

UNITED STATES OF AMERICA NUCLEAR REGULATORY COMMISSION

Title: PERIODIC BRIEFING BY THE ADVISORY COMMITTEE ON REACTOR
SAFEGUARDS

Location: ONE WHITE FLINT NORTH, ROCKVILLE, MARYLAND

Date: THURSDAY, JULY 14, 1988

Pages: 1-33

RETURN TO SECRETARIAT RECORDS

Ann Riley & Associates

Court Reporters

1625 I Street, N.W., Suite 921

Washington, D.C. 20006

(202) 293-3950

DISCLAIMER

This is an unofficial transcript of a meeting of the United States Nuclear Regulatory Commission held on 7-14-88 in the Commission's office at One White Flint North, Rockville, Maryland. The meeting was open to public attendance and observation. This transcript has not been reviewed, corrected or edited, and it may contain inaccuracies.

The transcript is intended solely for general informational purposes. As provided by 10 CFR 9.103, it is not part of the formal or informal record of decision of the matters discussed. Expressions of opinion in this transcript do not necessarily reflect final determination or beliefs. No pleading or other paper may be filed with the Commission in any proceeding as the result of, or addressed to, any statement or argument contained herein, except as the Commission may authorize.

1 UNITED STATES OF AMERICA
2 NUCLEAR REGULATORY COMMISSION

3 ***

4 PERIODIC BRIEFING BY THE ADVISORY COMMITTEE ON
5 REACTOR SAFEGUARDS

6 ***

7 PUBLIC MEETING

8 ***

9 Nuclear Regulatory Commission
10 One White Flint North
11 Rockville, Maryland

12
13 Thursday, July 14, 1988
14

15 The Commission met in open session, pursuant to
16 notice, at 2:02 o'clock, p.m., the Honorable LANDO W. ZECH,
17 Chairman of the Commission, presiding.

18 COMMISSIONERS PRESENT:

19 LANDO W. ZECH, Chairman of the Commission
20 THOMAS M. ROBERTS, Member of the Commission
21 KENNETH CARR, Member of the Commission
22 KENNETH ROGERS, Member of the Commission
23
24
25

STAFF AND PRESENTERS SEATED AT THE COMMISSION TABLE:

2

3

W. PARLER

4

A. BATES

5

D. WARD

6

C. SIESS

7

W. KERR

8

H. LEWIS

9

C. MICHELSON

10

J. CARROLL

11

P. SHEWMON

12

C. WYLIE

13

14

15

16

17

18

19

20

21

22

23

24

25

P R O C E E D I N G S

[2:02 p.m.]

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

CHAIRMAN ZECH: Good afternoon, ladies and gentlemen. The purpose of today's meeting is for the Advisory Committee on Reactor Safeguards to brief the Commission on their review of the proposed generic letter on Individual Plant Examinations, IPE.

In the proposed Integrated Safety Assessment Program II, ISAP II, the Commission is scheduled to receive a briefing next week, a week from today, from the staff on the proposed generic letter on IPE's. Further, the Commission received the paper on ISAP II, Secy 88.159 dated June 6, 1988 in which the NRC staff proposed not to implement the ISAP II program as a requirement. However, the staff would arrange to combine IPE and ISAP's reviews when requested by licensees.

We were informed that this is a matter that the NRC staff will address during the workshops to be held following issuance of the IPE generic letter. I understand that copies of the ACRS letter of May 10th, 1988, the subject of today's briefing, are available at the entrance of the room.

Do any of my fellow Commissioners have any opening comments to make?

[No response.]

CHAIRMAN ZECH: If not, Dr. Kerr, you may begin, please.

1 MR. KERR: Thank you, Mr. Chairman. We appreciate
2 the opportunity to meet with you. We have found our meetings
3 with you in the past to be productive. We are glad to have
4 this opportunity to discuss a topic which we believe is of
5 considerable importance to you and which we take very
6 seriously.

7 Before beginning our discussion, however, I would
8 call attention to the fact that Mr. J. Carroll, who is a new
9 member of our committee and with whom I believe you have not
10 met before, is with us today and we are delighted to have him
11 as a member of the committee.

12 CHAIRMAN ZECH: Welcome to the ACRS and to the NRC.
13 We are delighted to have you with us.

14 MR. CARROLL: Thank you.

15 MR. KERR: We have asked Mr. Ward to make some
16 opening comments on this topic and then I will expect that
17 other members of the committee will join in with whatever
18 discussion ensues, so I am going to turn things over to Mr.
19 Ward at this point.

20 CHAIRMAN ZECH: Thank you very much. Mr. Ward, you
21 may proceed.

22 MR. WARD: Thank you very much, Bill.

23 I will discuss the May 10th, 1988 letter, as the
24 Chairman pointed out, but first I'd like to go back a couple
25 months to an earlier -- a short letter we wrote earlier on

1 March 15th, 1988 and this is one where we commented as what we
2 saw as a need for greater coherence among new regulatory
3 policies. I'll just quote a couple lines from that and this
4 will explain, I think, why we wrote the letter we did in May,
5 but we pointed out that we saw what we believed to be a lack of
6 coherence and integration among several separate areas of
7 policy making within the NRC.

8 We saw that the severe accident policy was just one
9 of these but other policies, particularly those which might
10 cause new requirements to be placed on licensees, also were
11 part of what we saw as the overall problem of lack of
12 coherence. These others included the safety goal and then the
13 approach being taken for the resolution of unresolved safety
14 issues and generic issues.

15 We offered two suggestions at that time and one was
16 that there should be an attempt to integrate all of these
17 evolving policies and issues and particularly any new
18 requirements that would come out of these several different
19 policies or issues, an attempt to integrate those really beyond
20 simply the things that had been identified as the severe
21 accident policy issues, but because ultimately the only risk in
22 nuclear power -- this is slightly simplified perhaps, but the
23 only risk is from severe accidents so that really all of the
24 regulations and policies of the Agency are directed toward
25 reducing the risk from severe accidents. It's just sort of a

1 truism.

2 We suggested that there was a need to integrate not
3 only the severe accident issues but all important technical
4 regulatory issues.

5 The second point we made in that March letter was
6 that we saw the safety goal policy as really not just another
7 one of these issues out on the table but we really saw it as
8 the policy which could be a useful tool for providing for
9 integration of all the other policies. It's sort of an
10 umbrella policy.

11 Those are just some kind of general words to you that
12 may or may not have been helpful, but then in May we reviewed
13 two programs which were being developed by the staff and as the
14 Chairman mentioned, these were the IPE programs, the Individual
15 Plant Examination, and the Integrated Safety Assessment
16 Program, the ISAP II.

17 We saw in these an opportunity to provide -- by
18 slightly bending around these two policies or developments, we
19 saw an opportunity to provide what we thought would be greater
20 coherence and greater integration for the several, the many
21 policies being developed in the Agency. So we suggested that
22 there was some bending around that was needed in our letter of
23 May 10th and went on and described what we saw as necessary to
24 achieve this.

25 As I said, we really saw this as an opportunity. I

1 think we weren't the only people who recognized the problem of
2 the perhaps growing or existing lack of coherence among the
3 policies. I think the staff itself recognized this and was in
4 fact considering efforts to integrate the severe accident --
5 the so-called severe accident issues. We were merely
6 suggesting that this attempt at integration should be expanded
7 beyond just that set of issues.

8 We saw this as an opportunity and, in summary, there
9 are three steps. We thought that the IPE approach, the
10 Individual Plant Evaluation approach or something like that
11 could be used as a last time around means to identify and
12 indicate problems primarily in the design hardware at existing
13 plants, as I say, not only opposite the so-called severe
14 accident set of issues by opposite all outstanding safety
15 related issues, because as I said we think those are all severe
16 accident issues. That's the only issue there is, really.

17 Second, we saw an opportunity to use the ISAP, the
18 Integrated Safety Assessment Programs, as the means to permit
19 licensees to make a coherent, if you will, an integrated
20 response to a lot of different requirement which were coming in
21 from several directions and permit them to make a response
22 which would be perhaps unique but appropriate for their
23 particular plant designs and set of conditions, but which would
24 be approved, reviewed and approved, by the staff.

25 The third point was that if this was going to be

1 done, take advantage of it and expand the concept for IPE and a
2 more universal concept for ISAP. It looked to us that if
3 licensees were really going to do this sort of thing, they
4 needed to have in their hands -- they needed to develop a good
5 Probabilistic Risk Assessment for their own plants to use as a
6 tool in these other two activities.

7 So we made three recommendations and this is in our
8 letter of May 10th, and I'll discuss these in a slightly
9 different order than they are given on page two of that letter,
10 but they're on page two.

11 Our first recommendation, and I think it's most
12 efficient if I can just quote the text. The purpose we
13 suggested in this slightly revised program, the purpose of
14 IPE's would be acknowledged as broader than the original intent
15 of what was called "searching for outliers" relative to severe
16 accident issues, but instead it would call for a general risk
17 assessment of each plant using the body of experience available
18 from the TMI-2 accident, from the development from PRA, from
19 existing severe accident research and really from the general
20 experience of over a thousand reactor years of operation that
21 we've had in this country.

22 We would suggest that all outstanding safety issues,
23 USI's, generic issues would be subsumed by this program and it
24 would be made clear to the licensees that the intent of the
25 program would be that this would be the end of new

1 requirements. Now that is rather a optimistic view but the
2 intent would be that it would really be the end of new
3 requirements except in the advent of important new information
4 or new experience, so that given our state of knowledge today
5 it would suggest that this IPE would bring the plants up to the
6 best state -- the state they needed to be in based on knowledge
7 today and there would be no further requirements beyond that.

8 The second is the -- actually the third bullet on
9 page two -- and this deals with the ISAP process and this is
10 really again where the licensees come in, in developing
11 responses to perhaps the several new requirements that would
12 come out of the IPE.

13 We said the conclusions about results of the risk
14 analysis and necessary changes in actual plant systems and
15 procedures would be determined by the licensee and be reviewed
16 by the NRC staff through the ISAP process, which has been
17 developed jointly by the staff and certain of the licensees, so
18 we believe that this risk-based approach embodied in ISAP is
19 the most logical means for resolving most safety issues. The
20 risk analyses used in the IPE for each plant would be available
21 for use by the licensee and by the NRC staff in their ISAP
22 evaluations.

23 Now there is some argument that if the analysis used
24 in the IPE is going to be used for this second purpose, that is
25 for ISAP, that what's really needed is full scope PRA and not

1 just the simplified version of the PRA's which have been
2 suggested for use in the IPE process that's been proposed.

3 That brings us to the third recommendation, which is
4 the second bullet on page two, second paragraph from the
5 bottom. We suggested that each licensee should be required to
6 conduct a substantial and systematic risk analysis for their
7 plant and in fact we recommend that such an analysis would be a
8 full scope PRA at least to Level 2. That means at least
9 through containment performance and that it would, and this is
10 an important addition, and it would include both external and
11 internal initiators, both pipe breaks and earthquakes in other
12 words.

13 Now we stated that we acknowledge the difficulties
14 inherent in making this an immediate requirement. However, we
15 suggest that it should be possible to develop a phased approach
16 with the intent that within several years each plant would have
17 been analyzed by state-of-the-art methods, in other words, by a
18 full scope PRA.

19 At the beginning, this might very well be the sort of
20 more abbreviated IPE process that's been developed by certain
21 places in the industry and with the cooperation of the staff.
22 Our understanding is that abbreviated IPE process can be
23 developed and extended to become a PRA and what we're
24 suggesting is that that should be done and that there should be
25 a commitment that should be done for every plant.

1 Actually the staff in its response to this letter has
2 said in effect well, those are kind of some nice ideas but we
3 are not sure they are practical. We think they might slow
4 things up, but when we look at the latest draft of the IPE
5 generic letter, it seems to some extent each of these proposals
6 really is incorporated in the draft.

7 First of all, the staff encourages but doesn't
8 require a full-scope PRA on the part of the licensees and also
9 and probably as important -- some disagreement here -- they
10 also say that this PRA at the beginning for the IPE whatever it
11 is would be only for internal events and that the process for
12 incorporating the threat from external events would come along
13 later.

14 The draft generic letter on IPE also permits but does
15 not require licensees to take initiative in arguing that some
16 of the outstanding USI's or generic issues faced by the plant
17 might be covered by their IPE. It also permits but does not
18 require the licensees to take the initiative in providing an
19 integrated implementation response to new requirements through
20 something like the ISAP process. In other words, the staff
21 would stand ready to cooperate with the licensee if they wanted
22 to go through the ISAP approach but the staff is not insisting
23 that that be done.

24 In other words, the staff is permitting individual
25 licensees to opt for coherence in their response to these

1 several issues and policies, but the staff is not really
2 explicitly requiring or really providing for licensees to --
3 the staff isn't providing the coherence and integration itself,
4 although it is permitting the licensees to respond to new
5 requirements in a more coherent and integrated fashion.

6 Maybe that is good enough but I think that's contrary
7 to one of the purposes of the policy statement issued a couple
8 years ago on severe accidents regarding future designs in
9 existing plants. One of the key purposes in that, and I'll
10 quote, was to "achieve improved stability and predictability of
11 reactor regulation in a manner that would merit improved public
12 confidence in our regulatory decision-making."

13 I guess that's where I have a problem with the
14 approach being taken by the staff. While they are permitting
15 the licensees to take a more integrated and coherent approach,
16 they are not clearly telling the licensees that they are in
17 fact encouraging and promising to support this sort of approach
18 in the future.

19 That's all the comments I have at the present time
20 and somebody else might have something to say.

21 MR. KERR: Any additional comments at this point?

22 [No response.]

23 MR. KERR: There were none to the letter.

24 MR. SIESS: Which I think might be worth noting.

25 CHAIRMAN ZECH: What was that?

1 MR. SIESS: There were no additional comments to the
2 letter. It may reflect a unanimity or simply a smaller size
3 ACRS.

4 CHAIRMAN ZECH: All right. Shall we ask if there are
5 questions or do you want to proceed? What is your desire?

6 MR. KERR: I would like to get any reaction that you
7 or your colleagues may have to what has occurred so far.

8 CHAIRMAN ZECH: Fine. Any questions or comments from
9 my colleagues? Commissioner Roberts?

10 COMMISSIONER ROBERTS: No.

11 CHAIRMAN ZECH: Commissioner Carr?

12 COMMISSIONER CARR: I tend to agree with the approach
13 that you're taking. I think we are inching everybody toward a
14 Level 3 PRA an inch at a time and eventually I'm sure they'll
15 all get it in time to apply for their license extension but I
16 think that your points are well taken that they could probably
17 do it in a better fashion.

18 CHAIRMAN ZECH: Commissioner Rogers?

19 COMMISSIONER ROGERS: Well, I don't have much more to
20 add, but it does seem as if urging a PRA on all existing plants
21 does seem to be a wise course and so I tend to be in favor of
22 that.

23 CHAIRMAN ZECH: My view would be, frankly, to wait
24 and hear from the staff next week. I was frankly hoping that
25 ACRS and the staff could get together and decide together to

1 come up with something that you could jointly agree to, but I
2 guess you've come about as close as you can.

3 Certainly I think that coherence is important. The
4 staff as I understand, however, is trying to come up with a
5 somewhat similar approach with their master plan to get
6 together on severe accidents and all the other issues that
7 surround and are part of it.

8 I think perhaps we have come closer together as far
9 as regards requiring PRA's. I certainly do understand and
10 believe in the value of the analysis that goes into such an
11 approach. I guess as far as I'm concerned I'll wait and hear
12 what the staff has to say next week. I think again that you
13 have come closer together but not quite as I would hope so that
14 the Commission would have a joint ACRS/staff view -- so you've
15 come that close and not any closer, I guess.

16 The Commission will indeed make a decision but I
17 think I want to wait and hear what the staff has to say next
18 week.

19 MR. SIESS: May I say something?

20 CHAIRMAN ZECH: Certainly.

21 MR. SIESS: You know, the IPE I think at the very
22 early stages was going to be "the search for outliers." Now
23 the staff has expanded it considerably beyond that and it's
24 quite clear that they have and I think properly.

25 If the IPE were only a search for outliers, it would

1 seem to me almost overkill to use a PRA just to find outliers
2 and then throw the PRA away, so the staff has expanded the uses
3 of the PRA or the IDCOR methodology and not only to find
4 outliers but to handle A-45, to look for accident management --
5 which is coming down the line -- and so forth.

6 They did read our letter beyond the point that said
7 we think it is an improvement over the last one because they
8 made some changes in the IPE letter that I think have gone
9 quite a few steps toward the thoughts we have.

10 CHAIRMAN ZECH: I agree.

11 MR. SIESS: They mention that other USI's or GSI's
12 could be handled. I am not sure they could be handled with the
13 IPEM and the IDCOR methodology. I am sure they could with the
14 PRA methodology because that is what the ISAP program was.

15 Let me remind you that the severe accident policy
16 statement included USI's or GSI's as a part of the policy
17 statement and outliers was another part of it, so resolution or
18 implementation and preferably an integrated implementation of
19 USI's and GSI's is clearly a part of the severe accident policy
20 statement. Now it has been made an adjunct to the IPE, so what
21 we were really trying to say was that the IPE was a part of
22 this. Let's take a bigger look and put the whole thing
23 together using PRA as a base.

24 CHAIRMAN ZECH: I understand.

25 MR. SIESS: Now whether the IDCOR methodology can

1 replace a PRA I don't know but we're hanging so many decisions
2 on PRA -- they are just coming up, they're coming up and I
3 don't know whether the plant that has one is going to be at an
4 advantage over the plant that doesn't or vice versa, but maybe
5 uniformity is what we need.

6 CHAIRMAN ZECH: I certainly appreciate those
7 comments. Are there other comments from other members of the
8 committee on this particular subject?

9 Yes, please go ahead, Bill.

10 MR. KERR: I believe that there has been a
11 convergence of views between the staff and the committee since
12 the meetings that led to our May letter. It has not been
13 complete. I don't necessarily expect always that it will be
14 because we operate with a different set of constraints than
15 those with which the staff has to deal.

16 I have been encouraged by what appears to me to be an
17 effort to achieve greater integration and that I think is true
18 not only of the IPE draft version that we have most recently
19 seen but also as described in the SECY-88-147, which talks
20 about integration of severe accident issues.

21 We have just spent some time this past few days in a
22 subcommittee and this morning in a committee meeting discussing
23 that and we will be sending a report to you indicating some
24 comments, but it seems to me almost for the first time we have
25 been able, using that document as a base of operations, to

1 discuss a number of what had been somewhat disparate issues in
2 a coherent way. Although there is work to be done and the
3 staff I'm sure recognizes this even more than we do, in
4 integrating at least it represents I think an important initial
5 effort to consider the various things that have grown up from a
6 consideration of severe accident issues and to put them in a
7 form which permits them to be applied to an individual plant.

8 As we recognize, none of this does very much good
9 until it has some impact on plant design, construction and/or
10 operation. Chet was making a point that the USI's and generic
11 issues are important and we agree and although they can be
12 resolved, that is the first step. There needs to be then
13 implementation. One of the things that appealed to us I think
14 about the possibility of the ISAP approach is that if a basis
15 existed for this, one would accomplish the implementation of
16 the resolution of these issues along with whatever changes were
17 necessary as a result of the IPE.

18 What we were trying to say was not that we disagreed
19 with the general objectives of what is going on but that we
20 thought given a bit of additional consideration, the process
21 could be made more efficient and in the long run more
22 effective.

23 It does seem to me that there is movement in the
24 direction of at least we felt that should occur and I did not
25 detect any great resistance on the part of the staff. It

1 appears to me that one of the things that exists is that they
2 have been working on the program for a long time and are
3 somewhat unwilling to completely scuttle it. I understand
4 this, and it is a program that I think they were directed to
5 work on by the Commission, to develop along with the industry
6 an approach that would not necessarily require a PRA.

7 At the time this began I think the committee had a
8 feeling that probably such a program should exist. I believe
9 more and more as we have looked at things we see the
10 desirability of a full-scope PRA and I would expect that even
11 those plants that may not opt for the full-scope PRA will learn
12 enough and collect enough information from whatever IPEM that
13 they may use that they are likely to go ahead and develop the
14 full-scope PRA. I believe that is a possibility and I
15 certainly think it's a desirable approach.

16 CHAIRMAN ZECH: I certainly am encouraged about the
17 fact that the staff and the ACRS views have converged. I think
18 they have converged and I think that is very important. It
19 certainly helps the Commission.

20 I guess maybe you can answer a question for me. The
21 ISAP program, it is my understanding, is fairly resource-
22 intensive and maybe that's the reason that a great number of
23 utilities have not looked upon it as something that they
24 thought was the right way to go. I've been under the
25 impression that there are not too many utilities that favor the

1 ISAP program. Perhaps you could comment on that. Have you
2 looked into that and what are your feelings on that?

3 MR. SIESS: Well, it varies. For example, as I think
4 you know, there is one utility that was in the pilot ISAP
5 program with two plants and they've been on their knees before
6 the staff begging to have the program extended to their other
7 two plants, so they are extremely enthusiastic. The staff's
8 questionnaire --

9 CHAIRMAN ZECH: How about some of the others?

10 MR. SIESS: The staff's questionnaire got back quite
11 a few people that were interested, but it was not a majority.

12 MR. WARD: Twelve percent is what we were told
13 yesterday.

14 MR. SIESS: Twelve utilities out of 56 utilities I
15 think is approximately 12 percent of the plants.

16 The questionnaires that were sent out asked the
17 question based on the proposal which existed then, which
18 required a license amendment on the agreed-on schedule, which a
19 number objected to. I don't think any were polled after that
20 was dropped.

21 I don't think all the utilities see a need. I talked
22 to one of the relatively new plants. I visited Clinton last
23 week or the week before and they are not interested in a PRA
24 and they don't intend to have one and they weren't interested
25 in ISAP. I said "Why not?" "Well, we don't have that many

1 outstanding issues." They don't. They are a brand new plant.
2 I looked at their SIMS report and they didn't have that many.
3 I would like to go back in five years and see how many they've
4 got. We haven't quit putting new issues out, but a lot of them
5 object to the license amendment. A lot of them just thought it
6 was too much hassle.

7 Let me make a comment about the PRA. You said that
8 the staff and ACRS are coming together. I think the industry
9 is coming around. Perhaps you have read an EPRI report that
10 just came out, a survey made of 10 utilities that had PRA's,
11 how they got into it and what uses they made of them, and they
12 all thought they were beneficial, cost beneficial, and I found
13 this quite interesting in view of the fact that the uses made
14 by the various utilities varied tremendously. Some were hardly
15 using and some were using them extensively, but they all
16 thought they were beneficial not only to their operation, their
17 reliability but to the health and safety of the public.

18 So I think the industry is coming around. I think
19 they may need a push. I thought it had a carrot. As far as
20 resources, it is going to be demanding on NRC resources.

21 CHAIRMAN ZECH: Yes.

22 MR. SIESS: Because a real ISAP approach to all
23 outstanding issues, a risk-based approach which we've used in
24 the SEP on the old plants, said everything didn't have to be
25 done just because it was it was in the standard review plan or

1 just because it was imposed. If a PRA, if a safety analysis
2 showed that it really did improve things on that plant or if
3 wasn't cost effective or if I fix A it would take care of B or
4 A would take care of B and C and the project managers in the
5 SEP had to negotiate with the technical reviewers in the
6 standard review plan and that's what you'd have with ISAP. It
7 would be a quite different way of doing business for the staff.
8 There would have to be a lot more judgment exercised, PRA-based
9 judgment rather than standard review plan based judgment, if it
10 does take judgment to interpret the standard.

11 It would be a different story but I think it would be
12 much more effective. I think we'd see more things implemented
13 in a more timely manner and a more effective manner.

14 COMMISSIONER ROGERS: If I may ask a question about
15 the PRA experience that you've seen so far, do you have any
16 feeling about who did those PRA's, to what extent the utility
17 staff conducted them and to what extent they were done from the
18 outside?

19 MR. SIESS: Very little. Northeast Nuclear -- they
20 have a 12-man staff doing them. They do their own. Consumers'
21 Power, for example, on Big Rock, they had two of their people
22 from the plant involved in it and that was, they said, one of
23 the great advantages, what they learned about their own plant.
24 Commonwealth Edison's design PRA was done by somebody else.
25 The Byron Braidwood sort of extension, they were replicates of

1 Zion, it was all somebody else's doing. They are not really
2 into it. It varies all over the place.

3 The ones that have been most involved and not just
4 with a separate PRA group but getting people out at each plant
5 involved both in doing it and using it, they are the ones that
6 have the greatest enthusiasm. The more they are involved in
7 it, the more enthusiastic they are.

8 It is interesting because Duke has never submitted
9 their PRA's. They have got them for every plant, three plants.
10 They have never submitted them to NRC for approval. When they
11 want to use the PRA as an argument on whatever basis, they
12 build their argument on the basis of the PRA and submit the
13 package and let the package stand or fall on its own feet, but
14 they don't cite a previously approved PRA, which would be very
15 difficult because the PRA is a living document. If it was
16 approved last year, who knows how good it is this year, but
17 they simply go back to the PRA as a basis for their analysis,
18 present that to the staff and they have won some interesting
19 arguments according to them.

20 Everybody does it differently. This report is
21 fascinating. There are also interviews with I think 18 staff
22 members, NRC staff members, as to what they think about the
23 uses of PRA and that also is quite interesting. I commend it
24 to you. I don't have the title off-hand but I could get it for
25 you.

1 COMMISSIONER ROGERS: Thank you.

2 CHAIRMAN ZECH: Are there any other comments?

3 [No response.]

4 CHAIRMAN ZECH: Are there other subjects to bring up?

5 MR. MICHELSON: I have a related comment to what
6 we're discussing. In the ACRS letter we pointed out a
7 recommendation that they include both external as well as
8 internal initiators in the PRA. It is probably appreciated
9 around the table that external initiators at the present time
10 are not well handled; in fact, in most of the PRA's they
11 simply are not considered.

12 As to how much of an outlier, how much of a
13 contributor to risk these external events are is really
14 somewhat unknown because of the goodness of the PRA's that have
15 tried to handle the questions so far, so we have asked that
16 this be looked at carefully. The staff addressed this in their
17 reply. They are setting up certain kinds of groups, task
18 forces to look at the questions, to come up with some criteria
19 on how we would even handle external events.

20 I think this is the right direction to go. The only
21 comment I would like make on it is that it is a very urgent
22 item in terms of getting it done expeditiously. The reason I
23 say this is that we are trying now to review the ABWR. It is
24 inconceivable that we can give a final FDA on the ABWR without
25 the severe accident issue having been thoroughly reviewed and

1 taken care of.

2 The schedule is going to be very tight to get the
3 severe accident information. It has to come somewhat in
4 conjunction with the PRA towards the end of the business, but
5 we have to start developing early on the criteria to be used
6 and so forth in an analysis. Steps are being taken. I am only
7 urging that every effort be made to take them.

8 CHAIRMAN ZECH: I appreciate your comment.

9 Are there other subjects?

10 MR. SIESS: Can I ask you a question?

11 CHAIRMAN ZECH: Yes, certainly.

12 MR. SIESS: I know the Commission has got a lot of
13 things within your responsibility and a lot of things to worry
14 about besides reactor safety. You have got waste management
15 and all those nice things, but in the area of reactor safety,
16 what issues are there besides severe accident? Isn't severe
17 accident the bottom line of reactor safety?

18 CHAIRMAN ZECH: Certainly that's the important way to
19 look at it.

20 MR. SIESS: We keep talking about it as if it is
21 something different or separate.

22 CHAIRMAN ZECH: Our mission is public health and
23 safety and of course severe accidents involve doing what we can
24 to prevent the release of radiation, so clearly that is the
25 purpose of what we're about -- so that's an understandable way

1 to put it. We don't want to harm the public. Public health
2 and safety is our mission and I think that is what you are
3 saying, you are alluding to, and I'd agree with you.
4 Certainly. There is no question about that.

5 MR. SIESS: It is not "an" issue in reactor safety,
6 it is "the" issue.

7 CHAIRMAN ZECH: It is the issue. It is what we're
8 about.

9 MR. SIESS: I can think of others.

10 CHAIRMAN ZECH: But this is certainly the focus of
11 our mission and the focus of your mission in advising us in
12 that regard, so no question about it. Protection of the public
13 health and safety is what it is all about.

14 COMMISSIONER CARR: I would only comment that I think
15 our mission is more to prevent severe accidents than it is
16 perhaps to handle.

17 MR. SIESS: Well, you could break the issue down. If
18 we do not have a severe accident, we're pretty much home free.
19 I could think of some accidents less than what we are calling a
20 severe accident, which incidentally hasn't been defined. There
21 are some accidents greater than Class 8 accidents that wouldn't
22 be severe accidents. If we had a LOCA and a containment leak
23 of 5% we could exceed -- under the worst meteorology we could
24 exceed Part 100 doses, but we wouldn't call that a severe
25 accident.

1 But basically our attention has been focused on
2 severe accidents and it is "the" issue. I am having trouble
3 finding it as "an" issue in the reactor safety area.

4 CHAIRMAN ZECH: Oh, I don't think you should have any
5 trouble finding it as the issue because it is the issue. I
6 don't think anybody would disagree with that.

7 MR. SIESS: No, I think what Mr. Carr is saying is
8 it's involved with prevention as well as mitigation and
9 certainly we'd all agree with that. Prevention is --

10 MR. SIESS: No question about that. We'd rather have
11 prevention.

12 CHAIRMAN ZECH: Exactly.

13 MR. SIESS: I hope we never have to mitigate one.

14 CHAIRMAN ZECH: Right. I would agree with that.

15 MR. WARD: That's kind of a truism. I agree with all
16 truisms.

17 COMMISSIONER CARR: It is also an emphasis on where
18 you put your budget money.

19 MR. WARD: Right. But if you believe in the concept
20 of defense in depth, that says that you should have means to
21 mitigate an accident in case you weren't really as smart as you
22 thought you were and all the things you did to prevent them
23 didn't work out. So we believe in defense in depth.

24 Okay, that means that we do have to provide some
25 effort, some technical effort, some resources and construction

1 and everything else for mitigation if we really believe in
2 defense in depth. Since we tend to have fixed resources, that
3 means we are going to have to take something away from
4 prevention resources to provide mitigation resources.

5 I don't know what the right balance is, 50 - 50? 90
6 - 10? 99 - 1? But there has to be a balance and there have to
7 be real resources devoted to mitigation if we believe in
8 defense in depth.

9 Too often I hear when someone starts coming in saying
10 gee, we've got to worry and do something about mitigation and
11 they tend to get written off because no, let's just concentrate
12 on prevention --

13 MR. SIESS: But it isn't that simple. We put water
14 in the containment to mitigate the consequences of a LOCA and
15 to keep the steam from blowing up the containment. We put a
16 containment there that mitigates the consequences of a core
17 melt that lets a lot of activity into the containment. We have
18 emergency plans to mitigate the consequences of a containment
19 failure, so I could draw a whole lot of barriers with the
20 prevention on one side and mitigation on the other and I have
21 never thought about where it would stop.

22 If we have releases, we could give the iodine pills
23 to mitigate those consequences and maybe that's where it stops.

24 CHAIRMAN ZECH: Yes.

25 MR. SIESS: Everybody defines it where they want it.

1 CHAIRMAN ZECH: Mr. Kerr?

2 MR. KERR: Two things I'd like to comment on. First
3 is NUREG-1150, with which you are familiar and on which you are
4 getting reports. This is said to be a very important part of
5 the severe accident program. We have seen a first draft and
6 have commented on it as have others. If it is to be an
7 important part of resolution of the issue, it seems to me it is
8 incumbent upon all of us to make certain that it is accurate
9 within the sources available and credible.

10 There has been some discussion of whether there
11 should be a peer review of the document in its filed form, and
12 while at this point I am not speaking for the Committee, it may
13 make a statement on this, I for one certainly believe that it
14 ought to be examined by a different objective group, call it
15 peer review or what. I think the credibility of that document,
16 if it is cited, and I assume it will be, as one of those things
17 that contribute to the resolution of the issues. It is very
18 important.

19 A second and I think unrelated comment I want to make
20 is that the existing regulations in the main come from a period
21 before WASH-1400, before we dealt with PRA's and used them very
22 much. It is very difficult to go back and reconstruct those
23 regulations but in some cases it seems to me we need to look
24 carefully at that possibility. I think particularly of
25 containment.

1 The containment criteria, design criteria that exists
2 for containment, with a few small exceptions, are based on our
3 postulated design basis accidents that came into existence in
4 the late 1960's and early 1970's, and before we took into
5 account really that core melts were at least credible.

6 We have a lot more information now and yet those
7 regulations for design still exist. This is not too important
8 for operating reactors. They are there. Nobody is going to
9 rebuild those containments unless we find out some things that
10 we don't now know. For new reactors, it does seem to me we
11 need to reach some sort of decision based not just on the
12 consideration of those design basis accidents that were used to
13 formulate today's regulations, but to take into account in
14 whatever way and I don't have a solution to the problem at this
15 point, but to take into account in whatever way is appropriate
16 the fact that we now know a lot more about the possibility of
17 severe accidents and what some of the consequences might be.
18 Therefore, we might arrive at some slightly different
19 conclusions about the way in which one ought to design
20 containments.

21 CHAIRMAN ZECH: All right. We appreciate your
22 comments.

23 MR. MICHELSON: May I reinforce Dr. Kerr's comment on
24 NUREG-1150. The peer review at the time it was performed did
25 not have the opportunity to review in detail how the external

1 events would be handled because that is still ongoing work as I
2 understand it and it is going to be only for Surry and Oyster
3 and Peach Bottom. At such time as the external event work has
4 been completed, I think it will be essential that the approach
5 in the work proceed in a good peer review. That is not
6 presently in the package, at least as I understand it.

7 CHAIRMAN ZECH: All right. We appreciate that
8 comment, too. Any other comments?

9 MR. WARD: I would just like to add or endorse what
10 Dr. Kerr said about the need for establishing some new design
11 criteria for containments based on present knowledge. Twenty
12 to twenty-five years ago the decision was made that although we
13 needed to have containments for severe accidents, we didn't
14 know enough about the nature of severe accidents to explicitly
15 design the containments for those. We sort of finessed the
16 problem by designing them for kind of an artificial set of
17 circumstances and that has probably worked out pretty well we
18 think. It worked great at TMI-2. The present analyses say
19 many of these containments are pretty good. To what extent
20 those conclusions are a little bit self serving, I'm sometimes
21 a little cynical about them.

22 We now know an awful lot more about severe accidents
23 than we did 25 years ago. I really think it is time to come to
24 grips with it and come up with a new, better set of design
25 criteria. I don't see either the agency or the industry really

1 working toward that. Nobody is paying any attention to it.

2 MR. MICHELSON: If it isn't done pretty soon, it
3 isn't going to be timely for ABWR and some of these other
4 advanced concepts that we are in the review process on already.
5 How do we get these new ideas which the severe accident policy
6 said we would incorporate into future plants? How are they
7 going to get in if we don't see some real activity in that area
8 soon?

9 CHAIRMAN ZECH: Why doesn't the ACRS give us a paper
10 in that regard?

11 MR. SIESS: We are not smart enough.

12 MR. WARD: That is one reason.

13 CHAIRMAN ZECH: Now we have a little discussion.

14 MR. SIESS: If by designing new design criteria, I
15 don't think we have the information.

16 CHAIRMAN ZECH: That's why we don't have a paper.

17 MR. SIESS: We don't know what we are going to design
18 for direct containment heating, for steam explosion, for
19 hydrogen --

20 CHAIRMAN ZECH: When you figure it out, maybe you can
21 give us a paper.

22 MR. SIESS: What we have learned is what not to do.
23 We are not going to build any more low pressure capacity ice
24 condensers or low pressure capacity suppression systems, like
25 the Mark III or the ice condenser. We don't know whether to

1 design them for 60 psi or 75 or 100. We have learned something
2 but it is what not to do. We will work on it.

3 CHAIRMAN ZECH: Obviously the ACRS doesn't have an
4 unanimous conclusion but please do work on it. It is an
5 important issue. We should try --

6 MR. SIESS: I don't think we are 9 to 1 yet either.

7 CHAIRMAN ZECH: Maybe you won't even be 9 to 1.

8 Are there any other comments?

9 COMMISSIONER ROBERTS: I would like to ask a question
10 unrelated to anything we have talked about. As I understand
11 it, you didn't have the benefit of commenting on the policy
12 statement on maintenance but there was a staff requirements
13 memo that I will read from that says "The staff should
14 periodically brief the ACRS and seek their input during the
15 development of the notice of the proposed rulemaking."

16 Is that occurring?

17 MR. MICHELSON: Yes. The answer is yes but we
18 haven't briefed you yet because the staff is still developing
19 its paper.

20 COMMISSIONER ROBERTS: Are you working with the
21 staff?

22 MR. MICHELSON: Yes. One member of the Committee
23 attended all three days of the workshop. There is a staff
24 briefing for August. There is a detailed subcommittee
25 presentation scheduled for Wednesday, full committee in

1 September, and a letter from the Committee will be forthcoming
2 in September. That is our present schedule, if nothing happens
3 in the meantime.

4 CHAIRMAN ZECH: Thank you very much. Other comments
5 from my fellow Commissioners?

6 [No response.]

7 CHAIRMAN ZECH: Let me thank you for a very important
8 presentation today on ISAP and IPEs, PRAs, and other very
9 important issues. I appreciated the discussion on the severe
10 accidents. Certainly we have put a lot of effort into that and
11 as has the staff recently, as has the Committee, too.

12 I will look forward to hearing from the staff next
13 week. I know the Commission looks forward to coming to some
14 closure on this IPE, ISAP issue soon. I appreciate what the
15 ACRS has done in working with the staff on this issue. I think
16 we have come a lot closer together than we were some time ago.
17 That is encouraging to me. We do want to make the best
18 decision we possibly can but we will make a decision. We
19 appreciate very much the work of the ACRS in this and other
20 fields that you are involved in continually.

21 Thank you very much for a fine briefing. We
22 appreciate it.

23 We stand adjourned.

24 [Whereupon, at 2:55 p.m., the briefing was
25 concluded.]

CERTIFICATE OF TRANSCRIBER

This is to certify that the attached events
of a meeting of the U.S. Nuclear Regulatory Commission
entitled:

TITLE OF MEETING: PERIODIC BRIEFING BY THE ADVISORY COMMITTEE
ON REACTOR SAFEGUARDS

PLACE OF MEETING: Washington, D.C.

DATE OF MEETING: THURSDAY, JULY 16, 1988

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

Maulana Nations

Ann Riley & Associates, Ltd.

PERIODIC BRIEFING BY THE
ADVISORY COMMITTEE ON REACTOR
(SAFEGUARDS PERSONNEL)

2:00 P.M., July 14, 1988

CARROLL



SHEWMON



WYLIE



LEWIS



SIESS



WARD



KERR



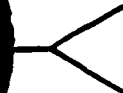
MICHELSON



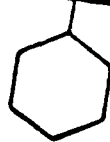
PARLER



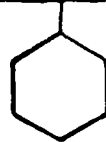
CHILK



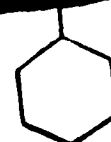
COMMISSIONER
ROGERS



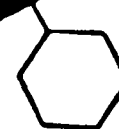
CHAIRMAN
ZECH



COMMISSIONER
ROBERTS



COMMISSIONER
CARR





UNITED STATES
NUCLEAR REGULATORY COMMISSION
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
WASHINGTON, D. C. 20555

May 10, 1988

The Honorable Lando W. Zech, Jr.
Chairman
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Chairman Zech:

SUBJECT: PROPOSED GENERIC LETTER ON INDIVIDUAL PLANT EXAMINATIONS AND
THE PROPOSED INTEGRATED SAFETY ASSESSMENT PROGRAM II

During the 337th meeting of the Advisory Committee on Reactor Safeguards, May 5-7, 1988, we discussed a draft generic letter prepared by the NRC Staff as guidance for Individual Plant Examinations (IPEs) for severe accident vulnerabilities. We also discussed the proposed Integrated Safety Assessment Program II (ISAP II) and related information. Both of these topics have been considered during previous meetings of the ACRS, and we reported our preliminary views on the IPE generic letter in our report of June 9, 1987 and on the ISAP process in our report of July 15, 1987. The ACRS Subcommittee on Severe Accidents met on April 26, 1988 to discuss the latest version of the proposed generic letter on IPEs. The ACRS Subcommittee on Generic Items met on April 27, 1988 to discuss ISAP II. We also had the benefit of discussions on both topics with members of the NRC Staff and industry representatives, as appropriate, and the availability of the documents referenced.

These two programs developed by different NRC Staff groups have not been integrated, even though they deal with many of the same issues. It is for this reason that we are providing our comments on both programs in a single letter. The present Staff positions, as we understand them, are that the IPE generic letter should be issued in its present form and that implementation of the ISAP II should not be pursued at this time. We disagree with both of these positions. Instead, we believe that the IPE program should be expanded to incorporate all outstanding safety issues, not just those under the severe accident rubric. The generic letter should be revised accordingly. The ISAP II approach should then serve as the instrument by which changes in plant equipment or procedures identified by the IPE could be evaluated and assigned priority by the licensees and reviewed by the NRC Staff.

May 10, 1988

We consider the most recent draft of the IPE generic letter an improvement over that which we commented on in our report of June 9, 1987. However, in our report of March 15, 1988, we expressed our concern that there was a lack of coherence among the several principal regulatory programs of the Commission. We believe the IPE program offers an opportunity for providing improved coherence. In its present form, the generic letter will, instead, continue the current compartmentalization.

We believe that IPE and ISAP II can be recast in a reasonable time and with reasonable expenditure of resources. Radical changes are not necessary, but some modifications and improvements in focus are. We propose a program characterized as follows:

- The purpose of IPEs would be acknowledged as broader than the original intent of "searching for outliers." Instead, it would call for a general risk reassessment of each plant using the body of information available from the TMI-2 accident experience, development of PRA, existing severe accident research, and the general experience of about 1100 reactor-years. All outstanding safety issues, USIs, GIs, etc., would be subsumed by the program. It would be made clear that the intent of the program would be for this to be the end of new requirements for licensees. This would be changed only by the advent of important new information or experience.

We note that the IPE program proposed by the NRC Staff already has been expanded well beyond the "search for outliers" concept. In subsuming USI A-45, "Shutdown Decay Heat Removal Requirements," into the IPE, for example, the Staff has taken a major step in the direction we are suggesting. Our proposal extends this to a more logical conclusion.

- Each licensee would be required to conduct a substantial and systematic risk analysis for their plant. We recommend that such an analysis would be a full scope PRA (at least Level 2) and include both external and internal initiators. We acknowledge the difficulties inherent in making this an immediate requirement. However, it should be possible to develop a phased approach with the intent that within several years each plant would have been analyzed by state-of-the-art methods.
- Conclusions about results of the risk analysis and necessary changes in actual plant systems and procedures would be determined by the licensee and reviewed by the NRC Staff through

May 10, 1988

the ISAP process. We believe the risk-based approach embodied in ISAP is the most logical means for resolving most safety issues. The risk analysis used in the IPE for each plant will be available for use by the licensee and NRC Staff in their ISAP evaluations.

We believe that the approach we have outlined above will provide the opportunity for a more integrated resolution of severe accident issues and other outstanding safety and licensing issues as well. We endorse current efforts on the part of the NRC Staff to formulate an integrated program.

Sincerely,



W. Kerr
Chairman

References:

1. U.S. Nuclear Regulatory Commission, NRR Generic Letter 88-02, dated January 20, 1988, "Integrated Safety Assessment Program II (ISAP II)."
2. Memorandum dated March 1, 1988, from T. Speis (NRC) to D. Ross (NRC), et. al., "Commission Paper on Integrated Approach to Implementing the Commission's Policy on Severe Accidents" (Draft).
3. Memorandum dated April 1, 1988, from T. Speis (NRC) to W. Kerr (ACRS), "Documentation Necessary for the Initiation of the Severe Accident Policy Implementation" (Draft Predecisional Attachments).
4. Draft SECY Paper (undated), Integrated Safety Assessment Program II (Predecisional Document), received April 26, 1988.