. I don't want it in bits and pieces.

MR. ELLIS: Yes, sir.

JUDGE BRENNER: Save it all until the end of the day. Maybe we can take it tomorrow morning.

All right. We are going to end with the County's cross examination on the operating QA after the County completes 16.2. We believe the County has had ample opportunity to present its best examples, and from those examples the County can suggest the findings it wants us to find, and that there would be no point in going through a large quantity of additional manual chapters or additional procedures to get repetitious points, which we assume are no different in kind or importance given the fact that we told the County a long time ago to put the most important ones first.

So we should have not only a representative example from the County's point of view, but we should have the best example. And on that basis we will finish up with this procedure and then go to ISEG matters.

As we said yesterday, the Board will ask its questions first on ISEG matters. If we have a little time between your completion and lunch, we will jump in

with some questions on this matter and start ISEG after lunch.

BY MR. DYNNER: (Resuming)

Q Gentlemen, I was questioning you concerning QAPS 16.2. If you would turn back to that procedure, please. Paragraph 5.3.2 states how data may be categorized. It is optional only, isn't it?

A (WITNESS MULLER) Mr. Dynner, it is not optional. It is at the discretion of the CQAE because he has to perform an evaluation. Data gathered in one form may prove meaningless, whereas it may be gathered in another form that may show an actual trend. That is why the procedure appears that way rather than submit pages of useless information in a report. The CQAE has the choice of using the method that will best prove his analysis.

Q And in paragraph 5.3.3 that also is what you have referred to as a "may" requirement, which means it is optional, isn't that correct?

A (WITNESS MULLER) It is optional in that some of these subcategories may not apply on a month-by-month basis because activities may not have been conducted in which nonconformances were found.

Q Is the statement in paragraph 5.3.3 that deficiency summaries may be made on a month-by-month

basis intended to distinguish it from the ordinary requirement that the trends will be reported annually as stated in 5.2 of this procedure?

A (WITNESS MULLER) It is made to distinguish that, and also 5.1 notes that trending is done continuously. We would not wait until the end of a month to report a trend if we had discovered it. The CAR would be the proper mechanism to report a trend had it had an adverse effect on quality.

Q And nowhere in this procedure is the word "trend" defined, is it?

A (WITNESS MULLER) No, Mr. Dynner. There is no definition of the word "trend" in this procedure.

Q And in paragraph 5.1 there is no definition of the term "monitored," is there?

A (WITNESS KELLY) There is no specific definition of the word "monitored." I think everybody knows what the word "monitored" means. I don't know where you're going with that.

Q Why don't you tell us what you think the word "monitored" means?

A (WITNESS KELLY) It says, "Trends adverse to quality are monitored on a continuing basis by the operating QA engineer from his review of LILCO deficiency reports, corrective actions, et cetera,

requests."

It is a continuing day-to-day review, cognizance of what deficiencies have been found.

Q You have read the first sentence more or less of paragraph 5.1. Do I understand your testimony is the word "monitor" means to review?

A (WITNESS MULLER) Yes, Mr. Dynner. "Monitor" would mean review. The OQE does review each one of the LOR CARs and what it reports, and the deficiency report that may come out of inspection or surveillance reports.

Q If it means review then this sentence says that trends are reviewed from the OQA's review. Does that make any sense to you?

JUDGE BRENNER: Mr. Dynner, I am going to jump in since this is more time at our discretion. I don't think it's useful. You have made your point on the question. I don't want to overly parse the English language. You have asked the question, they have given the answer, and you can write your finding accordingly. Let's move on.

BY MR. DYNNER: (Resuming)

Q Are there any procedures for determining how the monitoring is carried out?

A (WITNESS KELLY) As Mr. Muller stated, as far as reviewing each one of these items, that requirement

is specified in the various appropriate QAPSs that relate to those items.

Q If two pieces of the same kind of equipment broke down would that constitute a trend, in your view?

A (WITNESS KELLY) You would have to look at, number one, the piece of equipment, what broke, when it broke, the same manufacturer, a different manufacturer. There are a lot of variables.

Q There's no provision in this procedure for when a report must be made to appropriate management if a trend is discovered, is there?

A (WITNESS MULLER) Mr. Muller, there is no specific time frame noted in paragraph 5.1. However, we did testify on the corrective action request procedure that we had gone through this whole thing.

Q Is it your testimony that each and every trend that is discovered results in a corrective action request?

A (WITNESS KELLY) Every significant adverse trend would.

Q And the definition of what is a significant adverse trend is within the discretion of the QQA engineer, isn't that true?

A (WITNESS KELLY) There is an evaluation that must be performed by the station QQA engineer to

determine that significance. When you asked the question about two items failing, we listed only a few of the things that would have to be taken into account to determine if that was significant.

Q Why is the report of quality trends only required to be done annually and not more frequently?

A (WITNESS MULLER) That is a summary report to management. The trends would be documented on a continuous basis as they were found. Corrective action requests would go to the same management that the annual reports would go to.

Q My question, Mr. Muller, is while the CARs may go to management, that would mean that with respect to trends apparent by those CARs, management would have to make its own analysis as to what the trends were rather than to have a report. And wouldn't a report on a more frequent basis be of some use to management if it is concerned with quality assurance?

A (WITNESS KELLY) As we stated, that annual report is more than a summary document. Paragraph 5.1 requires that a corrective action request be initiated if a trend, an adverse trend was detected. That CAR would document the basis of that determination so that responsible organization could address the item.

Q When we were discussing the analysis section

of this procedure, does it contain any mandatory requirements, we went through paragraphs 5.3.1 through 5.3.3. It is true, isn't it, that paragraph 5.3.4 also states what you regard as a should requirement, which is a recommendation only, isn't that correct?

A (WITNESS MULLER) Once again, Mr. Dynner, it is a should requirement. What that means is if a deficiency chart shows no trend, it may be very useless to upper management, and there would be no sense sending them that report. But if I find some other means of reporting, that may be the best way to report to upper management the trends that we are discovering.

Q And the reference here to paragraph 5.2.1 is erroneous, is it not? There is no such paragraph in here.

A (WITNESS MULLER) That's correct. It's a typo. It should be 5.3.1.

Q And paragraph 5.3.5 is also optional because it says the magnitude of an adverse condition may be established in the deficiency summaries, et cetera, does it not?

A (WITNESS KELLY) The intent of that paragraph is to demonstrate that the conditions have to be evaluated, and there are various methods and items to take into consideration. For example, if you had say

ten audits and say each one of those audits identified a problem with the identification of items in storage, you could say one hundred percent of the time I found an identification problem with storage items. You can just simply look at the numbers. You have to go back and look at the audit and say well, I found one item out of the 100 items I looked at during each of those audits. So in reality we are talking about you found -- we are talking 10 audits. You found 10 items out of 1,000 items. That number may not even be -- than you have to look at what is the consequence of that identification not being there.

So the purpose of this paragraph is to identify the types of evaluations that have to be performed. That will vary from case to case depending upon the individual circumstance.

Q But it doesn't do that in terms of quality, does it? It only states, "The magnitude of adverse conditions may be established in the deficiency summaries by comparing to the frequency of the activity in which adverse conditions occur." That is a quantitative measure only, isn't it?

A (WITNESS KELLY) The statement may, because in some cases that may be applicable for a determination of an adverse condition. In other cases it may not at all.

Q And there is nothing in this procedure that says the seriousness of an adverse condition may be used to establish whether a trend is significant, is there?

A (WITNESS KELLY) I'm sorry. Could you repeat the question?

Q I will try to paraphrase it. There is nothing in this procedure which indicates that the trend may be established by looking at the seriousness of the deficiency -- in other words, by using qualitative as opposed to quantitative criteria -- isn't that correct?

A (WITNESS KELLY) No, I don't believe that is correct. Both quantitative and qualitative analysis has to be performed. In some instances the quantitative may not have any meaning. As I said, you have to look at each thing on an individual basis as far as the importance of the item.

Q We have a provision in paragraph 5.3.5 that says you may look at the frequency. Now, where in this procedure does it say that you should look at the seriousness of the defect?

A (WITNESS KELLY) That same paragraph talks about, by comparing it with the frequency of the activity in which adverse conditions occur, that is what we are talking about here, adverse conditions. I mean to me that is quite obvious.

Q The reporting requirement in paragraph 5.4.1 is a recommendation only, is it not?

A (WITNESS MULLER) A recommendation in so far as the "should" requirement it, yes. If we deem there are other sections we could include in the report, we would.

Q And Items A through C of that subparagraph are examples only, aren't they?

A (WITNESS MULLER) They are examples of categories in which the report should be written.

Q Were you going to say something?

A (WITNESS KELLY) Yes, please. I believe the types of items described here are quite basic and fundamental in providing a report to management. Obviously, you would have to -- as far as Item A goes, what is the purpose of the report. B seems quite obvious. If you were talking about trend analysis, you would have to specify what timeframe you are talking about. C talks about deficiency charts and summaries. As we discussed before, that is discretionary on the station QQAE insofar as the format to best illustrate the trend.

And obviously, there would be some statement of conclusion.

Q If an QQA person preparing the annual report did not include a section on the purpose of the report,

he or she would not be in violation of this procedure, isn't that correct?

JUDGE BRENNER: Off the record.

(Discussion off the record.)

WITNESS MULLER: Mr. Dynner, he would not be in violation of the procedure per se. However, in order to send a report to management, one would want to include the purpose of the report so management could understand exactly what is meant by the report. It is a good management practice.

And I would review the report prior to its going to management and I would make sure I understood exactly why the report was being written, and I would understand what was in the report.

BY MR. DYNNER (Resuming):

Q Let me get back to the matter that has been troubling me for some time, and that is if it is good management practice to state as a requirement that the report should contain the purpose of the report, and if in fact it is done, then why don't you make it a requirement in the procedure?

A (WITNESS MULLER) It would not be a regulatory requirement, an FSAR requirement or a QA Manual requirement, that's why. If I chose to change the report slightly, I would not want to change my procedure

prior to writing the report.

Q So you feel it is necessary and desirable for the OQA Section to have the flexibility so that they need not state in the report the purpose, and they need not state the period for which the trend analysis is being reported. Isn't that correct?

A (WITNESS MULLER) According to the regulations, they need not do it; according to good practice, they would have to do it.

Q And according to this procedure, they need not do it. Isn't that correct?

A (WITNESS MULLER) This procedure provides the guidance to the OQAE and the personnel preparing the report. It suggests that they follow this format.

MR. DYNNER: Thank you. I have no further questions on QAPS 16.2. Judge Brenner, I would like to continue my cross examination of operating QA. I know the Board's position. It has been stated several times. We have had colloquies from time to time on my ability or inability to set priorities, and it seems to me that there are problems in doing that because of the detail of the material.

So that to the extent that the Board, as you have indicated, wants me to stop, I would like to have the offer of proof that was previously submitted to be

continued with respect to the items that I have not yet been able to get to.

JUDGE BRENNER: Yes, certainly. It is an exhibit and will remain an exhibit, and you can match it up later with what you proceed on and what you would have wanted to do. Beyond that, if you want, you can even -- you can think about it, you don't have to do it now -- you can even make your latest cross plan an exhibit indicating which questions you didn't get to, if you want further detail in the record. But if you do that, please mark it in such a way that you can indicate the ones you did not get to. It's up to you. I think it would provide a better record for you.

In terms of priorities, it is not you as an individual; it is the county overall, and it reflected the fact that so many weeks were spent on aspects other than operational QA when we told the county to divide up that large time period. And we think, as we stated, that as it turned out, a little more time should have been allowed for operational QA. And I emphasize "as it turned out." I think even with the time allowed, things could have moved more expeditiously.

However, as we said last time, -- I don't want to repeat the whole thing -- we took into account the fact that you may have missed some things and that an

opportunity to react differently after your original shot at this might be helpful. And that is why after your offer of proof, we came back and allowed you some more, which you have now been through.

And we have looked at the cross plan. There are certain aspects of the cross plan we would have asked that you get to. As it turned out, you did get to all of those aspects. I think it was a combination of our hinting and your picking the priorities this time more in accordance with ours. We certainly agree you have to react to the answers to determine priorities.

I think our problem is you stayed with your preconceived plan regardless of the answers instead of reacting to priorities, and that is why I think I think you could have been more efficient. But none of this is a criticism of you. Sometimes the witnesses took too long in answering, and we factored that in, giving you more time, also.

MR. DYNNER: Judge Brenner, if I could also raise an additional matter.

JUDGE BRENNER: The key point is you have either made your case or you have not, and these additional examples are highly unlikely to show us anything different from what you have already shown us. I repeat the statement -- you should have even better

than a representative example. You should have, from your point of view, the best examples, and from LILCO's point of view, the worst examples.

MR. DYNNER: I suppose it all depends upon whether the Board is satisfied. Apparently, the Board is satisfied with the sort of sampling plan approach. We all recognize the fact that to do this in this considerable detail for every procedure would take a lot longer.

JUDGE BRENNER: This process would cease to exist, if that is the way we applied this process. It is that simple. That's right. We think we have enough of a factual example to understand your views through cross examination as to what the situation is and how we will get the staff's view through its questions and LILCO's view through its redirect, and then the findings. And further, the county's view through it testimony, of which there was precious little of the detail you had in cross. The subject was hit but not the detail, and that would have been the best place to put things, but that is a different message.

MR. DYNNER: I could comment about the timing and other things on the QA Manual, but I will leave that.

JUDGE BRENNER: Yes. Don't raise that subject. There were a lot of words on that last spring.

MR. DYNNER: I would like to raise for the Board an additional matter. You will recall that at the hearing on November 4th we had some discussions concerning OQA staffing matters, and there was a letter and several documents pursuant to your order that were delivered to us by Mr. Ellis.

We did have some discussions concerning the possibility of settling the OQA staffing matter, and apparently, they have not been as productive as all of us would have hoped.

In your statement -- I refer to the transcript on page 13,051 -- you indicated that "When we come back to the followup, which we hope will be limited by the county by their redirect, and the Board questions of LILCO witnesses, if the county sees anything in those documents that it believes is inconsistent with the answers you've received from the witnesses, or sufficiently apparently different that you want to pursue it, you will be able to do that with the witnesses."

Your statement there clearly indicated that that would occur after the redirect. And my only point in raising it now is there are areas that the county would like to explore with respect to these OQA staffing documents. And we could do that now or we could do that

later; whatever the Board feels would be most efficient.

JUDGE BRENNER: I remember thinking it would have to come after the redirect. The question wasn't whether you felt you wanted to explore things; it was where you could identify things inconsistent with the testimony elicited. We won't apply an extremely tight test of inconsistency, but it's not a simple matter of your interest being stimulated.

MR. DYNNER: From our review of documents we have received, we believe there are considerable differences and inconsistencies.

JUDGE BRENNER: All right. Give me a cross plan with the documents and we will take a look at your plan. And if the preliminary showing is that there are things inconsistent with the previous information and recognizing that this was the area where we believed a fully correct answer to your discovery would have provided during these documents back during the county's discovery time we will, in fact, let you inquire into it.

But let's take a look at what you want to do, and give us a tight cross plan with the essentials, and you will have a better chance of convincing us that what you want to do has the potential for inconsistency. As I say, we won't apply an extremely high test for inconsistency, but we have to see something there that

has the potential of giving us different, material information.

MR. DYNNER: Thank you. We will comply that.

JUDGE BRENNER: Incidentally, if you're not happy with the number of people they have assigned, you have zero in the record on it, because the number they have put in their testimony appears to be different from what the county previously believed, at least as far as anything indicated in the county's testimony and contentions and so on. I will leave it at that.

You might want to make a statement -- and we will let you do it after the redirect so you have time to formulate it. We would like to hear from the county as to whether that number is the number they believed at the time the contention was propounded. And if not, why is that number insufficient given the responsibilities of the people comprising the total number, which is information also in the record.

MR. ELLIS: Would that statement be available to us? We, too, would like to have that information.

JUDGE BRENNER: Yes. I want to hear it on the record. And actually, given the negotiations that broke down, it would be good to hear that tomorrow, if we can, from the county. Because that could affect redirect or further examination.

MR. DYNNER: I'm sorry, what is it you wish to hear, Judge Brenner, about the negotiations?

JUDGE BRENNER: Why the county is not happy with that number, and whether the predicate question is that our impression is correct that it is a different number than the county believed at the time the contention was propounded. I'm talking about the number of people making up the operating QA staff. It will give us a little more insight into why the negotations on that one narrow point broke down.

This is aside from your right to inquire further into the basis for the number, for which we will want the cross plan. And if it is going to rely on materials they gave you, you had better attach the relevant portions to the cross plan so we can look at them. Give us a time estimate, also.

Okay. This panel will be temporarily dismissed. Let's get the ISEG people sworn in and get their testimony in.

MR. ELLIS: Judge Brenner, would it be appropriate for me to ask some preliminary questions of this panel to introduce the book that I supplied?

JUDGE BRENNER: Yes.

MR. ELLIS: And --

JUDGE BRENNER: Why don't you get their

qualifications down and the other information marked as exhibits. Don't bother filling out the qualifications. It will be redundant. That will save you having to break up the package. And if you think it appropriate, as we thought it might be, get the charts identified as an exhibit and bound in with any corrections you feel you want to make.

MR. ELLIS: All right, sir. May I furnish the reporter with the separate copies of the resumes? Some of the resumes are in here (indicating) and others are in this filing we furnished the reporter. I will furnish separate copies to the reporter after lunch.

JUDGE BRENNER: Thank you. Let's get the witnesses sworn in. I think Mr. Alexander has been previously sworn, but it's been so long. Are you sure he has been?

MR. ELLIS: I am sure he has been sworn. Is that correct, Mr. Alexander?

MR. ALEXANDER: (Nods affirmatively.)

JUDGE BRENNER: Let's swear him in again. The three of you stand, please, and raise your right hand.

Whereupon,

JOHN F. ALEXANDER,

ROBERT A. KUBINAK and

BRIAN McCAFFREY

were called as witness by counsel for LILCO and, after being first duly sworn, were examined and testified as follows:

JUDGE BRENNER: Mr. Ellis, you may introduce them and proceed.

DIRECT EXAMINATION

BY MR. ELLIS:

Q Mr. McCaffrey, would you state your full name and residence address, please, sir?

A (WITNESS McCAFFREY) My name is Brian McCaffrey, I am Manager of Nuclear Compliance and Safety for the Long Island Lighting Company in the Nuclear Operations Support Department. My business address is 175 East Old Country Road, Hicksville.

Q I will address the same question. Mr. Kubinak, would you give us your name, your business address and what your present position is, please?

A (WITNESS KUBINAK) My name is Robert A. Kubinak, I am Manager of the Nuclear Operations Support Department, a resident of Long Island.

Q Mr. Alexander, would you state your name, your business address and your current position, please?

A (WITNESS ALEXANDER) My name is John F. Alexander, I am group leader of the Independent Safety Engineering Group, and my business address is Shoreham

Nuclear Power Station, Wading River, New York.

Q Gentlemen, you have before you the booklet previously distributed to the parties and the Board.

A (WITNESS ALEXANDER) Yes, we do.

Q Mr. Alexander, would you describe what is in this booklet, please?

A (WITNESS ALEXANDER) The booklet contains basically four sections. The first section is the Nuclear Operations Corporate Policy, number 22, which describes the Independent Safety Engineering Group. The second section is the Charter of the Independent Safety Engineering Group for the Long Island Lighting Company. The third section are the Administrative Procedures for the Independent Safety Engineering Group which are NOSD Series Procedures 19.1 through 19.5. And the final section are the resumes of the group leader and the independent safety group engineers.

Q Mr. Alexander, are the NOC policy, the charter and procedure the latest versions of those documents?

A (WITNESS ALEXANDER) That is correct.

Q Are the resumes contained in the booklet accurate to the best of your knowledge and belief?

A (WITNESS ALEXANDER) That is correct.

MR. ELLIS: Judge Brenner, we would like to have this -- we will need Judge Morris's assistance --

we would like to have this marked as the next LILCO exhibit and admit it into evidence.

JUDGE BRENNER: 34.

MR. ELLIS: Thank you, that is LILCO Exhibit 34. I would note for the record, the only resume of the panel that appears in here, I believe, is the resume of Mr. Alexander. I will get to the resumes of Mr. Kubinak and Mr. McCaffrey in a moment.

JUDGE BRENNER: In the absence of objection, we will admit LILCO Exhibit 34 as just identified into evidence.

(The document referred to was marked LILCO Exhibit No. 34 for identification and was received in evidence.)

MR. ELLIS: Judge Brenner, the resumes of Mr. McCaffrey and Mr. Kubinak are Items 3 and 4 of the pleading entitled, "LILCO's Response to ASLB Information Request," dated November 10, 1982. Would you like us to make the whole thing an exhibit, or would you prefer just the resumes?

JUDGE BRENNER: Let's make the whole package an exhibit; that will be easier for you. But in addition, for convenience I want the resumes of these

three witnesses bound in. I guess we will bind them in immediately after lunch.

MR. ELLIS: All right.

JUDGE BRENNER: That is the first thing we will do when we come back.

BY MR. ELLIS (Resuming):

Q Mr. McCaffrey, Mr. Kubinak, do you have before you what I have referred to now as LILCO's Response to ASLB Information Request, dated November 10, 1982?

A (WITNESS McCAFFREY) Yes, we do.

Q Does that include as Items 3 and 4 -- Item 3, the resume of you, Mr. Kubinak?

A (WITNESS KUBINAK) Yes, it does.

Q And as Item 4 to that, ASLB -- I beg your pardon -- LILCO's Response to ASLB Information Request dated November 10, is Item 4 your resume, Mr. McCaffrey?

A (WITNESS McCAFFREY) Yes, it is.

Q Are there any corrections either of you have to make to your resumes?

A (WITNESS McCAFFREY) I have a minor correction.

Q Would you tell us what it is, sir, referring us to the page number?

A (WITNESS McCAFFREY) This is Item 4 of the exhibit, page 1. It is really a typographical error. The title is not correctly typed on the top. It should

be Manager, Nuclear Compliance and Safety, which is correctly stated in the text.

Q So in the title when it says Manager, Nuclear Compliance, the words "and Safety" should be added?

A (WITNESS McCAFFREY) That is correct.

Q Are there any other corrections?

A (WITNESS McCAFFREY) No, there are not.

MR. ELLIS: Judge Brenner, we would offer this as LILCO's Exhibit --

JUDGE BRENNER: 35.

MR. ELLIS: 35.

JUDGE BRENNER: In the absence of objection, we will admit LILCO Exhibit 35 into evidence.

(The document referred to was marked LILCO Exhibit No. 35 for identification and was received in evidence.)

JUDGE BRENNER: One point. Did you ask the witnesses if the rest of this is true and correct?

MR. ELLIS: No, sir. I should do that.

JUDGE BRENNER: It indicates here it was prepared by or under the supervision of Mr. McCaffrey. You might ask him to confirm that.

BY MR. ELLIS (Resuming):

Q Mr. McCaffrey, you have before you what has been marked as LILCO Exhibit 35. Is the information in the attachments, Items 1 and 2, -- Items 3 and 4 being resumes -- is the information in Items 1 and 2 accurate, to the best of your knowledge and belief?

A (WITNESS McCAFFREY) Give me a moment to look at them.

Q And you might confirm whether it was or was not prepared under your supervision and direction.

A (WITNESS McCAFFREY) Items 1 and 2 are also correct to the best of my knowledge, and yes, the entire exhibit was prepared under my supervision and direction.

JUDGE BRENNER: All right, we will admit it into evidence.

BY MR. ELLIS (Resuming):

Q Next, gentlement, do you have before you a three-page document that consist of organizational charts. The first entitled, "Nuclear Operations Support." The second bears at the top just "Long Island Light Company" and begins with, "The President...", and the third page is entitled, "Figure 13.1.2-1, Station Organization." It appears to be from the FSAR. Do you have that before you?

A (WITNESS ALEXANDER) Yes, we do.

Q Can you describe briefly what this exhibit

reflects?

A (WITNESS KUBINAK) The first exhibit is the organizational chart of the Nuclear Operations Support Department. The second exhibit is an organization chart extending downward from the president of the company, indicating the reporting point of the Off-Site Nuclear Review Board. The third organization chart extends downward from the Shoreham Plant Manager indicating the reporting point of the Review Operations Committee.

Q Mr. Kubinak, on the first page -- well, on the first page, the Manager, Nuclear Operations Support; is that you, sir?

A (WITNESS KUBINAK) Yes, it is.

Q Is the Nuclear Compliance and Safety block to the left on the first page Mr. McCaffrey?

A (WITNESS KUBINAK) Yes, it is.

Q Did you have anything you wanted to add, Mr. Alexander?

A (WITNESS ALEXANDER) No.

MR. ELLIS: I believe that identification is sufficient, Judge Brenner, to warrant its admission into evidence.

WITNESS McCAFFREY: Mr. Ellis, may I make one comment on Figure 13.1.2.-1, which is part of this package. If the Board has any confusion about it being

slightly different than the FSAR, the Review of Operations Committee box was drawn in yesterday to show its proper alignment. That is not what is currently shown in the FSAR.

BY MR. DYNNER (Resuming):

Q The Review of Operations Committee box is the one on the same level as Shoreham Plant Manager on the third page?

A (WITNESS McCAFFREY) That is correct.

MR. ELLIS: These three pages are the pages we produced yesterday at the request of the Board.

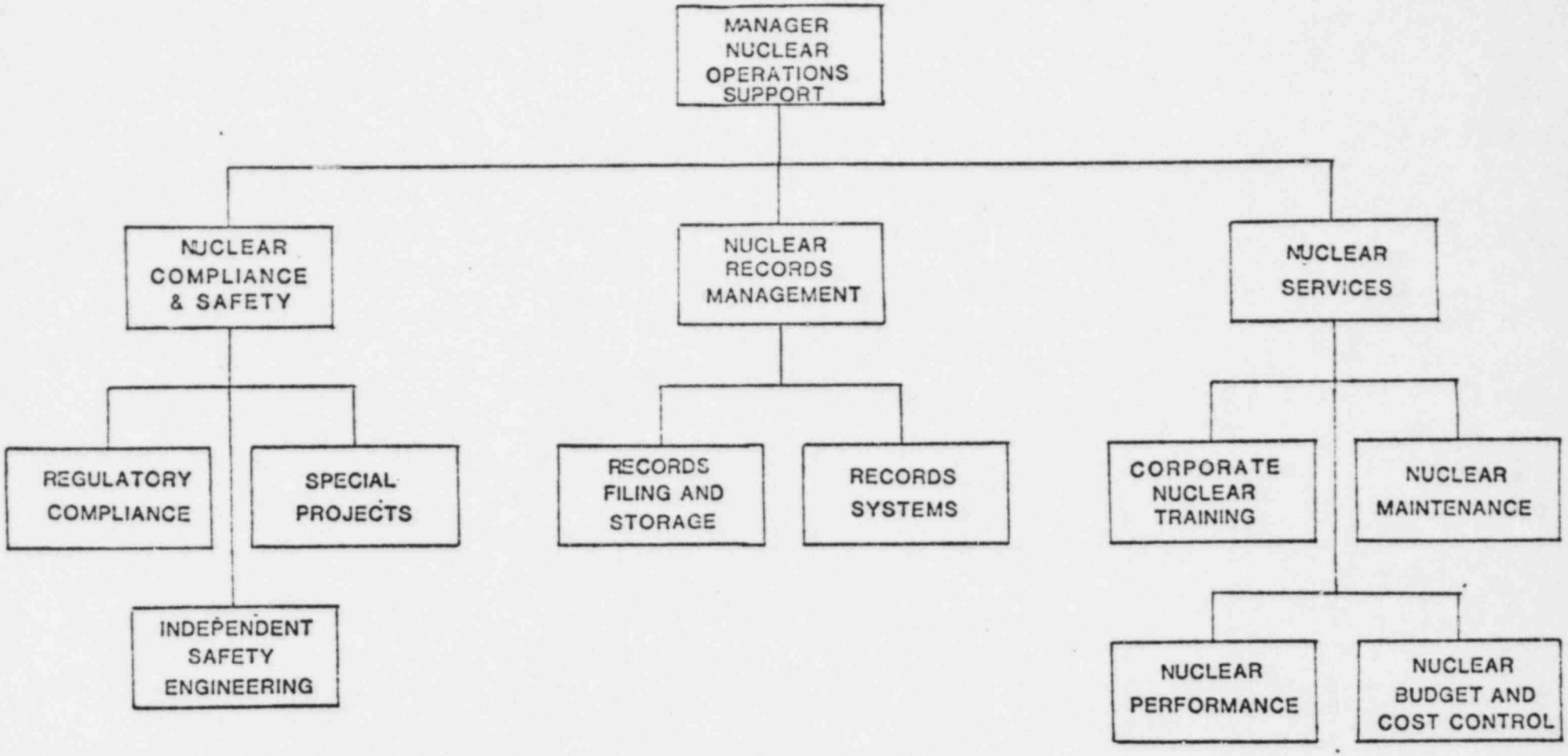
JUDGE BRENNER: All right, let's mark it LILCO Exhibit 36. Let's number the pages 1, 2, and 3, hopefully in that order. And we will admit it into evidence.

(The document referred to was marked LILCO Exhibit No. 36 for identification and was received in evidence.)

JUDGE BRENNER: And in addition to the three additional copies, let's bind one copy in for convenience at this point in the transcript.

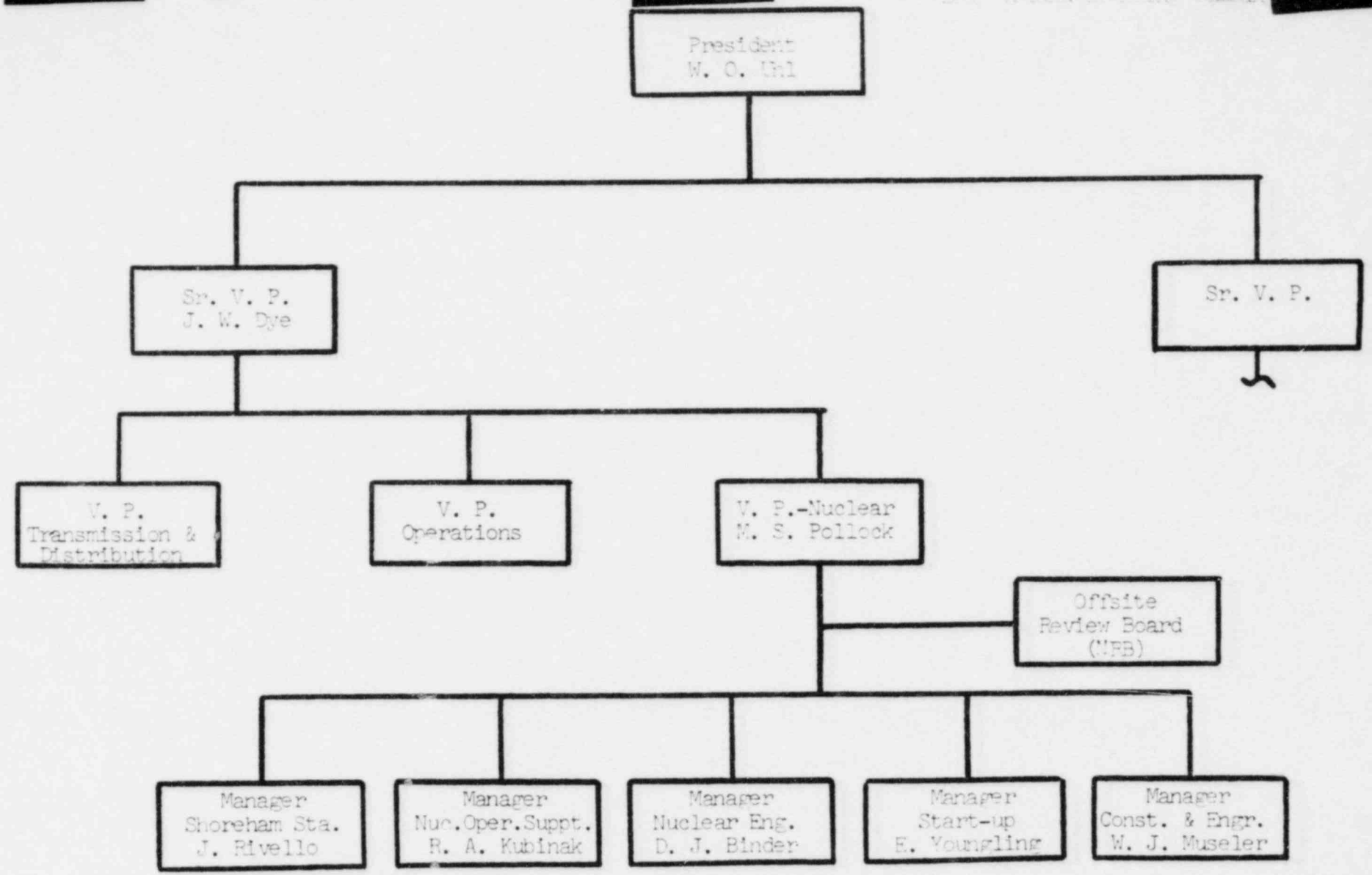
(LILCO Exhibit 36 follows:)

NUCLEAR OPERATIONS SUPPORT



10/82 PRS

LILCO 36


President
W. O. Uhl
Sr. V. P.
J. W. Dye
Sr. V. P.
V. P.
Transmission & Distribution
V. P.
Operations
V. P.-Nuclear
M. S. Pollock
Offsite
Review Board
(NRB)
Manager
Shoreham Sta.
J. Rivello
Manager
Nuc. Oper. Suppt.
R. A. Kubinak
Manager
Nuclear Eng.
D. J. Binder
Manager
Start-up
E. Youngling
Manager
Const. & Engr.
W. J. Museler

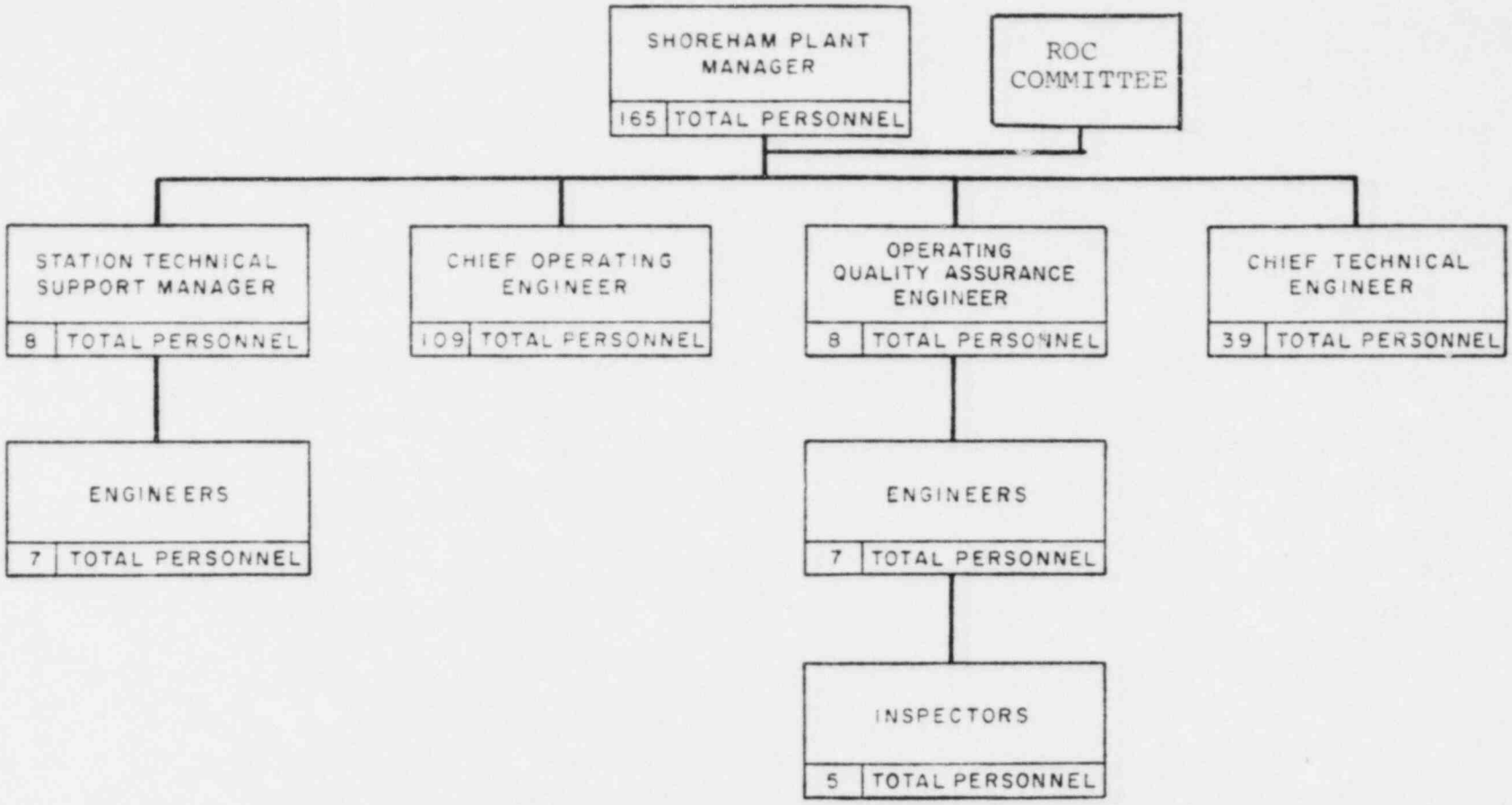


FIGURE 13.1.2-1
STATION ORGANIZATION
SHOREHAM NUCLEAR POWER STATION-UNIT 1
FINAL SAFETY ANALYSIS REPORT

MR. ELLIS: The panel is ready to respond to Board questions, Mr. Examiner.

JUDGE BRENNER: Let them get nourished before they have to do that, and we will break until 1:45 and then we will come back and begin with the Board questions of the panel.

(Whereupon, at 12:15 p.m., the hearing in the above-entitled matter was recessed for lunch, to reconvene at 1:45 p.m. the same day.)

AFTERNOON SESSION

(1:45 p.m.)

JUDGE BRENNER: Let me make one preliminary announcement. We will start the hearing an hour later tomorrow at 10:00 o'clock. We have run out of time to work on some of the emergency planning matters, and in order to factor things back in and be ready for Monday, we have to complete meeting as a Board tomorrow morning. We will start at 10:00. We would not have done this unless it were absolutely essential, but it has become essential.

If there's nothing else, Judge Morris will begin his questions.

Whereupon,

JOHN F. ALEXANDER,

ROBERT A. KUBINAK and

BRIAN McCAFFREY,

the witnesses on the stand at the time of recess, resumed the stand and, having been previously duly sworn, were examined and testified further as follows:

BOARD EXAMINATION

BY JUDGE MORRIS:

Q I'm sorry, gentlemen, but I don't have a cross examination plan that you can follow. Neither can I predict the number of questions I will ask, nor how long

it will take. I do have a number of areas in which I have interest.

I would like to tell the witness I am setting out with no preconceived notions of whether their deficiencies have been explained or whatever. The purpose of my inquiry is to better understand the system LILCO has for conducting its operations. And as you know, we are inundated with paper and we cannot absorb every detail and we are not looking for every detail.

Rather, we are trying to understand the attitudes, management systems that exist, the concepts and philosophy, if you will, what is going to make this plant, in your mind, acceptably safe. Because our interest, of course, is in the protection of the health and safety of the public.

We are focusing in the broad concept now, in a rather narrow area, and to understand that I will probably ask some very broad questions, but probably some rather detailed questions. In a sense, this is, again, for my understanding. But it is also, in a sense, to test your understanding of how the system is going to work. Or, to the extent it is in place, how it is working, and if we can, to relate that to broader concepts of Commission policy, good engineering judgment and whatever.

So don't feel I am trying to trap you on any question or that I think something is wrong and I want you to tell me you will do something to fix it. I am really just trying to understand what your knowledge of the systems is.

And I guess as a starter, I would like to look at your response to our questions. This is LILCO Exhibit 35. One of the questions related to the commitment by LILCO to have technical advisors in place by the time of fuel load. I believe Mr. Riley of General Electric, the advisor to Vice President of Nuclear -- at that level, you may not be very familiar with his activities in that particular function, I don't know. But to the extent you are familiar, I would like to learn a little bit about that.

I understand he has had this assignment since April of this year.

A (WITNESS KUBINAK) Yes, sir, that is correct. I have attended virtually all of those meetings between Mr. Riley and Mr. Pollock, Mr. Riley being the advisor to Mr. Pollock.

Q Let me as Mr. Kubinak if I have pronounced your name correctly.

A (WITNESS KUBINAK) Yes, sir, that is correct.

Q From those meetings, are you familiar with the

kinds of advice that was either sought or given?

A (WITNESS KUBINAK) Yes. I am not prepared here with a list of the items I covered in every agenda. I will just depend upon what I can remember from those meetings.

Q I am not interested in a complete summary. I would be more interested in the nature of the advice, and what you might consider to be the major nature of it.

A (WITNESS KUBINAK) I think the major issue that was discussed between the two individuals was the start-up performance of other units of similar kind that are current, that are going on at the present time, or that Mr. Riley had personal experience with. It is difficult for me without the minutes from those meetings to bring up a specific example of that.

Q Let me interrupt for a moment. Is it possible for you to move closer to a microphone?

A (WITNESS KUBINAK) Yes, sir.

Q Maybe to start with, you could describe the nature of such a meeting and who was present and how it was conducted.

A (WITNESS KUBINAK) The meeting is a group of three. Each meeting I attended Mr. Riley attended, Mr. Pollock attended. It was a one-on-one between them. I acted as a person who made sure that the meeting did

occur and who arranged with Mr. Riley the content of those meetings. I arranged the meetings from the beginning.

We had an agreed-upon agenda for each meeting, and initially, we had an agreed-upon list of topics for those particular meetings. Mr. Riley prepared for each meeting to give Mr. Pollock the information we had agreed upon. It would be much better if I could talk from the original list that was put together. I think I could give you a much better idea of what each meeting -- the intent of each meeting was. If we could get that sent down here, I think I could give you a much better picture of what these meetings were about.

Q Well, could you in a sentence or two generally identify the kinds of things that were discussed?

A (WITNESS KUBINAK) Yes. I think operating experiences on similar units was a big input to these meetings. Mr. Riley has a very good background in the startup and operation of these particular types of units. Mr. Riley has access to the GE storehouse of information; information that can be gotten from the home office and brought to the plant which would link that plant to reactors of similar type.

With his background, he knew, and with his knowledge of the plant he knew which ones to apply to

the plant. He could summarize them and give Mr. Pollock a good indication of what was going on in the industry with similar type units.

One of the topics referfed to experience with similar types of equipment. Mr. Pollock was very interested to know if our equipment was very similar to these other units. He was very interested to know what information Mr. Riley could get on the performance of that equipment, so that we could build into our operation much more reliability and availability.

Mr. Pollock probed in these different areas wanting to know what can we do with the information you are giving us so that our startup program and our operation will run as smoothly. That was particularly interesting to Mr. Pollock, that particular topic. He made available also on one or more occasions improvements that could be made or could be considered -- that GE considered improvements that could be made to our unit, and Mr. Pollock and he discussed those types of improvements. So we were, in this agenda item, trying to bring in what is GE doing now that would help us. Those kinds of pieces of information were passed between the two.

In another meeting we talked about the availability of access to certain part of the plant once

the fuel has been loaded and the startup program is in process, from the maintenance point of view. How do you do maintenance in areas such as that. And one of outcomes from that meeting was a direct charge to me from Mr. Pollock to make sure that we do have the proper photographs, the proper videotapes, the proper training tools that we can give to our maintenance people so that if they have to work in those areas, we can minimize the time the operator or the maintenance man has to be in those areas -- very specific areas, very specific types of information being passed from Mr. Riley to Mr. Pollock.

Q And if I recall correctly, Mr. Riley has been the Project Manager for General Electric at the site.

A (WITNESS KUBINAK) That's right, he's been the number one General Electric person at the site.

Q And has been there for how many years?

A (WITNESS KUBINAK) Mr. Riley has been at Shoreham since 1977. He has not been Project Manager since 1977. If I remember correctly, he had a predecessor; he was like an assistant project manager for General Electric involved considerably with our startup effort. When the project manager left, he was appointed to take his place. This was prior to the start of these meetings, however.

Q I believe you said you prepared the agenda for these meetings.

A (WITNESS KUBINAK) Prior to beginning these meetings, Mr. Riley and I sat down together and prepared the agenda as to what he could give us from his point of view and what we wanted to learn from Mr. Pollock's point of view. Yes, I did arrange that.

Q And was that agenda shown to Mr. Pollock prior to the meeting for his preparation or approval?

A (WITNESS KUBINAK) Absolutely. I went over that agenda with him before the meetings began to make sure he conveyed to me -- or I had heard what he conveyed to me, and I did. When I showed him that agenda, he was satisfied that it did cover all of the issues he wanted to talk about.

Q And I believe these meetings have taken place about once a month.

A (WITNESS KUBINAK) I don't offhand know if they would average once a month. The intent was to have them once a month. I would think they would average no less than once every six weeks. I just can't recall the number of meetings or where we are placed on this agenda. I don't have the data with me.

Q And how long would such a meeting last?

A (WITNESS KUBINAK) The meeting would last in

excess of an hour but certainly less than two. As a matter of fact, I think one was scheduled for yesterday morning. I don't know whether it happened because I wasn't there.

Q Does Mr. Riley have other contacts with the Vice President, not in that particular assignment but just in his normal duties with General Electric?

A (WITNESS KUBINAK) Yes. The office of Mr. Youngling, the startup manager, the office of Mr. Riley and the office of Mr. Pollock are in reasonable proximity in the complex. I don't know that they do meet on any specific frequency. But being that close, they must come in contact during the day in some fashion. Mr. Pollock spends at least three to four days per week in that complex.

Q But you don't have direct knowledge of the frequency of contact?

A (WITNESS KUBINAK) Not other than these meetings that I attend.

Q Thank you for that information. I won't press you any further because you weren't prepared to respond on this particular subject, but if your counsel and yourself believe it would be worthwhile to expand at a later time, I will leave that up to you.

With respect to Mr. Nichols who is advisor to

the Plant Manager, are you familiar with his activities?

A (WITNESS KUBINAK) No, sir, I don't attend those meetings. However, the reports from the minutes of those meetings, the topic comes to me. I do know those meetings are occurring but I can't relate the subject matter at this point.

Q Let me put that in the same category, then. If you and your counsel believe LILCO would like to provide further information on that, you are welcome to do so. Mr. McCaffrey, do you have any knowledge of Mr. Nichols' activities?

A (WITNESS McCAFFREY) No, I have no direct knowledge of the events that have taken place at the meeting.

Q Mr. Alexander?

A (WITNESS ALEXANDER) No, I don't know of the meetings that have taken place between Mr. Rivello and Mr. Nichols. I know I see both of them at the plant virtually every day, but I have not been a part of the meetings.

Q Let me just interject. On any question, if any member of the panel would like to add to what has already been said, feel free to do so without my specifically asking you.

In your submittal of November 10th, you state

that requests for bids have been made to organizations to provide shift advisors. Is there any further information available on that?

A (WITNESS McCAFFREY) No, sir. I'm not aware of the evaluation of the bids at this time, so I can't update you on the status beyond what I said in my filing.

Q Let me put that in the category of further discussion, if you feel it would be useful.

Mr. Kubinak, I believe you are the Chairman of the Reactor Review of Operations Committee.

A (WITNESS KUBINAK) No, sir. The Chairman of the Review of Operations Committee is the Plant Manager. That committee is advisory to the plant chairman.

Q You are President of the NRB?

A (WITNESS KUBINAK) Yes, sir.

Q Are you familiar with the activities of the ROC?

A (WITNESS KUBINAK) I am past president of that committee. I established that committee when I was Plant Manager and that committee ran for five or six years when I was Plant Manager.

Q I believe your submittal says since 1976, in February. Are you able to recall some of the specific major activities of the ROC?

A (WITNESS KUBINAK) Yes. While I was the manager of the plant and Chairman of the Review of Operations Committee, a major project that committee worked on was the approval of plant procedures. All procedures that reflected safety or were involved with nuclear safety were all approved by that committee. Other procedures, particularly administrative procedures for the plant, were also approved by that committee. Others were approved just by the Plant Manager without committee action.

At the same time, while plant operating procedures, maintenance procedures and others were being performed, there was also a startup test program. A startup test program, which is primarily a GE program for that unit, requires procedures. It requires procedures specific to the particular unit. Those procedures, the beginning of those procedures, were also processed through the Review of Operations Committee. So first it was the operating procedures and then the procedures for the startup test program.

The procedures numbered in total for the plant approximately 1200. That is why we started very early to put those procedures together and get them approved.

Q How was this review conducted? Were the procedures distributed to the members of the committee

sometime in advance of the meeting with specific questions, or just the procedure itself? Was a date to be ready to have a meeting? How did it operate?

A (WITNESS KUBINAK) First of all, the membership was from each of the sections in the plant. There was, first of all, the vice chairman with two assistant superintendents. The membership then was quality assurance engineer, the maintenance engineer, the operating engineer, the instrument and control engineer, radiation and chemistry engineer, health physics engineer, reactor engineer and the technical manager. Each of those groups were assigned -- and security.

Each of those were assigned a group of procedures they were responsible for, and those procedures for the most part were very specific to the area these people represented. In addition, each had responsibilities for administrative procedures for running the plant, the operations of the plant.

The Plant Manager generally had a lot of input to the administrative procedures on how this plant was going to run. The administrative procedures are developed to give the format for the procedures that were being performed. There are procedures which indicate the type of procedure; whether it is safety related or not, whether it should go to the committee

for approval or just to the Plant Manager, or whether quality assurance should have input to that procedure.

This entire block of administrative data was placed into one computer program so that we had at our fingertips a good picture of the status of procedure generation throughout the plant. It is titled -- and it still is in use, of course -- "plant procedure status list." It gives you all the information as to the procedure; who reviewed it, who approved it, where it had to go, whether it is issued here in draft form, what date it was issued, the review frequency. Certain procedures, safety-related procedures, must be periodically reviewed.

The Plant Manager in his administrative program also decided on the process for writing these procedures and approving these procedures. The process generally went like this. A particular section would write a procedure. That procedure would be duplicated in some number and distributed to the other members of the Review of Operations Committee. Each of those had the responsibility to comment on that particular procedure.

Those comments were recorded on a comment control form; then that procedure was returned to the originator. The originator had the responsibility to go

around to each of those people who made comments and resolve those comments before the meeting. We wanted to keep the meeting for only those comments that had particular significance, or established some level or had some importance to the group where the group had to get together and get a common input.

The originator of the procedure then would incorporate these comments, or he would not, but he would indicate in one case or the other. If he did not incorporate them, he would settle this particular condition with that person as to how they would accomplish that particular point. And then, if the originator was satisfied with the procedure, he would go to the plant administrative coordinator, -- office manager type person -- and get it on the agenda for the next Review of Operations Committee meeting.

If he was confident that he had good control over that procedure and had all of the comments in when the particular procedure came up for discussion at the meeting and it went very smoothly, at that point I could tell whether he had done his job and resolved comments. If there were comments that were not resolved it was his obligation to let me know ahead of time so we could do some groundwork or have the right people there so we could settle that particular issue.

Once that procedure was approved by the Review Committee, which was advisory to me at the time, the plant administrative coordinator would make sure that it was properly typed for the most part on auto-type machines and he would deliver that to my office, that procedure, after it was clerically good.

I would sign it, it would go into our master control system that controlled those procedures. It was controlled from that point on as to any changes to those procedures. Does that answer your question?

Q I just need a lot of background information, thank you.

A (WITNESS ALEXANDER) I would just like to add that the plant staff, section heads, the Plant Manager and the chief engineers meet daily, and as group leader of the ISEG I attend those meetings to observe --

Q Excuse me. Who meets daily, again?

A (WITNESS ALEXANDER) The plant staff, the section heads and I as group leader of the ISEG attend to observe and listen.

Q Excuse me, Mr. Alexander. You said section heads?

A (WITNESS ALEXANDER) Yes. Basically, the same level as ROC members; most of whom are ROC members, and I observe that meeting. And once a week, and often more

often than that, the meeting then breaks up or will turn into the ROC meeting, and they still continue to perform basically the same functions Mr. Kubinak just described -- review of procedures, startup procedures.

Q This was going to be one of my later questions as to whether or not there were meetings that took place other than these meetings of the ROC among the plant staff and management.

A (WITNESS KUBINAK) It's very important to understand that some years back we could hold these meetings on a weekly basis or every two weeks basis since operation of the plant was not getting close. At this point, I believe they meet on a daily basis.

A (WITNESS ALEXANDER) That is correct, they do.

Q Has the ROC ever referred questions to the Nuclear Review Board?

A (WITNESS KUBINAK) No, sir, I think it's been the other way around at this point.

Q That was my next question.

A (WITNESS KUBINAK) The Plant Manager, who is Chairman of the Review of Operations Committee, is a member of the Nuclear Review Board. We have established the Nuclear Review Board, and one of the elements in establishing that Board -- I can go over the other elements later if you wish -- one of the elements is to

assure that the Review of Operations Committee minutes go to the Nuclear Review Board members.

At this point, the Nuclear Review Board members have asked that I go back over the review process used in the plants for procedures or procedure changes and prepare a board report to them as to what that process is; not just who supplied them the procedures that are used to do this review process, but to come in and present it to the board. So we are at that stage.

The board has asked for a ROC member or others appointed by the Chairman of the Nuclear Review Board to prepare that report and give it at a meeting.

Q Has the ROC reviewed the QA Manual?

A (WITNESS KUBINAK) There are two QA organizations.

Q I am talking about the OQA at the site.

A (WITNESS KUBINAK) I believe that is the case. I just can't remember the timeframe it happened in. Each and every piece of correspondence that came from OQA, whether it be a procedure or the OQA Manual, came through my hands as Plant Manager. There is an OQA procedure as to who signed the procedures and who signed the manual. I don't recall whether I signed the manual or I had Mr. Pollock sign the manual or both. That

happened quite a few years back. That manual has been in place for quite a long time.

Q Perhaps it is subject to the review that the NRB and the ROC have given to the QA Manual, and the OQA procedures is something you could supply.

A (WITNESS KUBINAK) One of the elements in preparing a nuclear review board to exercise their review and audit responsibilities was to give them an idea as to what documentation exists in the company. Some of these fellows are new to the company and some are members of the company. During one of the Nuclear Review Board meetings this year, I acquainted the Nuclear Review Board as to the existence of the quality assurance manuals.

I gave the Nuclear Review Board members the option of having their own manuals or, when they want a piece of information from them, to get it from my office. I have a library in my office, in the Nuclear Operations Support Office, and we have administrative persons who man that office, and they had the option then of getting their own QA manual or calling when they wanted this particular number and having it shipped out to them.

There are advantages in both cases, but I had said that if they want an updated control manual copy, I have it, and at this point I made that proposal. I have no decisions yet from the membership.

A (WITNESS MC CAFFREY) Judge Morris, if I may add to that, as with any review board like the Nuclear Review Board, it is important to familiarize the members with how the company they are monitoring functions. Indoctrination and familiarization with Shoreham's QA program is a scheduled agenda item at the next Nuclear Review Board meeting, which the manager of the QA Department, Mr. Muller, whom you have seen before you already parochially, will come and make a presentation before the Nuclear Review Board to further explain the workings of the QA program as it applies to Shoreham Station.

A (WITNESS KUBINAK) Again, in the status of the Nuclear Review Board, we have had difficulties in getting Mr. Muller or Mr. Gerick to come to the meeting the last few meetings.

Q Mr. Gerick put it the other way around.

A (WITNESS KUBINAK) And as a matter of fact, we did cancel the last Nuclear Review Board meeting because they could not support that request. We have requested they come to the next meeting, and both, I believe, have agreed to do that. It is important that the original person stand up there, the person stand up there, stand up there in front of the Nuclear Review Board so that not only does the individual come across, but also his

programs come across much better.

JUDGE BRENNER: And you also forgive us for having them here as well as yourselves here on that same theory.

WITNESS KUBINAK: Yes.

BY JUDGE MORRIS: (Resuming)

Q Staying with the ROC for a moment, you did mention, I believe, Mr. Alexander, that the members of that committee are section heads. Was the basis for selection the organizations which would be represented, or was there some other criteria which led to the selection of members to that committee?

A (WITNESS KUBINAK) I made that selection. I wrote that procedure to select those people. In part, the administration of the plant and the analysis of the procedures required to be developed, I found that I could take a section head, like the section head of Instrument and Control, and working with him, we could block out the procedures required for his particular section.

Looking at that, a good portion of his procedures deal with calibration. It is important that the Nuclear Review Board get to approve those particular procedures.

Q You said the Review Board would have approved

the procedures?

A (WITNESS KUBINAK) The Review of Operations Committee would approve these procedures.

Q The ROC.

A (WITNESS KUBINAK) (Nods affirmatively.) So to make this as neat as possible, I selected each of the section heads in the plant to block out their procedures, put them into the plant procedure status list to be responsible to generate those particular procedures and then come into the meeting and present their procedures and get them approved. So it sort of fell in a normal administrative fashion that each of these members, which are very important members in the plant, to come to each of the meetings, make their presentations and get them approved. The important point also is that other procedures tend to flow or have to interface between these particular sections, and it is important, then, that the other fellow be there also for me to know that indeed he does agree with this particular procedure.

It worked out each of the section heads was given membership in a review board and the responsibility to generate his own procedures to make sure they interfaced with each other and to make sure they interfaced with my administrative procedures.

Q When the plant goes into operation, Mr. Kubinak, do you believe that the basis for selection of members will be the same?

A (WITNESS KUBINAK) I see no reason why it should change. It has been very successful.

A (WITNESS ALEXANDER) That methodology of selecting people for the ROC board is it provides a balance of mixed disciplines. The health physics engineer is involved, for example. The operating engineer is involved. The maintenance engineer is involved. Basically, all of the key sections or functions of the plant are members of the ROC Committee, and it represents a wide range of disciplines and talents to review the procedures. It also provides for, for instance, the chief engineers who would have an even wider range of experience and background also sitting on the panel or the board.

A (WITNESS KUBINAK) I think I called those chief engineers assistant superintendents to be more descriptive part of the way back in my testimony. We do call them chief engineers, one being the chief operating engineer and one being the chief technical engineer.

A (WITNESS MC CAFFREY) Judge Morris, just for the record, I think if you would refer to Section 13.4.2.1 of the FSAR, it will have that listing in it.

Q I have the listing but the potential dichotomy I saw was simply selecting people from organizations on the organization chart as opposed to selecting people representing all technical disciplines. And if you were to tell me why you think you have covered all technical disciplines with the sections that are represented on the ROC, that would be useful to know.

A (WITNESS KUBINAK) What do you mean by technical discipline? Could you clarify that for me?

Q I don't wish to be precise, but, for example, nuclear physics, thermal hydraulics, health physics, chemistry, mechanical engineering, et cetera.

A (WITNESS KUBINAK) Oh, yes. For example, one of the members is the radiochemistry engineer, who has gone through extensive training in the area of radiochemistry. The reactor engineer is the fellow who represents the thermal hydraulics area. He gets his training as reactor engineer from making the General Electric programs for maintenance of the core. The operating engineer in this particular case is a mechanical engineer. The instrument and control engineer is an electrical engineer. The health physics engineer is a mechanical engineer with a master's degree in something that approximates health physics. We do represent the disciplines there.

Of the two chief engineers, one is --

A (WITNESS ALEXANDER) Lennie has a master's degree in physics and also bachelor's degree in physics. The other is a marine engineer with a master's degree in nuclear engineering, both with extensive backgrounds. Lennie came up as a reactor engineer. The chief operating engineer was a reactor engineer.

MR. ELLIS: Mr. Alexander, when you refer to Lennie, are you referring to Mr. Calone?

WITNESS ALEXANDER: Yes. I'm sorry.

JUDGE BRENNER: We knew who he was.

WITNESS ALEXANDER: Mr. Calone was a former reactor engineer, and Mr. Steiger --

WITNESS KUBINAK: Bill Steiger was a former operating engineer in the plant, if I recall correctly. He has an extensive background in reactor operations and a master's degree in nuclear engineering. I believe we have everything in the plant that it is possible to have in a plant covered there, included quality assurance. The operating quality assurance engineer is a member of the board also.

BY JUDGE MORRIS: (Resuming)

Q I sense the activities of the committee for lo six years have been largely with procedures since the plant is not yet in operation, and I am wondering, once

the plant does go into operation, whether you have thought explicitly about the kinds of activity the Committee will be engaged in, which will relate more to operation, and whether then you feel that all important disciplines will be covered.

A (WITNESS KUBINAK) Yes, I believe there is no change or intent to change the membership from what we have. I believe each of the members is now qualified according to standard for his particular position, in any case, more than qualified at this point. I believe the operating engineer has completed his NRC testing program for his personal license. I know he has been exempt. I don't know if the program is entirely complete. If I was the chairman of that committee now, I would feel even more comfortable that I had the maximum support from that plant staff I could possibly get.

I have one more point. Many of these people have been designated to get licenses that are not in the operating chain.

A (WITNESS ALEXANDER) In that case, Judge, the reactor engineer, the INC engineer and both chief engineers have completed the SRO licensing requirements and are awaiting the results of the exam.

A (WITNESS KUBINAK) Along with the operating

engineer and his staff.

Q Well, what is in the back of my mind is the difference between starting up a piece of equipment and planning how to do that and writing procedures and observing increases in radioactivity in the primary system or corrosion or stickiness of control rods, and those things which come only with operation.

A (WITNESS KUBINAK) We have an extensive program in giving practical experience to these people. In the first half of the seventies -- again, the dates I will have to confirm -- I was selected as plant manager, appointed plant manager. I was selected to go out for extensive training in plant operations. I joined the General Electric startup team for the Dresden Unit No. 2 and 3 reactors. I spent a considerable amount of time there as pre-operational test engineer.

I followed that with on-shift representation for General Electric during the startup of Unit No. 3. I qualified at the simulator for RO and SRO for Dresden Units 2 and 3. I was examined by the Commission for reactor operator on Dresden's 2 and 3 and given a certificate by them. The management of the company and myself were impressed by what we could learn using that method of training people.

When I came back from that assignment, which

lasted between one and one and one-half years, I put a plan together and had it approved by the company that I would do this with many more people. Mr. Steiger, who is the chief operating engineer, did almost the exact same program as I did at Nebraska Public Power Service, Cooper Station, Nebraska Public Power Service. He joined the General Electric startup team and he performed as a pre-operational test engineer. He went on shift and into the power test program.

The same thing went for Mr. Youngling, whom you have seen here on the panel. He was in the other chief engineer's position at the time. In his particular case he spent, I believe, a year or more doing the same program at the Duane Arnold station, very good training during the startup test program. He was a pre-operational test engineer also.

When those fellows came back, we did the same thing, not necessarily in that sense, time sense, to other people. The fellow, Mr. Calone, who was reactor engineer at the time, went down to Brown's Ferry. Brown's Ferry had all units shut down at that time, if I remember correctly, and he worked as the reactor engineer on a reactor engineering crew down there so that he would understand what it was to bring a reactor up and to know what radioactivity was and so forth.

Our present operating engineer, Jack Notaro, had similar engineering training at Millstone. John Scalice, our present engineer, had practical training at Brunswick, and our instrument and control engineer, Bill Gunther, had similar training at Duane Arnold. We have tried to build in to all of these people very good operating experience. For example -- I can't talk about their particular control room experiences, but I can mine -- when I was at Dresden on shift, I got many, many reactor load changes above 50 percent load and below 50 percent load. I had at least two, if not more, actual criticals on the big machines operating on the reactor control board, under the direction, of course, of a senior operator.

It is very good experience, and you understand when you come out of that kind of experience what really goes on in the management of a nuclear plant. They have all had that training. We have sent mechanics and health physics technicians and people from all levels within that plant staff out for practical training, and we have a proximity there to Brookhaven National Laboratory. Most, if not all, of our operators have worked on the reactor at Brookhaven National Laboratory. One of their reactors, their medical reactor, our health physics technicians have trained

under the direction of the health physics people at that laboratory. So I believe we know what radioactivity is and we can manage it.

In the maintenance area, you brought up the fact that certain areas of the plant will become radioactive in one form or another. We have had the maintenance engineer and the assistant maintenance engineers out in the plants, and the foremen, I believe, out into the plants to work on overhauls so that they could see what the mechanic is up against and how he has to dress, how you have to control access and what types of tools he needs and what areas to locate tools so you don't have to bring them into other areas, and all of those things have been built into our people. We have had the time to do it.

Q How do you see the ROC functioning after the plant goes into operation? You won't have procedures to review so much anymore.

A (WITNESS KUBINAK) There will be procedure changes at that time.

Q Primarily procedure changes?

A (WITNESS KUBINAK) They are in a different mode now. There is a lot of work going on here in finishing the plant. There are systems being finished now and pre-operational tests being conducted. These

systems are being turned over to the plant. This system, in effect, goes from construction to the startup organization to the plant. There is a lot of work being done on the transfer of these systems from startup to the plant.

In any case, the startup program or the transfer program or the plant program used the same people. The operators are still in the control room running the equipment. They are getting a lot of time in the control room running this equipment. As the systems are turned over to the plant, the plant even maintains those systems.

Q I am focusing specifically on ROC and its function after the plant starts up.

A (WITNESS KUBINAK) The Review of Operations Committee must look at these turnover packages and agree that these systems are indeed what they say they are when they came over.

Q And when you have the plant 100 percent in your hands, then what does the ROC do?

A (WITNESS KUBINAK) Yes, that is a good point that was brought up to me here. The Review of Operations Committee, in effect its reports, its minutes go to the Nuclear Review Board. The activities that the Nuclear Review Board must undertake are reflected in the

review and audit responsibilities as listed in the technical specifications. The Review of Operations Committee, as is discussed here, would run tests or experiments in the plant. They would make changes to the plant. They would make changes in procedures. They would make modifications to systems. They would investigate violations. They would review events that are occurring within the plant.

It would appear that their workload, once procedure review is out of the way and out of the picture, that their workload is much higher.

Q Were you reading from something specific, Mr. Kubinak?

A (WITNESS KUBINAK) Yes.

A (WITNESS MC CAFFREY) Judge Morris, the document we were referring to here was the FSAR amendment, Revision 27 of August 1982, which gives a brief listing of the responsibilities of the Review of Operations Committee. An example would be review of any event where the plant had to make a 24-hour report to the Commission. Another example would be to review a design modification in the plant, whether there is a safety issue or not, and forward such conclusion to the Nuclear Review Board for a second check of their review as an example of the work they would be doing when the

large bulk of the procedure modifications is behind them.

Q That is in Chapter 13, is it, Mr. Mc Caffrey?

A (WITNESS MC CAFFREY) It is in Chapter 13, 13.4.

A (WITNESS KUBINAK) I was referring to the fact that the Nuclear Review Board has to monitor that operation.

Q Turning to the Nuclear Review Board, Mr. Kubinak, can you recall -- I guess it hasn't been in operation as long as the ROC, since April, according to your submittal.

A (WITNESS KUBINAK) The Nuclear Review Board had its first meeting in April of 1982, yes.

Q And can you recall, if I may use the words again, some specific major actions it has been involved in since that time?

A (WITNESS KUBINAK) I can give you the status of the Nuclear Review Board at this point. I think it would give you the actions they have taken and the actions coming up, and that may give you the picture. I am working from an attachment to the Nuclear Review Board minutes. Each of these issues as I bring them up not necessarily occurs in order. They may very well have been in parallel, and I think as you see this -- are you also interested -- I could start back at the

origin and selection of membership, if you want to go back that far, or just the issues that have been conducted.

Q Why don't we do the issues first.

A (WITNESS KUBINAK) The first submittal I made to the Nuclear Review Board was a charter for its operation. There are different levels of documents that I like to work with in the company, and the top level document is the Nuclear Operations Corporate Policy, which is signed by one or more vice presidents, which gives general guidelines on how we will operate in that area. Below that point, the next level of documentation is a charter that says I recognize my responsibilities for the Nuclear Operations corporate policy but here I am going to give a little more information as to how I am going to interpret those particular responsibilities.

The next level of documentation below the charter are the procedures and how you will do it. The first thing I did with the Nuclear Review Board is give them a draft charter so that the membership as they saw that charter would understand what their responsibilities were. It was a combination. The charter was a combination of the technical specifications and desires of the Chairman of the Nuclear Review Board and the Vice President.

I distributed that charter. That charter was commented upon. The comments are from the Board members. It was discussed at a board meeting and the comments were incorporated in the charter and the charter was signed by the Vice President, Nuclear. Once that charter was signed, it was time to make sure procedures were available to give more information about that charter. The procedures for the Nuclear Review Board have been presented to the Board by myself. They have been reviewed by the Board. Both written and verbal comments were received and reviewed at the meeting of the Nuclear Review Board and the charters are in their final phase of development. Those I will sign as Chairman of the Nuclear Review Board.

We then went down and made sure that we took a look at other nuclear review boards, and I did that through a study I commissioned that collected the data from reports that came from the Performance Appraisal Branch of the Nuclear Regulatory Commission as to their rating, I guess you would call it, of the Nuclear Review Boards that they have audited, their good points, the average points and the bad points. We took the good points, and of cours we wanted to put them in, and the other points we wanted to raise up into the "good" section.

So I went down and started taking these points -- let's say criticisms or good points -- making sure our Board was well aware of them. The first was documentation availability. A lot of these also came from judgments, but we went, I went to the Nuclear Review Board and discussed documentation, what is available in this company, how do you get your hands on it. I gave out indexes as to what was included in that documentation, and this included the FSAR, the plant procedure status list, which is a tremendous source of information. I will go over that even more in detail if you wish. The technical specifications. Of course, the ones they have are the draft technical specifications that we are working with, the policies, the nuclear operation corporate policies, what they meant, which ones they are involved in, how do they get copies, get updated copies at all times, the monthly reports. They get regular monthly reports from my office mailed to them to make sure they are up to date as to how the Nuclear Operations Group is doing here, and descriptions.

One of the major efforts that I had when I was plant manager was to make sure that the operators had good information to work from, good system descriptions, all inclusive, giving basic information that they must know to really know those systems and how to operate

them. Those system descriptions were made available also to the membership.

As each meeting as we had them over the past year, I brought in people who had important positions at that site. I asked the plant manager to stand up and explain the Review of Operations Committee and now they operate. I had Mr. Rivello, the plant manager, also talk about the Joint Test Group involved in our startup program and what they do and what their responsibilities do. I had Mr. Youngling come in and give them the duties of startup, what does he do, how is it controlled, what kind of documentation does he use, and all of these good things that the Review Board should know.

I had Mr. Alexander, on my right, come in to the meeting and give a presentation on the independent safety engineering group, how it functions and what its responsibilities are, what its charter looks like and what its procedures look like and what process he goes through in discharging his responsibilities.

At each of the meetings, I had Mr. McCaffrey come in to the meeting and made sure that he gave to the membership the status of the licensing effort we are going through now, where were the hearings being held, who was there, what are the issues, what schedules do we

have, what does it look like. He prepared presentations to the Board on that.

That brings us up to the present, and that is quality assurance. The Board has not had either the Quality Assurance Department head or the Operating Quality Assurance engineer yet come into the meeting and give a description of his efforts. At the next meeting I believe we will be able to accomplish that.

Also at the next meeting it is planned we will submit to the Board, and I think we can do it satisfactorily, the audit schedule. The Nuclear Review Board, according to the technical specifications, must have an audit schedule, the largest of which runs about three years, so this audit schedule will cover about a three-year cycle.

In addition to the audit schedule they will receive a description, a written description in a number of paragraphs of the first audit. Our charter and procedures for the Nuclear Review Board call for the board to be advised of the upcoming audit, the board to be advised of the scope of that audit, so that they can agree with both of those.

Then following the meeting it is the responsibility of the chairman to take that scope, select a lead auditor, and come up with a detailed audit plan. The chairman then executes the detailed audit plan, and the auditor or the chairman bring the results of that audit back in to the meeting.

We expect to have the first audit conducted in the first quarter of 1983. We expect the audit clock to start the first of January 1983 for the 3-year cycle. Other than the requests the board made, which was earlier in my testimony about more detailed information on the procedure and procedure change approval process, that is a good summary, I think, or status of the Nuclear Review Board.

Q So you intend a 3-year cycle of audits. I believe you said that you would select an audit leader.

A (WITNESS KUBINAK) Yes. Our charter calls, or the procedure calls, for the lead person on the audit to

be a qualified auditor or a quality assurance auditor, whatever the correct term is. And it also says that at the discretion of the chairman I can put one or more board members, technical support-type persons, or other auditors on that team. Of course, that would depend upon the scope and the timing as to how long we want the audit to run.

A (WITNESS MC CAFFREY) Judge, I would like to round out the picture we are trying to paint of where the Nuclear Review Board has been since its beginning in April. In addition to everything Mr. Kubinak has described, it is important that the Nuclear Review Board personnel, which I think you will see from the resumes, is a senior, experienced, wide-ranging group of people in their abilities. It is important, though, to indoctrinate them into the Shroreham nuclear power plant specifically so that in the course of exercising their obligations they can visualize how many pumps we have in a given system, they can visualize flow paths and what makes the plant tick.

So we have been engaged in a fairly intensive program at each meeting to pick suitable topics for which we bring in personnel from the training department to train our operators, to brief them on a given system. We may pick the service water system or the

electrical system for the plant to increase their exposure and allow them to apply their particular expertise directly to the Shoreham station.

Q The company members and the board have names that are familiar to me. One or two of the consultant members are also familiar to me, but we have no resumes on the consultant members. Do you have that list in front of you?

A (WITNESS KUBINAK) Yes, I do, sir.

Q Could you briefly describe the expertise of each of the consultant members?

A (WITNESS KUBINAK) The first consultant member on my list is Mr. Bowers. He is the manager of the health physics services group of the NUS Corporation. His major area of expertise is radiological safety. He has considerable experience in emergency planning. He has actual experience as a health physics engineer. I believe that kind of a position at Niagara Mohawk Nine Mile Point. He has considerable experience in radiation chemistry. I think that is all I can recall from Mr. Bowers' resume.

Then there is Dr. Crawford. Dr. Crawford is a vice president from Scientific Applications. In his resume he has considerable nuclear engineering experience, considerable experience in chemistry and

radiochemistry and considerable experience in safety analysis.

Mr. Christianson (phonetic) --

Q Excuse me. You say safety analysis. To me that is a very broad subject.

A (WITNESS KUBINAK) Yes, it is. I think I ought to go over that listing of expertise before I go any further.

Q Maybe that could be supplied at a later time so we don't need to take up time with it now.

A (WITNESS KUBINAK) In the area of safety analysis, this is a subject which is not a requirement as listed in the technical specifications. As a matter of fact, two areas were added to the listing of areas, as they call them, in the technical specifications.

Q Let me interrupt for a moment. Did you begin your proposed technical specifications from so-called GE standard technical specifications? Is that a starting point?

A (WITNESS KUBINAK) I believe that is the case, yes, sir.

Q Okay.

A (WITNESS KUBINAK) We added two additional topics. By "me," I mean myself and the vice president of nuclear. One topic was training and the other safety

analysis. Safety analysis is a very broad topic, and it was meant to be that way. This is -- included in this area are risk analysis, interreaction, statistical analysis, various areas of expertise that the board does require in monitoring the operation of a nuclear power plant.

In addition, when I went over this particular topic with the board members at a meeting, it is understood between the board and ourselves and myself as chairman that if at any time we feel uncomfortable that we don't have what we think we should have, we can cover it in one of two fashions. And I have approval of the company to do this. Either we form a subcommittee with the proper expertise on it if we do not have it on the board, or even if we do have it on the board; or we can supplement board membership.

Both of those are included in our charter and approved by the company. Safety analysis is a broad topic to cover many of the specific areas of expertise.

Q For both the ROC and the NRB you have described some of the major activities in the past and projected some of the activities when the plant goes into operation. In reviewing the submittals prior to today I didn't get any clear picture of the closeness, let me say, in real time of the awareness of these two

organizations with the daily operations of the plant.

I did get the impression that the plant staff including all organizations, could recommend things to the ROC and the ROC could recommend things to NRB. And specifically ISEG could bring to the attention of the board subjects or problems to consider. And I think all of that is certainly understandable.

What I didn't get a clear picture of was what I termed some months ago the difference between a reactive mode and a sort of active mode, if I can call the latter, sort of an affirmative action mode, not waiting for something to happan or having a prescribed schedule for doing things, but being sensitive to what is going on now and being alert to not only remedying deviations from normal procedure but anticipating potential deviations or anticipating or creating ways to improve the process.

Since it is a geneal question already, I will make it even more general and say I am interested in your set of priorities, what things you would look at in terms of those things clearly safety-related and those things which I will describe as the technical adequacy of the process. I don't know if I have conveyed my meaning with those words to you or not.

In other words, let me draw a little analogy

which just occurred to me. If I owned a Rolls Royce, I would spend a lot of time making sure that proper lubrication and protection of the finish and all of those good things were there on a daily basis, not waiting for deterioration before I went to the repair shop. I think it's overdrawn, but it is the concept I am trying to convey.

A (WITNESS KUBINAK) I think in our normal method of operation I stress to my people anticipation, and I think in the formulation of our Nuclear Review Board and the investigations we made into other people's problems before we had the problems, we investigated the fact that some boards were not trained properly or oriented properly, they didn't know where the documents were and all of those good things.

We jumped all over those kinds of documents to make sure we built into the Nuclear Review Board that kind of information right from the beginning. The training going on in a Nuclear Review Board is very, very good. The people on it are all experts in their own right, but they have to be oriented to that particular station.

The first time we were there we had a meeting at the station to begin with out in the plant, let's go take a look. We make sure they know what's there. We

train them. I think that's exercising this anticipatory effect.

We have other programs built in that are of the same nature. For example, I have 100 percent company responsibility for the program in NPO, the NPRDS program. That's an anticipatory program. We do participate in that, and I will give you the status of it if you wish.

We have the independent safety engineering group. That's certainly an anticipatory group which goes out and gets information from these other plants and puts it together and comes back and says, wait a minute, this applies to us, and they to that kind of work.

We have other areas of corporate training. I have 100 percent responsibility for establishing a program to train our corporate people, our support people. This isn't the operation at the site now, the operators; this is the rest of the people who are off-site, nuclear operations support department and the nuclear engineering department, electrical engineering and some other support services, to make sure the people are trained and set up the program. That is certainly anticipatory in our definition.

I have a section that is records management.

At this point they take construction records and put them into a computerized file system. We can go in there and get records, an orderly system. Anticipating the need for the plant to have a good document control system and drawing control system.

They now are launching the program to come up with these two systems so that when the plant is running they have adequate document control and drawing control systems.

We think in many cases we are well ahead in these areas of anticipatory programs. There are certain areas you can't pull off until certain amount of data are available or programs outside my control are available. But we are certainly working on them.

The philosophy of the nuclear operations support is just to do this effectively in the future. There are three departments which will report to Mr. Pollock. They will be the nuclear engineering department, the plant, and myself. And if the particular matter is not entirely engineering or entirely operations, I have it, and my responsibility is to tie it into the corporation and make sure they get tied together.

You could ask the question, how does ISEG tie to the Nuclear Review Board. The man on my left here is

the chairman of the Independent Safety and Engineering Group, and he is also the board engineer. That is described in the charter. He is written into the charter so he can attend these meetings as chairman of ISEG to make sure we have a tie between those two organizations.

I think the anticipatory effects we have are very good. I think we do an excellent job. I think anticipating my plant managership by sending me to Dresden, for example, for a year or 2 years of training was very anticipatory.

MR. ELLIS: I am sorry, Judge Morris. If I could just clarify, Mr. Kubinak, you mention meetings Mr. McCaffrey would attend. I am not sure it was clear what meetings you were referring to as board engineer.

WITNESS KUBINAK: As board engineer he attends the Nuclear Review Board meetings.

MR. ELLIS: So "board" was Nuclear Review Board?

WITNESS KUBINAK: That is correct.

JUDGE MORRIS: I understood that.

MR. ELLIS: I am sorry.

WITNESS KUBINAK: Just the program that we instituted to choose the membership of the Nuclear Review Board was anticipatory. I think the additions we

made through the required categories as listed in the tech spec was anticipatory. I think putting the training man on the Nuclear Review Board so that when we talk training we know what we are talking about is important. That is anticipatory. I think we take that approach in every one of my assignments, including the NPRDS program.

A (WITNESS MC CAFFREY) Judge Morris, another aspect under Mr. Kubinak's management control is the inflow and outflow of all regulatory correspondence and matters that will affect nuclear programs for the company, since it all flows through this one department. You have ISEG, you have NPRDS, you have regulatory matters. So what you should get a sense of is having your fingers on the pulse of the industry to be a central clearinghouse for all matters that can affect the operation of the plant and feed those to the appropriate organizations.

In my role in regulatory compliance, if I see a matter that I deem significant to the supervisor of ISEG, it will go directly to him promptly if something crosses my desk. And as board engineer of the NRB, if I think this is an item that would be of significance to the NRB, we would put it on the agenda and bring it to the attention of the NRB.

I think if you look at our charter, which, of course, we have with us here, the technical specifications prescribe certain activities that the NRB must entertain.

LILCO has added another category on our own, and if I could read fom it, it simply says, "Other areas of Shoreham nuclear power station operations considers it appropriate by the chairman of the Nuclear Review Board or the vice president." So we have built into it a catch-all to anything else we think appropriate that NRB should dig into and investigate.

Q Well, from the submittals I have read, I have a good understanding of the, to use your term, "screening" of operational experience from the industry and understanding the responsibility of your organization, Mr. McCaffrey, to alert the ROC and the NRB to items you think are important for them to consider.

What I am searching for are two things: one, the mechanism by which the ROC and the NRB satisfy themselves that they are gtting the information they need to discharge their responsibility in a way which has been defined by Mr. Kubinak; and the separate problem I think relates probably directly to the ISEG where the procedures cover a great many pages, they are

quite detailed into the definition of projects the approval of projects, the execution of projects, the reporting of the project and so forth, which I find to be about as complete a bureaucratic system as I have seen anywhere.

What I wonder is the extent to which the poor people who must fill out all of these forms and comply with all of these procedures are spending timeout in the plant watching what is happening on a daily basis rather than being assigned a project by their boss to work on.

Am I communicating my concern?

A (WITNESS ALEXANDER) Judge Morris, first of all, we haven't found the procedures have been cumbersome. We have found them to be very workable, and although we do have -- of course, procedures on any plant are always inclined to be changed somewhat. But we have no plans to make major change. We have had no problems with procedures, just minor changes.

To this point the primary emphasis of the ISEG has been to look at operating experiences. Obviously, we have had to look at operating experiences of other plants because to this point Shoreham does not have a large amount of operationg experience itself.

However, we have looked and the participate in the formal and informal meetings of gaining operational

experience from Shoreham; specifically, they said, I attend ROC meetings, I attend daily meetings, I walk around the plant. I am in the contrtol room at least once a day.

All of my people -- there are five of us out there -- we are at the site inside the security fence. We walk around the plant everyday. We have to just to perform our operating experience review, which as I said, has taken up the predominant amount of our time up to this point.

We do have scheduled programs under NSOD 19.9, whereby I send these people out into the plant almost on headhunting observations. They go out with a basic goal in mind: to observe a certain function or a certain type of function or the performance of a certain class of machinery. But they are not very limited projects. The term "project" is just a means of our controlling their activities and to give them a specific set of instructions to perform. It does not encumber them.

In addition, several of these people have come up with their own projects, their own ideas. Having been out in the field and observed things, they have come up with good ideas. They come back, they report it to me, we discuss it. If I consider that that type of project has merit, we produce a project plan, and we

send them back out in the field with the approval of the chairman and the manager.

We don't think that the organization we have in any way encumbers them. It provides a certain amount of control for their activities, and it provides a means for our assuring what they are doing and what they are doing is in accordance with our charter.

ISEG is an active and reactive organization. Obviously, if there is a problem at the plant, we learn about it either informally at the daily meeting or if an LER is produced and sent off-site, a licensee event report, in reportable terms.

We get those LERs, we look at them, it is our intention to trend them, to analyze them, to look for signs of repetitive problems. That is a reactive situation. But as I said, we are also there at the site and at the plant, and we do have what we call surveillances. But it's just a term for scheduling broader activities, to send people out of the plant.

As far as ROC is concerned, the people who are on ROC are basically teh people who are having problems with the day-to-day operations of the plant. As I said, they are the operating engineers, the health phsyics engineers. They meet daily.

ROC has to know what is going on because they

are the people to whom the events are occurring. And the fact that at 9:00 o'clock, they suddenly become ROC and produce a formal set of minutes for formal discussion where before if it was starting at 8:00 o'clock they had been less formal meetings, it does not change the character of the knowledge they had going into the meeting.

Q What didn't come through to me in reading the procedures was the balance between what I think you have termed surveillance activities and operations evaluation, if you will. I believe you used that term as opposed to projects which might be studied, pump performance for a month or something.

A (WITNESS ALEXANDER) We call them all projects. That is the way we control the project. But we deem it our responsibility to take on those steps outlined in NUREG-0737, which is assessment of plant characteristics, the whole six or seven steps. And we do that, and if the procedure NSOD 19.9 lays out some minimum frequency for us to make sure that we meet all of those steps. It has been difficult for us at this point to always come up with real meaningful projects right now because the plant isn't operating. We aren't making heat, and we aremn't making electricity. So it's hard to go out and see if there is a problem with the

condenser or any of the nuclear pumps out in the field because they are just not working.

So we funneled our energies and our prime effort in the area we think will do the most good right now, which is going to the backlog and operating experiences of other plants: James Fitzpatrick's LER review, the review of both circulars and notices and that type of stuff.

Q Do you consider the requirements or guidance in 0737 as a minimum you should comply with? Do you feel your goals are completely coincident with or synonymous with those expressed in 0737, or do you have a somewhat different picture of what ISEG should do?

A (WITNESS MC CAFFREY) Judge Morris, may we have a moment?

Q Sure.

(Witnesses conferred.)

A (WITNESS ALEXANDER) Judge, we did take the requirements of 0737 as a basic framework around which to start the development of the ISEG. As you can see from the charter, we mostly listed that out. However, in addition, we have built some other things into our procedures, into the charter, because we envision the ISEG to be even a bit more ambitious than what was outlined in 0737.

First of all, there are no frequencies laid out in 0737. We put that on ourselves as far as scheduling these reviews and assessments and surveillances. Secondly, we took on certain formalized or laid out for ourselves the sources of operating experiences such as we committed to the INPO program. We specifically committed to the reviewing of GE Sills plant LERs attending these meetings that go on every day.

In addition, we committed to a semi-annual basic evaluation for the operating experiences of the plant. We make this report to the NRB twice a year. This includes an evaluation of operating experiences feedback.

A (WITNESS MC CAFFREY) If I could just add a couple of more features. We needed the time to put our thoughts together as to what incremental things we have

added to the program. NUREG-0737 1.B, 1.2, would not require an audit of ISEG by the Nuclear Review Board. Yet, Long Island Lighting Company has opted for that feature. So NRB will audit ISEG. ISEG is required at the minimum to be staffed at a level of five people. And as we said before, I believe it is our plan to staff that to the level of six people, and we will be probably at that level within a couple of weeks.

We have also built into our procedures and charter the ability to tap any other technical resources within the Long Island Lighting Company or outside consultants that we deem appropriate to fulfill the ISEG functions. Certainly a multidisciplined group of five engineers are wide-ranging in their views. But it was not a self-contained think tank. It was not envisioned to be so by the Nuclear Regulatory Commission. They need the intelligence to figure out when they need more help.

We have built into that that we can have the Nuclear Engineering Department, Electrical Engineering or anyone else we deem appropriate assist or provide on assignment to ISEG additional personnel to help us with our programs.

I would also point out that the PRA study that LILCO has done that you have heard so much about before

is a feature that we feel the ISEG people need to be fully aware of.

Mr. Alexander has been attending meetings of the PRA. We have had lots of discussions with Vojen Joksinovich to develop that philosophy and feed it back into the way we do business. So if you look at some of these features which I don't believe are exhaustive, but if we had more time you would see we do not feel limited by what NUREG-0737 items were prescribed.

Q In terms of the disciplines or selections of personnel in ISEG, how is that approached?

A (WITNESS MC CAFFREY) NUREG-0737 suggests that a multidisciplined group is required. That says to me as an engineer that you would like people who would give you the widest possible discipline coverage on ISEG that you could obtain. You would like someone with an electrical background. We have that.

I should point out on that note that NUREG-0737 suggests the majority of which should not be recent college graduates. We have opted that no one on there will be a recent college graduate. We want people with significant experience. We have people with electrical engineering coverage. I have given you the resumes of the personnel. Mr. Pedowitz has the electrical discipline background. Others have

backgrounds of heat transfer, fluid flow, system design, piping supports, civil design.

Mr. Alexander gives us an important feature of ISEG. It has an operational awareness of input. Mr. Alexander came to us from the plant, and that enhances the ISEG and enables us to deal correctly with operational matters and have the proper feel for operational matters and gives us the ability to have more fruitful discussions with the personnel. That, to me, is a multidiscipline type of organization rather than say having people strictly in each. And you have the deficiencies certainly in the electrical areas.

Q So you have looked at the disciplines represented, and it's your opinion you do have a broad spectrum of disciplines represented on that committee.

A (WITNESS MC CAFFREY) Yes, it is.

A (WITNESS KUBINAK) Can I add to that, sir?

Q Sure.

A (WITNESS KUBINAK) We have other responsibilities that are my responsibility to build into ISEG from a corporate point of view. We have ISEG recognized by the Vice President of Nuclear as an entity. We have a corporate policy that he has given to us to administer. He knows what is going on. We have good contact with him. He knows and has given us

responsibilities.

In addition, once you get recognition such as this by the corporation, you can implement the recommendations of ISEG. We intend to implement these recommendations as they occur, and we do have with this type of structure, with the Nuclear Operations Support Department type structure, we can get these recommendations implemented.

I couldn't possibly settle for the description given for Mr. Alexander's background. When choosing the onsite leader I spent a lot of time getting the man out of the plant structure and into this job because of his qualifications. He has an extensive nuclear Navy background. He has extensive training. He is a licensed candidate for an operating license at Shoreham. He has gone through a tremendous amount of training in going toward this operating license. He knows his way around that site, and he can implement the day-to-day operations, and that is what I was looking for.

Q Why was this particular group chosen to operate as a committee rather than just a group under the section leader?

A (WITNESS ALEXANDER) The idea, Judge, was -- first of all, the company didn't have a broad range of

nuclear plant operating experience, so the idea was to have the committee meet as a committee of peers to discuss with multidisciplined people all aspects as a final approval of any project, so we could look for things like systems interactions that maybe one discipline or one expert that had done something didn't pick up.

When these projects are completed they are submitted to me, and I review them, and if I agree with them, I then have them reproduced. We set up an agenda. We have them distributed to the various members and managers of NOSD, Mr. Kubinak, and we schedule a meeting; and these projects are all presented one at a time. The person who created the project defends the project and states why he did what he did, why he reached the conclusions he did, and we vote on it, and people ask questions as they see fit. We vote on it, and approve it, and recommend it to the manager of NOSD.

The purpose was to assure that we had a forum from which all of the disciplines could review the project and jointly discuss the results.

Q Is this done anywhere else in the company?

A (WITNESS ALEXANDER) Not to my knowledge, Judge.

A (WITNESS KUBINAK) The Nuclear Review Board.

Q The NRB is not a line organization. ISEG is.

A (WITNESS ALEXANDER) Excuse me. Did you say we were a line organization?

Q I see you in a line. You report to Mr. McCaffrey.

A (WITNESS ALEXANDER) I see. I understand.

A (WITNESS MC CAFFREY) Judge Morris, I would like to add to the theme discussed there about when we review a project, and we need to evaluate it from its operational significance. This is not something strictly related to a component value of whatever.

Mr. Alexander, of course, to me is almost a self-contained operational input, but when I run the ISEG meetings -- and one is scheduled for Friday at 9:00, assuming we are finished here, of course -- when I review a project and a recommendation, I evaluate it through the discussion at the meeting for whether we have had sufficient contact with the operational people if it's an operational concern. And if I feel that the evaluation did not sufficiently engage the plant personnel, the people who will run the plant, then I would reject such a project for not being completed, send it back, and direct that the person who did the review go over to the plant and have more extensive discussions with the operational people. That is, of

course, the advantage of having ISEG on site. You have them in physical proximity with the plant personnel. Their offices will be located in the very offices the plant will occupy to encourage a daily interaction to assist us in our evaluation.

Q I still don't understand why it is a committee rather than a group or why you can't make the same kinds of decisions without a vote but with the same input.

A (WITNESS ALEXANDER) Judge, we don't feel it affects the operation. We decided to set up that type of operation to enccurage that particular interaction in that form, and we find it to be to this point successful.

We have taken projects up, and in one case we had one rejected. But for the most part they do seem to get endorsed and sent on to the manager of NOSD.

Q In the spirit of my opening remarks I'm not criticizing you. I find it outside of Sweden rather strange. A vote is taken which in effect ties the hands of the supervisional manager.

A (WITNESS MC CAFFREY) Let me add to that because I chair those meetings. To me it makes no difference. I think if you look at the procedures it appears more military than it really is. The meetings are a much more informal process of an exchange of

information, not a rigorous stand-up-and-be-counted-on-your-vote.

Q One last area, Mr. Alexander. We have been talking about the value of experience, and I did note that there is a lot of Navy experience represented in ISEG. But can you briefly summarize the experience of the members with commercial operating nuclear plants?

A (WITNESS MC CAFFREY) Judge Morris, could I get a clarification? Are you seeking commercial operational experience or commercial nuclear experience in the general sense meaning engineering design, et cetera?

Q Working experience at an operational commercial nuclear plant.

A (WITNESS MC CAFFREY) Thank you.

A (WITNESS ALEXANDER) As for myself, Judge, I spent approximately six weeks at Browns Ferry. In addition, I was a certified senior reactor operator, so I spent approximately 12 weeks at the Dresden-2 and 3 facilities. Mr. Curt has been hired on. He is a consultant who works for EDS Corporation. He has had various experiances as a consultant with various nuclear plants throughout the country. The same can be said for Mr. Klan. He worked for Ebasco. He worked predominantly in the construction of plants, but he did

have some experience with the operations of backfitting and operating the plants. The three of us make up the operating commercial experience in ISEG.

Q It's a little past our time for a break but let me ask you, if you were unable to fully explain your answers to some of my questions and would like an opportunity to expand on anything at this time.

(Pause.)

JUDGE MORRIS: You can think about it and come back after the break if you want.

JUDGE BRENNER: Let's take a 15-minute break until 3:55 during which the three of us judges will discuss Judge Morris' views on procedures in committees and voting.

(Recess.)

JUDGE BRENNER: Back on the record.

We will give the witnesses an opportunity if they want to amplify anything. That is where we left matters before the break. It would thereafter be the Board's plan for Judge Morris to continue with questions in the areas LILCO wants combined in this panel; that is, NPRDS and related SER sections.

Is that all right, Mr. Ellis?

WITNESS MC CAFFREY: Judge Morris, I would like to pick up one point. There will probably be others who will clarify later.

One I would like to deal with now is the discussion we had on the committee concept for ISEG. One advantage of the committee is it gives each member of ISEG, the ISEG engineers themselves, a certain autonomy. They get a vote. If they dissent, that view is recorded, and they have the right to make that dissension known to me, the chairman; that is, they are not constrained by a group supervisor necessarily. That also gives them the right to convey that dissenting opinion beyond me to my boss or even the VP-Nuclear; so it preserves some of their independence which we think is a nice feature for ISEG.

BY JUDGE MORRIS: (Resuming)

Q One of the disadvantages of allowing me to

rethink over the break is it gave me and some other Board members a chance to think over the break of additional questions, one of which was the one you just answered.

Another subject we didn't touch on, Mr. Alexander, was the relationship that ISEG currently has with the startup group. Are you following their operations?

A (WITNESS ALEXANDER) We are not observing their function at this point. We are not performing ISEG functions on their operations, Judge. However, we are aware of what they are doing, and we are trying to take advantage of their testing and their operation of various systems in order to gain experience for our members.

In addition, we find that the startup organization engineers are an invaluable source of information. For instance, when we go out to perform a project, invariably not only will we go to the plant staff and ask them questions, observing basic design documents and the system itself, we find ourselves frequently going to startup organizations to find out how the system is performing startup and what is really happening.

We do not view the ISEG as a group to check on

the startup or the pre-op phase of the plant. We view ourselves as checking on the plant itself in its operational phase. We will be observing the startup test program which is actually run by the plant staff, the General Electric-sponsored startup test program. At that point we will be observing the fuel load, the actual startup of the reactor, and the testing of the system as a whole system. We will be observing that.

Q Is it correct you view this phase as an important time for your organization to learn the systems as they go through, as they are accepted and go through startup testing and pre-operational testing?

A (WITNESS ALEXANDER) Yes, we do view it as an important time. We have undertaken a fairly extensive training program to try to train them on the program, the design of the plant. We have been sending them to various training lessons, some taught by the plant staff, some taught by consultant groups, and sent them to the simulator. We do take advantage. We know what tests are coming up. They are announced at the morning meeting, and I am there. If there is something of interest, I make sure the members of the group know that and are available to go take a look at it.

So, yes, we do take advantage of it, but we don't go out and actually review their startup tests at

this point, no.

A (WITNESS MC CAFFREY) On the point of the ISEG engineers getting prepared and understanding the systems I would like to relate some experiences going back into the February-March-April time period when Mr. Alexander was off on his 12-week BWR training program.

I would go out to the site and tell the ISEG engineers I was coming out and request they take me on a system walkdown, take a system, any system they studied that week. And my experience with the plant, of course, was having been there for many years during the design and licensing activities of the plant, so I would quiz them on it and ask them to walk me around with the drawings and go find valve 378 or whatever it was and describe the functioning the system.

When we run our ISEG meetings it is important when we review a completed project that not only Mr. Alexander but myself develops a personal appreciation for whether the ISEG engineer in the course of doing his evaluation has properly visualized what makes the plant tick, how the system works. We literally run built-in quizzes as we go along to make sure he understands what he is doing, and of course that training will continue to increase their ability to do their projects correctly and thoroughly.

A (WITNESS ALEXANDER) We have scheduled out into the future the time available to us through the ISEG engineers, and at Mr. Kubinak's correction we have put an ample amount of time in for training. It's our hope eventually to train them at least to the level of reactor operator for senior operator training. That is long-term. But we have future plans, and we hope to schedule them to start that process in the next year.

Q You say long-term. Is that one year, three years?

A (WITNESS ALEXANDER) It takes approximately six months full-time to get that level of training. We have scheduled within 1983 three engineers we currently have in there fully employed by Long Island Lighting. We have scheduled them for 1983 to actually start that process.

The first phase, which is the PWR technology, they have scheduled that in 1983 at various times. I can't afford to send everyone to school at the same time. We have it staggered, and the function starts in 1983.

A (WITNESS MC CAFFREY) Judge Morris, maybe it would be beneficial at this point to add some of the special training programs the ISEG engineers have been exposed to enhance their ability to function. Mr.

Alexander mentioned the simulator course. A number of them spent a week at the Limerick simulator. They have undergone typically a five-week BWR technology training program at the site run by the training department for the plant. They have undergone QQA training to make sure they understand the nuclear program.

I should also add that while we do not have the sixth member of ISEG in place at this time, this person will have extensive QQA experience to bring to bear on the ISEG group.

Additionally, the ISEG engineers have undergone general employee training which you have heard discussed before in the QQA testimony. They have access to all areas of the plant.

Q I believe you mentioned somewhere in the exhibit that the members of the ISEG are considered to be on a rotating assignment, is that correct?

A (WITNESS ALEXANDER) That is correct, Judge.

Q What cycle do you anticipate?

A (WITNESS MC CAFFREY) Another philosophy we have applied to ISEG is that rotation is a good idea for the independent safety and engineering group. Right now the ISEG people are of course employees of the Nuclear Operations Support Department. One member at this point is a consultant.

I have had discussions over the past year with the managers of Nuclear Engineering and Electrical Engineering to talk about my program where I intend to make available to them opportunities to put people from those organizations on ISEG for one to two year assignments. I think anything less than one year would not be productive for anyone.

They find that program interesting. They would like to participate. And I think as the plant gets into operation you will see a rotation where we take an ISEG engineer and reassign him to Nuclear Engineering and take some particular person from Nuclear Engineering and put him on ISEG.

At some point if I were to decide I need someone with an extensive I&C background, for instance, and I think that blend should be brought into ISEG to change its complexion, we could do that by transferring someone from another department.

Q Mr. McCaffrey, what fraction of your time do you spend on ISEG activities?

A (WITNESS MC CAFFREY) I think the time I spend now is not indicative of the time I spend in the future. One of my major assignments right now is management of the ASLB hearing program for Long Island Lighting Company.

Q We apologize for that.

A (WITNESS MC CAFFREY) That takes an extensive amount of my time.

JUDGE BRENNER: I'm glad someone manages it.

WITNESS MC CAFFREY: I attend all of the ISEG meetings. They are held monthly. I chair the meetings. They typically run three or four hours each to get through the agenda and all the voting matters we must deal with and all the peripheral discussions on a given matter that has been evaluated.

I go out and meet with Mr. Alexander on staffing requirements, the mix of ISEG, where we are currently putting our manpower, where we should be putting it, how are we coming on reviewing the James A. Fitzpatrick LERs, what is the status, typical management overviews.

So if I had to pick a percentage of my time, I would say at this point it is in the range of 10 to 15 percent at this point to manage the program and keep it going. The advantage I have, since I can't put as much time in as I would like, which I certainly will do when this program has ended, the advantage I have is that Mr. Alexander is a very good leader. He manages ISEG. We communicate on the phone probably every day. So really when I give you the percentage, it doesn't even count

the phone calls back and forth in routine support of ISEG.

Q Do you anticipate that fraction will change after the plant is in commercial operation?

A (WITNESS MC CAFFREY) My major responsibility when the plant is in operation will focus on two main areas. One is Nuclear Review Board as board engineer and management of the administrative arm, preparation of agendas and other administrative material, and overseeing the audit program. The other major sphere I will be involved in is regulatory compliance matters, the interaction with the NRC or the regulatory bodies, et cetera, and ISEG. So those are my major spheres as you have seen on the organization chart.

My judgment would be that strict ISEG time would be in the range of probably 20 to 25 percent on an average on a monthly basis.

Q Mr. Alexander, you mention you attend daily meetings at the plant site, reporting to Mr. McCaffrey. I am sure you have frequent conversations with him. What other channels of communication do you feel you have open to you?

A (WITNESS ALEXANDER) Well, I have very free channels of communication, Judge. First of all, I have, I think, a very good rapport with the people on the

plant staff. Mr. McCaffrey pointed out I initially came from plant staff. I know virtually everyone there. And in the course of our projects I frequently interact with them. When I walk through the plant I talk to the people. When I walk through the control room I talk to the people there. I ask them what their problems are. I read their logs. I check their data sheets. I know them. So I have very good input and information from the source.

As far as contact with personnel outside the plant, the Shoreham nuclear power station, I feel I also have excellent communication with people at NOSD. I know everyone there. I can and have called Mr. Kubinak directly on many occasions when Mr. McCaffrey was not available.

I deal frequently with the members of the Nuclear Engineering Department on ERA matters. Mr. Kusak, who is the manager of their systems section, I talk with him frequently. I talk with Mr. Chou. I have talked with Mr. Chou very frequently. He is the manager of licensing nuclear engineering. And somewhat with Mr. Tunney. I know him very well.

I feel I have excellent communications and responsiveness up and down the organization. I have no problems with communication. In addition, I make

frequent written communications. I write a monthly report which goes straight to Mr. Kubinak for inclusion in his monthly report and review. I write a monthly operating assessment report which goes to the managers, all managers, senior managers, Mr. Kubinak, Mr. Vendor, head of Nuclear Engineering, Mr. Ravello. We disseminate it throughout the plant. It is a required reading list. So those people know what ISEG is doing and what our opinions are on various operating experiences. I feel I have very adequate communications.

Q Just a moment, please.

(Pause.)

A (WITNESS ALEXANDER) I might like to add to that also. We have frequent communication with people outside LILCO. We call, ISEG calls INPO at least once a day for various information, sometimes many times a day. The same with NSAC. We call the other plants for information. We have very open communications with other plants for exchange of information.

Also, I might add, since I mentioned Mr. Tunney's name, he is the manager of nuclear fuels.

Q Okay. I would like to switch now to the area of the NPRDS. It rusn out that I am fairly familiar with NPRDS. So Iam not interested in learning how it works, its reports and so forth. I know all of that. NOMIS I know nothing about. So with respect to NPRDS, what has been NOMIS' involvement?

A (WITNESS KUBINAK) I have 100 percent responsibility assigned to me within the nuclear organization to implement the NPRDS program when it was assigned to me. And that follows the philosophy I said before about what is assigned to NOSDS compared to nuclear engineering or the plant itself. It crosses department lines in a number of areas. A number of people outside our organization, I believe, intend to use this in their operations.

When I got the assignment, we investigated

what as going on in the NPRDS arena, and because of that investigation I broke the project up into three phases.

Q About when was this, Mr. Kubinak?

A (WITNESS KUBINAK) This investigation was approximately 1 year ago. We felt at the time we should not start imnmediately working on it. We felt it was most important for plant operations. So we said, in the year 1982 we would accomplish phase one, and phase one had the definition of repairing the data base.

Presently, to give you the status of phase one, I have one engineer and three technicians at the plant actively engaged in gathering the data base. They have approximately 3,500 components completed out of an expected 4,500, giving them about a 75 percent completion. We expect -- oh, incidentally, the data that has been collected has been put on the required forms, as you know, and put on a magnetic tape and is down in the computer at the present time. So it is 75 percent input, 25 percent of the project remaining.

We intend to finish that project by the first of the year, finish phase one of the project by the first of the year, and that is the data base.

As far as phase two is concerned -

Q Just for clarification, I am sure the "data base" is used in different ways and in different

contexts. What I assume you have been meaning is what I would call "pedigree data."

A (WITNESS KUBINAK) That is correct, sir.

Q The basic data on the equipment and components.

A (WITNESS KUBINAK) Basic data on the equipment and components and the environmental data that goes along with that. The engineering data and the environmental data.

Q Right.

A (WITNESS KUBINAK) Gathering that data and putting our information on thed computer.

And the second phase of the project was to ensure that we had input and output capabilities with the main system; again, NPRDS system. This phase includes the training of the personnel to do that type of work, the acquisition of the modem and the terminal, it is necessary to do that work. That phase is in progress. We have three people trained in using the terminal.

We have been in active communication with the data base down in, I guess it is, San Antonio. We have more work to do on this tie. We expect to complete or have active, easy active contact with the data base before the end of the year.

We have recognized at this time that we have

to do input and output work, we have to get information from component dealers in our plant and get it in the system. That is what the system was designed for. We are actively working on this tie.

First of all, it can be done manually, but we would rather not do that. We want to do this in a fairly automatic form. While I was plant manager, we put together a system called MWR, maintenance work request system, to keep track of maintenance work done at the site. That system is in effect and computerized. We hope and we have on the drawing board the extraction from the maintenance work request system to be done by computer so that we can take that information without a lot of manual effort and get it into the NPRDS system.

At the same time, we are working on using that piece of information to do inform, the equipment history data base for plant operations. In phase two we have three people trained. We have them on the computer and we are -- or have contacted our information services people to scope out this automatic tie between the maintenance work request system the NPRDS system, and the equipment history system. I would have to classify that phase as 50 percent complete.

Phase three was to make a recommendation to

the vice president, nuclear, as to how he should make use of this system within his organization. At the same time, with that recommendation would go the procedures to be used to handle the system with all of the organizations involved.

This phase has really not been started. We have some difficulty with INPO. We cannot finalize with them what they can really give us. It appears that they have just changed that system over from someone else to INPO. It appears from attending meetings down there, my people attending meetings down there, that the system is not yet finalized. Given that condition, I hesitate making these recommendations to the vice president.

We are there all of the time when they have a meeting, when they have a workshop, we are there. We think we are up on the system with them. We think we understand some of the problems involved. For example, one of the things we can do with the NPRDS system is trend failures by computer. I have not been able to get the answer from my people as to do they have a computer program within their data base to do this trending for me or do I have to extract information from the NPRDS data base into LILCO's computer and do that trend work.

That answer is not available. At least I have not been able to get it. And that leaves some big holes

in the application of NPRDS to the LILCO system. I think e are waiting for them. Once they finalize their input -- and I understand also from my people that there is a lot of input from the Nuclear Regulatory Commission going into that data base also -- once they have finalized what they will have available for me, I can make some intelligent decisions or recommendations to the VP nuclear as to how he should use that system within his organization.

That then, of course, comes down into the generation of a policy as to how he wants to use it and the procedures. I think that is pretty much the status of NPRDS within LILCO.

A (WITNESS ALEXANDER) I might also add, Judge, while we find data is not readily available, there are quarterly reports we get and distribute. Their output is not in the best format for usability.

However, we can and do regularly perform failure searches thruough the NPRDS system. ISEG has performed at least -- I personally performed at least two for components we had suspected. So we do use the data base of other plants at this time even though we haven't actually formulated an overall policy as to how we intend to integrate it into the system.

Q I believe there have been at least two major

criticisms of NPRDS, and the one is that it doesn't give adequate information on root causes of failure. Does the LILCO MWR system address itself to that problem?

A (WITNESS ALEXANDER) Judge, I am almost positive the MWR does lay down cause of failure, but I am not certain how far it breaks it down and what coding the form actually uses. We could get back to you with that information if you would like.

Q One of the problems with a computerized system is you have a finite choice as to entering a root cause, so that the information sometimes is not very specific as to what actually happened.

A (WITNESS ALEXANDER) The MWR does offer a finite choice of cause codes.

Q Do it also operate free field in which we can really describe the cause?

A (WITNESS ALEXANDER) I am not sure on that. It offers a free field to make comments. I am not sure it actually has a free field for writing large amounts of cause, giving information.

Q The other criticism was the rate, the failure rate of data were suspect in that they were derived from a system which assumes no failure and no challenge or rather that the only challenges were from routine tests which are at a fixed schedule set by procedure or tech

specs, and that if there were a nonroutine challenge to the system, that might not show up in the system. Are you familiar with that problem?

A (WITNESS ALEXANDER) I can understand the problem, Judge, but I don't believe our MWR system would capture that. And if a person just turned on the RHR pump for containment cooling as a routine function, there is no input to the computer system data base that would say the pump went on this one time and worked properly as opposed to in a surveillance course if he started the pump for a surveillance test, that, of course, would be fed into this balance program.

So for routine uses, I don't think it is identified in our program either. Of course, if he started it and it didn't work, then an MWR would be generated.

Q Yes. I guess we are defining the problem a little better. It shows the failure but not always the total history of success. So that the ratio may be suspect.

A (WITNESS ALEXANDER) Yes, Judge.

Q I would like to move to NOMIS. And as I said, I do know the system, so I would appreciate a brief description of what it is.

A (WITNESS MC CAFFREY) I have a publication

from NUS, a publication, a NOMIS, which means "nuclear engineering and maintenance engineering service," is a commercial venture run by NUS Corporation.

To me it is a bit different from the INPO programs which are sanctioned by or endorsed by the Nuclear Regulatory Commission. This is a commercial venture that right now has it the range of 60 to 70 plants in this country participating. LILCO is a member of NOMIS.

Its primary features, according to the people I have talked with, are operation-oriented more than engineering type feedback. But it's a system anyone can access and obtain information. Some of the advantages of NOMIS is it is run by an outside organization, NUS Corporation, and they provide a monitoring and assurance of feedback. So if you input to the system and are seeking a failure rate history on a given component, NUS will take it upon itself as the organization running the program to send out to the participating utilities that request and follow up to assure the answer is obtained, compile the answer, and report back to the requesting utility. So that follow-up feature is a very important fature.

If I could just read from the short description that NUS has put out, it begins by saying,

the nuclear operations and maintenance information service, NOMIS, was founded on the premise that daily maintenance or operations problems in one nuclear power plant will someday appear in another.

So they are supplying a feedback circuit, an operational feedback. There is a need to transfer problem-solving information from plant to plant as expeditiously as possible, utility guidance. NOMIS has responded to this need. Most importantly by becoming a verbal clearinghouse of operational and maintenance information from operational and pre-operational nuclear power plants. I think Shoreham fits in the latter category.

NOMIS also publishes timely reports in a monthly newspaper, holds semiannual and topical meetings and provides selected research assistance for its sponsor. That, in a nutshell, is a reasonable description of NOMIS.

A little bit further it says in here that NOMIS can also be of significant value as an engineering information feedback source and can assist in finding spare parts. Especially during a forced outage condition, the plant staff may not have the time to spend hunting for them.

That gives you a feel for what NOMIS can do

for you. It has some of the same capabilities as NOTEPAD. You can input in the system, search the industry and get feedback. The follow-up feature is a nice advantage. LILCO joined NOMIS in July 1981. It is an annual contract with NUS Corporation. The plant has been using it.

The other nuclear organizations such as ISEG, the nuclear engineering department and the like, are being made fully aware of the potential use of NOMIS so they can access it also. Even though it is administered by the Shoreham station, the NOMIS program is run by the plant technical support manager, directly under the plant manager, Mr. Jim Rivello.

At this point, the plant finds NOMIS advantageous and it is worth the monthly charge it costs us to participate. Our position is going to be that we will evaluate the continued usability and worth of NOMIS on an annual basis, but our plans right now are to continue participating.

A (WITNESS ALEXANDER) I might point out ISEG has used NOMIS, and we were very satisfied with the results.

JUDGE MORRIS: That is all the questions I have. Thank you very much.

JUDGE BRENNER: I have one or two quick things.

BY JUDGE BRENNER:

Q I am trying to understand where you gentlemen believe there might or might not be a need for communication or some sort of interrelation between the persons in charge of the power ascension program at the plant. I don't know whether that would be startup organization purely or the plant organization or, as I suspect, some combination of the two and ISEG and ROC.

I understood your answer before in terms of what is currently happening on the plant and what ISEG is doing or not doing with the startup organnization given the current circumstance. But what role do you see for ROC and ISEG at the beginning of the power ascension program?

A (WITNESS ALEXANDER) Judge, the power ascension program is the startup test program I described before, the General Electric startup test program. That is under the cognizance and direction of the plant manager, Jim Rivello, and is actually supervised and coordinated by the reactor engineer, John Scalice. All of those tests which are performed are reviewed and approved by ROC and then approved by the plant manager.

ISEG has said, we will be observing the tests and after the test reviews are complete we will also be

looking at the results of the tests not in a blind function. We will not hold up the reporting of the testing as we look at these things, but we intend to go back and go over the results of these tests looking for technical features or indications of possible problems or areas for potential improvement and report up through our chain of command.

Q I guess just looking at the written information, as I did before having the benefit of having the benefit of your presence here, I wondered why I didn't see Mr. Youngling's organization represented either on the ROC or on some interface. Maybe the answer is his organization doesn't have a role once the power ascension program begins. I will have to doublecheck that with you now.

(Pause.)

Q I guess basically I am confused as to whether it would be Mr. Youngling's organization that would be on the spot, so to speak, as things occur in the power ascension program or whether everything would come under the cognizance of Mr. Rivello.

My question is to the interface of ROC and ISEG entering the power ascension program.

A (WITNESS KUBINAK) I believe I can answer that and provide some information with that answer. The

startup test program is under direct control of the plant manager. The startup program, under the direction of Mr. Youngling, involves acceptance testing and pre-operational testing. Once that testing is complete, he takes those systems, those packages of things as they are created and turns them over to the plant staff.

The reactor engineer on the plant staff is the person who has the responsibility to schedule that startup test program. He has at the present time a draft startup test program, a profile, a load profile, a reactor load profile, and an electrical load profile, and the tests themselves which were approved.

The tests were approved by the Review of Operations Committee. Built into this test program are plateaus or levels of which these tests are conducted. The results of the tests as they are conducted are brought into the Review of Operations Committee meetings which are under the direction of the plant manager, under the chairmanship of the plant manager.

The Review of Operations Committee is continuously in contact with the startup test program. The committee is made up of the plant section heads who are conducting and directing the startup test program. There is excellent communications then between the startup test program itself and the plant staff because

they are one.

Mr. Youngling is theoretically -- Mr. Youngling's staff has decreased to zero. Theoretically they have decreased to zero, but he is to be aware that all pre-operational tests and acceptance tests cannot be accomplished before fuel up. So he does have a role.

Mr. Youngling during his startup test program when he is conducting the pre-operational tests and acceptance tests, has meetings in the sasme room where the plant manager holds his Review of Operations Committee meetings, and the plant manager goes to those meetings. So he has a good communication link to the startup people.

Q That answers my question. Thank you. As ISEG, in terms of the work it is doing now, that is, reviewing reports to see if there are any trends it picks up or, conversely, being apprised of some trends and following through to see how they result in the reports, have you found anything you have had to communicate to these persons who are involved in startup now and will continue through startup that you want them to watch for or that has changed their procedures, something of that nature?

A (WITNESS ALEXANDER) We have completed and approved approximately ten projects to date. There are

still some others pending, but we have completed ten, approximately half of which have some recommendations. These recommendations have been approved and forwarded to, in one case, a nuclear engineering department, but for the most part to the plant staff itself.

To this point, they have mostly resolved it in changes to procedures or changes to observed maintenance frequencies; mostly, changes in procedures at this point. Those changes have been accepted and discussed with the plant staff and they have, I believe, accepted them and will move their procedures. We have not picked up any trends or unexpected transients to look for. Therefore, we haven't had an occasion to warn plant staff necessarily for that.

We have had some situations, for instance, a discussion with the problem of the SRV instrument, the hatch for the SRVs did not open. We made sure the plant staff was informed of that. We gave them all the information we had.

In addition, we put that information and a lot of other operating experience information into these monthly reports we produce and are disseminated from the manager level all the way down to the user level to the reactor operators themselves, informing them of unusual transients or situations at other plants for which they

should be on the lookout or at least be informed. So we have done it at that level, but we haven't had any circumstance yet that would require us to take an active or try to start a test program, anything like that.

Q You must be a mind-reader. You have picked an example in your answer just now that was on everyone's mind. Can you give us some examples of the procedural either changes or they may not have been changes per se, they may have been things you wanted to make sure they were considering in the procedures. The ones you consider the more significant ones. You don't have to run through them all.

A (WITNESS ALEXANDER) One we are currently working on now is cases of organic intrusion into the primary cooling system. It occurred at Peach Bottom and it occurred at Hatch, I believe. This is one of the things we used NOMIS for. We conducted an industry search to find out what other plants are doing with regard to keeping organics out of the primary coolant. The end result was we recommended to the plant that they first of all sample on a regular basis for organics into the condenser, into the condensate storage tank, and through their radwaste system, which it turns out is the most likely source of organic intrusion.

We recommended they buy a machine so they

could sample it. We provided them with a couple of recommended models and vendors.

We recommended and drafted for them a proposed procedure to prevent crust contamination through the use of color coding of funnels, drain funnels in the plant, and mechanical jumpers, temporary hoses, to prevent, in an extreme example, to prevent a person from using a hose that had been used to transport caustic to the new. It has a breathing air hose.

So we proposed a color coding system for that, and we expect to present that project not at the Friday meeting but the next meeting of the ISEG Committee.

Approved projects we have are crane check valves. There have been a lot of problems with a particular model of crane check valves. It turns out that, lucky us, we had some of those at the plant. So we proposed increasing the frequency for inspecting these check valves to make sure that they didn't, or to catch an incipient failure of these check valves.

Q Where did you pick up the check valve situation?

A (WITNESS ALEXANDER) We got that from INPO on the significant event report program.

Q Do you know if the NRC Staff put out a bulletin on it?

A (WITNESS ALEXANDER) They put out a plethora of bulletins on that one, check valves. But that particular model hasn't hit their system yet. But they have covered just about all of the check valves at one point or another.

We did a project in recommending the installation of a hydrogen detector on the exciter housings for the generator. There had been several instances of hydrogen leaking into the exciter and then ultimately exploding. So we proposed a simple hydrogen detector be installed and alarmed to the control room. We forwarded that project to nuclear engineering for engineering.

Q I guess I will ask the same question. Where did you pick up that situation?

A (WITNESS ALEXANDER) I got that from the SEEIN program. That initially came out as an SER and was followed up by an SOER by INPO.

Q I didn't hear your first words. What program?

A (WITNESS ALEXANDER) SEEIN, S-E-E-I-N, significant event evaluation information network, I believe is the acronym, similar to that.

Q Should I know that one? Is that a part of INPO?

A (WITNESS ALEXANDER) Yes, sir. Part of it,

the SER program, comes over the NOTEPAD system, which is monitored and managed by INPO and the SOERs come through the mail.

A (WITNESS MC CAFFREY) Judge Brenner, on the issue of other related bulletins, the ISEG engineers evaluate a given SER or SDR that has come out through the SEEIN program. One of the first things they look through is whether there was notice of that having occurred already through either the I&E bulletin circular or information notice system. So what they do is they go research the files to find if there are related bulletins to make it a part of the data base they are evaluating.

As ISEG continues that bulletin circular information notice system for the evaulation and close out of those documents currently performed by the project, which will go away as the plant is in operation, the bulletin circulars and information notices will be cleared through my organization. All will be forwarded to ISEG for their information as potential significant feedback experience notwithstanding that bulletin or whatever being assigned to nuclear engineering to prepare the appropriate response.

Q You anticipated. One reason I asked the other question is I have visions of the recipients of all of this valuable information, getting ten copies from ten sources about the same problem in the same timeframe and

having to sit through more rather than less to find significant things. It was in the back of my mind when I asked the other question, and it was apparently in the back of your mind, too.

Are there any others you care to give? Again, I am not focusing on the technical merits of the individual issue. I am trying to get a feel directly and for the sake of the record as to what types of things ISEG has been doing.

A (WITNESS ALEXANDER) We monitored plant training on three occasions. We found some minor -- In monitoring plant training what we did was checked lesson plans we used to make sure they were technically correct. We found that basically there were a few minor changes. We sat in on the classroom to make sure the information that was being put out was what was in the lesson plan and correct.

Q Did the instructor know who you were or who the ISEG representatives were?

A (WITNESS ALEXANDER) The first time, no. Then after they found out --

Q Word gets around.

A (WITNESS ALEXANDER) Yes, sir. I did an audit of the station equipment clearance procedure. That was one we picked up in wandering through the plant. We

noticed some discrepancies in the kind of red tags that were used, so we decided to do an audit of the danger tags or equipment clearance tags they use in the plant. We had some minor recommendations there. We picked up an event where the service air lines had been backfailed at another plant with radioactive water, and we checked to make sure that the design at Shoreham would preclude that as best as possible that you could design it, and we basically were unable to find any places where there was even a similar design or a similar occurrence would occur.

That took almost, I would say, three man-weeks to perform because we actually went out and looked at the tanks and the arrangement of the valves. So a lot of these reports we do, we find we do an awful lot of work and come back empty-handed.

Should I go on?

Q I don't mean to attach any particular importance to your answer. I am just curious. Have you reviewed any of the startup work to date or the procedures in terms of possible water hammer problems that you might have picked up during the startup of other similar plants as a part of the ISEG program? I don't mean whether LILCO as a whole has considered it. Have you heard about that?

[Pause.]

A (WITNESS ALEXANDER) I have two projects currently pending on water hammer. The first is a general, general open-ended water hammer project that I picked up from an INPO significant event report. I don't have any termination date in mind. It is basically a project plan. And what I am doing is taking all of the operating experience I have found with reference to water hammers and stuff it in this folder, and every once in a while go back and review it until I can find something that seems to give me a clue as to a trend or something.

Secondly, as part of a settlement agreement, ISEG was committed to review the alarm response procedures for two systems -- well, for many systems, but by a certain particular date, core spray and HPCI, and in reviewing those alarm response procedures, we found two cases where water hammer events could be a factor.

We informed the plant of that through common control forms, which is their way of controlling comments, and in addition, we intend to roll that information as a final recommendation into the final project plan report. We are committed to have that first phase done before, I believe, it is fuel load.

There is a date attached to it, like in March or so, or fuel load, whichever comes later, but I expect to have that done by January 1st, and that report will be published at that time.

So yes, we have had two instances where we have run into the water hammer issue.

Q Just using that last point as an example, and solely as an example, does ISEG do much in the way of follow-up to see whether plant staff (a) accepts the suggestion and (b) whether plant staff's view of accepting the suggestion is the same as ISEG's view of how it should be implamented?

A (WITNESS ALEXANDER) We have by our procedures a tickler file, and when a project is complete, we take the tickler or we enter this project with the recommendations into the tickler file and we schedule it several months in advance or further down the line, and when we get to that point, we go back to verify that the plant staff has dispositioned our comments. If they haven't, we will expect to try to influence them or encourage them to reach some sort of disposition. At that point, once we have a disposition, we will compare it to our results, and if we have problems with it, we will take it up with the manager of NOSD and he camm bring it up to the plant manager to bring up our

concerns.

Built into those comment control forms, it is a multi-colored form, so when I made those comments to them, I get back a particular-colored sheet which I have included in the project and will include their disposition of those comments.

Q Did you want to answer something, Mr. McCaffrey?

A (WITNESS MC CAFFREY) Yes, Judge Brenner. If I could just add that in my view, and I think Mr. Kubinak shares my view, any organization where we have made a recommendation, we consider that obligatory to implement that recommendation. Now, from a philosophical viewpoint, we have had discussions with Nuclear Engineering and the plant staff. We make a recommendation to address a certain safety or reliability concern, and we may have suggested a certain way to alleviate that concern. They have the flexibility to come back to us and offer an alternative way of resolving the same concern, and perhaps they will have come up with a better mousetrap, in which case we will certainly listen. We feel it is our obligation to ensure the concerns we have raised are adequately resolved in an acceptable fashion, and if not, we will take it as high as we have to go to get that result.

Q Your answer is helpful. I think you focused on the easier possibility, that is, where the plant staff says no, we disagree. I was thinking of a sometimes harder possibility, where they say they agree but the communication gap was such that the recipient may not have fully appreciated the intention of the suggestor. That is what I had in mind.

A (WITNESS MC CAFFREY) I encourage both the ISEG supervisor engineers that if they are coming up with a recommendation, that when that is presented to me at the ISEG committee meetings, I would like to have seen them first run that informally by the people who will be seeing it once it makes the loop and comes back again. I don't want to hear the feedback being something we should have been aware of before we consummated the recommendations. So that feedback is encouraged. I think that will increase the probability of the recommendations going through far more smoothly.

Q Yes, that is consistent with what you said before. I didn't put the two together, so thank you for doing that.

If what ISEG comes up with in terms of a recommendation -- and let's assume that the plant staff implements it -- involves an operational approach -- it could be an operational procedure, for example -- how is

this formalized to the point where OQA is apprised of this now being a change or an addition or something to look for, or you may think that it's not necessary to do that. I understand if you redo a whole new procedure, OQA will then be apprised of the new procedure, but I am thinking of a situation where there is a change in approach but it doesn't quite reach the level of changing the basic written procedures but ISEG has come up with something they would like the plant to watch, and in turn, if the plant is watching something, as I understand things, it might be something that OQA should know about should they choose to audit it. I wonder if there is a loop in OQA somewhere.

A (WITNESS ALEXANDER) Judge, if it is a procedural change that affects any procedure under QA cognizance, whether it is administrative, safety-related, it is noted on that PPSL as an asterisk under the QA column. In order for that procedure to be approved at ROC, QA must go along with it. Even if they change one letter in the procedure, they must be apprised. So there is no minor change that can be brought past them.

In addition, because they are in the regular plant staff, they have available from the plant manager all of the information we send through them, and as I

said, in our monthly operating experience report they have available to them required reading. It is on that required reading list. So they would know what we are talking about in general.

Q When you make your comments -- I forget the exact title on that multi-part form -- does that go to all of the members of ROC or particularly does it go to the OQA engineer in addition to the action recipient, or does it have to come up on the ROC agenda?

A (WITNESS ALEXANDER) What would happen, Judge, I would make the comment to the operating engineer. He has a henchman who actually redoes the procedure to incorporate the comment or to come up with a reason why it shouldn't be incorporated. I know him personally, and he basically comes over and asks me what I really want on the form. The procedure is then marked up and brought into ROC.

Now, in this particular case we are talking about, these were alarm response procedures, but they are approved at ROC. So the procedure is actually brought up. Where the procedure has changed is noted in the margin when it is presented at ROC, and QA is there. QA has an input. They know what was before. They know the changes and they are told why they were made.

Q Again, backing up slightly, I was envisioning the possibility of a situation where the procedure if written could encompass the old way of doing things, which you found not to be the best way, and the new way of doing things given the new insight you had gained. It could be an addition, it could be a change that still wouldn't vary a description in the procedure. We have seen some procedures in which things can be done different ways depending upon the discretion of the persons responsible, and I was wondering about that type of approach. Maybe you are telling me if something you found needed to be done differently, it would become an addition to the procedure.

A (WITNESS ALEXANDER) Yes, Judge, I believe it would. I know it would. If we made a recommendation and it was acceptable, it would be incorporated into the procedure and approved at ROC, and if the plant staff found it unacceptable, they would return the comment, we would disposition it that way, and if we had a disagreement, we would take it up through the management to resolve all the way up to the VP-Nuclear.

A (WITNESS MC CAFFREY) Judge Brenner, if we look at the entire process through complete closure of a recommendation, I think we regard closure as when the recommendation is implemented, not merely the commitment

by the assigned organization that they intend to implement it. So in the case of that H_2 monitoring generator, we will track that one through they minute they put it on the machine.

JUDGE BRENNER: That is all I have. Thank you very much.

BY JUDGE CARPENTER:

Q Mr. Kubinak, I have just one question. Would you give me your reaction to Mr. Alexander's remarks that they spent three weeks looking very carefully as to whether it was possibly organic contamination left in the plumbing and came up empty-handed? He sounded a little disappointed. I would love to get your reaction on that. It is really an attitude. What do you really hope ISEG would do? He expressed disappointment. He came up empty-handed.

[Pause.]

A (WITNESS KUBINAK) Yes, I think Mr. Alexander is a very aggressive person who does an excellent job and likes to see an outcome from the jobs he does. I don't think he expressed disappointment, incidentally. I think it was more like I put a lot of time in on it, boss, and I didn't come up with anything to help you; not that he was disappointed but he indeed made a try at it, he found something, he took a look, and he said this

is the best I can do, we have no intrusion into our pipes here. And I take that as being just fine. He spent a lot of time. He spent three weeks, and he feels bad he spent that kind of money. I don't.

Q That is what I wanted to get a feel for. I guess I am a maverick, but to me, "10 o'clock and all is well" is a very useful product. Coming back to Judge Morris, being on top of things, I think this is exactly the direction we are trying to look at, the recognition that the ISEG group might work very hard looking for potential safety improvements without seeing any and working and doing one hell of a good job in the sense of, yes, we have affirmed, we have explored beyond the original design considerations in a particular correction, and increasing the understanding of the plant in the direction of more safe operation, "10 o'clock and all is well." That is why I was curious to get your reaction.

A (WITNESS KUBINAK) That is certainly fine with me.

A (WITNESS MC CAFFREY) Judge Carpenter, if I could add to that, I would view the three weeks expended there as certainly not lost time. Three works were expended researching the plants, walking down systems and gaining additional knowledge of this plant. I think

also I would hope we do not find a lot of things out there when we ultimately do these investigations because that will be indicative of a plant well-conceived, well-thought-out and well-built. And as I believe we have continued over the some ten years this plant has been built, to continue to factor in things like bulletins, circulars and industry feedback to assure as few as possible deficiencies in design or ways to make it better have made it into the plant. That should be borne out by ISEG going in and looking at things. I think they will find a well-built plant, but certainly their charter is to make it better.

Q And also to keep looking. It is a very tedious, in my mind, process. You will not make headlines, you will not have projects that produce big changes, we all hope, in the plant. I wanted to see if there was agreement that that was the flavor of ISEG.

A (WITNESS KUBINAK) Yes. He comes up and we discuss that situation, and I concur, they have gone to the right depth and did the project according to the project plan. I feel good about the fact he found nothing.

Q It is a very positive result there, an affirmation that that safety concern is put to bed. I think that is as useful, if not more so, in the sense of

what ISEG does that no one else in the plant does.

A (WITNESS KUBINAK) Yes.

JUDGE CARPENTER: I thank you. I couldn't help that comment.

JUDGE BRENNER: Well, it is 10 after 5:00, so I think -- Mr. Bordenick.

MR. BORDENICK: I think I owe the Board and the County some information on the Staff's plans vis-a-vis cross-examination of the County's witnesses. I have consulted with Mr. Earley -- I should say coordinated our cross-examination efforts. My cross-examination will largely be follow-up type, so (a) I don't think it is necessary to file an amended cross plan, and (b) I will not have any documents beyond those designated by the Applicant.

JUDGE BRENNER: Given what you have said, I agree with your "(a)," and as for your "(b)," you spoke for yourself.

Incidentally, speaking of revised cross plans, and I would like to speak of it for 30 seconds, we never expressly stated what the procedure would be for inadequate core cooling, which is the next contention coming up. We have long received cross plans, but as we have stated many times, variations as a result of discussions could be warranted in the testimony and/or

cross plans.

In addition, unless the parties object, it would be reasonable, I think, to return to the other procedure of putting the Staff witnesses up on the same panel with LILCO's witnesses. But if there is a reason to vary that procedure, we will entertain the parties' telling us. The reason we know is so that parties preparing revised cross plans can judge accordingly.

We will adjourn for the day and begin at 10 o'clock, as we stated, tomorrow morning.

[Whereupon, at 5:12 p.m. the hearing was recessed, to reconvene at 10:00 a.m. the following day, Thursday, November 18, 1982.]

NUCLEAR REGULATORY COMMISSION

This is to certify that the attached proceedings before the

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

in the matter of: Long Island Lighting Company (Shoreham Nuclear Power Station)

Date of Proceeding: November 17, 1982

Docket Number: 50-322-OL

Place of Proceeding: Bethesda, Maryland

were held as herein appears, and that this is the original transcript thereof for the file of the Commission.

Sharon Filipour

Official Reporter (Typed)

Sharon Filipour

Official Reporter (Signature)