UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

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In the matter of: :

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METROPOLITAN EDISON COMPANY : Docket No. 50-289

: (Restart)

(Three Mile Island Unit 1) :

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25 North Court Street,

Harrisburg, Pennsylvania

Friday, December 19, 1980

The evidentiary hearing in the above-entitled matter was resumed, pursuant to adjournment, at 8:30 a.m.

BEFORE:

T

IVAN W. SMITH, Esq., Chairman,
Atomic Safety and Licensing Board

DR. WALTER H. JORDAN, Member

APPEARANCES:

On behalf of the Licensee, Metropolitan Edison Company:

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On behalf of the Commonwealth of Pennsylvania:

ROBERT ADLER, Esq.
Assistant Attorney General,
505 Executive House,
Harrisburg, Pennsylvania
WILLIAM DORNSIFE,
Nuclear Engineer

On behalf of Union of Concerned Scientists:

ELLYN WEISS, Esq.,
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On behalf of the Regulatory Staff:

JAMES TOURTELLOTTE, Esq.
JAMES M. CUTCHIN, IV, Esq.
Office of Executive Legal Director,

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Petitioners for leave to intervene pro se:

STEVEN C. SHOLLY,
304 South Market Street,
Mechanicsville, Pennsylvania

On behalf of ANGRY:

GAIL BRADFORD

C O N T E N T S

WITNESS:	DIRECT CROSS	REDIRECT RECROSS	BOARD	CROSS BY BOARD
John J. Zudans				
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P R O C E E D I N G S

CHAIRMAN SMITH: Are we ready to go on the record?

Ms. Weiss, do you want to give your report?

MS. WEISS: I was unable to go over the rebuttal testimony that was given yesterday, oral rebuttal with Mr. Pollard.

He is still sick in bed. As I told the parties when I came in this morning, though, I can do some further questioning of Mr. Dudans this morning.

CHAIRMAN SMITH: Ms. Bradford is not here. Let's proceed with your examination of Mr. Dudans.

MR. BAXTER: Based on that, Mr. Chairman, I assume my witnesses are excused today. I will have them here for the first order of business on Monday.

CHAIRMAN SMITH: Right.

Ms. Weiss, is there any possibility that Mr. Pollard will not be able to attend Monday?

MS. WEISS: I do not know how to answer that question. I do not know what he has got or how long it is going to last.

CHAIRMAN SMITH: I would hate to bring everybody here simply to receive a report that we all go home again. Unless we can specifically arrange for other testimony for Monday, substitute testimony, before we

adjourn today, let's decide either for a method of communication in which we learn that we go forward with Mr. Pollard's participation or we have substitute business to attend to.

Thereupon,

JOHN J. ZUDANS

the witness on the stand at the time of adjournment, was recalled on behalf of the NRC staff and was further examined and testified as follows:

CROSS EXAMINATION (Resumed)

BY MS. WEISS:

Q On question seven, page 4 of your testimony you state that the staff's position requires that the safety relief valve functon as expected during design transient and accident conditions.

I would like you to specify that a little more for me if you can.

How is it that the valves are expected to function under these various conditions?

A Well, the valves are expected to open at the set point at which they have been set and close at a certain set point below that. That is the function that they are supposed to perform.

Q Regardless of the nature of the event that causes the pressure to reach the set point?

(Pause)

As far as the valve is concerned, it does not know what the event is. If the pressure builds up, yes, it is immaterial what event.

CHAIRMAN SMITH: Ms. Weiss, Ms. Bradford has arrived and she does have a conflict later on this morning. So when you find a logical place to stop your questions --

MS. WEISS: This is as good as any.

(The witness was excused)

(Laughter)

CHAIRMAN SMITH: Ms. Bradford, simply because the name plate for ANGRY is at that place does not mean you are required to sit there. You can move it around wherever you can find space.

(Pause)

We will hear your answer; that is, ANGRY's answer to licensee's objections to the receipt into evidence of the Beyea testimony and ANGRY contention 5D, which is -- I might as well read it into the record now.

"The NRC order fails to require as conditions for restart the following modifications in the design of the TMI-1 reactor, without which there can be no reasonable assurance that TMI-1 can be operated without endangering the public health and safety: the installation of effluent pathways or systems for the rapid filtration of large volume

of contaminated gases and fluids."

So if you will address the licensee's objection to Dr. Beyea's testimony, I will give Mr. Cutchin an opportunity and everybody an opportunity to make final comments.

Ms. Bradford?

ORAL ARGUMENT ON BEHALF OF ANGRY

BY MS. BRADFORD:

This is a response by the Antinuclear Group of York to the licensee's objections to Dr. Beyea's testimony on ANGRY contention 5D.

I would like to just briefly summarize what the objections were and then go through them point by point.

CHAIRMAN SMITH: I want to see if we cannot make a more comfortable microphone arrangement for you.

(Pause)

MS. BRADFORD: I have two exhibits here which I did not get a chance to copy, and I wonder whether someone would make copies now, if that would be convenient.

CHAIRMAN SMITH: I guess so.

MR. TROWBRIDGE: I probably have a copy of one of your exhibits. I do not know what the other one is.

MS. BRADFORD: One is the December 11 letter from the ACTS.

Is that what you have extra copies of?

MR. TROWBRIDGE: Yes.

MS. BRADFORD: The second is the September 8, 1980 from the ACRS to chairman Ahearne.

(Pause)

MR. TROWBRIDGE: No.

(Pause)

CHAIRMAN SMITH: Proceed.

MS. BRADFORD: Thank you, sir.

Licensee has objected to Dr. Beyea's testimony on the need for rapid filtration capability for the following reasons: one, as beyond the scope of ANGRY's original contentions; and two, inconsistent with the board's rulings as to the admissibility of contentions.

Additional objections in the body of licensee's brief are that ANGRY has never briefed or argued the admissibility of its contention 5D as a hydrogen control contention of a Class 9 accident contention; that ANGRY did not seek a waiver of 50.44 or include 5D along with 5A in the certification to the Commission on hydrogen issues.

The licensee also claims that the accident scenarios in the Beyea testimony failed to discuss the nexus between such sequences and the TMI-2 accident.

In closing, licensee adds that ANGRY has an appropriate forum for this concern in the proposed rulemaking on consideration of degraded or melted cores in

safety regulation.

Scope and admissibility of ANGRY 5D:

transcript 605 to 606 of the first special prehearing conference, the board overruled the licensee's original objection to 5D by admitting the contention subject to further specifications during discovery.

In response to the licensee's discovery request, ANGRY filed on March 17, 1980 the response that filtered venting systems proposed by ANGRY is described in UCLA Engineering 7775, a report entitled "Post-Accident Filtration as a Means of Improving Containment Effectiveness," by B. Gossett, et al.

The project director for the study was David Okrent who is now on the Advisory Committee for Reactor Safeguards for the NRC.

In its brief the licensee acknowledges that we specified the exact study which we would later file testimony i support of. But then the brief does not mention the citation and discussion, claiming instead that the licensee concluded that ANGRY's contention was not based on or even related to this study.

In fact, the licensee was informed clearly and directly seven months ago that ANGRY's concern in 5D was addressed in a study by D. Okrent in UCLA Engineering 7775. Any confusion about our response should have been cleared up

by the licensee long before October 15, 1980 when Mr. Trowbridge mentioned having objections to the subject matter specified by us as the concern of ANGRY 80.

The NRC staff also received our response to the licensee interrogatory seven months ago. The staff had additional warning as to the nature of our concerns through our request to Mr. Tourtellotte for a copy of UCLA Engineering 7775, which he kindly provided to us in the first place.

The licensee claims ANGRY's concern is limited to enhancement of the capacity of the rad waste system components whose design basis was exceeded in the TMI-2 accident.

As is also discussed in our responses to interrories, ANGRY would have been glad to present testimony on this concern also. However, we were not able to. We add in passing here that we hope the board will still examine this problem and that the licennee -- that the licensee outlines as another part of our concern that for lack of researchers we are not able to be of assistance to the board in further developing testimony on that portion of that concern.

In our March 17, 1980 response to the licensee, we stated specifically that the system described in the Okrent study should be installed at TMI-1 for rapid

Filtration of contaminated gases.

In the testimony of Dr. Jan Beyea on page 2 in response to the second question -- do designs for filtered venting systems exist -- Dr. Beyea answers, "Yes. See reference eight, Post-Accident Filtration as a Means of Improving Containment Effectiveness, UCLA Engineering, 7775."

Further discussion of this system, the advantages, cost effectiveness, and the effectiveness in mitigating releases from the TMI-2 accident or close variations on the TMI-2 accident follow.

Dr. Beyea conducted the study for the President's Council on Environmental Quality on "Some Long Term Consequences of Hypothetical Major Releases of Radioactivity to the Atmosphere from Three Mile Island," September 1979 report to CEQ, which follows the consequences of hypothetical accidents similar to the TMI-2 event sequences.

The chart from this study is included in Appendix B in Dr. Beyea's testimony. Other accident scenarios not related to TMI-2 closely are also discussed to present what mitigating effects the system would have, including those that are and are not accidents worse than design basis.

While the testimony should be considered in light of the mitigation of consequences of accident similar

to TMI-2, ANGRY also suggests that it is useful to explore needs for other needs for the equipment.

ANGRY contends in 5D that installation of the system in the Okrent study should be a condition to the restart of Unit 1.

Dr. Beyea suggests, page IV, that as a first step towards this goal, the licensee should be required to complete the study investigating the capability -- the compatiblity of the TMI-1 safety systems with the filtered venting concept.

And at page IV Dr. Beyea recommends against the restart, if it were found that in the study that filtered venting were not compatible with the TMI-1 safety systems.

In a recent letter just received by the parties, the December 11, 1980 letter from the ACRS to Chairman Ahearne on status report on the restart of TMI-1, Dr. Moeller and Dr. Okrent, at page 4, add additional comments.

"We recommend that the restart" --

DR. JORDAN: Page what?

MS. BRADFORD: Page 4.

CHAIRMAN SMITH: Page 3.

MS. BRADFORD: Page 3. You are right. It is on the last page.

DR. JORDAN: You are speaking of the additional comments of Moeller and Okrent; is that right?

MS. BRADFORD: Yes.

DR. JORDAN: Could we have just a moment to read that. I have not seen that before.

(Pause)

DR. JORDAN: Thank you.,

MS. BRADFORD: "We recomend that the restart of Three Mile Island Nuclear Station Unit 1 be made contingent on a commitment by the licensee to perform within a reasonable period following restart a study such as that recommended in the ACRS letter of December 13, 1979 referred to above."

Above, the studies clearly identified to include filtered venting systems which have the potential formitigating accidents involving large scale core damage or core melting.

In conclusio, our contention has already been admitted by the board. Our exact concern was clearly identified in March 1980. And further, ANGRY's concern is largely shared by members of the ACRS, including Mr. Okrent who is an author of the report that the testimony of Dr. Beyea is based on.

Dr. Beyea clearly shows nexus to the TMI-2 accident in his discussion of the need for thefiltered

venting equipment, and the testimony presents remedies available for the board to rule upon which are similar to recommendation by members of the ACRS, though not exactly the same.

ANGRY 5D is not a hydrogen control issue. ANGRY 5D should not be considered in the same light as the issue of hydrogen control which relates to the specific rule, 50.44. This rule does not apply to the filtered venting systems in the Okrent study.

CHAIRMAN SMITH: What you are saying is very important to us. Would you speak slowly and loud.

DR. JORDAN: We are having a little trouble hearing. We want to hear particularly what you say. It is not exclusively hydrogen control?

MS. BRADFORD: ANGRY's is not a hydrogen control issue, essentially. ANGRY 5D should not be considered in the same light as the issue of hydrogen control, which relates to a specific rule.

CHAIRMAN SMITH: Is it your view, then, that the ACRS members and the ACRS members' separate comments of December 11 and the ACRS letter of December 8 do not associate filtered venting with hydrogen control?

MS. BRADFORD: Clearly, they associate it with the issue in this hearing oin hydrogen control; it has been the question of the specific rule, 50.44.

DR. JORDAN: Is it your position that it is a broader contention than hydrogen control? There are other mechanisms besides hydrogen burning that would lead to containment pressure beyond the ability of the containment to hold them.

Is that the point, that it is broader, that there are other ways? I guess Dr. Beyea mentioned some of those.

MS. BRADFORD: I think that is accurate.

DR. JORDAN: All right.

(Board Conferring)

MS. BRADFORD: ANGRY 5D is a Class 9 issue as defined by the board and as admitted by the board. The board question on the Class 9 issue calls upon the staff to first tell the board all of the Class 9 scenarios which have a nexus t the TMI accident sequence and for each scenario, tell the board specifically what measures the staff has taken to mitigate the consequences.

Even if the staff takes the position that all the TMI fixes will totally prevent Class 9 event, Dr. Beyea's testimony is still relevant in relation to mitigating the consequences of TMI type 2 scenarios.

Because the board has not decided yet on this issue, the board has required licencee to develop emergency procedures for dealing with Class 9 accidents. The issue of

dealing with TMI-2 type accidents is still -

CHAIRMAN SMITH: Back up, if you please. What did you say the board did?

MS. BRADFORD: The staff --

CHAIRMAN SMITH: Or the staff? Would you restate your position as to what you think the board did with respect to emergency planning and Class 9? You used the words "emergency" and "Class 9" pretty close together. I want to hear it again.

MS. WEISS: She said the staff required licensees to provide emergency procedures for dealing with core cooling.

MR. TROWBRIDGE: Why don't we have it read again rather than Ms. Weiss's translation of it.

CHAIRMAN SMITH: Would you read the point again?

MS. BRADFORD: Ms. Weiss was accurate.

CHAIRMAN SMITH: The last time you mentioned the board. Go on from there.

Ms. Weiss, you may have heard it, you see, but I heard the words "board" and "emergency planning" and "Class 9" somewhere in close position, and I want to hear it again.

MS. WEISS: "Board" was in the sentence before.

CHAIRMAN SMITH: That may well be.

MS. WEISS: She said the board has not yet resolved the issue of whether the staff's measures to prevent the occurrence of Class 9 accidents are going to work. Then she said the staff has required emergency procedures.

CHAIRMAN SMITH: All right. That very well may be. That is what I want to find out.

MS. WEISS: I apologize for breaking in. This is Ms. Bradford's first oral argument to the board.

CHAIRMAN SMITH: the only demand we put upon her is to read a portion of her statement again.

MS. BRADFORD: Thank you, sir.

CHAIRMAN SMITH: I think you should help. If you can be helpful, you are encouraged to.

(Pause)

Why don't you just pick a point. I think Ms. Weiss is probably correct in her observation of what it is that started this. Read it again so I can follow it.

MS. BRADFORD: The board question on Class scenario -- on the Class 9 issue calls upon the staff to first tell the board all the Class 9 scenarios which have a nexus to the TMI-2 accident event sequence, and for each scenario tell the board specifically what measures the staff has taken to prevent or mitigate the consequences.

CHAIRMAN SMITH: Now, go on from there.

MS. BRADFORD: Even if the staff takes the position that all the TMI fixes will totally prevent Class 9 events, Dr. Beyea's testimony is still relevant in relation to mitigating the consequneces of TMI-2 accidents because the board has ot finished hearing this issue.

The staff has also required licensees to devise emergency procedures for dealing with Class 9 accidents. This issue of deling with TMI-2 type accidents is still an open question which has not been decided by board; whether measures that the staff claims may -- or that the staff claims or may claim will prevent core melt or severe core melt damage will actually do so.

Again, we quote the ACRS. This is from the September 8, 1980 letter.

DR. JORDAN: Would you point out where that is? Go ahead, we'll find it.

MS. BRADFORD: From Plesset to Ahearne, additional ACRs comments on hydrogen control and improvement of containment capability.

This is the last part of the letter at the top of the page on the right.

"For many reasons, we believe it is difficult with a high degree of confidence that the frequency of severe core melt, core damage, or core melt for reactors in operation or under construction is so low that it is not

prudent to aggressively pursue measures, both to prevent serious accidents and to mitigate them."

"We believe that the recommendation dated December 13, 1979 should be adopted and given priority by the NRC."

And that is a quote from the ACRS letter. Therefore, we have the right to present evidence on mitigating consequences of accident scenarios related to the TMI-2 accident.

Section five: the existance of a proposed rulemaking which may include the issue of filtered venting does not preclude admission of the issue in this hearing. The licensee identifies a rulemaking on "consideration of degraded cores or melted cores in safety regulations," which was noticed in 45 Federal Register, 65,475.

This procedure is in a preliminary stage, and our concern identified by Dr. Beyea's testimony may or may not be included. But even if it is included in that hearing, ANGRY still wishes to present testimony in this hearing.

ANGRY's primary interest in the issue of rapid filtration is that TMI-1 which is located some 12 miles from York have the capability presented in the Okrent study prior to restart.

We do not want to wait until the generic

issues for all reactors is resolved some years from now, nor is ANGRY contemplating going into the business of intervening in every NRC hearing available.

We are parties to this TMI-1 hearing because it directly affects our interest as local residents. We have identified a valid concern pointed out by the accident itself, and we to address the issue in this hearing.

Other proposed rulemakings are on issues admitted to this hearing. An example is emergency planning; that the NRC has decided that our concern as ANGRY 5D may be an issue that merits a new rulemaking, only further buttresses the importance of hearing the issue here.

Accordingly --

DR. JORDAN: I did not hear that sentence.

MS. BRADFORD: That the NRC has decided our concern of ANGRY 5D may be an issue that merits a new rulemaking only further buttresses th importance of hearing the issue here.

Accordingly, for all these reasons, ANGRY requests that the board receive into evidence Dr. Beyea's testimony on ANGRY contention 5D.

CHAIRMAN SMITH: Mr. Cutchin.

ORAL ARGUMENT ON BEHALF OF THE NRC STAFF

BY MR. CUTCHIN:

Thank you, Mr. Chairman.

In general, as I indicated earlier in the proceeding, the staff is in support of the licensee's view that the admission of this testimony is objectionable in this proceeding for a number of reasons.

The testimony addresses issues that are outside the scope of ANGRY's contention 5D as originally filed, as eventually "further specified" in its response to licensee's interogatory 5-2 which ANGRY elected to stand upon in response to the board's memorandum and order of the 23rd of June requiring further specification of contentions.

Moreover, neither the staff nor the licensee nor apparently the board, for that matter, has yet viewed ANGRY's contention 5D as having raised the issues now thought to be addressed by Dr. Beyea's testimony.

Additionally, although ANGRY was -- ANGRY was represented at the meeting at which a number of intervenor's, licensee, and staff discussed the grouping and subject matter of various contentions, just prior to a prehearing conference several months ago, ANGRY never objected to the classification of that contention 5D as a general design contention nor to having it litigated as such.

Clearly, the testimony addresses issues not raised by ANGRY in accordance with the ruling of this board and the Commission. The board concluded in its first special prehearing conference order dated December 19, 1979

that opening this proceeding to general litigation of unspecified Class 9 accidents was not appropriate.

The board said such was particularly inappropriate because the board should be able to find at least a reasonable nexus between the accident that occurred at TMI-2 and matters sought to be litigated in this TMI-1 restart proceeding.

Dr. Beyea's testimony makes no attempt to relate the testimony to likely but unspecified accident sequences. Instead, it speaks to possible or plausible situations and what might or might not happen.

As to ways which the containment could be breached and as to whether the testimony should be considered as relating to hydrogen control contentions, these issues sought to be raised also were not raised in accordance with the guidance given by the Commission in its ruling in CLI 80-16 in which in order to raise such contentions, an intervenor was required -- any party was required to specify specific scenarios and address the likelihood of their occurrence.

Finally -- and I think very importantly -- now that this matter has been identified by the Commission as the subject of a proposed rulemaking, one must be mindful of the general rule of the Commission that a true generic issue should not be considered in individual license proceedings,

but should be handled in rulemaking.

The Commission has indicated that at least the generic safety question should be resolved whenever possible. And this issue has been specifically identified in question 5 in the October 2 advanced notice of proposed rulemaking discussed a moment ago by Ms. Bradford.

Again, although the board may consider generic issues, I think the rule in ALAB 2-18, Potomac Electric Company, Douglas Point Nuclear Generating Station, 8 AEC-79 1974, indicates that it should not be the ordinary practice.

That is all I have.

CHAIRMAN SMITH: Let's hear from the Commonwealth now.

MR. ROBERT ADLER: Commonwealth has chosen not to take a position on this matter. We have nothing further to add.

ORAL ARGUMENT ON BEHALF OF LICENSEE

BY MR. TROWBRIDGE:

MR. TROWBRIDGE: Mr. Chairman, it seems to me that ANGRY's response to our objections in some respects fails to address points that we made in the objection. In other respects, it seems to me erroneous.

Let me deal first with the question as to whether or not the Beyea testimony is outside the scope of the contention. I ask the board again to look at the

contention again which talks about installation in effluent pathways of filtration systems.

I think a reasonable reading of that is that ANGRY is referring to pathways that exist and that were involved in the TMI-2 releases.

I did not hear any reference by ANGRY to the point that we made that in the first special prehearing conference at trascript 605, 606, ANGRY's counsel explained that contention 5D referred to a design modification that has been proposed in studies that have been done on the problem connected with the accident at TMI-2.

At the time of the contention there were no studies of TMI-2 to our knowledge which proposed a containment filtered venting system, although there were studies, of course, that commented on the capabilities of the existing rad waste system.

ANGRY is correct that in response to our interrogatory, what systems are you talking about, there was a reference to the UCLA study. I would call attention to the fact in the total context of the interrogatory which is fully quoted in our statement of objections, that it was apparent or certainly a reasonable construction of ANGRY's response that it was still talking about the "TMI rad waste system, and more specifically about enhancing those TMI-1 components of the rad waste system, corresponding to those

components of TMI-2 for which design bases were exceeded."

And lastly, I will not further elaborate argument made in our objections and reinforced by Mr. Cutchin that all through this process the licensee, the staff, and the board, to the best of our knowledge, ANGRY as well did not treat or consider its contention, either a Class 9 contention or as raising a hydrogen control issue.

I do not understand the distinction that Ms. Bradford tried to draw between the hydrogen control -- this is not a hydrogencontrol issue. But it is only a filtration -- filter system issue.

As we indicated in our objections, Dr. Beyea bases his case for a containment filter system in part -- not in entirety -- but in part on a generation and explosion of hydrogen causing a breach of containment. That is a scenario which is exactly what -- what we have been talking about before which went to the Commission on certification to decide whether or not -- under what ground rules that should -- that scenario should be considered.

The ground rules have not been met, as the Commission decided them, have not been met in this proceeding. The testimony, unlike the ground rules layed down by the Commission, and as further explained in post-decision memorandum by this board, the testimony does

not -- Dr. Beyea does not define the accident which results in hydrogen generation.

It contains no justification for assuming a breach of containment and gives no estimate or basis for doses to the public in the event of such breach. In other words, the testimony not only does not meet the criteria layed down by the Commission for hydrogen control contentions, but it effectively deprives the licensee of any opportunity to address the probability of the hydrogen generation or its impact on containment or to come to grips with any claims as to those effects.

As to the balance, to the extent that the Beyea testimony does not depend on hydrogen and hydrogen explosion, it simply postulates through either core melt or other rather ill-defined events which result in breach of containment.

The sequence of the event and the relationship to the TMI-2 accident, those are nowhere explained, and thus the Beyea testimony fails to meet the criteria layed down in early rulings by this board that it is necessaryto define the accident scenarios and their nexus to the TMI-2 accident, if the intervenor wishes to present a case based on a Class 9 event.

Looking over my notes, Mr. Chairman, I would add only one thing: I mentioned the fact that -- that

ANGRY's interrogatory response, which did reference a NCIA report -- it referenced also a discussion in the Bogovin Report which was a discussion of the capacity of TMI-2's conventional waste disposal systems only.

And it made no reference to another portion of the Bogovin Report which briefly discussed controlled filtered venting. Mr. Chairman, I would remind the board that in earlier proceedings where contentions were debated, the allowability of them were debated, debate was confined by the board to those parties immediately involved in the contention.

CHAIRMAN SMITH: Those parties?

MR. TROWBRIDGE: Who were immediately involved in the contention, either asserting or opposing.

CHAIRMAN SMITH: Referring to Ms. Weiss?

MR. TROWBRIDGE: I am anticipating Ms. Weiss.

(Board Conferring)

DR. JORDAN: Mr. Trowbridge, suppose the intervenors were to prevail on the assumptions of the Class 9 contentions, that the fixes proposed are not adequate, that one has to prepare for the possibility of a Class 9 in that you do make provisions for population evacuation out to the 10 mile limit.

And would not then the licensee be proposing that rather than deny restart, that mitigation of Class 9 is

the proper route, and that filtered venting is the most likely route for mitigating the Class 9 accident.

That is -- wouldn't that be the licensee's position under those circumstances?

MR. TROWBRIDGE: Mr. Chairman and Dr. Jordan, I do not think that we have intended to express an opinion on the merit. Filtered venting, from what I have seen of the issue -- and I know it has been tried in other proceedings -- is an enormously complicated technical issue which properly addressed would mean days of hearing and extensive testimony.

I am simply saying that the place to do this, particularly on this issue, which is a fairly generic issue which -- in connection -- which as suggested by the Commission in its own rulemaking proposals, utilities with common problems would be grouped together and address hydrogen control or other issues on a group basis where they pool their resources which they will very much need to do.

And this is peculiarly the filtered venting concepts. It should be approached on an industry-wide basis and not the burden of one licensee under a condition of a restart while the rest of the world continues to operate without filtered venting.

DR. JORDAN: Suppose the board and the licensee and the staff had been alert enough at the time

that contention 5D was proposed --

MR. TROWBRIDGE: I did not hear you.

DR. JORDAN: Suppose the board, the staff, and the licensee had been alert enough to have read the contention as a possible -- as applying to the containment as well as to, say, the other buildings? Can't we read carefully the answers to the licensee's interrogatory -- would you have argued at the time that the contention should have been turned down?

MR. TROWBRIDGE: Dr. Jordan, let me take this is two bites: had we at the time that we were debating the allowability, back at that first special prehearing conference, had any notin that what we were talking about here was mitigation of a major Class 9 event, we would certainly have objected to and would have asked the board to treat it as it did treat other Class 9 contentions advanced without the scenario or nexus.

As to had we recognized, our thought at the time of the interrogatories that -- that agreement to talk about a filtration system designed for the Class 9 event, I do not know that we had any obligation to do anything.

The board has previously ruled, for example, in rejecting ECNP's September 1980 specification to its emergency planning contentions, that the process of further specifying contentions cannot be used to expand those

contentions beyond the scope as originally admitted.

I am not sure we would not have said something, but I would have absolutely no obligation to do more than object to the testimony as outside the scope if in fact it was advanced.

MS. WEISS: Mr. Chairman?

CHAIRMAN SMITH: Ms. Weiss. We are going to permit Ms. Weiss to comment. Her own interests and her own contentions are so closely related to this issue that I think she has an interest in it.

In addition to that, we are -- we really want to be well informed on the law that is involved, too.

ORAL ARGUMENT ON BEHALF OF
THE UNION OF CONCERNED SCIENTISTS
BY MS. WEISS:

My comments will be very brief. I would just like to get on the record telling the board that the Union of Concerned Scientists supports the admission of this contention. I have not parsed the admission -- I have not parsed the language of the original contention nor of the answers to interrogatories.

I am not going to offer an argument to you on whether or not this testimony was fairly or should have been known to be fairly within the scope of the original contention.

What seems to me to be the most telling argument is the one that goes to the status of the Class 9 issue and the board's question on the Class 9 issue.

I do not think there is any question but that at least the staff is under an obligation to come forward and tell this board to identify, first of all, what are the Class 9 accidents that have a cose and clear nexus to Three Mile Island Unit 2 and then identify all of the steps that have been taken in order to prevent those accidents from occurring or to mitigate their consequences.

It is very much an open question whether the staff would be able to persuade this board that they have adopted measures which would prevent the recurrence of another core damage -- core melt event.

Being that that is the situation, it seems to me clear that ANGRY ought to be able to present its testimony on mitigating measures.

CHAIRMAN SMITH: You are saying that Dr. Beyea's testimony is germane to the proceeding as it relates to the board's question in the debate we are having now and the basis advanced by ANGRY that it is germane to its contention?

I think that is what we have before us.

MS. WEISS: I see it as a Class 9 issue. If ANGRY at any time classified it as solely a hydrogen issue,

I do not belive they can be faulted for that. It seems to me it is clearly within the scope of the Class 9 issue that is before the board now, and it is broader -- it is much broader than the original UCS contention on hydrogen control.

CHAIRMAN SMITH: What have we done with similar Class 9 contentions? If this had been advanced expressly as a Class 9 contention early in the proceeding, what would we have done with it?

MS. WEISS: All I know is that the UCS Class 9 contention remains. We have not stipulated scenarios, as the board will recall.

CHAIRMAN SMITH: It is your position that your Class 9 contention remains untouched by anything that the board has done in this proceeding?

MS. WEISS: I think the board has certainly made staements with respect to the nature of the evidence that it would be necessary to meet that contention and the nature of the evidence would be necessary to prevail upon it.

As to the admissibility, the UCS contention has been admitted by the board in its original form after many arguments, oral arguments on the subject.

MR. TROWBRIDGE: Mr. Chairman, that is not correct. It is not admitted in its original form, and the board objected to other UCS contentions which sought to rest

on unspecified Class 9 issues.

The board will recall that UCS went back and revised its contention so as to make it essentially -- raised questions about the staff's methodology, and that was a different contention entirely than the one that they started out with.

Plus, there were others that --

MS. WEISS: I disagree with that; it was never changed. It may have been specified. And -- but the nature of it was never changed.

CHAIRMAN SMITH: The record will reflect -- I remember the first prehearing conference where we discussed your contention. The board suggested ways by which the issue could be raised, and you did most specifically; you came up -- as a matter of fact, you said in a letter to the board that this is a change in your contention at the invitation of the board, which I thought was overstating things a bit.

But --

MS. WEISS: I was talking, Mr. Chairman, about the arguments that we had subsequent to that about whether we needed to specify scenarios.

CHAIRMAN SMITH: I think the board made it clear we -- portions of our memorandum and order on generalized Class 9 contentions are accurately quoted by Mr.

Baxter in his brief on this testimony.

I think we very specifically ruled that we would not take an unspecified Class 9 scenario.

MS. WEISS: That is true. But we are going to have an opportunity -- the staff has not come forward with scenarios, and we are going to have an opportunity to cross examine on those scenarios.

CHAIRMAN SMITH: There you are talking about the board's question -- your contention. And we have before us the ANGRY contention, whether this is relevant to the ANGRY contention.

MS. WEISS: As I said at the outset, I am not prepared to make an argument as to whether this testimony fits within a specific contention. I am only arguing that it is relevant to issues before this board.

CHAIRMAN SMITH: I understand.

MR. TROWBRIDGE: I don't disagree on one point with Ms. Weiss; we have advanced two bases for objections. One is it is not within the scope of the contention. If the board were to rule otherwise, our objection would be that this describes a Class 9 testimony based on Class 9 events which neither the testimony nor the contention provide the accident sequence and nexus that is required for a Class 9 contention.

DR. JORDAN: My concern is more to the

upcoming rulemaking hearing. I would like actually to hear a little more from Mr. Cutchin as to whether this board -- I do not think there is any question but this is exactly intended at the rulemaking hearing to discuss filtered venting and other methods for dealing with essentially Class 9 accidents.

Therefore, is this board allowed even to consider those contentions?

MR. TROWBRIDGE: I would remind the board that essentially this issue has already been dealt with in brief by the parties. Essentially, I belive there is a consensus between the licensee and the staff. There was a consensus in our brief that it was within the discretion of the board to hear or not hear an issue which was the subject of rulemaking.

DR. JORDAN: Which issue was that?

CHAIRMAN SMITH: I think it came up in Class 9. I think it may have come up again in hydrogen. The law, as I would summarize it is boards are peritted -- a proposed rulemaking does not bar a board from taking up a consideration, but we have to keep our eye on the proposed rulemaking so we do not go into business for ourselves, so to speak.

However, it goes further than that I think the existence of a proposed rulemaking does not excuse

boards from dealing with the issue appropriate in a proceeding if it is not resolved at the end of the proceeding by the rulemaking process.

You may have some trouble with that; I think that can be found in the Douglas Point decision cited by Mr. Cutchin. Simply because there is a proposed rulemaking does not in itself relieve the board of the responsibility of addressing the issue. If at the close of the record, the rulemaking has not disposed of it, we have to somehow,if it has relevance to the proceeding, we have to somehow deal with it.

MS. TROWBRIDGE: I think our previous brief did not go as far -- touch on the question you just mentioned, did not reach that point. I do think it is quite relevant to the board's consideration of what it might do, but in this particular case we have not argued essentially -- we have not pinned our case primarily on the pending rulemaking, as to what is required to raise a Class 9 event.

CHAIRMAN SMITH: I would like to have Ms. Weiss and Ms. Bradford address the thoughts that I am having on this. I lay them out so that you can address them and that -- not that that is what I have decided, but what I think could be argued.

The only scenario -- the only relationship to the TMI-2 accident that Dr. Beyea's testimony could have

would be a postulation that the hydrogen generation caused a breach of containment, and therefore the need for the filtration he refers to to mitigate the effects that he discusses, the potential effects.

But the Commission has told us what we can and cannot do to postulation of the hydrogen generation in this case. It seems to me that could be controlling right there.

MS. WEISS: I can only refer the board to the statements in Dr. Beyea's testimony and Ms. Bradford may be in a better position. She may be more familiar with it than I, but he does, I think, state that this system would be useful or necessary to vent the containment building to prevent a hydrogen explosion or fire should failure of the containment by overpressurization be imminent or should a major leakage path develop.

He also talks about failure of containment isolation.

CHAIRMAN SMITH: Didn't the Commission tell us that we have to accept the 5.44 assumption for hydrogen generation?

DR. JORDAN: I think, to my mind, in looking over this -- and I have not spent a lot of time with it, but I think Beyea does talk about other mechanisms, such as a steam explosion; such as generation of CO(2) from the concrete in the case of a meltdown.

There are other mechanisms besides hydrogen generation for overpressurizing.

CHAIRMAN SMITH: I am talking about those that have a reasonable nexus to the TMI-2 accident. I do not remember any steam explosions in that accident.

MS. WEISS: Dr. Beyea, I do not think he was expressly asked the question for this testimony, to demonstrate the nexus of these scenarios to the TMI-2 accident. That does not appear here. but I do know that ANGRY has been in contact with him and he has stated that some of the --

MR. TROWBRIDGE: I am going to object to the statement by Ms. Weiss as to what she understands ANGRY talked to Dr. Beyea about. If ANGRY has something to say -- this is secondhand argument that I think should not be permitted.

CHAIRMAN SMITH: I think you are going beyond what we are permitted to consider at this time.

DR. JORDAN: If Ms. Weiss does not do it, I have to do it.

CHAIRMAN SMITH: Dr. Jordan wants it.

MS. WEISS: At least some of these scenarios, in his view, have a close analog to TMI-2, and he has presented others that do not, merely for purposes of comparing the benefits that could be gained in both

cases.

Then he is here on the stand -- or I suppose it could be prepared beforehand -- I think that Dr. Beyea is prepared to justify the nexus of the accident scenarios that he has in mind.1

CHAIRMAN SMITH: Do you mean by oral testimony?

MS. WEISS: Or in writing.

DR. JORDAN: My concern of course is broader than just the close nexus; that TMI-2 was a failure of the main feedwater pumps, and my board question six is what happens under failure of main feedwater; whether it ends up as hydrogen or a steam explosion or whatever is a secondary concern.

The question is: have they adequately prevented the accident? If they have not, then there are many ways in which the containment can be overpressurized. So I think to say that it has to be hydrogen to have a nexus is not necessary. Although hydrogen i a major core melt may indeed result and probably will result in hydrogen generation.

But it possibly could result also in other ways of overpressurizing. The concern is broader than just hydrogen in the board question six, anyhow.

And in addressing contention 13, the staff has developed a number of scenarios that lead to meltdown. If

those scenarios -- and they have not yet addressed the probability of those scenarios -- but if any one of those scenarios led to meltdown, then the question would not be: are you going to protect against a hydrogen explosion?

The question would be: are you going to try to mitigate the release of fission products to the atmosphere? This is a serious concern to the Commission; we know that under the degraded rulemaking hearing. Hydrogen is one of the issues under the degraded rulemaking.

I would say it is not necessary that it be hydrogen, although that is surely the closest nexus, and I agree with the chairman in that respect. I think one can argue -- and I have by any means, as you can well see, decided whether the other nexuses are close enough or not, excepting that I have asked the staff to address -- and they did address some 10 or 15 different scenarios.

And they did address how in each case the fixes in their minds were adequate. There is yet to come in testimony, however, as to the basis for the feeling on the part of the staff that the fixes are adequate. I think it is still an open question as to whether the fixes are indeed adequate or sufficient.

ANGRY's contention, as I say, whether that was originally a contention or not and whether we should in this hearing on that basis go into a hearing which is surely

contemplated -- will be held in a rulemaking are the things I guess that as I mentioned I am concerned about.

And finally, I guess, something that has not been addressed, whether properly addressed or not -- I have not had a chance to talk to the chairman -- what would it gain us if we were to hear this testimony? How would it help us in our conclusions?

I think it is true that if the staff fails to prevail or if the licensee fails to prevail -- if the Class 9 contention wins, then it is not going to be a board saying, go to a filtered venting. There are many other ways which the Commission is going to be considering -- there are other ways, and some of them may be better.

I do not know the answer; no one does, as a matter of fact, as to what the best way of dealing with it is. I think we would not get to that issue. We would say, "No restart," it seems to me. That would be the first thing we would do.

We would not try to direct the licensee to decide immediately on what kind of mitigation. That is my feeling at the moment. I would welcome -- I urge, in fact, all of you to address that. You do see that I have a genuine concern as to whether this issue should be admitted or not.

MR. TROWBRIDGE: Mr. Chairman, could I refer

to your discussion about the relevance of rulemaking to the board's decision? I do think the board should for a reason I did not give before, give substantial weight to the fact that a rulemaking is proposed on this. We are dealing here with a late piece of testimony.

I am not going to argue again whether the board should or should not allow the lateness, but it is late. In my view, it is a late contention, a late construction by ANGRY from the original contention. I think it should be viewed in light of the factors that the allowability of late contentions must take into account, one of which is the availability of other means to protect the parties' interests.

I do think it is appropriate for the board to take into account considering what it would now do to this proceeding to go back and require the preparatin of testimony on this issue. I think the board ought to consider that it has relevance, that there are other avenues available to the intervenors in this proceeding to put forth their views on filtered venting.

CHAIRMAN SMITH: Do you understand the reference that Mr. Trowbridge is making there? Although the intervention rule does not directly apply to late evidence, the standards of late intervention have traditionally been applied to late evidence.

MS. BRADFORD: It is not late.

CHAIRMAN SMITH: Oh, it is late. That was discussed in a telephone conference. As a matter of fact, I think an order somewhere along the line --

MS. BRADFORD: We applied and received an extention of time on this testimony.

CHAIRMAN SMITH: Could you demonstrate that to me?

MS. BRADFORD: That we received an extension of time from you?

DR. JORDAN: Address the issue of lateness with Ms. Weiss's help. Maybe -- if you need to talk together a few minutes --

MS. BRADFORD: I would be glad to address the issue of lateness. I would like to start with looking again at our filing with March 17, 1980 in answer to the licensee's interrogatories. Their question is: describe the system which ANGRY proposes be installed for rapid filtration of contaminated gases.

Our answer -- the beginning of our answer: "Such a system is described in P. Gosset, et al., Post-Accident Filtration as a Means of Improving Containment Effectiveness."

Now, that is exactly the document that we later based the testimony on.

CHAIRMAN SMITH: I do not think that is what we are talking about. Testimony was due on September 15.

MS. BRADFORD: I understand that. Before September 15, I ralized that we would not have it in by September 15. I spoke with you, Mr. Smith, on the phone.

CHAIRMAN SMITH: Right.

MS. BRADFORD: I received an extension until October 3.

CHAIRMAN SMITH: No.

MS. BRADFORD: No. We also filed --

CHAIRMAN SMITH: We did not rule; we did not rule. What we stated was we would not rule on the good cause for late filing at that time, that you could if you wished, take a chance on submitting his testimony. Now, there was a little bit of concern about this whole thing, and I do not know if I reduced it to writing or not, but, number one, I was concerned that I got an entirely different story from you than I got from Mr. Pell, completely contrary, contradictory.

You stated -- they have forgotten that he said they did not have time to do it. So we did not have anything. The only thing I ruled was that the best thing for you to do, if you wished to argue timeliness or good cause for late filing is to proceed as rapidly as you can to get the testimony, but do not wait for us to rule on whether

you can do it to present the testimony because it has to be then considered in the light of the testimony that you are offering.

MS. BRADFORD: Yes, sir, and we did file it as soon as we could.

CHAIRMAN SMITH: I want to correct the record. We did not extend the time for the filing of testimony.

MS. BRADFORD: I understood that you did until October 3.

CHAIRMAN SMITH: Then you did not understand the ruling. The ruling was: you get it in and we will look at it in ruling whether the standards for accepting late evidence should be applied.

Do you see the difference? I guess not.

MS. BRADFORD: I understand you are saying this now. That was not my understanding at the time.

CHAIRMAN SMITH: Then you misunderstood. It is incredible to me that you could have misunderstood because I stressed it again and again and again in that telephone conference.

MS. BRADFORD: What was the significance of the date, October 3?

CHAIRMAN SMITH: I have no right to extend the time on your oral request, which is exactly what I told you,

on your unilateral, ex parte oral request to extend the time without a showing. I said the best thing for you to do is to submit the testimony, as fast as you can, submit it.

And then --

MS. BRADFORD: We did that.

CHAIRMAN SMITH: I know you did that. You missed the point. Then we would rule. If you wished to do that, if you wish to take chances, then we would rule on whether you met the test of good cause for late filing.

MS. BRADFORD: Sure. This testimony was filed October 3. It is now December 19. The licensee has had ample time to prepare his testimony on this. the objectin that the testimony is late is not raised in their objections in their brief. It is only mentioned right now by Mr. Trowbridge.

CHAIRMAN SMITH: The testimony has not been offered yet. They have raised it.

MS. BRADFORD: They have raised objection to the receipt into evidence of the testimony and one of there objections is that the testimony was filed late.

MS. WEISS: I cannot seriously believe that this question of the admissibility into evidence is going to be decided on whether or not Ms. Bradford was two weeks late.

CHAIRMAN SMITH: Look, Ms. Weiss, this is very difficult for me. I tried to accommodate ANGRY on this. I

received a report from Mr. Bell that they just simply have not had time to prepare it. They wanted an extension. Then I received a report from Ms. Bradford that they had forgotten. So there right away I am faced with things that are difficult to reconcile. And then I correct Ms. Bradford's impression. That point is ignored. And now you are taking another shift, that it does not matter.

MS. WEISS: I am not saying it does not matter. I cannot believe that this board is going to decide the issue of the admissibility of this testimony on whether it was filed two weeks late or not.

CHAIRMAN SMITH: It may or may not be, but we will take that into account.

MS. WEISS: I cannot believe that the licensee has been prejudiced. The way the board has conducted itself in this hearing, I cannot believe you will not decide on the merits.

CHAIRMAN SMITH: The only reason it has occupied such an important part of this discussion this morning is because Ms. Bradford in my view seriously misstated the ruling I made over the phone. I just want to correct it.

We will give the appropriate weight to lateness, timeliness when it comes time to consider it.

MS. BRADFORD: I now understand what your

ruling was. I am sorry I miscuoted it. Thank you. I have some other responses to make to various points that were raised. I need a minute.

(Pause)

I would like to respond to Dr. Jordan's question of what help this testimony would be to the board should the board decide to hear it. We suggest -- or Dr. Beyea suggests in the testimony certain remedies available for the board to rule upon.

Among them is for the licensee to study whether or not the filter venting system is compatible with TMI safety systems and for the licensee to study the cost effectiveness and other general effectiveness of this system to see whether it should be installed.

This suggestion is similar to the suggestion of the ACRS and their suggestion is that the NRC staff and the licensee concurrently study this system with an eye towards installing it.

Is that helpful, Dr. Jordan?

DR. JORDAN: Yes.

MS. BRADFORD: I feel awful on the subject of lateness or prejudice to the Licensee, that it is unfair to fault ANGRY because the staff or the Licensee did not understand our specification filed March 17. We have heard a lot of discussion that Mr. Trowbridge did not understand what we meant, but our filing is very clear. We suggest a specific study in answer to a specific question of theirs as to what system we would propose.

The Licensee never objected to that and they have not yet responded to why they didn't believe that our answer was what we wanted to answer.

DR. JORDAN: Mr. Cutchin, would you address what weight the staff would give to the ACRS comments by Moeller and Okrent which says that "We believe this recommendation is especially applicable to a high density population site such as TMI. Prior history of the accident site reinforces the desirability of examining design measures which have the potential for reducing significantly the quantity of radioactive material released for a range of postulated serious accidents leading to severe core damage or molten core. We recommend that the restart of Three Mile Island Nuclear Station Unit 1 be made contingent on a commitment by the Licensee to perform within a reasonable period following restart a study such as that recommended in the ACRS letter

of December 13, 1979 referred to above."

What does the staff do when they see a recommendation like this, recommending actions by the staff in a particular hearing? What would be the consequences of that recommendation?

MR. CUTCHIN: You caught me almost completely by surprise, but let me give it a whirl.

Obviously those are the recommendations of two individual members of the ACRS, which I presume, not having seen the document from which you read, were not adopted by the Committee as a whole.

Furthermore, I think in a proceeding such as this it is difficult for the Board to give consideration to recommendations made in ACRS letters. Normally boards consider ACRS letters in construction permit and operating license proceedings, and only for the purpose of showing that the statutory requirement that an ACRS review has been made in those situations.

In this particular proceeding, obviously there is no requirement that an ACRS review even be performed. Of course, both the staff and the Commission suggested it. I cannot tell you now that the staff would give great weight to that particular recommendation. I think the staff's views are set forth in its recommendations for rulemaking and that the matter is more likely to be considered as a

generic issue in the rulemaking. Having no information, I can only speculate for you.

MS. BRADFORD: I would just like to add here that on Monday of this week I called up the staff office and requested of Mr. Tourtellotte certain letters, including this September 6 letter, the December 13 letter, which I still don't have, December 13, 1979, containing the original recommendations, which I still don't have. Because Mr. Tourtellotte has been sick this request was never processed. And then yesterday afternoon I received, after talking with I think Richard Major from ACRS on the subject of this letter, I received a copy from Mr. Silver, and I spent quite a while yesterday afternoon discussing it with him. I am sorry the staff is caught by surprise.

MR. CUTCHIN: I have not personally read this letter, nor do I consider that the Board can give the statements made in that letter a great deal of weight by normal practice.

CHAIRMAN SMITH: We don't want to digress into the state of Mr. Cutchin's mind when the question was put to him. That will not be very helpful.

Is there anything further on it?

Of course, this is an important issue. Dr. Little will participate in it.

We will take it under advisement.

DR. JORDAN: I think Ms. Bradford would like to say something else?

MS. BRADFORD: I am just looking to see whether I have something else.

DR. JORDAN: Take your time.

MR. TROWBRIDGE: I understand Ms. Bradford will participate in the meeting.

CHAIRMAN SMITH: Review your notes. We will take a short break and then we will see if you have any further comments.

Let's take five minutes.

Well, let's take a ten minute break, then, and make it our morning break.

(A brief recess was taken.)

CHAIRMAN SMITH: Ms. Bradford?

MS. BRADFORD: I find that the other points that I have circled that I wanted to address are all contained in my original statement, and rather than spend the Board's time repeating these things I would like to Xerox this and file it with you.

CHAIRMAN SMITH: You mean your comments? Of course, they are in the transcript.

MS. BRADFORD: Yes. And I'm hoping that I managed to get everything that I wrote down said in the transcript. I would rather also submit this, in case I missed something.

CHAIRMAN SMITH: All right.

MS. BRADFORD: The only other thing I would like to add is the consideration of the weight of the testimony or the concern of the ACRS, in that the Board can give this more weight than the staff suggested and adopt it.

DR. JORDAN: I don't understand that. I don't understand the point that you're making.

MS. BRADFORD: It may be a normal practice for boards to not give weight --

DR. JORDAN: Consider the weight of the testimony.

MS. BRADFORD: In this case, if the Board feels it is appropriate --

DR. JORDAN: On the basis that we will judge the

weight; is that what you are saying

MS. BRADFORD: Yes.

CHAIRMAN SMITH: Are you referring to Dr. Beyea's testimony or the ACRS letter?

MS. BRADFORD: The ACRS letter.

DR. JORDAN: All right. That I didn't understand. All right.

MS. BRADFORD: I didn't know whether, just as a suggestion, whether the Board would like this Intervenor to speak with Mr. Okrent and see whether there was some additional carification of this issue that can offer.

DR. JORDAN: I don't think that's necessary. I understand very clearly what Mr. Okrent and what Mr. Moeller are saying.

MS. BRADFORD: Fine. Also, I didn't know whether the Board wished further -- would allow us to file further specification on the question.

CHAIRMAN SMITH: I think the problem you have now, Ms. Bradford, is not making the Board understand what is meant by the filtration or by the --

MS. BRADFORD: Does the Board wish clarification on the nexus to TMI?

(Board conferring.)

CHAIRMAN SMITH: I don't know. Do you have anything to add now? Is your idea that you want to go back

to Dr. Beyea and ask him?

MS. BRADFORD: Yes. He would know more about it than I do.

CHAIRMAN SMITH: There is a serious question of timeliness.

MS. BRADFORD: I think it is contained in the testimony. I direct you to the testimony.

DR. JORDAN: I think Dr. Beyea addressed the nexus question moderately well, as a matter of fact.

MS. BRADFORD: Thank you. That's all I have.

MR. TROWBRIDGE: Mr. Chairman, I would inquire of Ms. Bradford whether she read the entire document which she now proposes to offer to the Board. If not, I would like to see the document for any further response I might wish to make now.

MS. BRADFORD: Yes, sir.

MR. TROWBRIDGE: The answer is, you did read the entire document?

MS. BRADFORD: Yes, I did. Would you like to read it?

MR. TROWBRIDGE: I don't need to read it if you read the entire document.

CHAIRMAN SMITH: If you are comfortable that you read the entire document, I think it would be better for us not to have it. You see, the problem he is raising, if you

forgot something and the adversaries didn't have a chance to address it, then we shouldn't consider it unless you come back to the hearing or something.

You are going to go to the emergency planning meeting. If you have an opportunity, make sure that you have made all of your points. And then if we are still in session, you can come back if you have forgotten something.

Do you understand the problem?

MS. BRADFORD: I have to compare it against the transcript today.

CHAIRMAN SMITH: You are not confident on your memory on it, I see. If you have forgotten something and it appears in the transcript that you didn't make all your points on there, then if they are important you can bring it to our attention.

MS. BRADFORD: Thank you, sir.

CHAIRMAN SMITH: If you would like to give Mr. Trowbridge and the other parties a copy of what you have there, so that they can be assured that you are not just continually offering new arguments, any new arguments, that might be an appropriate thing to do. You see what I mean?

MS. BRADFORD: This just would be giving them a copy.

CHAIRMAN SMITH: So they know that you are not just extending your arguments indefinitely, that you really

did overlook something, if that's the case.

MS. BRADFORD: Thank you.

CHAIRMAN SMITH: Thank you, Ms. Bradford.

MR. CUTCHIN: Should we have Mr. Zudans resume the stand?

Whereupon,

JOHN J. ZUDANS

was resumed as a witness on behalf of the NRC staff and, having been previously duly sworn, was examined and testified further as follows:

CROSS-EXAMINATION -- CONTINUED

BY MS. WEISS:

Q Mr. Zudans, about 9:00 o'clock this morning we started talking about your answer to question 7 on page 8. You had told me that the staff requires that the safety and relief valves open and close at their set points?

A That's correct.

DR. JORDAN: You indicated, I believe, that there were two points, an opening point and a closing point.

THE WITNESS: Normally, yes.

DR. JORDAN: Does this make the construction of the valve somewhat tricky? It is not like I have on my pressure cooker at home, for example, which follows the pressure. If the pressure is high, it relieves; if it is low, it comes right back down.

Are there two distinct set points, and doesn't that make it a tricky mechanical design?

THE WITNESS: I really don't know about the set point trip design. However, I don't think the mechanical design of the valve is any trickier. The set points are --

DR. JORDAN: Is the set point electrical or is it mechanical? Is it just a matter of pressure against a spring?

THE WITNESS: Pressure-sensing device triggering --

DR. JORDAN: There is a pressure-sensing device that in turn operates the valve, so that there -- it is more than just a simple valve that operates on pressure?

THE WITNESS: That is correct, for the PORV.

DR. JORDAN: No, no.

THE WITNESS: The safety valve is just pressure, based on a spring, how you adjust the spring.

DR. JORDAN: So therefore when the pressure relieves it comes back down?

THE WITNESS: Right.

DR. JORDAN: All right.

Were you talking about the PORV?

MS. WEISS: Both. The sentence refers to relief and safety valves.

THE WITNESS: They are slightly different, yes.

The PORV works on a pressure-sensing device. The safety valve is strictly mechanical. The mechanical part is the adjusting of the spring at the top of the valve.

CHAIRMAN SMITH: You are referring to the pilot in the pilot-operated relief valve?

THE WITNESS: Yes. the sensing occurs through the -- the sensing is a pressure sensor that sends a signal to the solenoid, that moves the plunger, which is the pilot, up and down and closes or opens the valve.

CHAIRMAN SMITH: Can I ask a question there about this valve? I understood in earlier testimony that you were making a distinction between electromatic valves, such as the PORV manufactured by the company Dresser, and solenoid valves.

THE WITNESS: No. No, the solenoid is part of the valve. It is an electrical device that moves the plunger down and then opens or closes the pilot.

CHAIRMAN SMITH: That is what I always thought was meant by the PORV. But in your testimony yesterday somehow you began discussing the difference between an electromatic valve and a solenoid-operated valve. That's where I got confused.

THE WITNESS: I don't remember that portion of where I did discuss that. I just read the transcript.

BY MS. WEISS: (Resuming)

Q During what accidents and transients would you expect the pressure in the primary system to reach the set point of the PORV?

A As I mentioned yesterday, I am really not qualified to discuss the transients. My sole purpose is to evaluate valve operability, Ii I am told that it is going to see certain types of loadings. I am a member of a branch that is responsible for evaluating the operability, the mechanical operability of valves.

I think I would be doing a disservice to the Board to try to answer tose kinds of questions.

Q Do you know if Mr. Jensen would be qualified to answer that?

A I would like Mr. Jensen to answer that question.

Q Well, the question comes from your statement on page 4, the staff's position requires that the safety and relief valves function as expected during design transient and accident conditions.

A Which are specified to me when I am given the task to evaluate the valve by other branches.

Q Which branch would specify that to you?

A The Reactor Systems Branch would do that.

Q And that is a branch of the Division of Nuclear Reactor Regulation?

A Yes.

Q Have you made any evaluation of the demands on the safety valves, both in terms of number of times it might be required to operate and the nature -- the flow quality that it would be required to relieve during the bleed and feed mode of cooling?

A No.

Q Will the testing program for the safety valves make an attempt to simulate bleed and feed conditions in any way?

A To the extent that the feed and bleed mode of operation would have two-phase flow or solid fluid flow, it would make an attempt at simulating that.

Q Do any of the test parameters specifically address the bleed and feed mode? I am interested in whether you are going to do a test that would require the safety valves to open and close repeatedly under various conditions of flow quality.

A From my reading of the program, I do not believe that you are going to get a lot of open and closing through the -- consecutive opening and closing, because the problem with the system that you are trying to test is that you need very large accumulations for the accumulator tanks. You can only do the -- that has been the problem over the years with the testing.

There haven't been any good test facilities. They

are developing the facility to try to simulate these kinds of flows. I am not sure that it will simulate the feed and bleed type of operation.

Q I just want to clarify the very end of that. You said you are not sure that it will simulate. Do you have any evidence to believe that it will simulate the bleed and feed in the way that I have described, that is, repeated openings and closings under various flow quality conditions?

A They will attempt to simulate two-phase flow. They will attempt to simulate solid fluid flow and steam. There will be transition phase through the test as you blow down, where you would get a sequence of these types of environments through the valve.

However, the system, as I see it, is not able to recover quickly enough to go up and challenge the valve immediately again. I may be corrected in this when it is more clear how capable it will be.

Q You are speaking of limitations at your test facility that limit the extent to which you can simulate feed ad bleed?

A Well, again, I am really starting to get out of my area, since I don't know exactly the conditions that you would have during feed and bleed. However, we do want to confirm that the valves will operate under those conditions and that is the purpose of the testing, to confirm that the

valves will be able to function during those types of environments.

Q When you were speaking, two answers back, of the inability of the system to repressurize quickly and reopen the safety valves, you were speaking about the limitations of your test facility?

A I'm sorry, I didn't catch the middle part.

Q When you were answering a question about two questions ago and you were talking about the limitations of your facility or of a facility to repressurize quickly and reopen the safety valves, you were referring to the limitations at your test facility; is that correct?

A The potential limitations there, yes.

Q On Question 8, page 5 of your testimony, the second line from the bottom of your answer, you state that: "The staff requires that Met Ed justify that the EPRI test program is applicable to the TI-1 SRV's."

Is "SRV" safety and relief valve?

A Yes.

Q Has the staff yet determined that the EPRI test program is so applicable?

A I have personally determined that the valves are going to be tested at -- for the EPRI program, are the same as those that are in TMI Unit 1. I have not determined that all of the parameters of the test will be applicable. So I

can't fully answer that question.

Q When will that determination be made?

A I believe it is being done at this time. However, I don't have the answer to that question.

Q Do you have a schedule? Is there a target date?

A The completion of the testing will be by July 1st, 1981.

Q I take it that the testing is going forward in advance of the staff's determination that it will be fully applicable to the valves in Three Mile Island Unit 1?

A It is one of the requirements of NUREG-0578 that testing is applicable,, the testing will be applicable to the valves at TMI-1.

Q You haven't yet determined that the testing program, the parameters, are fully out?

A I think the major part of it, it is determined that the same valves are being tested. I have told you the same valves are going to be tested in the FPBI program that are in TMI-1.

Q When are you going to decide whether the parameters accurately reflect the situation in TMI-1?

A I believe that is being determined at this time. However, I don't have the answer since I am not doing that review.

Q The tests have already started?

A Some tests have already started.

Q Mr. Correa yesterday was discussing a list of six -- I called them open items -- between NRC and EPRI with regard to the test program. Was that just the test program for the safety and relief valves and not the block valves?

A I believe that is correct.

Q Do you have knowledge as to what the nature of those differences are between the staff and EPRI?

A I do have knowledge of the comments that we had on the program.

Q Could you please describe them to me?

A I will have to get the memo out.

(Pause.)

A The comments are contained in a letter to Mr. Russell Youngblood, Chairman of the EPRI Research Advisory Committee.

Q Can you tell from the bottom of the letter whether copies were sent to the parties in the case?

A I'm sorry? To whom?

Q Can you tell whether copies were sent to the parties to this case, the restart case?

A I am sure the comments were sent to the licensee, since he is a part of the group that is doing the testing.

Q Can you tell if they were sent to any of the Intervenors or to the Board?

A I can't tell from this letter. However, I can't tell you that it has not been sent.

Q What was the date on that?

A November 26th, 1980.

(Pause.)

A Would you like me to go through each of the items?

Q Just summarize. You don't need to go into any great detail.

A The first comment has to do with the fact that the valves tested, to be tested, do not appear to represent all relief and safety valves installed in PBW operating plants.

The second comment is that the staff was not included in the receipt of the screening criteria and we would like to be included.

The third comment has to do on the fact that the program is not completely responsive to NUREG-0578. The requirement concerns the effect of safety relief valve discharge piping on valve operability. I think I confused that one. Let me do it again.

How the discharge piping affects valve operability is one point that may not have been fully responsive.

Q Before you go on, I would like to ask you for a little more detail on that one. Are there any examples given of how discharge piping may affect valve operability?

A Let me read to you verbatim what it says. Quote:

"It is not clear from the information provided to date in the program plan or in meetings with the staff how the affects of pipe reaction loading on the valve in each specific plant will be evaluated by the generic testing being proposed. Therefore, the basis used by EPRI to concluding that the end loadings in the test program will envelope the end loadings for each valve as installed in each specific plant should be provided, together with the information as to how the end loadings on the test valves and the plant-specific valves will be determined." Quote.

Q Thank you.

A The next item refers to relief and safety valve qualification and associated control circuitry. It is a requirement that you include the control circuitry in the test. And I think that we heard yesterday that that circuitry will be included in the test, from Mr. Correa.

DR. JORDAN: This is with respect to PORV, now?

THE WITNESS: Relief and safety --

DR. JORDAN: What control circuitry is involved in the safety, relief and safety valves?

THE WITNESS: I think it was stated broadly that if there is anything, it should be included. However, I agree with you that safety valves -- there is no control circuitry.

BY MS. WEISS: (Resuming)

Q You just stated that you understood Mr. Correa to state that EPRI had acceded to that item. I'm not sure I remember him saying that. That is your understanding?

A I understood yesterday that Mr. Correa stated that the control circuitry will be included in the test. I have heard that back in Washington, also.

The next item was the requirement that the staff has made, comment that the staff feels that the program does not include two-phase, fluid conditions or subcooled water 2500 psig. And I mentioned that yesterday, that we believe we need that.

The last comment concerns the piping configurations that will be used in the testing program and the comment that it seems that the piping is all symmetrically located in one plane, and the staff feels that the piping should more simulate the condition in plants, where the piping is not really only in one plane, but it may be in two or three planes after it leaves the pressurizer.

That is a general outline of the comments. The memo was signed by Richard Volmer, Director of NPP.

Q In light of the nature of the concerns and differences between the staff and EPRI, and in light of the amount of time that has already been required to design a test program and submit a test program, do you still have a strong degree of confidence that this testing on safety and

relief valves will be completed by July 1, 1981?

A That question is very difficult to answer, since I am not aware of where they are in their testing right now. I cannot -- again, it really would not be fair to you to say that it would be done on schedule.

Q I wanted to ask some more about the entire schedule for the program. If you want to refer to NUREG-0737, that might be useful, Section II.D.1. The pages begin on 3-72.

In your Question 3 you state that: "Present schedules indicate that this testing will be completed."

A I have the wrong one. I'm sorry.

All right, 3-72.

Q You state in your testimony in Question 3 that: "Present schedules indicate that this testing will be completed by July 1, 1981." By "this testing" you mean the testing of the relief and safety valves, correct?

A Correct.

Q When is the report of the results on that testing due at NRC?

A It is my understanding that we will be receiving reports on the testing as they are completed, and it may well be before July 1st, 1981.

Q Isn't it accurate that the plant-specific test results for PORV and safety valve are due October 1, 1981?

A That's correct.

Q What about the block valve? That is a separate test program, correct?

A Yes.

Q Is it true that that program will not be submitted until January 1981 or that is the current schedule for its submittal?

A I don't know that date.

Q You may want to refer to page 3-74 at the top.

A Yes, that's correct.

Q The plant-specific submittals are currently due July 1982 on block valves?

A That's right

Q Are any of these requirements either for the submittal of test data, the submittal of test programs, are any of those requirements for restart of Unit 1?

A I don't know.

Q I believe, although I can't place my hands on the exact language, that it is stated in the action plan, and perhaps also in this clarification, that after the test results have been submitted to the NRC that the NRC will consider the necessity for imposing additional requirements. Is that accurate, to your knowledge?

A Yes, to my knowledge that's correct.

MS. WEISS: I have no further questions of the

witness at this time.

CHAIRMAN SMITH: Mr. Dornsife?

MR. DORNSIFE: I have just one, that concerns the operation of primarily the safety valves.

CROSS-EXAMINATION

BY MR. DORNSIFE:

Q If the safety valves -- a theoretical situation: If the safety valves, the ones that would be used on the pressurizer, if they were attached to a constant volume vessel and the vessel was full of liquid, and you started pumping into the vessel at a constant rate, how would these relief valves behave?

In other words, when the relief valves hit their set point do they pop open to their full relieving capacity and then reset? Would they open enough to allow the release of that input?

A I think that's correct.

Q Which is correct. I said both.

A It would open to the extent that it needs to relieve. It is on a spring. So the spring rate would determine how far it would open.

Q If some pumps were pumping into a constant volume, the relief valves or the safety valves would not close and then reopen, they would stay open?

A Depending on how quickly you depressurize, it

would determine the rate at which they are opening and closing.

Q What I am describing, would that in your opinion -- I realize you don't know much about the bleed and feed. But would that be your opinion of what the bleed and feed would approximate, that condition? The high pressure injection pumps are pumping into a constant volume?

DR. JORDAN: Constant rate.

MR. DORNSIFE: Into a constant volume, at a constant rate.

THE WITNESS: It could be.

BY MR. DORNSIFE: (Resuming)

Q How about the relief valve, the power operated relief valve? When it reaches its set point, does it go full open?

A Yes.

Q So it does not respond the same way as the safety valve would or operate the same way as the safety valve?

A That's my understanding.

MR. DORNSIFE: Thank you.

(Board conferring.)

CHAIRMAN SMITH: Mr. Correa, perhaps you could help us on a confusion I have had. On page 8813 of yesterday's transcript, Page 8813, quote: "As far as the PORV goes" --

WITNESS CORREA: Could you wait a second, until I get a copy of that, please.

CHAIRMAN SMITH: Okay.

(Pause.)

CHAIRMAN SMITH: P813.

WITNESS CORREA: I have it.

CHAIRMAN SMITH: Beginning at line 20.

I perceive there a difference between a solenoid-actuated and what is referred to -- an electromatic PORV. I noted earlier in the day that the PORV at Three Mile Island was regularly referred to as a solenoid valve. But I noticed almost always, when it is referred to in the written documents, it is referred to as an electromatic valve.

I just wonder if you could explain if there is a difference and what the difference is.

WITNESS CORREA: Yes, there is. As far as starting on line 20, when I said that there are two basic types of valves, one type of valve that is used mostly on the Westinghouse plants is a control-type valve which is essentially a globe valve, and the -- the operator for this globe valve can either be an air operator or an electrosolenoid operator to operate the globe valve. That is one basic type of power operated relief valve that is used at the Westinghouse plants.

In the B&W plants, B&W has used what is known as the electromatic valve, made by Dresser, or the pressurematic valve made by Crosby. Both of these valves are fairly similar -- I think they are fairly similar.

I can speak for the Dresser valve. It operates by a remote signal which tells a solenoid to actuate a plunger, and this plunger opens up a pilot valve, which relieves pressure under the main disk and allows the system pressure to open up the main disk of the valve.

CHAIRMAN SMITH: So I was failing to appreciate the difference between the solenoid control and the solenoid-operated, directly operated.

WITNESS CORREA: Yes. The globe are solenoid directly operated. The Dresser valve has a solenoid which opens up the pilot valve.

CHAIRMAN SMITH: Thank you.

DR. JORDAN: I gather, in looking at 0737, the tests on ATWS, A-T-W-S, will be later, and it specifies temperatures and pressures, like 700 degrees and 3200. Those are higher than the present test program; is that correct?

WITNESS ZUDANS: Yes.

DR. JORDAN: All right.

CHAIRMAN SMITH: Mr. Baxter?

MR. BAXTER: I have no questions.

CHAIRMAN SMITH: Mr. Cutchin?

MR. CUTCHIN: I have no further questions.

CHAIRMAN SMITH: You are excused. Thank you.

(Witness excused.)

MS. WEISS: Mr. Chairman, as I said, I haven't had a chance to discuss this witness' testimony with Mr. Pollard. My feeling is that we probably will not have any need to ask him further questions. But since you said he was excused, I would like to reserve that. I would like to reserve the right.

MR. CUTCHIN: We understand that, Mr. Chairman. If she can show a real need to bringing him back, to the Board's satisfaction, then of course he will come back.

CHAIRMAN SMITH: All right. What shall we do now? I think that's about all we can do, isn't it?

MR. CUTCHIN: Are there further questions of Mr. Jensen that she is able to go forward with now?

CHAIRMAN SMITH: She indicated no.

If there is no other business for today, we will adjourn then until 10:00 a.m. Monday.

Let's discuss the problem that might arise if it should happen that Mr. Pollard can't make it. Can we have some contingency plans that some other witness would go forward? Is that possible?

MR. CUTCHIN: I assume that the licensee will have

witnesses on the next issue. I could arrange to have my witness, if need be, come up earlier. But now I had planned to bring him up perhaps Monday afternoon.

CHAIRMAN SMITH: Does that solve the problem or do we just have another witness that can't be examined?

MR. CUTCHIN: I believe you have another witness who can't be examined, because Mr. Pollard also has testimony in that area as well.

MR. BAXTER: The next two agenda items are exclusively UCS Contentions.

CHAIRMAN SMITH: Do you have any suggestions, Ms. Weiss?

MS. WEISS: I wonder if it is possible to fit in any of those floating, uncontested items in next week, the separation issue or whatever, the other ones that have no parties directly involved.

CHAIRMAN SMITH: Do you have any thoughts, Mr. Baxter?

MR. BAXTER: I had considered separation and investigated it. Unfortunately, one of our witnesses has irreconcilable conflicts. I don't know of very many others that don't involve Intervenors.

There is one staff Board question on the IREP, I-R-E-P. It is not very much testimony. It certainly wouldn't fill three days.

CHAIRMAN SMITH: Ms. Weiss, I think we should plan on Mr. Pollard being here. If his experience is as typical as others who have had this problem, he should be in good enough health to go forward Monday.

However, if you are certain by, say, a certain time on Sunday, I think it would not be fair to bring everybody up here simply just to find that Mr. Pollard is not here and you can't go forward. What do you recommend that we do?

MS. WEISS: I would be happy to let people know on Sunday. I wonder if there is some way to arrange a communications system, and we could leave it that everybody will be here unless we hear something on Sunday.

CHAIRMAN SMITH: Let's put it this way. I will expect to hear from you by noon on Sunday. I will give you my home phone number. By noon on Sunday, if it is definite then that he can't make it, and then --

MR. BAXTER: And/or that Ms. Weiss is unable to consult with him back in Washington, such that she could go forward on her own.

CHAIRMAN SMITH: I am sure, after all the preparation they have done, they want to get these issues over with, too. I know the momentum is toward, in their viewpoint, going forward.

If it should appear to you that you cannot -- that

we can't go forward Monday morning, could you, no later than Sunday, call me at home, and then I will then advise Mr. Cutchin and Mr. Baxter and Mr. Dornsife of that?

I guess it is not quite as critical for you, since you don't have any traveling to do. Dr. Jordan and Dr. Little have a great deal to do.

DR. JORDAN: I would be leaving for the Lauderdale Airport 6:00 o'clock Sunday evening. So I need to know.

CHAIRMAN SMITH: Let's adjourn.

(Whereupon, at 11:12 a.m., the hearing was adjourned.)

NUCLEAR REGULATORY COMMISSION

This is to certify that the attached proceedings before the

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in the matter of: METROPOLITAN EDISON COMPANY (TMI UNIT 1)

Date of Proceeding: December 19, 1980

Docket Number: 50-289 (Restart)

Place of Proceeding: Harrisburg, Pa.

were held as herein appears, and that this is the original transcript thereof for the file of the Commission.

Barbara L. Whitlock

Official Reporter (Typed)

Barbara L. Whitlock

Official Reporter (Signature)