NUCLEAR REGULATORY COMMISSION

IN THE MATTER OF:

PUBLIC MEETING

DISCUSSION OF RADIOACTIVELY CONTAMINATED

WATER AT TMI AND RELATED SUBJECTS (EPICOR II)

Place - Washington, D. C.

Date - Wednesday, 10 October 1979 Pages 1 - 60

Telephone:
(202) 347-3700

ACE - FEDERAL REPORTERS, INC.

Official Reporters

444 North Capitol Street
Washington, D.C. 20001

NATIONWIDE COVERAGE - DAILY

DISCLAIMER

This is an unofficial transcript of a meeting of the United States Nuclear Regulatory Commission held on Wednesday, 10 October 1979 in the Commissions's offices at 1717 H Street, N. W., Washington, D. C. 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 determinations 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.

UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

PUBLIC MEETING

DISCUSSION OF RADIOACTIVELY CONTAMINATED WATER AT TMI AND RELATED SUBJECTS (EPICOR II)

Room 1130,
1717 H Street, N.W.,
Washington, D.C.
Wednesday, 10 October 1979

The Commission met, pursuant to notice, at 1:10 p.m.

BEFORE:

DR. JOSEPH M. HENDRIE, Chairman

VICTOR GILINSKY, Commissioner

RICHARD T. KENNEDY, Commissioner

PETER A. BRADFORD, Commissioner

JOHN F. AHEARNE, Commissioner

ALSO PRESENT:

Leonard Bickwit, Jr., Esq.
Steven Eilperin, Esq.
Martin Malsch, Esq.
Bernard Snyder, Esq.
Lee Gossick
Edson Case
Richard Vollmer
John Collins
Howard Shapar, Esq.

ebl

C3

P R O C E E D I N G S

CHAIRMAN HENDRIE: If we can come to order?

Mr. Kennedy will join us directly. In the meantime we should go ahead.

The Commission meets this afternoon for a continuation of its discussion of what to do with the contaminated water at Three Mile Island and related subjects, the proposed use of the EPICOR II system, and so on.

The first thing I would note is that we will hear from the Staff this afternoon, who have been asked to prepare some further material in response to comments on the environmental assessment of the EPICOR II system and its proposed limited use.

Later on the Commission will want to discuss certain legal aspects of possible Commission actions in connection with this matter, and we will do that at a second meeting this afternoon which will be closed since we will want to discuss with the Commission's lawyers various matters connected with possible litigation.

I welcome the Staff. Lee, I see you have brought Ed Case, Mr. Vollmer and John Collins. I think we ought to turn to the papers they have prepared, responding to some of the comments on the environmental assessment and associated matters. Why don't you go ahead?

MR. GOSSICK: Why don't you go ahead, Mr. Chairman?

eb2

THe paper we sent down I'm sure you've hardly had a chance to read, but Mr. Vollmer is prepared to go through and brief you one the comments that the Staff has.

Dick, do you want to go ahead?

CHAIRMAN HENDRIE: I think we ought to do that in any case, and I will just note that fortunately my colleagues and I are fast readers and quick absorbers of information, fortunately.

Why don't you go ahead?

MR. VOLLMER: Okay. Thank you.

What I would like to do if I may to start out with is basically summarize the options that were discussed at the last meeting. And rather than going through the point by point comments that we have provided you in the October 9th memorandum, I'd like to use if I may the opportunity presented with Mr. Snyder's memo which does I think pretty well highlight some of the important issues and the technical comments, and go down those and discuss those with the Commission. And if there are residual comments then we can take them as they come up.

CHAIRMAN HENDRIE: I'm sure the Commissioners will have assorted questions with respect to these papers.

MR. VOLLMER: As we talked about last time, we see three major options for processing or storage or interim treatment of the contaminated water that is now housed in tanks

eb3

in the auxiliary building and the fuel handling building.

One of these options was the use of available tanks in Unit 1, to transfer the water over to the auxiliary building tanks in Unit 1, and thereby provide a certain amount of free board that would give us more operational flexibility in Unit 2 to proceed with the needed operations and the leakage that accrues from maintaining the Unit 2 system in the safe shut-down configuration.

As we discussed before, there are several problems with the transfer to Unit 1, I think generally characterizing it as spreading out the contamination problem and not providing for a fix which would immobilize the contained radioactivity in the water, which was the basis reason that the Staff felt that that option was not desirable.

Another option we discussed briefly was the transfer of water to the reactor building. At this point in time we are roughly 150 or 200 thousand gallons away from reaching the decay heat removal valves, the decay heat removal system valves in the reactor building. We feel these valves are fairly critical to have them in working order during the operation, so we don't feel it would be really a good solution to put additional water into the reactor building.

There are other problems with that. This water would contact various parts of the primary system, cutting down -- providing a heat transfer medium which would tend to

eb4

1 counteract the natural circulation that is currently going on
2 in the system.
3 The third thing that was considered of course was
4 the thing we've been discussing for some time and that's the
5 use of EPICOR II for processing the water. And I think to
6 summarize the Staff's position on this, it is that we feel that
7 the public interest can best be served by immobilizing the
8 activity in the contained radioactive water by putting them
9 on -- fixing them on resins, and we feel that this also would
10 provide needed relief in the auxiliary building to try to
11 clean up areas in there and to over-all reduce the occupa-
12 tional exposure.
13 Activities are still going on in the auxiliary
14 building and will need to be for the foreseeable future, in-
15 cluding the proposed installation of a separate decay heat
16 removal system that would be more nearly matched to the heat
17 load that we currently have in the core and would provide a
18 fairly low flow so that we would not have to get into a situa-
19 tion where turning on larger pumps might disturb the core.
20 Since we don't know the configuration there we would rather
21 not have to apply any high flows to the core.
22 With those in mind as the options, I would like to
23 go to the discussions in the OPE memo and discuss briefly
24 Items 1 and 2, "Adequacy of the EPICOR II System" and "The
25 Solidification of the Resins," and then go on to the 12 or 15

eb5

or so technical comments that they had. I think they fairly reflect some of the comments that were provided as the public comments, and also some of the nagging issues that you and others have raised that perhaps were not adequately handled in our original environmental assessment.

As far as Item 1, the adequacy of the EPICOR II system, I think that we have in the environmental assessment perhaps not provided an extremely direct analysis of how, isotope by isotope, the system itself will be capable of decontaminating the water. We have used, rather than that, basically a criteria approach.

The criteria was basically that the system should operate such that the effluent water from the system would be capable of many disposal alternatives. And one of these disposal alternatives that would need to be considered in a separate assessment would be the alternative of discharge to a river, as well as the others would be tanking offsite, evaporation or solidification or others.

So what the Staff did was basically assure themselves that the technology we see with the use of a system like EPICOR, which we feel will give decontamination factors in the order of 10^5 or so, would be certainly adequate to clean the water up to a point where it could be below 10 CFR Part 20 disposal standards and could be below the standards set by Appendix I if the river were used as a discharge

eb6

criteria.

There was no intent here to, in advance, pick a discharge alternative but, rather, it was the selection of a criteria and a goal by which the system could be performance-oriented.

Work is going on currently and we don't have the results from those to try to assess what type of decontamination factors would be achieved by the system. If you wish to go into that further I'm sure John can comment on it. I don't know when we might expect the results.

MR. COLLINS: We can expect those documented results in about a week or ten days from now. Most of the studies have been completed. It's a matter of making the final evaluation of the data.

MR. VOLLMER: But in any event, as we discussed in the environmental assessment, the water from EPICOR would be put into a holding tank and if the decontamination factors that we expect or the resultant water did not achieve the goals that we're looking for, it could be put back through the system or other decontamination activities could be undertaken if necessary.

COMMISSIONER AHEARNE: Such as --?

MR. VOLLMER: Well, if necessary, if the system itself didn't work, we could go back into putting it back into holding tanks and a different type of resin mix could be

eb7

1 used. I guess if necessary it could be put through an evapora-
2 tor or something like that, which would make it less of a con-
3 centration problem. But I think the resin would be the first
4 solution.
5 Isn't that right, John?
6 MR. COLLINS: Yes.
7 MR. VOLLMER: So I think it's a technology that
8 we're talking about, and we would expect, based on a great
9 deal of experience with operating plants, with military
10 applications, that it's the Staff's best judgment that this
11 facility will provide us with the decontamination factors that
12 we have been alluding to in our environmental assessment.
13 CHAIRMAN HENDRIE: Hold it just a second.
14 Let me ask the people back in the back row, first
15 of all can you hear me when I talk about like this?
16 And the second question is can you hear these folks
17 when they talk about like they've been talking?
18 VOICE FROM THE AUDIENCE: No.
19 CHAIRMAN HENDRIE: I hear some heads shaking, so
20 I will ask you to hold your mikes up a little bit and boom
21 out so the people in the back can hear. You know, if we
22 charged less for the back seats why then I suppose it would be
23 fair that the people back there not hear as well as the people
24 up front, but since it is sort of one-price seating, why
25 everybody is entitled to the same receipt of information.

eb8

Please go ahead.

MR. VOLLMER: Okay.

One item that was brought up in this discussion, the OPE discussion of the adequacy of the EPICOR system was the issue of whether or not a hydrostatic test of the system with clean water would be conducted after demineralizing unit replacement.

As you know, the system itself was tested to 125 pounds prior to operation, performance tested. And operation of the system will be at just a few pounds over pressure. And also the Staff felt that operations really provide you with a continual testing of the system by virtue of the fact you do have leak detection systems and so on.

However, the licensee has informed us that they would indeed plan on doing a performance test, a leak performance test after replacement of the resins each time with clean water, so I think that particular issue, as far as demonstration each time a process is initiated after a change-out, disconnect and connecting the hoses, will be taken care of. That certainly is not reflected in our current environmental assessment since the information is relatively recent.

I would like to go on now to the solidification of the resins which were discussed in considerable detail in the last meeting.

In a letter from Bill Dirks to Harold Denton dated

eb9

1 October 3rd it discussed the processing of TMI-2 waste and
2 sort of a Staff consensus that the waste would be solidified
3 at a time when -- well, this particular letter said six months.
4 And inthe discussions we had last week I think there was a
5 consensus that, on a best-efforts basis, we would go from the
6 vacuum, dewatered resins into a solidified matrix resin for
7 shipment, but that this should not preclude the application of
8 EPICOR, rather, that we should proceed with the operation
9 and as soon as the system could be put into place, there would
10 be, from that time forward, solidification of resins for ship-
11 ment.
12 Ed, so far as I know, there was no real reservation
13 on the actual timing, and the Staff has discussed --
14 CHAIRMAN HENDRIE: Well, Harold Denton and Bill
15 Dirks had talked about six months as a possible changeover
16 time, to a point where only solidified resins might be shipped.
17 I don't think, talking to both of them, it was clear to me
18 that the six months was not contemplated as some inviolable
19 limit or date from above but, rather, a time which was probably
20 on the short side but was aimed also at encouraging vigorous
21 action to design to get a solidification system into operation.
22 And I think one of the things that people have
23 suggested in resolving the question about solidification of
24 the spent resins, assuming that the system -- if the system
25 is to be operated, would be to try to establish that target

ebl0

1 time as part of the initial understanding on the matter so that
2 it simply does not drift and keep getting pushed out as time
3 goes on.
4 And in that context-- Let's see. In fact you
5 represent one side of that issue but I see others who can
6 represent the other side if necessary.
7 How good or bad is six months as a target?
8 MR. COLLINS: Let me address that, Mr. Chairman.
9 Following our last meeting with you, I met with the
10 licensee and I think it was pretty clear to the licensee the
11 direction in which the Staff and the Commissioners were heading
12 as far as solidification.
13 The licensee has undertaken a study to identify the
14 best method available for solidification. There are many
15 alternatives and he has undertaken a study to identify the --
16 CHAIRMAN HENDRIE: ANd some of those I notice have
17 already resulted in the arrival at burial grounds of containers
18 with free water in them, or at least free liquid.
19 MR. COLLINS: But not from TMI though.
20 COMMISSIONER GILINSKY: I thought no reactors had
21 implemented this requirement yet.
22 COMMISSIONER AHEARNE: There are about nine or some-
23 thing.
24 MR. SNYDER: They do it on their own option I be-
25 lieve.

ebl1

CHAIRMAN HENDRIE: There are a number that have tried one or another solidification process, and I made the comment only to note that one does not, by saying the word "solidification" one does not move from a difficult and uncertain area into the golden promised land.

There's a good deal to it and one has to be careful in choosing the process and working out the details.

MR. COLLINS: That's what the licensee is attempting to do at the present time.

COMMISSIONER GILLINSKY: Let me just raise this point. There are reactors now --

MR. COLLINS: -- who have the capability to solidify.

COMMISSIONER GILLINSKY: They do that now as a matter of course, --

MR. COLLINS: Yes.

COMMISSIONER GILLINSKY: -- and ship their waste in that form.

MR. COLLINS: Some of them would ship the resins in solidified form in 55-gallon drums.

CHAIRMAN HENDRIE: You may remember that some of those drums containing solidified resins in fact leaked at the Nevada site not so long ago and caused a certain amount of discussion between ourselves and Governor List.

COMMISSIONER GILLINSKY: Did they employ one of these solidification schemes?

ebl2

1 CHAIRMAN HENDRIE: Yes.

2 COMMISSIONER GILLINSKY: The Palisades reactor?

3 CHAIRMAN HENDRIE: Yes.

4 MR. COLLINS: They were using urea formaldehyde.

5 So I guess, to sum it up, they are preparing -- they

6 are going through this study and will prepare a report to us

7 identifying the present method to handle the solidification

8 of the EPICOR II resins.

9 I would hope that the Staff would see that report

10 in the very near future. I don't have a permanent date as to

11 when they will submit it to us. I would certainly expect it

12 would be within the next couple of weeks though. But that

13 study is underway.

14 CHAIRMAN HENDRIE: But try to set a target time

15 after which one would not ship spent resins unless solidified.

16 The six-months number sounds to you short?

17 MR. COLLINS: I think six months is entirely too

18 short.

19 COMMISSIONER GILINSKY: Why do you need to ship

20 resins at all during the six months? Why can't EPICOR operate

21 and the resins then be stored and solidified when that process

22 is available?

23 MR. COLLINS: The resins can be stored and that was

24 the purpose of constructing an onsite interim staging area,

25 because of the availability of shipping casks to make those

ebl3

1 shipments.

2 COMMISSIONER GILINSKY: But this would get away from

3 this six-month limit, Mr. Chairman?

4 MR. COLLINS: I think the six months is not very

5 realistic at all. I think it is very unrealistic, six months

6 to do that.

7 MR. VOLLMER: What you say is certainly true. The

8 facilities were constructed to accommodate long-term storage.

9 And I think we talked about before that the generation of resins

10 would be a lot faster if the system is used as expected than

11 the shipment anyway.

12 But the feeling was that rather than sort of getting

13 into the mode of piling up wastes that we felt it would be

14 more appropriate to get it out. But that certainly is another

15 option.

16 COMMISSIONER GILINSKY: As the Chairman said, you're

17 already off by a factor of 100. Am I recalling you correctly?

18 CHAIRMAN HENDRIE: Get the stuff out of the water

19 is my aim.

20 COMMISSIONER AHEARNE: On the question of no free-

21 standing water criteria, do you intend to comment on that?

22 MR. COLLINS: I believe that they go on to say

23 that the licensee has undertaken tests to demonstrate no

24 free-standing water, and those tests have been on-going.

25 I've seen some preliminary results from that and

ebl4

again I have asked the licensee to submit to us the documentation of the results of their tests to show us no free-standing water in those resins.

COMMISSIONER AHEARNE: That would be a criterion that you would --

MR. COLLINS: Absolutely, no free-standing water; no question about it.

CHAIRMAN HENDRIE: Go ahead, please.

MR. VOLLMER: This is probably a good time to pick up the comment that has been made several places and that is what about the environmental assessment or inclusion of the transportation and burial in the environmental assessment.

In particular, I guess the comment -- the question came up as to whether or not the environmental risks associated with either the dewatered resin shipment or the solidified resin shipments would be much different, and I think we believe that the risks associated with the transportation of the dewatered resins or the solidified resins are roughly equivalent.

Both of these would have to comply with the same federal limits for contact dose rate and dose rate at the site of the trailer. So each package, be it solidified or not, would have to be shielded as necessary.

Also, the NRC and DOT package requirements would have to be satisfied so that the radioactive content would be in an overpack capable of withstanding a 30-foot drop test, the

ebl5

fire at 1475, and water immersion.

Things are somewhat equivalent from an environmental assessment point of view. The only major difference that we can see on the solidification side -- and I would like to re-characterize it as not a major difference. If the resins are truly dewatered as we would require them before shipment, we don't see a major transportation and/or burial problem.

On the side against solidification, we believe that it will involve more operator exposure to go the solidification route, but I think a careful assessment and preplanning of the system that is used for solidification will certainly minimize that. And that would be one of the criterion that we would look very carefully at in assessing that system.

So I guess on balance we would conclude that there is no major environmental difference between the shipment of the dewatered resins or the shipment of the solidified resins. I think, in my view anyway, it would be more of a policy question of how quickly you feel it is necessary to get the resins offsite as opposed to waiting on an interim storage basis for a solidification process to be put into effect.

But I don't think on balance it would affect significantly the transportation issue.

COMMISSIONER AHEARNE: Since you have raised the transportation question, could you comment on EPA's questioning about the perhaps need for special packaging since they

ebl6

1 conclude that the resins are so different than the normal
2 resins?
3 MR. VOLLMER: I think the packaging issue really
4 gets to the integrity of the package and the dose rates, the
5 surface dose rates and the dose rates to the trailer, and
6 whatever the isotope involved, we would require that these
7 basic criteria be met.
8 This just got stuck in front of my nose and John
9 hasn't seen it.
10 MR. COLLINS: Can we come back to this?
11 COMMISSIONER AHEARNE: Yes. I just received it,
12 too. It's easier to ask a question than to answer it.
13 MR. VOLLMER: Okay. On page 4 of the OBE memo,
14 Item 3 lists a number of suggested question for the Staff,
15 and I would like to briefly respond to these, and again I think
16 we do characterize a lot of the major issues that have been
17 brought up.
18 The first one deals with the issue of-- The EPICOR
19 system has a pipe for transfer of contaminated liquids between
20 the auxiliary building and the EPICOR II building, and the
21 question would be how would such leakage in that particular
22 transfer system be detected?
23 As we indicated before, both the pipe that is used
24 to transfer the liquid and the guard pipe which surrounds it
25 and that in turn is surrounded by concrete which you can't

ebl7 ..1 really give a great deal of leak integrity credit for anyway,
2 but the first two, the main pipe and the guard pipe, are both
3 seal-welded and tested. And the guard pipe itself does drain
4 by gravity flow into the EPICOR II building sump where any
5 accumulation of leakage would indeed be detected.
6 So we feel that if a leak did occur on the system
7 which was somewhere between a leak that would be not detected
8 because you're missing some of the water that you think is
9 going into the building but still it is a measurable leak rate,
10 it would go into the sump and be not only held up that way
11 but also detected.
12 If it's a very small leak of course it would take
13 longer to detect, but we think it's an adequate cure for that.
14 Item 2 on the system testing. I think we mentioned
15 that a few minutes ago. I also would like to mention that
16 during process of the water itself there is monitoring of the
17 potential leak rate both by the sump levels-- Perhaps you
18 can see it in the airborne contamination. If it was a mist
19 it could be carried along. And you also have TV monitoring
20 the system.
21 So we believe that there will be careful control and
22 monitoring of leak rates in the system. And the addition of
23 the licensee's commitment to pressure test after each replace-
24 ment will provide additional assurance that there won't be any
25 major loss of contaminated water when the system is first started

eb18

1 up after replacement.

2 I think this would adequately cover the issues

3 addressed in that point.

4 Now as far as the precautions to be exercised during

5 change-out, as you know the handling of resins and all of

6 the activities associated with change-out have been very care-

7 fully procedurized. These procedures either have been or are

8 being approved by the people onsite.

9 The procedures include health physics control.

10 And as a last point we have gone a few yards further

11 in this type of an activity and we have had an NRC audit of

12 the operations and training of the operators who do this

13 activity by a member of our Operator Licensing Staff, and we

14 are satisfied that the people who will be qualified for opera-

15 tion of the system will be adequately trained to perform all

16 the operations, not only trained to perform the operations but

17 trained to know what to do in a contingency, a malfunction or

18 some other type of emergency.

19 We do not intend to have any specific NRC monitoring

20 of each particular change-out, but we feel that the controls

21 are routine and surveillance of what's going on at the site,

22 in addition to our approval of the procedures and review of

23 the training, is an adequate overview of that.

24 On Item 4, the highest radiation levels will be

25 handled within the shielded transfer belt.

eb19

And why is the mixed bed demineralizer unit not handled this way? Well, two reasons.

THe first one is that it won't fit, since this particular demineralizer unit is 6 foot by 6 foot, and I believe the other one is a 4 by 4.

But even so it's not unusual to handle activity in filters and so on of this type of a dose rate in operating facilities. And EPICOR II which has been utilized both before and during and since the accident -- EPICOR I, excuse me. EPICOR I, which has been utilized before and since the accident, is handling routinely filters at this dose level.

I think the training is adequate. The experience has been good, and a number of these EPICOR I filters have already been put in the storage facility.

MR. COLLINS: I would like to add just one thing on that. That's an upper bound estimate on the 20 rem. Given the efficiency, the removal efficiency, for the two upstream demineralizers before it reaches that third one, more often than not, that's going to be much lower activity level than what you see here. For the purpose of evaluation, we upper-bounded that number.

MR. VOLLMER: On item 5 we did talk about the dewatering tests which are being done. And as far as the transportation issue, I think the Commission has seen about a month ago a paper which was sent down which outlined the procedures

eb20

that were required before any waste shipment could be sent from the site. And these included a fairly detailed checklist by the licensee as well as a checklist and approvals by the NRC. And I think we would continue that type of a procedure and we would use that to assure ourselves that anything that was shipped offsite indeed met all the criteria necessary.

2a

2B WRB/wbl

Unless John wants to comment further as far as the free standing criteria, we believe that that can be accommodated and documented, and that we can get adequate assurance that a process control applied to the dewatering system will assure that continual basically dry resins will be achieved. And if that's not the case then we'll certainly go back to the Commission.

And, in any event, as John said, we would not ship resins that we felt had any free water. They would need to be vacuum dried.

Item 6 I think we also discussed. That was the solidification problem again.

If there are no other questions I'll go on.

MR. SNYDER: A minor one, Dick.

On Question 3 you didn't mention whether there would be any restrictions on handling of the casks outdoors during inclement weather.

MR. VOLLMER: I'm sorry.

MR. COLLINS: At this time there is no restriction placed on the handling of material in inclement weather. It is in a transfer bell moved outside and placed in a shielded vault for transport to the staging area. So I don't see any need to limit the operation because of inclement weather.

MR. VOLLMER: I think good sense would probably dictate, if you were in the middle of a very severe storm or

1 something like that operationally it couldn't be accommodated.
2 But if the thrust of the question is inclemency in terms of
3 getting water on the thing, I think--
4 MR. SNYDER: Just making it more difficult to
5 handle, especially the one that is not going to be inside the
6 bell.
7 MR. COLLINS: It wouldn't impair the handling of
8 it at all because of inclement weather. You may, because of
9 certain high wind conditions, restrict operation. But that's
10 a normal safety precaution that's take on many outdoor
11 activities. And it certainly could be placed in the operating
12 procedures.
13 Just because it rained or snowed shouldn't affect
14 the operation at all.
15 MR. EILPERIN: A couple of questions.
16 At one point you said that if the EPICOR II didn't
17 decontaminate down to the factor you wanted to decontaminate
18 to you could change the resin bed. Or one other alternative
19 was to put the water in holding tanks. I thought the lack of
20 holding tanks was--
21 CHAIRMAN HENDRIE: Steve, could you hook up to the
22 microphone system one way or the other?
23 MR. EILPERIN: I thought that the lack of holding
24 tanks right now was a constraint. So I was wondering about
25 that alternative.

MR. COLLINS: I think what Dick was leading to was that if the water came through the EPICOR system and did not meet the specification either for re-use of the plant or for disposal it could then either be recycled through taking it into the off-spec tank and recycling it back through the demineralizer, changing out the demineralizers and putting in fresh resins. Or if it were found, because of that particular batch, the resin that was in there was not effective or had reduced efficiency to it, the type of resin itself could be changed.

All the material processed will be backsampled and analyzed for its radioactive content and its chemical content prior to being processed through there.

Now there would be other tanks that would be available because you removed that water from a tank in the auxiliary building. That water could also then be moved back to that tank.

MR. EILPERIN: And what about the operating procedures? Are those available now?

MR. COLLINS: The operating procedures for the EPICOR II system, about 90 percent of all operating procedures including emergency and alarm procedures have been completed and approved by the NRC. There are a few remaining, and they are being worked on at the present time by the staff.

COMMISSIONER BRADFORD: When will they be

WRB/wb4

1 completed?

2 MR. COLLINS: All of the operating procedures

3 should be completed by the end of this week.

4 COMMISSIONER KENNEDY: When you say there are a

5 few remaining, they are completed but are under review by the

6 staff; is that correct?

7 MR. COLLINS: That's correct.

8 CHAIRMAN HENDRIE: Are there other questions on

9 this point?

10 Go ahead.

11 MR. VOLLMER: The first item was the limit for the

12 water cleanup to predetermined levels. And as I indicated

13 before, our thrust there was that our predetermined level would

14 be such that certain options for water disposal could be

15 exercised. And we didn't feel at this point in time that it

16 was necessary to provide a specific decontamination factor

17 for each isotope in the water. We have given what we felt

18 were, based on our other experience, decontamination factors

19 that we felt would be achieved. And, if they aren't achieved,

20 again, the process John just alluded to:-- we could put them

21 in appropriate tanks, hold them up in secure ways to either

22 upgrade the system or to provide the additional decontamination

23 necessary.

24 COMMISSIONER BRADFORD: You say you have given

25 those levels?

WRB/wb5

MR. COLLINS: No. We have not-- Well, the levels that have been given are basically-- The initial criteria were that the water should meet, if it were to be discharged to the Susquehanna, that the water would have to meet 10 CFR Part 20 and Appendix type limitations; that is, downstream dosage considerations, as well as the point of discharge considerations.

Now, recognizing that the disposal alternatives have not been assessed, this at least provides us with a benchmark from which we could judge the system adequacy. And we feel that would be most appropriate when we found out what water, or what decontamination factors we did achieve and what the water was like and--

COMMISSIONER BRADFORD: So those are the levels you will be using, then, to decide whether you would have to put the water back through the system again, or change the system somehow?

MR. COLLINS: Yes.

MR. CASE: If that option were chosen.

COMMISSIONER BRADFORD: If somebody wants to know what an unsatisfactory level would be, he should go to Appendix I?

MR. VOLLMER: As far as-- Okay; Appendix I is dose evaluation.

CHAIRMAN HENDRIE: Certainly in terms of exposure.

COMMISSIONER BRADFORD: And then what should they do to get the number that's going to tell you that the system isn't performing in the way that you want it to?

MR. VOLLMER: What they do is backcalculate. It's a very-- Since it's a calculation of dose in the environment back to a level of activity in an undetermined discharge point, that would be difficult. But the water, in terms of meeting Part 20 requirements at the discharge-- John, how would that...

MR. COLLINS: You would have to backcalculate that, too.

MR. VOLLMER: Based on dilution flow.

MR. COLLINS: It has never been standard practice to set decontamination factors on pieces of equipment. Because a decontamination factor varies with the input concentration of the material. And then it also decreases with time. The number of bed volumes passed through a demineralizer, the DF may start up very high and becomes -- or starts decreasing with the number of beds, the volume of water passed through it.

So what you're trying to achieve is that when you have that water processed, that batch processed, you're trying to achieve a number. If it were discharged then you would take a sample and analyze it such that none of those concentrations of radionuclides would exceed those in Part 20 for unrestricted release.

So if you're saying, Can you backcalculate? Yes,

WRB/wb7

you could backcalculate. If you started off with the unrestricted area, Part 20 concentrations, and applied those in the process tank, that is what the effluent would have to meet from the EPICOR II system.

Knowing that, and your input concentration from a particular batch, would be the decontamination factor that that particular batch would have to achieve.

COMMISSIONER BRADFORD: Well, you see what I'm after. You said in answer to Bernie's question that there is some level of performance that you expect of the system, and if it doesn't meet it there are certain actions that you have to take. And what I take it this other question is after, and what I'm trying to get at is how you will decide whether the system is performing in that way, what numbers are you using.

MR. COLLINS: If it were decided that the water were to be discharged, that particular batch after it has been processed -- and recognizing that we're processing all the water on a batch basis -- that would be analyzed and if those values exceeded Part 20 values for instantaneous release it would have to be reprocessed.

4.100

COMMISSIONER BRADFORD: Let's see: this is a process that has to-- If we were to, say, start using EPICOR as soon as we can you'd have water coming out of it, how long from now?

MR. COLLINS: If approval were given today, probably by the end of the week or the beginning of next week water could be being processed.

COMMISSIONER BRADFORD: Again, how would you know whether that water, when it first came out, was being handled to a satisfactory degree?

COMMISSIONER AHEARNE: Since you would not have at that time any decision on what to do with the water. All you would know is that the water is going to stay onsite.

MR. COLLINS: You're still applying the same value whether it is being disposed of or stored.

MR. VOLLMER: We use that as our disposal criterion.

COMMISSIONER GILINSKY: And what is that?

MR. COLLINS: Part 20.

COMMISSIONER GILINSKY: It's expressed in what units?

MR. COLLINS: Microcuries per--

MR. SNYDER: It's by isotope also, individual isotopes, specific activities for unrestricted release. That seems to me to be a reasonable thing. I think it would have been helpful if the assessment had said that. You have to have some measure of how effective your system is. That's the point of the question.

CHAIRMAN HENDRIE: Let me see if I can confuse the

WRB/wb9

1 issue further in the interests of clarifying things for myself.

2 Presuming the water is to be processed in some

3 fashion, EPICOR or whatever, at some point you would regard it

4 as adequately processed, one pass through the system, or two,

5 or whatever it takes.

6 Now will the effluent from that black box, I will

7 call adequate processing for the present purposes-- Now this

8 water is headed for storage; it's not headed for the river or

9 tank cars to take it to who knows where; it's headed for

10 storage onsite with disposal to be determined later.

11 Nevertheless, Part 20 concentration limits would apply to that

12 at that point?

13 MR. COLLINS: Absolutely.

14 CHAIRMAN HENDRIE: All right. So that's Part 20.

15 Now what that means is if you haven't got Part 20

16 limits coming out on the first pass through EPICOR II, why,

17 you're going to put it over into recycle and run it again?

18 MR. COLLINS: That's correct.

19 CHAIRMAN HENDRIE: That sounds to me like-- Is it

20 clear that that's what you want to establish?

21 It's not clear to me that--

22 COMMISSIONER GILINSKY: Is that too lax or too

23 strict?

24 CHAIRMAN HENDRIE: Look, the nature of this ion

25 exchange system is that even when it isn't working as well as

1 you might like it, it's still going to give you a decontamina-
2 tion factor well above a hundred. I'll guarantee that. And
3 I'll practically guarantee above a thousand. And it's likely
4 to be up in the 10^4 and above range.
5 Now if you take one pass of contaminated water,
6 then, through this system, even if it doesn't meet Part 20
7 limits when it comes out you've accomplished an enormous
8 step forward in public health and safety of concentrating and
9 fixing the bulk of the radioactive material, 99 percent, 99.9
10 or 99.99 percent of the material in a form and in a place
11 where it can't easily get back to the human environment; okay?
12 So that in terms of a health and safety step, why, never
13 mind whether it meets Part 20 out the other end: that's a
14 problem we'll deal with in terms of any disposal options.
15 But you have accomplished a very substantial benefit, in my
16 view, in getting the fission products out of a form where, if
17 the tanks leak or somebody turns the wrong valve or a pipe
18 busts it's going to be messy down there and it's going to be a
19 detriment to the public health and safety.
20 Let's get this stuff on the ion beds. And if we
21 have to make a one pass through all the water and take it out
22 at a part in a thousand and still not have Part 20 concen-
23 trations on the stuff that's left, you have still taken the
24 great bulk of it and put it in a form where it can't get to
25 people, and you have reduced the residual risk down there by

WRB/wb11

1 that much.

2 Now the question of what you then do and what the

3 concentrations ought to be when you consider disposal options,

4 evaporation, discharge to the river after dilution with other

5 streams through the plant, ship it offsite -- I don't know;

6 make concrete with it or whatever you want to do with it,

7 those certainly remain to be considered.

8 One is going to have to talk about certainly

9 the Part 20 regulations, about the Appendix I limits and

10 exposure of the public, which requires really very low efflu-

11 ent -- amounts in the effluent.

12 Now, one of the things that has bothered the

13 present environmental assessment is the staff's trying to say,

14 Look, we aren't quite sure what the disposal option chosen

15 will be; that you need to know what the disposal option is

16 and what other factors are, such as a dilution before release,

17 before you come back and determine what the limiting concen-

18 tration of a radionuclide is in this water which will be stored

19 in tanks on the island after having been processed through

20 EPICOR. And it's because they aren't sure what to say about the

21 dilution factor in particular that they are leery of quoting

22 a limiting concentration as the output of this first pass

23 through EPICOR II.

24 And it is similarly the difficulty if you say to

25 anybody, Well I won't tell you what the concentration is but I'll

tell you that we're going to apply Appendix I downstream where anybody could be exposed, and let you backcalculate.

Well, you can backcalculate from the dose assumptions about exposure downstream if it's a discharge to the river case. But eventually you get back and your calculator will have to know what the dilution factor is before he could get back into the tank water concentration. And without that being defined -- and it is not defined at this point -- why, it's hard to set a. . .you really can't set a definitive number.

But I think what we want to keep in mind is that even without setting such concentration limits on the product water from EPICOR II, that passing the water through that system indeed removes the bulk -- and I'm talking about 999 parts out of a thousand, or something like that, of the radioactive material. You know, an enormous step forward in reducing the hazard from this stuff.

Now I'm not sure where we want to go with regard to trying to supply some sort of concentration limit numbers here in our discussion here of the environmental assessment or in any subsequent action we take. The Staff has been reluctant to do so other than to talk about Part 20 limits for concentration. But I'm not even-- It's not clear to me that you want to hang that on this system for this first processing step. That is, I would rather pass all of this stuff through

EPICOR II and get the great bulk of the radioactivity fixed in the resins, and then look at the product water and decide that this batch and this batch and this batch still have got traces in them that are too high for any of the discharge options I wanted to consider, and then recycle them, you see, and pull it down.

I think the game is to get the bulk of the fission products tied up in a form where they can't get back to people.

COMMISSIONER GILINSKY: How do you see that their proposal interfers with that?

CHAIRMAN HENDRIE: I don't see it at all. What I see interfering with it possibly is a concern that we can't go forward unless we set specific radionuclide concentration limits. And then this long discussion of mine is saying simply I'm trying to clarify.

COMMISSIONER AHEARNE: But if you move on to absolute limits are you saying that you would be in favor of a relative decontamination factor approach?

CHAIRMAN HENDRIE: I would run this stuff through EPICOR and say, whatever is done with it, that the product stream is going to go back into tanks for storage, and it isn't going to go anywhere else until we talk about it here and there is an environmental assessment on it. And I wouldn't put any limits on it because I'm confident that even a pass toward the end of the life of a bed is going to takeout the

WRB/wb14

great bulk of the radioactive material and be of considerable benefit in a public health and safety sense.

At this time I would not set decontamination factor or effluent concentration performance requirements on the system.

COMMISSIONER KENNEDY: You would wait to do that until you know what the disposal system is.

MR. COLLINS: It was the intent of the staff to include all of that in the next assessment of the disposition. It will all be discussed in detail.

MR. VOLLMER: I might clarify: On Part 20 it's not clear to me that for tritium you would have the processed water through EPICOR meet Part 20 requirements for tritium.

CHAIRMAN HENDRIE: Just so.

MR. VOLLMER: As you point out, the bulk of--

CHAIRMAN HENDRIE: I think I can be very cautious about saying Part 20 on the effluent from EPICOR. But we want to keep in mind that we've got --that the water we're talking about for EPICOR is -- what? -- a quarter million gallons give or take a couple of truckloads of material with fission products in it. What we're proposing is to run it through a chemical process system and put it back in the same or similar tankage with amounts of radioactivity in it that are at least a factor of a hundred and more likely factors of a thousand or ten thousand or more less.

4.240

WRB/wb15

1 MR. COLLINS: That's correct.

2 CHAIRMAN HENDRIE: I find it very hard to find a
3 difficulty for the public health and safety there, and I find
4 considerable benefit for it. And that's quite apart from
5 whether in turn, then, the concentrations in those tanks after
6 processing meets any sort of -- meets the criteria for any
7 particular disposal method.

8 COMMISSIONER GILINSKY: Well, let's see:-- I
9 understood Mr. Collins and Mr. Vollmer to be saying that they
10 were aiming to get below the Part 20 limits. They would simply
11 recycle that--

12 CHAIRMAN HENDRIE: That's what I understood them
13 to say, too. And I'm saying: be cautious, that may not be
14 what you want to do.

15 That is, I hate to see you sit there because of
16 tritium limits or something like that and just recycle and
17 recycle two or three passes from one tank while all the rest
18 of this contaminated water sits there waiting for you to do it.
19 I think you ought to take it all through the system once.

20 COMMISSIONER GILINSKY: That's just the order in
21 which you do things.

22 CHAIRMAN HENDRIE: Just so. But if you say once
23 I take-- You know, it all depends on how these things get
24 written up. And I've seen us write prescriptions which say
25 once you take the water out of that system and start it into

wrb/agbl

1 the processing over here, you can't put it back until it meets
2 certain concentration requirements. And you can then get stuck
3 going around in circles over here in the process in order to
4 meet that. In the meantime, all the rest of that stuff out
5 there sits there unprocessed.
6 COMMISSIONER GILINSKY: But you're not saying, are
7 you, that once they have run it through and gotten it de-
8 contaminated that they shouldn't run it through again to get
9 it below Part 20 limits?
10 CHAIRMAN HENDRIE: You betcha I'm not saying that.
11 It's got to be below Part 20 limits for any of the disposal
12 options that, you know --
13 COMMISSIONER GILINSKY: You're just telling them
14 to do it in the right sequence?
15 CHAIRMAN HENDRIE: I'm telling them to do it in
16 the right sequence. I'm also cautioning them not to tie
17 themselves up with unnecessary or perhaps even unwise over-
18 requirements on the system that might impede getting the bulk
19 of this stuff fixed on resins instead of sitting there in tanks.
20 COMMISSIONER KENNEDY: It's not a question of
21 whether, it's only a question of when.
22 CHAIRMAN HENDRIE: Yes.
23 COMMISSIONER AHEARNE: If I could ask a question
24 on the when. Let me ask, for an assumption, assume that TMI-1
25 is not available, so I'm just addressing TMI-2. Since part of

this is precipitated by the fact that you have this flow in so you are increasing the amount of water that you want to run through, there is a limit to how much of the water you can run through EPICOR and put back into the tanks from which it came, as the Chairman just indicated might be the solution, so you're going to have to put it somewhere else.

Now to put it somewhere else and not put it in TMI-1, you are going to have to bring it down to some level, aren't you, below what it currently is. So there is some upper bound that it has to be below in order to put it in that other set of tanks. What would that be?

MR. VOLLMER: That would likely be dictated by shielding considerations. If it is in, for example, storage in the 130,000 or so gallon tank in the EPICOR building itself, that is a relatively unshielded tank and you would back-calculate if there were any shielding problem.

With the decontamination factors we expect of the system, we don't feel that there would be a problem in storing it there. For a decontamination factor of, say, something like 100, then that wouldn't be a very prudent place to store it and you're right, we have to be very selective about our --

COMMISSIONER AHEARNE: At 10^4 would it be --

MR. VOLLMER: I would imagine that certainly at 10^4 or so you would have a great many tankage options that you could be living with. And certainly if you cut down to a gross

activity, that would be Part 20, you're certainly talking about railroad cars or almost anyplace you store it, you'd have reasonable assurance that --

CHAIRMAN HENDRIE: That's a very good point, John, and does provide an incentive, in fact, to get good decontamination factors. Because, in fact, if you can get down to very low concentrations, then as Dick says your options on temporary tankage are very broad. The higher the level of contamination in that water, why the more limited those options are.

COMMISSIONER AHEARNE: That was my concern.

CHAIRMAN HENDRIE: A very good point.

COMMISSIONER BRADFORD: Is there a relationship between Appendix I numbers and the Part 20 numbers?

MR. VOLLMER: No, the Part 20 numbers are numbers in terms of either gross contamination or specific isotope contamination, as set out in Part 20 that must be met at the point of discharge.

Now if that point of discharge was into a fresh water river, then you would have to assess the dilution provided by that river, the uptake in the aquatic species in that river, and possible public water intakes downstream and do a dose assessment and see to meet Part 20 that no person would likely receive more than three millirems -- to meet Appendix I. If you were discharging into a salt water environment, then of course

you would not have the public water intake.

So it depends on really the environment and what happens after it's put into wherever you're putting it, and the dose assessment from that, including recreational uses, fish uptake and water and so on. So the two are difficult to equate.

But as far as Three Mile, my recollection serves me that our discharge limit to meet Appendix I values, for example, would be on the order of 10 curies a quarter from the site. And for from the time of the accident up to now, I think all the releases summed over that time has only been about a half a curie. So we feel that this operation would be --

COMMISSIONER GILINSKY: Half a curie to what?

MR. VOLLMER: Total. Half a curie are those things which we would normally use in the Appendix I calculation. What I'm saying is what has gone into the river now would be allowable discharge from TMI-1 and from the industrial waste-water and so on is on the order of half a curie.

In other words, the allowance to meet Appendix I, for example, would be about 10 curies a quarter, and that's what's contained in the current facility tech specs. Those are predicated on the dose calculation for drinking water, recreational usage and fish consumption.

I'll run through very briefly the rest of these. The alarm setpoint, this is in Table Two -- listed in Item Two

WRB/wbl

at the bottom of page 5, we did make some corrections in response to the public comments. One of the corrections wasn't made. The alarm setpoint will be about 20 percent of 10 CFR Part 20 release limits.

I might point out that since this assessment was written our noble gases and iodine, which would likely provide the only gaseous release from EPICOR, have suffered another 10 or so million decontamination by natural decay. We don't think this will be any type of a problem or that there will be any measurable releases. But, in any event, the monitor will be set below the 10 CFR Part 20 discharge limits so as to provide assurance that if that limit is reached and the alarm is sounded the operation can be shut down and you would have a fair margin of protection, probably about 10^3 dispersion between the point of release of Part 20 material and the nearest public exposure.

So we think youhave a fairly adequate -- more than adequate limitation on the setpoint.

The type of monitors:-- John, can you address that?

MR. COLLINS: It's a gross gamma, beta and iodine -- or particulate and iodine cartridge on--

CHAIRMAN HENDRIE: Volume, John. Volume.

MR. COLLINS: Volume? Oh, the sampling rate? Oh, I'm sorry; you want me to speak up.

CHAIRMAN HENDRIE: If you will please shout at us.

MR. VOLLMER: Item 3, the benefit-impact assessment. I think we've covered that adequately.

COMMISSIONER BRADFORD: Item 2, the same kind of question again. There is a set of numbers you can get from the people who made that comment, what the setpoints are?

MR. VOLLMER: Yes. They are specified. We can do that.

Item 4 was the question of the testing of the floor drains. I checked on this this morning, and I understand that we have checked that there is no interface and they are not connected to the storm drain.

COMMISSIONER AHEARNE: They suggested a dye test to make sure of that.

MR. VOLLMER: Okay. In the detailed comments.

MR. COLLINS: There are no drains connected to the storm drain in the chemical cleaning building. There are none.

MR. VOLLMER: I guess the question is, put dye in there and see what you get.

COMMISSIONER AHEARNE: That was the proposal, as I recall.

MR. SNYDER: It was from the State of Pennsylvania.

COMMISSIONER AHEARNE: They suggested a dye test just to verify.

MR. COLLINS: You put the dye in the drains and check the river and see if you have any dye. I don't know how it would get out there.

CHAIRMAN HENDRIE: Are there drains in the building?

MR. COLLINS: There are floor drains, but they all go to the sump of the building. Everything drains into the sump.

MR. VOLLMER: Can we communicate back to the state and see if they would like to suggest some specific testing program and then talk to the licensee?

MR. SNYDER: I didn't understand the comment either. And the purpose of that item here was just to bring it to the fore. And I think it might not be a bad idea just to check with the people in the State. Maybe there is something here that hasn't been communicated adequately in their comment. If there is physically no separation it doesn't make sense to--

MR. VOLLMER: Okay, we'll do that, and make sure the state is indeed satisfied.

Item 5: Will EPICOR II be used for other water?

A system of this type could be used for other water, but we at this point in time have not received any indication from the licensee that he intends on using it beyond the processing of the auxiliary building water plus what's in the tank farm and the spent fuel building.

WRB/wb4

As far as the decommissioning, the type of decommissioning would undoubtedly be a flush and using a decontamination fluid to clean out the pipes, a dismantling operation that is typical of what you would do for any process system that gets contaminated either by crud or by fission products.

This is also a not too unroutine operation, so I don't think there would be anything particularly new or novel about doing such an operation for EPICOR.

COMMISSIONER GILINSKY: When would that be done if EPICOR is only expected to be used for a relatively short time?

MR. VOLLMER: I really don't know. It depends on what the licensee would like to do with that building, if he would find other uses for EPICOR or if he wishes to propose its use for a broader activity in terms of some of the wastes that are either coming out of the -- that will be taken out of the reactor building in the future, for decontamination of that.

I would think that there are uses for the facility. But, again, no proposal has been made for that.

Item 6:-- I'm sorry, Bernie, but I guess we didn't quite know for sure what storage space you were concerned with there, whether it was solid storage space or--

MR. SNYDER: Solid storage, I believe. And it was a comment raised--

MR. VOLLMER: I do recall that. I think John perhaps

WRB/wb5

could comment on what that--

MR. SNYDER: This was Franklin and Marshall College's comment.

MR. COLLINS: Actually the long term storage facility is built on the module concept basis, where you can add modules to that facility. And it was designed that way, not constructed that way, designed that way, so that if a processing method were conceived for the higher activity water you would have available a design concept already in place to handle those things. But the modules would be built on an as-built basis. They were forward looking, Franklin and Marshall.

2[illegible]ls

2c ebl

MR. VOLLMER: I think the general intent is certainly to move the waste off at the earliest possible time so that if the storage space is not needed it's certainly there for contingency. If the burial grounds were closed up for an extended period of time or something like that, then the high integrity storage space would be available.

c5

Item 7, no consideration of demineralizing at a rate equal to cask availability to avoid onsite storage.

I think Chairman Hendrie's comments that the real incentive here is to get on with the job of taking the contamination out of the liquid form, I think that would respond to that particular comment.

Item 8, the same ALARA standard should not be applied to the accident contamination as that for normal operations. Several people have made this comment, and I think the basic definition of ALARA would stand, no matter in what environment it need be applied.

Indeed, it's as low as reasonable achievable, whatever the conditions you're faced with.

CHAIRMAN HENDRIE: Did the comment mean we shouldn't do -- that the cleanup should not be conducted so as to reduce exposures as low as reasonably achievable? I don't understand the comment at all.

COMMISSIONER AHEARNE: I think the comment was to say that previously you had some set of standards established

b2

1 under ALARA and that you should now establish lower standards.

2 MR. VOLLMER: More strict standards because of the

3 accident.

4 CHAIRMAN HENDRIE: As low as reasonably achievable

5 hopefully means just that.

6 MR. SNYDER: But aren't they translated into

7 specific numbers in the tech specs? I thought that was per-

8 haps-- It was not clear to me what this comment means either.

9 MR. VOLLMER: The tech specs-- You're defining

10 ALARA by the Appendix I values in the tech specs which are

11 arrived at by some sort of an ALARA cost-benefit consideration.

12 I think-- Right off the top of my head I think if we applied

13 ALARA considerations in terms of cost-benefit to this type of

14 an operation we would likely get higher release limits rather

15 than lower.

16 But I think Appendix I is the sort of basic criteria

17 that we've been going by here, and the only thing that we haven't

18 met that would be part of Appendix I requirements is we have

19 not specifically addressed whether or not the addition of

20 another thousand dollars in invested equipment could reduce

21 the man-rem by one man-rem or more.

22 And I think the man-rem consideration for the liquid

23 discharges are traditionally fairly low in meeting current

24 Appendix I objectives. I think they would likely be less than

25 a few man-rem to ten man-rem for the whole process. And

eb3

1 incrementally it would be hard to visualize spending less than
2 $10,000 to make a significant impact on that.
3 So I think even to the Appendix I cost-benefit
4 evaluation, if you want to go through that type of routine,
5 you could make a very good case that we are ALARA now if we
6 can meet our current Appendix I objectives.
7 John, do you agree with that?
8 MR. COLLINS: Yes.
9 MR. VOLLMER: Okay.
10 Item 9 I think we have discussed, some of the
11 reasons we didn't want to go into looking at each nuclide by
12 nuclide.
13 Item 10 addresses the objectivity of the Staff. I'm
14 not exactly the one to respond to that.
15 MR. COLLINS: Well, I would like to respond because--
16 MR. VOLLMER: I knew you would.
17 MR. COLLINS: Not because of that, because it really
18 is a little more than that. I think you took this a little
19 out of context, Bernie.
20 I think it was saying that because we were on the
21 site giving direct guidance to the licensee we now had lost our
22 objectivity. And really, in response, we were performing our
23 normal licensing function which is to provide design guidance
24 for radwaste systems or any reactor system. And I think that
25 that's what the question asked, didn't it?

eb4

1 MR. VOLLMER: Yes, it's just that we are doing more
2 than the normal process.
3 COMMISSIONER AHEARNE: So objectively you feel you
4 are being objective.
5 MR. VOLLMER: Our very objective view would be yes.
6 MR. COLLINS: Absolutely.
7 MR. VOLLMER: Item 11, I think we have addressed
8 that. It was not in any way a foregone conclusion that the
9 water would be discharged into the river, but the discharge
10 quality water, as I indicated, was an attempt to provide a
11 criterion or a goal for the decontamination process, that it
12 would meet these objectives. And certainly we've discussed
13 that as meeting the Part 20 criteria.
14 And then the last question, the impact of operating
15 EPICOR II without having the over-all approach I think is per-
16 haps a legal question.
17 MR. BICKWIT: That's right, and we can address that
18 question in our next meeting.
19 COMMISSIONER AHEARNE: Could we now address perhaps
20 the EPA questions?
21 MR. COLLINS: I think I read into the EPA comment
22 they're saying because of the higher nature, the higher levels
23 of activity that may be associated here, that certain addi-
24 tional criteria should be applied on the packaging and handling.
25 And then they of course go into a comparison which

eb5

is a poor comparison because they're taking average numbers for shipments from PWRs rather than the upper-bound numbers because there are PWRs who make shipments of resins in much higher numbers than are postulated here.

They just took numbers and divided them by shipments which is really not a fair comparison.

It is a question that NMS and NRR have been looking at on the total picture, the generic picture of maybe restructuring the packaging criteria, but at the present time the liners and the shielded containers that they would be shipped in do meet the packaging requirements of both NRC and DOT.

CHAIRMAN HENDRIE: Well, let's see. My understanding about the welded steel tank liners to hold resins and the Type B transportation cask, together with other arrangements with regard to the transportation proposed for moving the resins to a burial site seem to me in fact to constitute substantial packaging and handling as contrasted to the normal handling of resins, spent resin materials from normally operating facilities.

MR. COLLINS: Of course any spent resin material from any plant, it would depend on the activity level of the resin. I mean even on other reactors if the activity levels were high, they would have to go, because of the shielding requirements, in special packaging.

eb6

1 CHAIRMAN HENDRIE: But a lot of it does move in 55-
2 gallon drums.
3 MR. COLLINS: Certainly.
4 COMMISSIONER AHEARNE: I think what you're pointing
5 out, John, is what you expect here still does not exceed the
6 capability of the cask and liner that you would be putting
7 it into.
8 MR. COLLINS: No, it does not, and that was the
9 criterion that was placed on the EPICOR II system for its
10 contact readings on the liners such that they would meet
11 packaging requirements for shipment.
12 CHAIRMAN HENDRIE: Corrosion resistance in storage
13 if there is a need for extended storage before the stuff is
14 moved.
15 COMMISSIONER KENNEDY: That's onsite.
16 COMMISSIONER AHEARNE: Onsite.
17 MR. COLLINS: Well, because of-- The liner itself
18 of course has a certain amount of corrosion resistance to it.
19 The pH of the material itself is fairly neutral, so that it
20 wouldn't be high corrosion but it would be desirable-- That's
21 why the licensee didn't construct this as a permanent facility;
22 it's a staging area. And the sooner that material can be
23 shipped to its final resting place the better it would be.
24 COMMISSIONER KENNEDY: That doesn't answer the ques-
25 tion.

eb7

1 MR. COLLINS: No, it doesn't.

2 Well, we are not intending on any lengthy storage

3 of the material.

4 COMMISSIONER AHEARNE: What kind of storage do you

5 think would be without significant problems? How long?

6 MR. COLLINS: The storage facility itself has a

7 design criteria applied to it of two years.

8 COMMISSIONER KENNEDY: Two years?

9 MR. COLLINS: I believe it is three-eighth inch

10 liner.

11 CHAIRMAN HENDRIE: Three-eighth inch welded-plate

12 tanks. And it's a fairly well cleaned up-- Well, what equiva-

13 lent pH in a dewatered resin?

14 MR. COLLINS: It would be fairly neutral. The

15 influent solution is approximately between seven and eight. I

16 don't see a corrosion problem.

17 CHAIRMAN HENDRIE: Unless there is some reason you

18 expect to get low pH sludges and so on down in the bottom --

19 MR. COLLINS: That can be handled by operating

20 procedures.

21 CHAIRMAN HENDRIE: -- you ought to go a long time.

22 MR. SNYDER: The process adjusts the pH before they

23 start running it through.

24 MR. COLLINS: The resin itself adjusts the pH. The

25 ratio of the cation to the anion will adjust the pH.

eb8

CHAIRMAN HENDRIE: And finally do the proposed packaging and storage procedures in any way preclude or present further difficulty to the processing of waste such as solidification?

MR. COLLINS: Well, I think we have said that the resin itself -- putting it on a resin at this time does not preclude alternative ways of handling it, and that's what the licensee is looking at, alternative ways of handling their solidified resins.

COMMISSIONER AHEARNE: Thank you.

MR. VOLLMER: The last item I wanted to address was a fairly lengthy discussion in the Susquehannah Valley Alliance comments by a consultant, Mr. Kosarek, which basically used some of the Staff documents and other documents, challenging the capability of -- or the Staff's evaluation at least of the capability of EPICOR II to clean up the water.

I think we could-- If you wish we could ask John to discuss some of the specific allegations he made, but I think again I would like to get back to the-- It has been the Staff's judgment that, based on the experience we have had with other systems of this type, treating contaminated reactor water, that these are our best judgments as to how this system will perform, and if it doesn't perform to expectations there are measures we could take to accommodate it.

So again, if you wish we can go into some of the

eb9

1 details of his comments. If not, we can leave it at that.

2 CHAIRMAN HENDRIE: Does somebody want-- There is

3 at least a summary write-up in the Staff's response to comments

4 by the Susquehannah Valley Alliance in the papers that are here

5 before the Commission. Does anybody want to pursue some of

6 those?

7 COMMISSIONER GILINSKY: The principal immediate

8 alternative would be to store the water in the various tanks

9 that are available, presumably principally in TMI 1.

10 MR. VOLLMER: I'm sorry, the alternative for using --

11 COMMISSIONER GILINSKY: To using EPICOR if it

12 shouldn't operate as expected.

13 MR. VOLLMER: I believe that that really is about

14 the only real alternative. I don't believe that putting it

15 in the reactor building or construction of high integrity tanks

16 at this point is really an alternative. I think that is the

17 only alternative.

18 MR. SNYDER: Actually by doing the laboratory scale

19 testing with a proven technology, unless there is something

20 unique here that none of us know anything about, I don't see

21 any reason why it shouldn't work. We're going to do it on a

22 small scale with samples of actual TMI water in a lab to see

23 what the resins do for you, and it's easy to scale up. It's

24 hardly a new process.

25 COMMISSIONER BRADFORD: When are they going to do

ebl0

that?

MR. COLLINS: That work has been on-going and that's what I was referring to earlier, that the results of that would certainly be documented.

COMMISSIONER BRADFORD: Bernie put it in the future and I was having trouble seeing when it would be done between now and the weekend.

MR. SNYDER: I'm sorry.

CHAIRMAN HENDRIE: Another one of those frantic Friday afternoons, Peter.

Are there other questions?

(No response.)

Bernie?

MR. SNYDER: No, sir. I think they've covered everything that we raised plus the major comments that the outside raised very well.

CHAIRMAN HENDRIE: Steve?

MR. EILPERIN: No further comments. I think they've covered it pretty well.

CHAIRMAN HENDRIE: Len?

MR. BICKIE: Nothing further.

CHAIRMAN HENDRIE: I would note that the Commission's discussion with the Staff here today, as well as the discussion the other day, in part have covered various aspects of the environmental assessment, in some ways supplementing it and

bll

supplementing it.

It seems to me that the papers before the Commission, as well as the discussion here in the form of the transcript of the meeting might usefully be appended to the environmental assessment so that when people ask what materials were before the Commission and considered in whatever decision we may make here by way of having in hand an adequate assessment of environmental effects of any of our decisions, I think they ought to have clearly before them that all of this material and discussion was in fact a part of that process.

So with your agreement I will direct that we waive the customary rule about use of transcripts for this meeting and the last one on EPICOR and provide that they -- together of course with the Staff papers that are here --

COMMISSIONER AHEARNE: You don't include the October 9th response to the comments?

CHAIRMAN JENDRIE: Just so.

(Continuing) -- should be appended to the environmental assessment.

MR. BICKWIT: I think you might vote that, Mr. Chairman.

COMMISSIONER BRADFORD: You're not suggesting including the transcript of the two meetings with the environmental assessment.

MR. BICKWIT: As part of the administrative record leading to that, assuming that that becomes the basis for the your negative declaration.

CHAIRMAN HENDRIE: At the moment we have a rule that says that transcripts are not available as parts of a record of that kind. And it seems to me in this case, because of some substantive discussion in addition to that record that has gone on here, that it would be useful, and counsel has recommended that a transcript of this meeting kept and the past one be made a part of that record.

COMMISSIONER BRADFORD: Let's see, the published document called the environmental assessment, then --

MR. BICKWIT: All you would publish would be your negative declaration, if you felt the assessment was adequate for that purpose. That is the only legally required document to publish.

I think this is the equivalent of just as an administrative hearing is deemed to modify the Environmental Impact Statement. So here, too, your discussions would be deemed to modify the environmental assessment. And in toto that would be the basis for whatever decision you might reach.

So far the environmental assessment serves two

wrb/agb2

5.230

purposes: it's obviously helping you make your decision on how you want to handle EPICOR and it also forms the basis for a negative declaration. It certainly, I think, would be in the public interest to tell the public part of the basis for your decision was certainly this discussion.

CHAIRMAN HENDRIE: And the one at the previous meeting of the same time and on the same subject.

Well I would propose that the transcripts -- that the normal rule on transcripts be suspended for the purpose of allowing these two transcripts to become a part of the, what should I call it, the record, the administrative record in this matter. And I will call for those in favor.

COMMISSIONER KENNEDY: Aye.

CHAIRMAN HENDRIE: Aye.

COMMISSIONER BRADFORD: Let me raise another question. I don't think I have any objection to this, but what seems peculiar to me at the moment is we have not yet made a decision about it.

MR. BICKWIT: That's right. As I stated it, you would do this only if you came to the conclusion that you wanted to issue a negative declaration.

COMMISSIONER BRADFORD: That's what was perplexing me, I would think we would make that decision first.

CHAIRMAN HENDRIE: I thought it would be useful to include the material to make it clear that we propose to

wrh/agb3

include the material in the record at this point. This is a public meeting of the Commission on the subject, and it seemed to me that one might do it, might preferably do it that way.

Now, I don't regard this as prejudicing the subsequent determination which will have to ride on the merits and the votes of the Commissioners as they may come out.

COMMISSIONER AHEARNE: Are you saying that if we make a negative declaration, that it be included, and if we don't then the motion is moot?

MR. BICKWIT: That's right.

CHAIRMAN HENDRIE: In a practical way, that's how it turns out.

Let me ask for aye's again.

COMMISSIONER AHEARNE: Aye.

COMMISSIONER KENNEDY: Aye.

COMMISSIONER BRADFORD: I'll abstain until after we've made a decision on the negative declaration.

COMMISSIONER GILINSKY: I think you ought to take it in the opposite order.

CHAIRMAN HENDRIE: So you would abstain pending that.

COMMISSIONER GILINSKY: Yes.

CHAIRMAN HENDRIE: All right. The motion is carried on a three-to-two abstention, three for, two abstention basis.

And I think unless anybody else has other business

wrb/agb4

that we ought to transact here, I think we ought to get on and hear the advice of our legal staffs in closed session.

Thank you very much.

(Whereupon, at 2:47 p.m., the meeting of the Commissioners was adjourned.)