UNITED STATES
NUCLEAR REGULATORY COMMISSION

In the matter of:

BRIEFING ON STATUS OF REVIEW OF
ENVIRONMENTAL QUALIFICATION OF
ELECTRICAL COMPONENTS AT
OPERATING POWER REACTORS

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Room 550
East-West Towers
4350 East-West Highway
Bethesda, Md.

Tuesday, April 15, 1980

The Commission met pursuant to notice, for presentation of the above-entitled matter at 10:08 a.m., John F. Ahearne, Chairman of the Commission presiding.

BEFORE:

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

P R O C E E D I N G S

CHAIRMAN AHEARNE: The Commission will come to order. This morning we meet to hear a briefing on the status of the review of environmental qualification of electrical components that operate in power reactors. And that long title has buried in it some, I believe, quite interesting material.

Harold, I trust that you will have -- either you or minions on your behalf will have many things to tell us.

MR. DENTON: I need to review our physical security, because I walked up here with the briefer today, and we've lost him between the elevator and --

COMMISSIONER KENNEDY: It happens to all of us.

CHAIRMAN AHEARNE: Harold, we have a great deal of trouble with material balances, and it probably applies to people. We just hadn't noticed it before.

MR. DENTON: Ed, why don't you join us at the table also.

COMMISSIONER HENDRIE: It's the fifth floor, Harold.

MR. DENTON: I knew there was something. Let me give just a few words on the topic, and then turn it over to Daryl Eisenhut, who will brief you on the status of our review of this topic.

This has been a troublesome issue for several

years. The early approach to equipment qualifications was an attempt to set an umbrella standard, so that individual pieces of equipment wouldn't have to be looked at. That standard wasn't even established until after a large number of plants were built, and then an even newer standard was proposed -- so-called atroply 74. The Staff didn't propose to apply that standard till -- except to plants who are still under construction. So we've had to go back and develop lower tier standards to do the comparison. And pieces of equipment that fall through this net -- and there have been dozens of pieces of equipment out of all the equipment in a containment that fall through the net that then have to be looked at individually. And this is really -- causes the Staff difficulty, to review individual pieces of equipment. Then you have to look at the performance of that equipment, how long it's intended to function. And it's the type of review that we don't -- it's the type of detail that we as Staff don't normally get into. It's looking at every nail, rather than looking at the criteria for nails sort of thing.

With that introduction, let me turn it over to Daryl to explain where we are in our review of plants that are in operation, and the relationship between the work we're doing and what INE does, and when we hope to finish for review, first pass-through of all the plants that are

in operation.

MR. EISENHUT: Thank you. Since this must be about our 34th meeting on the subject, I'll try to summarize very briefly some of the background. The first slide, I have just a simple outline of what I'll be going through, discussing the status of -- sort of the safety status of our ongoing work, briefly highlighting the things we're finding, where we're going, and what the schedules look like. And then we'll discuss several other subjects that don't really follow any pattern but they're really some of the major significant aspects that's coming out of this.

First, the work on environmental qualification has, of course, been underway for a number of years. It was highlighted, I think, in '77, I think it's fair to say, by the UCS petition that came in, that brought some extra attention to it. For the last couple of years we've been basically on an issue by issue approach. We've been reviewing, you will recall, a number of aspects -- improvements you might call them.

The next slide. This is just a reminder of some of the things we've done over the last few years, you remember; and I won't go through these in any detail. They're all pretty self-explanatory. It's fair to say we had a considerable number of debates, discussions, some

plant shutdowns, certainly a considerable number of modifications in plants.

The key aspect is that every time one of these came up, we made a plant safety determination -- that is, whether the plant's all right or not, whether it requires some modification. It was always looked at as being somewhat of a short-term determination. It was always in the back of our mind that we were going to be going through the subject of environmental qualification, and not item by item by item as they should arise, but rather this overall umbrella approach. And that's pretty much where we are today.

The basic safety premise in the past was that items would, in fact, survive the accident environment. They would survive the accident environment through the short term. That is, they would accomplish their mission quite often operating in a few seconds, although we had questions about their ability to survive for a longer term. We felt that there is enough components to -- and enough redundency and diversity -- to allow plants to keep operating. However, we felt that we had to have a longer-term program.

Now, that longer-term program we've been working on for a couple of years. Basically it was broken down into two pieces. One piece was, we started looking at the older

plants that are in the systematic evaluation program. That's 11 plants. And NRR was going to take a look at them and decide what kind of a criteria should we be using for the evaluation in the long-term.

The basic requirements, you recall, come from basically the GDC, General Design Criteria 1 and 4. GDC 1 just says that you have to have good quality things in your plant, say, sort of the overall Q-A requirement; all structure systems and components must be good. GDC 4 says that structure systems and components must be qualified for the environment; that they must function following an accident in normal operation.

NOw, those are basically the two requirements. Now, that's not very specific. It's also very difficult to review plants against those two requirements, and because of that we decided we needed to develop some more guidance. We designated one of our unresolved safety issues, given the nomenclature A-24, to be the subject of environmental qualification of electrical equipment.

Now, the requirement, you also recall, 323 71 was the requirement that Mr. Denton referred to, was the requirement that all plants up through some 20 more plants to go on line, become operational. That is the standard that they would have to use. A lot of the older plants -- in fact, most of the presently operated plants -- did not

even have 323 71 at the time they went into operation. That's because the grandfathering of the requirement of 323 71. 323 74 actually first goes into play, I believe it's the Commanche Peak plant, which is a number of years down the road yet.

CHAIRMAN AHEARNE: Darryl, both of those standards are more, here's what you want to take into account, rather than very specific, here's what you ought to do.

MR. EISENHUT: That certainly is correct. And by and large, they're not a specific requirement that says how you take things into account. It's more -- for example, 74 says you take into account age, these kinds of considerations.

COMMISSIONER BRADFORD: Nonetheless, the standards are significantly different. I mean, there's a big difference between 71 and 74.

MR. EISENHUT: The standards are different. There are a couple of aspects. One is the margin that is required for testing from 71, 74. That is, you require a longer -- a different kind of profile, temperature and pressure profile. Another one is aging requirements. I think maybe that radiation is --

MR. BOUCHER: No, I don't think there's a significant change.

MR. EISENHUT: Ed Boucher. It is fair to say that they're more of a general requirement. So what we remarked upon is -- especially since we knew that the plants -- most of the presently operated plants -- were not required to meet environmental qualification specifically at the time of the application. We knew that when we went and looked, for example, there would not be good documentation. So we wanted to develop specific enough guidance, or guidelines, so that when we went and looked we didn't just say, yes, we conclude there's no documentation. We tried to go a little step further, and we developed over the last year, I think that through 1979 we developed two staff guidance documents.

One document is 824, as I mentioned, which was an interim guidance for plants coming down the line, starting with Sequoia. It lays out some guidelines of what it means to meet 323 71, and then what it would mean to meet 323 74. We also developed as a guideline document referred as the DOR guidelines, which we sent out to all plants, which is a couple of steps more specific on what you look at, and what level you look at. These two documents were basically what has been developed over the last year, while we were actually doing very little in the way of specific plant by plant evaluation component by component. We'd issued a I80 bulletin in 1979, which instructed

licensees to begin looking at themselves.

The 11 SEP plants did not receive that bulletin because we were going to pursue it in a slightly different way; that is, we were going to work with them, lay out our requirements, and we were actually going to be more involved in the review process, so that that could be a vehicle with which we could learn and develop some more specific guidance ourself, which would help as we go down the line in the future.

I think it's important that we go on now to the following discussion. It's important to remember that the DOR Guidelines are really a screening guideline. They address many parameters: radiation, temperature, pressure, vibration, all of the parameters you would look at to see whether something's environmentally qualified.

They're a screening aid. They're an aid for INE to use when they're looking at plants to see whether they do a good job or not. They're aimed to help us focus our review and to help us identify questionable components. They will highlight the areas of deficiencies; for example, if a component may not meet our guidelines for one specific given parameter; for example, radiation.

CHAIRMAN AHEARNE: Darryl, could you take a minute and repeat for me the relationship between 824, which I guess is in REG 588?

MR. EISENHUT: I think that's right.

CHAIRMAN AHEARNE: The INE bulletin, and the DOR Guidelines.

MR. EISENHUT: Okay. The 824 document is a document laid out, called Interim Staff Guidance for doing the reviews coming down the road for plants that have to meet IEEE 323 71 or 74. It's a guidance document that went through each of the major items from those standards and said here's some kind of guidance, what you really need to do to meet those ground rules. It really doesn't say too much, I think it's fair to say, on the 71 standard. On the 74 standard, which was a lot more specific, it gives some additional guidance. So it's sort of an amplification of 71 and 74.

CHAIRMAN AHEARNE: So it is more -- first of all, it's restricted to those set of plants that have to meet 71 and 74. Is that correct?

MR. EISENHUT: I think that's fair to say.

CHAIRMAN AHEARNE: Yes. And second, it's not in addition to, but it's an explanation --

MR. EISENHUT: -- of --

CHAIRMAN AHEARNE: -- of how to do. Okay.

MR. DENTON: That last part has really been the difficulty with the 74 standard. There are still differing views on how do you comply with 74, ranging from it cannot be

complied with with today's technology, to, that it can be with these types of requirements.

MR. EISENHUT: Now, Ed Boucher, on my right, developed the DOR Guidelines, at least certainly the principal focal point in getting it done. So I'll let him go ahead and explain what it was we've developed, and why we've had to go beyond the 824 document.

CHAIRMAN AHEARNE: Before he gets to that, could you tell me, the INE bulletin was to all but the SEP plants.

MR. EISENHUT: That's correct.

CHAIRMAN AHEARNE: And it asked them to review their plants against -- against what?

MR. JORDAN: The original bulletin was telling them to review their plants against their exhisting committments, the FSAR committments. And then the revisable, which was issued in January, is requesting them to evaluate their plant components against the DOR guidelines and the NUREG 0588. So we --

CHAIRMAN AHEARNE: Whichever is applicable?

MR. JORDAN: Well, against both, in the same fashion that --

CHAIRMAN AHEARNE: Well, for example, since there are some plants for which -- you've already said that 0588 is for those plants required to meet 71 and 74.

MR. JORDAN: And I should make it clear that the issuance of the bulletin 01B is backfitting, if you will, those licensees on operating plants outside of the SEP plants.

CHAIRMAN AHEARNE: 2588.

MR. JORDAN: 20588, using the guidelines as the means for evaluation.

CHAIRMAN AHEARNE: I see. And is that equivalent to saying that alternates would then backfit being required to meet the 74?

MR. JORDAN: No, no.

MR. EISENHUT: No.

MR. JORDAN: We're missing something here.

CHAIRMAN AHEARNE: I'm missing something.

MR. JORDAN: 0588, it gives two tables as you go through it. Each page is two columns. One column is for -- here's what it means to meet the 71 standard. Here's what it means to meet the 74 standard.

Now, for the 71 standard, it doesn't give you a lot of detail. The DOR Guidelines supplement that column. So if you ask a licensee -- all of the operating plants, I think maybe 50 of them that are operating today do not have in their application a specific committment to meet the IEEE 323 standard at all. We are backfitting that standard to all operating plants. We're backfitting the 71 version

as interpreted by the DOR Guidelines.

CHAIRMAN AHEARNE: The DOR Guidelines. And that's what the January bulletin was saying, that the plants had to review against 588.

MR. JORDAN: That's correct.

MR. EISENHUT: Yes, the INE bulletin has been, fortunately, a living document that's changed a number of times. It's really 7901, came out in January, '79. It's been modified as time went on.

CHAIRMAN AHEARNE: All right.

MR. EISENHUT: Why don't you give some specifics?

MR. BOUCHER: Okay, before I say some specific words about what's in the guidelines, let me backtrack just a little bit and try and give a general characterization to the NUREG 588 document and how it compares on a higher plane, a general sort of a plane, with the guidelines.

The 0588 document, I view it as a design tool. The kinds of things that are in there are the kind of considerations that one ought to put into a qualification when he's designing a component. It gives a large list of things that should be considered, with some specific guidance on acceptable ways in the design phast to consider these things. So it's a designer sort of a tool. And for that reason it's very appropriate for our CP and OL reviews, because that's where we're at in that process.

We recognize on an ad hoc basis, when you attempt to make judgments about things after they're already built, you use different tools. Engineers might use different tools in a situation like that, versus the tools they would use if they were sitting down to design something. And that was the reason for creating the DOR Guidelines. What specific aspects of the design would you look at on an ad hoc basis to make judgments about whether or not that design lools like it might be weak or questionable with regard to that component's ability to withstand severe, harsh environments. So that was the reason for creating the DOR Guidelines, because you needed a different tool for a different sort of application.

So the kinds of things you find in the DOR Guidelines are statements like, you've checked the radiation qualifications profile to see that it is at least 2×10^7 res. And if it is 2×10^7 res, we believe that that gives one a sufficient level of confidence on an ad hoc basis, on a cost benefit scale with regard to taking a piece of equipment out versus designing it from scratch, to say that there's reasonable insurance that it will withstand radiation. If it's not designed to 2×10^7 res, when you're looking at it, if it hasn't been tested and hasn't been qualified to that level, then one looks at the case specific application of that component to see if it will, in fact,

get that kind of dose. And the DOR Guidelines provide specific guidance on how one makes a judgment about what dose it will see at a specific location. So you can see the DOR Guidelines were written for ad hoc decisions, post design; whereas, the NUREG 588 were made for up front decisions, when you can look at a whole broader spectrum of things. I think that characterizes the general relationship between these two documents.

Now, as we go through the review process that we've got on the program to make reviews on these operating plants, we can see that these two documents come back together in the review process. Once you've made a judgment using the DOR Guidelines that a component's qualification is in suspect, then you're forced to go into its detailed design. And when you go into its detailed design, then you begin to go back to those types of documents, those types of considerations that are appropriate at the design phase. And you can see that we come back into the process with applying -- once we've sorted out, using the guidelines, that the answer is no, you don't meet the guidelines, you're into a detailed review sort of phase. And then you see the inputs to that decision, that judgment there, are the kinds of things one would consider in the design process, the NUREG 588, and specific application type information, it's location, the specific temperatures it will see.

So you can see the process melds. And then the ultimate judgment, specific case requirements met, gives consideration to the NUREG 588 document.

CHAIRMAN AHEARNE: Now, by the subtitle you have up there, I conclude that this is now applicable to all operating plants.

MR. BOUCHER: That's correct.

CHAIRMAN AHEARNE: Is that correct?

MR. BOUCHER: That's correct.

CHAIRMAN AHEARNE: SEP and non-SEP.

MR. BOUCHER: That's correct.

COMMISSIONER BRADFORD: And when is it scheduled for completion?

MR. BOUCHER: WE've established the goal for completion of this program by the end of this year. Now, one has to recognize that we need to be more specific about what it is we expect to have at the end of this year. The very minimum that we've set for our goals at the end of this year is to identify all those cases where the DOR Guidelines are not met, and to make some judgment as to the overall safety significance of not meeting the guidelines there. It's not clear that we will be able to get down to the nitty-gritty all the way through the review process, and identify what the exact replacement component will be. Certainly, that's our goal to do that, but it's not clear

that we'll get that far. But at the very least, we expect to have identified all those cases where the DOR Guidelines are not met, and some judgment with regard to safety significance.

MR. DENTON: Now, this date applies to all plants, regardless of whether they're being done by INE, or by DOR. INE and DOR have split up the plants, but basically we hope to have tested all plants against the DOR Guidelines by the end of the year, and made an initial judgment on those items that fell through the net, that didn't meet it.

COMMISSIONER BRADFORD: What is the corresponding date then for a goal for actually having the qualified equipment in place in all plants?

MR. EISENHUT: I don't think we really have a goal for getting it all in, an actual date. I think to a large degree it's going to depend on what's found as a result of the reviews. Some utilities are coming in and saying, rather than argue about a component, they want to go and approach replacing it, and lay out a schedule for replacing it. Some utilities are going to end up testing a lot of equipment. So, really, the target is to go through all the equipment from these plants by the end of 1980.

MR. DIRCKS: And this is component by component. This is a massive inventory.

COMMISSIONER HENDRIE: The end of '80 goal, as I understand it, is to scan the guidelines, identify places where the guidelines aren't met. But you're not going to crawl down into details on components until some later time.

MR. EISENHUT: Well, when you find a component that doesn't meet the guidelines, you, of course, have to ask yourself what it means from a safety standpoint. Now --

COMMISSIONER HENDRIE: But that comes in that detailed review part.

MR. EISENHUT: But some of that we're doing right now. When you find a component, for example, that's really questionable, whether it will function in an accident environment, you must ask what this means from a safety standpoint. So it's sort of a hybrid. For plants, non-SEP plants, we basically put the requirement on the licensee for him -- when it doesn't meet the guidelines, for him to decide and make a determination whether or not he has a safety basis for continuing to operate. We'll be auditing those. We obviously can't check thousands and thousands of components, nor do I think we should.

On the SEP program, which is running in parallel now, but at the same time -- you have to understand, when we laid out the program, we laid it out in 1979, and it got considerably delayed by the Three Mile Island accident --

the thought was that the Staff would be doing a lot more on the SEP reviews; therefore, learning a lot more from it, and perhaps able to define a lot more specific criteria to help everyone else do the rest of the plants.

COMMISSIONER BRADFORD: Now, run that by me once more. If the licensee finds unqualified equipment -- say, connectors, because that's something I can halfway understand -- it's up to him to determine whether he has an adequate basis for continued operation?

MR. DENTON: In the first instance. We check that. But we make -- since there literally could be thousands of pieces of equipment that have to be compared, and dozens in any particular plant, he makes the first documentation as to why, even though it doesn't meet the blanket qualifications, it only performs -- it only has to perform during certain time interval or some other requirement, whether or not its failure to meet requirements is important to safety. And then we check that after he's made the initial determination.

COMMISSIONER BRADFORD: How soon from the time that the unqualified equipment is discovered does he owe you a report on that situation?

MR. JORDAN: Okay. Assuming that it would cause one of the systems in the tec specs to be made inoperable if this component were unqualified, then the licensee would

have a 24-hour notification and a 14-day report to make. And so we would have his notification to act on, and also his report. And then those are being reviewed on a real time basis as they come in.

For instance, I should identify from the revision to the 7901 bulletin, we've now received six licensee -- I'm sorry, five reports and one pending -- on unqualified components that have additionally been identified from this first set of responses.

COMMISSIONER BRADFORD: How many pieces of equipment are we talking about in a plant?

MR. DENTON: Depends on how you classify, you know, a piece of equipment. But if you look at the individual serial numbers, the books I've seen -- do you want to guess? You've been -- you've checked it.

MR. BOUCHER: You take all the equipment inside and outside containment, it would run up into hundreds. If you spoke specifically on inside containment, where the biggest concern lies, where the hostile environments are most severe, I would say that probably you'll boil down to 30 or 40 at the low end of the scale, of critical components, those which you really would believe should be qualified, per plant.

Now, of those, perhaps there might be some duplicates in there too.

COMMISSIONER BRADFORD: When you say 30 or 40, would you be counting all connectors as one, or would you be counting connector by connector? You're counting classes of equipment?

MR. BOUCHER: Classes of equipment.

COMMISSIONER HENDRIE: But individual pieces very much greater than that.

MR. EISENHUT: That's right. And that gets you into difficulty if you find --

COMMISSIONER HENDRIE: No, a collector is one item. It adds list.

MR. EISENHUT: That's right.

COMMISSIONER HENDRIE: But there may be 700 connectors.

MR. EISENHUT: Let's not focus too much on connectors, because there are very few operating reactors with any connectors left.

COMMISSIONER HENDRIE: Well, as Peter says, we've been through that enough so commissioners understand connectors. Even though we understand, it's no longer a problem, it's a useful specimen to examine.

COMMISSIONER BRADFORD: Is it, in fact, the right magnitude and ratio to keep in mind, for one class of equipment on that list of 40, there might be as many as

700 of them in the plant; so that you'd be talking about a list of 40, you've maybe talking about 2800?

MR. DENTON: I wouldn't think that was typical. If you go to transmittors or something, there're not 700 transmittors.

COMMISSIONER BRADFORD: No, but there's components --

MR. DENTON: But there are classes where it would be that large.

MR. EISENHUT: So you'd run into the thousands.

MR. DENTON: So let's get back to the question you're asking. Are we -- we were saying we hope to have completed the initial screening of all operating plants -- and we'll set aside plants that are under review for just a moment -- by the end of the year. That's both SEP and all others. So between DOR and INE, they will have made the initial pass-through to see what falls above and what falls below the DOR criteria. And we'll make some initial judgment as those deficiencies are revealed. A final decision on whether that equipment really is qualified for its function, or whether it's got to be replaces, will come some months after that, probably as the result of back and forth with the licensee, after an initial judgment is made.

And it is true that in many cases licensees are opting to just replace it with new equipment rather than

try to trace -- especially if it's a real old piece -- to try to show that it's really qualified for the base conditions if it hadn't been tested quite to that standard.

MR. EISENHUT: That's right. So there's not really a point where you just truncate it and say I'm done. It's the kind of thing where first you worry about the 30 or 40 most significant, and there may be another 60 or 70 lesser significant that you work on next. And it's going to be a very long program for a plant who may have these 100 different types of components which were never really looked at from an environmental qualification standpoint. You think they're generally good quality, but they weren't specifically looked at, and therefore, don't have the paper pedigree behind them, because it just wasn't --

MR. DENTON: With regard to this area, perhaps in retrospect we should have done at it with certain minimum standards for all equipment, and somewhat higher standards for other equipment. And instead we adopted a standard from which we readily permit deviations. So it's not a minimum standard for any piece of equipment, if it can be shown not to apply. I think that's what's made our administration of it so difficult.

COMMISSIONER BRADFORD: Darryl used the phrase

paper pedigree. I take it that the pedigree will, in fact, be a requirement apart from the fact of qualification of this type of equipment in the future. But it isn't for the equipment that's already in place?

MR. EISENHUT: For the really old plants it was not a requirement to have a documented bases for the documentation. So that's what makes the job very difficult. Do you go out -- plants very often have to go in and look and see physically what kind of a piece of equipment they actually have. And there's not the long record behind it supporting it. In new plants, there certainly would be, yes.

MR. DENTON: Maybe this is a good point to talk about the visits to the six plants, and to summarize what those results have indicated.

MR. DIRCKS: You might add, Darryl, at this point, where once you've gone through this process -- we've talked about this -- and you establish that the components qualify for a particular plant, from that point, for that class of components, then you sort of lock it up, and it becomes a part of the license, so to speak. Is that how you're looking at it?

MR. DENTON: Yes, we like to do that.

MR. DIRCKS: And that's an enforcable type of thing.

MR. EISENHUT: Clearly it's got to be -- once you have it done, you don't want to be doing this again five years from now. This is the related aspect.

There's always the related aspect. And that is, once an item is qualified for use someplace -- one of the items in the last seven things we'll talk about, sort of a clearing house, keeping a list of all that equipment --

MR. DIRCKS: Yes.

MR. EISENHUT: Right now, the status of the SEP plants -- now, I call them SEP plants, but we've added Indian Point and Zion to that set too -- we're reviewing both of those together -- is that we've done a preliminary site review of really Palisades and Oyster Creek. Because of the results we were finding, I asked a team to go out for a very preliminary evaluation of Indian Point and Zion. Although --

CHAIRMAN AHEARNE: Are you going to discuss the results?

MR. EISENHUT: Yes, I will. Just a second. Although I recognized when sending them out that we were still very early in the review process, they had not gotten all their documentation together. The basic finding that we've had -- found -- from those reviews is that, first, I think we're running about six to eight items per plant; that we've looked at the preliminary way, and those items

do not meet at least one of our screening guidelines, or they failed to meet our screening guidelines in at least one aspect.

COMMISSIONER BRADFORD: This is six to eight of 30 or 40?

MR. EISENHUT: Yes. So what we had to do --

CHAIRMAN AHEARNE: How were they chosen?

MR. EISENHUT: Completely at random, I believe.

MR. BOUCHER: Well, they weren't totally at random. Some cases they were, and other cases they weren't. We looked at them and we -- we didn't want to look at the same component over and over again, because -- for valves in one plant and then another plant -- so that affected the selection. We tried to get a complete spectrum all the way across the board.

COMMISSIONER KENNEDY: So that, in effect, in dealing with the six or eight plants, you have in fact looked at the full range of components which you would want to look at in any given plant.

MR. BOUCHER: I couldn't give you complete assurance that we've looked at one of each that's going to appear in every plant. But certainly that was the goal. I think we've looked at pretty close to that.

MR. EISENHUT: Which is certainly the major groupings. But there's some in each plant of my six to

eight where -- that's probably a rough average number. I notices on Palisades we looked at probably a dozen. But I also noticed that on every plant we looked at ASCO solenoid valves.

CHAIRMAN AHEARNE: That is the point that you're making; that you've looked at --

MR. EISENHUT: -- a wide spectrum.

CHAIRMAN AHEARNE: -- a wide spectrum. And all of them failed some aspect --

MR. EISENHUT: All of those have at least one problem with our screening guideline. That is correct.

MR. BOUCHER: Some cases that problem is relatively minor. We wouldn't want to give the impression that there's nothing out there that could meet the guidelines. In some cases the problem is relatively minor. We expect that it will be resolved. I could give you -- I could put these slides up if you like, which is a summary of the different components we've looked at at different plants. The slide's too big, but you can see that you've got solenoid valves, you've got control cables, valve operators. And there's duplication in some areas, in other areas there isn't. Recombiners, I think we only looked at them at one plant. Switches, cables -- it's a broad spectrum of equipment there at those three plants. And then --

MR. EISENHUT: Now, as you point out in Palisades, Palisades was the only plant we've done where we've done a full site visit, so the list there is somewhat longer. It's one of the original plants that we looked at.

Now, as we go through these, and as we identify where these items come up, and where it does not meet our screening guidelines -- that is, the area where it's either -- has a questionable deficiency, that it certainly doesn't meet our guidelines in one aspect -- we have to look at it from a safety determination standpoint. So on these plants on these items, when one of these arises we look at it specifically on how it's used, and have to make a decision on whether or not it's important from a safety standpoint that immediate action is required.

COMMISSIONER HENDRIE: When you say some of the problems you found were not too major, I gather that some have been major. Could you give a kind of description of kinds that were?

MR. BOUCHER: Let's run through one example of -- a specific example of what we identified.

MR. EISENHUT: We're just picking one example. We've done this approach basically on every one of these items that we looked at in here. It'll give you a feeling for how major an exercise it really is.

MR. BOUCHER: Here's our old friend the ASCO solenoid valves, but this is a different twist on the story. The first column is a list of deviations that we found from the guidelines. We regard the deviations as fairly significant in that there's no test data at all for many of the areas that we believe one ought to consider. And further, if you do a materials analysis, you find that the component does in fact have materials that you wouldn't want in a nuclear application inside containment. So our judgment is that the thing just plain isn't qualified. At the plant, when we identified that for the licensee, we told him that our judgment is that it isn't qualified. And he said, well, that's our judgment too. And we're going to replace it before we restart.

So that's a nice neat clean one there.

CHAIRMAN AHEARNE: Well now, the model that he's replacing it with --

MR. BOUCHER: That's what I want to speak to next. So that was our next question. We said, well gee, we'd like to see what you're going to replace it with. How good is that? We know what you've got is not particularly comforting, but let's see what we're going to get. So this is what we got. This was a little bit disturbing to us. Right there. And the disturbing fact is that the

licensee didn't have any qualification data for that component, but he was able to identify it. Well, it turns out that I recognized that component, and many of our participants on the Staff team did recognize it as one that had been qualified in another application. So we believe that the component is, in fact, qualified, and our estimate of the impact on the overall plant safety is that there's no immediate impact; because it's our judgment that it is qualified, but that we still believe that licensee ought to go out and get that data and sit down and study it and see that he agreed with our conclusion on a plant specific application. Maybe he has some twist to his plant that validates that conclusion.

MR. EISENHUT: You know, he could conceivably -- the component could have been qualified for one environment, and his environment could be harsher. WE looked at it -- this is a case which we'll come back to in a little bit, because it's an example where the Staff knows the component's been qualified elsewhere. That information has been propriatary, so it's been tucked away somewhere. This licensee didn't know it, but this licensee comes before us and says that he's not sure this component's qualified.

COMMISSIONER BRADFORD: Why is the fact that a piece of equipment is qualified propriatary?

MR. EISENHUT: Very simple. Because money is the reason. It costs money to qualify it, because the only way to qualify is to test it. So if you had a nuclear plant, and wanted to go out and have ten new components you wanted to put in, and you had to hire someone to run a test, and pay $1 million, let us say, to run those tests, you want to keep that information on the hopes that you can sell it back and recoup your money. It's a very simple financial incentive.

CHAIRMAN AHEARNE: In other words, the company who makes the component doesn't --

MR. EISENHUT: It's a spectrum. Some I think have.

MR. BOUCHER: In some cases the company who makes the component pays for the test, and in some cases the licensee does. And they all have paid money for this qualification, and they hold it propriatary. We -- in fact, this is a bit of a problem between the utilities. We received a freedom of information request from one group of utilities trying to get us to force the other group of utilities to release the information, which puts us in a very uncomfortable position. And we have attained some information on a propriatary basis also. It's a problem in the industry right now.

COMMISSIONER BRADFORD: What is the component

manufacturer doing while all this is going on? If I manufactured solenoid valves, and knew them to be qualified, I would, far from having it held propriatary, I would start running it in my advertisements.

CHAIRMAN AHEARNE: But you can't. You need it for the qualification. You can't do that.

COMMISSIONER BRADFORD: I wondered about that.

COMMISSIONER HENDRIE: If the valve manufacturers run the qualification, then you typically don't have this kind of problem, because the utilities that bought the valves from him says, hey there, valve maker, are my valves good? The guy says, sure they're good. Let me show you -- give you a copy of the data sheets. Or it's worse, the valve maker will say to the utility, look, you didn't buy those on the basis that you wanted data sheets, and I want another $2 nd a half per valve to send you copies of data sheets, but at least they're available. The pinch is where utility A needs the information. The valve maker doesn't have it. Utility B or somebody else has done the test. They've spent money as related here on it. They'd like to sell that information to utility A or the valve maker and recover some of their costs.

COMMISSIONER BRADFORD: And it's basically those

test results that are at issue.

MR. HENDRIE: Yes. Verified copies of the test data are typically the hard nut information that stand behind a qualification. Or similarly, if there are analytical results that come along, why, the copies of that.

CHAIRMAN AHEARNE: Is this significant problem or an irritation?

MR. EISENHUT: I think it's got the potential to be a significant problem. I think -- from two aspects --

COMMISSIONER HENDRIE: And we've had it before. I can remember in a few densification days, where the Staff is sitting at the middle and getting propriatary information on this fuel manufacturing processes, and how it all turns out from five or six people. And here comes a poor plant operator. We say, you've got a fuel densification

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COMM. HENDRIE: Because of information we've gotten from somebody else on a proprietary basis that is fuel is, you know, maybe it's fine. But he can't show that because he can't get that data. And there were some considerable agonies there and -- and --

COMM. BRADFORD: Is it that he can't get it, or is it that he can't get it without paying for it?

COMM. HENDRIE: In those cases -- in most of those cases it was he couldn't get it because these people were, you know, they're life-and-death competitors for that fuel business. And Westinghouse is not about to supply information that will let GE's fuel pass muster.

MR. EISENHUT: The problem is even worse than that because the second guy may not even know that the component was ever qualified. He may not even know that the information does exist. Because its existence by itself is in fact --

MR. DIRCKS: I think you're going to --

MR. EISENHUT: -- means it's either qualified.

MR. DIRCKS: -- you're going to touch on some of this on recommendations at the end; maybe a clearinghouse or maybe hear something for the industry to pickup --

MR. EISENHUT: Yes.

MR. DIRCKS: -- sort of the -- the punch line there.

MR. EISENHUT: Yes. Maybe we can just cover it now since we're 90 percent of the way done.

I think it gets down to the basic question, one of the things that we see as a problem, and a major problem, is this proprietary information aspects. From two basic aspects; one is, it helps us make a safety decision if we know that information. In this case the team of people has been working on it for a couple years and they certainly are familiar with this. And the other thing is, our team of people that's assisting the staff under contract comes from Franklin Research Institute. Franklin happens to be one of the big qualifiers of electrical equipment.

So, it helps us make safety decisions. It also can help us avoid an unnecessary plant shutdown, both for -- whether we would require it or whether the utilities themselves would be shuting the plant down.

MR. DENTON: You mean the availability of a data base would.

MR. EISENHUT: The availability, that's correct.

MR. BOUCHER: And let's say that -- that part of it does exist. We had in fact pooled all the major -- well, the two major testing labs, and they provided information to us under proprietary agreement for us to use in making

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the short-term safety decisions, but we have no right to release it to other people.

COMM. BRADFORD: Who are those two labs?

MR. BOUCHER: Wiley Labs and Franklin. Under subcontract to noe of the national labs.

MR. EISENHUT: So, the way it can really help our terms is it really helps our people doing this effort by giving them a better understanding of the types and kinds of things that are qualified. You really can't look component by component. It just gives you a better background knowledge of the general nature of what will survive an environment and what will not survive an environment.

COMM. HENDRIE: Well, it's a very considerable help to the exercise of your engineering judgment on whether a particular component for which there is not a clean and -- and verified pedigree is in fact in the real world servicable if something happens. That's often the case. If you don't have the pedrigee, but the instrument turns out to be all right. And having a body of test data on all kinds of things as background for your judgment of a particular component is a lot better than just sort of squinting at the ceiling and --

MR. EISENHUT: It certainly helps with the process.

MR. HENDRIE: -- and making a guess.

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MR. DENTON: It seems to me a case where the economic back and forth were disincentives to a -- a safety and -- or an administrative -- a convenient administrative process.

COMM. BRADFORD: I can see how this problem would arise frequently with regard to the pre-1971 standard material; that is, the -- where the only requirement was that it be of high industrial quality.

But for equipment that was supposed to be qualified at least to the '71 standard, is there -- is there not even supposed to be assurance supplied from the manufacturer to the utility which would be available to us, that in fact this equipment did meet the '71 standards?

MR. DENTON: What you're saying would certainly follow, except I think it's 58 of the operating plants do not have to meet the --

COMM. BRADFORD: The '7 -- even the '71 standard.

MR. DENTON: -- '71. So, you can see the magnitude of the problem we have is not -- it's not --

COMM. BRADFORD: Yes.

MR. DENTON: -- '67.

CHAIRMAN AHEARNE: Very small --

COMM. HENDRIE: You have to realize that the '71 standard is, you know, was adopted in '71.

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COMM. BRADFORD: For plants which --

COMM. HENDRIE: And you ask now which plants would have in their designs then specified the '71 standard as the basis for equipment purchase? Typically those will be plants which have not filed -- gotten as far as filing a CP application by '71. So, maybe plants that are violating itin '72 have now picked it up. But earlier -- but you know there aren't that any plants that had -- in '72.

MR. BOUCHER: That was a trial U-standard also. People who tend to lose track of it. That was not issued as an official Triple A standard. It was trial use. The official standard was the '74 versions. So, there was a trial use period in there. So, the staff was a little bit uncomfortable with applying it as a licensing requirement. The utilities were uncomfortable with embracing it. It just took some time to get comfortable with it.

A VOICE: I think what they're --

COMM. HENDRIE: I don't know that we're comfortable with the '74 standard; are we?

MR. BOUCHER: Certainly more comfortable than we were with the '71 I think.

COMM. HENDRIE: Well, it's a higher standard, but

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there are these arguments about whether it's durable in all respect.

A VOICE: I think that's right.

MR. DIRCKS: I think what you're talking about here, and we've talked about, is some sort of a clearing-house, whether the industry could get together and do it. It would be tremendously advantageous for an industry group to have this sort of thing because they are the major beneficiaries and would be the users and at least know what equipment is qualified and what could -- could they use -- lead off.

MR. EISENHUT: That's right.

As Bill mentioned, on the short term what we're trying to do is we have-- we're having our own computer listing that I&E's putting together, keeping track on all the equipment that comes out qualified. On the longer term we're going to be looking at it as it's principally a burden on the industry. The industry should be the one doing this. And it's one of our other items in a moment we'll mention. We'll just touch upon it now. And that is, the industry is just going to have to pay more attention to environmental qualification. They're going to have to put more attention on it both plant by plant, and plant specific evaluations, and they're going to have to think

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about things like a clearinghouse.

You can't keep going on with this item by item by item year after year after year. And we're going to be looking at ways --looking to ways to get that message clearly to -- to the industry.

CHAIRMAN AHEARNE: Now, you're not going to skip over, I trust, your --

MR. EISENHUT: No, I'm not.

CHAIRMAN AHEARNE: -- assessment of base for continued operation.

MR. EISENHUT: The basis for continued operation -- let's put it up. We give you an idea on -- on an ASCO solenoid.

CHAIRMAN AHEARNE: I gather you're jumping ahead when -- do you have a summary of deviations and the guidelines?

MR. EISENHUT: Yes.

CHAIRMAN AHEARNE: I gather you're -- that -- from that you're seeing a variety of problems that aren't just that.

MR. BOUCHER: Well, I guess when one makes the statement that we haven't found any equipment that meets all the guidelines, it's clear that we've found at least some equipment that just about every piece of the guidelines

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isn't met on.

I think they breakdown into these probably four major categories--certainly it should be no mystery that there was an aging consideration given in these early plants. And that --

COMM. BRADFORD: Because it wasn't a requirement.

MR. BOUCHER: It wasn't a requirement.

There are a couple of things that are a little bit surprising, and is that -- that is that the component installed in the plant, it -- it's not surprising that it's not identical to the component that, perhaps, was tested and -- and cited as a basis for qualifying -- for qualification. But it is a little bit surprising that in many cases it is not even very close. So, that's a significant aspect.

And the guidelines require that if you're going to rely on similarity it has to be very similar.

COMM. BRADFORD: Well, let me ask a little bit more about that.

That means that if the paper describing the plant shows that Brand A is in place, you -- and then you went and looked you might actually find Brand X?

MR. BOUCHER: Yes.

COMM: BRADFORD: Is that not a violation of

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anything?

MR. BOUCHER: What the -- the paper -- let me put in the perspective which the papers cite it.

The paper is cited as a test which demonstrates by similarities that the component as installed in the plant is qualified. And what we would expect to find, and this is the licensee's judgment, that it is similar enough to demonstrate that the qual -- that the component I have in my plant is qualified. Well, what we find is there's a large disparity between the licensee's judgment as to what is similar enough and what we would regard as being similar enough. And we find that in years -- in recent years the staff's view of similarity has declined as a valid qualification tool.

Does that clarify the --

MR. DENTON: I don't think it's -- I think you need to separate misrepresentation of parts in --

MR. BOUCHER: That's right. I don't think --

MR. DENTON: -- the plant from --

MR. BOUCHER: No.

MR. DENTON: -- from is a technical opinion that a certain test applies to what's in the plant and our --

MR. BOUCHER: That's right.

MR. DENTON: -- judgment that it's not close enough

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to really apply.

MR. DIRCKS: Well, I think that's getting back to the issue we had before about the enforcability of the thing. We're going through it almost now and saying if you have Component X, Model so and so, Serial Number such and such you're qualified. And the question is once we've gone through this exercise how do you lock it up and prevent substitutions from going in and out. And I think that's the point that you want to talk about in a few minutes.

Is that right, or do you at least raise that as an issue or once you go through this horrible, agonizing exercise and you determine that that plant is qualified, can you end the process then until you're qualified with these components? And then two weeks later what you don't want is a component being pulled out and another model being thrown in there.

COMM. BRADFORD: Yes. I would guess that certainly you don't want that, but that's also likely to be a little less of a problem than the situation, perhaps, when the plant is being built and it just isn't convenient to install what you thought you were going to install, so you put something else in

MR. DIRCKS: Well, I suppose what's being built now then if you -- if you could determine -- you say you put

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qualifying equipment in and -- and you'd -- they'd have a pretty good idea of what's qualified and what's not on it. COMM. BRADFORD: But I'm looking at the plants that are already out there. Certainly if you get down to the level of specificity which I gather you'd -- there are a lot of cases you don't have where they actually -- a portion of the serial number of the piece of equipment, and it turns out to be completely different. Then, you're not talking about similarities, you're talking about an error or a deviation of a different sort.

But if you just talking about the Brand A versus Brand X, are you saying that if the licensee had said that Brand A was going to be in there and Brand A was qualified, it would be enough to -- for them to say in their judgment that the qualification testing done for a component made by one manufacturer could be carried over to a -- to a different component made by -- or to the same component made by another manufacturer using -- it -

MR. DENTON: Maybe what we'll have to --

COMM. BRADFORD: Maybe I'm misunderstanding the qualification process, but some how that seems like quite a jump.

MR. BOUCHER: Let's take an example like cable. A poly -- a significant feature of a cable is its

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insulation system. And maybe DuPont provides polyethylene insulation to several different cable manufacturers. I don't know that to be a fact. I don't know whether polyethyelene's DuPont's trading name or not.

But in any case a polyethylene insulation on one cable has the same resistance to radiation as it does on another cable, and if it is relatively the same thickness of insulation, which it is likely to be, because of the international cable standards on -- on what insulation is required for a given voltage level; you can extrapolate from a test on one polyethylene insulation system to give you some information, some judgment material, the data to use for another piece of cable by a different manufacturer with the same insulation.

The things that are a bit different --the things that give us trouble are cases where a licensee cites a qualification test report for a valve operator that is done with one manufactrer's motor as the driving force to attempt to justify qualification for a similar operator -- valve operator, but with a different motor in it because the insulation system's from one motor to the other might be different and the materials might be different. And we believe it's possible to get some useful information in that kind of extrapolation. But it's

necessary to examine in great detail the similarities and the dissimilarities. And we find that that hasn't been done yet in these cases. And we're a bit surprised that when one attempts to use the similarity argument that he doesn't have right behind it a detailed analysis that supports that similarity or --

MR. EISENHUT: In fact, just to give you an idea of how real a problem we had on the polyethylene cables last year was we had one where it was a cross-length polyethylene which is a little different structure than another one. And in fact they behaved differently. One turned out to be qualified and another one -- replace the cable.

So, it's the -- you've really got to look at it in a lot of detail. But, yes, there's certainly room to make engineering judgment materials compressant from one component to another component.

In fact, that's part of your bases by -- I think even in fact our requirements state the --

MR. BOUCHER: The guidelines permit similarity arguments as long as they're done in sufficient detail that permits test or --

MR. EISENHUT: That permits test or --

MR.BOUCHER: -- and so does I-Triple E Standard

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permit similarity.

COMM. BRADFORD: It's a lot of theory. I'd want to see extended operator training and licenseeing. These two gentlemen went to the same school, one passed; one didn't.

MR. DENTON: They have to be out of the same mold.

MR. EISENHUT: So, you can see these are the other kinds of considerations. I don't know how much you want to go through these. Aging considertions, of course, they wouldn't have.

Test sequence may not be quite along the same lines that you'd expect and inadequated documentation.

It's fair to say also, even though not on here, there is a number of columns we found case-by-case, for example, insulation problems. But insulation problems are really not a problem that we're looking at here. It's coincidental that we ran into them.

MR. BOUCHER: Did you say "installation" or "insulation."

MR. EISENHUT: Installation.

MR. DENTON: If you find a couple that are installed differently than in the plant than the way it was tested, and that installation gives one question about the validity of the test.

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COMM. BRADFORD: Well, couldn't it be worse than that? I mean, suppose it wasn't properly installed but it only works if it has --

MR. EISENHUT: Certainly. That's right. There could be a box that wasn't sealed up properly, therefore it's deficient in -- that's right. So, it would be quite major insulation deficiency.

The general conclusion was that most equipment failed to meet at least one aspect of our guidelines. But we went through it just as we showed you on Palasades the component we went through. We have gone through item by item where we have deficiencies, and we have concluded that no immediate plant shutdowns are required for different kinds of reasons in each case. Although, we feel that we ought to continue with a high priority effort to get the issue resolved.

CHAIRMAN AHEARNE: Now, in that case, just as you have pointed out that one of the problems you found with the licensees was documentation, if one were to ask take a particular plant that you've gone through, have you documented here the weaknesses you've found and here are the reasons why it's adequate to continue --

MR. EISENHUT: Well, we haven't progressed far enough to -- for it to be done. Even Palisades we're not

complete. We're just past the first step. Palisades review is going to run for a couple of months. At the end of that review you will have a documentation of --

CHAIRMAN AHEARNE: Well, now, my point is that you just said that you went through item by item and reached the conclusion that no immediate plant shutdown required, et cetera. And --

MR. EISENHUT: How did we document that?

CHAIRMAN AHEARNE: Yes. Answer that question.

MR. EISENHUT: I guess it's a varying degree.

MR. BOUCHER: It is a varying degree, and we haven't done it in the same sense that we've written SER for each of these plants, and the SER writing process is at the very end of this trail that we've gone through. And in order to make a safety judgment you can see that you have -- there's an awful lot that goes into one of these judgments. That's the bottom line so to speak.

MR. EISENHUT: No, it varies from case to case.

CHAIRMAN AHEARNE: I wasn't saying necessarily that a formal product to put into a formal system, I'm just asking --

MR. EISENHUT: It varies from case to case and generally not. For example, we probably would not have written down the Palisades' items so explicitly if we

hadn't gone through some of the --

CHAIRMAN AHEARNE: Put it on a slide.

MR. EISENHUT: -- put it on a slide. Because it's just not really profitable on these kinds of items. It takes a considerable period -- amount of item and staff resources to go through and write down each item. When you're dealing -- on Palisades it was twelve to fifteen items alone.

CHAIRMAN AHEARNE: Did any items reach the level of threshold significance that you required them to make an immediate change?

MR. BOUCHER: Immediate changes?

MR. EISENHUT: I could probably tell what these are.

MR. BOUCHER: There were some items. We were particularly troubled with these solenoid valves again, and we've made some changes on that. And there was a case.

In some cases there have been procedural changes to where there's not as much reliance on that component as there was. The operators have been instructed about the questionable intelligence they might get from a given instruments, and they are instructed to check other instruments.

There have been some immediate reactions in many

cases. Most of the time the licensee present this to us when we arrive. In other words, he's already judged that something more needs to be done in this area. Certainly before we leave we come to agreements like that.

CHAIRMAN AHEARNE: Do you write down those agreements?

MR. BOUCHER: There are trip reports that are prepared that we get requests for additional information from our contractor. It's just not organized in the same way that an SER is. If I was -- there is though.

MR. DENTON: But it will all be by the end of the process. In other words it's a -- I think partially the fact that it's ongoing in some area.

CHAIRMAN AHEARNE: This is probably a dumb question. If it's going to be written down at the end of the process, how do you recall over this period of a year what was agreed to back at the beginning of the year if you haven't documented it?

A VOICE: It's not a dumb question. In fact, it's a good question.

MR. BOUCHER: The question is it's written down, but it's not published. And certainly it's written down in our review process. Our contractor keeps brief logs of --

MR. DENTON: Logs and so forth.

MR. EISENHUT: At this point, what we'd like to do since I&E is doing a considerable number of these reviews also in a slightly different -- using the same guidelines in a slightly different fashion. Ed Jordan will sort of summarize what I&E has done before we come back -- we'll come back to the last line.

MR. JORDAN: We've gone over some of these in the processes discussion. What I would like to focus on I think is the very bottom section where the revised bulletin was issued. The lessons that we learned in the previous bulletin were that we had to make our questions very clear to the licensees. We had to do a little more in the way of explaining what it is we needed. The bulletin that we issued was much more detailed than the earlier bulletin. We asked for the information in a specific format. We provided examples of the types of data that we needed and the way in which we wanted that data.

Then, the task group members provided a workshop meeting in each of the regional offices for all of the licensees who were included in this review process during February, subsequent to their receipt of the bulletin.

And then based on the issues that were identified

during those meetings, we provided a -- a set of supplemental information to those licensees, answers to the principal questions that they raised during that meeting.

CHAIRMAN AHEARNE: When you say all the licensees that were covered, that -- is --

MR. JORDON: The 52 operating licensees.

The specific things that the revised bulletin required were in two sets of information. The first set, or the first three items, their response was requesting 45 days from the bulletin issuance which occurred the last of February, and we wanted a master list of the, first of all, the systems and then the components within each of the systems that are relied on to mitigate design basis events. And this is for LOCA hydrogen line break and both inside and outside containment environments.

We requested them to provide written evidence of the qualifications of these components and service profiles based on the FSAR design. And I'll explain where we are as far as those responses are in a moment.

Then, the second set of data is the 90-day response, which is presently due. And we requested the licensees to review their components against the DOR guidelines that were provided to the licensees and against the new Reg 0588 to evaluate the maximum flood

level, which is one of the parameters in the DOR guidelines. And reminded them that any equipment that was inoperable should be reported as an LER.

And this bulletin went out as a 50.54F type bulletin so that the responses were under oath or affirmation compared to the normal bulletins which had not been in the past.

Now, the -- I mentioned that we had set up a task group to do this work. I realize this isn't the Academy Awards, but they get very little glory for the amount of work they're putting in. Vince Thomas of my staff and Al Bennett are the headquarters representatives. And they're both sitting behind here.

Al Phinkle from Region 1, Ray Hardwick from Region 2, Jack Hughes from Region 3, Dan McDonald from Region 4, and John Eland from Region 5 have been the principal reviewers through this process. And they contributed to developing the revised bulletin, to the inspection procedures for performance of this task.

We broke the task down into some five increments for scheduling to have milestones that we could work with. And we're now into the task -- combined task two and three, and those have sort of merged now. And that merging was based on the licensee's responses in some cases merging

as well. Some licensees have requested delays because of other work and because of their plant status and -- and so we are in the process of both Tasks two and three doing inspections at plants based on their status. All of the refueling plants, of course, get first priority. So, that's where the inspection effort has been initiated thus far.

The 45-day responses have been screened and this is to ascertain the state of the licensees responses and whether he understands fully what we are looking for and is responding in an adequate fashion.

And then we're beginning to get the 90-day responses. As I have said, those are due right now.

Projecting, we anticipate being able to complete the evaluation of the responses and the major part of the inspections by September -- the end of September. And in conjunction with the schedule that licenseing has identified earlier, we anticipate being complete down to a reasonably low level with the reviews and identifications of discrepancies by the end of December.

We did make a projection in terms of followup of implementation. And our basis for it was that the procurement time and going through at least one refueling cycle at plants to allow replacement of marginal components.

So, that would run a total of some 29 months from the first of this year.

CHAIRMAN AHEARNE: Ed, your estimate of how long it's going to take for Task 3, you haven't yet really got the 90-day responses in?

MR. JORDAN: That's correct. But we've begun doing the inspections because of plant status which contribute to the completing of those reviews. So, we're -- and I'll describe in a little more detail what those inspections consist of.

CHAIRMAN AHEARNE: Do you think that's a realistic estimate when you'll be completed with the 90-day response?

MR. JORDAN: We will have worked through most of the licensees by then. Some of them because of the date of their responses will spill over into this latter phase. But it's a phase effort and -- so we will have narrowed down the total effort by that time to relatively few licensees.

To date some 12 facilities have been inspected and the -- the object primarily is to have performed an audit of at least one safe-related system, and this is a hand-over-hand review. Perhaps I shouldn't call it an audit because it's a --

CHAIRMAN AHERNE: What is a hand-over-hand?

MR. JORDAN: I say hand-over-hand because the inspectors are in the containment environment, and they're crawling through that system examining the cables, taking the descriptions from the cables and components directly. So, that becomes a part of their data base for reviews of the licensees' submittal subsequently. So, in many cases we're looking at the components before we receive the licensee's submittal. We'll compare our findings with what the licensee submits. If, for instance, his submittal is quite representative and our findings substantiate it, then we would not have to do more inspection effort of the actual components of the plant. Otherwise we would have to go back in and do more work, and force him to do additional work.

CHAIRMAN AHEARNE: Now, you say you audit one plant's system, that's --

MR. JORDAN: And the object is to rotate systems through the variety of plants so we have covered the entire plant.

CHAIRMAN AHEARNE: Any -- any plant system would have many components.

MR. JORDAN: That's correct. So, we would be looking at 15 or 30 components, depending on systems.

That kind of a magnitude. And the object is to get physically into the right plant area for that system. And this also causes delays in the inplant part of the inspection because we are not going to require shutdown for the inspection. We're phasing with their outages.

CHAIRMAN AHEARNE: Now, what do you mean "one unqualified limit switch"?

MR. JORDAN: Okay. The inspector in, let's say, crawling through the plant found the limit switch on a main steam ostellation valve that was unqualified and brought it to the licensee's attention.

CHAIRMAN AHEARNE: But are you saying that in all of these facilities that's the only thing, or is that a example of the kinds of things --

MR. JORDAN: That's the only thing that was specifically found that was immediately obvious. And so what we have now is a data bank from these plants that will compare with the licensee's qualification data and with his findings.

So, this was a limit switch that was known from previous work to be unqualified.

MR. THOMAS: Similar to the Haskell valve situation.

COMM. BRADFORD: Was known from previous work.

It had been tested elsewhere and --

MR. JORDAN: Yes. Yes, we had -- we had issued other bulletins and other activities that identified that this particular switch is not correct?

CHAIRMAN AHEARNE: But I gathered that in this particular inspection that it was more a data gathering than an actual comparison at the time. And this just happened to be that that particular inspector knew, or that team, knew that component was not qualified?

MR. JORDAN: That's correct.

COMM. KENNEDY: Did the licensee know it?

MR. JORDAN: When it was brought to his attention he realized it.

COMM. KENNEDY: But you said you had issued bulletins on the subject.

MR. JORDAN: Yes.

COMM. KENNEDY: He didn't get one?

MR. JORDAN: To go into the detail, that particular licensee believed that that was a switch that was performing only an indication function and was not necessary. We had previously conveyed to licensees that that indication function was necessary and should be qualified. So, he didn't get the message.

COMM. KENNEDY: He didn't know that either.

COMM. BRADFORD: Which plant was that?

MR. JORDAN: What plant?

MR. THOMAS: It was Hatch-2.

COMM. BRADFORD: Again, my -- it's a standard question--at what point did something become a violation? Here they've not -- not only is it unqualified but they've had a bulletin to the effect that this type of equipment should be qualified. Surely, it isn't a defense to say that they don't understand what the function of the limit switch is?

MR. JORDAN: Somehow I thought you'd ask that question.

COMM. BRADFORD: Well, what's the answer?

MR. JORDAN: Enforcement has to be considered in each of these where we -- we made a clear story to the licensees and where it is quite certain that the component is required to be qualified. We have not made a determination at this point on this particular instance whether enforcement action is warranted. But it will be considered.

The inspection -- I'm not sure of the date of the inspection, but as a part of the inspection writeup, that's the basis for the consideration of the enforcement action.

And understand that we are pressing very hard to make these trips at the plants while they're in the right condition to get into them.

Could I have the next one?

There's -- excuse me. Let me switch. There's one unqualified equipment reported. I think I gave you the -- it out of sequence -- horizontal, yes.

I mentioned earlier in discussion that there were some six instances where we had come across un-identified -- I'm sorry, unqualified equipment. And five of these are things that the licensees identified and reported as a part of the licensee event report. And the sixth is one of those in the top item of valve position indicating limit switch.

And once again, I think, as the licenseeing reviews have found, these are all types of components that have been previously identified by licensees and by the commission as having qualification problems. And I think perhaps you -- the one that may fall out a little different is the -- there was a motor-operated valve that was a misapplication and was brought when the licensee found it. It was obvious to them that there was a problem, and he's replacing it.

COMM. BRADFORD: Misapplication means that there shouldn't have been a motor-operated valve in that --

MR. JORDAN: No. That the motor operator was a misapplication for the environment. So, that there was --

A VOICE: You mean the wrong motor?

MR. JORDAN: Yes. Used the wrong environment. Should have been used -- qualified for some other environment.

CHAIRMAN AHEARNE: Or a different way of putting it, not qualified for environment.

MR. JORDAN: Right. Another way of putting it.

Okay. Now, the screening of response.

The other part of the manpower is in the screening of responses. And as it was earlier indicated, the numbers of items is very large in terms of components and in the parameters associated with each component. The -- to put it in general terms, the master list of equipment, the licensees have generally provided. And the biggest flaw in what they've provided thus far is in the qualification documentation. They were in most cases incomplete. And the licensees have stated they are still trying to dig up that material. But certainly we know that there's going to be some quantities of it that are not available, don't exist.

The licensees in some cases have anticipated delays in the 90-day responses, which is really the detail in their evaluations. They are due, as I indicated earlier, April 13. Presently due.

Those that have foreseen their inability to meet that date have requested in the main, delays out to June. We have some eight units that have requested delays until August. And five additional units that are requesting delays beyond August.

We are examining those requests on a case-by-case basis in terms of how much work they've actually accomplished thus far. This is in terms of the manhours of work.

CHAIRMAN AHEARNE: In general, what are their reasons for the very long delays?

MR. JORDAN: They're saying that the workloads that they have either because of a plant condition or because of TMI related response and other bulletins that are using up their manpower. We had, for instance, interaction of a bulletin 79.27 with this bulletin. A number of the licensees identified that as being a problem. The same type of electrical people involved in both of these. And --

CHAIRMAN AHEARNE: But that intersection of bulletins would occur for many plants; wouldn't it?

MR. JORDAN: But may impact some licensees worse than others because of either common in triple S or common A&E's. There seem to be an incredible variety of

stories in that respect.

CHAIRMAN AHEARNE: Do you really mean incredible?

MR. JORDAN: Large.

The -- but I wouldn't play down the amount of work that's involved. There are many man years of effort required from each licensee for each of these.

CHAIRMAN AHEARNE: No, I wasn't questioning the amount of effort required. I was just curious that there were such a wide spread of ability to --

MR. JORDAN: And that's why we're having to look at those that are falling, certainly, outside of this June date on a case-by-case basis. And we're planning -- considering when we have reached the level of, I'll say, acceptance of their given date that we will issue a confirmatory order much as we did bulletin 79.27. So, that we've locked up that time frame.

And I guess the last thing that I put in here is something we touched on earlier, is the -- some sort of computer file for data. We've tasked MPA, and they have begun work on a computer file for data for each plant so that we would have a listing of every system and each of the components and each of the qualifications for each of the components. And the ability then to compare components, Plant A and Plant B for the existance of the same component

for whether it's qualified in one as compared to the other. And to be able to make searchs across and also keep track of the status; as of some date some total percentage of the components have been reviewed and are acceptable or rejected. And perhaps that could be a contribution to some sort of an industry data bank subsequent.

MR. DENTON: The situation seems to cry out for an underwriter's laboratory sort of situation within the utility system whereby they maintain lists of equipment which is qualified for certain types of environments and makes it very easy for us rather than putting the burden somehow back on us to keep the list and the acceptance.

CHAIRMAN AHEARNE: True.

MR. JORDAN: And that's all I had.

MR. EISENHUT: Just in the way of wrapping up, there were several issues that we mentioned, that we would be touching upon. I think the first is just the overall recognition that this is an important issue. Even though we've been resolving it issue by issue as we go along, it is an important issue that the -- both the staff is going to have to continue work on, and in fact, the industry is going to have expend considerable resources.

I think it's fair to say the industry over the last year, certain segments of the industry, have not

progressed very fast on this issue; partially, I think because of even out -- the staff's own discussions of the last year or so where the staff made the determination that there was no immediate need. These plants now continue to operate. People are now playing those words back to us arguing that they didn't realize this was an important issue. So, we will be -- or continuing the highlight the fact that this is an important issue that the industry is going to have to work on very systematically over the next months and in fact few years.

The staff in fact has recognized the importance of this issue and has in the new NRR organization -- under our division of engineering. That branch is going to be responsible for doing the reviews; continuing on with seeing that safety evaluation reports are issued. It's going to evaluate the many, many topical reports that are in. It will interface with the division of project management to do the interaction with the licensee, sending out the requirements to the licensees, and will be making the safety decisions concerning continued continued operation.

There's an interface, of course, with systems considerations. There's an interface with human factors. The -- quite often it is not an environmental qualification

issued by itself. It's a safety -- overall safety aspect of the plant from a systems standpoint.

I&E will, of course, continue to be doing the 52 plant reviews and will be inspecting and enforcing the requirements that are developed.

Now, the last thing I am going to highlight on the chart is over at the right-hand side. You will see a division of safety technology which is the -- I think it's been characterized as sort of the conscience of NRR. It's a norm -- it's sitting normally outside of the day-to-day licensing process. They are not involved in the day-to-day decisions. But they are the keeper of the masterpiece.

CHAIRMAN AHEARNE: That's a new division?

MR. EISENHUT: Yes.

Yes, it's Roger Mattson's division of the new organization. That division will be responsible for developing new requirements. It -- in fact, it has the subcase, which is the unresolved safety issue piece, which was the source of the A-24 interim criteria document-- NUREG 588.

It's fair to say, I think, that for the present time that effort is essentially complete. What they will be doing in this area is continuing to evaluate how these

interim positions are being implemented and revised and continue to develop the criteria as need be.

There are also the overall coordination with the standards and research. And you'll see in a second there is a, of course, a significant piece of agency resources and research being devoted to this effort.

And that's basically the structure. We're trying to have a very streamlined organization with a -- recognizing the importance of the issue, we've created a, I think it's equipment qualification branch, which looks at environment qualifications, sysmic qualification of equipment, and pump and valve testing.

CHAIRMAN AHEARNE: So, the title environmental qualifications title.

MR. EISENHUT: I think that's too narrow. I think it's equipment qualification system. Unless it got --

CHAIRMAN AHEARNE: Well, if you guys don't know --

MR. DENTON: Well, we haven't officially named them yet.

MR. EISENHUT: It was supposed to have been equipment qualification unless we gletched to somewhere.

The --

A VOICE: The chart design in --

MR. EISENHUT: The last piece -- let's see if we can burn out the bulb here.

The -- this is just the last slide in the handout. We've touched upon most of these with the exception of two. We touched upon the need for a more specific enforceable guidance. And we said there the possibility of a potentially a new rule.

We're not sure it's a new rule or what form it's going to take. However, at the present time the only real enforceable piece is general design criteria 4. And I think it's fair to say that I&E finds that obviously you can't really enforce -- it's very difficult to tell people to meet that without having some additional guidance.

So, one of the things we're going to be developing over the next few months will be really looking at it and deciding what form should it take? Should it be something like the DOR guidelines? Should it be something like NUREG 588? Should it be something like an appendix to the -- appendix to Part 50? We really haven't decided, and we're going to be looking at those various options.

I think the one thing we're all clear on is you need more than a GDC-4.

It's also fair to say that there's considerable concern that maybe you just can't write very specific,

definitive guidance. And I guess I tend to agree with that. That you're just not going to be able to write very specific guidance to cover all aspects.

However, clearly there ought to be more than -- be able to write more enforceable guidance than the three sentences in GDC-4.

So, that will be another area that we will working on.

The last item that we have not specifically touched upon is confirmatory research and testing. You will recall that research has laid out a program to confirm the qualification of components. Over the last couple of years they have developed a program --

CHAIRMAN AHEARNE: Demonstrated many things, not that.

MR. EISENHUT: They have demonstrated many things. They have -- is there someone from research here? Supposed to be here? Someone from research was supposed to be here to address this. I was kind of hoping --

CHAIRMAN AHEARNE: It was probably decided that it wasn't something --

MR. EISENHUT: Wasn't the appropriate meeting to come to, yes.

The intent of that program was to take a piece

of equipment, you will recall, that was qualified elsewhere and requalify it. Todate they have retested the connector from Brown's Ferry. Do youremember? I think it --

CHAIRMAN AHEARNE: The real connector.

MR. EISENHUT: The real connector that was floating around the table here, it seems like a couple of years ago, that they have in fact run a test on.

It's also fair to say in their defense that they have developed quite an elaborate experimental rig at Sandia which will be capable of doing all kinds of good tests. And we're hopeful that we will be working with them to layout -- to try to see if we can't layout a very definitive program.

MR. DENTON: Can you sort of as a result of that test - - it met the standards which I recall TVA said it met.

MR. EISENHUT: Yes. That's all it was really tested to. They tried to duplicate the test that TVA had ran. They essentially duplicated the test and the component passed just as the test that TVA ran. So, it confirmed the TVA test.

COMM. BRADFORD: I -- let's see. It sounds as though there's something more. What are you not saying about the TVA test?

MR. EISENHUT: The TVA test was the test that was -- a test for a profile, as I recall, that was basically the profile that they laid out in their FASR. And I think -- I'm not trying to say anymore about it than --

COMM. KENNEDY: Well, that -- let me just -- that's reasonable; isn't it?

MR. EISENHUT: That is reasonable.

COMM. KENNEDY: Yes.

MR. EISENHUT: Except you have to ask yourself how reasonable it is because a lot of the older applications did not really layout the right kind of profile you would want today.

MR. DENTON: But I think the right answer --

COMM. KENNEDY: But that's a different question.

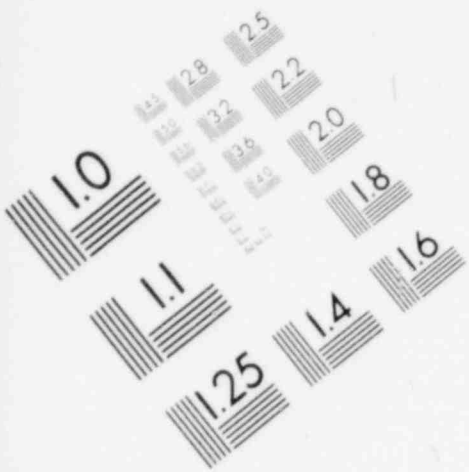
MR. DENTON: It's unanswered whether it meets the '74 standard, for example. It goes back to what does it take to show compliance for the '74 standards. It meant what the applicant claimed it meant.

COMM. KENNEDY: But as I recall it didn't --

MR. DENTON: And what we have accepted as being sufficient.

CHAIRMAN AHEARNE: Yes. But I think we originally described it as going to do more than that.

MR. DENTON: And I am -- that's why we need



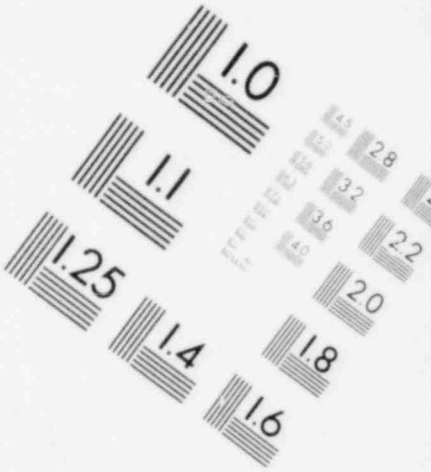
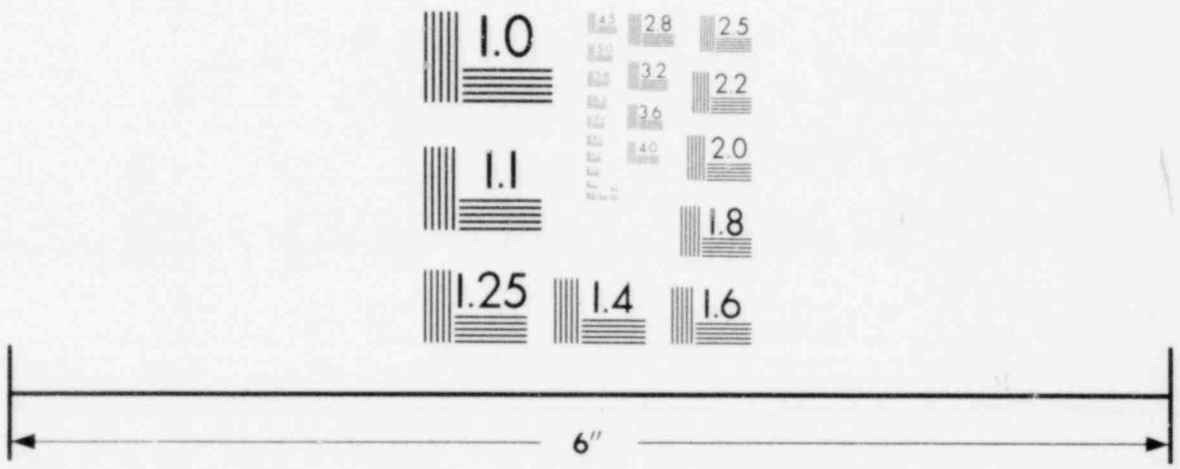
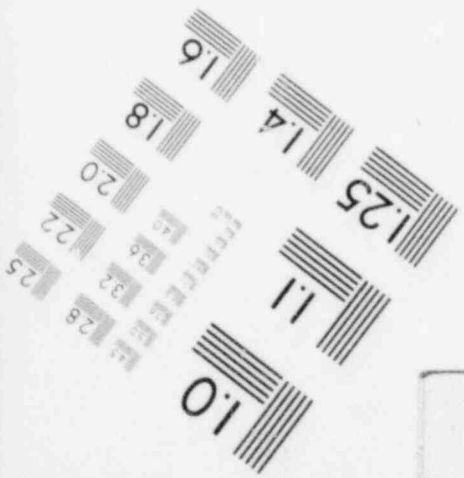
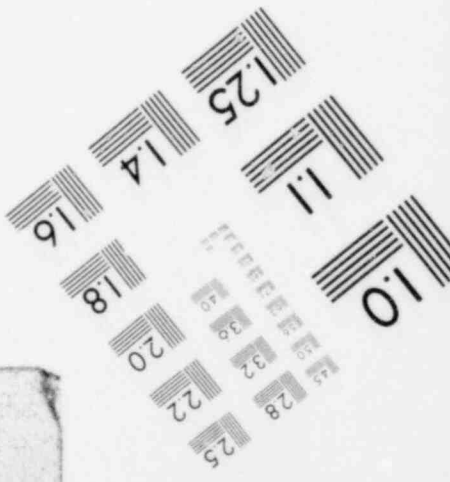


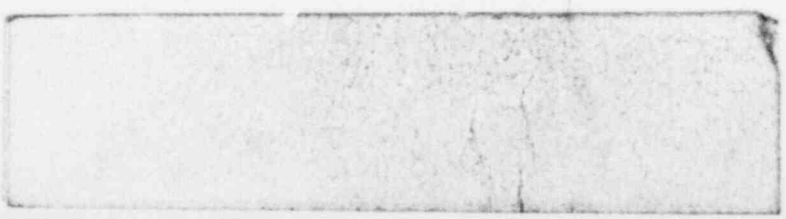
IMAGE EVALUATION
TEST TARGET (MT-3)



MICROCOPY RESOLUTION TEST CHART







someone from research, I think, to get into that little bit extra area.

COMM. BRADFORD: Well, let me just mention that in the April '78 decision, I guess, on the ECS petition, the commission did specifically request a paper laying out the alternatives for a -- conducting independent verification testing.

CHAIRMAN AHEARNE: And we even put some money in the budget.

COMM. BRADFORD: We even put some money in the budget. And from time to time --

CHAIRMAN AHEARNE: On the belief that the paper would be coming.

COMM. BRADFORD: That's right. We push a button or something that doesn't seem to be connected to anything at the other end about that paper. But --

A VOICE: That's why research isn't here.

COMM. BRADFORD: That paper indicates it's never come up.

MR. JORDAN: I think -- maybe I can help out a little bit. The division of operating -- I'm sorry, the division of construction of reactors for I&E is promulgating such a paper, and their representative is here today, Wayne Ryland, and Bill Rutherford who can give

you a little more as to its status. And --

MR. RUTHERFORD: The Sandia study is complete and as a result of that study it is presented in a paper that we expect to have it out by the end of this month provided we can get a consensus within the staff.

In addition to the presentation of the Sandia results, there are three alternatives that we studied. We have identified as a program and will continue effort on the problem of qualifications starting with the management people --

The program specifies an independent verification testing based on what we find, what has come out of the operating -- division.

The other aspect of the proposed program is indepth inspection as the work is under progress. That is the qualification of it while it's in progress as opposed to redcing it after the fact.

COMM. BRADFORD: Why don't we just leave it that we look forward to the paper, Bill, and put it in your tracking system.

MR. RUTHERFORD: Yes. Right.

CHAIRMAN AHEARNE: I think you've directed the question. We'll look forward to the paper.

COMM. KENNEDY: -- sergeant at arms.

MR. DENTON: Tish concludes our plan presentation.

CHAIRMAN AHEARNE: Harold, could you tell me why the industry seems to be reluctant to put together that underwriter laboratory type approach?

Are they reluctant are --

MR. DIRCKS: I don't think we've ever -- well, pushed them in this direction.

CHAIRMAN AHEARNE: Have we ever made -- really made a proposal to them?

MR. DIRCKS: We started a big push in this area pre-TMI days. And it has -- I'm not -- I've not surfaced it since we made the six-plant audit and the I&E results. And it's probably appropriate to bring it up again.

MR. EISENHUT: I think the -- if they take a look at the direction of this program, then youcan see the economic incentive to move along this path, and it would be helpful when we talked to them. And they have organized themselves into many operations since TMI and maybe one of these --

CHAIRMAN AHEARNE: It really seems to be a logical --

MR. EISENHUT: I think so.

CHAIRMAN AHEARNE: And as you say, it would be

much more appropriate for them to begin than for us to be plunging into this.

MR. EISENHUT: I think the incentive will be a lot clearer since the last time we talked.

COMM. BRADFORD: Let's see. I sometimes drift away from it. Did I miss a slide or something somewhere summarizing your visit to Indian Point?

MR. EISENHUT: No, you didn't -- you didn't -- you didn't miss it. We just didn't go it through it plant by plant.

COMM. BRADFORD: I thought, though, that John asked; and if he hadn't I would have, specifically about Indian Point.

MR. EISENHUT: Okay. The general conclusion on all of them came out basically the same. We do have -- we have the Indian Point. Oh, we had a listing of the -- yes, we do -- yes, we went through the listing, you remember, plant by plant of the items that were found at Indian Point. I think -- first, here's the overview of the -- listing of components that we had questions about it at Indian Point two and three. We went through these item by item in the same sort of way we did at Palisades.

If you'd like, we certainly are prepared to go through some of those. We can give you an idea of, for

example, the pressure transmitters or the --

COMM. BRADFORD: These are the components reviewed in the same generalization about --

MR. EISENHUT: Yes.

COMM. BRADFORD: -- that would apply to other plants would apply to these as well.

MR. EISENHUT: And we came to the same conclusions, yes. They fell through the screen. Just to show you, this is the kind of thing we go through one by one. These kinds of components. You make a decision on the -- this is the Westinghouse electrical penetration, which is one of the items on the list.

And the -- we made a technical argument that it looks like the basic materials and structure of the component leads you to the technical opinion that we'll survive.

COMM. BRADFORD: Are both of these units among the 58 that --

MR. EISENHUT: No. The -- the NRR is doing the eleven SEP plants plus Indian Point two and three and Zior one and two.

COMM. BRADFORD: I'm sorry. Are they both among the 58 that do not come under 32371?

MR. BOUCHER: My recollection is yes. I'm

looking to see if I can verify that.

MR. EISENHUT: I would suspect since there's --

MR. BOUCHER: Yes, the --

MR. EISENHUT: -- about a -- only about a dozen that do come under it. So, it would probably be the dozen latest.

MR. BOUCHER: The answer is yes.

CHAIRMAN AHEARNE: Thank you all very much. It's obviously most important and you're putting a lot of effort into it. It was a very informative presentation.

Thank you all.

(Whereupon at 11:46 a.m., the meeting was ajourned)

STATUS OF OPERATING REACTOR REVIEWS

- RESPONSES TO IEB 79-01 AND 79-01A INADEQUATE

  NRC QUESTIONS NOT CLEAR

  LICENSEE REPLIES DIFFICULT TO REVIEW

  LICENSEE REPLIES INCOMPLETE

- SCOPE OF REVIEW EXPANDED

  MORE RESTRICTIVE GUIDELINES

  HELB

  FLOOD

  AGING

- REVISED BULLETIN ISSUED JANUARY 14, 1980

  NRC/LICENSEE "WORKSHOP" MEETINGS HELD FEBRUARY 1-12, 1980

  "SUPPLEMENTAL INFORMATION" ISSUED ON FEBRUARY 20

REVISED BULLETIN 79-01B

- REQUIRES:

1. MASTER LIST OF ALL EQUIPMENT RELIED UPON TO MITIGATE DESIGN BASIS EVENTS

2. WRITTEN EVIDENCE OF QUALIFICATION

3. SERVICE PROFILES

4. LICENSEE EVALUATION AGAINST GUIDELINES

5. EVALUATE MAXIMUM FLOOD LEVEL

6. REPORTS INOPERABLE SYSTEMS AS LER

7. REPORT UNDER 50.54f

(a)	1, 2, 3	45 DAYS (FEBRUARY 28, 1980)
(b)	4, 5	90 DAYS (APRIL 13, 1980)

REVIEW SCHEDULE

TASK		ELAPSED TIME (MONTHS)
TASK 1	INITIAL PREPARATIONS, REGIONAL MEETINGS WITH LICENSEES (JANUARY 14 - MARCH 1)	1.5
TASK 2	EVALUATION OF 45 DAY RESPONSES (MARCH 1 - APRIL 15)	1.5
TASK 3	EVALUATION OF 90 DAY RESPONSES (APRIL 15 - SEPTEMBER 30)	5
TASK 4	RESOLUTION OF DEFICIENCIES (OCTOBER - DECEMBER 1980)	3
TASK 5	FOLLOWUP OF IMPLEMENTATION	18
	TOTAL	29 MONTHS

ON-SITE INSPECTIONS

- FACILITIES INSPECTED

  -- DRESDEN 3
  DUANE ARNOLD
  QUAD CITIES 2
  HATCH 2
  MONTICELLO
  PILGRIM
  FORT CALHOUN
  OCONEE 2 & 3
  RANCHO SECO
  ST. LUCIE
  TROJAN
  DIABLO CANYON

- AUDIT OF ONE PLANT SYSTEM PER PLANT

  -- ONE UNQUALIFIED LIMIT SWITCH

  -- IDENTIFIED FINDINGS CONTRIBUTE TO DATA BASE FOR DETAILED EVALUATION

SCREENING OF RESPONSES

- MASTER LISTS OF EQUIPMENT GENERALLY PROVIDED IN 45 DAY REPORT
  - -- QUALIFICATION DOCUMENTATION INCOMPLETE
- LICENSEES ANTICIPATING DELAYS IN 90-DAY RESPONSES
  - -- DUE APRIL 13
  - -- MOST COMMITTED BY JUNE 1
  - -- EIGHT UNITS DELAY UNTIL AUGUST 1
  - -- FIVE UNITS DELAY BEYOND AUGUST 1
- REVIEW REQUESTS FOR EXTENSIONS
  - -- WORK COMPLETED
  - -- ESTIMATE OF REMAINING
  - -- EXTENUATING CIRCUMSTANCES
- PLAN CONFIRMATORY ORDERS ON NEGOTIATED DELAYED RESPONSES
- MPA DEVELOPING COMPUTER FILE FOR DATA

UNQUALIFIED EQUIPMENT REPORTED

COMPONENT	NUMBER OF PLANTS	CORRECTIVE ACTION
VALVE POSITION INDICATING LIMIT SWITCHES	3	TO BE REPLACED
CABLE SPLICES	1	REPLACED
MOTOR OPERATED VALVE	1	TO BE REPLACED
PRESSURE SWITCH	1	TO BE REPLACED

COMPONENTS REVIEWED

Zion

ASCO Solenoid Valves
Power and Control Cables
Limitorque Valve Operators
Electrical Penetrations
Pressure Transmitters
Fan Cooler Motors
Cable Splices

Indian Point 2

ASCO Solenoid Valves
Power, Control, Inst. Cables
Limitorque Valve Operators
Electrical Penetrations
Pressure Transmitters
Hydrogen Recombiner
Motor-RHR & Fan Cooler
NAMCO Limit Switches

Indian Point 3

ASCO Solenoid Valves
Power, Control, Inst. Cables
Limitorque Valve Operators
Electrical Penetrations
Pressure Transmitters
Terminal Blocks
Motor-RHR and Fan Cooler
NAMCO Limit Switches

COMPONENTS REVIEWED (CONT.)

PALISADES

ASCO Solenoid Valves
Power and Control Cables
Limitorque Valve Operator
Instrument Cable
Electrical Penetrations
Pressure Transmitters
Terminal Blocks
Hydrogen Recombiner
Connectors
Junction Box
Fan Cooler Motors
Miscellaneous Equipment
Outside Containment

OYSTER CREEK

ASCO Solenoid Valves
Power, Control, Instrument Cables
Limitorque Valve Operators
Electrical Penetrations
Junction Boxes and Terminal Blocks
Electromatic Relief Valves

INDIAN POINT 3

WESTINGHOUSE ELECTRICAL PENETRATIONS

Deviations from DOR Guidelines

- No test data for radiation
- No test data for chemical spray
- No aging consideration
- Test sample configurations differ from installed units

Component Qualification

- Critical design features (insulator, seals) similar to devices such as transformers and incore neutron detectors which endure long-term high temperature, high gamma environment, thus believed acceptable until licensee can further justify

Impact on Overall Plant Safety

- No immediate safety concern pending licensee verification of qualification

X

PALISADES
ASCO SOLENOID VALVES
MODEL LM 831614

Deviations from DOR Guidelines	Component Qualification	Impact on Overall Plant Safety
• No test data for radiation • No test data for chemical spray • No test data for submergence • Negative materials analysis	• Not qualified for long term LOCA service	• No impact - Lic. will replace before restart with ASCO Model NP 831654E

PALISADES

ASCO SOLENOID VALVES

MODEL HP 831654E

Deviations from DOR Guidelines

- No data provided to document qualification
- Lic. replies on vendor compliance with the purchase spec.

Component Qualification

- Based on test results previously reviewed for NP series valves and staff discussions with vendor, component is believed to be adequately qualified for the present

Impact on Overall Plant Safety

- No immediate safety concern pending lic. verification of applicability of test data which is available.

ENVIRONMENTAL QUALIFICATION

BRIEFING OUTLINE

I. Brief Background

II. Ongoing Review
- Delayed by TMI
- Schedules
- Safety Status

III. Significant Aspects
- Importance of Issue
- Ongoing Organizational Responsibility
- Need for More Specific Enforceable Guidance
- Qualified Equipment Clearinghouse
- Burden on Industry
- Need for Confirmatory Research

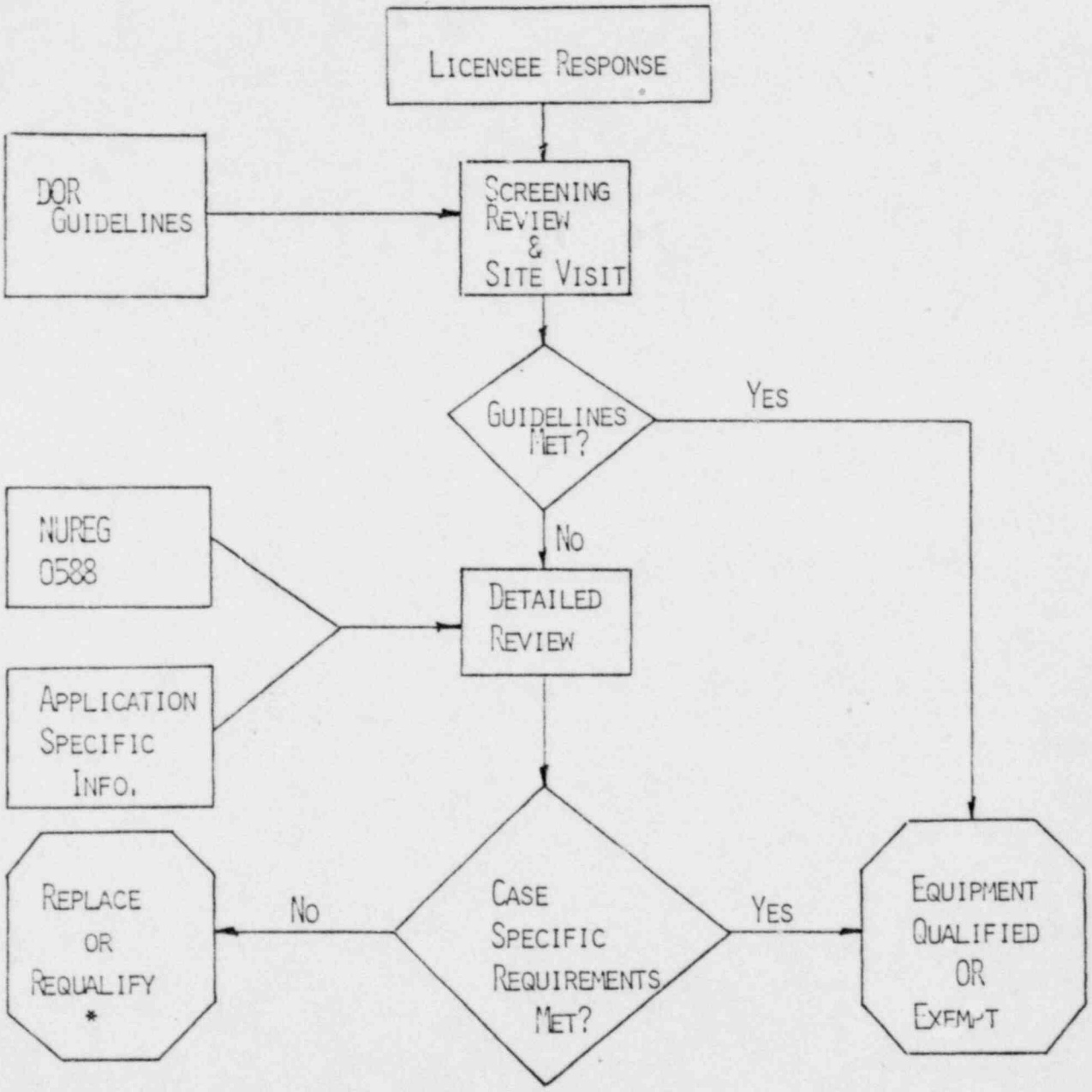
IMPROVEMENTS ALREADY COMPLETE OR UNDERWAY

- Connectors Replaced
- Terminal Blocks Replaced
- Solenoid Valves Replaced
- Improved Instrumentation On Order (e.g., Transmitters)
- Requalification Programs (e.g., Cables, Splices)
- Valve Operator Replacements On Order
- Licensee Awareness Of Potential Failures

OPERATING REACTORS E/Q

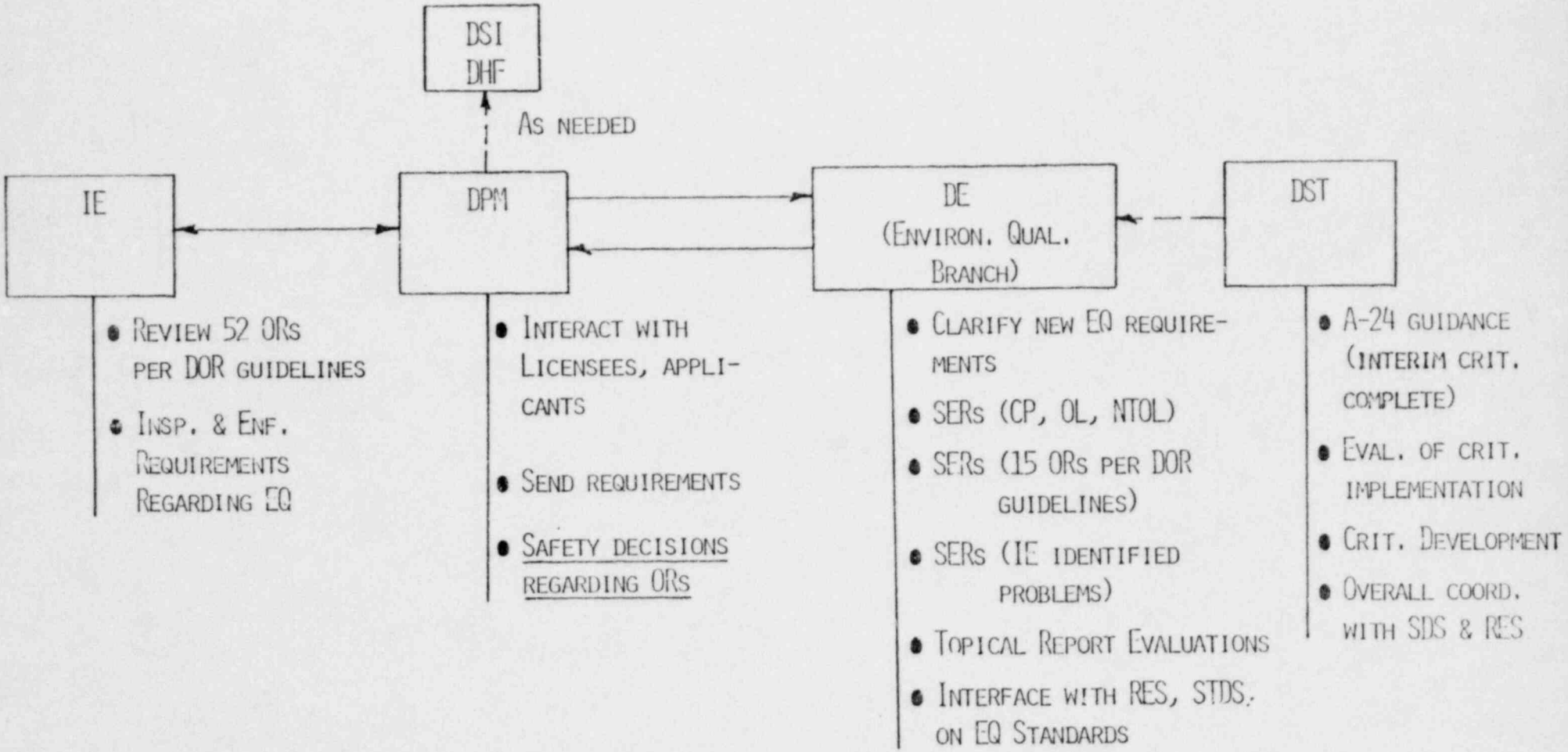
REVIEW PROCESS

(SEP & IE BULLETIN 79-01)



* BASIS FOR CONTINUED OPERATION MUST BE PROVIDED BY THE LICENSEE IN THE INTERIM

ENVIRONMENTAL QUALIFICATION ORGANIZATION



STATUS OF SEP REVIEWS

- Palisades Full Week Site Visit Complete
- Oyster Creek Full Week Site Visit Partially Complete - Balance Scheduled For Week of 4/28/80
- Quick Look Two Day Visits Complete for Four Plants

  Indian Point 2 - H/Q
  Indian Point 3 - Site
  Zion 1 & 2 - Site

SUMMARY OF DEVIATIONS FROM THE DOR GUIDELINES

- Component Installed In Plant Not Identical To Component Tested - Model, Size, Materials
- Inadequate Test Sequence - Not All Service Conditions Addressed
- No Aging Considerations
- Incomplete Documentation of Tests Performed

GENERAL ASSESSMENT OF SEP RESULTS TO DATE

- Although Most Equipment Failed To Meet At Least One Aspect Of The DOR Guidelines, No Immediate Plant Shutdowns Required While The Process Of Up Grading Equipment Qualification Continues.

BASES FOR CONTINUED OPERATION

- Equipment Will Perform Short Term Initiation Functions Even If It Fails In The Long Term.
- The Probability Of A Major Accident Which Would Produce An Extreme Environment Is Low.
- Defense-In-Depth Design Concept Often Provides Alternatives For Equipment Whose Qualification Is Questionable.

OTHER SIGNIFICANT ASPECTS

- Staff Recognition Of Importance Of Issue
- New Environmental Qualification Branch In NRR
- Need For More Specific Enforceable Guidance - Potential New Rule
- Qualified Equipment Clearinghouse - NRC And Industry
- Need For Confirmatory Research And Testing
- Increased Industry Emphasis