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UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

PRE-T CONFERENCE

ON

THREE MILE ISLAND

Middletown, Pennsylvania

April 17, 1979

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P R O C E E D I N G S

MR. FOUCHARD: Mr. Denton wanted to come down this morning and bring you up to date on the situation at Three Mile Island, including the environmental situation out there.

So, Harold, why don't you just go ahead.

MR. DENTON: As a result of a lot of efforts by people on the NRC staff, people in the State of Pennsylvania, other federal and local agencies, I consider my task here completed. I plan to return to Bethesda today. I'll leave Vic Stello here in charge. He'll be here for an indefinite period of time following the plant's status from here on out.

Today the plant is still being cooled through the steam generators. The bulk core temperature is about 245 degrees. Plans are being made to lower the temperature about another 10 degrees by opening up new flow paths for steam to reach the condenser.

Efforts are still underway to develop procedures an put into place the preferred cooling plan which is taking a lot longer than I had imagined it would take when I was here days ago. It's hard for me to realize I've been here for 19 days now since this accident began.

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Probably the most significant event over the weeken was the increase in the release rate of iodine Saturday

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morning. We noticed the iodine release rates were going up. Concentrations were beginning to be found on-site. By Sunday we were finding concentrations off-site in the trailer vicinity on the order of part 20 limits for unrestricted areas.

This condition existed throughout Sunday night and large parts of Monday. By Monday we were taking three steps, the first of which concerned the filter bank. The increase in iodine release rates seemed to coincide in time with the start of activities in replacing filters. When we looked into the status of the filter replacement activity, we found that 20 filters had been removed, but no replacements had been put in.

So there was a potential for bypass leakage through that filter space getting out without being filtered. All 20 of these filters have now been replaced in the plant, and future filter replacements will be on a one for one basis.

Another potential for release of iodine was a makeu tank. This is where the reactor coolant is brought from the primary system. It has a lot of iodine in it. When the makeup tank pressure was high before, there were high iodine release rates, and when it was low, there were low iodine release rates.

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We noticed it was back up to 10 to 16 pounds

yesterday, and steps were taken beginning at about 4:00 o'clock to vent the makeup tank to the waste gas decay tanks. These waste gas decay tanks are what I have described previously as being pumped back into the containment. And so the makeup tanks are now at essentially atmospheric pressure.

And the third effort was to spray the floors of the auxiliary building with thiosulphate in case there was iodine being evolved from the floor.

We're not certain which one of these three steps is really effective, but measurements being taken both on-site and off-site show that the iodine release rates are dropping. The most recent data I have on stack measurements show they are down about a factor of three at 4:00 o'clock this morning from a peak of yesterday.

I think five samples this morning off-site under the plume did not show iodine levels above the minimum detectable levels.

Right as we were leaving there was one sample in which we did find measurable amounts of iodine off-site. If you look at the total amount of iodine release during this period -- and using the sampler in trailer city, which was the predominant wind direction for the duration of the accide the total dose that someone would have received by being there during this 30 hour period or so is on the order of 1 t

millirems to the thyroid for a child. An adult would have received about a third of those values, assuing someone was continuously present at that location.

With with regard to noble gases, the release rates are still low. I looked at the results of the 47 dosimeter stations that we monitor. All of those continue to show background radiation levels.

With that summary, why don't I turn to questions.

QUESTION: I think you said there were 20 filters that had been taken out and there was a time when they hadn't been replaced; was that intentional?

MR. DENTON: I think it was probably intentional on the plant operator's part. I personally didn't know what the detailed procedure was. I assumed it would be a one for one type of replacement. These filters are shaped somewhat like a box, about 2 feet wide and 6 inches and 40 inches long and weight about 130 pounds.

And I felt the conventional practice was to take one out and replace it with another. Apparently, they elected for some reason to remove them, bag then and box them, the old filters, and had not put any in up to about midnight last night. So sometime during the night, as a result of our inquiries in this area and their efforts, they did replace filters in all the empty slots.

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1 QUESTION: Was there someone from the NRC there
2 at the point when they removed the filters and made the
3 decision not to --
4 MR. DENTON: No, because there has been a continuing
5 shortage of air supply for people working in plastic suits.
6 In order to enter this area, it requires a double layer of
7 plastic suits and boots and hoods. And the plant has had some
8 difficulties in maintaining air supply to these people in
9 suited area.
10 There are about seven men per shift, and it's about
11 a 300 foot long air line for each man, so to the extent that
12 an NRC person enters the area, it's taking up air and
13 reduces the amount of working time that is actually going on.
14 And I don't want to say that we know that that's the predomina
15 cause, because what we did is look at all the things that were
16 going on in the plant that were different than they were last
17 Thursday and Friday when the iodine levels were so low.
18 QUESTION: And how many -- why did they decide
19 to remove the filters.
20 MR. DENTON: I think they did it based on the fac
21 they felt they could do the job fastest that way, and if
22 the dampers on the seal were really tightly closed, both th
23 inlet and the outlet dampers, and if there was no leakage,
24 really shouldn't matter which way you do it. Although, if
25 the dampers did not seal tightly and there was some air flo

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still moving through, there could have been a potential that this was a route.

QUESTION: Knowing what this situation was, wouldn't it have been more prudent to replace them --

MR. DENTON: Well, since we were not running scientific tests, I don't know this is really the source. It's one potential source, and in the future, they will be one for one. But it could have been the makeup tank leakage or it could have been iodine from the floor. And what we did yesterday and Sunday was attack all possible routes that were responsible and whichever it was, it appears that the levels now are coming back now to where they were late last week.

QUESTION: Can you tell me why -- why did it take longer than you expected to get ready for this plan for cold shutdown?

MR. DENTON: Let me ask Vic Stello, who has been attending the daily status meetings on the preferred plan, to discuss that.

MR. STELLO: The modification that Harold is referring to is a modification necessary to put the so-called B steam generator water solid. We'll do this to provide additional redundancy for natural circulation cooling. It's possible that they can now -- there's nothing to preclude going to natural circulation today; however, having these

modifications is believed to be a desirable feature to provide that additional kind of redundancy.

QUESTION: A backup --

MR. STELLO: It -- yes. You can go natural circulation now, and this would be a backup to also use it as a mechanism for natural circulation. Why it takes this long is you need to look at the equipment you have available, design a piping system to hopefully use the equipment that is there and minimize the additional equipment that might need to be fabricated. And the design justtakes time, and it takes time to fabricate pipe and install it. It's just an activity under normal conditions that takes quite a bit of time, and it is an activity that we wouldn't want to try to get done too quickly in terms of finding difficulty with the activity. So it is going slower.

It's been looked at very carefully, and I guess we'r all anxious to have whatever we can have done as quickly as we have -- and it's a disappointment not to have it sooner, but there is just no -- excuse me?

QUESTION: Do you know right now --

MR. STELLO: I think it's still too soon to pick the date until the design is finalized and the equipment is ordered and we know exactly how many wells have to be made, how many feet of pipe will have to be run, and all of that

information is not yet here with us and is not available to the licensee.

And until that is available, it's not easy to predict an end date.

MR. DENTON: Since it takes six to eight years to build a plant, I'm beginning to think we were overly optimistic two weeks ago in our five and five projection.

As things become more routinized, the requirements that must be met to install long runs of piping just seem to take a lot longer than I had anticipated.

QUESTION: Mr. Denton, can you clarify the levels that were released -- iodine released and how that compares to the federal standards?

MR. DENTON: The -- our regulations in part 20 for unrestricted areas for occupancy during an entire year are 100 picocuries per cubic meter of iodine-131. And that's -- and that's based on -- if that situation existed during the year, a dose to a child's thyroid, if he were present in that concentration for an entire year, would be 1500 millirem.

So if you take the actual air concentration measured over the bulk of the period when releases were large in trailer city and convert it to that same ratio is how I got the 1 to 2 to a child's thyroid.

Let me ask Frank Congel who does all our dose

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calculations what the actual air concentration during that period was.

MR. CONGEL: The 24 hour period reflected the highest average concentration was at a level of 17 picocuries per cubic meter; based on inhaving that concentration for a day, a child would get less than 1 millirem to the thyroid. The release, as Mr. Denton has said, did not persist at that level.

So for the duration of the release, we estimated those in the 1 to 2 millirem region, if there were such an individual breathing in that concentration.

QUESTION: Mr. Abraham was quoted in a wire story saying these released exceeded the federal standard. You see to be indicating that they don't.

MR. DENTON: Well, the federal standards are based on that level being there for a whole year. And it's certainl true that on an instaneous basis right under the plume we did get, I think, three or four measurements yesterday out of the 11 where the maximum concentration we could find on an instaneous basis was over 100 picocuries per cubic meter.

QUESTION: Mr. Denton, I'd like to know if you have any comment on the impression that's been left upon the release of the transcript of the early meetings that the NRC - the impression of one -- that no one really knew what was goin

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on here and had very little grip on the situation. Some of the specific quotations from Mr. Hendric, like "blind and staggering" -- would you comment on that. Were things out of control three days after that accident?

MR. DENTON: I guess I can comment best on my own views. I know that before I left Bethesda Friday morning I had received a report that there was a plume over the plant,approximately 1000 millirem an hour, and since I didn't know for sure the status of the core or the composition of the atmosphere in the containment, and whether or not the containment was leaking and how long this plume might persist, it was back in Bethesda that I was recommending evacuation to the Commission.

And that's when I made a statement that we should be acting and getting ahead of the plume rather than sitting on our hands and waiting to decide.

While the decision process was going on, we began getting reports from people at the site that the actual off-site doses from that plume were on the order of 10 to 20 millir an hour, that the meterology was such that the plume was just sitting over the plant, and that it was not a failure of the containment or an anticipated sort of release, but it was due to deliberate venting of the B steam generator steam to the atmosphere.

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That had been actually stopped by the time I found out the plume. So my concern about evacuation went back down as I began to get better data from the site. And I think somewhere along there I even made the statement back in Bethesda that decisions like that can only be made by people at the site.

And I guess since I've gotten to the site, I have not felt that confusion and the analogy that the chairman used up here. But I think for someone being in Bethesda who was getting data after the fact, only hours perhaps after it really occurred, it's -- I guess I've learned that emergencies can only be managed by people at the site. They can't be managed back in Washington.

QUESTION: Are you saying then that the NRC -- suppose this happens again?

MR. DENTON: Well, I not sure that the NRC can manage emergencies back in Washington any better than the FAA can manage airplanes in the air that are out of control. You have to have a mechanism whereby people in the vicinity either -- the NRC inspectors getting here early or better state and licensee arrangements, that you just can't manage accidents from back in Washington.

I think they have to be managed here, and I would

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1 anticipate we would be changing our requirements to beef
2 up our ability to get here promptly and manage it from here.
3 I think our plans were based on making decisive decisions in
4 Washington, but the availability of information in Washington
5 compared to the information I can get here by being in the
6 control room, you know, is orders of magnitude different.
7 And I would not recommend that we attempt to manage accidents
8 in the future from back in Bethesda.
9 QUESTION: Do you think the state officials will
10 have to play a much greater role in situations like this
11 where there is so much confusing information and inability
12 of persons to get accurate information on the plant? What
13 changes do you see there? I'm talking in those first few
14 hours after the accident and even in those first few days.
15 MR. DENTON: I think state involvement is essential,
16 not only for the -- I found that I could give the state
17 technical advice on the status of the reactor and the probabili
18 of certain releases or certain kinds of consequences. But
19 I didn't have the detailed knowledge that the state had of
20 the times required for evacuation and the details such as
21 would farmers really desert farms and leave their cattle with
22 no one to feed them.

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23 We need some mechanism whereby the integrate the
24 information on the plant status into the state and let the
25 state make the decisions that have social, economic, and healt

costs for its citizens, and I expect this whole area to be rethought as a result of this accident.

QUESTION: Can you give us a little more detail on the modifications that are going on? For example, are you bypassing the turbine itself, or how does it go?

MR. DENTON: Well, the next 10 degrees will be by opening up lines that go through some of the separator parts of the turbine and will provide more flow area in the pressure steam, but not actually through the turbine.

But we are considering actually putting steam through the turbine as another -- anotherpossibility to lower the existing temperatures.

Are you talking about in the existing mode or --

MR. FOUCHARD: Short term or long term?

QUESTION: Long term to cold shutdown.

MR. DENTON: Let me just give an overall view of the long term, and then I'll ask Vic to elaborate. But for long term cooling, we'd like to have both the B generator and then the -- have it released itself in the containment.

We would like to upgrade the existing RHR, which is the residual heat removal system that would take contaminated water inside the containment, bring it outside and cool it and return it. We'd like to upgrade that to make it as leak tight and maintainable as we can.

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There's a third system that's being installed on th

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slab; that is a leak proof, easily maintained short term RHR. And then in a final system being installed will be a concrete structure that the chemical engineering units that process the contaminated water and cool the water also.

So ultimately, I would anticipate cooldown to be accomplished through this new building, structure that can take the contaminated water out of the containment, process it through the demineralizer and the evaporators and return the same water.

But that's in a big sense, and I can ask Vic to give you the details of this.

QUESTION: Mechanically, where are you at as far as being able to go to solid --

MR. STELLO: You can go water solid now in the A steam generator, if you wish to.

QUESTION: How about the B?

MR. STELLO: The B steam generator could also be taken water solid, but they would be using the main condensor, the normal heat removal equipment for the plant.

MR. DENTON: And the B steam generator may leak, which is a reason we wanted to install a tertiary loop in that system before using it.

MR. STELLO: There have been modifications made to the plant so that if you did take both steam generators

1 water solid, and if there is a leak in the B steam generator,
2 there have been filters put on the air ejectors to process
3 the air that would come out of the condensor.
4 The preferred way to do it is to put it in an
5 intermediate loop, which would have this in a closed system,
6 independent of the main condensor and then have an additional
7 heat exchanger to remove the heat ultimately from the plant
8 and not rely on the main condensor for that purpose.
9 QUESTION: Would that bypass the --
10 MR. STELLO: It would bypass -- yes, yes.
11 MR. FOUCHARD: I'm amazed at how well educated
12 some of you folks have become in the last three weeks.
13 Yes, sir.
14 QUESTION: Has any progress been made with
15 negotiations with South Carolina on the disposal of low level
16 waste?
17 MR. DENTON: I understand the waste that was
18 returned from the state of South Carolina will be shipped to
19 the state of Washington. Negotiations are still ongoing with
20 the state of South Carolina about future shipments.
21 QUESTION: Did any of that waste containment
22 fission products or --
23 MR. DENTON: They were being sampled to see if th
24 contained transuranics or not, and I just don't know the
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answer to the result. Apparently, whatever they contained, they were satisfactory to the state of Washington.

MR. FOUCHARD: Yes, sir.

QUESTION: This additional loop that you're talking about is going to be constructed in the auxiliary buildi or where exactly?

MR. STELLO: It will be constructed in the turbine building. It will bypass the equipment that was referred to earlier, at least for the main condensor. It will bypass that equipment and the -- hopefully, much of the equipment already in that building can be used by just reconnecting pipes, and all of that activity will go on in the turbine building.

QUESTION: One other question: do you have any new information or your latest data on the levels of radioactivity inside the containment and what that breaks down to in terms of --

MR. DENTON: I haven't checked that monitor recently. I guess everytime I looked, it was always reading 50,000 r an hour. There's some speculation all along that there may be radioactive particles lodged nearby. I've just not checked it. It seemed to be not varying at all. You would expect it to come down with radioactive decay in the containment. So it may not be an accurate monitor. There may be something lodged nearby that's causing it to be erroneous.

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You may recall, we did have a failure of the recombiner on the containment over the weekend, and this was found to be not related to the recombiner itself, but the electrical connections to it, and this was repaired and the recombiner is now back functioning properly.

MR. FOUCHARD: How about one more. I know some of you want to --

QUESTION: (Inaudible).

MR. DENTON: Not yet, but I understand its departure is imminent, and the arrangements have been authorized between the plant and the state.

QUESTION: And it was the same waste that was rejected by North Carolina?

MR. DENTON: Two shipments of the same waste, and I think there's going to be additional waste going to Washington in addition to the one that was rejected.

MR. FOUCHARD: One more.

QUESTION: There's a high level waste repositary in Washington for higher level waste than for --

MR. DENTON: I don't know for sure.

QUESTION: I'd like to ask one more general questio since you're not really on the site much anymore. A number of the members of the technical staff of the NRC have said over the last week that they believe that the problems at the

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2 plant can be solved and that they shouldn't stand in the

3 way of the plant's reopening.

4 I wondered if you had any general thoughts on that

5 and also if you could comment on the future operation, the

6 future of TMI number one.

7 MR. DENTON: I think I just received a letter

8 today with regard to unit one that said they have no plans to

9 start up unit one in the near future. I would envision that

10 unit one would be down for a considerable period of time so

11 parts of its system can be used to support unit two operations;

12 whether or not unit two ever starts up is somewhat of an

13 economic decision.

14 That's up to the utility and the Public Utility

15 Commission. If they can repair the plant to meet our standard

16 and make those modifications that we're going to require

17 ultimately of all plants of this general type and can

18 demonstrate that they meet these, then we would not be opposed

19 to a restart of the plant.

20 But I think it's probably premature to specul-t-

21 until they have had an opportunity to get inside unit one

22 and see how extensive the radiation damage to the equipment an

23 the cables has been and whether or not there is damage that

24 has not been previously known.

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25 But I think it's mainly an economic decision by th

company. We would not let them start up until they meet all the regulations and rules applicable for this kind of plant.

MR. FOUCHARD: Thank you very much.

(Whereupon, at 12:59 a.m., the press conference was concluded.)