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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION.

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ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

SUBCOMMITTEE ON GENERIC ITEMS

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Room 1167,
1717 H Street, N.W.
Washington, D.C.

Wednesday, 11 March 1981.

The subcommittee was convened, pursuant to notice,
at 1:30 p.m.

FOR THE ACRS:

PAUL SHEWMON, Chairman

CHESTER SIESS, Member

RICHARD K. MAJOR, Designated Federal Employee

FOR THE NRC STAFF:

Karl Kniel, Paul Norian, Newt Anderson, Tom
Cox, and Harold Vandermolen.

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P R O C E E D I N G S

(1:30 p.m.)

MR. SHEWMON: This is an open meeting of the Advisory Committee on Reactor Safeguards, Subcommittee on Generic Items.

I am Paul Shewmon, subcommittee chairman. The other ACRS member present today is Chester Siess on my right.

The purpose of this meeting is to compare the ACRS list of generic items with the NRC Staff's program on generic items, in order to ensure the ACRS list of generic items is receiving adequate attention. Methods to combine the lists on generic items will be explored, and a new approach for dealing with generic items, given such a merger, will also be discussed.

This meeting is being conducted in accordance with the provisions of the Federal Advisory Committee Act and the Government in the Sunshine Act. Mr. Richard K. Major is the designated federal employee.

The rules for participation in today's meeting have been announced in part in the notice of this meeting previously published February 23 in the Federal Register.

A transcript is being kept, and it is requested that each speaker identify himself or herself and speak with sufficient clarity and volume so he or she can readily

1 be heard -- something I will try to do.

2 We have not received either written statements or
3 requests for time to make oral statements.

4 Do you have anything to add?

5 MR. SIESS: No.

6 MR. SHEWMON: Do you have this (indicating), Karl?
7 Does it fit with what you have in mind?

8 MR. KNEIL: Yes.

9 MR. SHEWMON: I don't know that I have any
10 particular opening remarks. You are familiar with what we
11 are trying to do, and I think the main concern is to explore
12 the mechanics of this, and to try to set up a procedure
13 where things do not fall in the crack.

14 So why don't you begin talking, then, on the
15 areas of differences between the two lists, as you see them.

16 MR. KNEIL: Okay. I will make a suggestion that
17 we shift the agenda around just a little bit.

18 MR. SHEWMON: Okay.

19 MR. SIESS: Rich, we don't have anything other
20 than this to compare their priorities with our priorities?

21 MR. MAJOR: I think that is the only thing we
22 have that gave the priorities, but that is the cross-
23 reference that we have done.

24 MR. SIESS: There was a report. There was just a
25 sheet with some priorities on it. It wasn't in a report, but

1 that is all right. We have priorities listed here? Is that
2 right?

3 MR. MAJOR: Right.

4 MR. SIESS: That wasn't the last one, was it?
5 That was this seven --

6 MR. MAJOR: Yes.

7 MR. SIESS: That's the one I was thinking about.
8 Of course those were pre-TMI priorities. I am not sure our
9 priorities are the same, now.

10 (Slide.)

11 MR. KNEIL: My name is Karl Kneil from the Generic
12 Issues Branch. Today we have here myself, Paul Norian,
13 Newt Anderson, Tom Cox, and Harold Vandermolen from the
14 Safety Program Evaluation Branch. We are both in the
15 Division of Safety and Technology.

16 We looked at the agenda that the subcommittee had
17 put together, and what I am suggesting is we put our
18 presentation together I think that addresses most of the
19 items in this agenda. What I would suggest is that you
20 allow us to make our presentation, interrupting as you see
21 fit, and then we could go through the rest of your agenda
22 to regurgitate any items that you felt weren't sufficiently
23 covered or addressed.

24 MR. SHEWMON: Fine.

25 MR. KNEIL: So that the agenda I have is, I will

1 speak essentially myself; then Paul Norian and Newt Anderson
2 will discuss what we have today, and how we are handling the
3 generic problem today; and Tom Cox and Harold Vandermolen
4 will discuss what our plans are for the future in terms of
5 how we are going to try to address the generic issue problem
6 and handle it in the future.

7 (Slide.)

8 MR. SIESS: Karl, do you have a definition of a
9 "generic item"?

10 MR. KNEIL: A definition of a generic item?

11 MR. SIESS: Yes.

12 MR. KNEIL: No, we don't have one.

13 MR. SIESS: It seems to me that we are going to
14 have a problem if we don't know what we're talking about.

15 MR. KNEIL: It is one of the things I plan to
16 discuss a little bit on this third item on my talk on
17 general comparison -- ACRS generic items versus the Staff's
18 generic items. I think in connection with that --

19 MR. SIESS: We don't have a definition of a
20 "generic item," either.

21 MR. SHEWMON: I was wondering if you were going
22 to talk about the rigor of ours.

23 MR. SIESS: We have a definition, but it is not
24 a particularly helpful one. A "generic item" in the ACRS
25 is any item that has been mentioned in three letters.

1 M. KNEIL: Yes; that's right.

2 (Laughter.)

3 MR. SIESS: Now when you get to the question of
4 why it was mentioned in three letters, that was to make it
5 a generic item.

6 (Laughter.)

7 MR. SIESS: So far, no help. Right?

8 Basically, the idea of a generic items list was
9 that these were matters that were of concern that the
10 committee wanted to be considered on more than just the plant
11 the letter was being written on.

12 Now the framework for this is that the committee
13 gave advice to the Commission, chiefly in the form of
14 letters on cases.

15 MR. KNEIL: Correct.

16 MR. SIESS: Now we no longer do that. The last
17 two years, we haven't had any cases, so we have been writing
18 a lot of letters that are very generic.

19 MR. KNEIL: Right.

20 MR. SIESS: But at the time we developed this
21 system, we gave advice chiefly in the letters on cases. The
22 initial generic items were the Browns Ferry letter, the
23 asterisked areas. Do you remember that?

24 MR. KNEIL: Yes.

25 MR. SIESS: There were certain things mentioned

1 about Browns Ferry, and there was a footnote with an asterisk
2 that said that these apply to all large power reactors. So
3 the idea was, we wanted them to be generic and not just
4 limited to Browns Ferry.

5 Now later there was a somewhat inverted use of
6 them. They were items we wanted to be considered, but they
7 did not necessarily place a limit on that particular case.
8 In other words, we put it in the letter. We put it in the
9 letter, say, for plant A. Then that could lead to a licensing
10 condition on plant A, or something of that sort. That was
11 not our intent. We wanted it to be considered as a generic
12 item; but this was a mechanism for bringing it to the
13 attention of the Commission, you see.

14 MR. KNEIL: Yes.

15 MR. SIESS: So that is the sort of -- the opposite
16 of the other one, where we wanted it to be considered on
17 that case, and generically. This was sort of to remove the
18 stigma from that particular plant and say it was something
19 we were willing to see considered generically. And when it
20 was resolved, to go back and look at this plant and see to
21 what extent it applied.

22 So our definition never involved the degree of
23 safety implied, or its importance to safety. They were all
24 assumed to be important to safety. They were identified as
25 "generic" in the sense of several plants versus one plant.

1 And they were identified in terms of sort of
2 subjects of interest, rather than as necessary, specific
3 issues, which is one of the conflicts.

4 MR. SIESS: It was very specific.

5 MR. KNEIL: Somewhere, but others weren't. Others
6 were more subject-related.

7 MR. SHEWMON: There wasn't a great deal of
8 uniformity.

9 MR. KNEIL: Right.

10 MR. SIESS: And for many years, we didn't have
11 explanations of it, which confused everybody including us.
12 We just had a title.

13 (Laughter.)

14 MR. KNEIL: On this slide, I have tried to indi-
15 cate the functions of the two branches as they relate to
16 generic issues. The Generic Issues Branch of the Division
17 of Safety Technology's really main function is to manage
18 the technical resolution of issues designated as Unresolved
19 Safety Issues, or "USI"s.

20 We have many of the task managers in the Branch,
21 but we still have some task managers outside the Branch.
22 We are responsible for really resolving those issues, and
23 managing the resolution of those issues.

24 MR. SHEWMON: Karl, that is your job this year. It
25 seems to me it wasn't much more than a year ago that

1 Congress ordained there would be GSIs, and before that USIs,
2 and there was at that time still a list of these A-11 and
3 A-12s.

4 MR. KNEIL: Right.

5 MR. SHEWMON: Were you responsible for coordinating
6 them at that time?

7 MR. KNEIL: Yes. In the rest of these functions,
8 that shows up.

9 MR. SHEWMON: Okay.

10 MR. KNEIL: We are supposed to monitor the
11 implementation of resolved USIs; and we are supposed to
12 coordinate and monitor technical resolution of the TMI
13 Action Plan. And we are supposed to coordinate and monitor
14 technical resolution of other generic issues -- and that is
15 the item that you just mentioned.

16 MR. SHEWMON: Okay.

17 MR. KNEIL: So in other words, we have got
18 specific technical responsibility for the USIs; and we have
19 got sort of administrative and partial technical responsibility
20 in all other areas.

21 Now the Safety Program Evaluation Branch has
22 many functions. Two of their functions that relate to
23 generic issues are stated here: Develop a plan for
24 resolution of generic safety issues; and develop a method
25 for prioritization of safety issues to be included in the

1 above plan.

2 So let me talk a little bit now about how we are
3 doing these things, or not doing these things. I would like
4 to bring you up to speed on that.

5 (Slide.)

6 First I thought we would just present sort of a
7 summary of the present generic items list where they exist,
8 or where the really dominant ones exist, anyhow. We have
9 the unresolved safety issues -- and I have given the
10 references here.

11 These references give you either -- usually, a
12 list, and a description of all the issues involved: NUREG
13 0510 was the original report. NUREG 0705 is the one you
14 don't have yet; we are just polishing it off now. That is
15 on the four new issues.

16 NUREG 0606 is the Aqua Book, which keeps a
17 quarterly account of the progress schedules on the
18 Unresolved Safety Issues.

19 Now we have the TMI Action Plan as a big list
20 of generic issues. It is address in those (indicating) two
21 reports, NUREG 0660 and NUREG 0737.

22 We have the Category A Generic Issues, again
23 with the appropriate references.

24 We have the Category B, C, and D, with the
25 appropriate reference; and we have the ACRS Generic Issues --

1 and I didn't put down the last reference available for that;
2 I should have.

3 In my view, these are the main principal sources
4 of generic issues that we have.

5 (Slide.)

6 At this point, I would like to make sort of a
7 general comparison of the ACRS generic issues versus the
8 Staff's generic issues.

9 MR. SHEWMON: Where did the Staff's Generic Issues
10 List come from?

11 MR. KNEIL: Well, the original, the first ones we
12 had were really the A,B,C,D, issues, where there was a--
13 which originated in a list of -- I think it evolved from a
14 list of concerns and issues that concerned the Staff.

15 Then we went out with some kind of an interroga-
16 tion within the Staff to compile all the generic issues,
17 and to kind of prioritize them, and that was the first
18 A,B,C,D, list.

19 MR. SIESS: I think you looked at our list, too,
20 in that.

21 MR. KNEIL: I think in the process we looked at
22 your list, too.

23 MR. SHEWMON: And this is 0372 was the first
24 document, then? It is the lowest number on there. Was
25 that the first time that this got formalized?

1 MR. KNEIL: Yes; that's correct.

2 MR. SIESS: Is 0372 the Task Action Plan?

3 MR. KNEIL: Yes. It does include the Task Action
4 Plan. They were updated in NUREG 0410.

5 MR. ANDERSON: That's 0371.

6 MR. KNEIL: 0371? Did I get it wrong?

7 MR. SIESS: That's close.

8 (Laughter.)

9 MR. ANDERSON: That's close enough.

10 MR. KNEIL: 0471 is the B,C, and D. It is possible
11 I got it incorrect, but I thought I copied it from the
12 report.

13 MR. SIESS: 0372 sounds right to me.

14 MR. MAJOR: It is 0371. 0371 is right.

15 MR. KNEIL: Okay. I stand corrected.

16 MR. SHEWMON: Go ahead. Thank you.

17 MR. KNEIL: If you make the general comparison,
18 the subject matter is very similar, and a cross-reference
19 to the Staff's list can be made for most of the ACRS Generic
20 Items. We will get into a little more detail on this,
21 later.

22 New items could be added to the Staff List to
23 address specific ACRS items, as necessary. In other words,
24 it is not a sacrosanct list. People keep adding to it all
25 the time. So if it is necessary to accommodate your list to

1 add a few more to ours, that would be no problem.

2 This gets into the area, now, of what is the
3 definition? There appears to be a difference in the
4 perceived content of a generic item on the ACRS list versus
5 the Staff list.

6 In my view, the ACRS items tend to be subject-
7 related, although some of them are specific issues. The
8 Staff items tend to be more issue-related. I think this
9 distinction is important, because it is hard to resolve a
10 "subject," but a specific "issue" can be resolved.

11 Our experience has shown that we need a focus on
12 an issue to obtain resources, both Staff and contract
13 assistance; to manage it effectively; and to demonstrate
14 that progress has been made.

15 So I think that there are legitimate generic areas
16 of concern to the ACRS that can't be expressed as an issue,
17 but they shouldn't be called "generic issues." They should
18 be addressed in a research program, or an exploratory
19 research program; or there may be generic methods that need
20 work on. That again I don't think is an issue. It is a
21 methods development.

22 So I think what we are trying to do in the
23 generic issues now is to really focus on generic safety
24 issues, rather than just broad subjects. You want to be
25 able to define the issues, and if it takes -- you really

1 can't define the issue; that means it takes an exploratory
2 program to define that issue. We don't want to put it on
3 the issues list until that is done.

4 MR. SIESS: I don't get your distinction between
5 "subject" and "issue," unless you simply mean that the
6 narrowness of the definition --

7 MR. KNEIL: Let me try to give you an example.
8 Water hammer, I think, is an example. We've got an
9 Unresolved Safety Issue on water hammer, and it is not
10 moving very well. One of the reasons it is not moving very
11 well, parts of it have been focused, and I think tentatively
12 resolved, but the rest of it isn't focused. We don't have
13 a good understanding of which water hammers are really the
14 ones of concern.

15 MR. SIESS: That's the question. The ACRS
16 question is, I think: Is water hammer something which
17 should be of concern? That's the first issue. Now maybe
18 that's the subject?

19 MR. KNEIL: Yes. I think it is a "subject."

20 MR. SIESS: But the fact that it might require
21 research to resolve it doesn't -- I mean, how it is resolved
22 I don't think should be at all a question of how it is
23 defined, whether for research or technical assistance
24 programs, or someone on the Staff knows the answer.

25 MR. KNEIL: I agree that it is a legitimate area

1 of concern, and the question is --

2 MR. SIESS: But that's on your list, incidentally.

3 MR. KNEIL: I know it is.

4 MR. SIESS: That is A-1.

5 MR. KNEIL: I know it is. There are those kinds
6 of issues on our list.

7 MR. SIESS: Now take your A-2, asymmetric blowdown
8 loads. Now that is clearly one that originated with the
9 Staff.

10 MR. KNEIL: Well, it originated --

11 MR. SIESS: It has taken quite awhile to define
12 that one; let's face it.

13 MR. KNEIL: Yes, but I think it is more specific
14 than "water hammer," because it was concerned with a fairly
15 specific kind of sequence of happenings. And there was some
16 conceptual idea of where the problem was that would result
17 from that -- a break of a primary system vessel nozzle, or
18 near the nozzle, and the asymmetric loads that would result.
19 I think it was a specific issue, as compared to water
20 hammer.

21 MR. SIESS: Let's take the MARK I program.

22 MR. KNEIL: All right.

23 MR. SIESS: That ended up being fairly specific,
24 but it took about two years to break that down into all the
25 different forces that had to be considered in research. So

1 was that an "issue," or a "subject"?

2 MR. KNEIL: I think it was more of an "issue,"
3 because it was initiated by the experiments run by GE on
4 MARK III, where they identified certain pool loads that
5 originated from the discharge that hadn't been properly
6 accounted for. So you're right. There had to be a certain
7 amount of exploratory work required to define what kinds of
8 loads were caused by various phenomena; but I still think
9 it is a little bit bigger issue.

10 MR. SHEWMON: If you look at the things that show
11 up on our list that don't on here, decommissioning of
12 reactors is one. Now that is a "subject."

13 MR. SIESS: That is a subject.

14 MR. SHEWMON: You wish things were moving faster,
15 but it is not an "issue." We all agree on that.

16 MR. SIESS: You see, I think part of the difference,
17 when Karl says an "issue," I think he puts the word
18 "licensing" before it in his mind. A "licensing issue."
19 And a "licensing issue" to the Staff is one they might have
20 to go before a Hearing Board with.

21 MR. KNEIL: Yes.

22 MR. SIESS: Now if you want to make that distinc-
23 tion --

24 MR. KNEIL: That is a safety issue. It is a
25 licensing issue because it is a safety issue.

1 MR. SIESS: There may be many safety issues that
2 may not yet be licensing issues; but a licensing issue is
3 one the lawyers say you'd better get an answer to this or
4 you're going to have trouble.

5 MR. KNEIL: Right.

6 MR. SIESS: Now I think maybe that is part of your
7 thinking in that definition, that distinction between
8 "subject" and "issue."

9 MR. KNEIL: Yes. That's right.

10 MR. SIESS: To the degree you can define it, and
11 the degree with which it has already been defined, many
12 subjects can end up being "issues" with a little work on
13 defining them.

14 MR. KNEIL: Correct. Sometimes not so little,
15 though. Sometimes there's a hell of a lot of work involved
16 in defining an issue.

17 MR. SIESS: And sometimes your issues expand into
18 subjects.

19 MR. KNEIL: An issue can expand, that's correct,
20 from additional work on it.

21 MR. SIESS: I would rather see the distinction
22 made in the degree of definition of a narrowness, rather
23 than a couple of words like "subject" and "issue" which are
24 very subjective.

25 MR. KNEIL: Okay.

1 MR. SIESS: But I don't think those are
2 characteristics that clearly delineate the two lists. I
3 think you've got "subjects" on your list, and we've got
4 "issues" on ours.

5 MR. KNEIL: Agreed.

6 MR. SHEWMON: But I think the point of, given a
7 subject you'd like to stay interested in is a valid one --

8 MR. SIESS: Oh, yes.

9 MR. SHEWMON: Because my own frustrations as a
10 relatively newcomer have been -- well, stress corrosion
11 cracking of stainless steel. A hundred years from now we
12 can say whether it is resolved; now we just have procedures
13 and it is an interesting subject.

14 MR. SIESS: Right.

15 MR. SHEWMON: Go ahead.

16 (Slide.)

17 MR. KNEIL: On this slide, I have tried to
18 summarize the present Staff activities on generic issues.
19 In other words, what are we doing now on generic issues?

20 On the first one, "Unresolved Safety Issues,"
21 resolution is actively being pursued by task managers in
22 the GIB Branch, or outside using Staff and contractor
23 assistance.

24 This is the example of where I think we are
25 working in a satisfactory way. We identify the issues; we

1 plan for them; we work on resolution; we go out for public
2 comment; and we change the licensing guidance and implement
3 it on the plants.

4 MR. SIESS: Now in implementation, that has been
5 one of our problems, in that we reported issues as "resolved"
6 and the Reg Guide came out without really looking at the
7 implementation.

8 MR. KNEIL: Right.

9 MR. SIESS: Now on your Unresolved Safety Issues,
10 how is the implementation resolved -- specifically, backfit?

11 MR. KNEIL: We try to address the backfit during
12 the resolution of the issue. In other words, the resolution
13 of the issue addresses classes of plants with certain
14 characteristics, and the fix should be accordingly. And
15 I think for the most part, the more successful backfits are
16 done where that is thought very clearly through during the
17 resolution process.

18 MR. SIESS: And you no longer have an RRRC
19 Committee to review backfits?

20 MR. KNEIL: That is correct; we don't. But we
21 do have the SPEB, which have the same function. In other
22 words, part of our review during the final resolution phase
23 is to subject our draft resolutions to review by the Safety
24 Program Evaluation Branch, which then looks at cost/benefit
25 and other things about the resolution.

1 MR. SIESS: But, you see, the SPEB is at a quite
2 different level than the RRRC was. RRRC was a policy-level
3 decision-making group.

4 MR. KNEIL: Right.

5 MR. SIESS: And the SPEB is not policy level.

6 MR. KNEIL: No.

7 MR. SIESS: So is a review of these recommendations--

8 MR. KNEIL: Yes. We work with them, and then that
9 goes up through the Director of Safety Technology, and on
10 to the Director of NRR.

11 It is also possible that the Committee -- the
12 Committee of course is involved in commenting on resolution,
13 the ACRS. So they get involved at that point, also.

14 MR. SIESS: On USI.

15 MR. KNEIL: That's right.

16 MR. SIESS: And that has been quite recent, I
17 think. We are now officially involved in that?

18 MR. KNEIL: Yes. I think you have been involved
19 in just about every one we've done.

20 MR. SHEWMON: Let me interrupt you again. I have
21 got on my list of documents to be read, now, a couple of
22 NUREGs which are resolutions of A items.

23 MR. KNEIL: Okay.

24 MR. SHEWMON: Once that is put out, there is not
25 any formal way, or a requirement that the ACRS comment on

1 those, is there? Or is there?

2 MR. SIESS: There are USIs.

3 MR. KNEIL: There are two categories of reports.

4 MR. SHEWMON: I'm not asking about USIs, though.

5 MR. KNEIL: There are several issues we put out a
6 final report on. I think in most of those cases we have
7 been working with the Committee on it. So the Committee
8 should not have been surprised by what we finally came up
9 with.

10 MR. SHEWMON: No, the subcommittee is not.

11 MR. KNEIL: In future cases we are going out for
12 comment, and we are going to finish our work, and publish
13 a draft for comment.

14 MR. SHEWMON: On any A issue?

15 MR. KNEIL: Yes, on any A USI.

16 MR. SIESS: That is USI?

17 MR. KNEIL: That is USI; right.

18 MR. SHEWMON: My comment was on A generic items.

19 MR. KNEIL: We are planning what to do there. And
20 if you feel that you ought to be involved, it is something
21 we would like to hear at this meeting.

22 MR. SHEWMON: No, I'm not saying that so much as
23 inquiring as to whether or how well it has been thought out.
24 I think that is something the Committee has to get involved
25 in, too.

1 MR. SIESS: Yes, clearly.

2 MR. KNEIL: We've got a plan for that which will
3 be presented by Tom Cox, and I think the plan does include
4 an ACRS participation on resolution of generic issues.

5 MR. SIESS: Karl, if the ACRS is going to, let's
6 say, consolidate its list with the Staff, then I think the
7 ACRS is going to want to relate to the Staff's list in much
8 the same way it did to its own. That is, it will want to
9 be able to add items to the list, or to propose items.

10 MR. KNEIL: Right.

11 MR. SIESS: And it wants to be able to review the
12 resolution, just like we did on our Generic Items List. The
13 Staff would come in every six months, at one time, and say
14 we think this is resolved for these reasons, and the Committee
15 would either agree or disagree.

16 So I think we would want to be involved in the
17 resolution of every item on your list, A through D. We talk
18 about As, because As are the ones you're working on --

19 MR. KNEIL: We agree with that, and our plan does
20 involve just that. And a plan, which you will hear from
21 Tom Cox -- he'll show you where that is included in his
22 plan.

23 MR. SIESS: Now are all the TMI Action Plan items
24 considered generic items?

25 MR. KNEIL: Well, I consider them generic items.

1 It is a separate list.

2 Going back to unresolved safety issues for just a
3 minute --

4 MR. SIESS: It's not prioritized, though.

5 MR. KNEIL: Yes, they were prioritized, both by
6 the Staff and by the Committee.

7 MR. SIESS: But not versus the generic issues.

8 MR. KNEIL: No.

9 MR. SIESS: And now you've got two lists, each
10 with its own priorities --

11 MR. KNEIL: Right.

12 MR. SIESS: -- and how do you negotiate those?

13 MR. KNEIL: I think for the moment we will just
14 have to proceed down the Action Plan and keep it separate,
15 not just for -- for show purposes -- I don't think we can
16 separate the Action Plan and mix it in with every other
17 issue, at this time. I think down the pike a little bit,
18 we can.

19 MR. NORIAN: Most of those dates are short-term
20 dates. By "short-term," I mean they are supposed to be
21 completed this year. So hopefully that will clear out of
22 this picture sometime soon.

23 MR. SIESS: I'm not going to hold my breath.

24 MR. KNEIL: I think we are well aware of the
25 statements we made with the way you see the Committee

1 participation, and an opportunity to provide new issues, and
2 an opportunity to comment on the resolution of issues. We
3 have actually interjected a third point: An opportunity to
4 comment on the proposed plan for resolution.

5 MR. SIESS: Yes. Now I guess, too, you would have
6 to include that we would want the opportunity to comment on
7 your new issues. That is, any issue --

8 MR. KNEIL: Okay. We have done that in USIs. We
9 have done all those things with the USIs.

10 MR. SIESS: Sure. And those were at the top of
11 the list. Because if you just add an item that we have no
12 interest in, then when it comes to the resolution of it,
13 we should have no interest in it, and that puts two
14 categories in there.

15 MR. KNEIL: Yes.

16 MR. SIESS: I said "the opportunity" to comment.

17 MR. KNEIL: I understand, and we missed that one --
18 although we did cover it under USIs. We both offered you an
19 opportunity to comment on the new ones, and an opportunity to
20 suggest new ones.

21 MR. SIESS: There is a problem with, if you put
22 the USIs in too special a category, then the Committee gets
23 real itchy about what is in the USI list.

24 MR. KNEIL: I am not leaning on them so much as
25 being a special category; I am leaning on them because we

1 have had experience, and I want to use that experience and
2 the benefit from that experience in developing our eventual
3 plan.

4 MR. SIESS: A good approach.

5 MR. KNEIL: Now the status is reported quarterly
6 in NUREG 0606, the Aqua Book. Now we have recognized the
7 problem of implementation, also, in the Aqua Book. If you
8 look at some of the more recent issues, we discuss implementa-
9 tion in the foreword; and we have added -- we have two
10 summary tables in the front.

11 The first summary table is the same as in the
12 past, where it discusses essentially on the active projects
13 where they are.

14 The second summary table, which is on USIs for
15 which technical resolution is complete. It gives the USI
16 in the report, and the implementation status, and the
17 implementation task manager in the Division of Licensing.

18 MR. SIESS: You used the word "technical
19 resolution." That means you know what you ought to do --

20 MR. KNEIL: That's correct.

21 MR. SIESS: You know how important it is, but the
22 final action hasn't been taken. The rule requiring that
23 hasn't been done; if the Reg Guide is required, that hasn't
24 been done. Does it also mean that the implementation hasn't
25 been settled? Or is that part of the technical resolution?

1 MR. KNEIL: I didn't understand.

2 MR. SIESS: When the technical issue has been
3 resolved, does that mean that the implementation has been
4 resolved, technically? Do you know now whether it is to be
5 backfit or not? Do you want it backfit or not?

6 MR. KNEIL: Yes. In some cases we may not know
7 exactly the extent of backfit. That may be one of the
8 things that still has to be ironed out in the actual
9 backfitting implementation on the plant. But certainly it
10 is desirable that we have a good understanding of the extent
11 of backfit when we come to the technical resolution.

12 MR. SIESS: So "technical resolution," the other
13 side of the coin, is, what, administrative resolution?
14 Or policy change?

15 MR. KNEIL: Well, the other side of the coin is
16 implementation in licensing guidance, and on the plants.
17 That is how we distinguish implementation. You have to
18 implement it both into the licensing process in future
19 plants, and we have to backfit it to the extent that it is
20 required to be backfitted on operating plants.

21 MR. SIESS: So technical resolution versus
22 physical implementation?

23 MR. KNEIL: Right. And implementation into the
24 licensing process.

25 MR. SIESS: Into the process.

1 MR. KNEIL: We won't be doing that, but we will be
2 monitoring it, and presumably for USIs you will be able to
3 find that out by just going to this second table here, and
4 it will tell you what the status is of where we are. And if
5 you need more detail, it will tell you who to go to.

6 Now the TMI Action Plan, some issues have been
7 resolved and are being implemented, and the resolution is
8 being pursued on many issues by assigned individuals using
9 Staff and contractor assistance.

10 Now the status is reported quarterly in the
11 Action Plan Tracking System.

12 MR. SIESS: What color is that?

13 MR. KNEIL: It's not a color; it is a computer
14 output. We do it quarterly, and it is put on a computer, so
15 it is much more flexible in that sense. It is updated
16 quarterly. Paul Norian is going to talk to us briefly about
17 that specifically, so it will give you a feel for how we
18 are trying to put a handle on those issues.

19 MR. SHEWMON: Does that mean, then, that anybody
20 who goes up to the Phillips Building and finds a terminal
21 can find out what that is, quarterly?

22 MR. KNEIL: You should be able to find out easier
23 than that. We are issuing our -- or we are issuing at the
24 present, I guess quarterly, a compilation that should be
25 available in general. That (indicating) is an example of it.

(Mr. Norian holds up a computer printout.)

MR. KNEIL: Paul will give you just a little bit of a discussion on that.

Now what are we doing now on other generic issues? Other generic issues, we have had some activity on various issues. A new compilation of other generic issues has been initiated.

MR. SIESS: By "others," do you mean B,C,Ds?

MR. KNEIL: That's right. That's correct. The As that are not USIs, and the B,C,Ds, and any others. We are developing a plan for handling generic issues.

MR. SIESS: The B,C,D priorities were set about three years ago.

MR. KNEIL: Yes.

MR. SIESS: Have those been reviewed? Or are they in the process?

MR. KNEIL: They will be reviewed as part of this process. That is part of our presentation.

MR. SIESS: I suspect a lot of those priorities have changed.

MR. KNEIL: That is correct. There is a lot of duplication, I think, among issues. There are quite a few of the B,C,D issues that are not really safety issues. Some of them are environmental things like that. So that will be -- what we will do is reprocess this issue in accordance

1 with the plan we are developing.

2 So that completes my discussion. Let's see. The
3 next item was, I think Paul will tell you a little bit about
4 the Action Plan Tracking System, which is the kind of thing
5 we are developing to keep track of the generic issues.

6 MR. SIESS: I think we need a criterion that if
7 we have a generic issue and we haven't done anything about
8 it in five years, it can't be that important.

9 (Laughter.)

10 (Slide.)

11 MR. NORIAN: I only have one slide. The purpose
12 of this system is to come up with some means to keep track
13 of a list of items that has lots of subparts.

14 The key to this plan is that a lead reviewer is
15 assigned to each item in the plan. We are trying to come up
16 with a system to keep track of these items. We wanted to
17 have each person in charge of some part of the plan fill out
18 a form.

19 The form is attached to the handout. What we
20 are trying to do with this form is to get it all on one
21 page, so the person wouldn't think it was a burden to fill
22 it out, and do this from time to time in this way to keep
23 track of where we stood.

24 MR. SIESS: Excuse me. What Branch are you in,
25 Paul?

1 MR. NORIAN: I am with Karl Kneil's Branch.

2 MR. SIESS: The reviewers come from where?

3 MR. KNEIL: All over.

4 MR. NORIAN: Research, Standards --

5 MR. SIESS: Anywhere?

6 MR. KNEIL: Most of them are in the NRR.

7 MR. NORIAN: The purpose of this form is to tell
8 you why the work will be done. Sometimes just the title
9 won't tell you that. What the milestones are, what has been
10 done so far, what the status is. And the last point is:
11 We have some snags that have come up that perhaps more
12 people should know about.

13 Each quarter, these forms are sent out to these
14 people. They are filled out. We get them back, and as
15 Karl was saying we have them put out in this big listing,
16 which is then sent out to each Branch.

17 MR. SIESS: How many items in there?

18 MR. NORIAN: There are 150 or so main items, and
19 some of them have got subgroups. We monitor all the
20 subgroups here, too, and the total comes out to be around
21 350 items, 366. We are saying that this is done each three
22 or four months, and the next time this will be done will be
23 May. It has been done twice, so far. May will be the third
24 time.

25 What we are trying to come up with here is a

1 package where someone can go to to find out what the status
2 is of one item on the list. If what he wants to know is not
3 in here, it gives him a contact and a telephone. You can
4 call that person and ask him all you want to know, and
5 hopefully he is the right contact.

6 MR. SIESS: Who uses that, besides us, maybe?

7 MR. NORIAN: It is used by the Chairman quite a
8 bit to keep track of the Action Plan. This is done primarily
9 for him. He goes through the list and has his questions.
10 He met with the Staff a month ago, and all those items that
11 showed some slip, he had the people there explain to him
12 why we had that slip.

13 It is used by Harold Denton so he knows what the
14 status is, and so on down the list. But the Chairman does
15 look at this. This is his key means to find out what is
16 going on.

17 This was all I had to say.

18 MR. SHEWMON: Okay. Thank you.

19 MR. SIESS: What is the last date for any item
20 on there for completion? You said earlier, most of these
21 were short-term?

22 MR. NORIAN: A good part of them. I went through
23 them some time ago, and a good part of them were supposed
24 to be completed the first of this year. But I think some
25 of the dates are listed only as "after '82." So they have

been kind of put off with no fixed date. But I think most of them are -- in 0660, are scheduled to be completed this year.

MR. ANDERSON: I am Newt Anderson, also with the Generic Issues Branch, and I have two slides.

(Slide.)

First of all, we will look at how we implement, or how we manage the implementation of the resolution of USIs. Karl mentioned that it is our responsibility for the technical resolution, and also initiating the implementation. By "initiating," we take the necessary actions to get it started, and then follow through to see that the implementation does take place.

We issue a NUREG Report which details technical resolution, and in most instances is a pretty detailed picture of what is required for the implementation. In some cases, the implementation starts before we really achieve technical resolution and get our NUREG Report out.

Okay, on the operating plants the Division of Licensing has their own --

MR. SHEWMON: Let me stop you to just see what that means. BWR nozzle cracking A-10. The NUREG came out April 30, 1980. Now where on that schedule will this NUREG detailing resolution? Or is this NUREG -- do you have a chapter in this NUREG which spells it out, and that is what

1 you mean by you issuing a NUREG?

2 MR. ANDERSON: Yes. That's right. A-10 is a good
3 example. I think A-10 does specify how the implementation
4 will be handled.

5 MR. SHEWMON: And that is a NUREG you're talking
6 about?

7 MR. ANDERSON: That is the NUREG we're talking
8 about.

9 MR. KNEIL: Actually, I think the one you referred
10 to for April 30th is the one out for comment. The final
11 one came out in November.

12 MR. ANDERSON: Yes.

13 MR. KNEIL: The implementation letter went out
14 after the November letter. We are in the process of
15 implementing that, now.

16 MR. SHEWMON: Okay, this is the November Aqua Book.

17 MR. KNEIL: That is not up-to-date. That is one
18 of the ones we resolved.

19 MR. ANDERSON: We have a later version of the
20 Aqua Book out now.

21 The Division of Licensing maintains their own
22 generic list. Their generic list is really a multi-plant
23 action items that includes the implementation of USIs and
24 other generic concerns, as well as other action items on
25 operating plants that is the plight of more than one plant.

jwb

1 MR. SIESS: By "Action Items," do you mean "Action
2 Plan Items," 0660 items?

3 MR. ANDERSON: Yes.

4 MR. SIESS: I just wondered what you meant by
5 "action items." Is it broader than that?

6 MR. ANDERSON: Yes, it is broader than the
7 generic issues. I can give you a copy of their latest list,
8 if you would like to see what is on it.

9 MR. SIESS: Yes; sure.

10 (Mr. Anderson hands document to Mr. Siess.)

11 MR. ANDERSON: The penciled marks I have on that
12 copy are the new ones that have gone on recently. You will
13 note that unfortunately they have numbered their list "A
14 through E," so they have an Item A-1, also.

15 MR. SHEWMON: Which isn't your item?

16 MR. ANDERSON: It is not our A-1; it is their A-1.

17 MR. SIESS: Are those their priorities on here?

18 MR. ANDERSON: Those are priorities, yes. They
19 are general categories of priorities. They just add the new
20 A items at the end of the list.

21 MR. SHEWMON: But A is higher priority than B?

22 MR. ANDERSON: That's what they tell me, yes.

23 MR. SIESS: And these numbers out here (indicating)
24 are the number of plants they have?

25 MR. ANDERSON: Yes; that's correct. They have an

1 Action item on each plant, for each item. So we are
2 interfacing our system with theirs.

3 On the operating plants, we inform them -- we so
4 far have not done it formally, although we intend to
5 proceed in that manner -- we informed them that this has
6 been resolved and is ready for implementation. And of
7 course they know this beforehand, and we get them in on the
8 act as soon as we can.

9 They will assign a project manager responsibility
10 for coordinating the implementation. He follows it. He
11 writes the necessary task forms to contract with the
12 technical reviewers to do the work. And he also provides us
13 with status reports on the implementation that we need for
14 our Aqua Book.

15 MR. SIESS: Now these are SER-type items, aren't
16 they? Are they where they've got a problem in writing an
17 SER, essentially?

18 MR. ANDERSON: Most of those do show up in the
19 SERs; that's correct. But not all of them, though. Okay?
20 We have had a number of discussions with them about
21 interfacing our system. We feel it is going to be a pretty
22 smooth operation, because they are pretty interested of
23 course in getting the information for us. And we are very
24 interested in seeing that they do proceed with the
25 implementation.

1 Okay, as far as the Licensing requirements are
2 concerned, that is the changes in the Standard Review Plans
3 and Reg Guides. We also initiate those changes. We prepare
4 a letter to the Licensing Guidance Branch, which is also in
5 the Division of Safety Technology, detailing what Standard
6 Review Plan changes are necessary.

7 The Licensing Guidance Branch will then proceed
8 with those changes. We also write to the Standards people
9 detailing the changes, the necessary changes and regulatory
10 guides, and if necessary requirements for rulemaking. And
11 of course we coordinate closely with the Standards people
12 as we near the point for technical resolution.

13 MR. SIESS: When you issue the NUREG detailing
14 the resolution, it would have included in it the needed
15 changes in the Standard Review Plan, Regulatory Guides, and
16 Regulations?

17 MR. ANDERSON: That's right; although I don't
18 think that's universally true.

19 MR. KNEIL: That is what we're shooting for.

20 MR. SIESS: Okay.

21 MR. KNEIL: In some cases, we have achieved that
22 like A-36, heavy loads. We've got very specific recommenda-
23 tions requiring Standard Review Plan exact language, even,
24 and Reg Guide.

25 MR. SIESS: And in some cases, those won't really

1 gel until after they have been discussed some. You may not
2 have them in there initially. They will develop as you go
3 through the implementation.

4 MR. KNEIL: Well, we will try to do that before.
5 We are trying to get that discussion in the fore-comment
6 period. That is why we are going out for comment. In
7 general, we will be going out for comment with all our
8 NUREGS, and what we will try to get in the fore-comment
9 period is this kind of discussion from industry, from the
10 public where they feel there are inequities or impossi-
11 bilities or difficulties. We will get those kinds of
12 comments at that point.

13 MR. SIESS: I think this is excellent, because it
14 gives us an excellent audit trail, if you want to say that,
15 so that five years from now somebody can remember why
16 something was done. But suppose it wasn't done that way
17 for some existing thing you have, or one that you just
18 don't really see the path that clearly until you have
19 discussed it more with licensing, or they have tried to
20 implement it. Would there be any record kept on -- a file
21 kept, for example, on the issue that would show all of
22 these things that were done subsequent to the NUREG, if
23 somebody wanted to take an issue and follow it all the way
24 through to its complete implementation?

25 Are your files set up in such a way that that is

1 all there?

2 MR. KNEIL: Well, the responses to the implementa-
3 tion letters do have -- are related to the generic issues.

4 MR. SIESS: I mean, at a level of Reg Guide that
5 you didn't anticipate a Reg Guide when you wrote a NUREG,
6 but that two years later it turned out that the Reg Guide
7 was the best way to do it. Or maybe it turned out that you
8 managed to get a change made in ASME Section 3, as a part
9 of the implementation of this resolution. Would that be
10 documented somewhere why that change was made in Section 3,
11 and that this was the result of this?

12 MR. KNEIL: I think it would, because if there
13 was some kind of a change like that, I think it would
14 involve us again in the Generic Issues Branch, since we
15 are responsible for those kinds of issues. We should get
16 an opportunity to participate further.

17 I would think that if they reopened the issue,
18 essentially --

19 MR. SIESS: This would be part of the resolution.
20 Maybe at the time you didn't think it needed a change in
21 ASME, but it turned out that was the best way to do it.

22 MR. ANDERSON: Yes. There is some gap in the
23 logic between the time we issue our report, and say it is
24 technically resolved, until we actually get changes to the
25 Reg Guide or the Standard Review Plan.

1 MR. KNEIL: I think it is a very valid point.

2 MR. SIESS: I've been involved in writing codes
3 for years and, darn it, there are times when nobody remembers
4 why something was done. And it would be very important to
5 know why it was done, or to know what came up, and what was
6 done about it. It keeps you from making the same mistakes
7 over and over, or retracting something you did for a good
8 reason. I mean, it is a little bit thinking like an
9 historian, but you might just think about that.

10 MR. KNEIL: Yes.

11 MR. ANDERSON: Okay, and as I think has been
12 mentioned before, the progress on implementation is reported,
13 is monitored and it is reported in the Aqua Book. We have
14 been attempting to provide more information in those tables.

15 We are going to try to continue to make that
16 book as meaningful as we can. And of course all of the
17 completed USIs we will continue to list in the book, with
18 the status of implementation.

19 MR. SIESS: Now, you know, this is an excellent
20 procedure, and I could assume assume that if you ever get
21 around to addressing A items, the remaining A items or even
22 B items, unless you simply keep upgrading them, that they
23 would be treated in a similar fashion? Is that right?

24 MR. ANDERSON: I would think that we would track
25 it, as well.

1 MR. KNEIL: I think the plan that we will be
2 presenting here does treat them in a similar fashion. As
3 that presentation is given, if you see any weaknesses in
4 that plan, we would like to know about them.

5 MR. SIESS: Okay. But now to go back to what Paul
6 said about the TMI Action Plan Items, are they being
7 documented and followed in the same way?

8 MR. NORIAN: Not in this kind of detail.

9 MR. SIESS: Is there a document like the first
10 one up there, whether it's a NUREG or not I don't care, but
11 is there something that says this is the technical resolution?

12 MR. NORIAN: I don't believe it is that formal.
13 Some of them may have that, but I am not sure.

14 MR. SIESS: They must have a technical resolution,
15 and eventually they get embodied in the SRP Reg Guides, or
16 regulations, don't they? And I wouldn't think they would
17 get embodied in the Regulations, or in the Licensing
18 process, which is what the Licensing -- without some sort of
19 documented resolution.

20 MR. NORIAN: When it gets to the point that they
21 have to make a change at the plant, then a letter goes out
22 like a NUREG 0737.

23 MR. SIESS: That is generic. When we get down
24 to -- you know, I'm just looking to see the changes in
25 licensing requirements, and Action Plan items end up in

1 changes.

2 MR. ANDERSON: I suppose the closest thing to the
3 statement on NUREG 0578, for instance, that document details
4 what the requirements are for short-term lessons learned
5 for instance, and then they were implemented on the plant
6 based on the requirements stated in that NUREG.

7 MR. SIESS: But your NUREG, your Item one up there,
8 isn't just saying what the requirements are. It is the
9 technical resolution. It is saying, this is the problem.
10 This is what we think needs to be done to solve the problem.
11 Right?

12 MR. KNEIL: Right.

13 MR. SIESS: And why.

14 MR. KNEIL: Right. It provides a detailed
15 reasoning that led up to the requirements.

16 MR. SIESS: Yes, and the justification, if you
17 wish, the technical justification for it. That is one
18 reason you send it out for comment; you get a review of it.
19 Right?

20 MR. KNEIL: Right.

21 MR. SIESS: As well as the people who don't want
22 to do it have all the reasons why they don't want to.

23 MR. NORIAN: You know, certain parts of the Action
24 Plan said such things as "change the Reg Guide." That was
25 the item in the Action Plan. Or, "write a new rule." Or,

1 "write a paper for the Commission to decide what they want
2 to do. And that was the end product of that item in the
3 Action Plan.

4 So each item there does not go through all these
5 steps. Of course some of them said, you know, "retrain the
6 operators."

7 MR. SIESS: It has gone through some of these
8 steps. There have been changes in licensing requirements as
9 a result of TMI Action Plan Items. And those have been
10 carried out by the Division of Licensing, by Office of
11 Standards Development, you know, whoever is responsible for
12 changing the licensing requirements.

13 But I was really wondering about the technical
14 documentation. Now some of that is in 0660. It discusses
15 it and says why you need something.

16 MR. KNEIL: I don't think there is a consistent
17 way of presenting the resolution of each Action Plan Item.

18 MR. NORIAN: I think that's correct.

19 MR. SIESS: Yes. Well, that is peripheral, because
20 right now we are worried about the Generic Items List.

21 MR. ANDERSON: If the Generic Issues Branch had
22 done it, obviously it would have been much better.

23 (Laughter.)

24 MR. SIESS: We have handled the generic items
25 not much differently through this subcommittee, so we will

1 forget about it.

2 MR. ANDERSON: Okay. You asked us to compare the
3 lists, and while we've done a lot of looking at the list,
4 we have not done much to match that closely.

5 So we did go through and put together some
6 comparison.

7 (Slide.)

8 I can't swear that all of these numbers are
9 correct, but I think they are pretty close. Okay, these
10 are -- the basic list that we're using for a comparison is
11 our A,B,C,D list. Currently there are 141 issues on it.
12 Some are being worked on; some aren't. Some of the may be
13 completed and fully implemented, although they are still
14 carried on that list.

15 Okay, of these 141 issues, there are 48 As,
16 73 Bs, 17 Cs, and 3 Ds.

17 On the A issues, 29 of them are USIs. Some of
18 the USIs embody more than one A issue -- like A-3, -4, and
19 -5 are one issue. Six of them are TMI Action Plan Items
20 which we are still carrying on that list.

21 MR. SIESS: Which were on the list before the
22 TMI Action Plan.

23 MR. ANDERSON: That's correct.

24 Twenty-five of the A items cover either in total,
25 or are related to one or more of the ACRS issues. Of the

1 73 Bs, 10 are USIs or related to USIs; 9 TMI Action Plan;
2 25 cover, or are related to ACRS.

3 Of the 17 C issues, 3 USIs, and 4 ACRS; no TMI
4 Action Plans.

5 And all three of our D issues cover ACRS issues.

6 MR. SHEWMON: Let me come back. You have As, we
7 have As, NRR has As, but the "As" you are referring to here
8 are the ACRS As?

9 MR. ANDERSON: No. These are the Staff's list
10 of A,B,C,D items. This is NUREG 0737.

11 MR. SIESS: We've got priorities A,B, and C, on
12 our own unresolved issues. We had a D in, but none of them
13 got a D, I think.

14 MR. SHEWMON: Okay, so these are your As?

15 MR. SIESS: That is their list.

16 MR. ANDERSON: This would be one value of
17 combining the list.

18 MR. SIESS: You say all the lists compare --

19 MR. SHEWMON: Partial comparison.

20 MR. ANDERSON: Well --

21 MR. SHEWMON: Okay, so the first time where you
22 say anything about the ACRS list is that 25 cover or are
23 related to one or more ACRS items?

24 MR. SIESS: If I add that up, I get 57 ACRS items
25 there.

1 MR. ANDERSON: Out of 48.

2 MR. SIESS: Out of -- and how many do we have?

3 MR. ANDERSON: We have 77 issues.

4 MR. SIESS: So there are 27 of our issues?

5 MR. ANDERSON: Some of the issues on the Staff's

6 list, there are three ACRS items which are related to it.

7 MR. SIESS: Okay. But all of our items are on your

8 list?

9 MR. ANDERSON: No.

10 MR. KNEIL: No.

11 MR. ANDERSON: There are 28 of your items that

12 are not on the Staff list.

13 MR. SIESS: Of our unresolved items?

14 MR. KNEIL: No. Eleven. Eleven of your unresolved

15 items.

16 MR. ANDERSON: And some of those unresolved items --

17 MR. SIESS: Rich, how many unresolved items do

18 we have in Report 7?

19 MR. MAJOR: Twenty-some.

20 MR. SIESS: Unresolved?

21 MR. MAJOR: Twenty-some unresolved.

22 MR. SIESS: And 52 that are resolved?

23 MR. SHEWMON: We're too contentious a group.

24 MR. SIESS: No, that's right. We had 52 in the

25 "resolved" list, and we went up to a total of 77. So you

1 have included all of our lists.

2 MR. ANDERSON: That's correct.

3 MR. SIESS: We had only 25 unresolved items. Okay.

4 MR. ANDERSON: I am using the Staff's list
5 as a basis for comparison.

6 MR. SIESS: That's all right.

7 MR. ANDERSON: Just to give you some idea of how
8 they compared.

9 MR. SIESS: But it is appropriate that you got all
10 of our unresolved items on your list.

11 MR. ANDERSON: Well, I don't believe that I can
12 say that.

13 MR. SIESS: Well, they've got to be, because we
14 only had 77 total, and you say there are 77 ACRS items, and
15 that includes what we call "resolved," and that is
16 appropriate, because our definition of "resolved" meant
17 that there was a Reg Guide, but the implementation really
18 hadn't been looked at. So we have reopened that, in a way,
19 to say: Let's look at the implementation of the resolved
20 item. So it is appropriate that you have everything listed
21 there.

22 MR. ANDERSON: On the 11 where you have indicated
23 "further reviews," some of those items were previously
24 resolved that one of the committees wanted to reopen or
25 look at further.

1 MR. SIESS: Yes. And the "no action required" is
2 our statement of no action required?

3 MR. ANDERSON: That is your statement.

4 MR. SIESS: Yes. This is from some of that stuff
5 we sent out.

6 MR. ANDERSON: That concludes my presentation.

7 MR. SIESS: Paul, I did a correlation a couple of
8 years ago on the priorities that we had assigned, and you
9 had assigned, your A,B,C,Ds, and our A,B,C,Ds. And as I
10 recall, at that time, I made just a little matrix, A,B,C,D,
11 it was symmetrical about the diagonal. In other words,
12 there were about one-half of the items where we agreed on
13 priorities, and about half where we didn't.

14 MR. ANDERSON: Yes.

15 MR. SIESS: But your priorities, I'm sure, if you
16 tried to assign priorities now, they would be different.

17 MR. ANDERSON: Yes. That is obviously true. Some
18 of the NRC issues are USIs, now.

19 MR. SIESS: So I think we really have to start
20 over on priorities, as far as --

21 MR. ANDERSON: Yes. That's the next subject.

22 MR. SIESS: We can go through Rich's list. I
23 don't think we have done that, have we, to see what the
24 correlations were, and to do it? Do we only have the
25 priorities on certain items? The unresolved items are the

1 only ones we had?

2 MR. MAJOR: Yes.

3 MR. SHEWMON: Go ahead.

4 MR. COX: My name is Tom Cox. I am in the
5 Safety Program Evaluation Branch, which is in the Division
6 of Safety Technology.

7 What I am here to describe today is really a plan
8 for the future. I don't mean to imply in any way that we
9 are doing this now -- although certainly there are parts of
10 it that we wish we were able to be doing already -- but we
11 have put together tentatively a plan for how we think the
12 overall management of the safety issues ought to be
13 conducted.

14 This is still a working item right now within NRR.
15 In fact, it is within the Division of Safety Technology.
16 It has been exercised and discussed among several of the
17 managers, including our Division Manager, Dr. Murley, who
18 has been in on discussions on this. We think this plan has
19 some promise, but there is some work to be done on it, and
20 there are many details to be worked out yet. But we are
21 glad for the opportunity to talk to you about it, and hope
22 for your comments.

23 I think it will address some of the questions that
24 have come up already today.

25 (Slide.)

1 Now to try to come to grips with some terminology
2 early on, some problems that have come up earlier today.
3 You will notice it is called a "Plan for the Resolution of
4 Safety Issues," both "resolution" and "safety" are key words
5 here, in that we are trying to move to the idea, and in fact
6 actually working out issues such that resolution will mean
7 both the specification of a technical resolution, or at least
8 an objective resolution, and a detailed plan for getting that
9 resolution implemented.

10 In fact, we are trying to more effectively address
11 the responsibility to really make sure the Applicants or
12 Licensees have in fact implemented what has become a
13 Licensing requirement.

14 So "resolution" in the broadest sense in the
15 title of this plan means both getting a resolution, and
16 seeing that it is implemented.

17 "Safety issues" means pretty much just that. The
18 plan I am talking about here is mainly geared to handle
19 issues that are really posed in a pro and con sense, or
20 something that earlier today has been called a "subject,"
21 has really been distilled into an issue that involves a
22 certain identified risk reduction, or potential for risk
23 reduction in a plant.

24 Those are the kinds of things that are mainly
25 keyed to in this plan as it stands here today.

1 Well, what were the objectives? We started out
2 trying to develop a systematic method for managing development
3 of safety issues, which come up from all sources.

4 We are going to work on new issues that are
5 surfaced as concerns. Many of these are from the ACRS, and
6 we want to implement the requirements that result from that.
7 Sometimes we are really talking about implementing no
8 requirements. Such as there are quite a few RRRC decisions
9 on the book that were labeled at the time "Category 2," which
10 means a case-by-case implementation. When it comes up,
11 there have been sporadic efforts to try to get into the
12 applications that are still on the books, and implement those
13 requirements. But it hasn't been terribly effective yet.

14 Of course we have new requirements to implement,
15 too. You know what those are. Primarily they are coming out
16 of TMI, and represented by these various NUREGS that the
17 other men have described to you already.

18 So we are not just talking about newly identified
19 concerns and issues that aren't really developed yet; but
20 in fact we have some requirements around that may benefit
21 from a controlled, managed, overall process of looking at
22 the requirements, and actively managing how they are
23 implemented.

24 Another objective was -- and this is called out
25 separately as a distinct objective, because it is so key to

1 the successful operation of what we are trying to do here --
2 a systematic, overall method of managing issues development
3 and implementation prioritization.

4 We feel this is a key element in this successful
5 program, simply because there are so many issues even now
6 that there is simply no way to responsibly allocate resources,
7 but to prioritize. And we expect this prioritization method,
8 which we will get into pretty soon today, to both support
9 decisions on resource allocation, and to help in a quantita-
10 tive value impact assessment.

11 The process itself will lend to overall stabilizing
12 a complete licensing process through these several items
13 listed here. If we can get a systematic method going for
14 controlling development and implementation, it will help us
15 make backfit decisions for new and old requirements. We
16 will be able to develop standardized generic solutions, and
17 we want especially to get industry involved to help us
18 specify, or help develop those solutions.

19 We can establish controlled implementation --
20 "trackable," if you will, controlled implementation that is,
21 first of all, set up in order by the priorities we will
22 assign. Secondly, through the documentation that will come
23 out of a more formal process.

24 We will be able to manage the order in which
25 things are implemented, and the effort that the industry

1 puts into it. It will help us define and document the
2 decision criteria in a more formalized, systematic process.
3 As you know, it is relatively obvious that that should
4 result in documented decisions that are easily recalled,
5 regained, even up to years later, so that they can be
6 reviewed.

7 Lastly, if we can do all of the above, we will
8 obviously greatly improve the public perception of what goes
9 on at the Agency, and how we control what has come to be
10 known as "ratcheting" over the last few years. That is
11 just a survey of what we were shooting for here.

12 MR. SHEWMON: You and the Generic Issues Branch
13 issues, or the USI Branch, the Generic Issues Branch, are
14 both in the same Division? Is that right?

15 MR. COX: That is right.

16 MR. SHEWMON: You are talking about things that
17 sound rather similar to what we have been hearing about for
18 the last hour or two.

19 MR. COX: Right.

20 MR. SHEWMON: Would you tell me what part of the
21 universe you are talking about, now, as distinct from what
22 Karl was talking about?

23 MR. COX: I am talking about time future. Our
24 charter currently is to plan for a systematized process
25 to be put in place over some period of time, from starting

1 now, that will take over a large amount of what has been set
2 up now in individual actions. You know, you see an Aqua
3 Book that has taken care of an Action Plan. There are other
4 ways of tracking USIs.

5 There are -- let's see. Well, in some cases, there
6 aren't formalized ways yet of managing what we call "generic
7 issues" that aren't USIs. We are trying to put together a
8 process that will gather all of the new issues development
9 up into one workflow process, so that it can be accounted
10 for, so that all of the items can be accounted for, and they
11 can all be worked on in relative order of importance one to
12 another, and that is where the prioritization comes in.

13 We have a number of separate programs now. The
14 total process should be combined in the future.

15 MR. KNEIL: That is basically it. We've got a
16 number of separate programs, now, and we want really one
17 ideal program that incorporates all the features that are
18 deemed to be desirable.

19 MR. SHEWMON: So you will have a bigger APTS that
20 covers all of them?

21 MR. COX: That's one way of looking at it. What
22 we thought yesterday was, you see the Aqua Book there. As
23 those items are completed, the Aqua Book could ultimately
24 become a "super" Aqua Book, which had all generic items in
25 it, rather than just those for the Action Plan.

jwb

1 MR. SHEWMON: Okay. Thank you.

2 MR. COX: All right. Now I would like to go
3 through some of the steps involved in what we now, to date,
4 see in this process.

5 (Slide.)

6 First, to give you an overview of it, primarily
7 again we are looking at, first of all, identifying all the
8 issues. In the past hour-and-a-half, you have seen
9 different lists, and we have discussed different places
10 where these issues come from. They have been around for a
11 long time. We have new concerns. That line (indicating) can
12 mean brand-new items that maybe come up today, or yesterday,
13 or tomorrow, in the future.

14 We have current issues that perhaps would be
15 represented by the 0372 NUREG, or the 0410 NUREG, where you
16 see the Staff's issues in Categories A,B,C,D. Those are
17 not all unresolved safety issues, USIs, but nevertheless
18 they are current issues which we are not working on all of.

19 Then the last group could be called "approved
20 requirements." Those are things that are already on the
21 books which have not been implemented yet, perhaps, and
22 in fact they don't have a really specific priority ordering
23 among them -- all the RRRC decisions; other approved
24 requirements would be 0737 coming out of the TMI Program;
25 and of course all of the Action Plan.

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1 Now those have some prioritization done on them
2 already, but we are now talking about for the future, and
3 perhaps a different way of prioritizing with a little more
4 quantitative aspect to the whole prioritization list.

5 The key element here, again, is prioritizing. You
6 see the very next step after identifying all the issues is
7 prioritizing. What this means is, literally, a master
8 priority list based on risk reduction that is a potential
9 risk reduction that we can identify using probabilistic
10 techniques, in part, and we consider the cost, the cost both
11 to industry and the NRC of achieving this potential risk
12 reduction.

13 Now that is a scheme which is worth a discussion
14 all by itself, and Harold Vandermolen will tell you about
15 that after I finish this.

16 Once that master priority list is achieved, and
17 it can have many issues on it as we can manage to put on it,
18 the ultimate would be to have every issue on that list in
19 some ranking order. It might include as many as, I think
20 at this time we have about 150 to 180 total issues, if you
21 include all the issues that we know of.

22 Then that list could be used to justify resource
23 allocations within NRR or the Agency, and to actually line
24 up the amount of work we would spend in any one budget cycle,
25 and on what issues we're going to spend it. But it could be

1 used as a tool.

2 So we are not saying here it would be the exclu-
3 sive tool, but it would certainly be a powerful tool.

4 Having that master list -- and it is a living list that
5 could be changed as requirements are developed more
6 precisely, as costs are evaluated more precisely -- that
7 list would be used to govern a lot of our activities.

8 Let's say that we have the list of activities,
9 and whatever portion of that list we have chosen to work
10 on. We would then go, or those issues, those items would
11 then go into the development step which involves essentially,
12 for the very sophisticated, complicated, large-scope items,
13 it would involve Task Action Plans, several or a lot of
14 people working on them. For the very simple issues that
15 have a clearcut solution, there would be very little effort.
16 But that step would be done. That is a technical resolution
17 step.

18 Our positions are developed, and implementation
19 plans are developed on a relatively specific basis. Classes
20 of plants, groups of plants would be set out as groups that
21 are going to get specific technical resolutions.

22 During that phase, quite a bit of interaction
23 would take place with the various peer review groups like
24 the ACRS, like various industry groups, other parts of the
25 Agency, wherever the technical expertise was to resolve that

1 issue, that would be used.

2 As a result of that effort, the formal changed
3 documents would be prepared. These are your SRP changes,
4 standard tech spec changes, regulatory guides, those things
5 that actually govern licensing reviews.

6 When those documents are prepared, they will be
7 issued for public comment, and ACRS comment, much in the
8 way that we now handle SRP revisions. And after comment
9 and consideration of the comments, and incorporation of the
10 comments resulting in changes in the formal documents, the
11 requirements would ultimately get issued, and the Division
12 of Licensing would manage the implementation on individual
13 dockets.

14 Following that, there would be actual implementa-
15 tion audit conducted by perhaps NRR, and I&E, and to varying
16 degrees participation to ensure that plants really were
17 getting these changes in place as necessary, and applications
18 that weren't plants yet, that the applications would be
19 getting these requirements into their docketed licensing
20 material.

21 Now that is perhaps a little too long on that one.

22 (Slide.)

23 Let's look at the first -- Well, let me quickly
24 review the steps in the process. Let me just go through
25 them again to make sure: Identification, first, the

1 collection of all the issues; prioritizing, which would be
2 a continuing activity and which could have feedback into
3 various other steps of the process; a development phase
4 where the actual technical resolutions are worked out, along
5 with implementation plans; then the formal documentation; and
6 out for public and ACRS comment. It comes back in. The
7 comments are incorporated, and the formal requirements, if
8 that were the product, if that were the review, would then
9 be issued by the Division of Safety Technology in the various
10 licensing documents.

11 Then it would go to the Division of Licensing,
12 and the Division of Licensing would prioritize the require-
13 ments for implementation on plants.

14 Now this prioritization at this stage is not that
15 different from the earlier prioritization, except that
16 that Division is dealing with actual plants, operating
17 plants as well as license applications, and it could well
18 be that there would be some reasons for changing the
19 implementation order from an original prioritization list
20 simply because of plant-related considerations like shutdown
21 periods, or whatever.

22 So they would have some option to slightly change
23 the priority of implementation. Now when that implementa-
24 tion priority list is decided upon, then they would issue
25 the requirements to the licensees and applicants.

1 Following that, the actual implementation would
2 be verified.

3 MR. SHEWMON: This is a process to do what?

4 MR. COX: To control, to manage the resolution of
5 new issues.

6 MR. SHEWMON: New issues, only?

7 MR. COX: Generic safety issues.

8 MR. SHEWMON: New issues, only?

9 MR. COX: No. Strike "new" and write "generic
10 safety issues."

11 (Slide.)

12 Now to get into just a little bit about what we
13 mean by "identification," the first step in the process,
14 all the sources and the requirements or the issues would
15 come into the Division of Safety Technology with descrip-
16 tions of what those issues were.

17 Now to some, obviously starting today, there are
18 many issues that are already written up. We have 0410 and
19 0372. We have Task Action Plans on many issues. But for a
20 new issue, we would need some descriptive writeup as to
21 what the issue was.

22 The Division of Safety Technology would receive
23 that and collect them all, and screen them. And what we
24 are screening them for is to make sure that there's enough
25 information there to do a prioritization. That is the

1 information you see there as Item 3 that we would be
2 looking for, and that we would need, and that we would
3 want to the degree possible for initiating organization to
4 give us regarding a new issue: observed operating data,
5 potential event sequences, the risk reduction value.

6 We generally would do that in series released
7 per plant year -- year, or reactor year -- because again
8 we have identified a specific risk reduction that could
9 possibly be achieved.

10 We would be looking for recommended technical
11 solutions, if there are any at that stage. The originators
12 recommendations, if any, organizations that might participate
13 in the resolution. And of course any estimated industry
14 and NRC resources to affect the fix.

15 MR. SIESS: Before you leave that, it seems to
16 me you are asking the person who raised the question to
17 provide the answers.

18 MR. COX: All we are indicating here is that is
19 what "to the degree possible" means. If there were very
20 little of that available --

21 MR. SIESS: So that requires some kind of a
22 significant assessment that a lot of people, including the
23 ACRS, if we could go through that process, we would make a
24 recommendation to the Commission, not the generic items
25 list. A "generic item" is an item that somebody has

1 identified as being of concern. They don't necessarily know
2 how much concern it is until somebody has made the risk
3 analysis, and it may turn out to be of no concern at all.

4 But if I could carry an item that far, I could
5 make the decision as to whether it ought to be done.

6 MR. COX: Well, at this point, we don't know how
7 this compares to any of the other items that are coming in.

8 MR. SIESS: That may be. And on observed operating
9 data, I can think of a lot of things that have been on our
10 lists that did not really result from operating data, because
11 the list started back at Browns Ferry, and we did not have
12 all that much operating experience.

13 Now, sure, we're getting a lot of them out of
14 Operations, but a lot of them are coming out of a certain
15 amount of "what if'ing" that is going on.

16 So I say that, to the degree possible, and "as
17 appropriate," might be helpful there. But it seems to me
18 you are asking for an awful lot, because to get all that
19 much, what do you have to do?

20 MR. COX: That is what we will see in the next
21 few slides. We want it to be as comprehensive as possible
22 in asking questions, so we would not be accused --

23 MR. SIESS: You want a good question, I can see
24 that. But it seems to me like you're going a little bit
25 beyond that and what the answer, too.

1 MR. KNEIL: We want a good question. We do want
2 a good question.

3 MR. SIESS: I think that is important, and I am
4 sitting here listening because I think that is one of
5 ACRS's problems. We haven't always defined our questions
6 as well as we should. The committee has been told that if
7 we don't do this, and submit generic items for you to
8 include, we're going to have to do a better job of defining
9 them.

10 MR. KNEIL: I think, as I indicated before, I
11 think there are legitimate areas of interest where you can't
12 ask good questions. But I think they ought to be directed
13 elsewhere. In other words, directed to Research, or --

14 MR. SIESS: But I don't know that these things
15 should not go through the Licensing Staff before it goes
16 to Research. I'm not sure that they ought to -- Well, we
17 are always making suggestions to Research, as you well know,
18 but if you are going to have a Generic Items Branch type
19 thing, that is one place within the Commission where all of
20 these items of generic, or potential generic concern, or
21 generic potential concern -- I don't care where you put the
22 "potential" -- comes together.

23 Now the disposition of them? Do you send them to
24 Research for a solution? Do you send them to the contractor
25 for the solution? Do you go somewhere else for a solution?

1 Maybe you just go to the Commission for a solution. Maybe
2 that is all that is required is a policy decision.

3 It seems to me that you don't want people bypassing
4 you, necessarily, simply because they have a question.

5 MR. COX: That's right. Maybe I could give you
6 an example of how this might work.

7 MR. SIESS: Because I haven't found that Research
8 is so darned profficient in asking questions, either. That
9 should be part of their job.

10 MR. KNEIL: The suggestion you just made certainly
11 has merit. I hadn't really thought of it that way, that
12 we should be making the recommendations. Perhaps we should
13 be, that the Division of Safety Technology should be making
14 the recommendations regarding the disposition of a subject,
15 if it cannot be expressed as an issue that we can handle.

16 MR. SIESS: Well, some of your issues are going to
17 be solved by Research, too. They are going to call for
18 Research.

19 MR. KNEIL: Yes. Certainly they will be making
20 contributions; that's right. I just think you can ask
21 Research, because I know, like you said, you do as Research
22 as a way out for you.

23 MR. SIESS: You can ask Research, too. You are
24 officially a user office. We're not even officially a user
25 office.

1 MR. COX: May I move on?

2 MR. SIESS: Yes.

3 (Slide.)

4 I would just like to give you the scope of one
5 of our difficulties. Here are most of the places from
6 which we can get issues, concerns, whatever the term would
7 be, potential sources of requirements. That is not too good
8 a term in the title there, because the requirements would be
9 the end product of work done on materials submitted by these
10 various sources.

11 You can see -- and I'm not so sure I should read
12 them all -- I'm sorry. Do you all have, or you should have
13 copies of every one of these slides in front of you.

14 MR. SHEWMON: Yes.

15 MR. SIESS: We have them.

16 MR. COX: You can go through them pretty well.
17 Some of the lesser known ones, perhaps, might be the newer
18 IREP and NREP activities, which we fully expect are going
19 to yield some proposed new issues to look at; NRR generic
20 letters --

21 MR. SIESS: What is an "NRR generic letter"?

22 MR. COX: That would be a letter out of the
23 Director's office on a generic matter.

24 MR. SIESS: Have they written any of those?

25 MR. COX: In fact, I think you mentioned one

1 earlier, the asymmetric loads on vessels was one that came
2 out with just that kind of a letter. I think that largely
3 now has been superceded, or more often you will see that kind
4 of thing come out in number six, 10 CFR 50.54 letter, put
5 out by the Division of Licensing; I&E bulletins; I&E
6 transfer of responsibility; transfer of lead responsibility;
7 SER confirmatory analysis; issues raised by participants
8 in Category 4 items. You may remember some of those as
9 something that didn't quite make it into RRRC, but it was
10 approved by the Director as being important enough to be
11 considered.

12 (Slide.)

13 We have some more Regulatory Guides, backfitting
14 of previously approved Guide. That would fall under the
15 category of the RRRCs.

16 MR. SIESS: How did the Reg Guides get in there?
17 That is an end product.

18 MR. COX: That's right. We are not allowed to use
19 the word "requirement," though.

20 MR. SHEWMON: Are you referring to asking more
21 questions than there are answers?

22 MR. SIESS: They're not supposed to. An SRP
23 would be, SRP revisions mean they have to be implemented
24 in Licensing. I see what you mean. These are Licensing
25 requirements that DL has to worry about.

1 MR. COX: Or a proposed revision under today's
2 operating principles; proposed revision might come to DST.

3 MR. SIESS: You mean a proposed Regulatory Guide?

4 MR. COX: That's right. Yes, I see your distinction
5 there. That's true.

6 MR. SIESS: And a proposed SRP revision has to
7 be evaluated, essentially.

8 MR. COX: That's correct.

9 MR. SIESS: Okay.

10 (Slide.)

11 MR. COX: So I have here these sources that might
12 yield requirements.

13 Okay, now after getting the requirements
14 reasonably defined so we can go into this step, we now want
15 to try to prioritize them. We want to order them so that
16 we can make some recommendation on how much effort should
17 be expended on what issues.

18 We want to develop a preliminary estimate --

19 MR. SIESS: A lot of those things -- I'm still
20 bothered by some of those things in your list. If there is
21 a proposed new Regulatory Guide, presumably all the work
22 has been done on it. I don't see what you've got left to
23 do on it.

24 MR. COX: Let me say that that list is really
25 reflecting how things are today; that that is where we've

1 gotten the requirements. The point I think I'm trying to
2 get across there is --

3 MR. SIESS: The proposed Regulatory Guide is a
4 new requirement. That is the final product.

5 MR. COX: That's right.

6 MR. SIESS: And I don't see how it belongs in a
7 list with the AEOD's recommendation, which has no force and
8 effect whatever until somebody does something about it.

9 MR. COX: We are only indicating --

10 MR. SIESS: There is nothing to be done on a new
11 Regulatory Guide.

12 MR. COX: We wouldn't for the future.

13 MR. SIESS: Okay. Go ahead.

14 MR. SHEWMON: You have in the past, but you're
15 only talking about the future.

16 MR. COX: We're talking about a process.

17 MR. SIESS: That is why I am suspicious. That's
18 all right. Go ahead.

19 MR. COX: What we are saying is, all those sources
20 were not centralized. They did not go through one point,
21 as we hope to do in the future, to run all proposed new
22 issues or requirements, proposed requirements, before there
23 is technical work done on them, we want to collect the
24 questions in the Division of Safety Technology, and enter
25 this process with them.

1 MR. SIESS: So you are prioritizing the Staff's
2 effort, either you or one of your people, and a proposed
3 Regulatory Guide or an SRP change doesn't require any more
4 Staff effort. Those things just don't belong in here. The
5 work has already been done.

6 Now if it is a requested Regulatory Guide, and
7 somebody has got to decide whether OSD works on it or not,
8 that is something else. But that is not --

9 MR. COX: I would be willing to concede that a
10 proposed Regulatory Guide would not be the form in which we
11 would receive material into this process in the future.

12 MR. SIESS: And you still are prioritizing NRR's
13 activity, or the whole Commission activity.

14 MR. COX: Wherever work is necessary to come up
15 with a technical solution.

16 MR. SIESS: All right. Somebody in DST, I think
17 that is where a lot of them originate, or the DSI, thinks
18 they ought to be, or in Licensing thinks they need a Regula-
19 tory Guide on Licensing protection for nuclear power plants,
20 now they kick that over to Standards, and Standards sees it
21 as a man-year's work.

22 Is it the idea that this group will try to
23 prioritize that effort?

24 MR. KNEIL: Yes.

25 MR. COX: But in the future, I don't think it would

1 necessarily work that way. We would hope that the organiza-
2 tion in which the reviewer first gets that idea would deliver
3 that as a concern, or as an issue to the DST, rather than
4 going to Standards first.

5 What you described is the way it has happened now
6 or in the past.

7 MR. SIESS: Well, I am thinking of a very specific
8 case where DST did think they needed a Reg Guide, and they
9 asked Standards to do something on it, and it got out of
10 hand. But what I am saying is, this will require a certain
11 amount of work in DST to decide whether they need it, and
12 then it is going to require work in Standards to develop it.

13 Now Standards may have all the time in the world
14 to do something, or DST not, or vice versa. The prioritiza-
15 tion might have to take into account who is going to do it,
16 and what their workload is.

17 MR. KNEIL: Well, the prioritization is being
18 designed so we can decide what resources, if resources
19 should be applied.

20 MR. SIESS: No matter where?

21 MR. KNEIL: Right.

22 MR. SIESS: Including Research?

23 MR. KNEIL: Right.

24 MR. COX: Strictly a safety benefit versus cost
25 type thing.

1 MR. SIESS: So you can take all of the requests
2 you can send to Research, and prioritize them in advance
3 couldn't you? You can give them A, B, C, and D priorities,
4 so Research could allocate their funds as they might get them.

5 MR. KNEIL: Within the limited scope of issues,
6 yes.

7 MR. SIESS: Yes, but presumably the research that
8 is being done is on an issue, isn't?

9 MR. KNEIL: On an issue, or related to one, yes.

10 MR. SIESS: So I hope we are not --

11 MR. COX: Or at least a concern.

12 MR. SIESS: That is supposed to be the way it is.
13 We spend a lot of money over there in Research. I hope we
14 are spending it on issues.

15 MR. SHEWMON: Karl, the item this comes up on in
16 your list is "resolution of generic safety issues," and this
17 is so general and so broad, I am having trouble seeing where
18 it is going to come in to help us write a letter tomorrow.

19 Could we say: That's nice. When you get farther
20 down the road a year from now, we will hear from you again?
21 Or where does it tie back in?

22 MR. KNEIL: Our presentation is in two parts.
23 What are we doing now, so that you gain a better understanding
24 and confidence that we're in reasonable condition now. And
25 the other is: Where are we going?

1 We are giving you that so that you can have the
2 opportunity to comment, and also that you will feel confident
3 that in the future the system we are setting up is something
4 you will be able to operate with effectively.

5 MR. SIESS: Yes.

6 MR. SHEWMON: Well, I am not sure you are doing
7 that right now. Because it seems to me you're talking --
8 you know, it reminds me of one of these diagrams the
9 metallurgist sets up, and metallurgy is in the middle of the
10 graph, and everything else is appended to it. And what you
11 said is: All issues generated anyplace will filter through
12 this tube, and that is one man's perception, and that may
13 be a good way to set up an organization.

14 But our only concern is how we would be able to
15 put additional items on the list, it seems to me. And if
16 there are other things here, I guess I would like a little
17 enlightenment as to how they tie into what the subcommittee's
18 particular job is today.

19 MR. SIESS: I think Karl --

20 MR. KNEIL: You are high on the list, the ACRS
21 concerns is high on this input list. I think we are trying
22 to go into a little bit too much detail at this point, and
23 maybe we could just speed it up a little bit.

24 MR. SIESS: Yes. I think it is enough for us to
25 know that you're working on a system to handle it. But I

1 think what we need to work out is how we are going to
2 resolve disagreements with the Staff on priorities on our
3 items.

4 MR. KNEIL: Right. That is a matter of concern
5 to us.

6 MR. SIESS: Do you see what I mean?

7 MR. COX: Do you want to move right to the
8 discussion on prioritization, which of course is in the
9 future?

10 MR. KNEIL: Why don't you go through what you
11 have quickly, and maybe Dr. Shewmon --

12 MR. SIESS: You've got the last item there that
13 is of some interest. You would inform us of the priority
14 of any issue we propose.

15 MR. COX: And of course the one right before that,
16 it says: A master list is published periodically. You can
17 have it constantly. It is a public document. Any organiza-
18 tion can petition for a change in the order of things.

19 If you don't see an issue on there, if you don't
20 believe it is of high enough priority --

21 MR. SIESS: But, you see, what I am trying to keep
22 in mind, the ACRS is unique in relation to this, because if
23 this were set up, it could apply by policy to everybody in
24 the Commission, but not to the ACRS. In other words, if the
25 ACRS thought something was Priority A, and everybody else in

1 the Commission thought it was C, we still are independent to
2 the extent that we can write a separate letter, or prepare
3 a separate list and say: This is an A.

4 MR. COX: True.

5 MR. SIESS: Not that it will do any good,
6 necessarily, but this has been one of the problems in the
7 past. We have had generic items, and nothing was being
8 done about them, and we kept fussing about it, and all we
9 can do is fuss. But we can make our own list. And what we
10 are trying to do here is get away from making our own list,
11 and at least feel that we've got a fair amount of confidence
12 that we will end up about as well off in terms of getting
13 something done, having it on your list, as having it on our
14 list.

15 This is the kind of thing the committee has got
16 to be convinced of. Now the fact that we think it is an
17 A, and that you think it is a B, isn't the important thing.
18 If we think that it is more likely to get something done
19 about it being on your list with all your procedures for
20 getting something done, we might end up being happy to have
21 it on your list as a B, since the procedure behind it that
22 isn't behind our A.

23 MR. KNEIL: I think when we get through with
24 developing this, it will be obvious to you where we're
25 prioritized it. It will be obvious to you whether that

1 prioritization means that it is being worked on or not. So
2 that you will have better information than you have had in
3 the past regarding what the status of an item is that you
4 are interested in.

5 MR. SIESS: Let me interrupt for just a minute,
6 can I, Paul?

7 MR. SHEWMON: Yes.

8 MR. SIESS: I don't think the prioritization is
9 going to be a big hangup, and I don't want to overemphasize
10 it. I went through the list on the 28 resolution-pending
11 items from the ACRS list, and those are the only ones we
12 had put priorities on.

13 We had A,B,Cs. We didn't have a D. We had a
14 D, but we didn't use it. And I compared that list with
15 your priorities on the same items. Of those 25 items, I
16 guess they were, there were only six instances in which
17 your priority is lower than ours.

18 Two of those, you had a B where we had an A.
19 One you had a C where we had an A. And one you had a D
20 where we had an A. And I don't think we would argue too
21 much about any of those, because one of the Bs and Cs were
22 in subdivisions, or common mode failure things. You had
23 four items listed as As, and two as Bs, and one as a C, but
24 we had just lumped "common mode failure" as an A.

25 So there wasn't as much disagreement as I remember

1 from a previous list. And on the other ones, you either
2 agreed with our priority, or you had a higher one than we
3 did.

4 So I don't think it is going to be a big deal.
5 We are not that far off, and we are never going to be that
6 far off. And if we get that far off occasionally, we will
7 sit around and argue about it.

8 So I don't want to make too much of it, but this
9 is one of the things that I think we've got to sell to the
10 Committee. We haven't been far off.

11 MR. ANDERSON: I think one of the major points to
12 be made in prioritizing all of the issues is that the Staff
13 will have a good handle on where we should be spending our
14 resources.

15 It appears from the look that we've taken already
16 on a lot of the generic activities, that people are
17 continuing to work on activities that obviously are low
18 priority. You know, we don't have any way of saying you
19 shouldn't be working on this one if you're going to work on
20 this issue.

21 If we can free up the manpower --

22 MR. SHEWMON: We can do it by writing a letter to
23 Congress saying they should.

24 MR. SIESS: That's on the research.

25 MR. SHEWMON: Go ahead. I appreciate your feeling.

1 MR. ANDERSON: That situation exists. If we could
2 free up the manpower working on low-priority items, we could
3 spend more time on the ones you're interested in, and the
4 ones we are interested in as a higher priority.

5 MR. COX: Maybe I should ask what it is you would
6 like to see at this point.

7 MR. SIESS: Why don't you just flip through them
8 fast.

9 (Slide.)

10 MR. COX: This is the step where that list would
11 be created.

12 MR. SIESS: You are going to use guesstimates in
13 establishing this list of priorities?

14 MR. COX: That's right, and the ACRS would be
15 informed of how this list is going together, and of how
16 your recommendations would be on that list -- at least as
17 we first create it.

18 (Slide.)

19 There are two other things about that last step.
20 We would notify the Boards if something came up, a very
21 high priority. And we of course would enter in this
22 tracking system that gives access to the status. Here we
23 would have everything in the tracking system, even those
24 items which perhaps were not going to be worked on by
25 virtue of their low priority.

1 So there would be accountability established at
2 this point.

3 (Slide.)

4 MR. SIESS: And again, I would suggest that if
5 something doesn't get worked on in a certain length of time,
6 somebody ought to look at the priorities.

7 MR. SHEWMON: The Sunshine bill, or something?

8 MR. SIESS: Sunset, actually.

9 MR. SHEWMON: Yes, sunset. Thank you.

10 (Laughter.)

11 MR. COX: A few more comments on the development
12 stage which we would go into next. That would be those
13 issues that were selected by the NRR Director on that list
14 to be worked on which would individually go into the
15 respective development phases.

16 The only thing I am pointing out here is that of
17 a list of 150 items, we might only be working in one year
18 on the top -- I hesitate to even mention a number -- but some
19 number. Each issue would be assigned a task manager,
20 depending of course on the extent of the work necessary to
21 be done on it.

22 But there would be accountability through a
23 person for that issue. The plan would be written to solicit
24 ACRS comment before getting NRR Director final approval on
25 the Task Action Plan.

1 The key element here is we would get industry
2 involved at this stage.

3 MR. SIESS: That is very important.

4 MR. COX: Again, through owners' groups, AIF, EPRI,
5 NSAC, what have you. They would be involved in the
6 development of solutions and implementation plans.

7 We would continue to do a check on the prioritiza-
8 tion index that was developed for this issue, as more
9 information became available and we saw that either for a
10 certain technical solution you wouldn't get as much risk
11 reductions, or the cost of things changed.

12 MR. SIESS: How many levels of priority would you
13 assign? Do you have a ranking order list, or an A,B,C,D
14 type list?

15 MR. COX: What you will see today is a numerical
16 index that will give a number for each issue.

17 MR. SIESS: The rank ordering?

18 MR. COX: A rank ordering for each, relative to
19 the other.

20 MR. SIESS: Except that there has to be some
21 difference in number that isn't significant, so that you
22 could group them.

23 MR. COX: That's right. You will see the ranges
24 involved and how they run. So just to make that point, then,
25 the DST would be in here monitoring the efforts of all the

jwb

1 task managers on a periodic basis to ensure that the industry
2 hears one voice from the NRC, not always 40 or 50 different
3 voices clamoring for different actions.

4 (Slide.)

5 Okay, as the development phase draws to a very
6 specific result, we would then document this material that
7 is developed with the formal changes I mentioned earlier.

8 The final proposed revisions to the Licensing
9 documents would be based on the best of the alternatives
10 developed in the development phase. Reiterating again, the
11 completely developed implementation plan is important.

12 MR. SIESS: Leave that up just a minute. Looking
13 at the rulemaking parts, since we're now involved in the
14 rulemaking process at a level that we're not quite sure
15 what it is, how many safety-related rules do you think would
16 not be the result of this process?

17 What I'm getting at is --

18 MR. COX: Did you say "would not be the result"?

19 MR. KNEIL: Safety-related rules.

20 MR. SIESS: Yes.

21 MR. KNEIL: A minimum number.

22 MR. SIESS: What I'm thinking, if we're involved
23 in rulemaking, if we were involved in this sort of thing
24 when it came to rulemaking, our background would be
25 complete, because we have asked to be kept informed of rules

1 as they were being developed so we could have some input
2 into them, and not just be hit with a rule when it is out
3 for comment when the Commission wants our opinion on it.
4 And of course we're not interested in all rules; we're only
5 interested in safety-related rules, and not all rules are.
6 Some are procedural, and some are environmental. So this
7 would be helpful in that respect to get some involvement
8 here.

9 MR. KNEIL: That is certainly the way you partici-
10 pated in ATWS, for instance. We documented our resolutions,
11 and you all have been involved.

12 MR. SIESS: Oh, no question.

13 MR. COX: With this process, they could have been
14 following the development --

15 MR. SIESS: A lot of the rules we've been following
16 like fire protection, qualification -- qualification not so
17 much.

18 (Slide.)

19 MR. COX: Once the documents are formulated, they
20 are put out on the street in the manner that is done today.
21 We anticipate that if this process were working properly,
22 the industry comments at this point should not be very many,
23 since they have been involved in the development at this
24 point.

25 (Slide.)

1 With the formal approval by the Director of NRR,
2 we would issue -- in this case, our Licensing Guidance Branch
3 would be issuing new or modified documents. These
4 documents would then formally be transmitted by our
5 Division, DST, to the Division of Licensing.

6 (Slide.)

7 As I mentioned earlier, the Division of Licensing
8 now could affect the order of implementation somewhat,
9 although we would expect it would follow quite closely this
10 master prioritization master list that says, or that lists
11 these issues.

12 MR. SIESS: Somewhere where it says an example of
13 that, the Committee got pretty upset about the way the
14 implementation was carried out on the reactor coolant pump
15 trip on BWRs, which it was pretty obvious from the beginning
16 was a pretty good partial ATWS fix. You know, four years
17 later there were still BWRs that hadn't put in the trip.

18 This could be followed in this sort of thing much
19 more closely.

20 MR. COX: One of the key things about this process
21 is it is very visible. All issues' progress are very
22 visible.

23 MR. SIESS: Which it wasn't on that.

24 (Slide.)

25 MR. KNEIL: Using this kind of process, we've found

1 that one of the issues that we implemented on the plant was
2 not implemented, when we went in to check on it to fill in
3 the forms, so to speak, and it turned out it wasn't. So
4 we reinitiated implementation. So it does do that.

5 MR. COX: After DL decides what their implementa-
6 tion priorities should look like, and they go out with
7 requirements by letters to individual dockets, projects,
8 and manage the implementation.

9 MR. SIESS: On a plant that has a license, the
10 implementation is the responsibility of DL, not I&E, isn't
11 it? They issue the confirmatory order, and amend the
12 license? Is that right?

13 MR. COX: That's right.

14 MR. SIESS: And then when it is implemented, they
15 get back a sworn statement from the licensee that it was
16 implemented? Right?

17 MR. KNEIL: Right, except we've been leaning on
18 I&E in that direction, to avoid additional work in Licensing
19 by saying that I&E will inspect to see if they have
20 implemented it.

21 MR. SIESS: Okay.

22 MR. KNEIL: That is a tool that is being used
23 more frequently.

24 MR. SIESS: They've got a resident inspector. I
25 don't see why it should be a problem anymore.

1 MR. KNEIL: That is Harold Senton's favorite tool
2 to avoid additional work by the NRR Staff.

3 (Slide.)

4 MR. COX: This addresses that, to some degree. We
5 had thought that we would find in the future that we would
6 have NRR participating with L&E at some level of auditing.
7 That may or may not take place.

8 MR. SIESS: When a resident inspector does that
9 as a matter of routine, it should be -- that is what the
10 resident inspector is for. He is not there just to satisfy
11 the Congress, it seems to me; it is just so obvious. You've
12 got two of them on some plants.

13 MR. COX: The point we would make here is, the
14 audit will be selective. We won't be auditing or verifying
15 every single requirement on every single plant.

16 MR. SIESS: Why not? By "audit" --

17 MR. SHEWMON: He means another group going out to
18 see whether the inspector has done his job.

19 (Laughter.)

20 MR. COX: That is the end of what I have.

21 Are there any questions?

22 MR. SIESS: Not now.

23 MR. SHEWMON: Any more questions, do you mean?

24 (No response.)

25 MR. SHEWMON: Why don't we take a break before you

1 come on up. I think no meeting should run as long as this
2 has without a break.

3 (Brief recess.)

4 MR. SHEWMON: Okay. Go ahead.

5 MR. VANDERMOLEN: My name is Harold Vandermoelen,
6 with the Safety Programs Evaluation Branch. I am going to
7 finish up for us today, I hope, and talk a little bit about
8 prioritization we've been leading up to for quite a while
9 here.

10 I want to thank you for your many questions. I
11 know most of my introductory remarks can now be shortened.
12 I do want to say one thing to make it very clear. We are
13 talking about a tentative prioritization system. This is
14 something we are "trying," and we do not have an informal
15 use. We are not wedded to it. We are not engaged to it,
16 either. We may be flirting with it a little bit, but the
17 point is that this is very much a period where comments,
18 suggestions, and particularly constructive ones, can easily
19 be incorporated. So please feel free to do so, either
20 during this particular subcommittee meeting, or any time
21 within the next few months.

22 I am feeling a little hypnotized by the slide
23 projector, so I would like to wax a little bit theoretical
24 here. We looked at some of the older prioritization schemes,
25 the A,B,C,D, and some of the others. We have had point

1 systems in the past. These systems have tried to do a pretty
2 tough job. You have got the problem of trying to balance
3 safety issues, not issues past, but the agency has to go
4 down the issues that are not directly related to safety and
5 it is not an easy decision to make.

6 We have also tried to, in the past, get an idea
7 of what safety issues, what safety-related jobs we had to
8 get done that were the most important. Traditionally, the
9 way to do this is to get everybody together and argue about
10 it until you get some kind of concensus, the committee
11 approach. This is the sort of thing that usually results
12 with the A,B,C,D sort of priorities. We have broad groups.

13 We thought we would try something a little bit
14 different. We started out by saying: Well, let's come up
15 with a new system, and let's make it rational.

16 (Laughter.)

17 MR. VANDERMOLEN: Now "rational," I like the word
18 "rational." Even government bureaucrats like to think of
19 themselves as "rational." Other people have different ideas
20 on what is rational.

21 We decided we wanted a system prioritizing that
22 would be as objective as we could make it, and to try and
23 keep subjective judgmental things to a minimum. You can't
24 get rid of all of them; I think we all agree on that. We
25 wanted it to be reproducible. That is, we would like

1 to be able to get one task to prioritize, another to work
2 on a separate task, have them come up with something, and
3 have them be compatible. That's what we mean by
4 "reproducible."

5 We also would like it to be defensible. Now there
6 is nothing like having a good reason for what you are doing
7 to make it defensible. Now this is all very much easier
8 said than done.

9 What we came up with is not something we intend
10 ever to be locked into. That is, we do produce ordered
11 lists with this system. We think of these as a guideline.
12 I want to make that clear. It is a guideline. These things
13 can be negotiable. There are uncertainties involved, and
14 we will get into that a little bit more later.

15 We also don't intend this -- well, we don't intend
16 this to be a method of making absolute decisions. We don't
17 want to say that because something comes up at the bottom of
18 our priority list, that it is necessarily something that is
19 not worth doing.

20 What it means is that this is a relative list.
21 There are other things that are still more worth doing.

22 Well, now let's get into the theoretical part a
23 little bit when we get into specifics. What are we doing
24 with prioritizing, anyway, to make an ordered list like this?

25 Well, if you have got an ordered list, somewhere

1 down that list you're going to draw a line. That's where
2 you run out of resources. The stuff down below that line is
3 not going to get done, at least not this year. You don't
4 necessarily forget about it, but there is that effect.

5 Now we thought a minute, and sort of put ourselves
6 in the role of a factory manager. If you had a bunch of
7 jobs that you wanted to get done, and you were a factory
8 manager, each job was going to take you a certain amount of
9 resources, and it was going to make you a certain amount of
10 profit, you would do the one with the biggest profit, first.
11 That is, you would take the profit, divide it by the
12 dollar cost, and that is the one you would do first. When
13 you ran out of time, you would have gotten the most done
14 you could. You would have maximized your profit.

15 Well, everybody in this room knows that NRC is
16 not a profit-making institution. We thought we would try
17 and say: Let's figure out the safety benefit for each one
18 of these jobs we're talking about to estimate what resources
19 we need, and do the same sort of thing.

20 Our guiding statement is: We're going to try and
21 expend our resources in a manner that would maximize the
22 safety benefit to the public. That is an important statement.
23 But it is really, seriously, what we are trying to do with
24 this, and we think we can make it work. It will not be just
25 a theoretical-sounding statement.

1 Well, how do you define "benefit"? This was very
2 difficult, and it is where you get into a lot of subjective
3 judgments.

4 We thought: Well, if we were going to be very
5 technical, very scientific about it, we would try and figure
6 out the number of deaths involved, the number of injuries,
7 the environmental burden, the economic burden, all that sort
8 of thing. And obviously this can't be done. There are just
9 too many of these issues to handle. You can't do them fast
10 enough if you're going to do that good a job.

11 We thought awhile and we decided that we would
12 try defining safety benefit as it is related to the amount
13 of radioactivity that might be released from the plant. We
14 just measured it in curies released. Now you could do this
15 pretty easily if you're talking about something in an off-
16 gas system where you've got a routine release and you worry
17 about curies per year. Curies per year are the basic
18 parameter.

19 Most issues don't involve things like that.
20 You're talking about an event of some kind. So we thought
21 we would start using risk assessment, and see if we could
22 get something that would work for prioritization.

23 At this point, I think we can get down into a
24 little more specifics. I hope everybody is un hypnotized
25 from slides, but maybe hypnotized by the sound of my voice.

1 Let's define a few terms.

2 (Slide.)

3 Now if we've got some event at issue here, what
4 is the safety benefit of fixing it? We've got a problem
5 with what is the safety-benefit of fixing it.

6 We thought we could do it in terms of curies per
7 year with a weighting factor. We defined something we called
8 the "weighted safety benefit." You can think of an event
9 frequency. Statisticians don't always like this term. What
10 I mean by it is: If you've got a radioactivity-releasing
11 event, you ought to be able to estimate how many times this
12 is going to happen per reactor year, at least in theory. It
13 is related to, and often for most cases is identical
14 numerically to the probability per year, some things happening
15 more often. Certain trips happen about 10 times per year.
16 They don't have a probability of 10.

17 There is a little bit different mathematical
18 definition, but you can think of it as probability. "Curies
19 released" is clearly not too difficult -- in principle, not
20 too difficult to estimate. The factor of 1.2 is there just
21 to give more weight to a more severe event.

22 MR. SIESS: Risk aversion.

23 MR. VANDERMOLEN: Yes, risk aversion. That is all
24 it is. We define our priority score by taking this
25 aggregate, then, and dividing it by the total cost. That is,

1 we took what is up above, multiplying it by the number of
2 reactors, and dividing it by the total cost.

3 Can everyone see this?

4 MR. SHEWMON: Yes.

5 MR. VANDERMOLEN: We did put our costs, and the
6 costs of the licensee on the bottom. We did this because --
7 not "because," we were primarily concerned with a licensee's
8 financial condition. We were mostly thinking ratepayers and
9 taxpayers are the same thing. Since then, of course we have
10 had a change of Administration in the White House, and we
11 are getting Presidential directives that are speaking more
12 strongly in terms of cost/benefit ratios. This is really the
13 reciprocal of that benefit/cost.

14 So it is somewhat fortituous that it came out
15 that way, but we really do believe that this is the correct
16 ratio to use. Most times, the licensee cost is down.
17 Surprisingly, there are many cases where the NRC cost does
18 come in and play a significant role.

19 We express this in very simple units, curies of
20 1.2 per million reactor years per hour. We also define
21 something called "management socre," which is the same
22 thing only we just see where we are spending our appropria-
23 tion. Our primary prioritization on this line (indicating),
24 this SCP quantity, which is the total cost.

25 MR. SHEWMON: These releases, curies released, are

1 offsite?

2 MR. VANDERMOLEN: Yes. They are very primitive.
3 Now the biggest question was whether this thing would really
4 work.

5 MR. SIESS: It is a delta, so that reduces the
6 uncertainties to some extent.

7 MR. VANDERMOLEN: Yes.

8 MR. SIESS: Before you leave that, let me ask you
9 a couple of questions.

10 MR. VANDERMOLEN: Sure.

11 MR. SIESS: The risk aversion factor is a very
12 important factor. If you get that too high, you know, you
13 really skew things. And how did you select the "1.2"? I
14 am trying to remember what the figure was that we
15 recommended. Was it 1.2?

16 MR. KNEIL: Yes.

17 MR. VANDERMOLEN: In all honesty --

18 MR. SIESS: I hope you didn't take it from there.

19 MR. VANDERMOLEN: We used the Committee's factor.
20 We liked it. We tried it out a few times, and we liked it.

21 MR. SIESS: That's the real test.

22 MR. VANDERMOLEN: That's the real test.

23 MR. SIESS: Now you know, you go through, and
24 after you get a -- say this comes out, and you get a score,
25 and it is prioritized somewhere, and somebody does it, there

1 is always the chance that what you come out with after you
2 look at this concern, that the solution isn't what you
3 thought it was going to be, so the number of curies released
4 isn't what you thought it would be. The delta on the B. And
5 there is always one possibility that there will be no change.

6 MR. VANDERMOLEN: That's true.

7 MR. SIESS: There was no licensee cost, no safety
8 benefit, but there was an NRC cost.

9 MR. VANDERMOLEN: That's true, also.

10 MR. SIESS: So somewhere in your prioritization
11 you've got to weight the probability that this will be
12 successful, that this will --

13 MR. VANDERMOLEN: Well, we do this.

14 MR. SIESS: Have you got that later on somewhere?

15 MR. VANDERMOLEN: Well, maybe I'd better mention it
16 now. Again, we don't pretend that every issue is going to
17 fit neatly into this. We think the sort of things we have
18 been seeing coming in our workload lately, we can handle
19 about 90 percent of the things in this scheme.

20 As for the all-reach of the indeterminate, well
21 the NRC cost is never zero. You don't ever get zero to
22 zero.

23 MR. SIESS: Now the time element enters only in
24 the NRC cost?

25 MR. VANDERMOLEN: Yes.

1 MR. SIESS: But it really doesn't, because of its
2 man-years. Sometimes you can put 10 men on it do it on one
3 year, or one man on it and do it in 10 years. Now if you
4 knew where it was going to come out, that nine-year
5 difference could be reflected in that safety benefit; that it
6 would be 10 years before you got the safety benefits. Over
7 the next 30 years there would be more benefit than if you
8 made it now.

9 So how do you factor in the fact that here is a
10 job I could do quickly, and it would benefit a lot of people
11 over a lot of years, rather than doing the same things
12 slower?

13 MR. VANDERMOLEN: We haven't factored it in. That
14 is, if I am understanding your question correctly, we are
15 talking about -- you are talking about plant lifetime.
16 Because if I do it right now, the plant has 30 years to run
17 and you're getting more benefit?

18 MR. SIESS: Yes.

19 MR. VANDERMOLEN: We haven't done it. We have
20 just done it as a time density.

21 MR. SIESS: Assuming we're going to have 300
22 plants for the next 300 years, then of course it doesn't
23 make any difference.

24 MR. VANDERMOLEN: I think you will see it in a
25 few minutes.

1 MR. SIESS: Okay. Go ahead.

2 MR. VANDERMOLEN: This is still pretty crude, and
3 quite honestly speaking to a question you had of one of the
4 speakers earlier. You can't start out knowing all of these
5 parameters exactly, or even very exactly. What we found
6 in practice is that even at a very early stage of the game,
7 we can come up with some estimate -- great uncertainty, but
8 some estimate on these parameters.

9 (Slide.)

10 Well, let me be sure I haven't missed any of the
11 cautions that I was going to give you. Oh, one thing I
12 did forget to mention.

13 (Slide.)

14 The cost here, this is forward-looking costs.
15 That is, if you were to put some huge issue like ATWS on
16 this, and you had a 75 percent completion, the cost you
17 would put in is the cost to get the thing from its current
18 point to completion. You wouldn't put in the money you had
19 spent in the past. You are worried about the money in the
20 future.

21 MR. SIESS: Now there is nothing here on industry
22 cost? Is that right?

23 MR. VANDERMOLEN: Oh, yes there is. Licensee
24 cost is in there.

25 MR. SIESS: It is down at the bottom?

1 MR. SHEWMON: It is their management.

2 MR. VANDERMOLEN: We did a prior cut on this one.

3 We want this to be a guideline. We want other information
4 available. But we primarily calculated this one (indicating).

5 What we are trying to get with this system is an
6 ordered list that can be subdivided into three or four groups
7 if you want. We found that we do get a continuous spectrum
8 that is sort of artificial for grates, and things.

9 (Slide.)

10 This is sort of an example of a trial run of the
11 system. It is just an ordered list.

12 MR. SIESS: Now when I look at that, your item
13 "Davis Besse, Auxiliary Feedwater Pump," would that be for
14 just one reactor?

15 MR. VANDERMOLEN: That particular one is. When
16 we did this, we just happened to come across that at the
17 moment.

18 MR. SIESS: And a one-reactor item would rank that
19 high?

20 MR. VANDERMOLEN: It does.

21 MR. SIESS: Because it is divided by the licensee
22 cost?

23 MR. VANDERMOLEN: Yes, it is.

24 MR. SIESS: And for 20 reactors, it might not
25 change its position because the benefits would go up by a

1 factor of 20, and the denominator would go up almost by that
2 depending on how much NRC cost is?

3 MR. VANDERMOLEN: Yes. We did think about this
4 quite a bit, too. And one reason we did is we thought: Well,
5 we have generic issues --

6 MR. SIESS: That's why you have management, that
7 SM in there?

8 MR. VANDERMOLEN: Yes, exactly. We want people
9 to know why this comes out the way it does.

10 MR. SIESS: That would rank -- it wouldn't rank
11 nearly as high on SM, would it?

12 MR. VANDERMOLEN: No, I don't believe it would.
13 I am going to show you a table that has those numbers in
14 that in just a moment.

15 MR. SIESS: Okay. I see where you got it now.

16 MR. VANDERMOLEN: I would like to throw this up,
17 because when I throw numbers up, right away there seems to
18 be psychological factors that enter in. Dr. Kerr, one of
19 your fellow committee members, likes to say that when you
20 send something through a computer, everybody believes it.

21 MR. SIESS: Except for the guy that did it.

22 (Laughter.)

23 MR. VANDERMOLEN: Yes. I'm often the guy. I am
24 in that position, myself. So I have calculated some of
25 these, and I find that even with a hand calculation you put

1 a number down, and people tend to put a little bit too much
2 emphasis on it.

3 MR. SIESS: The real test of your quantified
4 procedure is, when you get through somebody comes and looks
5 at it and says, "Well, that looks reasonable."

6 MR. VANDERMOLEN: That is true. And in fact, that
7 is the next thing we're going to do.

8 MR. SIESS: In spite of the fact that you don't
9 want it to be subjective, that is the test that you apply to
10 it.

11 MR. VANDERMOLEN: That is the test. I guess our
12 underlying philosophy is, we have to agree and admit that
13 there is always some subjectivity, and try and be as
14 objective as we can.

15 MR. SIESS: Since credibility is usually subjective,
16 except for those people who believe computers.

17 (Laughter.)

18 (Slide.)

19 MR. SHEWMON: Now "high," "low," and "medium" on
20 that last one was SP, your priorities for it?

21 MR. VANDERMOLEN: Yes.

22 MR. SHEWMON: Okay.

23 MR. VANDERMOLEN: Let's take a look at something
24 a little more quantitative. Unfortunately, this projector
25 doesn't seem to be large enough to show everything.

1 When we did this, all of this sounds nice, and we
2 wanted to try and see if it would work. We just picked some
3 issues that happened to be coming through the SPEB, and for
4 other purposes we had other things we wanted to do to them
5 and we thought we would try and prioritize them.

6 What I would like you to notice is this element
7 right here (indicating). This is the priority score that
8 we factored, that we mentioned earlier, in a range over six
9 orders of magnitude.

10 MR. SIESS: That suggests very strongly to me that
11 your priority number ought to be the exponent.

12 MR. VANDERMOLLEN: We actually considered this.
13 In fact, we have had a lot of line thinking of putting up a
14 number that was devined similarly, two decimals, or something
15 of that nature.

16 MR. SIESS: I mean, your last column has sort of
17 slide off, but when I look at that in relation to that score,
18 you see --

19 MR. VANDERMOLLEN: It is true.

20 MR. SIESS: The exponent is the only thing that is
21 important there.

22 MR. VANDERMOLLEN: I find that when you leave them
23 as exponents, people are a little bit more aware that the
24 differences here (indicating) are considerably bigger than
25 the differences here (indicating). If it were longer, they

1 wouldn't notice.

2 MR. SIESS: You group them by exponent.

3 MR. VANDERMOLLEN: We also calculated those two
4 columns in the area of range. These are an estimate -- a
5 somewhat futuristic one, but given bad data, you come up
6 with bad areas of uncertainties.

7 MR. SIESS: What dominates that? The event
8 frequency?

9 MR. VANDERMOLLEN: It varies. In some cases it is
10 the cost that dominates. In any of them, if you're doing
11 better than a factor of 5, you're doing very well indeed.

12 MR. SIESS: Yes.

13 MR. VANDERMOLLEN: I can't really say that any one
14 of them would necessarily dominate, but sometimes they do
15 have the cost, and sometimes we do have a reasonable handle
16 on the probability.

17 Now the reason we want to put on ranges is not
18 only so that people will know there's a big uncertainty in
19 priority scores, but this is intended to help someone use
20 this as a guideline to exercise a little bit of judgment.

21 That is, these two issues overlap (indicating) very
22 much so. No one would be excited if we decided to switch
23 the two. That is, if there were other reasons, judgmental
24 reasons. This method (clearly) cannot distinguish
25 between those two issues, and it is perfectly legitimate to

1 use some more subjective factors there.

2 MR. SIESS: What does "effectiveness of fix" mean?

3 MR. VANDERMOLEN: It means, if that parameter were
4 100 percent, the delta would be all. You would fix everything.
5 That is, you would either completely prevent the event, send
6 its frequency to zero, or completely mitigate it and make
7 sure it never released any activity. It is there because
8 we recognize that we can't always fix all of the problems.

9 MR. SIESS: That is for a particular event?

10 MR. VANDERMOLEN: Yes.

11 MR. SIESS: The release from that event could be
12 dropped to zero if it were 100 percent?

13 MR. VANDERMOLEN: If it was 100 percent.

14 MR. SIESS: Or a sequence of events.

15 MR. VANDERMOLEN: We're a little bit more
16 sophisticated in how we calculated this.

17 MR. SIESS: I can see that, now.

18 MR. VANDERMOLEN: That is, we do try to sum up
19 contributions from the various PPR, WASH-1400 release
20 categories. So it is not quite that primitive, but it is
21 just to give an idea. There is a wide uncertainty in any
22 of these parameters.

23 The reason for having the other parameters here
24 is that we want you to know what is going on. We want people
25 to see why something might be very high in priority. It is

1 possible with this, because we've got a cost in the
2 denominator. If the cost were achieved -- which doesn't
3 happen too often -- but if the cost were very cheap, you
4 would promote this (indicating) a lot.

5 We think that is legitimate, because we want to
6 get the job done. But rather, we would like to get some
7 contributions for getting some small jobs to completion,
8 rather than spending all our resources on one weak one that
9 we never finish.

10 But we do want to provide this information so that
11 we can see what is going on. This is a guideline.

12 Well, your questions, again, have used up a little
13 bit of my talk, so I am going to skip ahead. There was a
14 big point I wanted to mention, which is: That with these
15 numbers, in addition to knowing how this works, we can make
16 intelligent use of the whole scheme.

17 What we like about it most, I guess, is that we
18 have been able to put out these numbers in something like
19 one man-day of effort per issue. And we do get a spread of
20 this magnitude.

21 MR. SIESS: Now for your risk analysis, you know,
22 the event frequency thing, I assume you use, what, WASH-1400?
23 Or IREP/NREP data? Or what?

24 MR. VANDERMOLEN: Anything we can get our hands
25 on.

1 MR. SIESS: You could do it in one day, because
2 you had --

3 MR. VANDERMOLEN: Yes, that's the whole point. We
4 have this background available to us. Some of these things
5 we actually use plant experience. We actually had some
6 data on that.

7 You have other things, if you're talking about
8 events that are associated with anticipated transients, EPRI
9 has collected some data on how often they happen. We use
10 anything we can, and that about lists our resources.

11 MR. SIESS: You've got to have more than that,
12 because BWR fuel reloading by itself does not lead to curie
13 release. Several other things have to happen, and you have
14 to know what their frequency or probabilities are.

15 MR. VANDERMOLLEN: Yes. To the accuracy we can use
16 for the scheme. Now if these issues all came within a factor
17 of 10, this wouldn't work. It is only the fact that they
18 are spread so much that makes the whole thing work. And
19 that is effectively the extent of the system as we now have
20 it.

21 MR. SIESS: Is curies per dollar? Curies of 1.2
22 per reactor year per million dollars?

23 MR. VANDERMOLEN: Yes.

24 MR. SIESS: So a score of 3×10^6 ? Gee, that's
25 a lot of curies, isn't it. Well, that's reactors, too.

1 MR. VANDERMOLEN: That's a lot of reactors, and
2 it is an issue that can lead to very serious consequences.

3 MR. SHEWMON: Now this gets you entirely in the
4 air dumps, or a fuel melt.

5 MR. SIESS: To get curies released?

6 MR. VANDERMOLEN: Yes.

7 MR. SHEWMON: So by your initial setup, you have
8 neglected anything that sort of relates to TMI-2, because
9 all that does is make the utility go bankrupt and it doesn't
10 hurt hardly anybody? Is that --

11 MR. VANDERMOLEN: No, we've got a core melt. We
12 have estimates on how much the release is going to happen.

13 MR. SIESS: For the core melt. But TMI-2 wasn't
14 a core melt.

15 MR. SHEWMON: My point is, if you don't have a
16 core melt, it doesn't read on your scale. We're sort of
17 back into classes of accidents 1 through 8. Anything that
18 influences those doesn't come on scale.

19 MR. VANDERMOLEN: This (indicating) does lead to
20 a core melt; this (indicating); this (indicating); I guess
21 this (indicating) one does. And some of the others do not.

22 MR. SHEWMON: And you can get curies released
23 without --

24 MR. SIESS: Well, there were a few thousand -- how
25 many curies out at TMI?

1 MR. VANDERMOLEN: That, I couldn't tell you.

2 MR. COX: 15?

3 MR. SIESS: I've forgotten. It was only a couple
4 of curies of iodine, but there were several thousand --

5 MR. SHEWMON: You get that release from what? Do
6 you know, or do you remember?

7 MR. VANDERMOLEN: If you misled the fuel and don't
8 detect it, you will be running on in-core detectors. You
9 will be driving fuel obviously up to what you thought were
10 its limits, if you didn't know what you had in the core
11 when you had the overdrive. Well, you can release activities
12 in two ways.

13 You can either, on a steady-state basis, where you
14 have something closer to DNB than you thought, and you keep
15 it there for a matter of months, and you may get a direct
16 failure instead of steady-state operation.

17 You can also have a transient during this period
18 with the core closer to the limits than you've analyzed.

19 MR. SHEWMON: But in both cases, this would not
20 be a core melt. This would be substantial fuel failure.

21 MR. VANDERMOLEN: -- being released.

22 MR. SIESS: That is what is going to give people a
23 problem. Your curie-release criterion, you see that is
24 where you see deaths and morbidities drop. But a million
25 curies of krypton and a million curies of iodine are just,

1 you know.

2 Now all of your core melt accidents, this is a
3 good basis for comparing them. They are going to have
4 roughly the same kind of off-site effect. But if you get
5 down in there to where you had a TMI-type accident, where
6 I forget whether there was a million curies of krypton, or
7 a thousand curies of krypton, xenon, and about 4 of iodine,
8 that was weighted wrong. But it may come out right anyway.

9 MR. VANDERMOLEN: It seems to come out right,
10 anyway.

11 MR. SIESS: I want to look at which of these are
12 core-melt accidents, and which ones are letting iodine out,
13 and leaving out the present iodine arguments --

14 MR. SHEWMON: Iodine doesn't hardly ever come out.

15 (Laughter.)

16 MR. VANDERMOLEN: If you have any specific places
17 where we can go to put in a weighting factor for that, we
18 will be happy to consider it.

19 MR. SIESS: Well, there's no way to do it. To
20 do that, you put in a weighting factor for that and then
21 you're doing your evaluating in terms of off-site effects,
22 if not off-site releases, which is a much more complicated
23 thing, and you have to worry about evacuation, population
24 density, et cetera.

25 MR. VANDERMOLEN: Admittedly.

1 MR. SIESS: You could take care of the population
2 by integrating, or averaging the site population, index-type
3 things, you know, which is some measure of population
4 density and certain distances. But it is not too easy.
5 But as I said, this wouldn't bother me if these were all
6 core melts. Then I would have a relative measure, because
7 I would think that most of the differences were not in the
8 amount of the release, because that would be about the same.
9 All the core melts are going to dump the same number of
10 curies out, eventually.

11 So the number of cost of reactors, and risk
12 reduction, needs to be considered, or frequency reduction.
13 And those are sort of the dominant things there. So I think
14 that just the curies when you go from core melt to other
15 accidents should have a jump in it somewhere. And as you
16 started down the list, all your core melts are at the top
17 anyway.

18 MR. VANDERMOLEN: Well, that's hardly surprising.
19 Well, the best statement that you can make about the system
20 is that it seems to work thus far. We're not beyond
21 refining it, yet, but we think it can work, and we would
22 much rather have -- resolve differences on this sort of
23 basis where we talk about weighting, or even talking about
24 whether we have estimated some of the parameters incorrectly
25 than just to say: Well, Mister so-and-so thinks this one is

1 important; Mr. So-and-so thinks, and take them both.

2 MR. SIESS: That brings out very clearly the point
3 that Karl was making earlier in distinguishing between
4 subjects and issues. You can only do this on issues.

5 MR. VANDERMOLEN: That's correct.

6 MR. SIESS: You have to have a very specific issue
7 that you factor these things into, and I see your point when
8 I get down to this.

9 I go back and look at the Research to Improve
10 Safety Report, 0248, was it, 0438, where they prioritized
11 the things that they should do research on to improve
12 safety. That was done subjectively. It was about 30 or 40
13 items. They had panels of experts who made judgments. They
14 considered the number of reactors, some of the same kinds
15 of factors, the potential risk reduction on purely a
16 judgmental basis and came up with a list of five items as
17 the top list.

18 The ACRS looked at them and said: Hey, that
19 looks great. There was an ACRS input, too. You can't do
20 that. Those were subjects.

21 MR. VANDERMOLEN: This won't apply to them.

22 MR. SIESS: And I don't know that anybody can
23 look at one of these subjectively, whether you gave that
24 same list to a couple of dozen people, whether they could
25 arrive at an ordering or not.

1 MR. VANDERMOLEN: We are still trying this out,
2 and we are in fact giving it to several people to see -- well
3 one of the things is in the background of our minds to see
4 if they can come up with something consistent.

5 MR. SIESS: I think everybody would put your
6 number one near the top.

7 MR. VANDERMOLEN: That's true.

8 MR. SIESS: Number two, I don't think anybody would
9 put it number two on a judgmental basis, because I just
10 don't see how they can get there. And nobody would have
11 the slightest feel for how to put that Davis Besse in a
12 single plant on in the list without a series of numbers
13 across.

14 MR. SHEWMON: Okay?

15 MR. SIESS: That is fascinating, though.

16 MR. SHEWMON: Thank you very much.

17 MR. SIESS: What do you do about the things that
18 somebody says: Gee, I can do this in two months. Let's do
19 it, even though it is way down at the bottom. There is
20 always that tendency to do the quick ones, the easy ones
21 first.

22 MR. VANDERMOLEN: If he can do it in two months
23 and you really believe that estimate, I don't think it would
24 be at the bottom of the list. I think -- oh, I see what you
25 mean. He may be able to finish the NRC work in two months.

1 MR. SIESS: You know, this is a quick, easy one.
2 We can reach a decision on this one, do a little work and
3 have a decision on it.

4 MR. VANDERMOLEN: There may be that tendency, it
5 is true, that with that list you would not promote it and
6 you get a very high --

7 MR. SIESS: If it didn't cost anybody anything,
8 of course it would come up high on the list. If it only
9 cost NRC. But if it cost the applicants very much --

10 MR. VANDERMOLEN: That's right. And when you are
11 resolving the issue, he may be able to solve it for NRC's
12 purposes, but a safety problem is not resolved really until
13 you get the hardware changed, or whatever, in the plant.
14 And that may take a lot longer than it took him to do what
15 he thought was important.

16 MR. SIESS: How do you address him, then? I can
17 visualize something that comes out number 40 on your SP
18 list, and number one on the SM list. It would be one I
19 talked about the pretty good possibility for risk reduction
20 involving 40 or 50 reactors. It would only require two or
21 three man-months of work. That would be way up on your SM
22 list; right?

23 MR. VANDERMOLEN: Yes, it would.

24 MR. SIESS: Because there is nothing in the
25 denominator but the three man-months. So what is the SM list

1 doing for management? It is going to encourage them to do
2 these quick-and-easy ones.

3 MR. VANDERMOLEN: Well, I am personally not at
4 all convinced that there are that many quick-and-easy ones.
5 They never really seem to work out that way.

6 (Laughter.)

7 MR. VANDERMOLEN: But somewhere you've got to take
8 this list, add it up, and you're going to come up, to the
9 extent of our appropriations, somewhere. There is going to
10 be a line across here. And if you are going to promote
11 something out of sequence here, something else is going to
12 get bumped, and we're going to have to balance there, and
13 that is going to be written into this decision.

14 I personally think, my own personal opinion, not
15 NRC policy, my personal opinion is that if you were to run
16 into that situation, you might want, on the basis of this
17 management score, to shift up to the top of the range of
18 the --

19 MR. SIESS: You could jimmy it up.

20 MR. VANDERMOLEN: But I don't think that is
21 necessarily valid.

22 MR. SIESS: Where do the USI items come out with
23 this system? Are these all USI items? No, they're not.

24 MR. VANDERMOLEN: No, they are not.

25 MR. KNEIL: Number three would be part of the

1 station blackout.

2 MR. SIESS: I'm just wondering if you took some
3 of your items and did the calculation, whether the top ones
4 would be USI items.

5 MR. VANDERMOLEN: We're going to try -- you caught
6 us a little bit early in this game.

7 MR. KNEIL: I know some of them would.

8 MR. SIESS: I'm not saying that would be a good
9 test of it, because I don't think the USI items were picked
10 on this criteria at all. And I won't say what I think they
11 were picked on.

12 MR. KNEIL: A recent one that was picked, A-44,
13 of course number three is part of A-44. So that I think
14 there is a good agreement there.

15 MR. SIESS: I can't believe -- or I'm not sure
16 what you've got in these little "generator reliabilities,"
17 but my concerns about that cover more than 22 plants. It
18 covers like about 70.

19 MR. VANDERMOLEN: This particular one, we were
20 talking about PWRs.

21 MR. SIESS: Well, there are more than 22 PWRs.
22 I think you're looking at other aspects of reliability than
23 the gross one I'm looking at.

24 MR. KNEIL: PWR air dump scram is related to ATWS.

25 MR. VANDERMOLEN: Yes, it is.

1 MR. KNEIL: So the top three, the top two out of
2 three are USIs. That's not too bad.

3 MR. SIESS: I can't believe that second column of
4 numbers, though. I don't think NRC can do anything for
5 \$40,000.

6 (Laughter.)

7 MR. SHEWMON: It depends on what the accountant
8 tells them.

9 Are we ready to tighten things up? It is an
10 interesting table, but at this point I would be interested
11 in -- we have been going over what things haven't been
12 covered today.

13 One of the things that comes up on some of the
14 things I brought were eight items which came out of the
15 last subcommittee meeting on this, about what we thought
16 wasn't getting as much priority, or some member of the
17 committee thought it would.

18 I don't think it is anything more quantitative
19 than that. Would you tell me again what you see as a
20 schedule for re-examining the priority, for example, of
21 decommissioning of reactors?

22 While you're looking at that, there are studies
23 that have come out on it. Nothing is being done very much
24 on getting out regulations on it that I know of, probably
25 because the priority is not seen as too high. If we took

1 that as an item, then you have that listed as one of your
2 items, or not at all? Or does it have low priority? Do you
3 know?

4 MR. MAJOR: I have that listed. I'm not sure.

5 MR. KNEIL: It is one of the A,B,C,D items.

6 MR. ANDERSON: Yes. And that particular issue is --

7 MR. SIESS: It's a Research; it's not a Licensing
8 item. That's the thing. What is our number on that,
9 Rich?

10 MR. SHEWMON: Seventy-two. Staff, B; ACRS, B.

11 MR. SIESS: It's not a licensing issue.

12 MR. ANDERSON: I don't have any information on
13 that. We have sent inquiries out to the various technical
14 divisions requesting an updated status on all of the
15 generic issues, and I have them on a number of them, but
16 that particular one I haven't received a reply yet. We
17 have seen a number of NUREGs coming through recently on
18 decommissioning and decontamination, so I think there have
19 been several.

20 MR. SHEWMON: Now decontamination of reactors
21 is another -- and I am going up my list from the bottom. I
22 guess that is certainly something which you will have more
23 experience with through TMI-2, to what extent we come out
24 with regulations on it.

25 MR. SIESS: Dresden.

1 MR. SHEWMON: Well, Dresden, yes. The advisability
2 of seismic scram.

3 MR. SIESS: They've got it as a "D," and we've got
4 it as something else, and it is being pursued actively by
5 Research, and I don't consider it an item. They've got it
6 a "D," and we've got it a "C." Now that is not that much
7 difference. It is on the list.

8 MR. MAJOR: I think there is a Research program
9 on that, some sort of a report looking at two-thirds of
10 scram.

11 MR. SIESS: Yes. They are working on it. I don't
12 see any problem with it. That is on our list as a "C," and
13 theirs as a "D."

14 MR. SHEWMON: Random multiple failures. They call
15 it an "A," they call it an "A," and somebody is unhappy.

16 MR. SIESS: A nonrandom multiple failure is our
17 Item 58, and they have got about six items that they say
18 relate to that. Four of them are As, and one of them is a
19 B, and one of them is a C. And that just has to be clarified
20 as to whether -- we started out with a general one, and then
21 we broke it down into an A, B, and C scram system, which
22 was number one on your list up there, clearly an A. Current
23 sources and AC and DC sources, and actually the Staff has
24 got ATWS, off-site power system, diesel reliability, power
25 supply station blackout. The only thing they disagreed on,

1 was they have "diesel reliability" as a B; and we had it
2 lumped in as an A. It gets to be a pretty good A on that
3 list, you know.

4 MR. VANDERMOLEN: Yes, sir.

5 MR. SIESS: And the nonrandom multiple failures
6 that nobody could find, other than the specific ones, is a
7 C on the Staff list.

8 MR. KNEIL: That is definitely a part of A-44,
9 so it has been upgraded.

10 MR. SIESS: That part of station blackout is
11 A-44?

12 MR. KNEIL: There is a specific task in there that
13 addresses diesel reliability.

14 MR. SIESS: So there is not that much disagreement.
15 Would about the 28 items that aren't on your list? Those
16 were all our so-called "resolved items," weren't they?

17 MR. ANDERSON: Well, the items from your list
18 that I couldn't see anything on our list that matched them
19 was four --

20 MR. SIESS: That's a resolved item.

21 MR. ANDERSON: Item No. 11.

22 MR. SIESS: Anything under 52 is resolved.

23 MR. SHEWMON: At least on one day in December we
24 thought it was.

25 MR. SIESS: It is unresolved in the sense that we

1 haven't looked at the implementation, but the system I don't
2 think that's a problem.

3 MR. ANDERSON: How about Item No. 56?

4 MR. MAJOR: That is something --

5 MR. SIESS: That was one --

6 MR. SHEWMON: I'm not sure that was an
7 instrumentation problem at Three Mile Island, but then maybe
8 it was.

9 MR. SIESS: And that didn't have -- I know the
10 history of that item. That is Dade's item. His concern
11 there was always not the Three Mile Island type of thing,
12 but fuel failure propagation. You remember what they put
13 into Fermi I after the first meltdown. They had something
14 that told them immediately they had one channel overheating,
15 and they could shut it down before it spread. You know, the
16 thermocouple stuff.

17 MR. ANDERSON: I wasn't able to find any Staff
18 generic activity that corresponded to that.

19 MR. SIESS: I suspect we have to look at that one,
20 but if we're going to have in-core thermocouples coming out
21 now from the Action Plan, that is a step in this direction.
22 The thermocouples that are being called for now are not just
23 part of the test. I think that's part of it. That is one.

24 There is another one that I think Rich had listed
25 as being 65, I guess.

1 MR. ANDERSON: I have 65, too.

2 MR. SIESS: I wouldn't worry about that one, Paul,
3 SEP.

4 MR. SHEWMON: 65 didn't make your list?

5 MR. SIESS: That again is a policy type thing,
6 rather than a licensing issue. That is the 10-year review,
7 and the SEP is of course a step in that direction.

8 This one I think the Committee has to reclarify and
9 restate. The original idea was that the Applicant would be
10 asked at the end of 10 years to evaluate his operating
11 experience, et cetera, et cetera, and recommend what he
12 might have done differently, and what he would have done to
13 improve things.

14 It was really an evaluation of operating experience.
15 And there has been a lot done, now, for continuing evaluation
16 of operating experience. So I think the Committee needs to
17 reconsider that one and try to frame it, maybe, closer to
18 an issue, or at least indicate the issues that might come
19 out of it. That is what I would think on that.

20 MR. MAJOR: The Bingham Amendment is covered in
21 that, too, isn't it?

22 MR. ANDERSON: I had one other one. No. 68. That
23 is stress corrosion cracking in BWR piping. I don't think
24 we have an issue that relates to that.

25 MR. SIESS: I think there are some issues that

1 might relate to it.

2 MR. SHEWMON: I'm sorry? Say that again? No. 68
3 is boiler, and you said --

4 MR. ANDERSON: Yes, BWR.

5 MR. SHEWMON: You have put out -- it was A-42.

6 MR. ANDERSON: Okay. No wonder I couldn't find it
7 on that. Okay, I missed that one. I was looking for
8 something different than A-42.

9 MR. SHEWMON: And I guess that, to me, is a
10 question of the Committee's problems of when is something
11 resolved, because you've got a good plan. It is being
12 implemented, and by our rules since two people just sort of
13 don't believe that we will ever resolve stress corrosion
14 cracking, but I don't believe that doesn't mean that we
15 shouldn't do something with it; that it shouldn't be an issue
16 that we should try to resolve and work on.

17 MR. SIESS: Paul?

18 MR. SIESS: Yes.

19 MR. SIESS: Based on what I have heard today, I
20 think things are in pretty good shape. I think there are
21 two questions as far as the ACRS is concerned.

22 One is, what items are on the list. That is, our
23 item versus your items.

24 Second, what priorities they are.

25 Now there are a couple of items that aren't on

1 your list because they don't fit too well, and I think the
2 mechanism exists for putting them on the list if they can
3 be defined properly.

4 There are a couple of items where the priorities
5 are a little out of sync, but the mechanism exists for
6 reviewing those. You will be reviewing your priorities, and
7 we can review ours, too. Maybe we will like yours better
8 than ours; and maybe we will like yours, when you get through,
9 better than ours. and the mechanism exists for that.

10 So I think that things are in pretty good shape
11 for the Committee to say: Okay, we are going to drop our
12 list. We will look through our items and see if there are
13 any that are completely missing, and see what we can do
14 about proposing them to you in a form that you can use. And
15 as you continue to work on priorities, we will follow that
16 issue and have you feed it back to us so we can see it.
17 Because nothing has to be done immediately. These are all
18 generic. They are all longer term issues where we want to
19 get organized and get on them.

20 So I would think that we have got a good case to
21 go to the Committee with, to tell them we are impressed by
22 what the Staff is doing to set this up systematically. There
23 is a mechanism for our input, and there will be a mechanism
24 for our continuing participation in the adding to the list,
25 reviewing priorities, and reviewing implementation.

1 MR. KNEIL: I think you ought to include that in
2 your letter, how you want to participate.

3 MR. SIESS: That is up to the Committee to decide
4 how. I would think they would want to participate pretty
5 much through this committee.

6 MR. KNEIL: Yes.

7 MR. SIESS: Sort of like what we do on Reg Guides
8 in another committee. We've got a committee that reviews
9 all Reg Guides. We have to settle things. You know, you're
10 talking about sending things out for comment. Now on Reg
11 Guides, we usually look at them before they go out for
12 comment, and then again after the comments.

13 Sometimes we say, "Oh, just go ahead and send it
14 out and we'll review it after we've seen what everybody else
15 says," but those are just mechanics.

16 MR. SHEWMON: Let me come back to what we do.
17 Apparently we are down for all of 15 minutes tomorrow, so
18 we aren't --

19 MR. MAJOR: For Saturday. Late Saturday.

20 MR. SIESS: We don't have a proposed letter to
21 write for this meeting?

22 MR. MAJOR: I don't think we have time to write
23 a letter for this meeting.

24 MR. SHEWMON: So do we want to have them come down
25 for the April meeting? Or do we want to try and draft a

1 letter and let it go? Or what?

2 MR. SIESS: I think at some point it would be
3 nice for the Committee to hear some of this. I think the
4 priority stuff maybe you will want to wait until you've
5 played with it a little more. I don't think it is urgent,
6 and I would say we ought to try to draft a letter for this
7 meeting, if it is possible, and let them look at it, and we
8 can finish it up next month. But I don't think the
9 Committee has to hear this, if the subcommittee says: Look,
10 we think that the Staff is really into this, and the
11 procedures are there, and they will produce these results,
12 or more than we've gotten in the past.

13 Now we may have to write a letter to the
14 Commissioners telling them why we're not going to have a
15 generic items paragraph in our case letters. We are writing
16 two case letters this month. We may have to make a decision
17 on that. But that's our problem.

18 I am not thinking of the Commission so much as
19 the Boards, but --

20 MR. SHEWMON: All right, is that all we have for
21 them today, then? Good.

22 (Whereupon, at 4:32 p.m., the meeting was
23 adjourned.)

24 * * *

25

NUCLEAR REGULATORY COMMISSION

This is to certify that the attached proceedings before the

in the matter of: ACRS - Subc on Generic IT&MS

Date of Proceeding: March 11, 1981

Docket Number: _____

Place of Proceeding: Washington D.C.

were held as herein appears, and that this is the original transcript thereof for the file of the Commission.

JANE W. Beach

Official Reporter (Typed)

Jane W. Beach

Official Reporter (Signature)

ACRS SUBCOMMITTEE COMMITTEE MEETING ON GENERIC ITEMS

1. - FUNCTIONS OF GENERIC ISSUES BRANCH (GIB) AND SAFETY PROGRAM EVALUATION BRANCH (SPEB) OF THE DIVISION OF SAFETY TECHNOLOGY
- PRESENT GENERIC ITEMS LIST
- GENERAL COMPARISON ACRS GENERIC ITEMS VS STAFF GENERIC ITEMS
- PRESENT STAFF ACTIVITY ON GENERIC ISSUES
KARL KNIEL
2. ACTION PLAN TRACKING SYSTEM (APTS)
PAUL NORIAN
3. - MATCH-UP BETWEEN ACRS GENERIC ITEMS LIST AND STAFF LIST
- IMPLEMENTATION OF USI RESOLUTION ON OPERATING PLANTS
NEWT ANDERSON
4. - PLAN FOR RESOLUTION OF GENERIC SAFETY ISSUES
TOM COX
5. - PROPOSED METHOD FOR PRIORITIZATION OF GENERIC ISSUES
HAROLD VANDERMOLLEN

kneil

GENERIC ISSUES BRANCH / DIVISION OF SAFETY TECHNOLOGY

1. MANAGE TECHNICAL RESOLUTION OF ISSUES DESIGNATED AS UNRESOLVED SAFETY ISSUES (USIs)
2. MONITOR IMPLEMENTATION OF RESOLVED USIs
3. COORDINATE AND MONITOR TECHNICAL RESOLUTION OF TMI ACTION PLAN
4. COORDINATE AND MONITOR TECHNICAL RESOLUTION OF OTHER GENERIC ISSUES

SAFETY PROGRAM EVALUATION BRANCH DIVISION OF SAFETY TECHNOLOGY

1. DEVELOP A PLAN FOR RESOLUTION OF GENERIC SAFETY ISSUES
2. DEVELOP A METHOD FOR PRIORITIZATION OF SAFETY ISSUES TO BE INCLUDED IN THE ABOVE PLAN

PRESENT GENERIC ITEMS LIST

1. UNRESOLVED SAFETY ISSUES

2. TMI ACTION PLAN

3. CATEGORY A GENERIC ISSUES

4. CATEGORY B, C, AND D

5. ACRS GENERIC ISSUES

REFERENCES

NUREG 0510, NUREG 0705
NUREG 0606, (AQUA BOOK)

NUREG 0660, NUREG 0737

NUREG 0372, NUREG 0410

NUREG 0471

GENERAL COMPARISON ACRS GENERIC ISSUES VS STAFF GENERIC ISSUES

1. SUBJECT MATTER IS VERY SIMILAR

- CROSS REFERENCES TO STAFF LIST CAN BE MADE FOR MOST ACRS GENERIC ITEMS
- NEW ITEMS COULD BE ADDED TO STAFF LIST TO ADDRESS SPECIFIC ACRS ITEMS IF NECESSARY

2. THERE APPEARS TO BE A DIFFERENCE IN THE PERCEIVED CONTENT OF A GENERIC ITEM ON THE ACRS LIST VS THE STAFF LIST

- ACRS ITEMS TEND TO BE SUBJECT RELATED
- STAFF ITEMS TRY TO BE MORE ISSUE RELATED

THIS DISTINCTION IS IMPORTANT BECAUSE:

SUBJECTS CAN'T BE RESOLVED

SPECIFIC ISSUES CAN BE RESOLVED

3. EXPERIENCE HAS SHOWN THAT WE NEED A FOCUSED ISSUE

- TO OBTAIN RESOURCES BOTH STAFF AND CONTRACT ASSISTANCE
- TO MANAGE EFFECTIVELY
- TO DEMONSTRATE PROGRESS HAS BEEN MADE

PRESENT STAFF ACTIVITY ON GENERIC ISSUES

1. UNRESOLVED SAFETY ISSUES

- RESOLUTION ACTIVELY BEING PURSUED BY TASK MANAGERS IN GIB USING STAFF AND CONTRACTOR ASSISTANCE
- STATUS REPORTED QUARTERLY IN NUREG-0606 (AQUA BOOK)
- STATUS ON IMPLEMENTATION FOR RESOLVED ISSUES REPORTED IN SEPARATE TABLE IN NUREG-0606

2. TMI ACTION PLAN

- SOME ISSUES HAVE BEEN RESOLVED AND ARE BEING IMPLEMENTED
- RESOLUTION BEING PURSUED ON MANY ISSUES BY ASSIGNED INDIVIDUALS USING STAFF AND CONTRACTOR ASSISTANCE
- STATUS REPORTED QUARTERLY IN THE ACTION PLAN TRACKING SYSTEM (APTS)

3. OTHER GENERIC ISSUES

- SOME ACTIVITY ON VARIOUS ISSUES
- NEW COMPILATION OF OTHER GENERIC ISSUES HAS BEEN INITIATED
- PLAN FOR HANDLING AND RESOLUTION OF GENERIC SAFETY ISSUES IS BEING DEVELOPED

ACTION PLAN TRACKING SYSTEM
(APTS)

- o A LEAD REVIEWER IS ASSIGNED FOR EACH ITEM IN TMI ACTION PLAN - NUREG-0660.
- o LEAD REVIEWER FILLS OUT ONE PAGE STATUS FORM FOR APTS SUMMARY.
 - o PURPOSE
 - o MILESTONES
 - o ACCOMPLISHMENTS
 - o STATUS
 - o ISSUES
- o FORMS REVIEWED IN DIVISION AND SENT TO OFFICE OF MANAGEMENT AND PROGRAM ANALYSIS (OMPA) FOR APTS PREPARATION AND DISTRIBUTION.
- o APTS STATUS UPDATED EACH 3 - 4 MONTHS -- NEXT SCHEDULED FOR MAY.
- o APTS PROVIDES A CONVENIENT SUMMARY FOR ALL ITEMS PLUS A CONTACT IF ADDITIONAL INFORMATION IS NEEDED.

Norian

TMI
ACTION PLAN SUMMARY

1. ITEM NUMBER

2. TACS NUMBER

3. REVISION
DATE

MO DAY YR

4. TITLE

5. PURPOSE AND SCOPE

6. RESPONSIBILITY

INDIVIDUAL

PHONE NUMBER

ORGANIZATION (Division, branch)

7. OTHERS INVOLVED

INDIVIDUAL

BRANCH

8. ORIGINAL SCHEDULE

INITIATION DATE

SIGNIFICANT MILESTONES

COMPLETION DATE

9. CURRENT SCHEDULE

INITIATION DATE

SIGNIFICANT MILESTONES

COMPLETION DATE

10. MAJOR ACCOMPLISHMENTS (List major accomplishments to date, including date accomplished)

11. CURRENT STATUS (Limit to 150 words)

12. ISSUES OR PROBLEMS (Limit to 50 words)

IMPLEMENTATION OF USI RESOLUTION

- O GIB ISSUES NUREG DETAILING RESOLUTION
- O IMPLEMENTATION ON OPERATING PLANTS
 - O GIB INFORMS DL OF IMPLEMENTATION REQUIREMENTS
 - O DL ASSIGNS PM TO COORDINATE IMPLEMENTATION
 - O DL PM PROVIDES STATUS REPORTS FOR AQUA BOOK
- O CHANGES IN LICENSING REQUIREMENTS
 - O GIB WRITES LETTER TO LICENSING GUIDANCE DETAILING SRP CHANGES
 - O GIB WRITES LETTER TO STANDARDS DEVELOPMENT DETAILING REGULATORY GUIDE CHANGES AND/OR REQUIREMENTS FOR RULEMAKING
- O PROGRESS IS MONITORED AND REPORTED IN AQUA BOOK UNTIL IMPLEMENTATION IS COMPLETE
- O ALL COMPLETE USIs ARE LISTED IN AQUA BOOK

Anderson

HOW THE LISTS COMPARE

o ABCD LIST HAS 141 ISSUES

- o 48 - A
- o 73 - B
- o 17 - C
- o 3 - D

o OF THE 48 A ISSUES

- o 29 - USIs
- o 6 - TMI ACTION PLAN ITEMS
- o 25 - COVER OR ARE RELATED TO ONE OR MORE ACRS ISSUES

o OF THE 73 B ISSUES

- o 10 - USIs OR RELATED TO USIs
- o 9 - TMI ACTION PLAN ITEMS
- o 25 - COVER OR RELATED TO ACRS ISSUES

o OF THE 17 C ISSUES

- o 3 - USI OR RELATED TO USI
- o 4 - COVER OR ARE RELATED TO ACRS ISSUES

o OF THE 3 D ISSUES

- o 3 - COVER OR ARE RELATED TO ACRS

o 28 OF 77 ACRS ITEMS NOT ON STAFF LIST

- o 17 - LISTED AS "NO ACTION REQUIRED"
- o 11 - INDICATE FURTHER REVIEW

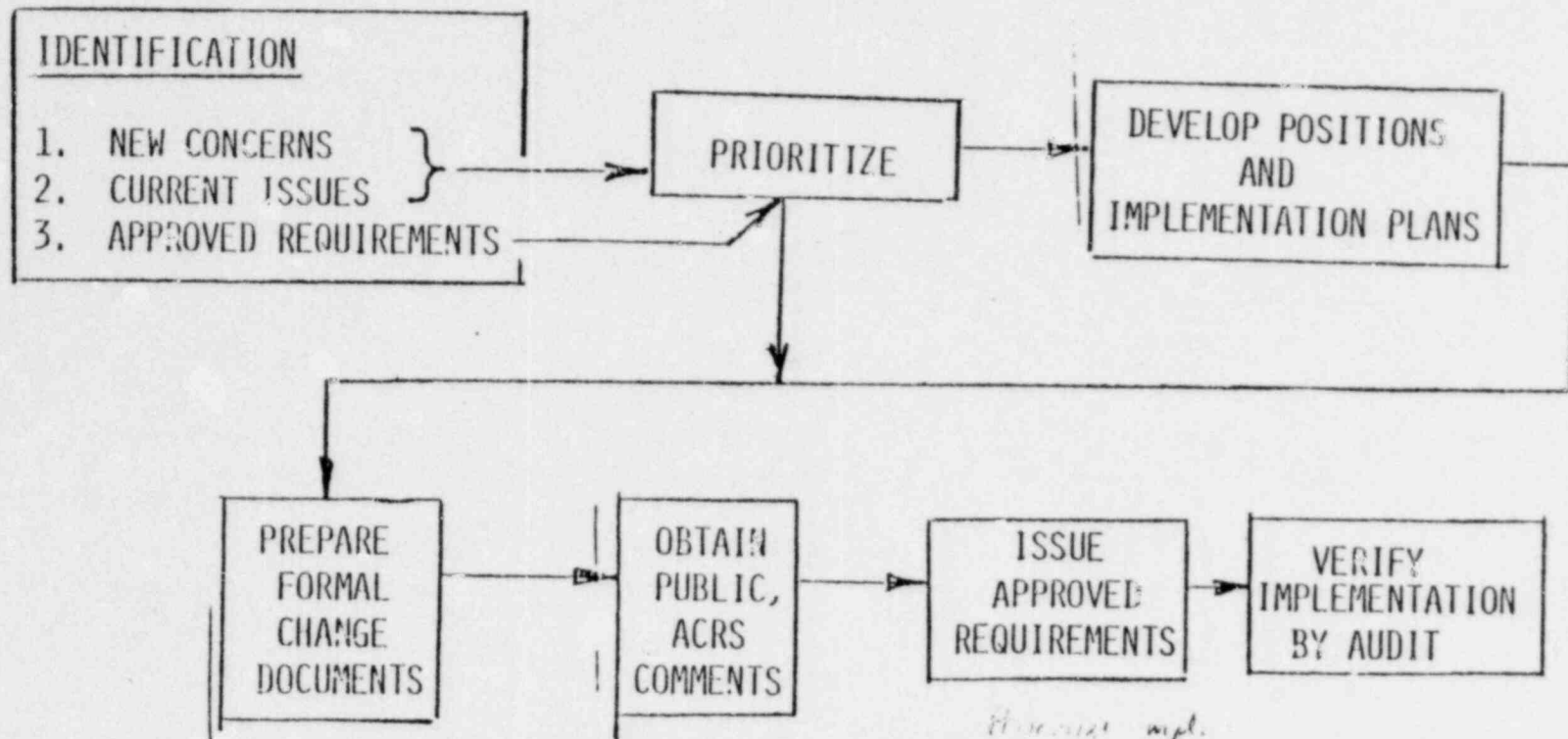
PLAN FOR RESOLUTION OF SAFETY ISSUES

OBJECTIVES

1. ESTABLISH A SYSTEMATIC METHOD FOR MANAGING DEVELOPMENT OF SAFETY ISSUES
 - A. DEVELOP NEW ISSUES, IMPLEMENT REQUIREMENTS THAT RESULT
 - B. IMPLEMENT OLD REQUIREMENTS (RRRC)
 - C. IMPLEMENT NEW REQUIREMENTS (0737, ETC.)
2. ESTABLISH PRIORITIZATION METHOD
 - A. SUPPORT DECISIONS ON RESOURCE ALLOCATION
 - B. QUANTITATIVE VALUE/IMPACT ASSESSMENTS
3. STABILIZE LICENSING PROCESS
 - A. HELP MAKE BACKFIT DECISION FOR NEW AND OLD REQUIREMENTS
 - B. DEVELOP STANDARDIZED, GENERIC SOLUTIONS WITH INDUSTRY INVOLVEMENT
 - C. ESTABLISH CONTROLLED IMPLEMENTATION
 - D. DEFINE AND DOCUMENT DECISION CRITERIA
 - E. IMPROVE PUBLIC PERCEPTION OF PROCESS

Cox

DEVELOPMENT AND IMPLEMENTATION
OF REGULATORY REQUIREMENTS
- AN OVERVIEW -



Handwritten notes:
Review impl.
Issue Approved
Implementation
to be done

STEPS IN THE PROCESS

1. IDENTIFICATION
2. PRIORITIZATION - A CONTINUING ACTIVITY THROUGHOUT THE PROCESS
3. DEVELOPMENT
4. DOCUMENTATION
5. PUBLIC AND ACRS COMMENT
6. ISSUE REQUIREMENT (SRP, GUIDE, TECH. SPEC)
7. PRIORITIZE IMPLEMENTATION
8. ISSUE REQUIREMENT TO LICENSEES/APPLICANTS
9. VERIFY IMPLEMENTATION BY AUDIT

IDENTIFICATION

1. SOURCES OF REQUIREMENTS OR ISSUES
2. DST WILL RECEIVE
3. ORIGINATING ORGANIZATION SHOULD PROVIDE, TO DEGREE POSSIBLE:
 - . OBSERVED OPERATING DATA
 - . POTENTIAL EVENT SEQUENCES
 - . RISK REDUCTION VALUE, C₁ RELEASED/PLANT YEAR
 - . RECOMMENDED TECHNICAL SOLUTIONS
 - . RECOMMENDED ORGANIZATIONS THAT SHOULD PARTICIPATE
 - . ESTIMATED INDUSTRY AND NRC RESOURCES TO EFFECT FIX

POTENTIAL SOURCES OF REQUIREMENTS

1. REGULATIONS
2. TMI ACTION PLAN - NUREG-0737 PLUS REMAINING NUREG-0660
3. ACRS CONCERNS
4. AEOD CONCERNS
5. LICENSING AND APPEAL BOARD DECISIONS
6. 10 CFR 50.54 LETTERS TO OPERATING PLANTS
7. IREP
8. NREP
9. NRR GENERIC LETTERS
10. ORDERS
11. I&E BULLETINS
12. I&E TRANSFER OF LEAD RESPONSIBILITY
13. SER CONFIRMATORY ANALYSIS
14. ISSUES RAISED BY PARTICIPANTS IN HEARINGS
15. NRR CATEGORY IV ITEMS

16. NEW REG. GUIDES
17. BACKFITTING OF PREVIOUSLY APPROVED REGULATORY GUIDES
18. SRP REVISIONS
19. NUREG REPORTS
20. RESEARCH RESULTS
21. STANDARD TECH. SPECS.

PRIORITIZATION

1. DEVELOP PRELIMINARY ESTIMATE OF PRIORITIZATION INDEX
2. PLACE ON MASTER PRIORITY LIST IN ACCORDANCE WITH RANKING RELATIVE TO ALL OTHER ISSUES
3. REPORT RELATIVE PRIORITY TO DIRECTOR, NRR
4. NRR DIRECTOR DECIDES ON RESOURCE ALLOCATION
5. METHOD IS INDEPENDENT OF CURRENT, PENDING WORK ON ABSOLUTE RISK GOALS - IS STRICTLY RELATIVE RANKING
6. IS USEFUL TOOL, BUT NOT THE EXCLUSIVE DETERMINANT IN JUSTIFYING RESOURCE ALLOCATIONS
7. MASTER LIST PUBLISHED PERIODICALLY - ANY ORGANIZATION MAY PETITION FOR CHANGE
8. ACRS INFORMED BY LETTER REGARDING PRIORITY LEVEL OF ANY ISSUE THEY PROPOSE

- 2 -

9. ASLB NOTIFICATION IF WARRANTED AT THIS STAGE
10. EACH ISSUE ENTERED IN TRACKING SYSTEM THAT PROVIDES CENTRALIZED ACCESS TO STATUS OF FURTHER DEVELOPMENT

DEVELOPMENT

1. EACH ISSUE ASSIGNED A TASK MANAGER
2. TASK ACTION PLAN WRITTEN, ACRS COMMENT SOLICITED AND CONSIDERED PRIOR TO NRR DIRECTOR FINAL APPROVAL
3. INDUSTRY PARTICIPATION SOLICITED TO DEVELOP TECHNICAL SOLUTIONS, COSTS, AND IMPLEMENTATION PLANS
4. MAINTAIN CONTINUING CHECK ON PRIORITIZATION INDEX
5. DST MONITORS, COORDINATES EFFORTS OF TASK MANAGERS TO ASSURE SYSTEMATIZED, PRIORITIZED INTERACTION WITH INDUSTRY GROUPS

DOCUMENTATION

1. PREPARE FORMAL PROPOSED CHANGES TO SRP, REGULATORY GUIDES, TECH. SPECS. OR REGULATIONS
2. DOCUMENTS BASED ON MOST COST-BENEFICIAL ALTERNATIVES DEVELOPED
3. PROPOSED CHANGES MUST INCLUDE COMPLETELY DEVELOPED IMPLEMENTATION PLAN ON PLANT-BY-PLANT BASIS
4. ISSUE MAY BE REMANDED TO RULEMAKING AT THIS TIME. OPTIONAL INTERIM REQUIREMENT MAY BE PROPOSED

PUBLIC AND ACRS COMMENT

1. FORMAL DOCUMENTS ISSUED FOR COMMENT
2. INDUSTRY COMMENTS SHOULD BE MINIMAL AT THIS TIME IF ACTIVE PARTICIPATION WAS OBTAINED IN DEVELOPING PROPOSED CHANGE
3. INCORPORATE COMMENTS
4. OBTAIN REQUIRED STAFF MANAGEMENT APPROVALS

ISSUE NEW LICENSING REQUIREMENT

1. NEW OR MODIFIED SRP, TECH. SPECS., GUIDES, REGULATIONS ARE ISSUED TO ALL PARTIES
2. DST FORMALLY TRANSFERS REQUIREMENTS TO DL FOR IMPLEMENTATION

PRIORITIZE IMPLEMENTATION

1. ORDER OF IMPLEMENTATION NOMINALLY BASED ON MASTER PRIORITIZATION INDEX
2. DL MAY ADJUST ORDER FOR GOOD CAUSE

ISSUE REQUIREMENT TO LICENSEES/APPLICANTS

1. DL ISSUES REQUIREMENTS BY LETTER TO INDIVIDUAL PROJECTS
2. DL MANAGES IMPLEMENTATION ON INDIVIDUAL PROJECTS
3. DL MANAGES STATUS REPORTING SYSTEM ON IMPLEMENTATION PROGRESS

VERIFY IMPLEMENTATION BY AUDIT

1. NRR AND IE PARTICIPATE IN AUDIT
2. AUDIT IS SELECTIVE ON BOTH NUMBER OF PLANTS AND NUMBER OF REQUIREMENTS AUDITED
3. AUDIT INVOLVES BOTH RECORD CHECKS AND ON SITE VERIFICATION OF AS-BUILT CONDITION

WEIGHTED SAFETY BENEFIT B:

$$B = \text{CHANGE IN } [(\text{EVENT FREQUENCY}) \times (\text{CURIES RELEASED})^{1.2}]$$

$$B = \Delta [FR^{1.2}] \text{ PRACTICAL UNITS: CURIES}^{1.2}/\text{REACTOR-YEAR}$$

PRIORITY SCORE S_p :

$$S_p = \frac{\text{AGGREGATE WEIGHTED SAFETY BENEFIT}}{\text{TOTAL COST}}$$

$$S_p = \frac{(\text{NO. REACTORS}) \times \text{CHANGE IN } [(\text{EVENT FREQUENCY}) (\text{CURIES RELEASED})^{1.2}]}{(\text{NRC COST}) + (\text{NO. REACTORS}) (\text{LICENSEE COST})}$$

$$S_p = \frac{N_{\Delta} [FR^{1.2}]}{C + NI} \text{ PRACTICAL UNITS: } C_I^{1.2}/R-Y/\text{MILLION } \$$$

MANAGEMENT SCORE S_M :

$$S_M = \frac{\text{AGGREGATE WEIGHTED SAFETY BENEFIT}}{\text{NRC COST}}$$

$$S_M = \frac{N_{\Delta} [FR^{1.2}]}{C} \text{ PRACTICAL UNITS: } C_I^{1.2}/Y/\text{DOLLAR}$$

Vandermolen

BWR SCRAM AIR DUMP
PWR RCP SEAL LEAKAGE
PWR DIESEL GENERATOR RELIABILITY

HIGH

DAVIS-BESSE AUX. FEED PUMP
BORON DILUTION WHILE S/D

MEDIUM

BWR FUEL MISLOADING
PWR RTD TIME RESPONSE
S-G TUBE RUPTURE DETECTORS

LOW

	NUMBER REACTORS	NRC COST (THOUSANDS)	COST PER LICENSEE (THOUSANDS)	WEIGHTED SAFETY BENEFIT	EFFECTIVENESS OF FIX	MGT SCORE	PRIORITY SCORE	RANGE
BWR SCRAM AIR DUMP	19	80	2100	5.4×10^6	98%	1×10^3	3×10^6	$2 \times 10^5 + 3 \times 10^7$
PWR RCP SEAL LEAKAGE	43	93	500	1.1×10^6	90%	5×10^2	2×10^6	$6 \times 10^5 + 1 \times 10^7$
PWR DIESEL GENERATOR RELIABILITY	22	266	1100	4.2×10^5	50%	3×10^1	7×10^5	$2 \times 10^5 + 3 \times 10^6$
DAVIS-BESSE DIESEL-DRIVEN AUX. FEED	1	40	2000	1.1×10^5	95%	3×10^0	6×10^4	$1 \times 10^4 + 2 \times 10^5$
BORON DILUTION	43	73	200	6.5×10^2	80%	4×10^{-1}	3×10^3	$1 \times 10^2 + 8 \times 10^4$
BWR FUEL MISLOADING	24	89	0.3	1.7×10^{-1}	80%	5×10^{-5}	3×10^2	$4 \times 10^1 + 2 \times 10^3$
PWR RTD TIME RESPONSE	43	29	26	3.0×10^{-1}	95%	4×10^{-4}	1×10^1	$6 \times 10^{-1} + 2 \times 10^2$
STEAM GENERATOR TUBE RUPTURE DETECTORS	43	150	600	1.4×10^0	55%	4×10^{-4}	2×10^0	$6 \times 10^{-1} + 8 \times 10^0$