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NUCLEAR REGULATORY COMMISSION

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BRIEFING ON STAFF RECOMMENDATIONS FOR IMPLEMENTATION OF SEVERE ACCIDENT POLICY FOR EXTERNALLY INITIATED EVENTS

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PUBLIC MEETING

Nuclear Regulatory Commission
One White Flint North
Rockville, Maryland

Friday, June 15, 1990

The Commission met in open session, pursuant to notice, at 10:00 a.m., Kenneth M. Carr, Chairman, presiding.

COMMISSIONERS PRESENT:

KENNETH M. CARR, Chairman of the Commission
KENNETH C. ROGERS, Commissioner
JAMES R. CURTISS, Commissioner

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STAFF SEATED AT THE COMMISSION TABLE:

SAMUEL J. CHILK, Secretary

WILLIAM C. PARLER, General Counsel

JAMES TAYLOR, Executive Director for Operations

ERIC BECKJORD, Director, Office of Research

DR. THOMAS MURLEY, Director, Office of Nuclear Reactor Regulation

DR. THEMIS SPEIS, Office of Research

JAMES RICHARDSON, NRR

LAWRENCE SHAO, Director, Division of Engineering, Office of Research

WILLIAM BECKNER, Office of Research

P-R-O-C-E-E-D-I-N-G-S

10:00 a.m.

CHAIRMAN CARR: Good morning, ladies and gentlemen.

Commissioners Roberts and Remick will not be with us this morning.

This morning the Commission will be briefed by the NRC staff on recommendations for individual plant examination for severe accident vulnerabilities due to external events. The individual plant examination concept originated from the Commission's Severe Accident Policy Statement. The NRC implemented this policy in part with generic letter 88-20 issued November 23rd, 1988 which requested that all licensees conduct an individual plant examination for severe accident vulnerabilities due to internal events.

Individual plant examination for severe accident vulnerabilities due to external events was postponed to permit the staff to first identify the external hazards that need a systematic examination, second to identify examination methods and develop guidance and procedures, and third to coordinate the individual plant examination for external events with other ongoing NRC programs.

An NRC external event steering group has completed recommendations on how to proceed on external events which have been incorporated into an NRC staff proposed supplement to generic letter 88-20.

This is an information briefing and no Commission vote will be taken at this meeting. However, the Commission is expected to vote following this meeting on the staff's recommendation to issue supplement for the generic letter 88-20 requesting all licensees holding operating license for nuclear power plant reactor facilities to perform an individual plant examination of external events for severe accident vulnerabilities and the draft guidance document.

Copies of the staff's slide presentation are available at the entrance to the meeting room.

Do any of my fellow Commissioners have any comments they wish to make before we begin?

If not, Mr. Taylor, please proceed.

MR. TAYLOR: Good morning. With me at the table, to my left, Bill Beckner, Larry Shao and Themis Speis from Research. To my right, Eric Beckjord, Director of Research, Tom Murley, Director of NRR, Jim Richardson from NRR.

As you pointed out, sir, this is the

second of two segments of effort to fill out the individual plant examination process. The staff is ready to proceed to cover its recommendations.

I'll ask Doctor Speis to start the detailed briefing.

DOCTOR SPEIS: Thank you.

(Slide) Mr. Chairman, Commissioners, viewgraph number 1, purpose of briefing, I think we have -- Mr. Chairman, you adequately described this, so we can go to the second viewgraph.

(Slide) The briefing today will cover some background information relevant to the IPEEE and say a few things about its relation to the IPE itself. We will talk about the external event steering group and the extensive interactions we have had with industry regarding this effort. Then we'll discuss the scope of the IPE, which basically consists of seismic events, fire, high wind, flood, tornados and nearby industrial facilities. As you'll hear later on, the seismic steering group -- excuse me, the external event steering group considered many other events, but they excluded a number of them. These are the ones that were left in the recommendations.

We will then discuss the implementation of the IPEEE, talk about the schedule and finally

summarize again our recommendations.

(Slide) If we go the next viewgraph, number 3, I have some additional information regarding background. But again, Mr. Chairman, you covered some of them already. I would like to only mention the-- back in 1986, we concluded at that time that the external events indeed had to be included in the IPE. But at that time we told the Commission that we needed a longer time, more time to evaluate this area, especially the issues of which external event should be included, identify acceptable methodology and also work to make sure that all other efforts dealing with external events are properly coordinated and integrated with the IPEEE.

(Slide) Continuing with the background, if we go to the viewgraph number 4, the work of the steering group has been completed and, of course, we'll be discussing the recommendations.

I'd like to say a few things about the extensive interaction that we have had with the industry and the ACRS during the development of both the generic letter and the guidance document which is attached. The ACRS had sent a letter to Mr. Chairman dated May 15, where they basically have agreed with our approach. The only point they made is that if

either the generic letter or the guidance document should be revised as a result of the workshop that we plan to have, then they would like to give them the chance to review both the generic letter and the guidance document and that will take place.

With the industry, you'll see later on that we have many meetings in all areas that we'll be talking about. Basically, our views and those of the industry coincide in all areas except in the area of seismic events. They have taken issue with us on the selection of the review level earthquake.

As recently as yesterday, we got a letter from NUMARC, again pointing out that they don't agree with us in this area and they told us in this letter that they have some additional work underway that they think will affect either generically or plant-specifically the seismic characterization, that is the review level earthquake. We'll be happy to review this work when they provide it to us basically. Also, they make the comment that they would like to be given the opportunity to review both the generic letter and the guidance document which, of course, they will when it goes out and we'll appropriately consider their comments.

So, with this background, Larry Shao, the

Director of the Division of Engineering, who has been the chairman of this effort, will now proceed to go into some more details. And later on, Mr. Beckner will proceed to discuss the implementation itself.

MR. SHAO: (Slide) Okay. Slide number 5, please.

There were three major objectives for the NRC external event steering group. The first objective is to identify the important external events, since there are so, so many external events, such as earthquake, fire, volcanoes, landslide, lightening and so on.

The second objective is to develop alternate or simplified methods since aside from PRA there were no alternate methods for individual plant examination for external events. For certain external events such as seismic loadings, there are many, many ongoing NRC programs. In order to avoid duplication of effort on the part of NRC and also on the part of industry, the last objective of the external event steering group is to integrate all NRC external event programs. The work, as Doctor Speis, by the external event steering group has been completed and their recommendation formed the basis for the proposed generic letter and the draft guidance document.

(Slide) Next slide, please.

The external event steering group members are from various offices of NRC. I'm the Chairman. Tom Novak is from AEOD, Jim Richardson from NRR, and Warren Minners from Research. Goutam Bagchi is Executive Secretary.

Because of the broad scope of the subject, the steering group, in turn, forms three subcommittees, one on seismic, one on fire, and the third one on high wind, flood and the others. Most members of the subcommittees are from NRR and Research. The key members are sitting here. They can answer any questions you ask them.

MR. TAYLOR: That's a broad statement.

COMMISSIONER ROGERS: On any subject whatsoever?

MR. SHAO: Concerning external event.

(Slide) The next slide, please.

The industry organized similar groups and they are headed by NUMARC. I think Bill Raisen is here.

The seismic issues working group, chaired by Bill Lindblad of General Electric is responsible for all seismic issues. The severe accident working group, which is responsible for its external

management and all other external events is chaired by Cordell Reed of Commonwealth Edison.

(Slide) The next slide, please?

In developing the approaches for IPEEE, there have been extensive interaction with industry. There were several management meetings which Jim Sniezek, Tom Murley and Eric Beckjord all attended. There were 12 meetings with NUMARC on seismic events alone, 11 meetings on fire and seven meetings on high wind, floods and others.

(Slide) Next slide, please.

The external event steering group studied many, many external events and we concluded that the important external events are earthquake, fire, external flood, wind and tornado and transportation and nearby facility accidents. The IPEEE should include all these events. In addition, you want the licensee to confirm that no known external event unique to the plant with potential to initiate severe accidents are excluded from the examinations.

(Slide) Next slide, please.

Now, let me talk about seismic IPEEE. For seismic IPEEE, either the seismic margin or seismic PRA method is acceptable.

(Slide) Next slide, please.

The seismic margin method provides an integrated review of plant response to seismic loadings. It provides a measure of plant capability to resist earthquake loadings beyond design basis. This method is essentially derived from PRA insights. Based on these insights, the number of systems and components to be examined is greatly reduced. The seismic margin study required a thorough walkdown to identify any areas that are vulnerable to earthquake loadings. The major event of this method is that no seismic hazard curves are used in the examinations.

It should be noted that the NRC and the industry through EPRI has worked on this method for several years and it has been successfully applied to three plants, Maine Yankee, Catawba and Hatch. The Maine Yankee and Catawba are PWRs and Hatch is a BWR. This study has been very useful. For instance, Maine Yankee has an original design basis of only 0.1 g after the seismic margin review and with some modifications, mostly on anchorage, the plant capacity of Maine Yankee becomes 0.27 g.

COMMISSIONER CURTISS: Larry, on that subject, if the margins approach is used, is that -- I gather the role that we would play is just to provide the number, the betting of the plants on that. Can

you expand upon your earlier comment that that's one issue on which you all disagree?

MR. SHAO: (Slide) Okay. Give me the backup slide, number 2, please. The backup slide number 2.

In the seismic margins method, the plant is reviewed against so-called review level earthquake. Well, what's the definition of review level earthquake? Review level earthquake is a screening or so-called reporting level earthquake. It does not represent a plant vulnerability. If the plant capacity is less than a review level earthquake, no more work has to be done and the examination is over. However, if the plant capacity is lower than the review level earthquake, the licensee should evaluate the significance of it. The review level earthquake for various sites, there are about 70 sites in the United States, would develop through very careful examination by our consultants, the staff and we also talked to CRGR, ACRS.

Mainly, the review level earthquake would develop based on two curves. One is called Lawrence Livermore curve and one's called EPRI curve. The Lawrence Livermore curve was developed based on NRC Research contract and also NRR contract and EPRI curve

is funded by the industry. But the problem is these curves make considerable differences. But these curves mainly are expert opinion.

(Slide) Before I come back to this, let me have backup slide number 6, please. Number 6.

These are the seismic hazard curves for Peach Bottom which are used in 1150. The upper curve was developed by Lawrence Livermore and the lower curve was developed by EPRI. There's a considerable difference between the two curves and it will give a considerable difference in answers.

NRC -- when we developed review level earthquake, we used both curves. We don't know which one is right. We believe EPRI is right and NRC is right. However, NUMARC developed their review level earthquake only based on their curves. So, we feel that we have some problems. So, our review earthquake is based on both curves.

COMMISSIONER CURTISS: Let me make sure I understand what you're saying. Is it the staff's position that either curve, either approach, the EPRI and Lawrence Livermore approach is acceptable?

MR. SHAO: No. Maybe I say it a different way. We used both results to come out with the final -- we used some kind of arithmetic sum. So, you

can look at EPRI curve, we look at Lawrence Livermore curve and we combine them and come out with the final results. We didn't know their curve, we didn't know our curve. We used both results and come up with a solution. A single solution.

CHAIRMAN CARR: The curves look like they differ by a factor of ten probably in the probability?

MR. SHAO: Okay. Yes.

(Slide) Okay. Give me backup slide number 9, please.

CHAIRMAN CARR: I couldn't tell what the bottom line was.

MR. SHAO: Okay. To answer your question, Chairman, let me show you the results of 1150.

Backup slide number 9, please.

Okay. This summary is taking part in NUREG-1150 for Peach Bottom. If you look at the main seismic external event --

COMMISSIONER CURTISS: Can you enlarge that a little bit? Has that been on it?

MR. SHAO: You can't read it?

CHAIRMAN CARR: He can enlarge it, I think.

COMMISSIONER CURTISS: Okay.

MR. SHAO: Okay. If you look at external

event by Livermore and also by EPRI, there's a factor of 20 in core melt frequency. The Livermore curve gives a result of 7.7×10^{-5}. The EPRI seismic curve give a result of 3.1×10^{-6}. There's a factor of 20. And according to the Peach Bottom 1150 study, the dominant core melt frequency comes from earthquake and fire.

CHAIRMAN CARR: Okay.

MR. SHAO: (Slide) Okay. Can you go back to backup slide number 2?

DOCTOR SPEIS: I think if we were to summarize, this area is highly uncertain. The curves that provide the likelihood of earthquakes, as you saw the two curves with the large differences, both of them were developed by high experts. So, we feel that both of them have to be utilized in examination. The review level earthquakes that are used in the margins approach, somehow -- you can call it an average of sorts. You know? So, that's kind of the bottom line.

You wanted to say something?

MR. RICHARDSON: Yes. I think it ought to be pointed out that this review level earthquake, as Larry pointed out, is merely a screening criteria. Those two levels were chosen, 0.3 g and 0.5 g, only because that is where the preponderance of the data

that we have available. We have a group of data taken from experience of similar equipment in heavy industrial facilities that have suffered earthquakes, test data and detailed analysis. They're generally centered about 0.5 g and 0.3 g. That's where the preponderance of the data is. So, that naturally becomes your screen. It's not that we expect the plant to demonstrate their capability of 0.5 g, it's only a starting place so you can screen out a volume of equipment so you don't have to do further analysis.

So, it really needs to be understood that these review level earthquakes are not expectations, they're screens to use to eliminate some data or some components so that you only have to look at selected components that aren't available in the database.

CHAIRMAN CARR: Well, are they geographical? For instance, the two plant sites that are 0.5 on the West Coast somewhere?

MR. RICHARDSON: No, they're East Coast. But again, it needs to be pointed out that there is no expectation that those plants be demonstrated to be capable of sustaining 0.5 g. It's just those two plants in the hazard curves, using the EPRI and Livermore hazard curves, appear to be outliers and we felt that the 0.3 g screen, they ought to go a little

above that. And our next data point was not at 0.31 g but it was at 0.5 g. So, they had to take the next step up.

CHAIRMAN CARR: Okay.

COMMISSIONER CURTISS: When you get to the seismic PRA approach, are you requiring the licensees to run both hazard curves?

MR. SHAO: Yes, I'll get back to that. That's the next slide.

COMMISSIONER CURTISS: Okay. I'm ahead of your graph, but that's --

MR. SHAO: Okay. If I answer you the seismic margin methodology program, maybe I'll go back to the next slide.

(Slide) Slide 12.

For the seismic PRA, the staff emphasize bottom line numbers, mainly because there are so much difference uncertainty in the seismic hazard curves. So, the answers are bottom line numbers. There are two sets of seismic curves, one from Livermore, one from EPRI. As I say, for certain sites, the two seismic curves give so much difference and both are coming from experts in the area. So therefore, for seismic PRA, we want the licensee to use both curves to identify any dominant sequences and dominant

components.

That's very funny. Let's say in Peach Bottom and Surry they use both curves, but the dominant sequences and dominant components are similar, almost similar, even though they're different curves. But every site will have the same result.

COMMISSIONER CURTISS: Wouldn't that suggest that if you think a defensible case can be made for each of the curves that the option of doing either EPRI or the Lawrence Livermore curve would be something sensible to provide?

MR. SHAO: Mainly because they have the same result, because the slope to occur for these two sites are the same. But if the slopes are not the same for the two curves, they may have different dominant sequences and dominant components. So, I cannot say --

CHAIRMAN CARR: I guess I don't understand. It looked like the two curves, one was just more conservative than the other one.

MR. SHAO: Yes.

Go ahead.

MR. RICHARDSON: You saw one comparison at Peach Bottom. There are other sites where, in fact, the shapes may be a little different.

CHAIRMAN CARR: They may cross?

MR. RICHARDSON: I don't know of any cases where they cross, but they may come much closer together in certain frequency ranges. But it also ought to be pointed out as you develop a PRA methodology and model it, it is -- I don't want to use the word "trivial," but a very easy task to run two different hazard curves through it. It would be a very small part of the effort.

CHAIRMAN CARR: But the curves then --

MR. RICHARDSON: And you gain insights from using both curves and then you arrive at a judgment, do I have a vulnerability?

CHAIRMAN CARR: Are the curves plant-specific or geographical area specific?

MR. RICHARDSON: Plant-specific.

MR. SHAO: Site-specific.

MR. RICHARDSON: Site-specific.

CHAIRMAN CARR: Any plant on that site? I wouldn't have to have a plant on that site and I could develop the curves?

MR. SHAO: No. These curves are developed based on the sites. We have 70 sites in the Eastern United States. We looked at these 70 sites and developed these curves.

CHAIRMAN CARR: Well, I would call those geographically-specific.

MR. SHAO: Okay. Fine.

CHAIRMAN CARR: Okay.

DOCTOR SPEIS: It is possible in some cases that we might not have considered some detailed information. For example, in NUMARC's letter, they indicate to us that they may have omitted some plant-specific information they would like to bring to our attention.

CHAIRMAN CARR: Okay.

COMMISSIONER CURTISS: Let me see if I can summarize what I understand you to be saying on the seismic PRA approach. Each of the curves may capture different things. So, as a result, you want to require them to do an analysis using both of the curves. Does that suggest anything about the averaging approach for the seismic margins methodology?

MR. SHAO: Margin, we already integrated two curves already. So, we only look at --

CHAIRMAN CARR: I thought you said in the margin the curves weren't used.

COMMISSIONER CURTISS: They took the average of the two.

MR. SHAO: The seismic curves --

CHAIRMAN CARR: Well then, I'd say they used them.

COMMISSIONER CURTISS: My question is if you're saying for seismic PRA that you may not catch everything that you want using just one of the curves, and particularly where they cross, you therefore need to use both curves. Why isn't that true as well as you go through identifying the review level earthquake for the margins approach?

MR. RICHARDSON: Okay. There's a very distinct difference in how you use the hazard curves between the two methods. In the seismic margins method, the hazard curves are used to select a review level earthquake and that's all they're used for. Once that is done, the hazard curves are set aside and we're just out to estimate the capacity of the plant.

CHAIRMAN CARR: Okay.

MR. RICHARDSON: That's one of the strengths of the margin method, is it takes the uncertainty of the hazard out of the picture. On the other hand, the PRA, the answers you get are highly dependent upon the characteristic of the input, the hazard curve. And we think it prudent -- since there's a diversity of opinion, it's prudent to run

both and gain insights from both hazard curves. Not true for the margin method because the hazards were only used to select the review level earthquake and that was done by sort of laying the sites out and saying, "Do we have any outliers that ought to be at a little higher lever, review level earthquake?"

CHAIRMAN CARR: Are those curves based on the same sets of data?

MR. SHAO: No, on different data, mainly based on local geology.

CHAIRMAN CARR: Okay. That explains my problem.

COMMISSIONER CURTISS: And the option is given to the licensee to use either the margins approach or the seismic PRA?

MR. RICHARDSON: Right.

MR. SHAO: Yes.

COMMISSIONER CURTISS: Would you expect the vast majority of them to use the margins approach?

MR. SHAO: Yes, you're right.

COMMISSIONER CURTISS: Subject to resolution of this question of the review level earthquake.

MR. SHAO: Right. Exactly.

COMMISSIONER CURTISS: Okay.

MR. SHAO: Okay. In addition, a good walkdown should be made to identify any areas that are vulnerable to earthquake levels. Other areas very important is we want a so-called high confidence and low priority failure values for component sequences in the plant, so-called HCLPF curve, plant capacity. For the PRA, you can generate so-called HCLPF.

Okay. That's all I have on seismic and--

COMMISSIONER ROGERS: Well, just before ending the topic --

MR. SHAO: Sure.

COMMISSIONER ROGERS: -- in the margins methodology, what do you mean from -- what does this bullet really mean, from PRA insights. You're not doing a seismic PRA, but the internal events PRA or what are you talking about there?

MR. SHAO: There are about 25, 30 seismic PRA. For these seismic PRA, you know which systems are most important and which systems are not important.

COMMISSIONER ROGERS: Not on this plant but for other plants.

MR. SHAO: Yes. For other plants, from these experiences, you can pick out systems.

CHAIRMAN CARR: Okay. It's used just to

pick out the systems you're worried about?

MR. SHAO: Right.

COMMISSIONER ROGERS: Okay.

MR. TAYLOR: Bill?

MR. BECKNER: (Slide) Okay. I'm going to now look at the other hazards. If we go to slide 13, indicates acceptable methodology for fire IPEEE. Currently, the steering group has only identified one methodology and that's a fire PRA which would also be augmented by a walkdown to address some issues identified as part of the fire risk scoping study. That's the only method that's currently available. However, EPRI and NUMARC are working on a more simplified approach. This essentially is a success path approach or simplified PRA. We have met with EPRI and NUMARC a number of times on this method. We are still awaiting, I believe, their submittal, but once that submittal is given to us, we will review it to see if it's acceptable to perform the IPEEE. The fact that this method is under development is indeed indicated in the generic letter. So the licensees will know of its availability.

(Slide) Slide number 14 deals with, in effect, what we're calling the others, the high winds, including the tornadoes, external floods and the whole

laundry list of items that we looked at and screened out. But basically, what we're recommending in this area is a screening-type approach that makes heavy use of the original design basis of the plant. The reason we're doing this is that first of all plants that are designed to current criteria -- and what we mean by that is basically the post-1975 SRP: criteria -- the design basis is very, very conservative in these areas. And in addition, the design basis quite often made use of a probablistic approach.

So, what we're saying is that for these areas, if the plant is basically designed to the newer criteria, we can screen them out and don't have to worry about it anymore. But it is necessary that all plants go ahead and go through this screening process basically for two reasons. First of all, there may be some older plants that are not designed to the current NRC criteria and, second of all, newer plants may have nearby facilities that are not safety related and therefore were not designed to the criteria and they should be looked at.

In addition, there could have been changes in land use in the vicinity of the sites since the plant was licensed and so we feel that, again, plants should use a screening-type approach to examine in

these areas.

That concludes a general discussion of the basic external hazards that we feel need examination.

(Slide) If we can go to slide 15 now --

COMMISSIONER CURTISS: Before you go on, let me go back to the fire --

MR. BECKNER: Okay.

COMMISSIONER CURTISS: -- for your response on the NUMARC comments, because I gather what you're saying in the letter of April 13th is that the extensive work that we've done on Appendix R to date and the analyses that have been done, and they cite NUREG CR 50-42, indicate that as they say it, "The public risk for internal fire scenarios has been shown to be negligible."

Two questions. Number one, would you respond to that in terms of the risk that remains from fire as a result of the Appendix R initiatives? Two, if we proceed with fire in the context of external events, what steps does the staff envision to coordinate the work that's being done here with the work on Appendix R?

MR. BECKNER: (Slide) If we want to go to backup slide 7, I think there's an indication of the risk that remains from fire, even with Appendix R in

place.

MR. SHAO: Why don't we let Conrad McCracken answer the question. He's the Chairman of the Subcommittee on Fire.

Conrad?

MR. McCRACKEN: Conrad McCracken, NRR.

I think I need to go into a little background to address your question. Appendix R is only part of the regulations on fire. It only applies to a specific number of plants. The other plants have other regulations that they meet.

Appendix R and those other regulations were a deterministic approach to go in and protect a single train of shutdown equipment. That was done by basically putting a three hour barrier around it. You either wrap the component or you ensure that it's separated from the other equipment.

When people started to do PRAs, they've gone through about 20 PRAs now where fire has been included. The majority of those have found fire to be a significant factor because even though you've protected one train, you've left the other train vulnerable. If the train you've protected is out of service for any other reason, and in many cases they didn't have any significant time limits on how long

they could be out of service, it turned out you had a very high vulnerability to fire because the other train which you had not protected was now vulnerable.

We found that through PRAs, through a logical methodology of going through and looking systematically at all of your equipment and determining what is available, what is and what is not protected that you do find vulnerabilities and, in fact, some of those then need to be protected by some other means. They can be protected by implementing a fire watch if you have your fire protected train out of service. There are normally simple easy things to do that you can implement that will give you that added assurance that you've detected and taken care of the vulnerabilities.

COMMISSIONER CURTISS: Does the NUREG that they cite, NUREG CR 50-42, focus on single train or does it take the systematic approach?

MR. McCRACKEN: It takes --

COMMISSIONER CURTISS: I gather there argument here is that the six reactors that were studied in that NUREG showed no significant risk.

MR. McCRACKEN: No, I think we disagree with them on whether it shows any significant risk. They went and did a study at one particular plant on

their own. The assumptions they used in their study to justify their PRA base number we didn't agree with. We think the database they used wasn't applicable to nuclear power plants. We simply -- that was something done very early with them. That was probably the third or fourth meeting in our series of 11 meetings. Since that point, we've really not been involved in discussing or worrying about that particular database.

COMMISSIONER CURTISS: Okay. So your earlier comment that this has been resolved with NUMARC reflects a disagreement basically with the April 13th position.

MR. SHAO: Yes. I think NUMARC had no problem with us on fire, unless I'm wrong.

MR. McCRACKEN: Not that I'm aware of. There aren't any disagreements between us on -- we haven't reviewed their methodology yet though, so disagreements could arise.

COMMISSIONER CURTISS: I understand.

MR. BECKNER: Okay. Are there any more questions on the specific hazards?

(Slide) Then we can go to slide 15, which describes the implementation process that we would recommend. In effect, we're recommending a process that will parallel what we did for the IPE internal

events which is basically to issue a generic letter which would request the examination and, at the same time, issue a guidance document as a draft for comment. We would then have a workshop, consider any comments and questions that we got from the workshop on both the guidance document and anything in the generic letter. Then, following that, we would reissue the guidance document and indeed a supplement to the generic letter if necessary.

That would start the IPEEE clock, in effect. We would perform a similar type of request where the licensees would have 60 days to tell us about their plans which we would review and approve, and then the basic request would be that the IPEEE be completed in three years, although I'll talk a little bit more about schedule in a moment.

(Slide) That leads really to the next viewgraph which is the schedule that we would propose. Pending Commission approval, we could issue the generic letter in July. We've tentatively planned a workshop in the September time frame and that would have the guidance document being issued as final in November or late in the calendar year. That, again, giving the three year schedule that we would request, is consistent with closing out severe accident issues

by June of 1995, which the Commission -- we told the Commission was our target.

However, I do want to point out that the schedule problem and the fact that the utilities may be overloaded with both the internal and the external events has been a problem that NUMARC has made us aware of. As with the internal event IPE, we do indicate that licensees may request extensions and that we would evaluate them on a case by case basis.

COMMISSIONER CURTISS: On the schedule question here and on that issue of extensions, I gather what you're saying is that those licensees that want to do these in series are likely candidates for extension?

MR. BECKNER: Yes.

COMMISSIONER CURTISS: And if I read the SECY paper correctly, there are six licensees that are not doing them in series.

MR. BECKNER: There are six licensees that have told us already they're doing external as a part of internal. They're going ahead. But we have not heard the plans from the other utilities.

MR. TAYLOR: There may be more.

MR. BECKNER: There may be many more than that.

COMMISSIONER CURTISS: Would you expect the majority of the licensees to do these in series and hence --

MR. BECKNER: There may be efficiencies to doing it in parallel, or at least very close. To finish the internal events, you tend to make use of the same plant models for the external events and proceed immediately with external events using the same plant models and the same expertise as far as the plant side.

COMMISSIONER CURTISS: Okay.

CHAIRMAN CARR: Well, there might be some advantages of doing it simultaneously, it seems to me, because fixes in one place might interact with fixes in the other place.

MR. BECKNER: Correct.

COMMISSIONER CURTISS: I was trying to get a feel for whether the submittals will all come in at the end of '93 or whether they'll be spread out and permit the staff review of that to spread out as well.

MR. BECKNER: Don't have a feel for that at this point in time. The internal events tend to be -- IPEs, tend to be pushed toward the September '92 date.

COMMISSIONER CURTISS: Right.

MR. BECKNER: So, we may see a similar trend.

COMMISSIONER CURTISS: Okay.

MR. BECKNER: (Slide) The last slide, slide 17, simply restates the recommendation. That is that we recommend approving issuance of a generic letter and a supporting guidance document as a draft for comment that would request the licensees conduct an IPE. The IPE process would then start following the workshop and any revisions as necessary to either the guidance document or the generic letter. That concludes our presentation.

CHAIRMAN CARR: Any questions, Commissioner Rogers?

COMMISSIONER ROGERS: The estimation of cost required to do this, do I read this correctly that your estimate is that these will require about six person years for each of these examples?

MR. BECKNER: We view that as an upper limit.

COMMISSIONER ROGERS: How confident are you of that as being an upper limit?

MR. BECKNER: I guess that was a major issue that we dealt with in the internal events, and so we were very careful. We obtained estimates based

on experience with our contractors in 1150 and we also informally questioned a number of companies out in the world that performed PRA type analyses. We also looked at the costs for the margins methods that have been done. That number includes quite a bit of conservatism, I believe, because it was a major issue as far as the validity of the estimates of the internal events.

COMMISSIONER ROGERS: Does the industry more or less agree with you on that?

MR. BECKNER: I don't think we've seen any specific comments from industry on that at this point in time.

COMMISSIONER CURTISS: If I recall, the ACRS was skeptical of your initial estimate of 400,000.

MR. BECKNER: That estimate is based on what we felt our contractors could do it for.

COMMISSIONER CURTISS: Did they have a number in mind or were they just skeptical of the 400K?

MR. BECKNER: I don't believe they had a number in --

COMMISSIONER CURTISS: Okay.

COMMISSIONER ROGERS: That's all.

CHAIRMAN CARR: Commission Curtiss?

COMMISSIONER CURTISS: Yes. I have a number of questions. Let me begin with what happens at the conclusion of this process because the NUMARC letter raises a number of questions about whether this initiative ought to be subjected to the backfit analysis.

If I read the SECY paper correctly, and I'm looking here at page 3 and the top of page 4, the generic vulnerabilities would be used to determine if efficiencies exist in the regulations, that is to say the generic vulnerabilities identified after the process. If deficiencies are identified, the benefits of modifying the regulations would be assessed against the safety goal. It goes on to say at the bottom of that page, "The staff expects each licensee to identify all such actions and to implement them, if appropriate, in a timely manner."

Now, NUMARC's argument, as I understand it, is that this is really a predicate to rulemaking or some sort of regulatory requirement. So, under 50.109, you ought to subject this to the full regulatory review and the backfit analysis. What's the response to that?

This language, I guess, sounds to me like

it is a predicate to some kind of requirement. Or, to put it as they did, if we're doing this to impose requirements on licensees, it ought to go through the process. If not, why are we requiring it?

MR. BECKNER: No, I think there's two points here. Number one, if after we review the bulk of the IPEs and see that there are major weaknesses in our regulations, we of course would modify them. And if we chose to modify the regulations, we would go through the backfit process, of course. There's no intent or no expectation or no identified weaknesses in the regulations right now, but obviously with this database that's a possibility.

The second point is for individual plants. What we've said is if you find a weakness and you feel that you think it ought to be corrected, go ahead and correct it. Don't wait for approval from the staff, but correct it under the existing regulations that allow you to improve your plant. If the staff disagrees with decisions on fixing vulnerabilities, then of course we would use the backfit process. And there's nothing more than that to be read into the words, I don't think.

COMMISSIONER CURTISS: I guess their argument is that -- I take it everybody would agree--

if you impose requirements at the end of this process, that those would have to go through the backfit analysis.

MR. BECKNER: Certainly. We stated that.

COMMISSIONER CURTISS: But the question here is if this information request which you're treating under 50.54 as an information request, if there's a reasonable expectation that that will lead to the imposition of regulatory requirements, should that be subjected to the backfit analysis up front?

MR. BECKNER: I don't believe there's any expectation of any specific rule change at this point in time.

COMMISSIONER CURTISS: They cite, as an example of that, the CRGR's approach on USIA-46 where that was done.

MR. SHAO: A-46 is a definition of compliance. You've got A-46 for design basis as stated, the compliance issue.

CHAIRMAN CARR: Well, let me amplify that a little, because it looks like we're asking them to evaluate their plants according to criteria that they might not have been designed to.

MR. SHAO: Right.

CHAIRMAN CARR: And when they get through

with that, then we may say, "Hey, there's some things we think you ought to do against these new criteria that's not really part of your design." And you're saying if they say, "We won't do it," then we'll have to pass a rule and require them to do it, at which time you plan to do the backfit analysis.

MR. BECKNER: No. I think this has been a problem. The criteria that we're putting down, both the reporting criteria for the internal events and external events and also the review level earthquake is just that. It's a reporting criteria. And it says in the generic letter very clearly that these reporting criteria are not necessarily any definition of a vulnerability or any expectation. It's simply the level of detail in reporting that we would like to see.

A plant, for instance, that does not meet the 3.3 g review level earthquake, there's no expectation that that plant would have to be upgraded. It would be reviewed on a case by case basis in whatever level it could sustain, and also what the particular vulnerability was, the importance of that vulnerability.

DOCTOR SPEIS: If I may say something, Mr. Chairman, this is no different than the approach we

have taken for internal events.

CHAIRMAN CARR: I'm no more comfortable with that than I am with this when we get down to where the rubber hits the road and we've really got to make them do it.

DOCTOR SPEIS: We are talking about -- we are beyond the regulations. Okay?

CHAIRMAN CARR: Yes.

DOCTOR SPEIS: We're talking about risk reduction, safety enhancements. And in that area, the Commission rules are very clear. We have to apply the backfit rule if we think that something should be done to further enhance safety or reduce risk, you know.

CHAIRMAN CARR: Well, I applaud what we're doing. What we're really doing is, say, "Take a look at your plants. If you find something that need fixing, fix it." And we hope that there won't be an argument, because they'll obviously want to fix something that needs fixing.

MR. TAYLOR: That was the idea.

CHAIRMAN CARR: The argument's going to come if they say, "We don't think it needs fixing," and we say, "We think it does need fixing." Then, you're going to go through a rulemaking. Is that what you're telling me?

MR. TAYLOR: Or individual plant factors.

DOCTOR SPEIS: Yes. Yes, or individual--

MR. TAYLOR: It might likely be that or a group of plants.

COMMISSIONER CURTISS: I'm trying to extract the general principle here under 50.109 that I think I hear you're saying. If you have an initiative that is going to lead to the imposition of requirements at some point, as this one will or may, depending upon the willingness of the licensees and the way in which the licensees read, "We expect you to take those actions."

For purposes of how we interpret the backfit, I gather your argument is, in a case like this where we start off down that road with a request for information, what you call a 50.54(f) request, that that first step doesn't have to be subjected to the backfit process even if we stipulate at the front end that it will lead to requirements.

MR. BECKNER: At this point, we have no expectation on any fixes that might be required, so it would be difficult to do a backfit. We have no expectation of specific fixes or --

MR. PARLER: Mr. Chairman, if you would have to subject the first step to a classical backfit

analysis going through a cost benefit analysis for information that you need and you don't have, you couldn't do that. You have to have a justification for the information so that undue burdens are not imposed on people.

But beyond that, I agree -- well, not beyond that, but with that I agree completely with what Mr. Beckner has described. You worry about the backfitting rule when you get to the point of deciding whether or not you have to impose additional requirements.

COMMISSIONER CURTISS: Let me ask you one other question on this point, because they cite a section and I'm assuming it's accurately quoted here out of the *Federal Register* notice of September 20th, '85. "The amendment of 50.54(f) should be read as indicating a strong concern on the part of the Commission that extensive information requests be carefully scrutinized by staff management prior to initiating such requests. The Commission recognizes that there may be instances where it is not clear whether a backfit will follow an information request," which I take it is this case, "those cases should be resolved in favor of analysis."

Their argument is that this is a case

where it's not clear or, depending on how you read the language in the SECY paper, there's a reasonable expectation that requirements will follow. In citing that language from the 50.54(f) amendment, the Commission took the position in '85 that where it's unclear those ought to be resolved in favor of analysis. Is this one of those cases?

DOCTOR MURLEY: Well, we might be missing something, Commissioner. Maybe the analysis referred to is this request for information had to go through CRGR review, and it had to go through the analysis to support the request for information. Am I correct?

MR. BECKNER: Yes.

DOCTOR MURLEY: I haven't read that, but I wonder does the analysis refer to --

COMMISSIONER CURTISS: They're arguing that --

DOCTOR MURLEY: -- the backfit analysis--

COMMISSIONER CURTISS: -- although it has been referred to the CRGR, that it ought to go through the 50.109 backfit analysis, as I understand their position.

MR. BECKNER: I think that's the case.

CHAIRMAN CARR: Sounds like it depends on whether you're an optimist or a pessimist.

COMMISSIONER CURTISS: I'm just reading the language in the SECY paper that says that --

CHAIRMAN CARR: If you think the current plants are going to come out of this with no changes required, then obviously you don't need any pre-analysis. If you, on the other hand, believe they won't, then you might make the argument on the other side.

COMMISSIONER CURTISS: Right.

MR. TAYLOR: We're proceeding, you know--

CHAIRMAN CARR: The indications that they've given me so far, for instance, on the seismic events where they've looked at plants that were designed for less than what they think they need now and they look and they're well above the margin would lead you to be an optimist.

COMMISSIONER CURTISS: Puts you on the horns of the dilemma that the NUMARC folks raised, though. If you expect that this program won't lead to any regulatory requirements or changes at the end of the process, then they ask the question and I'll just ask it here, what's the purpose of the program then?

DOCTOR MURLEY: I don't know how we could conceivably do an analysis of the costs and the benefits when we don't have a remote idea of what they

would be before we ask for this. In other words, it's as the General Counsel said. If we're stopped from even asking for information, I don't know how we could conceivably do the analysis.

CHAIRMAN CARR: I would think it depends on -- the information to come in should give you a confidence level that your regulations are or are not good enough. If you find that they are not, why then you have to go through the rest of the process.

COMMISSIONER CURTISS: Yes. I understand the issue. I'm not sure where I come down on it, but it's been a helpful discussion.

CHAIRMAN CARR: We're not going to take a vote at this meeting.

COMMISSIONER CURTISS: I understand.

Let me go back. I missed a couple of questions here. On the Appendix R fire protection issue, the second question that I had was how would the staff propose to coordinate the efforts here with the ongoing fire protection efforts? Are there steps that this letter outlines that would ensure that those two efforts can be coordinated with the maximum use of resources?

MR. McCRACKEN: Yes. Conrad McCracken, NRR.

The Appendix R fire protection issues are already resolved, with the exception of two plants that we're cleaning up. And we have told them clearly in the way they handle this that they go in with the assumption that they meet all the current regulations on fire protection, unless we find something that doesn't apply.

So we're not trying to go beyond the current regulations for fire protection. We're saying, "With that implemented, do you have additional vulnerabilities?" We're not trying to revisit the issues that we've already addressed.

COMMISSIONER CURTISS: I guess I had more of a mechanical question. In terms of both that and seismic, for example, and walkdowns and that kind of thing, is the schedule coordinated so that the individual licensees in --

MR. McCRACKEN: Yes.

COMMISSIONER CURTISS: Go ahead.

MR. McCRACKEN: Yes. The intent is that we're trying to limit the number of walkdowns. This was an issue that we discussed with NUMARC. There are cases where they would like to have one big walkdown that addresses everything. There are other cases that they figure they're going to have a couple of

walkdowns, but with specific people looking at specific issues. But that's one that we've gone through with a senior management meeting with NUMARC. We've had a number of working group meetings. Our intent is not to have them walkdown the plant ten times in the next five years. We want them to limit the number of times they have to walkdown and go for specific purposes with a written procedure before they go to address all the areas that need to be picked up and have the proper expertise of people doing it.

MR. RICHARDSON: That's especially true also in the seismic area where the generic letter clearly recognizes that A-46 is closely related and requires extensive walkdown. And we encourage the industry to closely coordinate those walkdowns, if not the same walk down, at least make sure that they maximize the benefits from each walkdown so that there is carry-over so that their resources can be optimized.

COMMISSIONER CURTISS: I think -- let me take a quick look here. That's all I have.

CHAIRMAN CARR: Well, I might just comment that from a health and safety standpoint it looks like a common sense thing to do. I realize there's lots of issues and I share some of Commissioner Curtiss'

concerns about how we get to the endpoint from where we are now, but I don't think I can solve that here.

MR. TAYLOR: Those concerns apply to the IPE from the very beginning, and that is that there is that possibility and then the staff will have to face -- the licensee decides on its own to make a fix, they will.

COMMISSIONER CURTISS: I had some other questions --

CHAIRMAN CARR: Sure.

COMMISSIONER CURTISS: -- on the resources issue I mean to ask. I noted here that you've got the resources included in the five year plan. Is that-- does that assume that those reviews will all be done in-house, or is there going to be contractor review of those as well?

MR. BECKNER: It's similar to the internal events. It would be a mixture.

COMMISSIONER CURTISS: A mixture?

MR. BECKNER: Yes.

COMMISSIONER CURTISS: All right.

And, Tom, back to your comment on information requests on the backfit issue, do I interpret you to be saying that an information request such as this or any other one that we might proceed

with itself, regardless of what the ultimate outcome might be -- let's say, just for the sake of argument, that we stipulate that a regulatory requirement will be forthcoming, but not at this point -- that that, in your judgement, would not be subject to a 50.109 cost benefit evaluation?

DOCTOR MURLEY: I guess I hadn't thought about the general question, because I can foresee areas where we kind of know where we're heading and the technical issue is well-defined where it may be appropriate to require the analysis before we even go out with a 50.54(f) request for information.

But in this very broad area where we don't really know what's going to come out of it, it is a bit of a fishing expedition. I wouldn't know how to do the analysis of where a rule might emerge from this until we get the information back. So it's in that context that I said I wouldn't here really know how to start to do the analysis of cost and benefits of potential rulemakings when I don't even know what might emerge.

MR. PARLER: I think, Mr. Chairman, that the Commission or the prior Commission when it approved the Backfit Rule they also approved, if my recollection is correct, a change to 50.54(f), which

talked about the preparation or the reasons for such information and that considering the burden that would be imposed on the licensees, et cetera, that if -- and if you have those considerations, you'll get into a situation that seems to me that at least at the outset that you would have complied with what the Commission had in mind when it published the Backfit Rule as far as what considerations should be given to the request for information.

As I understand the Commissioner's question, if you know when you're requesting the information before you even get the information pretty much what the outcome will be, well then should you collapse the 50.54 requirements with the requirements in 50.109 for a cost benefit analysis in the event that you can't make the determination that the change is needed for adequate protection purposes? I would think that would be a unique type of situation where you have already made up your minds before you request the information.

COMMISSIONER CURTISS: And the language that I'm grappling with is actually the tougher case. I think if you know going in that you're going to have regulatory requirements that flow out of the process, that's a pretty clear answer. The *Federal Register*

language that they cite here on those 50.54(f) changes, though, seems to suggest that in cases where it's unclear -- I'll read it.

"The Commission recognizes that there may be instances where it is not clear whether a backfit will follow an information request. Those cases should be resolved in favor of the analysis."

I guess that may be the case we have here. I need to think about it more carefully, but that's the thing I'm grappling with right now.

CHAIRMAN CARR: I guess my curiosity is raised in the other direction. If it were clear you didn't need it, why would you ask for the information anyway?

COMMISSIONER CURTISS: That's NUMARC's point.

CHAIRMAN CARR: Well, but I mean that language in there would indicate that you'd only go out if it was unclear. You'd have to do an analysis. If it was clear, it's okay to go out for it. But if it was clear you didn't need it for regulation, why would you want it?

COMMISSIONER CURTISS: I'd like to read the text of that *Federal Register* notice more carefully, but it does reflect the Commission's

position at the time on how 50.109 should be implemented, and 50.54(f).

MR. PARLER: I would say there would be some question about going out if you don't need it for any regulation or for any other legitimate regulatory purpose. If you don't need it for either, you shouldn't be asking for information.

DOCTOR SPEIS: Mr. Chairman, a similar question to Commissioner Curtiss was raised by Commissioner Roberts when we were discussing internal events. And at that time, we provided to the Commission an explicit justification in the form of the 50.54(f) analysis.

MR. TAYLOR: That's really applicable here.

DOCTOR SPEIS: It's totally applicable and you might want to revisit that.

MR. TAYLOR: That's available. You should consider that if we --

COMMISSIONER CURTISS: I'll take a look at that. I think that preceded --

DOCTOR SPEIS: We'll make sure --

MR. TAYLOR: It's really -- the philosophy is the same.

COMMISSIONER CURTISS: Okay.

DOCTOR SPEIS: It's exactly the same question, you know. What is your justification?

MR. TAYLOR: Yes.

MR. BECKNER: Appendix 5 of the generic letter is additional 50.54(f) analysis for this request.

CHAIRMAN CARR: Any other questions?

Well, I'd like to thank the staff for this informative briefing. You've made significant progress toward closure of the severe accident issues and making recommendations on individual plant examinations for severe accident vulnerabilities due to both internal and external events, containment performance improvements and accident management strategies, and I commend the staff for the progress that has been made.

Still outstanding are staff recommendations to the Commission on the scope and content of utility accident management plans expected in 1991.

I encourage my fellow Commissioners to vote on staff's recommendation as soon as possible so that licensees can have the benefit of staff's work to date on performing a systematic examination of their plants for severe accident vulnerabilities due to

external events.

Are there any other comments?

If not, we stand adjourned.

(Whereupon, at 11:04 a.m., the above-entitled matter was concluded.)

CERTIFICATE OF TRANSCRIBER

This is to certify that the attached events of a meeting of the United States Nuclear Regulatory Commission entitled:

TITLE OF MEETING: BRIEFING ON STAFF RECOMMENDATIONS FOR IMPLEMENTATION OF SEVERE ACCIDENT POLICY FOR EXTERNALLY INITIATED EVENTS

PLACE OF MEETING: ROCKVILLE, MARYLAND

DATE OF MEETING: JUNE 15, 1990

were transcribed by me. I further certify that said transcription is accurate and complete, to the best of my ability, and that the transcript is a true and accurate record of the foregoing events.

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COMMISSION BRIEFING ON

INDIVIDUAL PLANT EXAMINATION EXTERNAL EVENTS

JUNE 15, 1990

THEMIS SPEIS
LARRY SHAO
WILLIAM BECKNER

PURPOSE OF BRIEFING

* TO DESCRIBE THE STAFF APPROACH RECOMMENDED IN SECY-90-192 FOR EVALUATING EXTERNAL EVENTS AS PART OF THE INDIVIDUAL PLANT EXAMINATION (IPE) PROCESS.

* REQUEST COMMISSION APPROVAL TO ISSUE A GENERIC LETTER WHICH WOULD REQUEST THAT LICENSEES CONDUCT AN IPE FOR EXTERNAL EVENTS (IPEEE).

OUTLINE

* BACKGROUND AND RELATION TO IPE
* EXTERNAL EVENT STEERING GROUP AND INTERACTION WITH INDUSTRY
* SCOPE OF IPEEE
  - SEISMIC EVENTS
  - FIRE
  - HIGH WIND, FLOOD, TRANSPORTATION, AND OTHER
* IPEEE IMPLEMENTATION
* SCHEDULE
* RECOMMENDATION

BACKGROUND AND RELATION TO IPE

* COMMISSION'S SEVERE ACCIDENT POLICY STATEMENT, AUGUST 8, 1985.

* IMPLEMENTATION PLAN FOR EXTERNAL EVENTS, SECY-86-162, DATED MAY 22, 1986:

  - EXTERNAL EVENTS TO BE INCLUDED IN IPE,

  - ADDRESS EXTERNAL EVENTS ON A LONGER SCHEDULE THAN INTERNAL EVENT PORTION OF IPE.

* EXTERNAL EVENTS STEERING GROUP (EESG) ESTABLISHED IN DECEMBER 1987.

* INTERNAL EVENT IPE GL-88-20 ISSUED IN NOVEMBER 1988 - EXTERNAL EVENTS ON A LATER SCHEDULE.

BACKGROUND AND RELATION TO IPE (CONT.)

* EESG RECOMMENDATIONS COMPLETED.

* INTERACTION WITH INDUSTRY.

* ACRS SUPPORTS RECOMMENDATIONS.

* NOW READY TO PROCEED WITH IPE FOR EXTERNAL EVENTS.

NRC EXTERNAL EVENTS STEERING GROUP (EESG)

* **IDENTIFY THE IMPORTANT EXTERNAL EVENTS.**

* **IDENTIFY OR DEVELOP METHODOLOGY FOR EXTERNAL EVENT IPE.**

* **INTEGRATE ALL EXTERNAL EVENTS PROGRAMS.**

* **EESG WORK PROVIDED THE BASIS FOR PREPARATION OF THE PROPOSED GENERIC LETTER AND DRAFT GUIDANCE DOCUMENT.**

EXTERNAL EVENT STEERING GROUP MEMBERSHIP

CHAIRMAN:	**L. C. SHAO, RES**
MEMBERS:	**T. NOVAK, AEOD**
	J. RICHARDSON, NRR
	W. MINNERS, RES
EXECUTIVE SECRETARY:	**G. BAGCHI, NRR**
SEISMIC SUBCOMMITTEE	
CO-CHAIRMAN:	**L. REITER, NRR**
	A. MURPHY, RES
FIRE SUBCOMMITTEE	
CHAIRMAN:	**C. MCCRACKEN, NRR**
HIGH WIND, FLOOD & OTHERS SUBCOMMITTEE	
CO-CHAIRMEN:	**D. JENG, NRR**
	W. BECKNER, RES

NUCLEAR INDUSTRY'S COUNTERPART ORGANIZATION

NUCLEAR UTILITY MANAGEMENT AND RESOURCES COUNCIL (NUMARC)

SEISMIC ISSUES WORKING GROUP	SEVERE ACCIDENT WORKING GROUP
CHAIRMAN: W. LINDBLAD	CHAIRMAN: CORDELL REED
RESPONSIBLE FOR RESOLUTION OF ALL SEISMIC ISSUES	RESPONSIBLE FOR RESOLUTION OF OTHER EXTERNAL EVENTS ISSUES AND ACCIDENT MANAGEMENT

INTERACTION WITH INDUSTRY TO DATE

* **EXTENSIVE INTERACTION HAS TAKEN PLACE WITH INDUSTRY OVER THE PAST TWO YEARS ON IPEEE:**

  - **SEISMIC (12 MEETINGS)**
  - **FIRE (11 MEETINGS)**
  - **HIGH WINDS/FLOODS (7 MEETINGS)**
  - **SEVERAL NRC/NUMARC MANAGEMENT MEETINGS**

SCOPE OF IPEEE

* **SEISMIC HAZARDS**

* **INTERNAL FIRES**

* **HIGH WINDS (INCLUDING TORNADOS); EXTERNAL FLOODS (INTERNAL FLOODING PART OF IPE); AND NEARBY MILITARY, INDUSTRIAL, AND TRANSPORTATION FACILITIES.**

* **ALL OTHER HAZARDS SCREENED OUT ON A GENERIC BASIS EXCEPT FOR SITE-UNIQUE HAZARDS KNOWN TO THE UTILITY.**

ACCEPTABLE METHODOLOGIES FOR SEISMIC IPEEE

* **SEISMIC MARGINS**

* **SEISMIC PRA**

SEISMIC MARGINS METHODOLOGY

* **OBJECTIVE:**

  PLANT-SPECIFIC ASSESSMENT OF THE INHERENT CAPABILITIES OF A NUCLEAR POWER PLANT TO WITHSTAND EARTHQUAKES BEYOND THE DESIGN LEVEL.

  - **FROM PRA INSIGHTS**
  - **REDUCE NUMBER OF SYSTEMS AND COMPONENTS TO BE EXAMINED**
  - **INTEGRATED PLANT RESPONSES**
  - **PLANT WALKDOWN**
  - **NO HAZARD CURVES USED**

* **METHODOLOGY HAS BEEN APPLIED TO ACTUAL PLANTS.**

SEISMIC PRA

* PLANT-SPECIFIC EXAMINATION TO IDENTIFY VULNERABILITIES AND UNDERSTAND PLANT RESPONSE TO A SEISMIC EVENT.

  - TWO HAZARD CURVES
  - DOMINANT SEQUENCES
  - DOMINANT COMPONENTS
  - HIGH CONFIDENCE, LOW PROBABILITY OF FAILURE (HCLPF) CALCULATION
  - PLANT WALKDOWN

ACCEPTABLE METHODOLOGIES FOR FIRE IPEEE

* **FIRE PRA**

* **NUMARC AND EPRI ARE DEVELOPING AN ALTERNATE METHODOLOGY, TO BE TESTED ON TWO TEST PLANTS BY SEPTEMBER 1990, WHICH WILL BE REVIEWED BY THE STAFF.**

ACCEPTABLE METHODOLOGIES FOR IPEEE FOR HIGH WINDS, FLOODS, AND OTHERS

* **SCREENING TYPE OF APPROACH, MAKING USE OF PLANT DESIGN BASIS:**

  - **OLDER PLANTS AND NEWER PLANTS WITH NEARBY FACILITIES NOT DESIGNED USING NRC CURRENT CRITERIA NEED PLANT-SPECIFIC EXAMINATION.**

  - **CHANGES IN LAND USE AT SITE VICINITY (i.e., INTRODUCTION OF NEW HAZARDS) AND CHANGES IN FREQUENCY/SEVERITY OF PREVIOUSLY EVALUATED HAZARDS.**

IPEEE IMPLEMENTATION

* PARALLELS INTERNAL EVENTS IPE PROCESS:
  - GENERIC LETTER
  - SUPPORTING GUIDANCE DOCUMENT

* GUIDANCE DOCUMENT TO BE ISSUED FOR COMMENT
  - DESCRIPTION OF KEY ELEMENTS OF EXAMINATION PROCESS AND ACCEPTABLE METHODS
  - REPORTING FORMAT AND CRITERIA (SIMILAR TO INTERNAL EVENT IPE).

* WORKSHOP TO BE HELD.

* ISSUANCE OF FINAL GUIDANCE DOCUMENT WILL START IPEEE CLOCK.

IPEEE SCHEDULE

*	ISSUE GENERIC LETTER AND DRAFT GUIDANCE DOCUMENT	7/90
*	WORKSHOP	9/90
*	ISSUE FINAL GUIDANCE DOCUMENT	11/90
*	IPEEE SUBMITTALS DUE	11/93**

** AS WITH THE IPE, LICENSEES MAY REQUEST EXTENSIONS WHICH WILL BE EVALUATED ON A CASE-BY-CASE BASIS.

RECOMMENDATION

APPROVE ISSUANCE OF A GENERIC LETTER AND SUPPORTING "DRAFT FOR COMMENT" GUIDANCE DOCUMENT REQUESTING THAT LICENSEES CONDUCT AN IPEEE. IPEEE PROCESS WOULD START FOLLOWING A WORKSHOP AND REVISIONS, AS NECESSARY, TO THE GUIDANCE DOCUMENT AND/OR GENERIC LETTER.