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NUCLEAR REGULATORY COMMISSION

Title: PERIODIC BRIEFING ON INDUSTRY IMPLEMENTATION OF  
GENERIC SAFETY ISSUES

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PERIODIC BRIEFING ON INDUSTRY IMPLEMENTATION OF  
GENERIC SAFETY ISSUES

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PUBLIC MEETING

Nuclear Regulatory Commission  
One White Flint North  
Rockville, Maryland

Thursday, October 25, 1990

The Commission met in open session,  
pursuant to notice, at 10:00 a.m., Kenneth C. Rogers,  
presiding.

COMMISSIONERS PRESENT:

KENNETH C. ROGERS, Commissioner  
JAMES R. CURTISS, Commissioner  
FORREST J. REMICK, Commissioner

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## STAFF SEATED AT THE COMMISSION TABLE:

SAMUEL J. CHILK, Secretary

JOE SCINTO, Office of the General Counsel

JAMES TAYLOR, Executive Director for Operations

JAMES PARTLOW, Associate Director for Projects, NRR

HERBERT BERKOW, Director, PD II-2, NRR

WILLIAM RUSSELL, Deputy Director, NRR

JAMES RICHARDSON, Director, Division of Engineering  
Technology, NRR

RICHARD WESSMAN, Director, PD I-3, NRR

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

10:02 a.m.

1  
2  
3 COMMISSIONER ROGERS: Good morning, ladies  
4 and gentlemen.

5 Chairman Carr will not be with us today.

6 Today we're scheduled to hear from the NRC  
7 staff on the status of implementation of closure of  
8 generic safety issues, GSIs, and unresolved safety  
9 issues, USIs. I consider the terms "generic" and  
10 "unresolved" as part of the names of these two groups  
11 of issues somewhat confusing. To assure that we all  
12 start this meeting with a common understanding of what  
13 we are here to discuss, I'd like to just offer my  
14 understanding of the staff's definition of USIs and  
15 GSIs.

16 It's my understanding that both USIs and  
17 GSIs are generic issues, despite the fact that only  
18 the latter uses the word "generic" in its name. USIs  
19 have all now been resolved, according to the staff's  
20 definition of resolution, despite what the name may  
21 suggest, but they have not all been implemented. Some  
22 of the GSIs have been resolved, but some are still  
23 unresolved issues, although they are not explicitly  
24 identified by name as either resolved or unresolved.

25 In fact, the only basis for the

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1 distinction between the two groups of issues relates  
2 to the degree of safety significance of each. GSIs  
3 are issues for which there may be safety concerns and  
4 which may have the potential for safety improvements.  
5 USIs are considered to pose important questions  
6 concerning the adequacy of existing safety  
7 requirements. So, the level of safety concern and the  
8 degree of certainty about that concern are higher for  
9 USIs than for GSIs. So, that's my understanding of  
10 the definition of these two types of issues and I'd  
11 appreciate any correction or clarification staff may  
12 care to offer at the outset of this briefing.

13 Further, we are here today to talk about  
14 those issues for which the Commission has developed  
15 and promulgated a resolution and will be focusing on  
16 the progress of licensees in implementing the  
17 resolutions as appropriate at U.S. nuclear power  
18 plants.

19 Again, to make it clear to everyone what  
20 the term "resolution" and "implementation" mean, let  
21 me offer nontechnical definitions. Resolution of an  
22 issue refers to the determination and statement by NRC  
23 of what the nature and magnitude of the problem is and  
24 what measures are necessary to correct any  
25 deficiencies that may exist. We were last briefed on

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1 the remaining unresolved GSIs on May 29th and we'll  
2 not be hearing an update on these today.

3 Implementation refers to the actions taken  
4 by a licensee to identify specific measures  
5 appropriate to that licensee's plant or plants and to  
6 make the necessary changes. These changes may vary  
7 from plant to plant and may involve analysis,  
8 hardware, procedures, training, or various  
9 combinations of these. The implementation process  
10 usually includes NRC approval of the licensee's  
11 proposed specific actions to address its deficiencies.

12 Thus, we'll be talking about all of the  
13 USIs and about those GSIs which are considered  
14 resolved. We were last briefed on the status of  
15 implementation of the USIs on February 14th. This  
16 briefing will provide an update to that information  
17 and will, in addition, provide a status report on the  
18 resolved GSIs. All generic issues, GSIs and USIs are  
19 tracked by research in the NUREG-0933 database.

20 Mr. Taylor, you may now begin your  
21 presentation.

22 MR. TAYLOR: Good morning. With me at the  
23 table from the staff are Dick Wessman, Herb Berkow,  
24 Jim Partlow, Bill Russell, Jim Richardson, all  
25 representing the Office of NRR.

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1 First, that was an excellent tutorial on a  
2 subject of the insider term, so to speak, of the way  
3 we talk about these various issues. I think basically  
4 we're in agreement. In fact, I'd like to extract it  
5 from the record so we can use it to explain to those  
6 that may not be as close to the center of the  
7 activity, and I must admit we sometimes with these  
8 names if you're immediately associated it with it,  
9 it's not completely obviously what they are, where  
10 they are and whether the actions are complete.

11 So, I do mean it. I believe the staff  
12 would have a hard job improving on that definition.  
13 But I will have it read carefully by all involved.

14 COMMISSIONER ROGERS: Thank you.

15 MR. TAYLOR: Thank you very much,  
16 actually, for the tutorial of what we think we mind.

17 COMMISSIONER ROGERS: Well, I think we  
18 ought to know it to understand that we are talking  
19 about something and understand it.

20 MR. TAYLOR: Yes, sir. I've very  
21 important because the concept when people say  
22 resolved, you think, "Well, everything is taken care  
23 of." That, in fact, is not the case. Indeed, today's  
24 briefing is to take resolutions and is everything  
25 taken care of, that is the implementation status,

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1 which is at the heart of all the issues, and that is  
2 what has happened at the individual plants.

3 I'd like to start getting -- to say that  
4 over the past 18 months, NRR, as you know, has placed  
5 special emphasis on upgrading its procedures and  
6 information systems to provide controlling status for  
7 plant-specific licensing actions and multi-plant  
8 actions. Today's briefing on the status of  
9 implementation of generic safety issues follows other  
10 recent reports to the Commission on the status of NRR  
11 plant-specific licensing actions, TMI action plan  
12 items, and unresolved safety issues.

13 This implementation status of GSIs is the  
14 final area that has needed this attention and thus in  
15 terms of its procedures and tracking, NRR has  
16 substantially completed the improvements which they  
17 intended to put in place some 18 months to--  
18 beginning 18 months or so ago.

19 While this whole effort in the various  
20 actions will continue and the control will continue, I  
21 would like the Commission to consider that the  
22 frequency of our status reports to you may be reduced.  
23 Some were reporting on a quarterly basis, others on a  
24 periodic basis. My ultimate concept is now that we  
25 have our system in fairly decent shape for both status

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1 and control, the Commission may want to consider  
2 getting a combined report on these various actions  
3 with appropriate definitions and perhaps a briefing on  
4 a semiannual or a frequency to be set by the  
5 Commission. I think we're now in a position to treat  
6 all those actions and give you regular reports in a  
7 way that we were not able to do previously.

8 With those thoughts, I'll ask Jim Partlow  
9 to commence the formal briefing.

10 MR. PARTLOW: Thank you.

11 We're going to get right to the briefing.  
12 I only want to say that Herb Berkow, on my left, will  
13 give the briefing on the status of GSIs and Dick  
14 Wessman will update you on the status of USIs. You  
15 were briefed by Dick in February, an initial briefing,  
16 and now will tell you what's happened in the ensuing  
17 eight months.

18 Just quickly also to point out that Herb  
19 and Dick, their main job day to day are project  
20 directors and handle all the administration of  
21 licensing actions and events in Regions II and I  
22 respectively. But they have taken on this collateral  
23 job over the last months to pull together from all the  
24 plants, all the project managers, the status of these  
25 items. So, I'm happy that they get the chance to

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1 tell you what they've done in the past months.

2 So, we'll start with Herb Berkow and GSIs.

3 MR. BERKOW: Thank you, Jim.

4 (Slide) May I have the first slide,  
5 please, Debbie?

6 As has already been established, we have  
7 a dual purpose here this morning. The first is to  
8 brief you on our recently completed effort to  
9 determine the implementation status of resolved GSI,  
10 and this is the first briefing to you on GSIs. And  
11 second, to provide an update of changes that have  
12 taken place in the implementation status of USIs since  
13 the initial briefing some eight and a half months ago.  
14 In both cases, we sought to determine whether  
15 implementation was completed and, if so, when was it  
16 completed? If it has not yet been completed, what  
17 remains to be done and when? We intend to use the  
18 results of these efforts to update our SIMS database  
19 with accurate and reliable information.

20 (Slide) Can I have the next slide,  
21 please, Debbie?

22 In addition to presenting the results of  
23 the effort, I think it's important to briefly describe  
24 to you the procedures and process we went through to  
25 get the information. I'll start with just a brief

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1 chronology of the seven month effort and then describe  
2 to you what I think is important and was a very key  
3 part of the effort we went through, and that was the  
4 GSI selection process, how we selected and why we  
5 needed to select from the many GSIs. That was a very  
6 time consuming, up front investment of time and  
7 effort, but critical to the success of the project.

8 Next I'll review how we obtained the data  
9 and how we evaluated that data to assure that we had a  
10 reliable and accurate database, and then finally we  
11 get to the summary and evaluation of the  
12 implementation status. At the conclusion of the GSI  
13 portion, Dick will brief you on the update on USIs.

14 The TMI -- the first of these efforts  
15 which dealt with the TMI action plan items was done  
16 back in early to mid-1989 and that was followed by the  
17 USI project in late '89 and early '90. In each case,  
18 there were important lessons learned and we profited  
19 from the experience of the previous effort such that  
20 this time, I think, we were able to do the job more  
21 efficiently and effectively and with less of a burden  
22 both to the licensees and the staff.

23 Following the USI briefing in February, at  
24 the request of the Commission, we began the GSI effort  
25 and we formed the GSI team to work on the project and

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1 spent the next several weeks defining exactly what it  
2 was we thought we needed to know and preparing the  
3 request. On April 25th, we issued Generic Letter 90-  
4 04 to all licensees, requesting them to give us the  
5 implementation status of the identified GSIs. We gave  
6 them adequate time to respond, about six weeks,  
7 requesting their answers back by the end of June, and  
8 we had essentially all the answers back by August 1st.

9 (Slide) Can I have the next slide,  
10 please?

11 I had planned to go through some  
12 definitions, but Commissioner Rogers did a far better  
13 job than I could have. So, I think we'll just skip  
14 over that one.

15 (Slide) Okay. The question might come up  
16 why did we have a selection process that we needed to  
17 go through for USIs, but not with GSIs? Well, as has  
18 already been established, there was a total population  
19 of only 27 USIs. They're all uniquely labeled, they  
20 were high visibility issues, all were resolved and  
21 there was really no decision. We addressed them all.

22 In the case of GSIs, we have a more  
23 amorphous category. Over the years, there have been  
24 hundreds, literally hundreds of GSI-type issues that  
25 have been identified, of varying types, varying

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1 status, applicability and significance. It was  
2 neither practical nor necessary to address them all.  
3 We had to initially identify all of them, research  
4 each one, characterize them and then make a decision  
5 as to which ones were important enough to address, and  
6 then assure that we had selected the proper ones. We  
7 only had one bite at the apple. So, we had to be sure  
8 that the ones we identified were the proper ones and  
9 that we had not omitted any important ones.

10 Generally, GSI responsibility is split  
11 between the Offices of Research and NRR. Research  
12 prioritizes and resolves the issues and NRR has the  
13 responsibility for determining implementation actions  
14 and tracking the implementation. Verification, if  
15 needed, is done by the regions. Requested actions are  
16 generally documented by NRR in the form of generic  
17 letters, bulletins, NUREGs, reg. guides. Sometimes  
18 they're promulgated by regulations or orders and in  
19 those cases they're no longer requests, but they  
20 become regulatory requirements.

21 We began with NUREG-0933, which is the  
22 official research database of all generic safety  
23 issues, and we also cross checked that with SIMS,  
24 which is the NRR database, and we got several hundred  
25 candidate issues. We gathered information on all of

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1       them and that was sometimes difficult because a lot of  
2       these issues are quite old and some of the people--  
3       and they've been inactive for a long time and some of  
4       the people who were familiar with them are no longer  
5       here. But we did manage to get a story on each of  
6       them.

7               We then went through a systematic process  
8       with the GSI team in coordination with the cognizant  
9       NRR divisions and Research in eliminating from that  
10      group of several hundred. We eliminated those that  
11      were not resolved, those that were resolved but where  
12      no actions were recommended, those which were covered  
13      previously in the TMI action plan and USI efforts,  
14      those which have been subsumed over the years into  
15      other efforts and are being covered under the other  
16      efforts, and those which had a rulemaking or an order  
17      associated with them. That then puts them into an  
18      enforcement issue rather than a tracking issue by NRR.  
19      We also eliminated those that are applicable to future  
20      plants only.

21              This gave us a group of 32 issues and  
22      subissues which survived the elimination process. We  
23      then got the concurrence of all of the NRR divisions  
24      and Research on that group, to make sure that we had  
25      the right ones. We identified and described those 32

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1 issues and subissues in the generic letter which we  
2 issued on April 25th. Again, in the letter we asked  
3 the licensees to tell us whether they had completed  
4 each of these issues that were applicable to their  
5 facilities; when; if it was not completed, what  
6 remains to be done; and when do they think they will  
7 be completed.

8 (Slide) May I have the next slide,  
9 please? Oh, Debbie, the next one, please. Okay.

10 The primary input to our database, of  
11 course, was the licensee response. However, as was  
12 the case in the USI effort, we did not rely solely on  
13 what the licensees told us. We required an  
14 independent staff determination. That was done by  
15 using the project manager's own records, interaction  
16 between the project manager and the licensee, input  
17 from the lead multi-plant action PM. It turns out  
18 that most of these 32 issues are also being tracked as  
19 multi-plant actions, and each of those has a lead PM.

20 So, we got input from the lead PM and also  
21 input from the cognizant lead technical branch.  
22 Fortunately, in most cases, we had agreement between  
23 what the licensees told us and what the staff  
24 determination came up with, but there were a number of  
25 differences. Those differences generally resulted

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1 from incomplete responses by some of the licensees, a  
2 misunderstanding. Even though we felt that we had  
3 made a very clear request, there were some  
4 misunderstandings on the part of some of the licensees  
5 as to what we wanted.

6 Some of them miscategorized. We had  
7 suggested four categories in which the licensees  
8 should put each of these issues. One was complete,  
9 the second was incomplete, the third was NC or no  
10 change required as a result of the request, and the  
11 fourth and final issue was E, that the request is  
12 still under evaluation by the licensee and has not yet  
13 made the determination as to whether anything needs to  
14 be done.

15 COMMISSIONER REMICK: Excuse me, Herb, a  
16 question.

17 MR. BERKOW: Yes.

18 COMMISSIONER REMICK: Noticeably absent  
19 from the people you mentioned is the senior resident  
20 or the resident. Is there a reason why they are not  
21 involved?

22 MR. BERKOW: Well, they would be involved  
23 in the verification aspect rather than the  
24 implementation aspect. Where verification was  
25 required and temporary instructions were issued,

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1 either the resident inspectors or the regional  
2 inspectors carried out those inspections. But for  
3 purposes of implementation status, we didn't feel that  
4 the residents would have anything to offer to us.

5 COMMISSIONER REMICK: I guess I don't  
6 quite understand, not yet. Verification means they  
7 viewed it, they've observed it.

8 MR. BERKOW: Yes. Yes.

9 MR. PARTLOW: They tried that on selected  
10 GSIs, not on all of them. But on those that we felt  
11 were especially important and those where we felt we  
12 could afford the inspection resources, we write  
13 temporary inspection procedures and in those cases  
14 then the residents or the regional inspectors will go  
15 out and verify for us that those have, in fact, taken  
16 place. So, that's the major role that the residents  
17 and inspectors played in this process.

18 MR. BERKOW: And we had temporary  
19 instructions on 16 of the 32 issues.

20 COMMISSIONER REMICK: So, in all cases,  
21 you did not necessarily rely on what project managers  
22 told you or others or documentation you had in some  
23 cases was actual verification?

24 MR. BERKOW: That's right.

25 MR. PARTLOW: That's right.

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1 MR. BERKOW: And when the implementation  
2 is promulgated, the cognizant technical branch decides  
3 whether verification is appropriate or not. If so, a  
4 temporary instruction is written.

5 COMMISSIONER REMICK: Now, the purpose of  
6 my question was just to see do we use the residents  
7 for such things?

8 MR. BERKOW: Oh, yes. Oh, yes. Yes.

9 COMMISSIONER REMICK: Sometimes ignore  
10 them. Okay.

11 MR. BERKOW: Yes.

12 There's also some confusion on  
13 implementation complete versus licensing action  
14 complete. They're not necessarily the same. A  
15 licensing action can be closed before implementation  
16 is complete or vice versa. Some of the licensees gave  
17 us for licensing action status rather than the  
18 implementation status and we had to get that  
19 clarified.

20 The GSI team then had individual meetings  
21 with each project manager to review the licensee  
22 response and the independent staff determination and  
23 to make sure that everybody was treating similar  
24 situations consistently. The PMs then prepared a memo  
25 to file which included the licensee response, the

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1 independent staff determination and highlighted those  
2 issues which were still considered by the staff to be  
3 incomplete and the licensee's plan for completing them  
4 and schedules. These memos were QAed by the GSI team  
5 and they were concurred in by the cognizant technical  
6 branches to be sure that everybody was in agreement as  
7 to the status, what we were saying the status was of  
8 these issues.

9 The data is presently being entered into  
10 the SIMS database and is scheduled to be completed by  
11 the end of November. The one remaining action is that  
12 each project manager is going to be asked to send a  
13 letter to his or her licensee saying that this is the  
14 staff's understanding of those issues that are still  
15 open at your plant and this is our understanding of  
16 your plans to complete them. Those letters will be  
17 sent by the end of November.

18 (Slide) Next slide, please.

19 And the results. The results shown here  
20 are the data as of the end of September. We have 111  
21 reactors that we considered. We did not include  
22 Rancho Seco, Fort St. Vrain or Shoreham. These plants  
23 are no longer operating and we also did not include  
24 both of the Watts Bar units and Comanche Peak 2, since  
25 they're still in the licensing process and GSI

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1 implementation will be covered as part of the  
2 licensing process. Of course, not all of the issues  
3 were applicable to all of the reactors either, so we  
4 had a total of 2,662 applicable GSI actions. Eighty-  
5 three percent of those have been implemented. The  
6 number of unimplemented actions at individual plants  
7 ranges from one to eight. The average is about four.

8 (Slide) Next slide, please.

9 COMMISSIONER CURTISS: Herb, excuse me.

10 MR. BERKOW: Yes.

11 COMMISSIONER CURTISS: On the previous  
12 chart, you identified the total unimplemented. Does  
13 that include those where the staff has not done its  
14 post-implementation review?

15 MR. BERKOW: You mean as far as the  
16 licensing action is concerned? No. We're dealing  
17 here only with whether or not the licensee had  
18 completed implementation. The licensing action may  
19 still be open.

20 COMMISSIONER CURTISS: Okay.

21 MR. PARTLOW: And verification may still  
22 be open.

23 MR. BERKOW: And verification may still be  
24 open, right.

25 COMMISSIONER CURTISS: Okay.

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1 MR. BERKOW: (Slide) The next slide,  
2 please.

3 We refer to these as the big five. It  
4 turns out that these five GSIs account for 94 percent  
5 of the 454 actions that were listed as being open on  
6 the previous chart, which means that there are only a  
7 total of 28 others on all of the 111 plants that are  
8 still not completed. The staff finds that there are  
9 generally acceptable plan and schedules for completing  
10 these.

11 These actions or these GSIs are all  
12 described in detail in the Commission paper, but I'd  
13 like to just briefly, for your information, run  
14 through the five as to what they entail.

15 Number 43 relates to air system problems  
16 and the request was that licensees verify the adequacy  
17 of the quality design maintenance practices,  
18 procedures and training related to the air systems.  
19 It's a relatively new issue. The generic letter went  
20 out in 1988 and the implementation is virtually  
21 complete at most of the plants. They're just waiting  
22 for a suitable outage to complete the actions. From  
23 the information we have, roughly 90 percent of them  
24 will be totally completed by the end of '91, with the  
25 remainder following not too long after that.

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1                   COMMISSIONER ROGERS:   What typically are  
2 they doing?   What are the changes that they are  
3 implementing?

4                   MR. BERKOW:   Okay.

5                   COMMISSIONER ROGERS:   I've been somewhat  
6 interested in this air system problem for some time  
7 because it seems to me it keeps popping up from time  
8 to time where a licensee loses all instrument air.  I  
9 noticed just in the last few months we've seen a  
10 number of situations in which at least the loss of  
11 instrument air was part of the event.  It may not have  
12 been the whole thing, but it at least was part of it.

13                  MR. BERKOW:   Okay.   The request in the  
14 generic letter was for a program of verification which  
15 included test verification of air quality,  
16 verification of adequate maintenance practices,  
17 emergency procedures and training, and verification of  
18 design and failure modes.  That's basically what  
19 was --

20                  MR. RUSSELL:   To give you an example that  
21 we actually discussed with the Commission at the time  
22 of the Pilgrim restart briefings and the various  
23 status reports, in some cases accumulators are being  
24 added using nitrogen supplies in lieu of air supplies.  
25 So, there are design modifications in addition to

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1 looking at quality capacity, how long can your air  
2 system hold and recall the discussions regarding  
3 accumulators for the reactor building or vacuum  
4 breakers. That's been fairly typical. There have  
5 been air supplies for seals for roll-up doors, for  
6 example, that have not been reliable. So, it's  
7 looking at the design aspects of the systems, the  
8 quality of the air systems, the rate of loss of air  
9 pressure associated with accumulators, et cetera. So,  
10 it's a fairly comprehensive review, looking overall at  
11 the reliability of air systems.

12 MR. TAYLOR: Accumulators have been added  
13 at a number of stations depending upon the vital  
14 function and that's been part of this whole issue.  
15 It's happened at a number of stations.

16 COMMISSIONER REMICK: What would hold up  
17 the installation of accumulators, the purchase of the  
18 equipment or -- why would it take a long time to add  
19 accumulators?

20 MR. TAYLOR: To design change, they have  
21 to get the engineering done, the procurement and then  
22 the installation. They've already been put in in a  
23 number of plants.

24 MR. RUSSELL: In some cases it's -- when  
25 we say accumulator, it's a simple gas bottle with

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1 usually a regulator and tubing and sometimes it's  
2 nitrogen and sometimes it's air operating off the air  
3 system to just give you a larger volume. They're not  
4 complicated designs, it's just the completion of the  
5 design review, the paperwork, the procedures that need  
6 to be upgraded in completing that review process.

7 MR. BERKOW: Some of these items require  
8 shutdowns --

9 MR. RUSSELL: Sure.

10 MR. BERKOW: -- and they're just waiting  
11 for the next convenient shutdown to complete it.

12 COMMISSIONER CURTISS: Is that the reason  
13 for the ten percent of plants that won't have it done  
14 at the end of '91, that they won't have an outage  
15 between now and then, or what is the reason that  
16 you've got ten percent after '91?

17 MR. BERKOW: Mostly, yes, that's the  
18 reason, that the outage they have, the planning on to  
19 complete it will not be done by the end of '91.

20 COMMISSIONER CURTISS: So, for the  
21 remaining ten percent, we would expect those to be  
22 resolved at whatever point they reach their outage  
23 after '91?

24 MR. BERKOW: Yes. Right.

25 COMMISSIONER CURTISS: Okay.

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1 MR. BERKOW: And these schedules are  
2 generally in accordance with the schedules that were  
3 offered in the generic letter. They were given time  
4 to do this.

5 Item 51 deals with the compliance of  
6 service water systems with the regulations and the  
7 need to establish programs to implement recommended  
8 actions that were given in the generic letter which  
9 was fairly recent. This generic letter was not issued  
10 until 1989 and the licensees were given a couple of  
11 years to complete the issue. Here again, we expect  
12 most of them to be done by the end of '92. This again  
13 is in conformance with the guidance in the generic  
14 letter.

15 67.3.3 deals with compliance with  
16 regulatory guide 1.97 of Revision 2. That's the  
17 instrumentation following an accident, and the  
18 requested schedules and plans from the licensees for  
19 dealing with these issues. Now, it's open on most  
20 plants for two reasons. In BWRs, the item is Category  
21 1 neutron flux monitoring, which the industry has  
22 appealed. They claim that the current instrumentation  
23 for normal operation is adequate and there is a formal  
24 appeal in by the BWR Owners Group which is currently  
25 under review by the staff. As I understand it, that

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1 review is scheduled to be complete sometime before the  
2 end of the year. Is that correct?

3 COMMISSIONER CURTISS: Is that a backfit  
4 appeal then?

5 MR. BERKOW: No, it's not a backfit  
6 appeal. I don't believe it's categorized as a backfit  
7 appeal.

8 MR. RUSSELL: The issue relates to the  
9 range that you need to be able to monitor down into  
10 the source range and the quality of the neutron  
11 instrument itself. That appeal is presently under  
12 review at the office director level. The staff at my  
13 level and lower have taken a position and that  
14 position is being reviewed now and Doctor Murley is to  
15 be briefed on that later -- or early in November and  
16 will make a decision. So, we are in the appeal  
17 process of the position that the staff has taken.  
18 This is a Reg. Guide 197 requirement that did  
19 previously go through the review and it's associated  
20 now with the range and the quality of the instrument  
21 that's being proposed to meet that requirement.

22 COMMISSIONER ROGERS: Is the problem only  
23 with the BWRs?

24 MR. BERKOW: This particular one.

25 MR. RUSSELL: Yes, this piece that's being

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1 held up.

2 MR. BERKOW: The neutron flux monitor.

3 COMMISSIONER ROGERS: And not PWRs?

4 MR. BERKOW: There's another one on PWRs  
5 with this particular generic issue and that is the  
6 need for Category 2 instrumentation to monitor the  
7 accumulated tank level and pressure and the  
8 containment sump temperature. Here again, industry  
9 has appealed that, claiming that there's no need for  
10 this. The staff has generally agreed and right now  
11 has told the industry that no further action is  
12 necessary. However, either the generic letter needs  
13 to be -- a new generic letter needs to be issued or  
14 the reg. guide needs to be modified. The staff is  
15 considering both of those actions. Until that is  
16 done, we have considered this action as unimplemented  
17 on these plants.

18 Scott, do you have anything you want to  
19 add to that?

20 COMMISSIONER CURTISS: But it's  
21 effectively been resolved for the PWRs, it sounds  
22 like. We've reached a consensus on the technical  
23 position.

24 MR. BERKOW: It is, but the paper that we  
25 have out though still is not consistent with that

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1 revised position.

2 COMMISSIONER CURTISS: It's a paperwork  
3 question for the PWR and it's an appeal question for  
4 the Bs.

5 COMMISSIONER REMICK: What is the basic  
6 issue on the BWR case? Is it subcritical monitoring  
7 of the core after an accident and the question of  
8 whether the source range monitors are adequate?  
9 What's the industry's response, that they can't do it  
10 or it's not needed?

11 MR. RUSSELL: Let me try and broadly  
12 summarize it. For certain accidents, we want to make  
13 sure that you can ensure that the reactor is shut down  
14 and remains shut down. So, the lower level of  
15 detectability with the instruments, whether you go  
16 down to  $10^{-6}$  percent power or you go below that point  
17 to assure that you don't have a problem, let's say a  
18 recriticality, et cetera, that's part of the issue,  
19 what's the right level that you should be able to  
20 measure down to to assure that you are indeed shut  
21 down.

22 The second issue has to do with cost  
23 associated with providing a qualified instrument and  
24 whether instruments are available that will meet all  
25 of the equipment qualification requirements for the

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1 postulated conditions that would exist. Those are the  
2 two issues.

3 The staff believes that it is possible--  
4 this is the issue that's under review. The staff  
5 believes it is possible to provide an appropriate  
6 range and qualification for the instruments. We have  
7 approved some cases.

8 Scott, was it Grand Gulf?

9 MR. NEWBERRY: Susquehanna and WNP 2.

10 MR. RUSSELL: Susquehanna and WNP 2 have  
11 been approved, but other owners are objecting and  
12 don't believe that that's feasible. That's the issue  
13 that's under review.

14 COMMISSIONER REMICK: Well, what was the  
15 solution in the case, for example of Susquehanna?

16 MR. RUSSELL: I'd like to have Scott  
17 Newberry address the specifics.

18 MR. NEWBERRY: Scott Newberry,  
19 Instrumentation and Control Systems Branch.

20 There's two real difficulties with the  
21 current systems. One is the environmental  
22 qualification -- both involve the environmental  
23 qualification of equipment inside the drywell where  
24 you may experience a harsh environment after an  
25 accident. There's the connectors. Of course, this

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1 instrumentation is going to be very low current, in  
2 the milli ampere range, and it could be subject to the  
3 environment and current leakage. So, there's the  
4 connector qualification issue.

5 But the other interesting issue is this  
6 instrumentation is withdrawn from the core at power and  
7 has to be reinserted after the accident. The drive  
8 motors that perform that function are located inside  
9 the drywell around the reactor vessel skirt and are  
10 not qualified to perform their function in the harsh  
11 environment. So, you'd either have to provide an  
12 environmentally qualified drive system, which is one  
13 alternative, or what one plant has done is to design  
14 and install an ex-core instrumentation system around  
15 the shield wall.

16 COMMISSIONER REMICK: So it's not a  
17 question of the use of the fission detectors, it's  
18 connectors and drives and so forth?

19 MR. NEWBERRY: No, sir. As a matter of  
20 fact, the other alternative to the ex-core system is a  
21 fixed in-core system that's been designed and  
22 installed at one plant.

23 COMMISSIONER REMICK: I see. Thank you.

24 COMMISSIONER CURTISS: Is there a  
25 consensus on what the cost of this would be, or is

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1 there a range of estimates?

2 MR. NEWBERRY: No. There's no  
3 disagreement on the cost. Any of the alternatives  
4 would not be inexpensive. The lower cost ex-core  
5 system is probably around \$1 million. The in-core  
6 systems would range upwards perhaps, depending on the  
7 options for fuel management and those sorts of things.  
8 It could cost as much as \$5 or \$6 million.

9 MR. BERKOW: Okay. The next issue is a  
10 Salem ATWS issue, vendor interface for safety-related  
11 components. This was originally part of the Salem  
12 ATWS Generic Letter 83-28 and the position was  
13 recently relaxed and superceded by another generic  
14 letter, 90-03, which was not issued until March of  
15 this year which essentially changes the program to  
16 bring it into accord with industry-developed program  
17 on vendor interface.

18 The responses were not due until the end  
19 of September. They're just about all in now. They're  
20 being evaluated. Some of them will become in the  
21 category of no change required. In other words, the  
22 licensee already conforms with the suggestions, and in  
23 other cases there will be actions that are required.  
24 We anticipate that where additional actions are  
25 required, program changes are needed. Most of these

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1 should be completed by sometime in 1991. For the time  
2 being, we've considered them to be all incomplete.

3 COMMISSIONER ROGERS: What is the  
4 difference between this issue and USI A-9, anticipated  
5 transient without scram?

6 MR. WESSMAN: Well, USI A-9 involves some  
7 systems and components in order to create a diverse  
8 means of tripping the reactor in the event that you  
9 have a transient and the normal scram systems do not  
10 perform as expected. For example, a diverse pump  
11 trips, feed trips, I think changes to the standby  
12 liquid control systems for a boiling water reactor,  
13 this type of thing.

14 MR. PARTLOW: Generic Letter 83-28, I  
15 believe, generally spoke to procedural matters,  
16 relationships with vendors, post trip reviews --

17 MR. TAYLOR: Testing.

18 MR. PARTLOW: -- testing of protection  
19 systems.

20 COMMISSIONER CURTISS: Herb, can you speak  
21 to the differences between what you are proposing in  
22 83-28 and the recent 90-03?

23 MR. BERKOW: Perhaps Scott can do that.

24 MR. PARTLOW: I can do that. The original  
25 one that said for every supplier of any safety-related

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1 equipment you need a program to be in touch with them  
2 so that you'll know what changes are going on in every  
3 one of your safety-related suppliers. Industry felt  
4 that that was a very cumbersome and not at all cost  
5 effective kind of program to have to set up.

6 So, they worked with us over several years  
7 and last year we changed our mind and we agreed and we  
8 said that, "This kind of contract with your vendors  
9 does not need to be on every safety-related supplier,  
10 but you need to pick out," and we named for them some  
11 examples, diesel generators, for example, or really  
12 important equipment where they should be sure that  
13 they have this kind of relationship with them. So, we  
14 wrote a letter that said more that we expected them on  
15 a reasonable basis to establish these things where it  
16 was really, really important.

17 So, we changed our mind.

18 COMMISSIONER CURTISS: All right. And  
19 under the recent generic letter, the responses are all  
20 now in, you indicated. What happens from here on out?

21 MR. BERKOW: Well, the responses are  
22 presently being evaluated and the status in some cases  
23 will remain incomplete. In some cases it will change  
24 to complete if a licensee convinces us that they  
25 already are in conformance with this new generic

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1 letter.

2 MR. PARTLOW: I believe we asked them to  
3 tell us, by September 30th, have you established the  
4 program and if not, when?

5 MR. BERKOW: And from some of the results  
6 that I've seen, some of them do have portions of the  
7 program they still need to establish. The dates I've  
8 seen are mostly in 1991 for completion.

9 COMMISSIONER CURTISS: Okay.

10 MR. BERKOW: So this is one that we'll  
11 still have to track in many plants as an unimplemented  
12 issue.

13 And the final one, 99, was originally  
14 concerned with inadvertent closing of the RHR suction  
15 valves when the RHR system was in use. It was later  
16 broadened to address failures associated with mid-loop  
17 operations. The later generic letter asks for a group  
18 of expeditious actions and some longer term programmed  
19 enhancements. The expeditious actions are essentially  
20 complete at all plants. The longer term actions are  
21 mostly open for hardware changes that are scheduled to  
22 be done between now and the end of 1992 in most  
23 plants.

24 (Slide) May I have the next slide,  
25 please?

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1                   COMMISSIONER CURTISS: Herb, I'm sorry, I  
2 had one other question on the ATWS. In the paper, you  
3 point out that there's a second issue beyond the one  
4 that we just discussed on reactor trip reliability  
5 that may involve a future generic communication.

6                   MR. BERKOW: Yes.

7                   COMMISSIONER CURTISS: Can you speak to  
8 that as well?

9                   MR. BERKOW: Yes. We did not include that  
10 because we considered -- by our definition, we  
11 considered that unresolved because the original  
12 resolution again has been appealed by the industry and  
13 the staff is presently developing a revised generic  
14 letter which will give the industry several additional  
15 options with which to meet the request that we had  
16 originally --

17                   Is Faust here? Faust, you can perhaps  
18 elaborate on that?

19                   MR. ROSA: Faust Rosa, Electrical Systems  
20 Branch.

21                   The three options that are going to be  
22 proposed to the industry consist of first life testing  
23 as originally called for by the generic letter, and  
24 then an ongoing surveillance and reliability  
25 monitoring program which would have a reactor trip

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1 breaker replaced or refurbished at, say, 500 cycles  
2 given that it experienced two failures during that  
3 time. And then we go on to 1,000 cycles and arbitrary  
4 replacement at that time. If the licensee installs a  
5 diagnostic -- recently developed diagnostic equipment  
6 whereby he can monitor the degradation of the breakers  
7 continuously, every time it's operated under test,  
8 then he can extend the life of the breaker beyond  
9 1,000 cycles. And the third option is simply a  
10 conservative replacement, refurbishment every 500  
11 cycles or two failures, whichever occurs first. In  
12 effect, that's what we propose to offer the industry.

13 COMMISSIONER CURTISS: And the ball's in  
14 our court on that?

15 MR. ROSA: Right.

16 COMMISSIONER CURTISS: Drafting the  
17 generic letter and the schedule for that is --

18 MR. ROSA: That draft is in final draft  
19 form about right now.

20 COMMISSIONER CURTISS: Okay.

21 MR. ROSA: We intend to send it to the  
22 CRGR for, not review, but for information.

23 COMMISSIONER CURTISS: Okay. Thanks.

24 MR. BERKOW: And just to clarify one  
25 further point, the fact that that is opened at most

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1 plants is not reflected in the statistics I showed  
2 you.

3 COMMISSIONER CURTISS: I understand,  
4 because it's not resolved.

5 MR. BERKOW: Because we considered that--  
6 it was not resolved, that's right.

7 COMMISSIONER CURTISS: Okay.

8 MR. BERKOW: (Slide) Okay. Getting back  
9 to the final chart, in summary, about 83 percent of  
10 the resolved generic issues for which we requested  
11 licensee action have been implemented. Again, the  
12 staff believes that no plant has an unacceptable  
13 number of open issues, and the plans and schedules for  
14 completing the remaining actions are acceptable to the  
15 staff and the staff is addressing those issues  
16 requiring further action or position to reach final  
17 resolution, several of which we've discussed here this  
18 morning.

19 And, finally, in our opinion, the  
20 remaining open issues do not pose an unacceptable  
21 safety risk. We are generally satisfied with the  
22 plans and schedules that the licensees have proposed  
23 for completing them.

24 And, that completes the GSI portion.

25 MR. TAYLOR: Mr. Wessman now will continue

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1 the briefing on updated USI implementation status.

2 MR. WESSMAN: Good morning, Commissioners.

3 (Slide) If I may have the next slide,  
4 please. This slide displays in gross numbers the  
5 statistics for the unresolved safety issues when we  
6 reported to you in February and where they stand  
7 currently at the end of September. You may recall  
8 that the process that we went through to establish a  
9 quality database was very similar to what Herb has  
10 described to you for the GSIs. You can see we have 45  
11 more USIs that are now closed. A couple of examples  
12 for you, and then we'll turn and look at what we call  
13 the "big four" in the USI area.

14 For example, recently at Calvert Cliffs  
15 Unit 1 the plant was returned to operation. One of  
16 the USIs that needed to be resolved prior to its  
17 returning to operation involved low temperature over-  
18 pressure protection, USI A-26. This had to be  
19 implemented for the start-up of the unit and was.  
20 Similarly, when they get ready to restart Unit 2 they  
21 will complete implementation of that same USI on that  
22 unit.

23 Several of the USIs involving the  
24 anticipated transient without scram, USI A-9, have  
25 been completed, but this is the sort of thing that has

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1 occurred over the last eight months. Gradually, a few  
2 more of the USIs have been implemented.

3 (Slide) If we can turn to the next slide,  
4 I would like to focus you on the big four of the USIs  
5 that still remain unimplemented at most plants. This  
6 is the same big four that we looked at in February  
7 and, again, in a couple of cases there has been  
8 progress on implementation from the standpoint of the  
9 numbers.

10 In all cases, there has been progress from  
11 the standpoint of activity either by the licensees or  
12 the staff and I can briefly summarize for you. Notice  
13 that this group of the big four represents about 84  
14 percent of all unimplemented USIs, so this is where  
15 most of the activity remains to be completed.

16 In the case of USI A-9, anticipated  
17 transient without scram, we had 60 open in February.  
18 Nine more reactors have implemented this one and we  
19 would expect by the end of the year another nine or  
20 ten will have probably completed implementation.

21 Of the 51 that remain unimplemented at  
22 this point in time, 20 of them involve an issue of  
23 diversity where in February there was a dialogue  
24 between the industry and the staff regarding the  
25 diversity of manufacture of certain trip system

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1 components. Now, in the case of those 20 reactors,  
2 they did have an operable system that could get us a  
3 trip, however, we were not satisfied with the level of  
4 diversity of some of the components. The issue  
5 regarding diversity has been resolved and at this  
6 point the licensees now know the action they must take  
7 and it is to get a proper diverse component and they  
8 will of course have to order parts and schedule  
9 installation during a refueling outage.

10 Of the other 31, safety evaluation reports  
11 by the staff have been completed, have been sent to  
12 the licensees and of course they are now in a position  
13 to do procurement of equipment and scheduling so the  
14 actions can be implemented during refueling outages.  
15 This means that over the course of the next two years  
16 we will have seen refueling outages on the facilities,  
17 and so by that time this action should be all but  
18 completed we would expect.

19 COMMISSIONER ROGERS: Just before you turn  
20 away from that, this diversity question, how did you  
21 finally define it, the satisfying the diversity  
22 requirement?

23 MR. WESSMAN: Well, I may ask Scott  
24 Newberry to help me out on this, but there was a  
25 question regarding certain components in the analogue

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1 trip units.

2 At one time, the licensees wanted to use  
3 components, I believe, manufactured by Rosemount and  
4 we felt that the identical components in certain  
5 portions of the diverse anticipated transient without  
6 scram circuitry were identical to components in the  
7 ordinary scram circuitry, and that meant if there was  
8 a common failure or the same type of diode or  
9 something in this component had a defect it could be  
10 in both systems and therefore a trip unit from a  
11 different manufacturer seemed to be the logical  
12 solution to be sure that some type of common failure  
13 or common manufacturing defect would not propagate  
14 into the two different systems.

15 COMMISSIONER ROGERS: Yes. I understand  
16 the concern. It's just a question of how you really  
17 resolve it, because just what do you really mean by  
18 diversity? Is it diversity of manufacturer, diversity  
19 of design of the system, the difference between  
20 redundancy and diversity? I think these have all been  
21 issues in some sense that have been involved here and  
22 I'm just curious as to how you finally settled on  
23 that.

24 For instance, if you had two redundant  
25 systems basically the same design, you would insist

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1 then that diversity is satisfied by having a different  
2 manufacturer of the basic components? Is that where  
3 it landed? Or, would you permit the diversity  
4 requirement to be satisfied only if the designs are  
5 basically different?

6 MR. TAYLOR: Commissioner, I'd like to ask  
7 Scott --

8 MR. WESSMAN: I need help.

9 MR. TAYLOR: -- Scott Newberry. There's a  
10 great deal of correspondence, but I think Scott may be  
11 able to give you a capsule of where we finally ended  
12 up on this.

13 MR. NEWBERRY: I think our view on  
14 diversity was, as you stated it, Commissioner Rogers,  
15 that if the function or the design was sufficiently  
16 diverse in itself that would have been an acceptable  
17 alternative, or if, in redundant scram systems, a  
18 different manufacturer or different component would  
19 have  
20 been --

21 COMMISSIONER ROGERS: The only way to  
22 satisfy it, I take it?

23 MR. NEWBERRY: Yes. In this case, both  
24 the alternate route injection system and the scram  
25 system use by-stables or trip units, comparators that

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1 are identical. Those are the systems that are  
2 installed on a boiling water -- virtually I guess it's  
3 about 20 boiling water reactors. The only real  
4 difference between those trip units as installed right  
5 now is one in the ARI, alternate route injection  
6 system, is an energized actuate system in the scram  
7 system. It's a fail safe design deenergized to  
8 actuate.

9 It was our view that that difference was  
10 just not sufficient and that especially since  
11 replacement trip units were reasonably available,  
12 totally different components, manufacturing process,  
13 that it was certainly reasonable to replace the trip  
14 units with a different trip unit.

15 COMMISSIONER ROGERS: Is there anyplace  
16 else that this question of how one interprets the  
17 meaning of diversity comes up?

18 MR. NEWBERRY: I can -- in terms of the  
19 ATWS, that is one of the key places where diversity  
20 comes up regularly and it came up rather frequently  
21 throughout the past two or three years as engineers  
22 sat and talked about was the system sufficiently  
23 diverse in terms of different components, relays,  
24 breakers, contactors and those sorts of things. But I  
25 don't think it's come up in too many places other than

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1 ATWS.

2 COMMISSIONER REMICK: It comes up, doesn't  
3 it, in alternate shutdown systems in some of the  
4 evolutionary plants?

5 The question isn't one of redundancy.  
6 Redundancy is a given. Isn't it a question of  
7 diversity versus reliability? In the solution where  
8 you're insisting upon diversity, how are you assuring  
9 yourself that diverse systems may be less reliable  
10 than the one that's redundant but has common  
11 components? How are you solving that? That was one  
12 of the arguments, if I recall, that people said,  
13 "Well, you require us to be diverse. Perhaps we'll be  
14 less reliable." Was that resolved in any rational  
15 way?

16 MR. TAYLOR: Scott?

17 COMMISSIONER ROGERS: That's a good point,  
18 yes.

19 MR. NEWBERRY: I think in all cases the  
20 objective is to improve the reliability of the  
21 function of concern. In the case of the ATWS rule,  
22 the objective is clearly to improve the reliability of  
23 the scram function.

24 COMMISSIONER REMICK: But are you  
25 convinced that you will have more reliable systems as

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1 a result?

2 MR. NEWBERRY: Yes, I am in terms of this  
3 issue and the implementation of the ATWS rule in  
4 general. In no case, to my knowledge, were we moving  
5 towards replacement of a reliable redundant component  
6 with an unreliable diverse component. In every  
7 instance, in fact the rule requires it, that the ATWS  
8 systems be reliable in themselves as well as diverse.  
9 So, the ATWS rule requires the plant to install  
10 reliable but diverse backup features to actuate a  
11 scram or to actuate other systems, turbine trip or  
12 auxiliary feedwater.

13 COMMISSIONER REMICK: Has anybody  
14 questioned whether they can get as reliable components  
15 as they had?

16 MR. RUSSELL: Commissioner, if I could  
17 help, this issue was discussed quite extensively. It  
18 was appealed. It was appealed all the way up through  
19 the executive director level, including a CRGR review.  
20 One of the difficult issues you have is how much  
21 reliability do you actually gain through diversity,  
22 eliminating the potential for common mode failure,  
23 which is very difficult to quantify, as compared to  
24 reliability with, say, a single system that is not  
25 diverse. It necessarily relies upon judgment, the

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1 best engineering judgment you can apply within the  
2 context that was outlined in the rule. That's what  
3 the staff did and that review went through the entire  
4 process back and forth and we believe that we have  
5 achieved the goal of both highly reliable and diverse  
6 within the context of the rule.

7 COMMISSIONER REMICK: I hope so too.

8 MR. TAYLOR: The alternate equipment had  
9 to have some evidence of the reliability.

10 COMMISSIONER REMICK: I hope.

11 COMMISSIONER CURTISS: As I recall, this  
12 issue came up when we were talking about advanced  
13 reactors just recently. If memory serves me, isn't  
14 the staff taking a look and producing a paper on the  
15 definition of diversity? I know Chairman Carr raised  
16 that question. I'm ready to go back and take a look  
17 at my notes, but I thought there was something  
18 expressed at one of the recent meetings. This is a  
19 question that obviously arises in a whole range of  
20 contexts.

21 MR. RUSSELL: I don't recall at that  
22 meeting whether it came up. It may have come up also  
23 when we talked about the approach that the British  
24 were using when we discussed reliability based  
25 technical specifications because one of the things the

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1 British are doing is that they allocate a system  
2 reliability goal and they won't allow you to go with  
3 one system beyond a  $10^{-4}$  reliability. So then you're  
4 into diversity because of the concern for common mode  
5 failure. So, they'll end up with a digital logic  
6 system for one portion of it and a relay type logic  
7 system for the other. They felt that that was an  
8 appropriate balance between the two in order to obtain  
9 the overall reliability that they wished for some of  
10 their systems.

11 COMMISSIONER ROGERS: Maybe we ought to  
12 move on.

13 MR. WESSMAN: Moving on to USI A-44,  
14 station blackout, when we reported to you in February,  
15 we told you that there were still responses to be  
16 received from the industry. These were supplemental  
17 responses to the original generic letter that had been  
18 issued earlier. These supplemental responses were  
19 scheduled for receipt in March of 1990 and those  
20 responses were received. Reviews are now in progress  
21 on licensee responses on the station blackout area.

22 Thirty-two reactors have complete safety  
23 evaluation reports and I think most of them have been  
24 sent out to the respective utilities. The review  
25 process is prioritized to focus on certain facilities

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1 that may have particular emergency diesel generator  
2 configurations or facilities with Mark I containment.  
3 Our review schedule has us to where we would complete  
4 the reviews by early 1992 and the safety evaluations  
5 back out to the utilities by that time.

6 After that step, of course, comes the  
7 utility's action to procure the necessary components  
8 and schedule installation. In some cases, again, this  
9 would be dependent on a refueling outage. So, we  
10 could be a couple of years away before we see a lot of  
11 these unresolved items fully implemented.

12 In the case of USI A-46, seismic  
13 qualification of equipment operating plants, again  
14 there has been progress from the standpoint of reviews  
15 and interactions with the industry. However,  
16 implementation has not moved forward. When we  
17 reported to you in February, we said that there was a  
18 safety evaluation report that was being developed by  
19 the staff evaluating material that had been submitted  
20 by the industry and that that safety evaluation would  
21 be issued in mid-1990. That safety evaluation was  
22 issued in June of this year and shortly thereafter the  
23 seismic qualification utility group submitted some  
24 supplemental guidelines for staff review, which of  
25 course means that we have an additional review action.

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1 There will be yet another safety evaluation from the  
2 staff on these supplemental guidelines, and at that  
3 point we would expect the interaction from the  
4 standpoint of reviews to be completed and then the  
5 licensees can move forward on implementation of this  
6 particular action.

7 Finally, with USI A-47, when we reported  
8 to you in February we told you that responses from the  
9 industry to Generic Letter 89-9 were due in March of  
10 this year. Those responses were received and reviews  
11 are proceeding in accordance with the schedule that we  
12 all established. As you can see, 29 of the reactors  
13 do have full implementation of this unresolved safety  
14 issue. There are no substantive issues that have been  
15 raised in this one and the reviews are proceeding  
16 pretty much as we expected.

17 So, you can see that a total of 38 of the  
18 big four have been closed. We still have about 84  
19 percent of the total 381 USIs that are involved in  
20 this big four, but we believe that we understand, as  
21 before, we know where we are and we believe that we  
22 are proceeding on a reasonable schedule that's  
23 commensurate with the safety significance of the  
24 issues and effectively using the resources that we  
25 have.

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1           This completes the portion on the USIs and  
2 I think, subject to any further questions, completes  
3 the staff's review, unless you have some wrap-up  
4 remarks, Jim.

5           MR. TAYLOR: No, I have no further  
6 remarks.

7           COMMISSIONER ROGERS: Other questions?

8           COMMISSIONER REMICK: I have several  
9 questions.

10           Am I correct? There are no USIs that wait  
11 to be resolved at the moment?

12           MR. WESSMAN: That's correct.

13           COMMISSIONER REMICK: Now, how about in  
14 the case of GSIs, to help me put it in perspective?  
15 Are there GSIs that are in the unresolved stage and  
16 are there -- how many and are there GSIs for which the  
17 priorities are yet to be set?

18           MR. BERKOW: The answer is yes. Perhaps  
19 Research can -- yes to both questions.

20           COMMISSIONER REMICK: Do you have any  
21 feeling for the relative numbers?

22           MR. TAYLOR: Is Research able to give that  
23 right now?

24           MR. EMRIT: Ron Emrit from Research. As  
25 of the end of FY '90, we show 13 GSIs to be resolved

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1 this fiscal year '91. I think it should be mentioned  
2 that the cut-off point for Herb's generic letter that  
3 went out this year was December 1989. Since that  
4 time, we resolved several issues, about six, but only  
5 two required any action on the part of licensees and  
6 that was issue number 70 and 94. But, I guess, your  
7 implementation process, next time we'll probably  
8 report on licensee action on those two issues.

9 COMMISSIONER REMICK: How many are in the  
10 pot, then, for which priorities are being established  
11 and discussions with ACRS and so forth?

12 MR. EMRIT: Well, if you're referring to  
13 issues that are being resolved right now, we have  
14 about 27 that are being resolved for which priorities  
15 have been established.

16 COMMISSIONER REMICK: But, are there any  
17 for which you're trying to establish priorities?

18 MR. EMRIT: Yes. Right now, we've got  
19 about 30 left --

20 COMMISSIONER REMICK: I see.

21 MR. EMRIT: -- to be prioritized. I think  
22 we reported on the status of that to you a couple  
23 months ago.

24 COMMISSIONER REMICK: And how many come in  
25 on a typical year? What's the input?

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1 MR. EMRIT: Well, the number has come down  
2 over the last few fiscal years. You know, we used to  
3 get 20 a year, about 20, 25 a year, but the last few  
4 years it's averaged about three or four per fiscal  
5 year.

6 COMMISSIONER REMICK: Okay. Thank you.

7 You now have information from the  
8 Commission on implementation of the safety goal and  
9 you've proposed as part of the regulatory impact study  
10 an IRRIS system on enabling licensees to propose  
11 schedule for implementation of things like GSIs. Do  
12 you see any specific impact of safety goal  
13 implementation on GSI resolution?

14 And, likewise, I guess the case of IRRIS  
15 is more obvious, because you plan to provide  
16 licensee's with the opportunity of suggesting  
17 schedules and then the staff will approve those or  
18 disapprove them. But, how about safety goals? Do you  
19 see any possible impact? It's not a loaded question.  
20 It's just an open question in my mind.

21 MR. TAYLOR: We have -- CRGR is trying to  
22 keep the measure of safety goal in front of it. The  
23 recent revisions of their instructions are to apply  
24 that.

25 Do you want to address it from the staff

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1 end, Bill?

2 MR. RUSSELL: At least from the staff end,  
3 while we have not seen all the guidance proceduralized  
4 as to what additional information may be required to  
5 demonstrate that a proposed new requirement is  
6 consistent with the safety goal, I don't personally  
7 envision that that's going to be a lot of additional  
8 effort, so I would not expect that it would take  
9 additional time once the guidance is developed and  
10 we're into a process for doing that. There may be  
11 some where it's difficult to quantify and we'll end up  
12 relying on judgement, but I don't see that process  
13 impacting the resolution portion of getting it through  
14 a CRGR review. There may be some start-up delays  
15 associated with that, with getting the paper and the  
16 information and presenting it, but once that's done I  
17 see that steady state it should not have a significant  
18 impact.

19 As it relates to the IRRIS program and the  
20 integrated regulatory requirements implementation  
21 schedules that licensees would be developing, because  
22 there may be plant-specific differences that cause the  
23 worth of a particular item to change when we go  
24 through generically we look at it on a best estimate.  
25 It may be that an issue would turn out to have a lower

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1 value cost benefit to a licensee and we've indicated  
2 that that may be prioritized low, and then when you  
3 look at that on a continuing basis that may in fact  
4 result in a determination that it's not necessary to  
5 implement at all. And that was the approach that we  
6 had proposed for handling on a plant-specific basis,  
7 because we could not really effectively address  
8 cumulative requirements other than generically with an  
9 idealized plant.

10 So, I don't believe that there would be  
11 significant impacts from the safety goal. In fact,  
12 the process that we think about in going through and  
13 developing requirements I think is consistent with  
14 that and it's just formalizing something which is  
15 going on informally in judging the need for  
16 requirement using the cost benefit analyses type of  
17 approach that we have in the value impact guidelines.

18 COMMISSIONER REMICK: The backfit rule?

19 MR. RUSSELL: Yes, sir.

20 COMMISSIONER REMICK: Thank you.

21 COMMISSIONER ROGERS: Commissioner  
22 Curtiss?

23 COMMISSIONER CURTISS: I actually just had  
24 one question. This is very thorough. I appreciate  
25 the update. It covered a lot of ground that I had

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1 questions about.

2 In USIs, given the definition, Dick, of  
3 USI on your chart here that involves condition not  
4 likely to be acceptable over plant lifetime, have we  
5 given any thought to how we will treat USIs in the  
6 context of those plants seeking license renewal where  
7 the USI is outstanding?

8 MR. WESSMAN: I'm not sure that we've  
9 looked specifically at that, but I think our belief is  
10 by the time a plant reaches the license renewal phase,  
11 the USIs would have been fully implemented. As we  
12 indicated and we looked at the big four, most of these  
13 have been implemented in the next two or three years,  
14 depending on the refueling outages and the procurement  
15 of components. That only leaves about 60 that are  
16 scattered amongst the other USIs. But I think from  
17 our knowledge of where the USI is or the licensee  
18 schedules, these should be fully implemented by the  
19 time we have to deal with the license renewal  
20 situation and I would expect that that will not be a  
21 consideration at that time.

22 MR. TAYLOR: That would be true for those  
23 USIs we now know and have in our inventory. We have  
24 to keep our mind open. That experience could bring  
25 others. We hope not, but that's a possibility. Then

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1 we'll have to deal with that.

2 MR. PARTLOW: I think to the extent that  
3 implementation of something based upon some future USI  
4 is really needed for adequate protection, why, it's  
5 going to have to get done. If that USI and its  
6 resolution surfaces at the 11th hour of license  
7 renewal, I don't know that at this point we would  
8 adamantly say that that would have to be implemented  
9 before the license was renewed. But certainly there  
10 would be some kind of reasonable schedule worked out,  
11 just as there is today.

12 MR. TAYLOR: We would have to evaluate--  
13 clearly in any of them, they're implemented by order  
14 as a condition to it. We could do that.

15 COMMISSIONER CURTISS: Okay. That's all I  
16 have.

17 COMMISSIONER ROGERS: That's all?

18 Commissioner Remick, I think you had  
19 another?

20 COMMISSIONER REMICK: Going back to, Jim,  
21 what you proposed in the beginning, the possibility of  
22 consolidation and changing schedules, I support that  
23 now that we have a much better feeling of the status  
24 of implementation. But looking ahead, do you feel  
25 that to keep yourselves updated and us updated on

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1 implementation it will be necessary to go out with a  
2 generic letter again or will your database in the SIMS  
3 system be sufficient to enable you to do that in a  
4 realistic way?

5 MR. BERKOW: We did not anticipate the  
6 need for another generic letter. I think we have  
7 systems in place now where we can -- now that we have  
8 a good base line, we should be able to keep it up to  
9 date.

10 COMMISSIONER REMICK: Good.

11 That's all, Ken.

12 COMMISSIONER ROGERS: You just touched on  
13 this question of the SIMS database. What is the  
14 advantage of maintaining these two databases, SIMS and  
15 the 0933 separately? There's a distinction there  
16 between the --

17 MR. BERKOW: Yes. 0933 tracks the  
18 research activities basically in the prioritization  
19 and resolution of the issues. The SIMS database goes  
20 further than that. It's the status of issues that are  
21 in the implementation stage as well as those that are  
22 completed. So, it really goes further than the 0933  
23 database does.

24 MR. PARTLOW: This 0933 is organized by  
25 issue. Our databases are more oriented towards plants

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1 and the issues within those plants.

2 MR. BERKOW: Right. And of course the  
3 SIMS has more in it than just GSIs or USIs. It's much  
4 broader. It's got all of the licensing activities in  
5 it.

6 COMMISSIONER ROGERS: When SIMS gets  
7 updated, does that update 0933 or not?

8 MR. BERKOW: Well, we do have a dialogue  
9 with Research and --

10 MR. WESSMAN: Here's our database guru.

11 MR. SCHOLL: My name is Raymond Scholl and  
12 for the past two years I have served as the safety  
13 information management system coordinator for NRR.

14 The databases that we've been talking  
15 about to a large extent are the same. The Office of  
16 Information Management within the NRC maintains a very  
17 large series of interlocking databases at NIH, one of  
18 which is GEMEX, which is related to 0933. 0933, as  
19 you've been briefed before by Research several times,  
20 is a NUREG which outlines the problems, possible  
21 solutions and costs. And when an issue has been  
22 resolved, that is we know what we want to do about it,  
23 it defines that resolution. It may define it in terms  
24 of saying generic letter umpty-scrunch was issued.

25 Another part of the system, the SIMS

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1 system itself, is a reporting system which is designed  
2 to extract the definition of the problem and the  
3 solution to the problem and supply plant-specific data  
4 where a plant has been required to do something. The  
5 data there is detailed data such as when the licensee  
6 responded, when we wrote an SER or a memo to files or  
7 some other way, administratively closed out NRR's  
8 review. It includes information as to whether or not  
9 the licensee had to implement something and, if so,  
10 when. It includes information on verification.

11 There are lots of SIMS reports out. Each  
12 one of these reports only contains a small amount of a  
13 very large volume of detailed data which is available  
14 from the computer if you should ask it the right  
15 questions. Included in the system, for instance, are  
16 inspection report numbers, dates when inspections were  
17 conducted, information on whether or not verification  
18 is required, information on the relationship between  
19 that particular SIMS issue and other related issues.

20 It contains some costing information and  
21 it also includes some history of the review path in  
22 some cases. In a lot of cases, the data is incomplete  
23 because it has not been of interest to the staff or to  
24 the Commission as other aspects such as the  
25 implementation we've worked on for the last two years.

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1                   COMMISSIONER ROGERS:    Okay.    I guess  
2                   there's still a lot of questions that I'd like to hear  
3                   about, but not today.    Thank you very much.

4                   Can you give us a little bit of assurance  
5                   or reassurance on the station blackout issue?    There  
6                   is not a single plant that has implemented the closure  
7                   on the station blackout issue.    Is that correct?

8                   MR. RUSSELL:    Let me start with that first  
9                   and then ask Faust Rosa to cover it.

10                  We're prioritizing the reviews.    We  
11                  clearly want to do those reviews where staff approval  
12                  is needed before hardware can be implemented.    So,  
13                  we're generally doing the reviews where an additional  
14                  AC supply is being proposed for the station or where  
15                  they're proposing to add additional diesels or  
16                  turbines.    We are doing the reviews where facilities  
17                  are basically proposing to cope with a station  
18                  blackout for a period of time using existing equipment  
19                  is on a lower priority.    So, we've developed that  
20                  scheme to do those first which would impact the  
21                  implementation schedules of licensees.

22                  I believe we've completed approximately 30  
23                  reviews for sites and a number of those, on the order  
24                  of about a third, I believe it's nine or ten, we've  
25                  found do not conform to the rule.    So, we are in an

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1 iterative mode waiting for the licensee to propose an  
2 alternate scheme which would be in conformance with  
3 the rule.

4 So, there has been significant work going  
5 on. It's being looked at at the highest levels. In  
6 fact, we're preparing a status report for the EDO  
7 which would provide the detailed schedules for the  
8 reviews, what's been completed and what has not been  
9 completed, such that this issue is getting visibility.  
10 Overall as to how we're doing it was the subject of  
11 the last program review with the EDO, at which time we  
12 committed to a priority to do those reviews first  
13 where we felt they would either not meet the rule and  
14 something else had to be proposed by the licensee, or  
15 where there were significant modifications for which  
16 staff approval was on the controlling path for  
17 implementing those modifications.

18 COMMISSIONER ROGERS: Well, could there be  
19 a -- you're setting your priorities by looking at  
20 those proposals that involve hardware additions or  
21 changes as distinct from a coping approach. Is it  
22 conceivable that some of those coping approaches that  
23 have been proposed are really quite unacceptable and  
24 that not reviewing them carefully right now is leaving  
25 something to a later date that perhaps ought to be

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1 flagged and paid attention to?

2 MR. RUSSELL: Well, that's clearly the  
3 case. In fact, the latest Commission paper that we  
4 sent forward on emerging technical issues, we  
5 identified the reactor coolant pump seals issue and  
6 what is the leakage that you would expect from a seal  
7 as a significant issue, Generic Issue 23. Depending  
8 upon the resolution of that issue, it may be that  
9 facilities would not be able to cope during a blackout  
10 condition. This affects four boiling water reactors  
11 that do not have the turbine-driven makeup capability,  
12 isolation condenser-type facilities, and pressurized  
13 water reactors.

14 That issue is presently in the review  
15 process. We are proposing a generic letter to alert  
16 those utilities. This was considered, by the way, at  
17 the time we promulgated the rule when we made the  
18 assumptions about leak rate from these seals and  
19 identified that the leakage could be higher. So, yes,  
20 there's an example where coping may not be appropriate  
21 so that that aspect of coping is important.

22 The other aspect is for dual unit sites  
23 where they're proposing to use excess capacity from  
24 the unaffected unit to provide AC power to the unit  
25 that has the blackout. We've had quite a bit of

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1 dialogue back and forth with industry on that issue.  
2 The staff does not agree with what I would call heroic  
3 measures, that is removing systems from service on the  
4 unaffected unit in order to provide power. We'd like  
5 that to be done using the normal systems that are  
6 required for shutdown for a loss of off-site AC power.  
7 Then, if they do indeed have additional capacity  
8 available, to consider that. So, those types of  
9 reviews where they're proposing to use the other unit  
10 on site's diesels is also getting priority.

11 So, this is a complicated review,  
12 depending upon what solution response to the rule has  
13 been proposed by the licensee. We are giving them  
14 high priorities. We've done the best we could in  
15 allocating resources to do that, and we have had a  
16 number that we have concluded the proposal does not  
17 meet the rule and we're trying to get through those.  
18 So, we're not going back and forth with Qs and As,  
19 trying to get resolution to agree on each one. If we  
20 find that the proposal does not meet our requirements,  
21 we're informing the licensee of that and moving on to  
22 the next one to get through them as quickly as we can.  
23 The schedules have slipped some and we're giving  
24 management attention to that fact, but it's a  
25 complicated process for us.

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1                   COMMISSIONER ROGERS: In closing, I'd like  
2 to urge continued progress towards implementation of  
3 the resolved USIs and GSIs because even though we use  
4 the terminology "resolved," the job is not really  
5 completed until the implementation is carried out at  
6 all U.S. nuclear power plants.

7                   If in the future staff identifies any  
8 bottlenecks to the timely implementation of these  
9 issues, they should advise the Commission promptly and  
10 should seek any necessary guidance.

11                   In addition, Agency's programs such as the  
12 IPE program or some of the staff's proposed activities  
13 in response to the regulatory impact survey currently  
14 under Commission consideration may also affect the  
15 schedule for implementation of closure of these issues  
16 and the Commission will want to be kept apprised of  
17 such matters. In any event, staff should continue to  
18 keep the Commission advised of the status of  
19 implementation of the closure of the USIs and GSIs.

20                   I'd like to thank the staff for an  
21 excellent job in briefing us this morning.

22                   If there are no further comments from my  
23 fellow Commissioners, we stand adjourned.

24                   (Whereupon, at 11:21 a.m., the above-  
25 entitled matter was adjourned.)

NEAL R. GROSS

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1323 RHODE ISLAND AVENUE, N.W.  
WASHINGTON, D.C. 20005

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: PERIODIC BRIEFING ON INDUSTRY IMPLEMENTATION OF  
GENERIC SAFETY ISSUES

PLACE OF MEETING: ROCKVILLE, MARYLAND

DATE OF MEETING: OCTOBER 25, 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.

Carol Lynch

Reporter's name: Peter Lynch

**NEAL R. GROSS**  
COURT REPORTERS AND TRANSCRIBERS  
1323 RHODE ISLAND AVENUE, N.W.  
WASHINGTON, D.C. 20005



**Commission Briefing  
on  
Implementation Status of Resolved  
Generic Safety Issues**

James Partlow  
Herbert Berkow  
Richard Wessman

October 25, 1990

# PURPOSES

- To Provide:
  - (1) Current Implementation Status of GSIs
  - (2) Implementation Status Update of USIs
- Is Implementation Completed?
- If Yes, When?
- If No, What Remains to be Done and When?

# BRIEFING OUTLINE

- Chronology of GSI Task Effort
- GSI Selection Process
- GSI Database Development
- Summary of GSI Implementation Status
- USI Status Update

# DEFINITIONS

## GSI

- Affects a Number of Plants
- May Have Potential for Safety Improvements

## USI

- Affects a Number of Plants
- Questions Adequacy of Existing Safety Requirements
- Final Resolution Not Yet Developed
- Involves Conditions Not Likely to be Acceptable Over Plant Lifetime

# GSI SELECTION PROCESS

- Starting Point - Generic Issue Databases
- Elimination
- Staff Involvement/Concurrence
- Result - 32 Issues & Subissues

# DATABASE DEVELOPMENT

- Response to GL 90-04
- Independent Staff Status Determination
- Staff QA/Concurrence
- SIMS Database Entry

# GSI IMPLEMENTATION STATISTICS

Total Applicable GSI Actions at 111 Reactors	2662
Total Implemented	2211 (83%)
Total Unimplemented	451 (17%)
No. Unimplemented at Individual Plants	1-8

# GSI UNIMPLEMENTED AT MOST PLANTS

	<u>GSI</u>	<u>NO. OF PLANTS OPEN</u>
43	Reliability of Air Systems	61
51	Improving the Reliability of Open-Cycle Service Water Systems	108
67.3.3	Improved Accident Monitoring	86
75	Salem ATWS Item 2.2.2, Vendor Interface for Safety-Related Components	108
99	RCS/RHR Suction Line Valve Interlock on PWRs	60
	TOTAL	423

# EVALUATION OF GSI IMPLEMENTATION STATUS

- About 83% Implemented
- No Plant Has Unacceptable Number of Open Issues
- Acceptable Plans and Schedules for Completing Remaining Actions; Staff is Addressing Issues Requiring Staff Action or Position to Reach Final Resolution

# USI IMPLEMENTATION STATISTICS

	<u>2/90</u>	<u>9/90</u>
Applicable USIs to be Implemented	1927	1927
USIs that are Implemented	-1501	-1546
Unimplemented USIs	<u>426</u>	<u>381</u>

# USIs UNIMPLEMENTED AT MOST PLANTS

<u>USI</u>		<u>PLANTS OPEN</u> <u>2/90</u>	<u>PLANTS OPEN</u> <u>9/90</u>
A-9	Anticipated Transient Without Scram	60	51
A-44	Station Blackout	116	116
A-46	Seismic Qualification of Equipment in Operating Plants	66	66
A-47	Safety Implications of Control Systems	116	87
TOTAL		<u>358</u>	<u>320</u>