NUCLEAR REGULATORY COMMISSION

IN THE MATTER OF:

PUBLIC MEETING

STATUS REPORT BY STAFF ON UCS PETITION

FOR EMERGENCY RELIEF, AND POSSIBLE ORDER

Place - Washington, D. C.

Date - Thursday, 8 December 1977 **Pages** 1 - 54

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UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

PUBLIC MEETING

STATUS REPORT BY STAFF ON UCS PETITION

FOR EMERGENCY RELIEF, AND POSSIBLE ORDER

Room 1130
1717 H Street, N. W.
Washington, D. C.

Thursday, 8 December 1977

The meeting was convened at 10:50 a.m., pursuant to notice, Dr. Joseph M. Hendrie, Chairman of the Commission, presiding.

BEFORE:

JOSEPH M. HENDRIE, Chairman
PETER A. BRADFORD, Commissioner
VICTOR GILINSKY, Commissioner
RICHARD T. KENNEDY, Commissioner

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P R O C E E D I N G S

CHAIRMAN HENDRIE: We will come to order.

We are on a somewhat taut schedule this morning.

Yesterday I had a high level appointment.

And had to leave the Commission sort of in midstream.

Today Commissioner Kennedy has even a higher level appointment, and I have to leave about a quarter to 12:00.

I hope we will be able to complete this sections of the proceedings by that time.

We meet this morning on the matter of the petition by the Union of Concerned Scientists, who have petitioned for emergency relief, on the basis growing out of some tests by Sandia Laboratory of electrical connectors and cable fire propagation matters.

The petition dates from the 4th of November.

Pretty soon thereafter the Commission called for a meeting and Staff response.

I believe our last meeting on this subject was the 11th of November, which the Commission heard discussion of the emergency aspects of the petition and whether or not the petitioners' request for emergency action, which was essentially to close down operating reactors, and halt construction on others, was necessary for the public safety.

The Commission concluded at that meeting that they did not feel that emergency action was required at that time,

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but that the Commission wanted a report from the Staff and asked the Staff to continue what was then an ongoing survey of the operating plants to confirm initial conclusions of the Staff.

The Commission asked for public comment as well as a report from the Staff and noted that as information developed it would take whatever interim action it felt was necessary in the public interest.

I would note that one of the results of the Staff survey was the voluntary shutting down of the D. C. Cook plant to replace the connectors which were found not to have been adequately qualified.

They may be back up by this time. Are they?

MR. CASE: Yes.

CHAIRMAN HENDRIE: Are they back in operation?

The initial request of the Commission for Staff report and public comments was for filing of these by the 25th of November.

The Staff requested an extension until December 12th, and more recently, until the 15th to complete their full set of comments on all aspects of the petition.

There is a meeting scheduled for the 22nd of December to consider that full range of issues raised in the petition.

Even though the Commission has been keeping track of

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the reports, the additional filings from petitioner, from the Staff, the public comments, and has not thus far felt it necessary to take any further immediate action.

It has seemed to us useful to have this meeting to have the Staff summarize its findings to date to see what further action the Committee might want to take.

We have also a request from the Union of Concerned Scientists to allow Mr. Pollard to participate and we have had a letter from another party along similar lines.

Yesterday the Commission voted to, and since I had to get up and leave my colleagues to thrash that matter out for themselves, I will ask them to assist me.

We voted to allow Mr. Pollard to make an appearance and opportunity for questions by the Commission.

COMMISSIONER GILINSKY: Yes.

CHAIRMAN HENDRIE: If that's a fair reading --

COMMISSIONER GILINSKY: It is.

CHAIRMAN HENDRIE: -- reading of the Commission decision.

COMMISSIONER KENNEDY: You decided as well, Mr. Chairman, on a two-to-one vote.

However, the other party's request for the same consideration was denied.

COMMISSIONER GILINSKY: We put off for another day.

COMMISSIONER KENNEDY: Put off for another day,

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although the request for specificity was also laid out.

CHAIRMAN HENDRIE: So noted. I think the outline which I would like to follow this morning is to ask the Union of Concerned Scientists, I assume Mr. Pollard is present.

MR. NELSON: They are enroute, Mr. Chairman.

We were surprised to see they weren't here and called the lawyer who made the request and she was confused about the time of the meeting.

They advised us they were on the way.

COMMISSIONER KENNEDY: This was discussed yesterday when Mr. Pollard was present.

MR. NELSON: Yes. Duly noted under the Sunshine Act -- I don't know the reason for the confusion.

You might want to put the question to them.

COMMISSIONER KENNEDY: As long as it wasn't our fault, I don't care.

MR. NELSON: Not that I know of, Mr. Commissioner.

On this one we are all right.

COMMISSIONER KENNEDY: I just wanted to be sure we had done what was necessary.

CHAIRMAN HENDRIE: I must say on occasion I have missed a meeting myself.

Well, I thought probably the best arrangement might be to have Mr. Pollard talk to us for a little bit and answer some questions first and followed by the Staff, but

these events make it appropriate to ask the Staff to go ahead and summarize their situation to date, the progress on the survey, how things stand.

MR. CASE: Thank you, Mr. Chairman.

Mr. Roger Mattson, director of the Division of Safety, who has had overall responsibility for pooling the efforts among the divisions and NRR will give you a briefing.

MR. MATTSON: As you noted, Mr. Chairman, this is our second briefing in the course of time that's transpired since November 4th. Two briefings, five status reports, a final filing by the Staff next week, leaving in detail all of the elements of the petition and some two supplemental filings by the petitioner, plus some 43 public comments. The activities I hope to summarize today have been arduous.

A number of things to consider.

A number of points to keep track of.

I hope by this briefing to pull together the principal elements of the work that has gone on and put it together in one place rather than scattered about in five or six filings.

CHAIRMAN HENDRIE: Also as soon as possible in view of the time.

MR. MATTSON: Soon. Our recommedation on November 11th when we were up here to brief you on the November 9th first status report is unchanged.

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That recommendation is, there is no need for immediate Commission action flowing from this petition.

The basis for that recommendation on no need for emergency action or immediate action is that the issues raised in the petition have been thoroughly treated by the Staff, early examined for all operating plants and that all necessary actions to assure the continued operations are safe have been taken.

COMMISSIONER GILINSKY: When you say "no necessary action," I take it you mean no across the board action covering a whole class of reactors.

Where necessary, you have taken action.

MR. MATTSON: Yes. I'm making a recommendation insofar as the Commission is concerned, both generically or plant specific, saying neither type of action is required immediately by the Commission because of actions either taken by the Staff or because our surveys and review have shown no need for action by anyone.

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COMMISSIONER GILINSKY: But in the past, where you thought -- I presume you thought action was appropriate, action was taken.

I mean the Chairman referred to voluntarily shutting down of the D. C. Cook plant, but my understanding was that, had they not done so, I think we would have asked them to.

MR. MATTSON: Yes, sir.

MR. CASE: I think that is a fair statement, but I would like to observe that I and the Staff believed that the actions of the Licensee were very responsible under the situation at hand. We would like to commend them for it.

COMMISSIONER GILINSKY: That is fine. But where you felt immediate action had to be taken, you moved out and took action.

MR. MATTSON: There were other actions of an immediate nature I would like to summarize as we go through this. It is fair to say that Cook was the most immediate action.

There were other plants with connectors, where qualifications were less certain and time was allowed for people to pull together information.

COMMISSIONER BRADFORD: Were there other actions that involved the replacement or altering of plants, their operation?

MR. MATTSON: No. I would like to move directly to

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a summary of the actions we have been talking about. Those fall generally in the area of environmental qualification of electrical equipment. As you have noted in our reports, we have talked about two preliminary surveys of two particular kinds of electrical equipment in operating reactors, to determine the state of their environmental qualification.

First was the electrical connectors that we reported on earlier, in our November 11th briefing.

Second was the electrical penetrations, specially those of a type that were found to have recently malfunctioned at the Millstone 2 operating plant.

I would like to turn first to the connectors. The preliminary survey we have described to you of the use of electrical connectors in safety systems, located inside containment, that would be required to function in the event of the accident which they are designed to mitigate, that survey is complete. We have found that 14 of the 65 operating plants had connectors in use in such safety-related systems.

We found that the actual connectors in those 14 plants had varying degrees of pedigree of environmental qualifications.

COMMISSIONER GILINSKY: The other plant did not have safety connectors at all?

MR. MATTSON: Not in safety systems located inside, required to function for the accidents they are designed for.

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Fourteen plants with varying degrees of pedigree, the actions we have taken with respect to those fourteen plants are directly proportional to the pedigree.

COMMISSIONER KENNEDY: Would you explain "pedigree"?

MR. MATTSON: I would like to.

(Slide.)

CHAIRMAN HENDRIE: At the previous session the Staff noted the restrictions on the type of slide made it difficult to get much information on the slide. I note you moved aggressively ahead, nevertheless.

MR. MATTSON: This slide is not new information. What it attempts to do is summarize in concise terms the information that is contained in the several status reports and starting at the top of the slide and going down, you will see what I am talking about with regard to pedigree. That is the pedigree of environmental qualifications for the plant at the top was the worst of the 14 and the plants at the bottom were the best of the 14. If we could go through them briefly.

D. C. Cook Unit 1 we have already talked about. Their connectors were found by us to not have been tested, to have no documentation. The plant was voluntarily shut down with the following confirmatory order on November 18. They subsequently replaced all of the connectors with butt splices which have been subsequently fully environmentally-qualified by test, and the plant resumed operation on December 2nd.

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COMMISSIONER BRADFORD: How could it have come to pass that D. C. Cook was ever able to commence operation without qualified connectors?

MR. MATTSON: D. C. Cook, American Electric Power committed in their safety analysis report that the equipment met environmental qualification requirements.

They have done the same thing for Cook Unit 2. Upon questioning, under the survey for "Did they have the connectors?" Yes, they had the connectors. You will recall in my first briefing, I identified this plant to you as one we found with connectors and also said at that time the Licensee told us prior to November 11th the connectors were qualified. Subsequent to that time, in trying to find the environmental qualification records, the Licensee went to the supplier of the connectors and, although the purchase order required environmental qualification tests, none had been done.

So what we have is apparently some kind of quality assurance documentation mistake in the procuring of equipment for that facility.

MR. CASE: That matter is being looked at by I&E separately from what we are doing here.

COMMISSIONER BRADFORD: It is being followed up?

MR. MATTSON: Yes. It is important to know, the review of electrical equipment we conduct due to the Regulatory Guides and our review plans, is an audit type. The Applicant

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will commit to environmentally qualify the safety-related equipment. We will look at the methods, procedures, criteria that he plans to use and in the course of our review either approve or change those things.

We then do an audit review to confirm that equipment is indeed qualified, according to the way the Applicant said he would do it.

In the case of D. C. Cook, the audit did not involve the connectors.

In the next class of plants, if we can continue on down the order of pedigree, was a group of plants similar in the sense that the initial submittals to the Staff, that is, we called those people, they said, yes, we have connectors, we said, come to Washington and show us what you have by way of qualification testing to support their quality.

They came in; they showed us what they had. This group of plants had some qualification and documentation, but incomplete documentation qualification.

They were all given a letter on November 18th requiring them to answer in ten days, to speak to the qualification requirements or provide a basis at that time for continued operation, pending completion of full qualification.

They are all back in now, and their status of qualification is as noted here.

We have found they are all qualified. Confirmatory

tests to support analyses which were done for some of that qualification are under way.

COMMISSIONER GILINSKY: Who is doing those? The Licensees themselves?

MR. MATTSON: Whether they are doing it themselves or under contract. I think the case of Browns Ferry, I think it is the Licensee.

MR. IPPOLITO: I am not sure about the long-term, but the short-term was conducted by the Licensee.

MR. MATTSON: In the case of Oyster Creek --

COMMISSIONER KENNEDY: It would not normally be the Licensee, would it?

MR. MATTSON: No. In the case of Oyster Creek we haven't decided whether confirmatory tests are required. We are still reviewing the qualification information.

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MR. SNYDER: When would you anticipate review would be completed?

MR. MATTSON: Within the next week.

MR. SNYDER: That is something you will address.

MR. MATTSON: We certainly can. Maine Yankee and Surry 1 and 2 were plants that had rather complete environmental qualification documentation when they came in during the week of the 18th. We have noted here they were partially qualified. I probably should note, partially qualified by test. The information missing had to do generally with radiation environment and caustic spray environment.

Since the primary failure mechanism we were looking for was steam at high temperature and under pressure and since they had tests for those conditions, we gave those people until the response date on the I&E Bulletin 7705, pulled together their documentation basis and the documentary testing in the event they had to do further testing.

COMMISSIONER GILINSKY: When is the due date?

MR. MATTSON: Due date is today.

COMMISSIONER BRADFORD: Why would you have steam over the multiple closures?

MR. MATTSON: Because of the data from the Sandia test and because the failure mechanism had to do with the permeation of the environment to the inside of the connector rather than some slow degradation from the outside, eating away

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materials, what have you. It is the failure mechanism identified in the test for these types of connectors.

COMMISSIONER BRADFORD: Let me see if I understand what that means. If they are exposed to a LOCA environment, it would be steam that would cause them to fail first?

MR. MATTSON: Yes.

COMMISSIONER BRADFORD: Would the other closures cause them to fail?

MR. MATTSON: It is possible to look at these things and consider the material of construction and the tests that have been performed on those kinds of materials in caustic environments or radiation environments.

For example, some kinds of rubber are well known to deteriorate in a radiation environment. Some kinds of metals are known to deteriorate in a caustic environment. The Staff was able to look at the materials of construction for these connectors in this class of plants, and although there were no confirmatory tests for those specific aspects of environmental qualification, the Staff was able to make an independent judgment that it was highly likely that were sufficient tests conducted that these connectors would pass the test.

Now, the harder questions of steam, high temperature and pressure were addressed by full environmental qualification testing for these particular connectors. So the Staff made the judgment that they could allow the remaining three weeks, at

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that time, until the due date on the I&E Bulletin for the licensee to pull together the full documentary basis on environmental qualification and to provide a basis for continued operation if further tests were required to complete that qualification basis.

A final set of plants were a group of five that had full qualification tests. They were able to show us the documentation when they met with us during the week of November 18th. We have required them to submit formally that documentation pursuant to the I&E Bulletin, 7705. Again, that is due in today.

Finally on the plant, I used the number "14" before. There are 14 plants with connectors. There was some uncertainty for a time as to whether Ginna had connectors. We straightened that out. They do not.

CHAIRMAN HENDRIE: These connectors are typically where? Close to penetrations?

MR. MATTSON: Yes.

CHAIRMAN HENDRIE: Where you get the penetration from a vendor and there is a cable stub on it?

MR. MATTSON: Yes.

CHAIRMAN HENDRIE: Then you have to decide whether you will take it with the stub and do what, and do splices or ask the vendor to put a connector on it, in which case I assume they were ordered from the vendor with the connectors?

MR. MATTSON: The reason for someone deciding to use

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connectors on these particular safety-related cables was ease of pulling the cable, or ease of changing the cable. I know of no safety function one way or the other. They should have been qualified. Environmental qualification. Indeed, we found everyone had spoken to that problem. What we now know is that connectors at D.C. Cook have been tested, environmentally qualified for the loss of coolant accident, subsequent to their removal.

When American Electric Power had the qualification test done for splices, they included the connectors in the test rig and they passed the LOCA environmental test.

COMMISSIONER KENNEDY: Let me be sure I understand what you just said. The connectors that were there, although we weren't sure, indeed turned out to be qualified.

MR. MATTSON: LOCA qualified, yes, sir.

COMMISSIONER KENNEDY: So there was no safety significance to the fact that the plant had to be shut down as a practical matter. Is that correct?

MR. MATTSON: Yes, sir. As a practical matter --

CHAIRMAN HENDRIE: American Electric has what, some 65 sound and certified connectors which presumably might be available to anyone who needs connectors. Right?

MR. MATTSON: Right. The bottom line is, the plants we have looked at, identified connectors, have qualified equipment. We still have documentation flowing in under various

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time constraints. The last of which should reach us today.

Some tests are still ongoing to fully confirm some of the qualification which was justified on the basis of analysis.

I should note the regulations do allow analysis in addition to testing to show environmental qualification.

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MR. SNYDER: On that point, Roger, some of the points of acceptance of some of the connectors, as I understood the last paper you sent in, allowed for qualification to be based on comparison, similar type connectors were qualified by someone else. Where does that fit into the scheme of the acceptance criteria, which is laid out in the Reg Guides and in the IEEE Standards? Is that considered to be analysis, that category?

MR. MATTSON: Yes. Comparisons are allowed, but documentation of the test performed on the comparative connector would be required pursuant to Appendix B, in the quality assurance requirement.

CHAIRMAN HENDRIE: Okay.

How much more material do you have?

MR. MATTSON: Not much. That is all on connectors. We can take the slide down, I guess.

The story on electrical penetrations is a little bit different than the one on connectors. You will recall we had not talked about penetrations in our last briefing and it was not until November 22, that a survey was done on safety questions involving penetration.

I might say briefly what these penetrations are. They are a component which allows the entry of electrical cables through the reactor containment so as to maintain the containment seal during normal operations, or under accident conditions. They contain various epoxies and sealants and materials

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designed to maintain the flexibility that is required, and the resistance, the electrical resistance between cables that is required and still, perform this pressure sealant function for the containment structure.

The problem that stimulated this second survey of electrical components was a malfunctioning of a certain variety of penetration at the Millstone II facility. Briefly, that malfunction was the shorting of electrical leads in the penetration during normal operation. The Millstone II facility is now shut down for repair of their penetration and for refueling.

We looked at the failure mode of the penetrations and looked at the general use of that kind or type of penetration, one manufactured by the General Electric Company and decided it was necessary to bring this operating problem to the attention of other plants with that kind of penetration, and while we were inquiring on that type of penetration, we also inquired as to the state of environmental qualifications for that type of penetration.

A two-phase survey was conducted by I&E. First a telephone survey with subsequent written follow-up, in response to the I&E bulletin.

The response to the telephone portion was available rather quickly after November 22, I believe the following week. We looked at the information, decided that it was important to follow up with telephone calls, to understand better the second

aspect of the question. That is, the status of environmental qualifications. While we were about it, the Office of Nuclear Reactor Regulation, because of the interest in petition we decided to enlarge the question slightly and talk about environmental qualifications for accident conditions for all electrical penetrations in all operating plants. That is, those required to function for safety.

MR. CASE: Not necessarily the GE type penetrations but all penetrations.

MR. MATTSON: Right. So the results of the survey and our follow-up on the survey, let me state in two ways. First, insofar as normal operations malfunctions are concerned for the GE type of penetration, we found that the Millstone experience had been shared by the Surry I and II facilities back in 1973. They, at that time, replaced those penetrations with a penetration that did not have this problem. The problem briefly is the, in breathing of moisture during normal operations, which accumulates between the electrical conductors and causes them to short.

This can be avoided by pressurizing the penetration with nitrogen. In fact, that was required for the Millstone facility and had apparently not been done.

COMMISSIONER GILINSKY: What does that mean, pressurizing --

MR. MATTSON: The penetration itself is a pressure containing component, has a connector on it for a nitrogen line,

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to keep the penetration filled with dry nitrogen at a pressure higher than the outside pressure, to prevent water and water vapor from leaking in during normal operation.

COMMISSIONER GILINSKY: Is it a field unit?

MR. MATTSON: Yes.

Now, the second aspect is a survey for penetrations, leads us to conclude that 62 of the 65 operating plants of LOCA qualified, that is environmental qualifications, penetrations.

There are three for which further documentation and information is required. It is our judgment that the penetrations of those three older facilities will be shown to be qualified. We have had the manufacturer of the penetrations and the Licensees in Washington with drawings, and our conclusion is, because of the construction, and so on, they can keep in service.

We gave them a letter to get the full story together in documents suitable for a final conclusion that the qualifications are adequate.

COMMISSIONER BRADFORD: Were Surry I and II and Millstone the only plants that had that type of penetration?

MR. MATTSON: No. There were a number of plants which used the GE penetration. Most boilers and a few PWRs.

Most other plants had been maintaining the nitrogen pressure. As I recall, there were a few others that had not.

We have clarified with General Electric whether or

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not there is a need for that pressure in their view as the supplier of the penetration. They have confirmed that there is, and we will be following up with operating reactors to make sure the supplier of the component is understood and being followed by the Licensees. For those plants that had not been maintaining the nitrogen pressure there were no shorts. There had been no malfunction.

COMMISSIONER BRADFORD: Why is that a LOCA-related consideration? That is, you have the problems --

MR. MATTSON: It is not a direct indication there would be a LOCA environmental qualification problem. There was an indication that there had been some deterioration of the penetrations during normal operations, which led us to wonder, question, whether there was a thoroughgoing treatment of the environmental qualification question for these penetrations, given our experience with the connectors. That is, we found in several plants, although the connectors were qualified, there was some difficulty with pulling together the documentation of the qualification quickly, at least, on the part of the Licensees, and we decided we would follow up on that aspect of the penetrations to confirm whether we had the same kind of questions being raised on penetrations we found.

Generally, we do not. One might suspect not, given that the penetrations were a nuclear safety feature, designed specifically for nuclear power plants for accident situations,

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you would expect, I guess, that they would be qualified. Whereas the connectors are a more generally used electrical component, not just peculiar to the nuclear industry.

That completes everything I have to say on pentrations.

Again, summaries go for both penetrations and connectors, qualified equipment is in use, there is still some work ongoing to pull toegether documentation.

There is no safety problem in our judgment, hence no need for immediate Commission action.

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COMMISSIONER BRADFORD: I take it that under — I guess the Chairman and the commission indicated earlier this fall your statement, there is no safety problem, you would bring it to our attention if there were any disagreement within the staff.

MR. MATTSON: Yes, sir. To my knowledge, there is no disagreement in the staff on this question, on the conclusion I just made.

We have made some considerations because of the time in which this was conducted, and at times even professional engineers get hot under the collar with one another, to make sure we were all together, to make sure we were making a collegial judgment. And, in fact, we found people working on the problem support the conclusions I have stated.

COMMISSIONER GILINSKY: This also assumes certain confirmatory tests will check out what your present expectations are.

MR. MATTSON: Yes. As we said in the filings, if any of those tests tell us something different from what I have told you today, we will take the action necessary at that time.

CHAIRMAN HENDRIE: I take it that the staff's position on the electrical cable matter continues to be that its array of guides, branch technical positions,

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the general posture established after the Browns Ferry matter, are adequate and do, indeed, cover the operating plants.

MR. MATTSON: I was going to move on to that brief and say in our November 9th report we stated the conclusion the ongoing program was adequate, the tests at Sandia were of a confirmatory nature, saying the requirement we had insofar as additional measures required to protect against exposure fires; that is separation and retardancy were not enough.

You had to do other things; that those were legitimate and reasonable requirements.

That conclusion is unchanged today. We have seen nothing in the comments or in the supplemental affidavits which would cause us to change our view into that question.

CHAIRMAN HENDRIE: I can see Mr. Pollard back on the aisle and time is running short. If the commission is willing, I would like to move forward. We seem to be close to a full-house situation.

On the other hand, everyone is seated at the moment. So if we do a little rearrangement, I think everyone might end up seated again.

If Ms. Wise is with you, she can come up, too. Mr. Pollard, I hope to be able to have you at the front end

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of the proceeding, but as it worked out, it seemed expeditious to have the staff go ahead and make its report.

We are going to be squeezed, as is the normal situation, for time. I wonder if you would care to make a statement. The commission may then have some questions.

MR. POLLARD: Fine. The basic question, as we see it, is, the question before the commission is whether, given the information available, it's possible to conclude that the plants now in operation and under construction meet the commission's regulations?

I think this is a correct assessment of the question. I think it was confirmed by the staff's orders shutting down D.C. Cook. There, the staff concluded that the requirements of the commission's regulations were not met. They were unable to conclude that the facility could continue to operate without undue risk to the public health and safety and ordered the plant shut down.

With respect to the two technical areas addressed in our petition, I think we can phrase the question in more specific terms; the two areas being the environmental qualification of electrical equipment and the physical separation of redundant safety-related cables.

With respect to the first, are you able today, more than a month after our petition was filed, to conclude on the basis of factual, reliable information, that there

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is reasonable assurance that the electrical equipment will function properly in the post-accident environment?

I submit that the information now before you will not support such a finding.

With respect to the physical separation, again, are you able to conclude today that in each operating plant that the physical separation of redundant safety cables throughout their entire length is such that a single fire will not destroy both sets of cables?

Here, again, I don't think the information you have supports such a finding. Even if you wish to broaden the question to include firefighting systems and ignore or downgrade the fact that you have regulations that specifically require adequate physical separation, I still don't think you can make the finding.

The information now shows that the firefighting systems are still under evaluation. The evaluation won't be completed until December 31st of 1978, and that we are at least months, if not years, away from having adequate firefighting systems installed.

I would like to just give you a brief -- a few brief specific examples of the deficiencies I see in the information that the staff has presented to you and, hopefully, then close with a few general observations about where we are today.

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On the environmental qualification subject, I know from personal experience that the technical experts on the staff who actually do the review work, as opposed to the management officials of the staff, the technical experts have only the most general type of information available.

When I was on the staff and attempting to even assemble a list of equipment that was supposed to be qualified, the licensees could not supply this. On the D.C. Cook unit 1 plant, I was in the electrical branch at the time this was reviewed. The electrical reviewer had completed his safety evaluation report, concluding that the environmental qualification program for Cook was acceptable.

This was the very same time period that the staff issued the letter to Westinghouse which we referenced in our original filing, where they concluded that based upon their evaluation of the program, there was no reason to conclude that the equipment could survive the accident environment for the time required.

The reviewer on Cook claimed that he had specific information for Cook, although he was never able to produce it.

The staff, in their earlier briefing, discounted the Sandia test results on the basis they had inadequate

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quality assurance documentation.

They now propose to allow plants to continue to operate on the basis of some partial information, with not even a word being said about the adequacy of the quality assurance program in effect at the time those tests were formed.

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We see that Sandia Labs proposes to thoroughly inspect all future test specimens before the tests are conducted but the Staff proposes not to do this, on the actual equipment installed in plants. In fact, they are going to rely upon the licensees themselves to conduct the tests. I expect a considerable amount of effort will be devoted to making sure that the equipment does not fail those tests as opposed to the effort that would be needed to make sure the test was a valid one, to demonstrate equipment that is now installed in the plants.

On the issue of separation, this is an area, of course, where I was deeply involved in in my time on the Staff. To give you an example of the types of problems the Staff has in evaluating statements from the utilities, during my review of the Oconee plants, Duke Power Company, in their application, said that their cables, the redundant safety cables, were spaced five feet apart vertically. This was a correct statement, as far as it went. Later on we discovered that between the two sets of cables were all the balance-of-plant cables; that the entire five feet of space was filled with other cables, although they weren't safety cables.

When we were asked -- when Inspection and Enforcement decided fire barriers ought to be installed. I went down to the plant and inspected it and in my opinion the cable situation was so bad that the fire barriers I&E proposed to be installed I

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didn't think would do much good.

When I informed my supervisors of this, they decided instead we should simply support I&E because we would not want to be in opposition with Inspection and Enforcement before the utility.

The licensees in general give very vague information with regard to anything specific. You have general criteria, and they always say they are exceptions to those general criteria. Very seldom, if ever, does the Staff become informed of those exceptions to cable separation criteria and evaluate them independently of the licensees.

On fire protection, which the Staff seems to want to substitute for adequate physical separation, their response breaks up into two parts. One is: What has been done already and what is planned to be done in the future.

As to what has been done already, the Staff says we have taken measures to improve the fire prevention. I assume that included among this, we have told the licensees not to use candles any more. They have said they are going to improve the firefighting system. By this, I suppose this includes the local fire department has been told where the plant is and has been given a tour, so they won't get lost.

As to future actions, the Staff says they have some Regulatory Guides. It is unclear to me which one they ever intend to use, whether it is 120 and its various revisions,

or 175, or the Branch technical position. But in any case, you must recognize those are not regulations. They will not complete their evaluations until the end of 1978 and the firefighting systems won't even be implemented until sometime after that.

To close with just some general observations of what has happened since we filed our petition, I believe it was yesterday someone made a reference to the fact that the Staff's position is a unanimous position. I think it's just been clarified, it is unanimous among the people working on the problem. So far none of those people have been identified. We do not know their qualifications, for the people making the broad and sweeping conclusions in the Staff's reports.

From the information I have available to me, it is clear that neither our petition nor the Staff's response to the Commission have been widely circulated among the Staff.

Finally, I would like to ask you, since you in your positions can't get involved in the intimate details of connector design and the methods of evaluating qualification tests, I think it is instructive to compare the very theoretical licensing process described most recently by Mr. Gossick in his testimony before the Senate. And compare that description of an idealized, theoretical licensing process with what has happened since we filed our petition.

At first the Staff accuses the UCS of misconstruing the safety significance of the test results at Sandia, issues

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a press release that says connectors are not used in nuclear power plants. That got widespread dissemination. By November 9 they had found three plants. By November 11 they found ten and today we find 14. We are saying that the Staff does not know the equipment that is used in today's nuclear power plants. I don't find this surprising, having been a member of the Staff. I think the public may find it somewhat surprising. The point is, that I come back to today, do you have enough information to conclude that the plants now operating and under construction meet your regulations. I don't believe you have such information.

CHAIRMAN HENDRIE: Apparently, to try to go across some of your remarks, Bob, the Staff does disagree with you. They seem to feel the qualification information they have in hand provides a reasonable basis for these plants to operate. Cable fire possibilities were recognized, what, more than a year ago in connection with the Browns Ferry review. The Commission at that time decided that with reasonable housekeeping and firefighting provisions that the probability of an externally initiated fire was small enough so that it was reasonable in the public interest to go forward with an orderly program of upgrading and did not require that everything come to an immediate screeching stop. You disagree with that. That is fair enough.

You somehow imply that the UCS petition should have

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been circulated broadly in the Staff. I am not quite sure what you mean. Should we ask for a vote from all 2500 employees? The implication is that the Staff is, a, incompetent; b, dishonest. I find that a little hard to accept.

MR. POLLARD: Let me go back over what you just said. Number one, the regulations don't say you have the option of meeting the regulation based on probability. Second, I did not imply that the Staff was being dishonest. I tried to point out to you the deficiencies in the information that the Staff has available to work with. You remember, before this came now, the Staff expected that they would find that there were no connectors used in safety systems. Then they expected that they would be able to simply call up the licensees to produce all their documentation. Now the Staff's position is: They are going to let the plants continue to operate on the expectation that when the licensees finally get around to doing the tests that should have been done before the plants began operation, they have some hopes and dreams that everything is going to work out all right. I don't know, but perhaps I am wrong, but I don't think that is the basis for regulation that is presented to the public and Congress in this Commission's testimony.

The idea is the plants are supposed to be safe before they operate.

CHAIRMAN HENDRIE: Nor do I agree that you have correctly stated the facts in the real world. It is a perception

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which you have and you are certainly entitled to it, but I must say it does not agree with my own perception of those facts. I think that simply has to remain an issue between us.

MR. POLLARD: I did want to say I was not implying the Staff was dishonest.

COMMISSIONER KENNEDY: It doesn't coincide with my perception of what we were just told by the Staff as to the nature of the documentation which is expected. That is a matter of perception.

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COMMISSIONER GILINSKY: What would constitute reasonable assurance from your point of view? In other words, what can be done, what needs to be satisfied?

Let's take the connector problem.

MR. POLLARD: I think the firefighting, for example, the Staff has Regulatory Guide 120. It says in their opinion a three-hour fire barrier is required between redundant safety systems and on each side of that barrier would require fire-fighting systems.

That seems to me, if that were, in fact, in place today in the plants, you would have reasonable assurance that no fire is going to damage redundant safety systems.

With respect to the connectors, if we knew today that we had qualification tests that involve all of the conditions, that the equipment must operate in, following a loss-of-coolant accident, that met the requirements of IEEE-323, 1974, by that I mean including aging and margin, for the time history of the accident development, that would constitute reasonable assurance, but what we are saying --

COMMISSIONER GILINSKY: Let me try to understand that. We have this little chart in front of us, and there are a number of tests which remain to be done, confirmatory tests. If these check out satisfactorily, would that constitute reasonable assurance from your point of view?

MR. POLLARD: I made some notes of the statistics

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on each one. On D. C. Cook they explained what should have happened, and they called the absence of environmental qualification a QA documentation mistake, very politely.

COMMISSIONER KENNEDY: Would you characterize it otherwise?

MR. POLLARD: No. I meant the press release to UCS's petition calling it misconstruing. They said the connectors after moved were shown to be fully qualified for a LOCA.

I am not sure that what they did not say was that they were fully qualified for a steamline break.

You must consider not only the LOCA, but a steamline break. You must also consider equipment outside containment where you could have a locally-severe environment.

As to the receipt of the information, your direct question, if you are going to rely upon analyses of the types of materials used in construction, as opposed to --

COMMISSIONER GILINSKY: Just to clarify what I am saying, in other words, are you concerned because these things have not been done yet, or are you really quarreling with the whole qualification system altogether, and even if all of these matters check out satisfactorily, even then you would say the situation is not such as to allow these reactors to operate.

MR. POLLARD: If I knew precisely what you meant by the qualification program, how it is supposed to be done, versus how it is being done --

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COMMISSION GILINSKY: As it is being conducted today.

MR. POLLARD: How it is being conducted today, you have only assurance it is satisfactory from the Licensees themselves. There is very little independent verification by the Staff of the specific equipment.

I think the answer to your question lies in whether or not you believe that plants should be licensed when it is known that they meet the regulations, versus whether or not the plants should be allowed to operate until you proved they don't.

COMMISSIONER GILINSKY: There are various degrees of knowing. That is what I am trying to get at here. You are in some way setting -- a higher standard is being applied.

I am trying to ascertain what it is.

MR. POLLARD: I can't answer your question with regard to the information on this chart, because I don't know from this chart what they mean by tests and analyses, and comparisons.

In my own experience, for example, in analyzing the qualification for the fan coolers at Three Mile Island, they came in with a comparison to a previously qualified motor.

I rejected it on the basis that the motor orientation was wrong, that the test specimen was so far different in horsepower that you could not extrapolate.

So when you ask me, can I accept comparisons, I have

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to know what are you comparing with what?

COMMISSIONER GILINSKY: Well, as Roger pointed out earlier, we have a system which is really based on auditing the Licensees. Most of the work is done by the Licensees.

Now, are you quarreling with that system, or that it is not -- I mean the audit isn't being performed well enough, or do you feel these tests have got to be done by NRC or what?

MR. POLLARD: I don't see any chance that this method is going to change its method of operation, of auditing.

One might argue that might be a better way to do things. But what I am saying, given the information you have today, the Staff conducted tests at Sandia for getting information about the synergistics effects or radiation versus steam environment. They had supposedly done an audit that is supposed to pick up deficiencies in the Licensee's program in quality assurance.

That failed. The Staff wishes to ignore the Sandia test results and go forward and let the plants operate on the basis of just a steam qualification, that is absent the radiation, which is precisely what they were trying to find out in the Sandia test.

You also might note on the penetrations, it said the failures in the Millstone penetrations occurred during normal operation and, therefore, they want to look at the environmental qualification of the connectors. You will recall

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that on the Sandia tests, the Staff said, I believe it was the Staff, it might have been Sandia, that those connectors probably would have operated satisfactorily, except in the LOCA environment.

Now, if the Staff is only going to investigate those pieces of equipment which fail during normal operation, and leave untouched all of the qualification programs for the remainder of the electrical equipment, then I submit that there is not reasonable assurance that the equipment can survive a LOCA environment.

COMMISSIONER GILINSKY: Isn't one of the questions whether you bring things to a halt because of a hint of problems, or problems, or -- Suppose when you start out here you thought that there may be one or two reactors with connectors, connector problems, or even several.

Do you think it is appropriate at that point to basically close down all the plants?

MR. POLLARD: Our petition did not say to close down all the plants. I think you should try and do some checking. Obviously, you don't shut down the plants on one person's statements, but after you find out, much to your surprise, that 14 out of 65 plants have connectors that you didn't even know about, and when you look into that more than half of those Licensees don't have any documentation of the test results, I would submit, yes, that is a good time to shut the plants

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down, until they can supply the documentation.

COMMISSIONER GILINSKY: Didn't the Staff, in fact, try to find out what the situation was pretty rapidly, after it was brought to their attention?

MR. POLLARD: It was brought to their attention in January of this year, when the first Sandia test results started coming in. They did nothing, which is why we filed our petition with you.

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COMMISSIONER GILINSKY: I guess I was dating it from the petition.

But at any rate, from that point on, they did seem to look into the situation and try to assess things and deal with it where it called for more severe action.

MR. POLLARD: No doubt they looked into it.

Whether you agree their actions now are justified I guess is the question before you.

I don't agree with it.

When I find the licensing program is supposed to be one that established that the regulations are met before the plants begin to operate, and then when you look in the situation and you find the regulations were not met, that equipment was not ever tested, today there is no documentation or incomplete documentation, then I suggest the course of action is not to give the licensees some additional time to supply the information or to even supply justifying continued operation in the absence of the information.

The plants should be shut down until it can be shown they met the requirements it should have met before the license was issued.

COMMISSIONER GILINSKY: Well, the Staff seems to believe that these matters will be cleared up satisfactorily.

They may be wrong.

MR. POLLARD: When you talk about the Staff, you are

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talking about a limited number of individuals of that opinion.

I have a different opinion.

That's why the question is before you.

CHAIRMAN HENDRIE: Well, with the noted difference in perception, Peter, do you have any questions?

COMMISSIONER BRADFORD: Let me pursue that a little more.

On the connectors, and specifically as to the ability of some, I guess to withstand radiation and caustic matters, the Staff indicated they made a decision on their own with regard to the plants in question, that the steam condition side of these connectors would withstand the radiation and caustic conditions that they would be likely to encounter.

Now, I gather that is without having done separate testing.

It's their judgment as to a likelihood.

Is that an appropriate thing for them to have done?

I gather from what you said to Commissioner Gilinsky, your position is really that the plant should have been shut down once we knew that the connectors were there and didn't have the documentation regarding the environmental qualification, even though the Staff's assessment was in fact the connectors were functioning.

MR. POLLARD: The Staff's assumption is that the

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plants can operate until the public can bring information to their attention that says the plants shouldn't be operated.

The Staff also assumes that the plants should be able to operate.

That's one of the reasons I resigned.

The failure todeal on an objective basis with the facts they have.

It might be interesting to note, what was the purpose of the Sandia test program according to the Staff.

It was to try and find out whether the application of radiation together with the other conditions of the accident would have some effect on the ability of the equipment to withstand the accident environment.

The test program, I don't know what the Staff's concluded with respect to that.

It seems from the documentation I have read they can't draw any conclusions because the connectors failed whether the connectors were applied simultaneously or sequentially.

The Staff says, but when we get around to doing the tests we should have done before the licenses were granted, we hope that our present feelings will be confirmed.

This is precisely their hope on November 5th when they hoped they wouldn't find any connectors in safety systems.

I don't think that's an adequate basis in terms of

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the language of reasonable assurance to let plants continue to operate when the consequences of a catastrophic accident are not mild.

COMMISSIONER GILINSKY: What would you have us do at this point?

MR. POLLARD: I would think on Browns Ferry 1, 2, and 3, Nine Mile Point Unit 1, Oyster Creek, should be shut down until they can supply the documentation.

COMMISSIONER GILINSKY: If they supplied it, it was satisfactory --

MR. POLLARD: They could resume operation.

I would note normally the licensing process allows an opportunity for a hearing to discuss questions such as this before plants are allowed to operate.

The fact that the Staff didn't know that the regulations weren't met and therefore never brought this information to the attention of the public prior to granting those licenses, I think might be an adequate opportunity to do so.

CHAIRMAN HENDRIE: I'm going to have to intercede.

We have reached high noon.

I would like to ask the question, the following question -- let me say first, we obviously have a strong difference of opinion on a number of points, but I certainly do thank you for coming.

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I'm sorry it was short notice, as it was, and left you less time to prepare than I had thought would be the case.

I think, nevertheless, you have made a very effective presentation in your point of view.

So I thank you.

MR. POLLARD: Thank you.

CHAIRMAN HENDRIE: And what I would like to do is ask now two things.

There was a matter dangling from yesterday with regard to the other request to make a statement.

Troy Conner wrote and asked on behalf of this party, if they could make a statement.

Now, somebody tells me that Mr. Conner is not around today.

Are there representatives of his firm present?

MR. ELLIS: Keith Ellis, with Conner-Moore.

Mr. Conner was in Cincinnati yesterday and I wasn't able to get through to him.

I can inform you if you wish what our position is with respect to representation, although we are not prepared to go forward with any formal presentation at this time.

CHAIRMAN HENDRIE: That is, you wouldn't feel prepared to speak to the merits of the issues here?

MR. ELLIS: Not to the merits, no. But the

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procedures, the procedures reached yesterday -- well, let me restrain it, and I will comment on the decisions reached yesterday, as to allowing Mr. Pollard to speak today and postponing any decision on the part of -- as to allowing on the part of industry anyone to speak either today or in the future, depending upon what happens today.

CHAIRMAN HENDRIE: I would take it, your argument would run in the direction of feeling that presentations from that side of the house would be in order.

MR. ELLIS: Well, actually, I might as well take this opportunity to state what the position was stated in the letter. I think it still does hold true. That being, first of all, there was no effective notice that consideration was going to be given by the Commission, a complete break with Commission practice. Contrary to the Commission's own policy.

Secondly, there was no justification set forth for such a break, nor was one shown yesterday; and thirdly, the unequal application of such a change in practice violates the fundamental principles under which this Commission operates.

Moreover, it was noted in that letter, the extra unilateral opportunity for Intervenors to continue their participation without assuring the right of equal participation to the public including the utilities does violate the spirit of fairness.

Also I would like to respond, if I might, to the position taken by ODC, which to a large extent, was part of the basis to postpone whether any other commenting members of the public would be allowed to speak. Because in your comments, general agreement was expressed with the Staff, that there was no need for us to speak today.

Generally, our presentation would parallel that of

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the Staff.

First of all, I think that is an unfounded assumption.

Second of all, I think that the notion that a party would be allowed to directly address the Commission in such a meeting as this has no precedent. I don't think, that at the time that letter was written, such a notion was in the heads of any of the people who we represent nor was it indicated by that letter that this was meant to be rebuttal. It was comment under normal Commission procedure.

Now, that we have seen what Mr. Pollard said, since it was at least the rebuttal testimony to that presentation by the Staff, I think an opportunity should be afforded to our clients.

Moreover, now that the ground rules as of yesterday have changed, there is no reason that we can or that we should be bound by the Staff's position on any matter which has since been raised by Mr. Pollard. Presumably, there was no matter raised, that was another assumption yesterday, that the presentation today made by Mr. Pollard would be of an evidentiary nature.

I recall one of the Commissioners stating if it was not going to be of an evidentiary nature, there was no reason to have it.

Now, that we seen the presentation by Mr. Pollard, since so much of it was mere argument and past history and

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included a statement I don't know what they mean by these analyses, I think it is -- certainly it's become clear that what was undertaken here was a continuation of the argument and the comments already received by the Commission.

I think in light of that, equal opportunity should be afforded to everyone else to comment.

Also I would point out for the record, that the position of Staff is such, that as the case law suggests, functions as an independent assessor of where the public interest lies, and as such is in the name of the Commission a protector of such, it is not an advocate for any specific member or group of the public and just because the position of the Staff and the Regulatory happens to coincide on a particular issue is no reason to deny the chance, the opportunity to defend from the particular perspective which is enjoyed by the industry and on this particular matter, which happens to run contra to that positional test, taken by other party who was granted an extra opportunity to participate in the proceeding.

I think, more or less, in summation on that point, I would cite you to yourself, Mr. Chairman, when you said on first of this year in Connecticut Yankee Nuclear Plant, the nuclear industry's job of designing the building of nuclear plants can be carried out effectively only if it knows the rules of the game and if those rules remain reasonably stable.

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For our part at NRC we cannot define the rules or provide stability unless we get effective input both from those who are regulated and from the interested public. The NRC has made progress in this area, but much more work remains to be done.

Thank you.

CHAIRMAN HENDRIE: Thank you, Mr. Ellis.

I must say, one of the benefits of going around and saying things in public you occasionally have opportunity to contemplate what you have said at a later time with some assistance of the times.

I am delighted to note that the process is already at work in my own case and I take due note.

I seem to be in a bad temper this morning. I am pointing out my disagreement with all sorts of people, and I don't by any manner or means agree with all of the things you have said, Mr. Ellis; but I think your point has been strongly made, and the Commission will take note.

I think time runs in such a fashion that the Commission should take under advisement what it has heard this morning.

I am sorry, Jack. I have an appointment, and I can't take any more comments.

What I will ask the Staff to do is to take a look at the transcript of this morning's session and make to the

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Commission whatever comment it feels that it ought to make, with regard to the Pollard statement and Mr. Ellis' statement.

MR. NELSON: As a legal matter, Mr. Chairman, I am not sure about the transcript being a part of the record of decision under Sunshine Act --

CHAIRMAN HENDRIE: I don't -- the transcript is precisely what we say it is. It is a best effort set of notes kept by a reporter and I only suggest it in the sense that if the Staff wasn't making notes for itself, it may choose to go and look at the other fellow's notes.

The Commission does not endorse those transcripts. We don't review them. We don't approve them. They are not an official record.

Nevertheless, I suggest that just as any set of notes might be useful, to jog memories, these may be useful.

One final matter, it seems to me, the Commission ought to deal with, and that is the question of an extension.

We are now some days past the nominal time at which we had asked for full Staff and public comments on the merits of the UCS petition. It becomes clear that the time would run on, and here we are at the 8th of December.

The Staff has requested sort of in two stages, extension to the 15th. I think it is a reasonable proposition, and I would ask if you would agree in that decision.

Okay. I am glad you could all come. Since we provide

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the public an opportunity to come to our meetings, I am glad to see we fill the room from time to time.

Thank you.

(Whereupon, at 12:12 p.m., the hearing was adjourned.)