(Region I Response Center Tape #1

Time - 9:15 a.m. Wednesday - 28 March

CAPHTON: A couple of more questions -- one has to do with whether or not you know if you have any safety ... safety relief type valves open at this time?

TMI OPERATOR: No --

CAPHTON: If you don;t know -- they're not open...

_____: Okay, our steamline - okay those safeties are all closed -- I know those. I don't believe any of the reactor building ones are but I will have to check on that. What's your other question?

CAPHTON: Okay. Steam generator level....

_____: You want that level too?

CAPHTON: Yes.

_____: Okay....

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_____: The steam generator level are 44% in the "A" and 66% in the "B" - that's in the operating range.

CAPHTON: Any - I guess I have two more questions --

_____: Well, as far as the valves in containment - okay - we haven't been able to verify that - you know - it doesn't appear that the code safety is lifted.

CAPHTON: You say that the code safeties...

_____: Did not lift, it appears that they did not lift. The electromatic relief's been open periodically - off and on -- it's closed right now.

CAPHTON: Okay. The other questions -- Do you know if there are any -- do you have any water going into the steam generator at all at this time.

_____: No, it's isolated.

CAPHTON: Do you know if containment spray is operating?

_____: That was never -- that never operated -- no. The high pressure injection did but the building spray part of the system never was actuated.

CAPHTON: Okay...

CAPHTON: It was intentionally not actuated then....

_____: Well, it never reached it.

CAPHTON: Okay... Relative - going back to your high pressures to your injection - do you know at what time the injection was initiated -- and how long it's been running?

_____: That I have to look up for you -- Can you hold?

CAPHTON: Sure...

_____: Do you have any other questions?

CAPHTON: I understand that the last report we had from Kunder that it was at 250 gpm/leg...

_____: Uh-hu...

CAPHTON: And the question is - when was it started and how long has it been operating?

_____: Okay, just a minute -

WARREN: (This is Ron Warren on the squawk box and it is 0920).

_____: Just a second, I will get that information for you right now....

_____: That's on the post trip review and that has not printed out yet.

CAPHTON: Okay....

_____: I will have to get that for you later....

CAPHTON: Could you take some more questions...

_____: Sure...

CAPHTON: Do you have indication of water in containment now - at sump levels - or this kind of thing?

_____: I believe they do -- as far as the drain tank -- because they verified the ruptured disc has on the drain tank had ruptured. I will have to check on that too.

CAPHTON: Okay. We got a couple more -- could I give you several questions Ed?

_____: Sure...

CAPHTON: Okay... Could you get us some information on the containment gaseous and particular activity from the monitors and do you have any indication of what the primary coolant activity is or do you have a rading on that?

_____: Okay.

CAPHTON: I guess -- okay -- you want to talk to Kunda...?

HAVERKAMP: This is Don Haverkamp. I would like to go through the scenario with George Kunder -- is he available. Or with someone familiar with it because I am going to try and get some times...

_____: Yeah, just a minute...

HAVERKAMP: (The time is 0926 - this will be Don Haverkamp and George Kunder). Also, when the secondary feedpump occurred -- do you know the cause?

KUNDER: The cause appears to have been the polisher valves when closed - we believe due to water in the airlines -- that caused loss, because that stoppped your flow -- there is no automatic bypasser on the polisher - and therefore the feedpumps tripped on low suction pressure -- just judging that -- there is nothing that tells you that really -- and that, of course, directly causes a turbine trip--

HAVERKAMP: Okay, as a result of a turbine trip, which is followed by a reactor trip on high reactor coolant system pressure -- there is some combination of things that caused a cooldown -- the reactor trip, the cooldown by the auxiliary feedpump operations, and lifting of the electromatic relief valve -- what about the steam generator safety valves - did they lift?

KUNDER: The safety valves - we think - I don't know - I didn't get word on that, Don, but they probably did -- hang on just a minute -- I'll look at the pressure--

HAVERKAMP: 0935 time check.

KUNDER: Okay, Don - it looks like the pressure went up to about a little over 1050 psi in the steam generator so that the relief valves - a couple probably opened briefly. Apparently the reactor tripped thereafter and - you know - you lost your heat source and allowed the pressure to come back down to the generation.

HAVERKAMP: Do you think these things in combination of the cooldown -- was there anything else that I have omitted that caused the trip LTV pump operation, etc.

KUNDER: That's pretty much it -- what happened from there, Don, it appears to me -- and we are still talking about it -- we have Lee Rogers here and Gary and are getting all the inout we possibly can - is that somewhere thereafter, with the - the pressurizer level went up -- as a matter of fact, the pressure and the RCS dipped down sufficiently to give us the high pressure injection - okay...?

HAVERKAMP: Right.

KUNDER: Once the operators recovered from that, and pressurizer level went up and the thing I have not gotten from the operators yet - still debriefing on - because they are all pretty much tied up with the plant activities - but it looks like the pressurizer level went up and went virtually solid and that apparently through the letdown activity and so forth - you lost your bubble - apparently pushed it right through the relief valves into the drain tank which subsequently ruptured the ruptured disc - when the level came down then you don't have that steam bubble - you put so much cold water into the pressurizer and now the heaters are on but you are not really drawing a bubble -- the pressure came down at that point, all the way down to about 10 hundred pounds and that was over roughly a 15-minute span. I think it

was during that condition that we possibly lost the - we got a bubble - steam bubbles or some such - through apparently the heating in the core up in the loops and the - it apparently had an effect of vapor-locking - you know - the coolant system such that we were not getting good flow -- we did not have any RC pumps running for awhile - but once the pressure got down below their npsh for the temperature we were at and then the flow dropped off. We secured the pumps -- the indications were very confusing but now that we are looking at the thing now - it looks to me like we had that vapor locking effect being fed by the heat in the core - and we reiniated HP injection, of course, to get the coolant flow in but it didn't appare to have the effect that we wanted -- okay -- and we did try to run another coolant pump to turn it on again but it didn't give you any flow - so it was still apparently vapor locked. The problem is trying to get the pressure down low enough so we are sure that the flow is going into the - is going down - in the reactor vessel annulus and up into the core. The vapor-lock apparently is preventing that from occurring - and that is apparently what led to failed fuel.

HAVERKAMP: Okay... Let me go on, George, with a couple of things -- to get your confirmation. At 16 hundred pounds, the reactor coolant system pressure, the emergency safeguards actuation was initiated - all of ECCS components were started and operated properly.

KUNDER: As far as we can see it did.

HAVERKAMP: The reactor coolant system at 16 hundred pounds psi.

KUNDER: The reactor coolant pressure was was what?

HAVERKAMP: 16 hundred pounds - what was your... Your safety injection equipment operated properly, is that correct?

KUNDER: I think we can _____ say that _____

(Region I Incident Response Center Tape #1 - Side 2, 3/28/79)

The pressure of the level, yes - just a minute.

HAVERKAMP: The safety injection was manually secured -

TMI: That's right -

HAVERKAMP: About what time was this?

TMI OPERATOR: It was within a few moments -- within a few minutes -- don't have a clear time for the debriefing yet -- I asked ther how much water they would have pumped in -- they said they thing it would have been very little because they secured it because of the pressurizer level going up - which is a normal response.

HAVERKAMP: Okay, was it pegged high when they secured it or did they just start to increase it? If you don't know, we will pass on it.

_____: I'm guessing, it probably was not quite pegged high yet -- but it did peg shortly thereafter - it looked like to me when I looked at the trace it bobbled around a little bit and finally went out of sight.

HAVERKAMP: Would you say it was about 5 minutes after the safety injection was initiated?

TMI OPERATOR: I would say within 5 minutes, yeah.

TMI OPERATOR: Somebody in the background talking.

HAVERKAMP: There is another conversation, I guess that's why....

TMI OPERATOR: That's why I can't tell who is talking to me.

HAVERKAMP: About this time there were some conflicting indications from the Control Roo.

TMI OPERATOR: That's right, the pressurizer level being pegged, then the pressure was drifting down, temperature staying about where it was, around 5450 or so, in that range - plus or minus 5 degrees.

That's the thing I think that baffled people the most, and it was -- we did have RC flow at the time - I think it was close to full flow.

HAVERKAMP: Just a minute, george, we have a couple of questions I think you can answer for us --

YUHAS: The HP related questions, if Dick Dubiel is handy, you might have him answer them --

KUNDER: He is tied up --

HAVERKAMP: Did you say Dick was tied up or is he coming?

KUNDER: I may be able to get your answers here - Dick is still kind of tied up --

YUHAS: Okay, the first question is - to what extent has the site been evacuated?

TMI OPERATOR: Okay, well the sites been -- we have all the -- we really have not evacuated anyine from the site -- we don't have any readings over roughly, you know, 1 mR/hr anywhere on the site or the site boundary - predominantly. Where we have sent out teams so far -- we have mustered all our people, however, and we have mustered two muster locations -- one in the north auditorium and the other in the

turbine building. We have allowed all the construction people that have come in or anybody that was here are down at the south gate right now. We have maintained our people in the north auditorium and the majority of the operations personnel that we wanted onsite, I&C instrument tech's, we have them in the Control Room vicinity so that we can use them on our emergency teams and monitoring teams, as may be. Most of the people never really got to work -- day shift people all, fir the most part, all are over at the observation center and we are still holding them. The wind direction is such that it is blowing away from the location. We have communications with that group -- the State Police at the north entrance to the Island trying to control traffic, also at the center itself and at the south bridge, to prevent people from coming on down here. So that sums up the status.

YUHAS: Fine, thank you. Next question. Has any consideration been given to offsite evacuation?

TMI OPERATOR: Not, not yet. We have monitored over in Goldsboro, we had State Police helicopter come down, we flow over a team there and they checked and there is nothing over there -- there is no radiation levels nor anything that we see at the moment that would, you know, generate a plume to give us an offsite concern. We did initially bas our offsite readings on a projected amount based on the RMA indication, okay -- I think we - you know, we monitored and found that there was nothing there yet, because we do not have any significant leakage.

The State is involved - we have them harging on another line - and we really ought to get back to them to let them know we are still here and I am talking to Gerusky, basically, and his staff. And we do have a whole body counter, by the way onsite at the moment if we have to use it.

YUHAS: Next question. Can you give me an update of your environmental sample results?

TMI OPERATOR: So far, we have had - I don't know the amounts of iodine we have measured - a little bit of iodine downwind, but it is still very low -- I can get the number for you -- we have ... all our gross beta gamma readings have been less than 1 mR/hr. We have sampled all quadrants around the site and also offsite and we see no significant activities or radiation levels yet.

YUHAS: Okay -- sample methodology for the iodine -- is that a CESCO cartridge type grab sampler?

TMI OPERATOR: Oh ... let me think - it is a cartridge filter that we sample with -- let me check....

YUHAS: Yeah, who do we have?

BENSON: Benson....

YUHAS: Okay, this is that question again regarding sample methodology for your environmental iodine -- are you using a Radeco sampler with a charcoal cartridge?

KUNDER: Okay, Kunder back again... We are using the charcoal filter -- draw the volume of air through it is measured and then we count it on SAM-2 instrument.

YUHAS: Okay, fine. Next question.... I would like an update of in-plant radiation monitoring readings, in particular, the containment dome, airlock operating floor, and then the containment gaseous and air particular detector readings.

KUNDER: Okay. I have to get those for you - some are not available, the containment doorway, for some reason out of service -- it just is not responding. The building monitor, due to the vapor that's been in the building, has given us a problem with water in the monitor and we are not getting an accurate reading through that monitor -- I am not sure I am going to be able to give that -- I'll get you the reading of the dome, anyhow.

YUHAS: I think we would prefer to have those readings - whether you consider them critical or not.

KUNDER: I will note that the majority of readings in the buildings are on high alarm status - so let me get some numbers for you.

YUHAS: Thank you.

KUNDER: Any other questions while I am at it?

REGION I: Is George Kunder still there?

KUNDER: George who?

REGION I: Kunder.

KUNDER: Yes, speaking.

REGION I: Is this George?

KUNDER: Yes.

REGION I: Okay. Do you have the pressure and temperature of the primary right now?

KUNDER: The pressure is still - let's see - it's still about - hang on right now -- I can't see -- the guys are blocking my view.

HAVERKAMP: Okay. (The time is 0955 -- George Kunder on the squawk box.)

KUNDER: The pressure -- it is cycling around 2000 lbs., the T_{av} is still up around 571 - indicated -- I don't think that our indicators are really giving us representative of indication of T_{av}, however, I am sure you will take that with a grain of salt, because we - you know - I am sure - we don't have an equilibrium temperature throughout the loops.

HAVERKAMP: Do you feel pressure is increasing?

KUNDER: The pressure has been cycling around that value.

HAVERKAMP: Okay.

KUNDER: Do you have more questions?

YUHAS: Yeah, I am waiting on the data for the containment radiation readings -- in the interim I would like to ask if charcoal environmental sample that was taken -- did it show a little bit of iodine?

KUNDER: Yeah.

YUHAS: You brought that back to the Station and counted it on your GeLi yet?

KUNDER: I don't know it we have.

YUHAS: We would like to get kind of a breakdown of what little iodine means in terms of a microcuries...

KUNDER: Okay. I will try to interrupt the information here and see if I can get that number for you. One thing, Don, you know, over in Unit 1, we did abandon the ECS over there when we brought the people over to Unit 2 because of the high airborne.

HAVERKAMP: You abandoned what?

KUNDER: We abandoned the ECS in Unit 1 because of high airborne in that area from the sampling and so the GeLi over there is not - you know - it's basically not usable to use and we would be using the Unit 2 GeLi downstairs and all the activities being controlled from the Unit 2 Control Room at this point - okay - Unit 1 Control Room is, of course, manned -- and Unit 1 is still shutdown -- you may be aware of...

HAVERKAMP: Okay.

KUNDER: I will try to get some of those readings for you...

(Time check - 1010)

TMI BACKGROUND: The airborne radiation levels are significant enough that we are going to have to evacuate any nonessential personnel - Mike Ross, I want you to take a skelton crew and control the plant -- next.....

KUNDER: This is Kunder again. We are getting some airborne in the Control Room -- I just heard him announcing it - we may be moving some of the communications over to the Unit 1 Control Room, okay? Let me give you the numbers you wanted -- hang on for a minute---

HAVERKAMP: Okay, Don --

YUHAS: Okay George, before we get started on these numbers, I want you to write down a telephone number so that your HP can call us from wherever your HP control is set up -- from the counting room or wherever he is set up. Are you all set? Are you there George?

BACKGROUND: I think we better go over to Unit 1. Okay, if I need you - I tell you what, though go to the Control Room and shift supervisors office, stand by there - if I need assistance ... (end of tape)

(Region I Incident Response Center Tape #2)

Call number --

YUHAS: All right -- area code 215/337-5362 - we will keep that line open for HP _____.

KUNDER: Is it 377?

YUHAS: No, 337.

KUNDER: 5362?

YUHAS: That's right.

YUHAS: This is just for HP, George.

KUNDER: HP?

YUHAS: Yeah.

KUNDER: Let me give those guys the number real quick before they get out of here because we are going over to Unit 1 Control Room and I will then give you a call.

KUNDER: Hang on here, I am not through with you yet.

KUNDER: Okay - I am going to run down real quick what we see in the reactor building.

HAVERKAMP: Okay.

KUNDER: You have basically three major elevations in there - the operating floor - we've got - over by the incore area, Don - you know where that is --

HAVERKAMP: Yeah.

KUNDER: We are reading 10 r/hr on the monitor that is in that region - the bridge monitors are pegged - I would expect that - it does not take too much to do that. There is an area monitor inside the access hatch - outside the -- it's inside the building but outside the "D" ring that's reading 100 mr/hr.

HAVERKAMP: What was that?

HAVERKAMP: Okay - I have that.

KUNDER: Okay - now the dome marker is a problem - that's reading - to believe the reading it's 6000 r/hr -- Dick believes that it's likely we've got steam and stuff up there -- that it's - it's either fouling the monitor up where it's - it's either a hot bubble - it's hard to interpret - he just can't believe we have that much - the one primary - and one and only primary activity that we got, and Dick is not sure it's full thing - but it was a 100 - around 140 microcuries/cc.

YUHAS: Is that air or water?

KUNDER: That's water - that's the primary coolant activity - and the only sample we were able to obtain prior to the levels going so high.

YUHAS: And that a gross beta-gamma number.

KUNDER: That's correct.

KUNDER: Now, you asked about the iodine?

YUHAS: Right.

_____: If you have GE-8 on you map that is basically a point east from the site boundary east -- we had 5.25×10^{9} microcuries/cc iodine. All the readings were below detectable limits that's ....

_____: I am going to have talk through a mask here.

YUHAS: Okay, that's fine for the HP - give us a call on the other number and I am going to turn it over to Don now and he is going to give you a number so you can call back.

KUNDER: Okay.

KUNDER: And oh by the wav, this west, southwest reading was 1.24×10^{8} iodine. Again, we have not seen anything really significant, but we are seeing a little tiny bit. Okay?

KUNDER: Don, what's that number?

HAVERKAMP: The number is area code 215/337-5360.

KUNDER: Okay.

HAVERKAMP: Are you going to be staying there are you going to Unit 1.

KUNDER: At the moment, I am staying here, and then I am going to relocate.

HAVERKAMP: Are you injecting now with the makeup pump?

KUNDER: We are - we still are injecting.

HAVERKAMP: You have been continuously since what time? Since about what time - an hour or two?

KUNDER: It's been at least an hour - the BWST - it's gone down - we are putting water in the core -

KUNDER: Hold on, just a minute...

KUNDER: Mike, how does the core look? (to Mike Ross in Unit 2 Control Room)

(Time check - 1015)

KUNDER: Talking to Mike Ross - he's looking at the indications, his assessment is that he's surely certain got the core covered and we are getting water - you know - water into the core. The only thing the is that the T_h are still high and that's what bothers us -- the pressure - and getting control of it - and...

HAVERKAMP: What is your pressure and temperature now?

KUNDER: The pressure is still up around what I told you -- it's holding there -- okay? We got a bubble in the pressurizer -- the only thing now -- he thinks -- it looks to him like we are getting some natural circulation cooling...okay? But he is still baffled by the "T" hot - we are really trying to access that -- "T" hot (?) right now are reading 571°F but, again, I am not sure how real a number that is.

HAVERKAMP: 571°F.

KUNDER: Yeah.

KUNDER: Don, be aware also, we do not have a primary to secondary leak in the "B" generator - I may have mentioned that before - the water level in it is very high - let me take a look - too far from the darn console and I can't see the stuff and it's changing too much - hang

on...I'd say it's about 45% full...okay? If water continues going into the secondary side of the generator, we may be in a position where just - you know - just that there may be a chance we are going to have some sort of a burp out of that generator ...okay? We are looking at that, assessing, you know, on what we are going to do to make sure that doesn't happen -- but just be aware that this is a concern.

HAVERKAMP: Are you using the "A" generator for cooling now?

KUNDER: Yes. Now I am going to sign off and hang up -- I will get somebody over to you in Unit 1 to re-establish communications - we've set up communications over in Unit 1 in the Control Room, Don.

HAVERKAMP: Okay - will they be able to answer questions -- or will somebody be there that is knowledgeable? I am going to get my mask on -- it's going to be a little more time delay, I think.

HAVERKAMP: Okay.

KUNDER: Okay.

KUNDER: I'll see you later, Don.

(Time check - 1019)

(The time is now 1027)

MARSHALL: This is Bubba Marshall at Three Mile Island -- I am in Unit 1 right now and I was just calling to tell you that if you need to get in touch with us -- call us on number 944-6623.

HAVERKAMP: 6623. Okay. Who do you have in Unit 1 coordinating this?

MARSHALL: Seelinger is over in Unit 1 coordinating right n[illegible] - we've moved everybody over to Unit 1 except for the essential personnel in Unit 2.

HAVERKAMP: Okay, and how about Miller?

MARSHALL: Miller, I imagine is enroute this way.

HAVERKAMP: All right.

HAVERKAMP: I understand you talked to Jim Higgins a little bit and gave him some information.

MARSHALL: Right.

HAVERKAMP: Do you know if there are about five - at least five people there from the NRC right now.

MARSHALL: Right - there are at least five and I think they just went out to talk to Seelinger.

HAVERKAMP: Okay.

MARSHALL: Okay?

HAVERKAMP: Just a second.

MARSHALL: We'd like to keep a line open to Unit 1 -- how do you prefer us doing that?

MARSHALL: I don't really know how we can --

HAVERKAMP: How many lines do you have there?

MARSHALL: Well, I've got three, four, five -- five lines.

HAVERKAMP: In the Supervisor's office.

MARSHALL: I've got five lines in the Supervisor's office.

HAVERKAMP: Okay, is there one that can be left open so we can be in communication? Can you keep one of those lines open for us?

MARSHALL: I am not sure who else is calling in on what line --

HAVERKAMP: All right.

MARSHALL: I would think there is probably only one or two outside organizations on each line --

HAVERKAMP: I don't know if we need to keep two lines open - we have a line open in Unit 2.

YUHAS: We have a line over in Unit 1 -

HAVERKAMP: You have one there?

YUHAS: I have an HP on it.

HAVERKAMP: On this circuit we have an HP on -- _____ representative anyway on one of the phones in Unit 1 over there - so that might be sufficient.

MARSHALL: Okay - that's part of the same number we are on here.

MARSHALL: Is that the same number we are using?

MARSHALL: It's part of the number I gave you.

HAVERKAMP: What extension is that?

MARSHALL: Have you got that line on that phone?

HAVERKAMP: What's that?

(Time check 1041)

HAVERKAMP: All right - did you determine if you are both on the same line or what?

HAVERKAMP: What extension are you on?

MARSHALL: We've got the phone that I gave you -- the number I gave you -- 944-6623.

MARSHALL: Yeah - your NRC guys haul that tied in with the Bureau of Rad-Health up there.

HAVERKAMP: Okay - I don't know if I understand that.

MARSHALL: I don't either.

MARSHALL: Are you - your guy was left on the phone - and he left a sign there that says... "DO NOT HANG UP THIS PHONE - HOT LINE TO RAD-HEALTH."

HAVERKAMP: What extension are you on?

MARSHALL: Oh, it's busy.

HAVERKAMP: You got a light there?

MARSHALL: no, it's a black - you know a regular black phone.

HAVERKAMP: There is no number, no extension?

MARSHALL: No, anything on it.

MARSHALL: That's the secret number.

HAVERKAMP: We are talking to someone that is an HP, right on 201 - extension 201 - which I think is in the Shift Supervisor's office or the Control Room.

MARSHALL: It's in the Control Room.

HAVERKAMP: All right.

HAVERKAMP: So, we have communications there and I think that is all we need.

MARSHALL: Okay. We are on 291 here and this one is in the Shift Supervisor's office.

MARSHALL: I'll clear this one -- you have communications then.

HAVERKAMP: Okay - I guess what we need to do is set up communications in our office on different telephones but we want to keep that 201 number.

HAVERKAMP: Can you get your HP tech or whoever is speaking with our inspector, over to this extension.

HAVERKAMP: Can you bring him in the Shift Supervisor's office?

MARSHALL: Yeah.

(Region I Incident Response Tape #2 - Side 2)

HAVERKAMP: Hello...

L: Hello...

HAVERKAMP: Who is this?

LANDRY: Leonard Landry.

HAVERKAMP: Leonard Landry? Okay - fine.

HAVERKAMP: Greg will be over here shortly so - we want to keep this line open - and would rather have communications from the Shift Supervisor's office where we are right now - so is that feasible?

LANDRY: Yes.

HAVERKAMP: Okay.

HAVERKAMP: We have a couple of operational questtions -- is somebody else there with you?

LANDRY: Yes, let me put him on.

HAVERKAMP: Who is this?

SMITH: This is Dave Smith, Control Room Operator in Unit 1.

HAVERKAMP: Okay, this is Don Haverkamp - We need to know the status of the primary side of Unit 2 as well as you know it - such as, how much as been injected from the BWST, what the reactor coolant pressure system is - temperature - the pressurizer level....

SMITH: Have you been able to get in touch with Unit 2?

MARSHALL: No, we've stopped our communications there because they were putting masks on and were sending people over to Unit 1. Have some of you who have come over to Unit 1 that would have this information?

SMITH: Would you hang on a second here?

SMITH: Mr. Haverkamp of the NRC

HITZ: This is Greg Hitz. 1950 pressure in the T_c at 220, okay?

HAVERKAMP: 1950?

HITZ: Right.

HAVERKAMP: Did you say 220?

HITZ: 220 degrees.

HAVERKAMP: Are you talking about Unit 2?

HITZ: Yeah. Right.

HAVERKAMP: The last we heard the temperature was around 500 degrees, so you you feel you finally got an accurate temperature measurement?

HITZ: They must -- say that again?

HAVERKAMP: Do you feel that 220 degrees is accurate or close.

HITZ: That's close, I believe - okay - I can't say that it is accurate though.

HAVERKAMP: But it is closer to 200 than it is to 500?

HITZ: Yes, I believe that.

HAVERKAMP: All right.

HAVERKAMP: Okay, that's encouraging, anyway.

HITZ: We've got a ton of your people here right now.

HAVERKAMP: How long has the BWST -- how much water -- how much has been injected to the primary system.

HITZ: I don't know that.

HAVERKAMP: Do you have a change in the level of the BWST from when you started?

HITZ: I can find out, if you need to know - okay?

HAVERKAMP: If you can convert that to gallons, we would appreciate it.

HITZ: All right.

HITZ: I'll see if I can find that information out - anything else?

HAVERKAMP: Who is the big group of NRC people you have there?

HITZ: Plumlee is here; Neely is here; Nimitz is here; and four of five other people.

HAVERKAMP: Neely, okay - Plumlee and Neely.

HAVERKAMP: The pressurizer level on Unit 2 - was it holding - does there appear to be a bubble - or what?

HITZ: I'll find out -- I didn't ask that information. I just got temperature and pressure - okay?

HAVERKAMP: Okay.

HAVERKAMP: The containment sump - was there an indication of additional leakage in the containment - do you have any increase in sump level?

HITZ: Yeah.

HITZ: Are you going to call be back?

HAVERKAMP: I'll keep the line open.

HITZ: Okay, hang on --

HITZ: This line is to stay open....

HITZ: I gotta put you on hold for a second, hold on -

CAPHTON: One thing, could you put one of the NRC fellows over to the telephone - I would appreciate it - get one to come to the phone.

OPERATOR: All right - hang on.

OPERATOR: Joe, they want to talk to an NRC man --

OPERATOR: Somebody wants an NRC man --

NEELY: Hello.

CAPHTON: Hello.

NEELY: This is Don Neely.

CAPHTON: Who?

NEELY: Don Neely.

CAPHTON: Hi'ya Don, this is Don Caphton. What we are trying to do is keep an open line and we would like someone rather than tie the Station people up - get one of you fellows to man the telephone at least while one of the Station people are not on the phone.

NEELY: Okay, you want to keep it on this line right here.

CAPHTON: Yeah.

NEELY: We have two more people here - Smith and Walt Baunack just arrived also.

CAPHTON: So you can take turns - however you can work it - but we would like somebody to at least keep the phone open.

NEELY: Okay - fine.

G. SMITH: Don, do you have sampling capability -- air sampling capability with you -- off-site?

NEELY: Yes we do.

SMITH: Okay, would you have Plumlee or someone to get off-site and start getting some samples of our own, and taking some readings.

NEELY: Okay, just a minute - I am not sure whether we have iodine capabilities -- hang on.

SMITH: Any kind of capabilities you have, Don.

NEELY: We do have particulare filter, we do have high volume samples.

SMITH: Okay.

SMITH: Anything you can get of your own, have Nimitz or Plumlee - perhaps Plumlee - whoever you want to send.

NEELY: Okay.

NEELY: Okay, we are going over to the Unit 2 Control Room -- the air concentrations are getting high in there.

SMITH: How high, Don?

NEELY: They are talking 10 to the minus 7.

SMITH: Okay.

NEELY: Karl has seen some readouts in the Unit 1 Control Room for the Unit 1 Fuel Building that showed 10 to the minus 4 air concentrations in Unit 1 Fuel Building.

SMITH: Is that common with 2?

NEELY: Yes.

SMITH: Okay.

RAYMOND: Don, is Jim Higgins there?

NEELY: Yes.

RAYMOND: Put him on.

NEELY: Jim....

(Time check 1055)

RAYMOND: Go ahead, Jim

HIGGINS: Yeah.

CAPHTON: Jim Higgins....

HIGGINS: Yes.

RAYMOND: Bill Raymond here - did you get me that information?

HIGGINS: I'm still trying to get over to the Unit 2 Control Room -- I haven't left here yet -- I got a little bit more - let me tell you what additional I have - they were using - they were trying to cool down - do some cool down using the "A" steam generator, using the atmospheric dumps.

RAYMOND: Okay, wait a minute. And aux feed makeup to the generator? They had probably -- probably had bubbles in both hot legs of the primary system so they - the only circulation that they had on the primary side was due to natural circulation. They are in the process of trying to establish - re-establish the bubble in the pressurizer - the pressurizer was solid - trying to re-establish the bubble there so that they could then get better circulation.

RAYMOND: I lost you, Jim -- can you repeat that?

HIGGINS: Okay, they had possible bubbles in both hot legs.

RAYMOND: Right.

HIGGINS: The natural circulation was - that was all they had and even that wasn't too great.

RAYMOND: Right.

RAYMOND: Okay, anything on the borated water storage tank and how much they pumped in?

HIGGINS: No. They did inject some in but I don't know how much they put in. The primary is full -- the pressurizer was solid, okay?

CAPHTON: At what time, Jim, are you talking now?

HIGGINS: I have no idea --

HITZ: I got some numbers that you were asking for, if you want them - you were talking about data BWST change?

RAYMOND: Right.

HITZ: Okay - 142,800 gallons.

HIGGINS: Where is this coming from?

_____: BWST -- we had a Shift Supervisor on duty.

RAYMOND: Is that what's been injected so far?

HITZ: Yes, sir.

RAYMOND: And you still have --

HITZ: We got 37 ft. left in the tank and there is 8400 gallons/ft.

RAYMOND: Okay, anything on the sump - containment sump level?

_____: The level is 6 ft. indicated - that's max. We can't tell if it is or not - the building pressure is 2 lbs. and decreasing.

RAYMOND: Those are containment pressures - 2 lbs. and decreasing.

HITZ: The pressurizer level is indicating greater than 400 inches - now that pressurizer level never came back to my understanding - you know - it went solid, right?

RAYMOND: Right.

HITZ: 400 inches and it never came back on scale after that.

HIGGINS: Okay, is it correct that you are still working over there with the pressurizer heaters - trying to re-establish the bubbles in the pressurizer?

HITZ: As far as I know -- yes, sir.

HIGGINS: Okay.

HITZ: Is there anything else you need from me?

HIGGINS: Yes, the makeup to the "A" steam generator - is that still being made up, and how - and are they still using the atmosphere dumps for cooldown?

HITZ: I will have to find that out - okay?

HIGGINS: Okay.

RAYMOND: Do you have anything on the generators, Jim?

HIGGINS: That's all.

RAYMOND: The pressure temperature?

HITZ: No.

RAYMOND: I understand that you have 37 ft. left in the BWST?

_____: The Shift Supervisor just went off the line - he's looking at some parameters going to the Unit 1 Control Room.

RAYMOND: Okay, let me pass this on - maybe

HIGGINS: Okay, I am still trying to get over to Unit 2 and when I do I should be able to get better information.

RAYMOND: All right, Jim, I appreciate it.

CAPHTON: Jim Higgins...are you there....

PLUMLEE: Sorry, who am I talking with?

HAVERKAMP: This is Don Haverkamp, who is this?

PLUMLEE: Karl Plumlee.

PLUMLEE: Just trying to check who we have there --

NEELY: We are going to have to kinda hang onto the phone on this end.

RAYMOND: That's right - we want to keep that line open.

CAPHTON: Put Nimitz on the telephone to be the telephone monitor on a continuing basis, Karl.

HITZ: Do you guys want to know about the "A" generator?

HITZ: We are still feeding the "A" generator with emergency feed and we are cooling down using the atmospheric dumps on the "A" generator, okay?

PLUMLEE: So you are sending steam off the "A" generator.

HITZ: That is correct.

HAVERKAMP: Do you have a pressure and temperature on the primary?

PLUMLEE: The last we heard it was 1500 lbs. -

HITZ: 1500 lbs.?

HITZ: That's not right -- I gave you one earlier, right?

CAPHTON: 1950 was the last pressure we had.

HITZ: 1950, right?

CAPHTON: Right.

PLUMLEE: 1950 in primary.

HITZ: 220 T cold (T_c).

CAPHTON: Right.

HITZ: Somebody asked me if that was accurate - I can't say that, okay?

HAVERKAMP: Okay.

HAVERKAMP: Do you have any secondary steam generator temperature or pressure?

HITZ: No, I didn't get that.

HAVERKAMP: Greg - this is Greg Hitz, isn't it?

HITZ: That is correct.

HAVERKAMP: Any other questions?

HAVERKAMP: Are you using two phones right now?

HITZ: Yes -- Mr. Plumlee is on the phone in the Shift Supervisor's office and I'm on the phone out here in the Control Room.

HAVERKAMP: We'll just stay in communication with Karl Plumlee for the time being.

(Region I Incident Response Center Tape #3

.....on this end for awhile.

(Time check 1100 hrs.)

HAVERKAMP: Chick, we need to be kept abreast of any evnironmental sampling results so whenever these come in if you would keep us updated, we would appreciate that.

GALLINA: Where do we have our van at right now -- do we know?

HAVERKAMP: The van? It's enroute but we don't know where somewhere in Connecticut -- it was up at Millstone apparently. It will be about one o'clock...

GALLINA: Are there any plans to direct it and get it back here?

CAPHTON: Estimated time of arrival about one o'clock this afternoon to this office -- it's due about 2:30 or 3:00 p.m. before he gets there.

GALLINA: Okay.

YUHAS: When it becomes necessary, call them on the environmental number -- We have some reports that 10 to the minus 8 gross iodine offsite.

GALLINA: The time of the wind shift was about 10:38 -- that was about 20 minutes ago.

CAPHTON: What's the new direction again?

GALLINA: I am not sure but they are picking it up at the north parking lot so it's probably from the south. Is all that stuff we are hearing, is that on your end or is it on this end?

CAPHTON: The background is probably on our end -- we are using the individual extension mike.

GALLINA: Okay. The problem we are running into here is that they've got the ventilation system isolated for Unit 2, and the activity is starting to bulge out over into Unit 1, so they have already evacuated Unit 2 to all ventilated areas and they are starting to do the same at Unit 1.

YUHAS: Chick, have they said why the aux building exhaust is isolated from Unit 2?

GALLINA: Well they are trying - I guess the - they are trying to keep the levels down - you know, from getting out of Unit 2 - and what they are doing is getting just some bulge over into Unit 1 - they are trying to get them started up again in Unit 2.

YUHAS: Unit 2 is an elevated release point -- I think they better consider the relative effects of ground release versus elevated releases on that aux building.

GALLINA: Well, they are probably evaluating that now - I am trying to figure why they are getting 10 to the minus 7 in the Control Room in Unit 2. Hold on just a second....Okay, I'm back.

CAPHTON: Chick, before we get started, the number that we have set up here with our speaker box is 5360.

GALLINA: Right, I got it. Okay, here is our status right now -- Jim Higgins, and Don Neely have gone over to the Unit 2 Control Room. Miller who is the Station Superintendent is over there and they are going to get an update from him as to the status. The last we had over there - the air concentrations are 10 to minus 7 microcuries/ml unidentified iodine. They are going over there in respirators.

YUHAS: Have you heard if they have coolant sample capability?

GALLINA: What? Coolant sampling?

YUHAS: Does he have the capability to do that?

GALLINA: I can check.

YUHAS: I do not want to infer that one should be taken because it might be a very high dose rate evolution, but I am interested in knowing if they have the capability.

GALLINA: I'll check that out -- hold on a second...I Greg Yuhas on the phone?

YUHAS: Go head.

GALLINA: I am going to switch you over to Ron Nimitz - he just came in with a whole mess of data on the off-site releases, okay?

YUHAS: Okay...good.

GALLINA: Hold on.

NIMITZ: Hello.

YUHAS: Yes, Ron.

NIMITZ: Okay, this is at the north gate -- this is sector GE-2, and it was less at 1 mr/hr at 1029, okay? Now this is sector GE-1, this is the northwest corner of the island -- we still have less than minimum detectable iodine at 0908 this morning and it was 3 mr/hr at 1048, and it appeared to be rising.

YUHAS: Wait a second Ron, let me repeat that - that was at 1048, ? mr/hr. with no detectable iodine?

NIMITZ: No, minimum detectable iodine but the iodine sample was at 0908.

YUHAS: Okay, 0908 and that was at MDA.

NIMITZ: Yes, less than minimum detectable.

YUHAS: What is MDA?

NIMITZ: I am not sure -- I'll get that for you.

YUHAS: Ron, can you talk up, we are having a little trouble hearing you.

NIMITZ: Okay. Let me give you the rest of the data.

YUHAS: Okay.

NIMITZ: It's 3 mr/hr in the north parking lot -- there is no sector - it is 3 mr/hr in the north parking lot.

YUHAS: What time?

NIMITZ: This is approximately 10 o'clock.

YUHAS: Okay.

NIMITZ: 50 mr/hr - 50 mr/hr near base of containment. Okay?

YUHAS: Okay, now the west corner - just a second, Ron, we need a time on that containment so we can make some judgements on the trend.

NIMITZ: Okay, I will get that back to you. All right, let's go on -- the west corner - Greg, Greg --

YUHAS: Yeah.

NIMITZ: Still there - okay - the west corner at 0905 the iodine was less than minimum detectable and the dose rate was less than 1 mr/hr

At 0750 this morning...the west corner - the southwest corner was - the iodine was 5.25×10^{-9} to the minus 9 - the dose rate was less than 1 mr/hr, this is at Sector GE-9. Okay?

YUHAS: What time, Ron?

NIMITZ: 0842 this morning.

YUHAS: Okay.

NIMITZ: The east portion of the island, Sector GE-4, at the perimeter of the island, was reading 7 mr/hr at 1057 this morning.

YUHAS: Slow down. GE-4?

NIMITZ: Yes.

YUHAS: The dose rate?

NIMITZ: 7 mr/hr - no iodine on that.

YUHAS: And the time?

NIMITZ: 1057.

YUHAS: Okay, Ron.

NIMITZ: The west, southwest corner of the island, Sector GE-5, was 2 mr/hr at 1104.

YUHAS: 2 mr/hr at 1104?

NIMITZ: Okay. As to the iodines downwind, they had an iodine - one iodine was taken at 9 o'clock this morning - it had registered in the neighborhood of 10 to the minus 9 -- this is the west, southwest of the island - located in Goldsboro.

YUHAS: Did you say in Goldsdale or towards Goldsdale?

NIMITZ: In Goldsboro.

YUHAS: In Goldsdale?

NIMITZ: Goldsboro - Goldsboro. That was approximately 10 to the minus 9. Then they took another sample in that location at 0942 and this sample was 10 to the minus 8.

YUHAS: Okay - Goldsboro, I assume, is an occupied area?

NIMITZ: I imagine so.

YUHAS: Okay.

NIMITZ: I'm just grabbing bits and pieces because they are running around like crazy in the Control Room here.

YUHAS: We can understand that.

NIMITZ: Okay - so I'll get back with you with any update information.

CAPHTON: Leave the line open - stay on the phone, Ron.

NIMITZ: Here's Chick back.

GALLINA: Okay, MDA on the air samples are 10 to the minus 10.

YUHAS: For iodine?

GALLINA: Yeah.

YUHAS: Okay, thanks, Chick.

GALLINA: We've got some other readings here are 10 to the minus 8 and 10 to the minus 9 microcuries/ml iodine across the river - directly across the river and the plant.

YUHAS: And the time?

GALLINA: The guy just came in and yelled it so I guess it's pretty recent. Probably around 11.

(The time now is 1115)

YUHAS: These are all SAM-2 readings, right?

GALLINA: Right.

YUHAS: Any confirmation on GeLi's yet?

GALLINA: Nothing.

YUHAS: Any monitored reading?

GALLINA: Nothing. We got some unofficial - I repeat - unofficial -- hold on -- okay. They took about 100 ml samples out of the sample sink - the primary reading is about 200 mr/hr.

RAYMOND: Okay, is that the unofficial you are talking about?

GALLINA: Yeah - Karl just gave it to me so it is a little more than unofficial --- 100 ml sample was reading 2 mr/hr out of their coolant.

YUHAS: Okay - What type of instrument?

GALLINA: What type of instrument, Karl? How do they mean that? It's a General Survey Instrument.

YUHAS: Was it a contact reading?

GALLINA: Yeah.

YUHAS: Glass bottle?

GALLINA: Right - contact reading, glass bottle. Yes.

YUHAS: Okay, when was that drawn?

GALLINA: About 10-15 minutes ago.

YUHAS: Okay, and I assume that you are going ahead and analyze that to get us a microcurie/cc number, right?

GALLINA: Right.

YUHAS: So you can get an isotopic breakdown so you guys can review it.

GALLINA: Hold on -- Is this 72 microcuries/cc a valid number? Okay, the unofficial reading is roughly 72 microcuries/ml.

YUHAS: Okay, that's the total number?

GALLINA: That's total.

YUHAS: Okay, I would like you to confirm for us, Chick, that that number is, you know, half the initial number reported at 0900.

(Region I Incident Response Center Tape #3 - Side 2)

GALLINA: Don Neely and Jim Higgins have gone over to the Unit 2 Control Room. I'm the only one here - they have all gone over to the Unit 2 Control Room. They are still reading 10 to the minus 7 unidentified iodine -- they are both in respirators. The ventilation system is still not operating in Unit 2 - they are still getting some bulging of the airborne problem over at Unit 1 - they are now setting up their primary control center in the Unit 1 Control Room area - I've got Ray Smith and Walt Baunack are here - I got Ron Nimitz out getting information from the off-site survey teams; I got Karl Plumlee out monitoring the radiation monitors for Unit 1; Ray Smith and Walt will probably be getting to work as soon as Jim Higgins and Neely get back from Unit 2.

BRUNNER: Chick.

GALLINA: Yeah.

BRUNNER: I don't know what's going to happen but HQ's was trying to get tied into this line by the operator so you may have some little conversation - or a break - or something - so, be aware.

GALLINA: Okay. Okay - just try and let me know when it's coming so that I can clean up my act a bit.

BRUNNER: Go ahead, Chick.

GALLINA: That's the status right now - we're trying to find out why the heck the air is getting hot in Unit 2 - that shouldn't be - and apparently they are still getting some release - probably from that steam generator that they've got isolated - it's still roughly about 1500 lbs so they may still be venting through the steam generator itself.

BRUNNER: 3 mr at the north parking lot - Chick - did you have any guess how that happened _____?

GALLINA: Hold on, just a second. You know, what I am going to do, I will try and keep talking to keep this open - but as information comes

in, I'll just ask you to hold on until I get what the information is - okay?

BRUNNER: Great.

GALLINA: Okay, hold on...we got the Goldsboro sample information - hold on...

NIMITZ: Greg....Hello, Greg?

CAPHTON: This is Caphton, go ahead, he's on another telephone.

NIMITZ: Okay...(talk a little louder, please) Okay - We were talking about the Goldsboro iodine samples - Okay, the sample taken at 9 o'clock was taken in the south - the southern portion of the town - in town - and this sample was 1.24 x 10 to the minus 9 - that was taken in town, in the southern portion of the town. Okay the other sample taken was taken in the northern portion of the town, and that was taken at 0940 and that iodine was 1.17 x 10 to the minus 8.

CAPHTON: -8?

NIMITZ: Right. All right - they just got another reading at the observation center which is located east of the island, across the river, at 1111 was reading 3 mr/hr.

SMITH: That was east of the river reading 3 mr/hr?

NIMITZ: The observation center across the river. Okay? I'll give you back to Chick.

SMITH: One minute, Ron - was there any airborne readings to go with that observation center reading?

NIMITZ: No, they are just coming in sporadically - they are counting them and bringing them up as soon as they come up, but there is no airborne in readings available as yet at the observation center.

SMITH: Thank you.

NIMITZ: Hello...I'll turn you over to Chick again.

CAPHTON: Okay.

GALLINA: Update on status - Ventilation of Unit 1 is stable - it's not getting any worse - we've got some better numbers from the chemists here on the activity in the coolant - I-131, 17 microcuries/ml.

CAPHTON: How many?

GALLINA: 17, on seven. I-33, 33 microcuries/ml. A total activity - 130 microcuries/ml. There's iodine, cesium, rubidium, xenon - approximately five or six (microcuries/ml).

CAPHTON: Rubidium and xenon _____?

GALLINA: The total is primarily iodine, cesium or rubidium - the xenon started out at roughly five or six.

SMITH: How far is the observation center from the island? (Background in Region I)

(The time now is 1125)

GALLINA: Unit 1. Northeast of Unit 1 - next to the turbine building.

CAPHTON: Okay.

GALLINA: At 1100 hours was reading 1.76 x 10 to the minus 9 iodine microcuries/cc. They haven't started up the vent system yet - it is because they may be considering having an off-site - you know, an evacuation from off-site areas if they have to.

CAPHTON: Okay.

(The time now is 1130)

YUHAS: Is that change in wind direction - has this been sustained?

GALLINA: What?

RAYMOND: Can't hear you Chick.

GALLINA: I couldn't hear your question.

YUHAS: Has the change in wind direction been sustained?

GALLINA: Apparently. I haven't heard - you know - hasn't changed since we have been notified of it.

YUHAS: Okay - so you are still out of the south, right?

GALLINA: Probably, I'll - Ron's out there - hold on - I'll get a confirmation on it.

YUHAS: Okay.

GALLINA: We heard on the radio - it said something about a secondary cooling pump leak but we haven't been able to confirm anything of that nature at all.

YUHAS: Okay, that sounds fine.

CAPHTON: Chick, the comment on the ventilation system, you say that it still has not been started up.

GALLINA: Right.

CAPHTON: Could you specifically - which ventilation system were you describing.

GALLINA: The auxiliary building and the fuel handling building - it's the containment that is closed now. They're isolated. They are - you know - getting some leakage into the aux-building and the fuel handling building and they are not isolated between Unit 2 and Unit 1, so some of it is bulging out into Unit 1. I've got a new reading for you -- Do you have the Three Mile Island Emergency Site Plan there?

CAPHTON: Hang on - somebody does - somewhere.

GALLINA: There's site locations labeled for the general emergency points.

CAPHTON: Chick, we are still looking.

GALLINA: Let me give you this information anyway.

CAPHTON: Okay.

GALLINA: Site location GE-4, the airborne concentration is 2.8 x 10 to the minus 7 microcuires/ml.

YUHAS: That's iodine, right?

GALLINA: Yeah. Okay, we got an update on information here.

YUHAS: Chick, was that airborne number gross iodine?

GALLINA: Yeah. We've got the update on the meteorology.

CAPHTON: We have the site emergency plan now.

GALLINA: Okay, now inside on one of the pages they have plot plants of the site - and it has certain fixed monitoring locations - it should be under Site or General Emergency. Okay, Don, we have some meteorology updates, okay?

GALLINA: I'm going to hand you over to Ron Nimitz.

NIMITZ: Hello.

CAPHTON: Speak louder, please.

NIMITZ: This is the meteorology starting about 1 a.m. this morning...starting about 1 a.m. this morning, the wind direction was at 270 degrees - going directly west. It started out at 1 knot/hr, went up to 2 miles/hr.

CAPHTON: Say that again...

NIMITZ: It started out at approximately 1 mile/hr, went to 2 miles/hr - increased to 4 miles/hr - and then it went back to 1 mile/hr. You got that?

CAPHTON: I don't have the times when these changes occurred.

NIMITZ: Okay, then at 9:50 this morning -- Hello --

CAPHTON: Yes, go ahead.

NIMITZ: At 9:50 this morning, the wind direction changed, and it changed going to 140 degrees, going towards sourtheast, and this was at 2 miles/hr. Okay?

CAPHTON: You're fading in and out.

NIMITZ: At 9:50 this morning the wind direction changed again, going to 140 degrees -- the speed was 2 miles/hr. Alright, at 11:05 this morning it changed again, continuing to go -- it coming from 270 degrees and going to 90 degrees, and the speed is 2 miles/hr.

CAPHTON: Going to 90 degrees - 2 miles/hr.

NIMITZ: Alright, I have another iodine number - could I relate that to someone?

CAPHTON: Go ahead -

NIMITZ: Okay, I have another iodine number, this number was directly east of the reactor building, Unit 2, and the location is GS-4. The sample was taken at 11:28 and indicated 2.84 x 10 to the minus 7 - and that's microcuries/cc.

YUHAS: Is GE-4 off site?

NIMITZ: The perimeter of the island.

YUHAS: The perimeter of the east side.

YUHAS: Ron, are you there?

NIMITZ: I also got some information on the leak.

YUHAS: Go ahead...

NIMITZ: The primary to secondary leak, the bottled up the "B" steam generator and they are beginning to release to atmosphere off of the "A" generator -- currently, they've got "B" steam generator bottled up - but apparently, they are going to have to pressure relieve it at some time. In talking to Jim Seelinger, he's the Unit 1 Superintendent, he said that it appears to him that they've got the release under control. (The time now is 11:40)

YUHAS: Ron...

NIMITZ: Yes...

CAPHTON: What release was he talking about that was under control. This is the continuing release after they isolated, and isolated the steam generator, they were getting some small amount of leakage, this is thed leak I was talking about. Based on some radiation surveys and checked some sampling lines to the primary, on the primary system, Karl's giving you those numbers, as Jim said it indicates that they are having some fule failures. That's all I have now, let me turn you over to Karl.

CAPHTON: Okay, good.

PLUMLEE: Hello, who am I talking with?

YUHAS: This is Greg Yuhas, Don Caphton here, too, Karl.

PLUMLEE: Okay, what I can tell you is kind of trivial. The first point is that the air intake for Unit 2 is to the east of the Aux-Building and so forth. So it's all bottled up anyway, they wouldn't be able to use the fresh air into that, but Unit 2 for many reasons is bottled up.

Okay, in Unit 1 they are now getting the ventilation back on in the Aux-Building, etc., all the Unit 1 ventilation is normal and even though its showing a trip there, really able to run without isolation on their Unit 1 Aux-Building ventilation because the crane on the cross between the fuel handling buildings, it's one crane, and apparently nobody closed off the Unit 2 opening and the like when they began drawing air out of Unit 2. Okay, somebody seems to be wanting a phone, I don't know if he wants to talk with us or not.

SMITH: Let me ask you a question, Karl.

PLUMLEE: Yes...

SMITH: Do we have anybody out taking samples now, any of the NRC people taking samples or readings in the unrestricted area?

PLUMLEE: No.

SMITH: No?

PLUMLEE: No.

SMITH: Why not?

PLUMLEE: There is a team of the licensee personnel off site and they are working around, we could obviously get someone out but we don't have a way of running an air sample at this point unless we got one in the emergency kit that's got a battery in it, we haven't looked to see if there is a battery driven air sampler.

SMITH: I believe there is, would you get yourself out and take one air sample, if capable, but if not capable, external radiation samples based on the present readings that we're hearing, the critical places in the unrestricted area, take them at the same place at about hourly intervals, when you take them now, report in the results that you are getting, then go back to essentially the same place and take them again.

PLUMLEE: That takes awhile for these samplers to run but we'll get them moving.

SMITH: Well, we want also direct radiation readings, Karl.

PLUMLEE: Okay...direct I can get very quickly and come back here, on the air samples I have to take a little time getting.

SMITH: Okay...on the direct, will you go out and confirm some of the readings that we're getting from them.

PLUMLEE: Yes, I will.

CAPHTON: Karl, before you leave, be sure someone is manning the telephone, okay?

PLUMLEE: Okay, we've got Ray Smith and Chick Gallina here.

CAPHTON: Okay...

PLUMLEE: I will try to get one of them to pick up the phone. Okay, I have a request to get my carcass out and do some reading for our own donfirmation readings for some preparatory (spoken in Unit 1 Control Room)

GALLINA: Okay, Karl is going out to do the surveys and I will be on the phone.. this is Chick.

CAPHTON: Okay, Chick.

YUHAS: Chick, have you got any confirmation yet from that hospital on what the isotope breakdown is on these roadside Iodine numbers?

GALLINA: As far as I know, no, I'll get Ron to check it out, hold on.

GALLIN_: Okay, Ron is going to check it out.

GALLINA: Hold on...

CAPHTON: Chick...Gallina...hello...

CAPHTON: Hello...

GALLINA:: Okay, I'm going to put the phone down for just a second...

CAPHTON: We need some information relative to containment pressure and the...

GALLINA: Okay, hold on...

SMITH: Hello...This is Ray Smith and I'll just sit here with the phone until something happen..

CAPHTON: Don Caphton, here Ray...we're trying to get some information on containment pressure and the high pressure coolant injection (HPCI)

SMITH: Yeah, well I don't think we'll get any of that until Jim gets back from Unit 2. Containment pressure and HPCI, is that what you said?

GALLINA: 1147 hours the wind shifted, it's now coming from 150 degrees going to 330 degrees at 6 miles an hour.

YUHAS: Go over that again, nice and slow.

YUHAS: 1147?

GALLINA: 1147 time, wind shift, now coming from 150 degrees...

YUHAS: At six?

GALLINA: At six...

GALLINA: We've got a new iodine number--are you ready?

YUHAS: Yeah...

GALLINA: Okay, location GS-5, that is the southeast corner of the island, 1104 am, 7.8 x 10 to the minus 8 microcuries/cc.

YUHAS: Okay, I've got you...

GALLINA: Okay, I've been on the phone with Margaret Reilly, State of Pennsylvania, they think they may have a milk problem off-site, they're running through that now, they're not really sure. They wanted to block off Highway 441, from Middletown to Bainbridge.

Region 1 Incident Response Center - Tape #4 - Side 2

exciting the people.

YUHAS: Okay now, go over the roads again.

GALLINA: Okay, Route 441, from Middletown to Bainbridge.

YUHAS: Okay, we got that one...

GALLINA: Okay?

YUHAS: That's it, right?

GALLINA: That's it so far.

YUHAS: Now you are going to let us know as soon as they come to a decision on that.

GALLINA: Of course...

YUHAS: Thanks, Chick.

YUHAS: That's Bainbridge, Maryland we're talking about, right?

GALLINA: I don't know...

YUHAS: Bainbridge, Pennsylvania?

GALLINA: I don't think they are going to go all the way to Maryland...

CAPHTON: We confirmed it, it is Pennsylvania.

GALLINA: Okay.

(the time now is 1155)

CAPHTON: Can you get someone to get us some information on containment pressure, HPCI, reactor coolant systems...

GALLINA: Jim Higgins and Don Neely are over there now getting it.

GALLINA: Okay, hold on...

CAPHTON: Get Ron.

GALLINA: The reactor building pressure, the last measurement, Walt Baunack said is 1.5 pounds, from the quench tank ruptured disc... I'm going to put Walt right on the line.

BAUNACK: Hey Don, you know we're over here at Unit 1 so we are getting everything secondhand, I was talking to Jim Seelinger and he said the reactor building pressure went up to about 1.5 pounds, and I assume that occured as a result of a ruptured disc...

CAPHTON: Do you know anything about the system pressure...

BAUNACK: The reactor coolant system pressure?

CAPHTON: Yeah, do you have anything on that?

BAUNACK: No, not right now, earlier when I first came in I talked to the Operations Supervisor on Unit 2 and he said it was around 1500 the last he knew.

CAPHTON: Okay, I didn't know if you had an update...

BAUNACK: The two things that look fairly certain, they've got fuel damage and they have a steam generator tube rupture, or a tube leak, but how significant it is I don't know. The activity that got out apparently got out through the steam generator safety valve...okay, Don?

CAPHTON: Yeah.

BAUNACK: Okay, as I picked up, it's a little difficult here because we are in the wrong control room, but as I get anything significant, I will pass it on to you.

CAPHTON: What's the status of Unit 1 at this time?

BAUNACK: I think she was in the process of heating up following the refueling outage, she's not running.

CAPHTON: Could you get us more definitions?

BAUNACK: We can find that out I'm sure.

BAUNACK: Hey, you want me to put Chick back on?

CAPHTON: Yeah...be fine.

CAPHTON: Chick, would you ask Walt if he has heard the atmospheric dumps blowing?

GALLINA: Hold on, Walt, that's how they are cooling down right now, with generator A--

CAPHTON: And they are blowing?

GALLINA: Yeah.

GALLINA: Generator B is isolated, generator A they are using the dumps to lower the pressure.

CAPHTON: Did Baunack hear this, the dumps blowing?

GALLINA: I know they did it, I don't know if he heard it. They're doing it now, he said.

GALLINA: New information, Unit 1 is at hot standby...

CAPHTON: Unit 1 is at hot standby...

GALLINA: Right.

GALLINA: They were doing rod, drop tests now they are just holding.

CAPHTON: Chick, we've got some wind information a little while ago and my understanding is that the wind had changed and is blowing from 150 degrees.

GALLINA: Right, at six miles an hour.

CAPHTON: Okay.

YUHAS: Have you got anything back yet on those gamma spec analysis on those filters from Goldsboro, have you heard anything?

GALLINA: No, not a thing.

YUHAS: It's almost two hours, maybe it's time to ask them what the results were.

GALLINA: Okay, I'll give the phone over to Smitty and I'll go out and find out...

(Time is now 1207)

GALLINA: They said they have a sample that they are going to try and count on the Geli, on the primary coolant but they can't get it close to the Geli, it's too hot yet, they are going to dilute it down.

YUHAS: Okay...

YUHAS: Is this the same sample they took earlier?

GALLINA: Yeah...

YUHAS: So they are going to try to get a decay count and see if they come up with the same number.

GALLINA: When they placed this call was it on FTS...

YUHAS: I'm not sure, I doubt it...

CAPHTON: They called us...

YUHAS: What do they want cash?

GALLINA: I don't know...

CAPHTON: Wait 'till they get the phone bill...

(Time is now 1220)

GALLINA: Walt Baunack is here, he's got an update on the status and it's a little bit different than what we were led to believe before, so, you know, I will hand it over to him and let him explain what's going on...

CAPHTON: Okay...

BAUNACK: Don, I just got Jim Seelinger, I don't know how accurate it is, but from what he says the pressurizer is full right now, they have been letting down using the electromatice but they secured the electromatic and what they feel they have, they feel they have bubbles in the steam generators, the steam bubble now is in the steam generator rather in the pressurizer where they would like it, but the primary system is still at 2000 pounds right now...

CAPHTON: Okay.

BAUNACK: But that leaves you obviously to think well you have a steam generator tube leak, obviously one steam generator is probably going to go to 2000 pounds also, and also the safety valves are significantly less than 2000 pounds, so it would seem if they get up there with no safety lift they are going to get another release as a result of that.

What they are trying to do is establish a bubble in the pressurizer, you know, to try and get it high enough to where they will collapse the bubbles in the steam generator. Earlier they had told us they were at about 1500 pounds, but now the latest Seelinger said it was back to 2000. You know as much as I do and how reliable this information is, I don't know, but basically the whole Unit 2 has been evacuated, they're getting ready to send two people in right now to the secondary building there, the see what they can find.

BRUNNER: Do you have a feeling on the temperature of the primary, Walt?

BAUNACK: Yeah, the stack monitor and ventilation monitor, they said they get around 3 or 400 mr background in that area right now. But even bits and pieces of information that we are getting, how reliable it is, I don't know whether it helps or not, I don't know either, but...

CAPHTON: How about our coolant temperature reactor coolant temperature, Walt, anything on that?

BAUNACK: I suspect it's probably pretty near saturated, wouldn't you think, if they got a steam bubble in the steam generator, it would have to be saturated.

BRUNNER: No reading...

BAUNACK: Nobody mentioned what it was if that's what you are saying.

(Time 1225)

BAUNACK: As far as activity goes, myself I'd sure feel a lot better if they found the system pressure was coming down, and I think you got a lot of all that stored energy in there, and if you've got significantly high activity in that system, you've got a potential for another release. (Time 1227)

CAPHTON: What are some of their ideas that they are using, you know, relative to handling this situation, you know?

BAUNACK: I have no idea because we are in the other Control Room, you know that's all going on the other unit's Control Room.

CAPHTON: Is, let's see...

BAUNACK: Higgins is over there.

CAPHTON: Higgins is in the other Control Room?

BAUNACK: They're in masks over there so it is a little difficult to communicate.

BAUNACK: Things are still progressing here, you know, if that primary system were down, you know, I'd say you were relatively sure you've secured the release but right now I don't know where they stand and I don't think they do either.

CAPHTON: Unit 1, the problems that you visualize, you know, at Unit 1 at this time?

BAUNACK: In what you'd call hot standby.

BAUNACK (to Unit 1 Control Room): Anybody got any good ideas, you know, on how they are sitting? Seems like with all that activity in the primary system and the pressure up, doesn't seem like a good way to go.

CAPHTON: The microphone and the speaker box in our conference room...

BAUNACK: Earlier people were saying they were getting a lot of background noise but that's no problem now.

CAPHTON: Okay, there were more people talking here earlier and they moved away from the mike now...

BAUNACK: You might even have more information than we have, you know we hear things like helicopters flying around and things getting their samples, the wind seems to be shifting around quite a bit.

BAUNACK: I guess it's just been shifting back and forth, it seems like every time you talk about it it's blowing in a different direction. Well, I'll go ahead and see if I can get some more on this primary system pressure, you see, that's the thing that's got me concerned the most.

CAPHTON: Yeah, could you lock us in on that, but we would like to keep someone manning the telephone, Walt.

BAUNACK: Okay, Chick just came back in...

Region I Incident Response Center Tape #5

(Nothing seems to be recorded on Side 1 of Tape #5)

(Time 1305)

BAUNACK: Just adjacent to the Unit 1 Control Room - this is the Shift Supervisor's office -

HQ: Is Jim or anybody over in Unit 2 now?

BAUNACK: Jim Higgins, yeah....

HQ: Okay....

BAUNACK: They went over there just about the time we got in.

HQ: Okay, so he'll be letting you know - let somebody know when the RHR is cutin then.

BAUNACK: Right - we haven't had any contacts from them at all but periodically this Control Room gets updated - on what's going on over there.

_____: Okay.

HQ: That's kind of our next bench point that we're after....

BAUNACK: Okay...as soon as we find out we'll give you the word. Chick will be here monitoring this phone we'll try and get you on another phone over at the observation center.

CAPHTON: Okay -- Walt, you have the number now right?

BAUNACK: Yeah...337-5362.

CAPHTON: 5362.

BAUNACK: Right.

BAUNACK: Okay, we'll see what we can do, Don. Hopefully things will clear up pretty soon.

HQ: You're going to keep this line open.... All right...

BAUNACK: We'll be here on this line -- he's right on the other phone - so he be on both phones.

PLUMLEE: This is Karl Plumlee -- George asked me to take a reading around the fence and I got out and hiked around along with an operator who is assigned to me - what I found out there was that on the east side of the facility -- with the wind - we were up-wind at the time -- we were getting a 5 mr/hr and none of it was on the ground - no indication there is anything stuck there or on anything around - I think it's probably coming out of a pipe that runs outside the building - outside the concrete walls, between the two units -- I didn't go in close - I was 60 to 80 ft. away from it.

CAPHTON: How far from the building, Karl?

PLUMLEE: I was 60 or 80 ft. from the pipe which is - I don't know if you are acquainted with the building but there is some pipes that run outside the concrete wall between the two units - I think this may well be the source - I couldn't be sure - you know I was 80 ft. from it - reading 5 mr/hr.

HQ: What size pipes are they?

PLUMLEE: Oh gee, I think they're 12 inch pipes -- there's a whole bunch of pipes -- is this Don?

CAPHTON: Karl, your on with Don Caphton and Mike Wilbur.

PLUMLEE: Okay -- Haverkamp would you know which pipes I am taking about?

CAPHTON: What building, Karl?

PLUMLEE: Okay - the aux building for Unit 2.

CAPHTON: Fuel building?

PLUMLEE: Auxiliary building - it has pipes that run outside the concrete wall over to Unit 1 Auxiliary or Turbine Building - to Unit 1 Turbine Building. I think those pipes are hot - I'd guess - but its only ....

HAVERKAMP: Karl, this is Don Haverkamp - is this on the east side or the west.

PLUMLEE: I don't believe we are getting 5 mr/hr at the fence coming through the concrete wall.

CAPHTON: Karl, you are talking about being on the east side of the building, right?

PLUMLEE: Right.

HAVERKAMP: I thought that was steam

PLUMLEE: This is the same sort of reading that the licensee was getting, 7-5-7-6-8 all around the facility at the fence. At different times you do get different readings -- I think we are on the west side -- we just checked before we got there -- that the water in the cooling towers doesn't have any reading on it - that much I know. The water coming out of Unit 2 cooling towers is pushing back into the building -- it is not hot but we got caught in the plume coming out this atmospheric release and there we read 20 mr/hr ground level.

WILBUR: Okay, you were...

PLUMLEE: And without the plume we got this 10 mr/hr ground level on the west side. My guess is -- the best I understand that atmospheric dump is forming a plume, it is quite variable, it switches hither and yon and from ground level it reads a good 10 mr/hr. Nothing on our our shoes and nothing on the ground.

CAPHTON: Okay, in the plume - then - you got a reading of 20 mr/hr.

PLUMLEE: Of which we think 10 is due to the plume and 10 is due to the location of the building -- the best I can guess.....that's on an E120 ....Eberline E120.

PLUMLEE: The guard is reading 5 mr/hr when we came through coming in --

WILBUR: The last one - I didn't hear that.

PLUMLEE: Right at the guard's location -

WILBUR: That's by the bridge there?

PLUMLEE: No sir, this is the one close to the building -- by the fence, access to the building.

SMITH: Are you saying in general throughout the fence line - Karl the general readings of the fence line were 5 to 10 mr/hr?

PLUMLEE: Right.

SMITH: That's the entire fence line?

PLUMLEE: No, it's near Unit 2 and nearer to Unit 1 and Unit 2 Aux building - near the Unit 2 Aux building.

SMITH: This is the inside fence?

PLUMLEE: Yes - it's about 80 ft. to 60 ft. from the reactor building. They've just announced that they are shuttinf down the atmospheric dump I think is affecting the release. Tom Gerusky is on the line with Chick Gallina and he says they are measuring activtiy up in Harrisburg.

SMITH: Measuring what in Harrisburg?

_____: Activity - airborne activity in Harrisburg -- I assume it's just detectable level - he's a little bit shook up about it.

SMITH: Okay...all right...would you get an idea of what concentrations he is talking about.

PLUMLEE: Okay, hang on....

PLUMLEE: Chick is going to get on the phone -- I'm going to leave along with a couple of our people -- Smitty and Baunack and Nimitz -- I'm going with them --

SMITH: Where are they going?

PLUMLEE: Any other questions before I get left?

WILBUR: Yeah, one quick one, you say they're shutting down the atmospheric dump -- have they cut in the RHR system -- do you know?

PLUMLEE: I assume that is what they were going on but I didn't hear that part. I hope that's what they are going to do with it.

WILBUR: Yeah....

PLUMLEE: All right, Bob has news in to Jim Seelinger about ten minutes ago that looked like the plume and the steam dump line was hot and apparently he is going right after it.

WILBUR: I didn't hear that.

PLUMLEE: Apparently Jim Seelinger who is the Unit 1 Shift Supervisor relayed this on into Unit 2 and he's just now announced that they are shutting down the atmospheric dump.

WILBUR: Yeah..

PLUMLEE: That should cut off the major portion of the release -- they were on the phoen with Tom Gerusky -- I'm going to see if they made that announcement.

(Time 1314)

PLUMLEE: I'm going to turn it over to Chick Gallina -- he's found a mask -- we're going on out -- it isn't the tremendous hazard but it's - you know - it would be a better part of judgment to cut down to the minimum here. Okay, Chick took the mask back off -- he's going to talk to you.

GALLINA: Yeah, I figure I'd talk to you before I get this mask on.

CAPHTON: Okay, Chick.

GALLINA: They picking up radiation readings in Harrisburg.

WILBUR: Do you have any idea of the magnitudes?

GALLINA: Yeah, I'll give it to you -- I have it right here.... They have an uncalibrated THYAC -- all right this is Tom Gerusky is giving

me these numbers -- at Front and Market Street in Harrisburg they're picking up 1 mr/hr -- at the Harrisburg Mall they're picking up 5 mr/hr -- at the Turnpike entrance they're picking up 25 mr/hr.

SMITH: Dispatch somebody immediately Chick to Harrisburg -- start taking confirmatory measurements immediately - send somebody down there....okay?

GALLINA: Hold on -

CAPHTON: I guess we don't believe it.

GALLINA: Well, he said this was uncalibrated...now on their GM meters they are picking to the Turnpike, maybe 3/10ths of an mr/hr.

WILBUR: Okay.

_____: So in other words, this THYAC is not calibrated.

SMITH: We still need somebody down there with our instrumentation getting immediate readings.

GALLINA: Okay, hold on....

GALLINA: A survey around the site - he came back.

SMITH: We have the results on that, Chick?

GALLINA: He told you those numbers?

SMITH: Yes.

GALLINA: Okay.

_____: I'm going to have to go in a respirator so hold on and we'll see if I can talk to you through this thing. . .Okay?

CAPHTON: Go ahead, Chick.

HAVERKAMP: Mike, the pressure of the reactor coolant system right now is around 600 lbs.

WILBUR: 600 psi?

HAVERKAMP: That is correct.

WILBUR: That's too high for the RHR system.

HAVERKAMP: Yeah...but they're hoping it will come down somewhat.

_____: The core flood tanks have partially injected into the vessel.

WILBUR: The core flood is gone?

HAVERKAMP: It's not gone - partially gone and its coming down slowly - so right now they're maintaining a head of water on the vessel.

WILBUR: All right.

HAVERKAMP: The BWST BWC level right now is 31 ft. - but that's about 3/5ths full.

WILBUR: All right.

HAVERKAMP: The "A" steam generator atmospheri. relief valve was wide open but I understand they're securing it right now.

WILBUR: We just heard that they closed that.

HAVERKAMP: There were some questions before about what was the feed and flowrate and basically there was very little -- what they had been doing was keeping this generator about full - 90% full allowing it to steam down and then they would makeup using the condensate pump because the pressure is pretty low.

HAVERKAMP: They - with the injection from the core flood tanks they are hoping that the temperature will come dowr low enough so that they can put the RHR system on service.

WILBUR: Okay

WILBUR: Right now you are not --

HAVERKAMP: They are trying to put the RHR in service as soon as possible.

WILBUR: Secured as far as the atmospheric relief - that's all secured now.

_____: That's been secured - they think they may have been getting some releases through the A generator - possibly.

WILBUR: You got no flow through the secondary at all then?

HAVERKAMP: Please?

WILBUR: How about containment pressure - have you got anything on that?

Tape #6

(Time 1315)

WILBUR: Damn that radiation! Do you got anything on that?

GALLINA: Don, can you hear me?

CAPHTON: Chick.

GALLINA: Yes.

CAPHTON: I can barely hear you.

GALLINA: I;ll just try and talk louder - can you understand me?

CAPHTON: Yes, I can understand you.

GALLINA: Okay, I'm talking through a respirator.

WILBUR: Talking through a respirator.

GALLINA: We just to an air sampler into Harrisburg to get some idea of where we stand.

CAPHTON: Chick.

GALLINA: Yeah.

CAPHTON: We can hear you --

WILBUR: I can hear him okay too, Don.

GALLINA: Ron Nimitz left - he's going to get Plumlee to get out to take some readings.

WILBUR: Okay, fine Chick.

CAPHTON: He's going offsite - is that confirmed?

GALLINA: Yeah....

CAPHTON: Can you have Plumlee to call in and provide the readings to you from a telephone as opposed to coming all the way back to the site.

GALLINA: Well, yeah - we'll do that.

CAPHTON: Okay.

GALLINA: Hey Don.

CAPHTON: Yeah.

GALLINA: Did Walt Baunack tell you that they're terminating the release. There closing down the steam dumps?

CAPHTON: Yes.

WILBUR: I missed that - what's happened?

CAPHTON: The site has just closed down the steam dumps.

WILBUR: Okay, we heard that. Don, Klinger is taking over for me now...okay?

CAPHTON: Okay. Jeryy?

KLINGER: Yeah, Don.

CAPHTON: Could you back away or cut your volume down someway -- you're really coming in for us to hear Gallina - and when you talk you're really blasting us up here.

KLINGER: Okay, how's this, any better?

CAPHTON: Yes.

KLINGER: Can you hear all right Don?

CAPHTON: Yes.

GALLINA: I'm here Don.

CAPHTON: Yeah, do you have anything Chick?

GALLINA: No, I'm just letting you know that I'm here.

CAPHTON: Okay. Caphton here. Klinger, we have a question - we want to know what's going to happen when that nitrogen hits the core -- in the accumulator? I would think it would be secured before the nitrogen hits the core before they inject any nitrogen.

KLINGER: Is this in fact what's going to happen? Is this what they are planning to do?

(Discussion in background at Region I)

CAPHTON: Jerry, the consensus of opinion here is that the system on the nitrogen pressure by the time it has pushed all the water out it will have equalized and therefore the design is that you don't get nitrogen in the reactor.

KLINGER: You're saying that it's going to push out the water - and it will equalize the pressure?

CAPHTON: That's what the consensus of opinion is at this point.

KLINGER: They're not planning to isolate that system.

GALLINA: Don,

CAPHTON: Yes.

GALLINA: Okay - we've got some helicopter readings.

CAPHTON: Okay.

GALLINA: Apparently they sent up the helicopter with the survey instruments and started taking some plume measurements -- just radiation readings - no air samples at Crawford Station - I'm not sure where that is - you'll have to find it on the map - these are all north of the site.

CAPHTON: Okay.

GALLINA: At Crawford Station reading less than 1 mR/hr. At the airport reading less than 1 mR/hr. At Hill Island which is just north of Three Mile Island they are reading 1 mR/hr. Readings were taken from 1:15 to about 1:18 p.m.

CAPHTON: What helicopter, Chick? Whose helicopter?

GALLINA: I don't know.... (Time 1:30) We don't think it is the State Police -- it's a contractor helicopter -- they've got an HP on it.

CAPHTON: Okay.

GALLINA: The steam dumps have been shut - or at least the electromatic valve to the pressurizer has been shut. Preliminary indications are that the readings are going down - they did not want to make exact because they don't want them to become confusing later on - but apparently they are getting readings of 2, 3 and 4 mR/hr in locations that they were reading twice as high a half an hour ago. So, this is just an indication that we've got that things are getting better.

KLINGER: Okay. Did you mean that the valve was closed on the pressurizer?

GALLINA: That's all I got for now - I'm going to get back on the respirator.

KLINGER: Where they the values on the steam generator or just the pressurizer?

GALLINA: They just came in and said the valves have been shut - now the valves they are talking about I guess were the steam dumps -- these are the ones that the State of Pennsylvania were worried about -- this is where the release is coming from.

KLINGER: Okay, good enough.

GALLINA: You see, the source has not really been determined yet - there's a few places that they could be getting this radiation from - there's the steam dump for the generatorl and there's also ... whenever this electromatic is opened up to relieve pressure in the pressurizer, it's dumping into another tank that they think may be giving them another leak from another path - they are not sure yet - but apparently both valves have been shut down.

KLINGER: The ruptured disc is blown on the drain tank.

GALLINA: Okay.

CAPHTON: Thank you, Chick.

GALLINA: Okay, I'm going to get back on the respirator until I have to talk again. But I'll have the earpiece on in case you want to get me.

CAPHTON: Chick .... Gallina....

KLINGER TO REGION I: What's your understanding of the relief valve on the pressurizer - are these closed or open?

CAPHTON: We are not sure about the condition of those valves at this time - we're not sure.

KLINGER: What's the status of those valves on the pressurizer?

CAPHTON: We'll try--

GALLINA: Hey Don.

CAPHTON: Gallina --

GALLINA: I've been hearing it, I'll put the phone down and try to find out ... hang on. Okay, the valves you are talking about are the atmosphere steam dumps. The electromatic on the pressurizer has been shut and it's been shut for awhile.

CAPHTON: Thank you. (Time 1335)

Side 2 of Tape #6

CAPHTON: Hello.

KLINGER: Did he understand the question that we want some information on the temperature and pressure of the reactor coolant?

CAPHTON: No. The last we had was 1:15 p.m. and 600 psi on the pressure - we have no temperature -

KLINGER: We have that information, we want to know if there is a change?

CAPHTON: We have no more information at this time.

KLINGER: Is Gallina still onsite?

CAPHTON: Yes he is.

KLINGER: Can you give us your latest reading, Chick on the reactor primary coolant temperature pressure?

GALLINA: Okay, I'll try - I'm in a respirator so I'll go out and come back to you. You want the actual temperature and pressure?

KLINGER: Right.

GALLINA: Okay, hold on.

KEIMIG: The primary pressure, Jerry is 445.

CAPHTON: Hang on Chick...

KLINGER: Is that current?

CAPHTON: Yes - saturated temperature.

KLINGER: When do they plan to cut the RHR in?

CAPHTON: Chick ... Gallina...(no response).

KLINGER: Chick, are you there?

CAPHTON: I think he's left to get an answer --

GALLINA: Okay, the reactor pressure is 500.

KLINGER: Got it.

GALLINA: Temperature - 250. Okay?

KLINGER: Got it, thank you.

YUHAS: Chick, what airport were you referring to earlier?

GALLINA: Harrisburg International.

YUHAS: National?

GALLINA: Harrisburg. Harrisburg Airport - north of the plant.

KLINGER: What temperature and pressure they are going to put the RHR on the line?

CAPHTON: Standby. I don't have a pressure to give you, but I would assume as soon as this reasonably get onto operate it. We would guess about 400 lbs., maybe --- Hello.

GALLINA: Yeah, Don.

CAPHTON: Chick, --

GALLINA: 350 pounds.

CAPHTON: Is that their statement?

GALLINA: I just asked the question when the RHR could be cut in -- they said 350.

CAPHTON: Okay, thank you.

HAVERKAMP: Jerry, this is Don Haverkamp, can you hear me?

KLINGER: I can hear fine.

HAVERKAMP: I have a status update from Jim Higgins.

KLINGER: Okay.

HAVERKAMP: The pressurizer is being vented through the normal vent into what's called the vent header - in addition, they've had a normal letdown in operation - so that's how they are reducing pressure in the primary side. The letdown among other places goes to the reactor coolant bleed tank.

KLINGER: Goes to the what?

HAVERKAMP: Reactor coolant bleed tank. They are taking a suction from the reactor coolant bleed tank to the core flood tanks - therefore taking a letdown of what has come out before going to the bleed tank where its cooled and pumping it back into the core flood tank and therefore getting some cooling in the direct coolant system. They will not have to recycle it using this method - they can keep their inventory in the BWST.

KLINGER: Right - okay.

HAVERKAMP: The pressure about 15 minutes ago was about 445 lbs. --

KEIMIG: We don't know where that pressure is being read from.

HAVERKAMP: The indicator that was used - we are not sure it was pressurizer pressure or reactor coolant loop pressure - but anyway they are cooling down by this method.

KLINGER: Okay.

HAVERKAMP: The reactor building pressure about 15 minutes ago was 1.2 psi - so after securing the electromatic relief valve they have seen a drop a reduction in building pressure.

KLINGER: Okay, go it. Thank you.

GALLINA: Okay, I have some samples, samples...

CAPHTON: Go ahead.

GALLINA: Okay. On the eastern site fence boundary, 1.7×10^{9}.

CAPHTON: Give that location again, Chick.

GALLINA: Eastern site fence boundary. I guess with the helicopter at 300 ft. above containment reading 20 mR/hr. Did you get that?

YUHAS: Got it 20 mR at 300 ft. over containment, right?

GALLINA: Right. The time of that sample was 1348 hours.

YUHAS: Any idea of what the containment dome monitor reads?

GALLINA: No.

Tape 7

(Time - 1355)

GALLINA: _____ activity in the control room -- Unit 1 control room -- 26 x MPC for unidentified and 9 x MPC for I^{131}.

YUHAS: Let me repeat those numbers for you Chick so that the other people who are listening can hear on it. You said you had 26 x MPC for unidentified gross Beta Gamma and 9 x MPC for iodine 131 in the Unit 1 Control Room -- is that correct?

GALLINA: That's what he said. Hold on. Okay...the update is 11 x MPC Iodine-131 and 34 x MPC unidentified.

YUHAS: Let me repeat those for you Chick -- 34 MPC unidentified, 11 MPC Iodine 131.

GALLINA: (Unintelligible due to respirator)

CAPHTON: Chick, would you repeat that again, please.

GALLINA: 34 MPC unidentified iodine.

YUHAS: Let me say what we think we are hearing - Chick - I think you said 34 x MPC for unidentified and 11 x MPC for iodine.

GALLINA: Unidentified and iodine.

KLINGLER: I heard 34 x MPC for unidentified particulate.

GALLINA: That's right - unidentified particulates.

Okay, we have that. 34 x MPC unidentified particulates 11 x MPC iodine.

CAPHTON: 11 x MPC for iodine.

GALLINA: Right.

KLINGLER: That was Unit 1 control room.

(Time - 1445)

YUHAS: Yeah, go ahead Chick.

GALLINA: Okay, 1.02 - 10 to the minus 7 of iodine...

KLINGLER: Did you relay on that, I didn't hear it.

YUHAS: 1.2 E to the minus 7 iodine.

GALLINA: 1.02, E to the minus 7.

YUHAS: Right.

GALLINA: 3.4 to the minus 8 particulates.

YUHAS: E to the minus 8.

KLINGLER: Would you relay that one again?

YUHAS: Okay, Chick - we have 1.02 E to the minus 7 of iodine and 9.4 E to the minus 8 for particulates.

GALLINA: 9...Niner.

YUHAS: Okay, 9.

KLINGLER: Where did he say...

YUHAS: This Unit 1 control room, right Chick?

GALLINA: Right. Are you ready for some more data?

CAPHTON: Yeah.

KLINGLER: What are you giving us - primary data?

GALLINA: No this is off-site data we just got.

KLINGLER: I didn't hear.

CAPHTON: Off-site data?

GALLINA: This is on-site and off-site data - both radiation and air surveys.

CAPHTON: You want to start with off-site first?

GALLINA: Well, they're all at the site boundary.

CAPHTON: Go ahead, Chick.

GALLINA: Okay - sample location GE-2, that's at the north gate.

CAPHTON: Go ahead.

GALLINA: 3 mr/hr.

CAPHTON: How many?

GALLINA: 3...at 1355 hours.

CAPHTON: Okay.

GALLINA: The iodine at 12 noon was reading 5.98 E to the minus 9.

CAPHTON: And where?

GALLINA: That's at the north gate at noon.

CAPHTON: GE-2?

KLINGLER: Is he saying GE-2 like General Electric?

GALLINA: That's at the north gate.

CAPHTON: Affirmative. Go ahead, Chick.

GALLINA: Okay. 400 - can you understand me?

CAPHTON: Go ahead.

GALLINA: 400 ft above the Unit 1 cooling tower - 10 mr/hr at 1332 hrs.

KLINGLER: 1330 hrs?

CAPHTON: 1330. Chick, are you talking?

GALLINA: No. I'm waiting for some confirmation, so that you copy the information.

CAPHTON: Yes, we have the cooling tower number.

GALLINA: Okay.

YUHAS: Chick before you answer that question, what type of respirators you got wearing?

GALLINA: Full face.

YUHAS: Cartridge?

GALLINA: Yeah.

YUHAS: Chick, are they cartridge or supplied air?

GALLINA: Cartridge.

YUHAS: Go ahead, Chick.

GALLINA: Okay, west warehouse 2 to 3 mr/hr.

CAPHTON: The time, Chick.

GALLINA: We haven't got a time on that one.

YUHAS: Okay - go on to the next.

GALLINA: GE-4 which is on the eastern part of the island, at 1333 hr less that 1 mr/hr - iodine reading 1.71 E to the minus 9.

YUHAS: Okay, let me repeat that one - GE-4, eastern part of island at 1333 less than 1 mr - 1.71 E to the minus 9.

GALLINA: GE-5, that's sourtheast island, south of island 2 mr/hr at 1104.

YUHAS: Okay, GE-5, southeast of island 2 mr/hr at 1104.

GALLINA: Okay - iodine 7.8 x 10 to the minus 8.

YUHAS: Iodine - 7.8 E to the minus 8.

GALLINA: Right. South of the island - less than 0.1 mr/hr.

CAPHTON: Repeat please.

GALLINA: South of island.

KLINGLER: What was the reading?

YUHAS: North of island less than .1 mr/hr.

GALLINA: No, south.

CAPHTON: South of island.

GALLINA: Right.

CAPHTON: And the reading?

GALLINA: That was less than .1. North parking lot.

CAPHTON: Say again.

GALLINA: North parking lot.

CAPHTON: Right.

GALLINA: 15 mr/hr.

CAPHTON: What time?

GALLINA: 1350.

CAPHTON: Any iodine?

GALLINA: No readings of iodine. The wind is now due north at 10 miles/hr.

KLINGLER: Say that again.

CAPHTON: The wind is due north at 10 miles/hr.

GALLINA: Right. I'm going to let Ron Nimitz talk to you, okay?

CAPHTON: Very well.

GALLINA: Hold on.

KLINGLER: Don, do you have a request in for some operating information?

CAPHTON: Hang on, just a minute - standby.

YUHAS: Wait a minute Ron.

CAPHTON: Regarding the operating information, we are getting operating information.

KLINGLER: Okay. Can we get the primary system's temperature and pressure?

CAPHTON: Standby.

KLINGLER: Okay.

Side 2 of Tape #7

YUHAS: You go ahead while we wait this other information.

NIMITZ: Okay. I just want to give you an update on the Unit 1 control room activity. The particulate is now 1.06 x 10 to the minus 7 micro-curies/cc and that was at 1352.

KLINGLER: Would you repeat that again?

NIMITZ: 1.06 x 10 to the minus 7.

KLINGLER: That's particulate?

NIMITZ: Yes - that's at 1352 - that's the latest one they haven't counted the iodine yet.

YUHAS: Thank you, Ron.

NIMITZ: I'll give you back to Chick.

GALLINA: Okay, I'm here.

CAPHTON: Are you back on the line?

GALLINA: Yeah, I'm getting an update, hold on.

CAPHTON: Okay.

GALLINA: At the north bridge gate - 6.8 x 10 minus 7 iodine.

CAPHTON: That's at the north gate.

GALLINA: Right.

YUHAS: What's the number Chick?

GALLINA: 6.8 x 10 to the minus 7.

YUHAS: And the time?

GALLINA: They just took that -- we just counted it -- and Middletown samples are being counted now.

YUHAS: Okay.

CAPHTON: Operating information - reactor coolant system pressure is approximately 500 psi, temperature, near saturation temperature we have cold leg 230 degrees, hot 600.

KLINGLER: The T_c is 230?

CAPHTON: Yes - the T_h is 600. Still have...suspect bubbles in the loops which would affect the temperature readings.

KLINGLER: Have you got a time on this stuff, Don? Is it right now or 10 minutes ago or what?

CAPHTON: 2:15.

KLINGLER: Okay. Is there enough dropping pressure at all then.

CAPHTON: Apparently not.

KLINGLER: How about the accumulators - are they still...

CAPHTON: They are still - everything is the same - no change in that area.

KLINGLER: Volume left in the accumulators? Do you have what the volume is in the accumulator?

CAPHTON: I don't have that at this time.

KLINGLER: How about the HPCI? Is that HPCI still running?

CAPHTON: As far as we know - I don't -- let's see - the last information we have was that there's still normal letdown with the makeup pumps operating.

KLINGLER: Okay. Have you got a flow on that?

CAPHTON: We don't have -- No, we don't have a flow rate.

KLINGLER: Don...What we are looking at is that there is no pressure decrease - no - evidently, Don - cutting over to the RHR system - we're wondering what's happening on it.

CAPHTON: Wait a minute - we're - as far as we know the RHR is not on.

KLINGLER: That's right - we're wondering.

GALLINA: Don.

CAPHTON: Yes.

GALLINA: We're going to put you on hold for a second.

CAPHTON: Okay, Chick.

KLINGLER: What we're after is - have they stopped in to cut over to the RHR?

CAPHTON: And why haven't they -- and the pressure is not low enough.

KLINGLER: We know that - but - the pumps - the HPCI is still running right?

CAPHTON: As far as we know -- Yeah -- the information we have is that they are still operating their high pressure cooling injection.

KLINGLER: Can you give a flow rate?

CAPHTON: I have nothing different. The last flow rate that I have was 250 gals/minute.

MOSELEY: This is Norm Moseley - what our problem is that it seems like they are making up with the high pressure cooling injection systems so that the accumulators are never going to get empty and the pressure is now hanging there for hours and hours and hours - and so what we are trying to get at is how are we or they going to get the pressure down so that the RHR can be used - that's what we are driving at - can we approach it from that basis?

CAPHTON: Okay, we will ask the question and see what kind of answer we get.

MOSELEY: Okay, fine.

CAPHTON: (We still have Gallina in Unit 1) Background

YUHAS: (Is he going to stay there?) Background

CAPHTON: (He's going to stay there) Background

KLINGLER: Don, Don, we were wondering, do they have all the vents open on the pressurizer - are they - are they venting as much as they can?

KEIMIG: Yes they are.

CAPHTON: The answer is yes they are.

KLINGLER: Okay. Don.

CAPHTON: Yes.

KLINGLER: We are wondering if the power operated relief valves are open - full open.

CAPHTON: Standby. The last information about 20 minutes ago - they were reported to have been closed at that time - then they are not venting. Okay, the electromatic relief valves are being intermittently opened.

KLINGLER: What are we after, Don - we though they were trying to get the pressure down - it's not going down that way is it?

CAPHTON: We are asking that question now to try and get the answer - we're apparently communicating on another telephone - we're trying to get that information.

KLINGLER: Okay.

CAPHTON: That is the question Norm (Moseley) was asking.

KLINGLER: Yes.

KEIMIG: Mike, I would suspect that they are trying to keep the radiation levels down inside the containment.

KLINGLER: Yes.

CAPHTON: I think to put it in perspective - I think what you are trying to do is minimize the releaes.

KLINGLER: Yes.

CAPHTON: Mike.

WILBUR: Yes.

CAPHTON: We are just curious relative to the number of people that are staffing the Response Center and also next door - is there a Commissioner or somebody there too?

WILBUR: Yes.

CAPHTON: Do you know who it is - we're just curious.

WILBUR: Mr. Ahearne and Mr. Bradford. And Mr. Ahearne is in the room here. Don, we are still wondering how much water level is just -- how much water is in the accumulators.

CAPHTON: We are attempting to put that together on the other telephone.

WILBUR: Okay.

CAPHTON: We are still seeking that information.

Side 1 of Tape 8

CAPHTON: That's one of the questions.

GALLINA: All right.

WILBUR: To confirm those rather high readings.

CAPHTON: We suspect that the instruments being used by the State were not reliable instruments.

WILBUR: Okay.

HQ: Previos information was that the inspector on site has performed surveys in the Harrisburg area and found nothing.

CAPHTON: We have a late report on the wind direction, it's north at 10 miles/hour.

WILBUR: The wind is north at 10 miles/hour.

CAPHTON: Yes.

WILBUR: Where is it going?

SMITH: To the north.

WILBUR: All right, that's what we had before, I believe.

GALLINA: Don.

CAPHTON: Yes.

GALLINA: Okay, we're back on the line.

CAPHTON: What information do you have, Chick, anything to update?

GALLINA: No...hold on.

GALLINA: Okay, they think the release is coming from the auxiliary building, floor drains, okay?

WILBUR: I didn't hear it, you will have to repeat it.

GALLINA: 10 r/hr. from the sump. It apparently came up through the floor drain.

CAPHTON: Would you give us the rad readings again, repeat that, please.

GALLINA: 10 r/hr.

CAPHTON: I understand that it is the auxiliary building floor drains, they a...

GALLINA: They are reading 1 to 2 r/hr. in the area of the rad-waste panels in the auxiliary building.

WILBUR: Was that mr/hr?

CAPHTON: No, r.

WILBUR: R per hour?

CAPHTON: In the area of auxiliary building, rad-waste control panels.

GALLINA: Okay, there is water there seems to be a floor drain and all the water storage tanks in Unit 2 are full.

WILBUR: We think the tanks are full?

WILBUR: Did you get that one, Don, I did not.

CAPHTON: The statement was, as I understand it, that all Unit 2 drain tanks are full.

GALLINA: That's right.

GALLINA: What they are going to do is that they are going to dump the neutralizing waste tanks of Unit 2 into the miscellaneous waste tanks in Unit 1.

GALLINA: Okay?

YUHAS: Gotcha.

CAPHTON: Standby just a minute.

CAPHTON: Go ahead.

GALLINA: Okay, they're gonna, hold on...

GALLINA: They're gonna dump miscellaneous, hold on a minute, Okay, you got what I said so far, right?

CAPHTON: Affirmative.

GALLINA: Okay.

WILBUR: I missed that last one.

CAPHTON: Standby Chick...

CAPHTON: Mike, his statement was that their plans are to dump neutralizing waste tank over at Building 2, Unit 2, to the miscellaneous waste tank of Unit 1.

GALLINA: Right, then they are going to dump this water to the floor of the Unit 1, which is this bleed tank room floor.

CAPHTON: Chick, if I understand you, they will pump the B tank through the floor, to the neutralizing waste tank...is that what you are telling me?

GALLINA: They are going to dump the neutralizing tank into the miscellaneous waste tank in Unit 1, they are going to dump this water from the miscellaneous water tank in Unit 1 to the bleed tank room floor.

CAPHTON: Okay.

WILBUR: I missed whatever room it was.

GALLINA: Bleed tank room floor in Unit 1. Apparently they did this last year. Okay?

Then they are going to pump the sumps in the auxiliary building into the neutralizing tanks in the miscellaneous storage tanks of Unit 1 and 2 respectively or 2 and 1 respectively. Do you want me to repeat that again?

CAPHTON: Okay, Chick let me read it back to you...They plan to pump the auxiliary building floor over to the Unit 2 neutralizing tank and the miscellaneous Unit 1 waste tank.

GALLINA: Right. In other words, they are going to pump the auxiliary floor into the neutralizing tank in Unit 2 and the miscellaneous tank in Unit 1.

CAPHTON: Okay.

GALLINA: The water is not hot in these tanks now and they want to get the hot water off the Unit 2 floor.

WILBUR: What you are saying is that they are dumping very low level stuff.

CAPHTON: Yes, that's affirmative, that's what he is saying and that's our understanding of what he is saying. It's still not the radioactive the stuff that coming in now.

GALLINA: Okay?

WILBUR: Don, we are more interested in the sources of this water, is it from the letdown?

WILBUR: What do we think is filling up? What they are trying to do is get the water off the floor in the auxiliary building, they're trying to get the hot water, they're trying to handle the hot water.

WILBUR: Okay, do they know where that came from?

CAPHTON: Yeah, from the reactor building pumps.

GALLINA: It came up through the floor drain.

WILBUR: Don, we are wondering why you are not leaving the water over in the containment.

CAPHTON: Standby, we're discussing it.

WILBUR: I hear you.

WILBUR: Are you still there Don?

CAPHTON: Yeah, we're still discussing your question.

CAPHTON: I think the overview answer is, Mike, they are concerned about releases and they are trying to do everthing they can do to minimize releases so moving the water around I am sure is relative to that concern, the specific reason why...

WILBUR: I think the question is, why is it getting from the containment building to the auxiliary building?

GALLINA: Hey, Don...

CAPHTON: Yes.

CALLINA: Can you hear better? I am going on the speaker phone...

CAPHTON: Yes.

GALLINA: Do you understand me?

CAPHTON: Yes, we hear you loud and clear.

GALLINA: Okay, apparently the water came through the floor drain not up from the sump, every place there is a floor drain is the water, in some places it is 6 to 8 inches deep.

Side 2 of Tape 8 (NOTE: You have to run the tape for awhile on side 2 before you hear anything, like almost half.)

CAPHTON: If I heard him right, is that just about all the sumps are, have water in them.

WILBUR: Yeah.

GALLINA: All the sumps are filled.

WILBUR: Yeah.

WILBUR: Are you talking about the reactor building sumps?

WILBUR: Containment building sumps?

GALLINA: Hold on.

This is Greg Hitz.

CAPHTON: Yes, Greg.

HITZ: All the ___ in the aux-building sumps are full.

CAPHTON: All right.

HITZ: All the tanks in that Unit are full and why I think happened is they were pumping down the reactor building sump before this happened, okay? And then when they got into trouble, the pump kept pumping because it blew the ruptured disc on the drain tank. All right. And then, that didn't terminate until it got to the four pounds building (overpressure) signal so we pumped water from the reactor building sump to the aux-building sump tanks which overflows to the aux-building itself, which backed up the floor drain.

WILBUR: Had they isolated that now?

HITZ: That's been isolated automati ally.

WILBUR: Was the water still coming out there?

HITZ: The building signal isolate that automatically?

WILBUR: You're not releasing it anymore, is that what I'm hearing?

HITZ: Unintelligible.

WILBUR: Pardon.

CAPHTON: Say that again?

HITZ: What we think is, you know, there's a lot of xenon in the water, right?

CAPHTON: Yes.

HITZ: And that's why we are getting a lot of our airbourne?

CAPHTON: Yes.

HITZ: Right now we are looking at pumping some of that water to Unit 1 so we can pump down the sump to lower the level of the floor.

WILBUR: There's no more water coming from containment, is that right?

HITZ: Negative. Not from containment.

WILBUR: That's where it came from to begin with?

HITZ: That's what I think, I don't know that for sure though.

WILBUR: Oh...

HITZ: But it's hot so I would definitely say that's where it came from. I went through the aux-building and did not see any leaks, okay?

WILBUR: Okay.

HITZ: I see no evidence of waste, the only water I see is all around the floor drains.

WILBUR: Okay.

WILBUR: And the source of this water is when the containment building sump over loaded.

HITZ: Say that again?

HITZ: Is there any way to increase the volume from HQ's?

HITZ: Can you increase your volume on your phone?

WILBUR: The thing is that I can talk louder.

HITZ: Okay, thank you.

WILBUR: Can you hear?

HITZ: Okay, I hear you.

WILBUR: Okay, what we are asking is that the water is not coming from the containment building now, is that correct?

HITZ: That's correct.

WILBUR: Okay, it's been isolated.

HITZ: It was isolated when the building got to 4 pounds, okay?

WILBUR: Okay.

HITZ: Listen, I don't know this for a fact, I'm assuming this, okay?

WILBUR: That all of this occur prior to the building reaching 4 pounds? At the time?

HITZ: Yeah, 4 pounds, right.

WILBUR: Okay.

WILBUR: Don, we are still wondering what the licensee plans are for shutdown, has anybody come back on that?

BRUNNER: Standby...shutdown or cooldown?

WILBUR: Cooldown.

CAPHTON: We don't have a communications setup, we, the person communicating went off to get some information, he hasn't come back, Sandy, Sandy Lawyer.

CAPHTON: Chick, we are trying to get some more process information relative to what's happening in the reactor.

HITZ: What kind of information do you want? What do you want to know?

WILBUR: We want to know what the plan is, they are sitting at 500 pounds.

HITZ: Let me go and call and find our...all right?

CAPHTON: Yeah, we had asked the question of Jim Higgins; however, we don't have a communication with him right now.

HITZ: Let me call, I got a hot line, let me call and see what the plant status is. Okay.

CAPHTON: Chick.

GALLINA: Yeah.

CAPHTON: Chick.

GALLINA: Yeah.

CAPHTON: Chick, one other question, we are trying to find out what their game plan is for lowering the pressure in the vessel.

GALLINA: Okay, we'll try and find out.

GALLINA: You'll have to forgive me this respirator is starting to get to me.

GALLINA: Hey, Don.

CAPHTON: Yes.

GALLINA: Are you still on?

CAPHTON: Go ahead.

GALLINA: We've got some new numbers on the control room activities...

CAPHTON: Go ahead.

CAPHTON: On Unit 1 or Unit 2?

GALLINA: Unit 1, Particulate is 1.67 x 10 to the minus 7.

WILBUR: I didn't get that number.

GALLINA: 1.67 x

WILBUR: 4.67 x 10 to the minus 7.

WILBUR: I didn't get that number.

GALLINA: One, unity!

WILBUR: Okay.

GALLINA: One.

WILBUR: Yes.

CAPHTON: We have that.

GALLINA: 1,67 x 10 to the minus 7; iodine at 1400 hours. 5.6 x 10 to the minus 8.

YUHAS: Chick.

GALLINA: Yeah.

YUHAS: Do you know if these people are counting these samples that you are giving us for iodine...on the counting room eqipment, or are they doing it on the SAM-2?

GALLINA: I think it's on the SAM-2.

YUHAS: Is there a counting room operable?

HITZ: Saturated with samples.

YUHAS: Do you have an off-site backup counting? At that hospital, for instance, you mentioned earlier.

GALLINA: No we haven't heard anything from them. Did you get that ioding number?

WILBUR: 5.6 x 10 to the minus 8.

GALLINA: 5.6, right, it was 1432 hours, it was 7.38 x 10 to the minus 8.

WILBUR: 7.38? What was the time on that?

GALLINA: 1432.

YUHAS: Chick.

GALLINA: Yeah.

YUHAS: Listen, we're concerned that the numbers you are getting off the SAM-2 may not be correct, we suggest that if they have a big backup capability, counting room capability, and if they would verified some of their numbers off these cartridges with that...

GALLINA: Okay, I'll tell them. We have one more radiation number.

CAPHTON: Okay, go ahead.

GALLINA: Middletown Swim Club less than 1 mr/hr at 1445 hours.

WILBUR: Where was this?

GALLINA: Middletown swim club.

WILBUR: Swim club?

GALLINA: Yes, swim club.

CAPHTON: Swimming club.

GALLINA: Right.

WILBUR: Do you have any operating information, Don?

CAPHTON: We are still trying.

GALLINA: They've gone out to get it.

GALLINA: Don.

CAPHTON: Yeah, go ahead.

GALLINA: Will somebody do me a favor, give my wife a call?

CAPHTON: Okay.

YUHAS: Anything in particular you would like us to say?

GALLINA: I won't be home for supper...ha, ha.

CAPHTON: We will pass that on, Chick.

SMITH: We'll ask her to pack a bag for you.

CAPHTON: That will be done, Chick.

GALLINA: Okay.

Side 1 of Tape 9

HITZ: The status of Unit 2 right now.

WILBUR: The status of Unit 2 - okay.

HITZ: Unit 2 has a 550 T hot; 200 T_c; 450 lbs. pressure and are going to go on decay heat removal - via the BWST - that's the game plan.

WILBUR: Going on the decay heat removal via the BWST -

HITZ: BWST

WILBUR: So you are just pumping out and back, then

HITZ: It's just like a normal cooldown -- you are going to cooldown; you are going to open the five valves; you are going to open the four valves; you're going to recirc the pot.

WILBUR: Okay.

HITZ: All right?

WILBUR: You're coming off the BWST thru the RHR pump thru the core and out onto the floor, is that it?

HITZ: Decay Heat Removal Pumps

WILBUR: And then you are spilling it out through the pressurizer relief tanks?

HITZ: No-no-no-no!

WILBUR: You said BWST, right?

HITZ: The BWST, listen, do you have the prints there? You take suction from the BWST, okay.

WILBUR: Right.

HITZ: Through the decay heat removal pump - you go into the pot right?

WILBUR: Right.

HITZ: You go into the pot.

WILBUR: Right.

HITZ: You open DHV 1, 2 and 3 and you come right back through - once they've squared away and they know what the pressurizer level is you'll just be recirc'ing - you know - through the loop, right?

WILBUR: I missed where you are going back to the BWST.

HITZ: We are not going back right away.

WILBUR: Okay, where is it going?

HITZ: They are going - they don't know what the level is right now.

HITZ: They're cooling down, okay?

WILBUR: All right.

WILBUR: What are you telling me you are doing a regular low pressure injection?

HITZ: For a period of time. And when I got from Mike - okay - they are just going to open 1, 2 and 3 -

WILBUR: I didn't hear it....

HITZ: What I got from Mike is that they're going to open DHV 1, 2 and 3.

WILBUR: DHV 1, 2 and 3 -- are these the letdown valves?

HITZ: Well, the drop-leg valves.

WILBUR: Pardon.

CAPHTON: Say again.

CAPHTON: Which valves?

HITZ: DHV 1, 2 and 3.

HITZ: Allright - they're just going to on decay heat - okay?

WILBUR: That's a normal decay heat?

HITZ: Yeah - once they get squared away.

WILBUR: Okay - that's a hot leg letdown.

HITZ: Yeah.

(Time 1500)

CAPHTON: Do you have some feel for when this will happen?

HITZ: Negative - not at this time - I don't know what their cooldown rate is.

WILBUR: Do you know when they are going to try and cut it in - I missed that?

HITZ: No - I don't know what the cooldown rate is okay?

WILBUR: Okay. What....

WILBUR: What are they going to wait for the temperature on that hot leg - 350 or what, 400?

WILBUR: Hello.

CAPHTON: I think we've lost the site - do you hear me?

GALLINA: According to Ron Nimitz they found an 18 minute half-life so its probably rubidium if that's the case we are at 20% MPC.

CAPHTON: Chick.

GALLINA: Yes.

CAPHTON: Are there any NRC inspectors in Unit 1 Control Room?

GALLINA: Two - Ron Nimitz and myself.

CAPHTON: Okay.

CAPHTON: Unit 2 control room has come off a mask - so what we would like to do is re-establish communications from Unit 2 control room - so one of you, maybe Nimitz, go over there and see if we can get communications established from Unit 2.

GALLINA: Don Neely and Higgins are there now.

CAPHTON: Okay.

GALLINA: Do you know that?

CAPHTON: Yes we know that.

GALLINA: Ron's going to have someone call there and have them call you.

GRIER: We have them but we need somebody to be on the phone full time.

CAPHTON: We need another man over there. They're busy.

GALLINA: All right.

WILBUR: Okay -- it might be a good idea to get a three-way tie between you, the site and us up here.

CAPHTON: Sure - we're working toward that end.

CAPHTON: As soon as our inspector gets there and establishes a telephone - he's going to give us a number.

WILBUR: Okay.

WILBUR: Don, can we pick up where we left off on that status of Unit 2? Have you got anybody you can talk to there are the site?

CAPHTON: Chick - is Hitz, or whatever his name is - is he available?

CAPHTON: Gallina/

GALLINA: Yeah - he's out in the control room right now - I can get him.

CAPHTON: Would you do that?

GALLINA: Yeah.

WILBUR: Who is the we will be talking to, Don?

CAPHTON: He's one of the operators.

WILBUR: Okay - TMI operators?

CAPHTON: Yes.

_____: (Greg Hitz.....Shift Supervisor)

CAPHTON: Greg Hitz, he's a Shift Supervisor, whenever he comes on the line.

WILBUR: All right.

HITZ: Hello.

CAPHTON: Greg?

HITZ: Yes.

CAPHTON: We've got several questions - Mike, go ahead.

WILBUR: We'd like to pick up again on what's going to happen on Unit 2.

HITZ: Do you know where they are now?

WILBUR: No.

HITZ: T hot 550 degrees.

_____: I'm sorry, I can't hear you.

HITZ: T hot is 550 degrees T hot; T cold is 200 degrees; the pressure is 450 lbs. - we are doing natural circulation cooldown - we got about a 3 degree an hour cooldown rate.

WILBUR: Okay - 3F per hour cooldown.

HITZ: It looks like in approximately 15 to 18 hours we will be able to go on decay heat.

WILBUR: 16 to 18 hours.

WILBUR: Hello.

WILBUR: Is there any way you can get onto decay heat quicker?

HITZ: I'm sorry, I did not hear that.

WILBUR: I say, is there any way of getting on decay heat quicker?

HITZ: Well, I don't believe so, sir. They're limited by the cooldown rate.

WILBUR: Yeah - and how are you cooling down - you're cooling down with your.

HITZ: They're using the condensate system and the steam generator A.

WILBUR: Okay, are you dumping into the condensor then?

_____: One thing I would like you to do is to let me know of any cases where the licensee bitches about too many people being on site.

_____: Don't think this is related - what do you think -

_____: Right!

_____: I am told that every operating reactor is to have its security inspection performed by November 1 and that Martin said that he will meet that requirement. You may have known this fellow Cooper that was on temporary assignment from one of the AEC operations office to Martin's group to help out on security inspections - I guess he ended up last week and one of his final job was supposed to be to audit the security within the Region I office - I presume that he did - I heard no feedback. Just a bit of information that is an opinion of Karl Abraham - and that is the owner of New York Times is apparently anti-nuclear power and

it's beginning to be obvious from the articles that appear - the that is the case - and apparently from what Abraham says - I'm just passing it on - I don't know whether its factual or not - Abraham says that there is one reporter on the N.Y. Times that is fairly knowledgeable on nuclear power - he has an assignment to study some kind of bush disease in Australia right now - and that's where he is -- Next item - we have been asked again to not use telephones for calling home - and it's gone down even further than what I had ever realized - for example, a telephone call from here to my home is not a long distance call and therefore if I had a call to make, I would just make it - I wasn't going downstairs to use the pay phone - so we've been asked not to do that because - and this is true, I know -- there's a point system in the Philadelphia Bell - _____ - and you can make so many telephone calls within your local area at no charge until you use up so many points for the month - and once you've use up that many points well then you start paying for those telephone calls and we're paying a penalty for those telephone calls. And apparently this office goes over the prescribed number of points every month so indeed the telephone calls that I for one have been making to my residence have not been free to the government. Okay, the monthly management report is due Tuesday - about the only input we've got on that is I don't want to go into it again - if you have any input, get it in.

Side 2 of Tape 9

WILBUR: Are you coming on the condensate storage?

WILBUR: Pardon.

HITZ: Yes sir, that's correct.

WILBUR: Okay, condensate storage out through your - what you call atmospheric relief?

WILBUR: Is that correct?

HITZ: That's correct.

WILBUR: Okay - do you have any activity - radioactivity off those reliefs?

HITZ: No sir.

WILBUR: Okay.

WILBUR: And this...you're cooling down at 3 degrees an hour you're saying.

HITZ: That's correct.

WILBUR: And you say 16 to 18 hours which is about another of 50 degrees?

HITZ: You know there is an interlock, okay?

WILBUR: Yeah - is it 400 lbs?

HITZ: 420 lbs

HITZ: It's 430, all right.

WILBUR: 430?

HITZ: But I'm putting in some conservatism there, okay?

WILBUR: Okay.

_____: Because I don't know - if they can - it depends on if it maintains it at 3 degrees per hour, you know, and they hold it - then you got some slop, okay? I just threw some conservatism in there.

WILBUR: Okay - there's 430 lbs and you're at 450 now.

HITZ: That's right.

HITZ: So, you know, that's 20 degrees they gotta go, right?

HITZ: I guess the results are conservative and I took it for 400.

HITZ: 16 hours is based on reaching 400 lbs.

WILBUR: Okay - 18 hours on reaching

WILBUR: 400

HITZ: Dropping 50 off - you actually - you only have to drop 20, is that correct?

HITZ: That's correct.

WILBUR: So, it could be within even 9 hours.

WILBUR: Okay.

WILBUR: Did you hear that?

WILBUR: He's got conservatism built in - he's assuming a linear 3F per hour shutdown - he's using a 400 lb cut-in - although cut in at 430 - so 450 to 400 is your 50 lb drop that is about a pound a degree.

WILBUR: Okay - the question is why are you using atmospheric relief?

WILBUR: Hello.

HITZ: Yeah, I'm listening.

HITZ: Because there is no vacuum.

WILBUR: You can't get vacuum - you mean you're....

HITZ: I'm not sending steam to Unit 2, okay - so they didn't re-establish vacuum.

WILBUR: Okay - you lost the seals?

HITZ: Yes, sir.

WILBUR: Okay - I think he's lost the turbine seal so he's can get vacuum.

HITZ: Now,

WILBUR: What's the steam pressure now?

HITZ: Steam pressure?

WILBUR: Yeah.

HITZ: I'll have to check and look at a set of steam tables, okay?

WILBUR: Are you just going over saturation temperature?

HITZ: Yeah.

WILBUR: Can you give us some parameters on the secondary steam generator pressure level; feedwater flow if you have it?

HITZ: Level and pressure?

WILBUR: Pardon.

HITZ: Level and pressure?

WILBUR: And feedwater flow.

HITZ: All right, anything else?

WILBUR: Temperature....

WILBUR: Steam generator temperatures.

HITZ: _____ temperature; downcomer temperature

HITZ: What do you want?

WILBUR: Steam temperature.

WILBUR: Okay.

WILBUR: One more - we are interested in if you have any activity readings for the secondary systems - secondary water.

HITZ: All right. I heard them talking that they were planning on changing how they were going to cool down. Whether they started that I don't know - but they were trying to relieve some of the pressure to the building itself and just keep cooling the building, okay?

WILBUR: Yeah.

HITZ: I'll check on that while I'm talking to him.

WILBUR: Okay - your saying they could pop your power operated relief.

HITZ: That's correct.

WILBUR: Pardon.

HITZ: Because the drain tank's open.

WILBUR: Pardon.

HITZ: The RC drain tank...we ruptured the rupture disc on that.

WILBUR: That's right.

HITZ: So, if you open your electromatic you can relieve pressure that way and they were talking about that when I left.

WILBUR: Right - we understand that is a way you are doing that - and that would get you down a lot faster.

HITZ: Let me talk to them and see what they are doing.

WILBUR: Okay - good enough.

HITZ: Because when I hung up to bring you back that other information that discussion was going on.

WILBUR: I'm sorry I didn't hear you.

HITZ: I said when I hung up the last time to talk to you that discussion was going on.

WILBUR: Okay.

HITZ: So, let me get this information -- level-pressure-flow-temperature-secondary activities.

WILBUR: Say that again.

HITZ: Level, pressure, feedwater flow, steam temperature, secondary activities. That's what you want to know.

WILBUR: Right - and if you come back with a game plan where they are going to use the power operated relief release on your pressurizer?

HITZ: Yeah.

WILBUR: We'd like to know that - what that might do to a 16 to 18 hour time.

HITZ: All right, I'll find out. I'll be right back.

HITZ: This is Greg Hitz.

CAPHTON: Go ahead, Greg.

HITZ: Right now they are not cooling down using the generator - so I did get that information. The reason they stopped using them because they were afraid they might have some activity in the secondary side.

WILBUR: Okay.

HITZ: What they are doing right now is that the have changed and they are floating off the BWST -- I know it's going to be hard to explain.

WILBUR: Okay, we got a drawing in front of us now, maybe it will help.

HITZ: Good....which one you got?

WILBUR: Well, it's a C302-640 - Decay Heat Removal for Unit 1 - I assume it's close to Unit 2.

HITZ: Okay - let me explain to you now, okay? We are taking suction from the BWST thru the five valves, okay?

WILBUR: Thru the five valves - hang on a minute, let me see if I can pick it up.

HITZ: Okay, what plans do you have again?

WILBUR: It's....

HITZ: Your print no.?

WILBUR: C302-640.

HITZ: 640, that's Unit 1.

WILBUR: That's right - that's all we have.

WILBUR: I got them...okay.

WILBUR: 5E and 5B --

HITZ: Yeah, those are open.

WILBUR: Okay...

HITZ: You've gotta open them to get suction to the makeup pump.

WILBUR: Okay, we're with you.

HITZ: All right, the makeup pumps are running and they're supplying water to the RCS system -

WILBUR: Thru the heat exchangers?

HITZ: No, to the RCS....not through the heat exchangers, thru the 16 valves.

HITZ: You gotta go to print 660.

WILBUR: Okay -- you're talking about low pressure injection?

HITZ: No, high pressure injection.

WILBUR: High pressure injection?

HITZ: Okay?

WILBUR: Yeah.

_____: So, we are coming out of the BWST, through the five valves, into the pump, out of the pump, through the 16 valves which are your high pressure injection valves and into the pot.

WILBUR: Okay, I haven't picked up the 16 valves yet.

HITZ: Are you on print 660?

WILBUR: 660?

HITZ: That's right, 660.

_____: I am now, hang on a minute. I got makeup and purification drawing, is that right?

Side 1 of Tape #10

WILBUR: "Make up and Purification" it says on mine.

HITZ: What?

WILBUR: "Make up and Purification" - I'm talking to Unit 1 - that's all I have.

HITZ: All right, that's good enough.

WILBUR: Okay.

HITZ: Are you on print 661?

WILBUR: Okay, I got the makeup pump, I picked those up.

HITZ: All right - come out and follow - at the discharge line to the makeup pump.

WILBUR: Okay, I see it.

HITZ: That's 16A, B, C and D see them?

WILBUR: Just a second.

HITZ: We only get - we got one of those valves open - 16 valve open in Unit 2. Okay. It's the same setup, all right? It's exactly the same and it goes into the vessel, do you see that?

WILBUR: I haven't picked it up yey. Okay, I've got them.

HITZ: Okay, if you look at the very top in the middle of your print.

WILBUR: Yeah.

HITZ: You see MUDPT1 - MU 23 DPT1.

WILBUR: I got it, that's your flowmeter.

HITZ: Yup. That's [illegible], see it.

WILBUR: Yeah, I got it. Okay, that would be your pump A cold leg.

HITZ: You got it Bud, okay.

WILBUR: Okay.

HITZ: That goes into the pot. The pressurizer level is 175 inches.

WILBUR: Pressure - hang on a minute.

HITZ: And periodically, but not very often, it will open that electromatic relief. But they are lowering their cooldown rate at around three degrees an hour. Okay. So you don't want to keep cycling that electromatic relief for feat that it will fail.

WILBUR: Yeah, I got it.

HITZ: Okay.

WILBUR: All right. Which way would that fail, if it failed, would it failed open?

HITZ: Yes sir, it's possible that it could fail open or it could fail closed. You know depending on what happened to the breaker, if the breaker trips - it depends when the breaker trips.

WILBUR: Okay.

HITZ: You know that's what would happen, okay?

WILBUR: Yeah. And this is your concern why you are not cycling that?

HITZ: That is correct.

WILBUR: What would happen if you opened it and left it open?

HITZ: We would depressurize rapidly.

WILBUR: Yeah. You can't have a partially open valve?

HITZ: No, no, negative - it's full open or full closed.

WILBUR: How far down would it go if you blew down now - it would go ...

HITZ: It would blow you down to zero.

WILBUR: All right. Okay, so what you're doing right now is you are almost pulsing the thing.

HITZ: Say that again please?

WILBUR: You're almost pulsing the thing - you're filling up the system with your makeup pumps - and then you blow down that little bit.

HITZ: That is correct.

WILBUR: Okay, and then you fill up again.

HITZ: What?

WILBUR: And then you fill up again.

HITZ: What?

WILBUR: And then you fill up again.

HITZ: Say that again.

WILBUR: I say and then you'd fill up again with your makeup pump.

HITZ: That's absolutely correct.

WILBUR: Okay, and you are not using the steam side at all.

HITZ: That's correct. They were using that earlier but they've stoppped.

WILBUR: Okay.

HITZ: You got anymore questions?

WILBUR: (_____ _____)

HQ TO RI: I'd have to think about what happened to the DHR system - I don't know if it would make any difference).

HITZ: Hello.

WILBUR: Yeah.

HITZ: Hello.

WILBUR: Yes.

HITZ: Is that all you need - do you need anything else right now?

WILBUR: Let's see - you were going to give us steam generator level and pressure but I guess that's academic.

HITZ: That's why I didn't get it for you, because it's academic now.

WILBUR: All right. Just a minute - are there any more questions? (To HQ staff) The T_h and T_c are still 550, 200 or just slightly low, is that right?

HITZ: That's approximate - I'll get some updated figures a little later on, okay?

WILBUR: We got a question - these may be approximate - how far off is it? (HQ to RI) We got a question - you got 450 pounds primary pressure and a 550 degree temperature there, and that would be super-heat?

BACKGROUND CONVERSATION: What about this 30 mR at the north gate? That jumped quite a bit didn't it?

GALLINA: Don, one new survey point came in at 1534 hours, they are reading 30 mR per hour at the north gate.

WILBUR: What is it?

GALLINA: North gate, 30 mR per hour.

WILBUR: 1330 or 1530.

GALLINA: 1534 hours.

WILBUR: Okay.

GALLINA: It's quite a jump from the last reading.

WILBUR: What's the letdown flow - is that still 75 ppm?

GALLINA: I don't know, he just went back into the Control Room.

WILBUR: Okay.

CAPHTON: Chick, you a. out of mask, is that right?

GALLINA: Yeah, I got out.

CAPHTON: Do you have any readings on the control room?

GALLINA: No, not right now, they're still confirming them, it looks like its Rubidium-88.

WILBUR: You still got the site on?

CAPHTON: Chick.

GALLINA: Yeah.

CAPHTON: Could we get someone to confirm that 30 mR per hour at the north gate.

GALLINA: That's confirmed by Karl Plumlee. Do you want one of us to confirm it?

CAPHTON: No, we just want to make sure that was a good reading.

GALLINA: Yeah, that was a good reading, I'll check it again right now.

WILBUR: Have we lost Greg Hitz?

CAPHTON: He's back in the control room.

WILBUR: We are talking about the discrepancy between the pressure and the T hot.

CAPHTON: He'll be back shortly.

WILBUR: Okay.

GALLINA: Oh, Don.

CAPHTON: Yeah.

GALLINA: I have some more readings here.

CAPHTON: Okay, go ahead.

GALLINA: At 1430 hours in Middletown, they are reading 3.5×10^{-9}.

CAPHTON: What units?

GALLINA: Microcuries per cc.

WILBUR: What is it - particulates? Are htese particulates or iodine?

GALLINA: Iodine.

WILBUR: Did you say at 1403?

CAPHTON: At 1403 hours.

GALLINA: 1403.

WILBUR: About two hours ago.

CAPHTON: Right. Chick, would you repeat the time please?

GALLINA: 1403.

CAPHTON: Okay, thank you. 1403.

GALLINA: Right. At 1427, location Middletown Square, 1.22×10^{-8}.

CAPHTON: Microcuries per cc iodine?

GALLINA: Right. Ready.

CAPHTON: Go ahead.

GALLINA: 1458 hours, Middletown Swim Club, 1.43×10^{-9} microcuries/cc.

CAPHTON: Anything else, Chick?

GALLINA: Well, I asked for confirmation of that north gate reading. Apparently they are not sure if it's an instrument problem or not because they went out again and they got 70 mR per hour.

WILBUR: Was that 70?

GALLINA: D ' you copy ´that?

CAPHTON: 70 mR per hour.

GALLINA: Right. They are going to check the instrument now.

Side 2 of Tape #10

WILBUR: Is Greg Hitz out there?

GALLINA: Yeah, we'll get him in here. Have you established contact with the information center?

CAPHTON: Never have. Chick, do you know what happened to the observation center people?

GALLINA: Idon't know - when they finally left, and went out there, I don't know what their status is.

CAPHTON: I have some data directly from Unit 2 telephone contact.

GALLINA: Okay. Do you have an open line to them now?

CAPHTON: We have, we do have a line, but we want to maintain this line.

GALLINA: Okay.

CAPHTON: Their statement was that the reactor building pressure was 0.0 pounds at this time. The pressurizer water level was 170 inches. The pressurized water temperature was 460 degrees.

GALLINA: Okay.

WILBUR: Did you get a hot leg temperature on that?

CAPHTON: Negative.

WILBUR: What was that, pressurizer temperature?

CAPHTON: All the pressures and temperature of levels of temperature was from the pressurizer.

WILBUR: Yeah. 460?

CAPHTON: 460 degrees. 170 inches...

WILBUR: Pressure?

CAPHTON: And reactor building pressure was zero.

WILBUR: Yeah, that's the containment, how about the pressurizer? Why is the pressurizer temperature much cooler than the hot leg? Any indication there?

CAPHTON: The pressurizer pressure is around 450.

WILBUR: The pressurizer pressure?

CAPHTON: 450. That's approximate.

WILBUR: Okay. Does that make sense? How about a hot leg - did you get a hot leg Don?

CAPHTON: Standby. He's off the phone, but as soon as he comes back we will try and get that.

WILBUR: Okay.

GALLINA: Who's that, Greg Hitz?

CAPHTON: No, this is Caphton.

YUHAS: Chick, are you there?

GALLINA: Yeah, I'm here.

YUHAS: Chick, have you heard any better numbers for isotopic identification, are they sending samples off or are they still playing gross numbers?

GALLINA: So far, it's all gross. I think they sent some samples out but I haven't heard anything back yet on them.

YUHAS: Do you know who they sent them to Chick?

GALLINA: Some hospital, local hospital has a GeLi detector.

YUHAS: Okay. We need to know as soon as they start getting some product out of those people.

GALLINA: Okay.

WILBUR: Don.

CAPHTON: Yes, go ahead.

WILBUR: Where was Greg Hitz calling from? Was he outside Unit 2 or Unit 1?

CAPHTON: He was at Unit 1 Control Room.

WILBUR: Okay. Have we got contact with Unit 2?

CAPHTON: We have a contact with Unit 2; however, he left the phone to get some information and he hasn't come back.

WILBUR: Okay. Is that one of our people or one of their's?

CAPHTON: One of our people.

WILBUR: Is there some way we can get hooked into him?

CAPHTON: We are working on that.

WILBUR: Don.

CAPHTON: Go ahead.

WILBUR: When whoever it is comes back to the Unit 2 phone, get the phone number from him and then we can patch it in up here. I may get a shift supervisor back on - he's gone too - but when he comes back. (To NRC:HQ staff)

CAPHTON: Chick, let me verify your telephone number, you're still at 717-944-4041.

GALLINA: Extension 291.

CAPHTON: Extension 291.

WILBUR: Extension 291?

GALLINA: Do you still want us to keep this line open?

CAPHTON: Yes, until we can set up with Unit 2 - which we're working on.

GALLINA: Okay, well Ray Smith and Walt Baunack just came back in.

CAPHTON: Where's Karl by the way?

WILBUR: Come back in from where?

GALLINA: Why don't you guys wait here, as soon as we set up communications I'll go with these guys over to Unit 2.

CAPHTON: Okay.

WILBUR: Don, that Greg Hitz was coming back, wasn't he?

CAPHTON: Yes, he's planning on coming back. Chick.

GALLINA: Hold on, I'm getting some more numbers.

CAPHTON: Okay.

WILBUR: Don.

CAPHTON: Go ahead.

WILBUR: This number you got, 717-944-4041.

CAPHTON: Yes, that's the number we are communicating with right now.

WILBUR: What site, Unit 1 or Unit 2?

CAPHTON: That is a Unit 1 number.

WILBUR: Okay.

CAPHTON: We have a line to Unit 21 however, the inspector is not at the end of the line right now, he went off to get information, we're trying to get another person over there to establish communications and then we'll transfer. We will try to do that.

WILBUR: Okay. Don, if we can find that phone number, we can set it up here, probably very quickly.

CAPHTON: We're working on it, as soon as we get the number we'll provide it to you.

WILBUR: Don.

CAPHTON: Yes.

WILBUR: Some time ago we asked about the incore thermocouple, the ones measuring out of the assembly, and I don't know if we ever got an answer back, in fact, that was before lunch.

CAPHTON: I don't know, I have no such information. Chick -- Gallina.

GALLINA: Yeah.

CAPHTON: There are several questions...we need to get Greg Hitz back on the telephone -- is he available?

GALLINA: I'll try and get a hold of him.

Side 1 - Tape #11

HITZ: Any more questions?

WILBUR: You also, when you left, we were asking of the discrepancy between the 450 psi and the 500 and whatever it was temperature - 550 temperature. This was T hot which would say you had some super-heat there.

HITZ: Yeah. What's your question?

WILBUR: We are wondering if it is a valid temperature?

HITZ: I don't know how accurate those temperature indicators are because at one time T hot was pegged high at 620 right. And I guess T cold was 220 or something like that.

WILBUR: Yeah, 220. 200 was the last we got.

HITZ: I talked to somebody about that and I said I wouldn't put much stock in those T hot instruments - I don't know if they are true or not.

WILBUR: Okay, how about your incore temperature?

HITZ: I didn't ask for that but I'll find that out.

WILBUR: Okay.

HITZ: That would be a better indication of what you have in the core.

WILBUR: Greg.

HITZ: Anything else you want to know?

WILBUR: Hang on a second, Mr. Stello would like to talk to you if he could, okay?

STELLO: Hi.

HITZ: Hello.

STELLO: Let me ask a question of you. If you really have 550 degrees in that hot leg, it's true you are getting super-heat. If you're getting super-heat there's a chance the core could be uncovered. The only way you are going to get rid of that problem is to find a way to get more water into that vessel and get that core level back up. If you thought about what problem you've got, if indeed you've got 550 degrees in that hot leg at 450 pounds.

HITZ: I see what you're saying, okay? They do have the BWST lined up and 175 inches indicated in the pressurizer would mean that the core would be covered. They also got the core flood tanks floating on that.

STELLO: But that doesn't necessarily mean that you don't have a steam bubble in there?

HITZ: Okay, you're talking about a steam bubble in the core?

STELLO: Yeah - if you have a steam bubble in the core you go the top part of the core which could be uncovered super-heating the stuff coming out of there and that's what's giving you the reading. Have any of your people out there talked to B&W about what kind of a problem that could look like?

HITZ: I don't know if they have talked to them over in Unit 2 or not - I'll find out.

STELLO: We have been trying to get in touch with you, as best we can understand it, as we talked to them we see the same concern in the same problem. If that thermocouple reading is correct, and you do have super-heat coming through that core...

HITZ: Let me talk to the guys in Unit 2 and see what...

STELLO: We would appreciate that very much.

HITZ: All right.

CAPHTON: Reading?

GALLINA: Yeah, the last one they got was at 1600 hours, less than 1 mr.

CAPHTON: What happened to the 70?

GALLINA: 1541, it was 70; 1548 it was 50; and at 1600, it was less than 1. It could be some plume effects in these, I'm not sure, but less than 1 seems to be a valid number at this point.

YUHAS: Whose number is that, Chick?

CAPHTON: Well, who provided the information? Do we know? The source of the information, Chick

GALLINA: Well, an HP just came in here and phoned that information to the State of Pennsylvania.

CAPHTON: Okay.

GALLINA: Tom Mulleavy, HP Supervisor.

CAPHTON: Do we have an update on wind direction?

GALLINA: Well, I'm keeping this line open - with Nimitz over in Unit 2, I can't go out and get that information unless you want me to.

CAPHTON: Let's hold on that.

GALLINA: Okay.

WILBUR: Don, this Mike again - any word on that phone number in Unit 2?

CAPHTON: Hang on, I'll check. No. Negative.

WILBUR: Okay.

CAPHTON: Chick.

GALLINA: Yeah.

CAPHTON: And Mike - Rick Keimig is going to pick up and spell me for awhile here.

GALLINA: Okay. Hey, Rick?

KEIMIG: Yes. Yes, Chick.

GALLINA: Okay, we are ready with an update on some information.

WILBUR: Okay.

HITZ: First of all, I can't get the incore temperature, okay?

WILBUR: You cannot get them?

HITZ: They print out question marks.

WILBUR: They printout question marks? Okay, what's that mean?

HITZ: That means that either the computer point is messed up. Okay, or the line - you know - where you sense it - that line is broken - something is messed up with that line. They were printing earlier. You know, the computer just won't put out a good number for them. They are trying all of them to see if we can get any of them to print. Okay. That's going to take some time, okay? Because you have to

printout each one individually. The core flood tanks are floating on the core like I told you, okay? And the core flood tanks just slide into the vessel a little bit. Now that ties in directly into the core - right on top of the core, okay?

WILBUR: Yes.

HITZ: One T hot is 590; the other T hot is still pegged high. All right? We feel that we got boiling in both the T hot legs. The pressurizer is 175 inches and they're trying to increase the pressure to push the pressurizer back up into the loops, okay? To cut the bubble off.

WILBUR: What was that again with the bubble?

HITZ: Well, they're talking - yeah, they're trying to force water out of the pressurizer back up into the hot legs, but you know the temperature indication we got in the hot legs - we feel - they tell me they think that they are boiling up there.

WILBUR: Yes.

HITZ: There's boiling in the hot legs.

WILBUR: Yes.

HITZ: They've got - you know - they've talked about boiling in the core themselves over there, and they tell me they feel - they are not boiling in the core from what they've seen with the core flood tanks and what they - you know - the way they got the makeup system lined up - we lost some pressurizer heaters too.

WILBUR: I understood that happened quite a bit earlier.

HITZ: I'm going back and see if they go any of the incores to printout.

WILBUR: Hello.

HITZ: Yes.

WILBUR: What is the basis that you feel that it is not boiling in the core?

HITZ: What's the basis for what?

WILBUR: You feel it is not boiling in the core?

HITZ: Because the core flood tanks are sitting right on top of the core - they feel that the pressure they are seeing is correct. The core flood tanks did slide in at 600 pounds - they've seen a decrease in the core flood tank pressure -- levels, okay?

WILBUR: All right.

HITZ: They slid into the pot, and the core flood tanks are now sitting there floating on top of the core. When the pressure - indicated pressure go to 600 pounds we seen a slight decrease in core flood tank level, which means that the core flood tanks - you know - the core flood tanks are pressurized at 600 pounds, so when the pressure in the system gets lower than 600 pounds, they just slide in, and they actually seen the level decrease in the core flood tanks. Can you excuse me a minute?

WILBUR: Yeah.

GALLINA: Greg has been called away for the time being.

KEIMIG: Chick, can you confirm a 70 mr reading at the north gate?

GALLINA: At 1541 that is what was reported; at 1600 they reported less than 1 mr.

KEIMIG: We just got a report that it's back up to 70. Chick.

GALLINA: Did that come from Unit 2?

KEIMIG: Don Neely. Is there any indication of any wind change?

GALLINA: No wind change. It is going due north.

KEIMIG: Any comment on that 70 mr (background). Chick, Neely said that the north gate is definitely 70.

GALLINA: Someone's going to check on that right now.

Side 2 - Tape #11

(Time 1615)

BRYAN: Rick.

KEIMIG: Yes.

BRYAN: This is Sam Bryan on Wilbur's mike - he'll be right back.

KEIMIG: Okay, Sam.

BRYAN: Hey, Rick.

KEIMIG: Yes, Sam.

BRYAN: We have a question - Do you know whether the site has considered simulataneous hot in cold leg injection?

KEIMIG: Sam, you will have to speak up some.

BRYAN: Do you know whether or not the site has considered simultaneous hot and cold leg injections?

KEIMIG: I don't believe so.

BRYAN: You know, it's apparent - we think it's apparent anyway - that they're boiling in the hot leg.

KEIMIG: Yes.

BRYAN: Okay - I don't know where to chase he bubble.

HITZ: Okay, this is Greg Hitz back again.

BRYAN: Yeah, Greg - this is Sam Bryan - I'm filling in for Mike Wilbur - Is there anything in on the incores?

HITZ: I'sorry, I didn't check yet, okay?

BRYAN: We were asking whether or not you have considered simultaneous injection in the hot and cold legs.

HITZ: I can't inject in the hot and cold legs - it can't be done.

BRYAN: Let me ask you a second question?

HITZ: How do you inject in the hot legs?

BRYAN: Sorry, what did you say?

HITZ: How do you inject in the hot legs?

BRYAN: I didn't know - I didn't know whether you could rig that or not - is there a way you could valve it?

HITZ: No, no - you can't valve it.

BRYAN: Have you considered blowing it down?

HITZ: I talked to them about that, okay.

BRYAN: Yeah.

HITZ: They're not too keen on cycling that electomatic relief, okay?

BRYAN: Is that the only thing they're concerned about?

HITZ: As far as I know, Sir. I'll bounce it off of them again, if you want me to.

BRYAN: Is your concern that if this valve fails in the closed position...

HITZ: No, in the open position - if it failed in the open position.

BRYAN: What are you concerned about, uncovering the core?

HITZ: Well, rapid cooldown, okay?

BRYAN: What is this going to do to you - how far would it take you?

HITZ: Well if the pressure goes to zero...

BRYAN: Are you worried about rupturing some primary system because of some stresses?

HITZ: Yeah, I would think, okay? See, you know, when we open that valve, it blows right into the reactor building.

BRYAN: But we're concerned that - that the core is protected.

HITZ: Okay, let me bounce it off and see what they have to say - I understand what you're saying.

BRYAN: I'm not telling you to - I'm asking you to consider it.

HITZ: I understand - I'm going to ask them, okay?

BRYAN: All right.

GALLINA: Greg had to leave - he will be back in a little while.

BRYAN: Okay.

KEIMIG: Chick, did you get anything on that north gate radiation level?

GALLINA: I just talked to Don Neely - if you talk to Don Neely - he said that its's definitely 70 and I haven't got any confirmation yet.

KEIMIG: Hey, Chick.

GALLINA: Yeah.

KEIMIG: Chick.

GALLINA: Yes.

KEIMIG: Are you aware that we have motel rooms out there for you guys?

GALLINA: No. I though you guys were going to send some Burger King or something.

KEIMIG: Your clothes are on the way out too. Do you have a pencil?

GALLINA: Yeah.

KEIMIG: Nationwide Inn - it's a Best Western Motel - South Front Street - in Harrisburg. It's off of Route 83.

GALLINA: All right.

KEIMIG: The rooms are reserved in the name of Don Neely - there are three rooms there - I think they're doubles.

GALLINA: Okay.

KEIMIG: Your clothes are on the way up - as everybody else's.

GALLINA: Clothes?

KEIMIG:

GALLINA: How did you manage that?

KEIMIG:

GALLINA:

KEIMIG:

GALLINA

KEIMIG: Hey ?

GALLINA: ah.

KEIMIG: Also, Bill Raymond is coming up there in a rental car.

GALLINA: Okay.

KEIMIG: So, you guys will have some transportation back and forth to motel. You'll have to set up some sort of relief mechanism so you can spell yourselves and get some sleep.

GALLINA: All right. We've got Smitty's car - we've got the emergency vehicle -and that will be the third.

KEIMIG: Couldn't get a hold of Smitty½s wife.

GALLINA: All right - I'll let him know.

KEIMIG: Also, Smitty does not have any clothes coming - neither does Nimitz - and Baunack may not have any coming up either - we couldn't get a hold of his wife. Baunack does have a suitcase coming. Are you getting this Chick?

GALLINA: Yeah, I'm getting it.

KEIMIG: Okay.

GALLINA: I don't know if it makes any difference, but I haven't seen Jane Fonda yet.

KEIMIG: Jack Lemmon is on his way up.

GALLINA: Okay.

KEIMIG: Hey, Chick?

GALLINA: Yeah.

KEIMIG: We're getting ready to transfer communications over to the Unit 2 control room.

GALLINA: Okay, when that's done, let me know if I can get over there.

KEIMIG: Wait a minute, we want you to call us back from where you are.

KEIMIG: Let me give you the number...

CAPHTON: 5361

GALLINA: Okay, I'll call that 5361 if I lose you.

KEIMIG: Right.

GALLINA: Okay. Let me know when you make the switch.

KEIMIG: Yeah, you'll know.

BRYAN: Say, Rick, what are you doing? Are you going to disturb our line?

KEIMIG: You guys are supposed to be setting this conference call up through your switchboard down there - I don't know whose working with McOscar on it.

BRYAN: Hey, Rick? We don't want to lose what we got until they get this damn arrangement set up for the conference call in the control room in Unit 2, so you hang tight until I give you the work to do something, okay? Or Until somebody gives me the word.

KEIMIG: Yeah, but the conference call has got to come through on the speaker phone we're on now.

BRYAN: Well, that's all right, as long as we all know it's straightened out and know at the same time when to hang up, because we don't want to lose you until we have to, you know.

KEIMIG: Well, the speaker phone is now an extension from another one of our phones here, so we will not lose you when we hang up.

BRYAN: All right.

KEIMIG: However, we may lose you when they pull the hook-up _____ downstairs.

BRYAN: Okay - just tell me when you're going to do something.

KEIMIG: I'll try if they tell me.

BRYAN: Don't hang up anything until somebody tells you - I won't either.

GALLINA: Well, they're getting ready to make a switch, that's why I don't want to leave the phone.

KEIMIG: Chick, are you still on?

GALLINA: Yeah.

BRYAN: Chick still on? This is Sam Bryan - am I talking to Chick?

GALLINA: Yeah, among other people.

BRYAN: Okay - I want to know that your're there - I have a question for you Chick - Current reading on the equipment hatch outside of where it was 500 mr per hour, and wherever it was 50 mr per hr. Did Chick get that, Rick?

KEIMIG: Chick.

GALLINA: Rick...

KEIMIG: Hey, Chick...

GALLINA: I have to put you on hold - I have to make another call out of here I'll get right back with you.

KEIMIG: Don't put us on hold, we're going to make a transfer.

GALLINA: Okay.

KEIMIG: Hold on.

GALLINA: Hey, Rick - I've got Greg Hitz back here - he wants to talk to you.

KEIMIG: Who?

GALLINA: Greg Hitz.

HITZ: We're going to blow that - your know - decrease the pressure. Hello. Did you hear what I said?

KEIMIG: Hey, Greg.

HITZ: What we're going to do is open that electromatic relief....

Side 1 - Tape #12

BRYAN: Hey, Greg.

KEIMIG: Yes.

BRYAN: Is this Greg?

KEIMIG: No, this is Rick.

BRYAN: Is Greg gone?

KEIMIG: I think so.

BRYAN: We would be interested in knowing if he got any word whether or not the accumulators are closed before they blowdown -that's the value to the vessel.

KEIMIG: If what Sam?

BRYAN: If the accumulator to vessel valves are closed before they open that relief valve - see we are faced with the possibility of a little nitrogen blowing into the core - once it gets below 100 psi they are going to start getting nitrogen in the core or in the vessel, at any rate.

KEIMIG: I don't think so Sam.

BRYAN: You don't?

BRYAN: Well...it's probably a pretty damn good idea anyway - if they have an opportunity to talk to them.

KEIMIG: Okay.

KEIMIG: Hey, Chick.

GALLINA: Hello.

KEIMIG: Is Greg Hitz still there?

GALLINA: No, he went out to the control room.

GALLINA: You wanted to know if the gas would go in from the accumulator?

KEIMIG: Yeah.

GALLINA: All right, I'll give him that message.

GALLINA: Hold on, I'll be right back.

KEIMIG: Are you back in mask?

GALLINA: Yeah, we're back in masks.

KEIMIG: Okay.

~~BRYAN~~: Where is he Rick?

KEIMIG: Who?

BRYAN: Chick.

KEIMIG: Chick is going to get word to him.

BRYAN: I am wondering where is he if he is back in mask.

KEIMIG: He's in the Unit 1 control room.

BRYAN: Unit 1 control room?

BRYAN: Rick.

KEIMIG: Yes.

BRYAN: We have Unit 2 control room on the line now.

KEIMIG: Okay.

BRYAN: You need to hang up when I tell you to -- and we'll dial you right back

KEIMIG: Okay.

BRYAN: Are you guys ready?

BRYAN: Okay, hang'er up.

KEIMIG: Okay, Jim (Higgins).

WILBUR: Who are you talking to - Greg?

KEIMIG: Okay.

HIGGINS: Let me tell you the status like it is in the control room, okay?

WILBUR: Say that again.

HIGGINS: Let me give you the status as it is in the control room right now.

WILBUR: Okay.

HIGGINS: What they are doing is they have ... originally they had a bubble in both loops. They were able to get rid of the bubble in the "A" loop and the "A" loop is now solid, okay?

WILBUR: Yeah.

HIGGINS: And the "B" loop still has a bubble. They were able to get a bubble in the pressurizer - they have since lost that - and the pressurizer is now full again, okay? The core flood tanks are floating on the reactor vessel - they have injected some water and they're still floating on the vessel and the water they have injected has gone into the vessel and they're continuing to do that -they're open and floating on the vessel. They are in the process of trying to cooldown right now - they're cooling down by letting down through the normal letdown path about 120 gpm, injecting with the makeup pumps, and that water is coming from the BWST that they're injecting.

WILBUR: Yeah, that's with your makeup pump. Okay.

HIGGINS: Okay, now they are still gettin decay heat from the core - and the B&W calculations they feel that they can change them with 120 gpm letdown - that's not enough to overcome the decay heat, okay?

WILBUR: Yeah.

HIGGINS: And so they have been periodically opening the electromatic relief valve all afternoon and the pressurizer vent valve, and that's been getting rid of some more heat for them; however, they're not getting too far - What they're trying to do is to get on to steaming to the main condensor so they can start steaming the "A" steam generator, and draw steam off the primary loop, with the "A" primary loop in natural circulation - since they got rid of the bubble in the "A" loop. That's their plan of attack.

WILBUR: How do you know that you do not have a bubble in the "A" loop?

HIGGINS: What's that again?

WILBUR: How do you know that you dc not have a bubble in the "A" loop?

HIGGINS: Okay, originally the "A" loop's hot leg temperatures were both up around 700 degrees -- the cold leg temperatures were about

225 -- when they did their operation last, they were pumping with makeup into the "A" loop to try and collapse that bubble - the temperature dropped quite rapidly - from about 700 down to about 575, okay, and they felt that when that happened they got rid of the bubble - plus at the same time, the pressurizer level dropped considerably... that's when they got the level in the pressurizer - and they saw a change for the water in the pressurizer to displace that bubble in the "A" loop. The "A" loop is still on at about 580 degrees and ...

WILBUR: Wait, I missed that.

HIGGINS: About 580.

WILBUR: The "A" loop is 580?

HIGGINS: Hot-leg, Th, Th

WIBUR: And what's the pressure?

HIGGINS: Okay, the pressure is running about 500 pounds - it's cycling - the pressure is cycling around 450 to 550.

WILBUR: Okay.

HIGGINS: Okay, until they can get enough heat removed to get temperature and pressure down - they cannot get on RHR - that's the big problem right now - that's why they're trying to get the condensor on the line so they can steam the "A" steam generator and get some cooldown, using natural circulation on the "A" loop. They're still working to try to get that done. In the meanwhile they are still doing the letdown and periodically with the electromatic relief.

WILBUR: Pardon? I'm sorry, I didn't hear that.

WILBUR: Hello. Jim...I missed the last one.

HIGGINS: I think it was just a repeat of what I had said before.

WILBUR: We were talking to a Greg Hitz.

HIGGINS: He was the Unit 1 Superintendent.

WILBUR: Pardon.

HIGGINS: He is the Unit 1 Shift Superintendent - he was getting his information relayed over to him by somebody from Unit 2 - I'm in the Unit 2 control room myself.

KEIMIG: Okay, Jim.

WILBUR: Did I understand you right, you said, when the operated relief valve opened it would come down to about 450 and hang there?

HIGGINS: Right.

HIGGINS: Rick. Could you pass on the word to Eldon that Herbein is at the observation center.

KEIMIG: Who is there?

HIGGINS: Jack Herbein, he's at the observation center.

BRUNNER: Mike.

WILBUR: Yeah.

BRUNNER: Dudley was the one asking and I understand with you, is that right?

BRUNNER: Dudley Thompson was the one asking who the Senior Met-Ed man is.

WILBUR: Okay, it was my understanding they were going to consider a blowdown with a power operated relief valve.

HIGGINS: Well, they did that, they did that, they've been doing that off and on all day.

WILBUR: I'm talking about a blowdown until you can get your low pressure system in not your DHR but your LPCI.

HIGGINS: Well, when the blew down, see the lowest they would get was about 450 feet stabilized out there. It wouldn't go lower.

BRUNNER: Mike, just a minute, I hate to break in - Bryan asked Jim Higgins who is the Senior Met-Ed man on site and can you get somebody to go get that for us. Probably Herbein but I need a phone number also.

HIGGINS: Herbein has not been in the Unit 2 control room but he has been in various areas on the site, Gary Miller is in the Unit 2 control room off and on. I can't see him right now, I think he's up front in the control room right now. Herbein has been on site and Gary Miller is on site also. They've both been floating around so I'm not sure that you can get him easily without having him paged, that's probably how you'll have to do it.

WILBUR: Well, hang on a minute, let me write the names down and I'll...who is it now?

BRUNNER: Herbein. He was the Superintendant to Unit 1.

WILBUR: Okay, he's the Senior Met-Ed man at the site.

BRUNNER: That's correct. Gary Miller, the present Station Superintendent is also there.

WILBUR: Okay, Gary?

KEIMIG: G-A-R-Y M-I-L-L-E-R

WILBUR: Okay, what's his position now?

HIGGINS: Station Superintendent.

WILBUR: Unit 2 Station?

HIGGINS: No, Station Superintendent, and both Unit Superintendents are also on site, Unit 1 and Unit 2.

HIGGINS: Superintendents are on site also.

WILBUR: Okay.

BRUNNER: Herbein is out of corporate now.

WILBUR: Okay.

KEIMIG: Mike.

WILBUR: Yeah.

KEIMIG: I have a number here for the observation center.

WILBUR: Phone number for the observation center.

KEIMIG: 367-0518.

WILBUR: 367-0518?

KEIMIG: Right.

WILBUR: You got an area code on that?

KEIMIG: 717.

WILBUR: 717, okay. This is at the observation center?

KEIMIG: Right, that's where Herbein is supposed to be.

HIGGINS: Okay, I'm still on the line here, any more questions for me?

WILBUR: Okay, have we got any more questions?

WILBUR: Okay, the question is were you bleeding and feeding, how are they set up now?

HIGGINS: They're bleeding through the normal letdown path, about 120 gpm.

WILBUR: They're bleeding through the normal letdown path at about 120 gpm and you're feeding with your makeup pump.

HIGGINS: That's correct.

WILBUR: Out of the BWST.

HIGGINS: And periodically they are using the electromatic relief, as necessary.

WILBUR: Okay, but they can't get below 450 pounds.

HIGGINS: That's right, so they are, the plan of attack is to get on cooldown on natural circulation on the "A" loop and steaming the "A" steam generator to the condensor.

WILBUR: Okay, to the condensor?

HIGGINS: Right.

WILBUR: Okay, hang on a minute. Norm wants to talk to you.

MOSLEY: Let's kick some things around here a little bit, they opened the electromatic relief valve on the pressurizer, how long did they leave it open, you say the pressure stabilized out around 450.

HIGGINS: That's correct, they've been periodically cycling out all day long, they are concerned about it, in that if they do too much

cycling on it, that it is going to stick open and they will be in a bad situation.

MOSLEY: Why would that be bad? Well, then the only way that they will have of controlling pressure would be through... If it's open they won't have to worry about pressure.

HIGGINS: They still don't have enough cooldown methods right now in order to prevent temperature and pressure from going up without the added help of the electromatic.

Side 2 - Tape #12

MOSLEY: And I would expect you're going to get exactly what you want to get.

KEIMIG: Right.

(1656)

HIGGINS: And that process is going to be very slow and a very long period of time. They said they will be able to do it a lot quicker if they can get the normal cooldown through the steam generator set up and therefore they've been working in the direction of trying to get rid of the bubbles in the loop, re-establishing the bubble in the pressureizer so they can back to some normal, natural circulation, and normal cooldown using the steam generators. They do have some concern

also about if using the electromatic relief they are putting more and more water in the reactor building sump, there is some concern about using up the amount of clean water, they would prefer to be able to use clean water to recover in a reasonable fashion as opposed to having to pump their...having the decay heat pumps take the suction from the reactor building sump and pumping that water that's been in the sump back into the system, they still are not in a situation where they are going to have to do that, they still have enough water in the BWST but not if they continually bleed off from the system into the reactor building, which is where that electromatice relief valve goes, they're going to get further away from the ability of doing that.

MOSLEY: The high not leg temperature...do you conclude that there is super heat there?

HIGGINS: In the hot leg?

MOSLEY: Yes.

HIGGINS: I'm not sure, there probably is, I'm not sure.

MOSLEY: How do we know there's not a steam bubble in the reactor itself and what the level is in the reactor?

HIGGINS: They're not positively certain that there is not a bubble there; however, they feel confident that there isn't because the flood core tanks are floating essentially on the vessel, and that any water when they first did the blowdown with the electromatic relief valve, they were at 1000 pounds and they came down, they got, when they came below 600 pounds or so, where the core flood tank valves would open and let water into the upper level of the core, the core flood tanks went down a very small amount and they thought essentially the reactor vessel was already full and the core flood tanks are floating on it and maintaining it full.

MOSLEY: I think it's a function of pressure rather than that they necessarily have shown there is not a steam bubble.

HIGGINS: That's true. They're not 100% certain.

MOSLEY: It would seem to me that we're just talking among ourselves, it would seem to me the best way to get from here to there is to blow it down and leave that valve open and let the pressure decay and then you can go into a recirculation mode.

HIGGINS: They did discuss that and decided that, they thought that was not the best way to go. They also discussed this with Bob Arnold, who is Vice President of Met-Ed I have been in on most of these conferences and he tried to get them...I think they've had some contact with the

B&W people and they thought the best way to get from here to there would be to assume that they didn't have a bubble that they would be able to close the electromatic and go back up in pressure to 200 or 2000 or whatever it took collapse, make sure they had all the bubbles collapsed, but they decided against that also.

MOSLEY: That's the mechanism too, but without the pressurizer heaters, I don't know whether...

HIGGINS: They do have a few pressurizer heaters now which they didn't have earlier, they still are very limited, they don't have all the pressurizer heaters, by any means, they have some small amount and a while ago while I was in the control room they did the level back in the pressurizer they said they had it for about 1/2 hour or an hour, they they were feeding makeup water in and lost it again, and by this time, they may have it back for now but they are working with the heaters that they had and with the electromatic to re-establish the level in the pressurizer, like they had done initially.

MOSLEY: Well, it's not apparent to me that the course they are taking is going to get us there before next week, I'm exaggerating a little bit.

HIGGINS: I agree with you, but I'm not sure that they have a better solution. I talked to them about the possibility of blowing down, not

only through the electromatic relief, but also from whatever source they had in the primary to blowdown water in order to reduce the temperature and pressure and adding more warm makeup water in, but they feel the reason they don't want to do that is because of water inventory problems and the fact that they feel they got a tremendous amount of water to do that probably they might run out of water in the BWST and they would have to start into recirc out of the sumps in the reactor building and they don't wnat to do that because they feel they can recover by still using clean water and not getting into that magnitude of recovery.

MOSLEY: Well...have you pursued with them, the question you and I talked about little earlier and that is how do we knwo that the core is not uncovered, partially.

HIGGINS: We have talked that over, actually mostly the discussion on that was, between the people on site here, the Unit Superintendent and with Bob Arnold who was the, I'm not sure of the exact title, with Met-Ed, I think he's the Vice President of Met-Ed, and they talked about it for 20 minutes over the phone and I listened to the whole discussion, the final results of it was they felt fairly confident that the core was covered they saw indications when they were blowing down and the flood core tanks and the interactions there, although they could not really give assurance of 100% that the core was covered.

MOSLEY: That flood tank story is not convincing to me.

HIGGINS: Excuse me?

KEIMIG: Hey Jim.

HIGGINS: Yeah.

KEIMIG: This is Rick.

KEIMIG: Get a hold of Don Neely to call us on 5363.

HIGGINS: 5363?

KEIMIG: Right.

HIGGINS: I'll be one second.

MOSLEY: How long is it going to be before they have the condensor back in?

HIGGINS: Okay, go ahead.

MOSLEY: My question was, how long is it going to be before they have the condensor back in so they can use that route to...

HIGGINS: They're not sure, I asked them that question and they are working on it, they are planning on using the mechanical vacuum pumps on Unit 2 and they are getting some sealing steam from Unit 1, so they are going to seal in the condensor, and are in the process of lining up and get it going, they have a lot of problems in their various areas with high radiation levels and contamination and I really can't tell you more what the actual radiation levels really are but they are going having a lot of trouble with access because of these high contamination levels.

MOSLEY: I'm going to get off the phone and turn you over to Kermit Whit, okay?

HIGGINS: Okay.

WHIT: Hello, is this Jim Higgins?

HIGGINS: Yes it is.

WHIT: Kermit Whit, I'll be talking to your for the next few hours probably. There's not any more questions coming right now

so just hold until we get some.

HIGGINS: Okay. Could I go out to the control room and get updated mayself. I've been on the phone awhile and I'm lagging a little behind on what's been hapening.

KEIMIG: Go ahead, Jim, is there anybody there from Region I that can hold the phone?

HIGGINS: Walt's here right now and Ray Smith.

KEIMIG: Okay, put Walt on , will you nlease?

HIGGINS: Walt asked me to have you call his wife so that she knows he won't be home tonight.

KEIMIG: She already knows, his suitcase is on the way up.

HIGGINS: Okay, I'll put him on the phone.

WHIT: So that I know who else is on the phone, do we have a three way communication with the Region?

KEIMIG: Yes, we do, Kermit, this is Rick Keimig in Region I.

WHIT: Okay, Rick.

BAUNACH: Hey, Rick, this is Walt.

KEIMIG: She knows that you're not coming home tonight.

BAUNACH: Okay, very good.

KEIMIG: Your suitcase is on its way up for you.

BAUNACH: Oh, yeah! Who's bringing that?

KEIMIG. It's coming up in the environmental van.

BAUNACH: Oh, very good. I guess you're all up to speed on what's going on here, Rick.

KEIMIG: So far.

BAUNACH: Yeah.

KEIMIG: Jim went to get an update.

BAUNACH: What?

KEIMIG: Jim went to get an undate.

BAUNACH: They're starting to...they're debating about opening the relief on the good steam generator well you know, they're not even 100% sure that the "B" steam generator has got a significant leak. Now the bulk of the release is probably coming off the building floor. But I think they somehow promised the State that they wouldn't release anymore steam and I think that's, you know, I think they still got that bubble in the steam generator, you know, in the primary loop.

KEIMIG: Sounds that way with the T hot temperatures they're getting.

BAUNACH: Yeah, the temperatures are almost meaningless, at least you can't have any faith in them.

KEIMIG: You got the word about the motel room, right?

BAUNACH: No, I don't know anything, but Jim will fill me in on that.

HIGGINS: Who do I have now?

KEIMIG: Hello.

HIGGINS: Whose on the line now?

KEIMIG: This is Keimig, Region I.

HIGGINS: They're starting to draw a vacuum right now in the condensor and they are planning when they get that to start steaming the "A" steam generator, also to get some cooldown. They feel pretty confident now that the "A" loop has no bubble in it. The Th in the the "A" loop is down to 530. The Th in the "B" loop still around 650 to 700, so they still have a bubble there. The pressurizer level is right around the top of the indicating range, around 400 inches, but it's starting to come down, it looks like, so they feel they are starting to draw a bubble back in the pressurizer, the primary pressure is 650 pounds.

WILBUR: 550?

HIGGINS: 650.

WILBUR: 650.

HIGGINS: Right.

HIGGINS: And they're still feeding with the makeup pump in normal letdown, and they are continuing to do that, but they're not using the electromatice relief at this moment. It's periodical off and on, and

they're getting a vacuum and they hope shortly to be drawing some steam to see if they can get some cooldown in that "A" loop and that "A" steam generator to the condensor.

WILBUR: What was that pressurizer level again?

HIGGINS: Right at the top of the indicator, it looks like it's starting to come down.

WILBUR: I'm sorry, I didn't get that, we had a buzz in our phone here.

HIGGINS: Way at the top of the indicator, it's right at the top of the indicating range, it looks like t it's starting to come down now.

WILBUR: Okay.

KEIMIG: Is that 175, Jim?

HIGGINS: 400, it went down to 175 earlier and it just had filled back up again.

KEIMIG: So it's up to 400 now.

HIGGINS: Yeah.

HIGGINS: It looks like it's starting to come back down now.

WILBUR: They're starting to pull a vacuum (to NRC:HQ staff).

Side 1 - Tape #13

HIGGINS: hopefully the steam generator will give you less circulation in the primary loop and hopefully it gets cooled off (UNINTELLIGIBLE).

(The time check is 1707)

HIGGINS: Okay, is that all the questions you have right now?

WITT: Yeah, Jim - If anybody has any questions, I'll holler at you.

HIGGINS: Okay, so I'm going back out and see how they're coming.

CAPHTON: Jim.

HIGGINS: Rick.

CAPHTON: Jim - before you leave, who is taking over the telephones.

HIGGINS: Ray Smith is right here - he wants to talk to you.

CAPHTON: Ray.

HIGGINS: I'll put him on.

CAPHTON: Go ahead, Ray.

SMITH: Rick?

CAPHTON: This is Don Caphton, Ray.

SMITH: Yeah. Don - listen I didn't have anything clear because when we left for the site at 9:30, you know, she asked me as I was going out the door did I want her to call my wife that I was leaving and I said yes, but, you know, could one of you guys go ahead and give my wife a call so that I know - I don't know whether she got it or what.

CAPHTON: We will take care of that - we will do it.

SMITH: Okay.

CAPHTON: I'm not sure we have any clothes or anthing but I understand that we were having problems reaching your wife - I think they tried.

SMITH: Well, they can leave a message with my daughter - she should be home right now.

CAPHTON: Okay, we'll do that.

SMITH: Okay - do you want the number?

CAPHTON: Ray? Do you want your wife or daughter to try and deliver some clothes here and we'll try to deliver them to you?

SMITH: Well, either way, or otherwise I'm going to have to make a trip back there tomorrow. I can call her tonight.

CAPHTON: Thonus is volunteering to go out to your house and pick them up.

SMITH: Who is that?

CAPHTON: Thonus - he says he doesn't live too far from you.

SMITH: Okay - as long as they get a hold of her - she'll throw something in a case.

SMITH: Do you want anything else, Don?

CAPHTON: Just keeping the line open, Ray.

SMITH: Okay.

KEIMIG: Go Jim - Yes Jim.

HIGGINS: Let me tell you what they're doing now -

WITT: Will you go slow, Jim, so I can write -

HIGGINS: Okay - vacuum is about 15 inches now in the condenser and they are starting to steam - they are just starting to steam right now from the "A" steam generator to the condenser.

WITT: Okay, starting to steam.

HIGGINS: Okay, the primary pressurizer level is still right at the top of the indicating range.

WITT: Okay.

HIGGINS: About 400 inches. The primary pressure is 650 pounds and -

CAPHTON: How many, Jim - say that again.

HIGGINS: 650 pounds - 6-5-0.

WITT: Do you have a temperature?

HIGGINS: Okay - temperatures are fairly unreliable - there are a lot of different temperatures that I could give you - the "B" loop - let me run through them but take them with a grain of salt, Okay?

WITT: Okay.

HIGGINS: "B" loop hot leg is still up aroung 650 - 700 because there's still a bubble in there; the cold legs are down around 225 or so, roughly --

WITT: 295?

HIGGINS: 225. The hot leg on the "A" side - it's been running - I don't know exactly but it's running around 570 - 580, Okay? They are going to start ot vary a bit noew that they are starting to draw some steam off of the "A" steam generator - hopefully they are going to start to come down. They are still feeding in with the makeup pump - still letting down with a normal full letdown path - and periodically with the electromatic relief valve - which - that's closed right now.

WITT: Okay. Let me report and see how much they caught - they have 15 inches of vacuum in the condenser - they are getting - they know, Jim, they are starting a steam flow.

HIGGINS: They are just starting - they were just starting when I came in -they are starting to crack the valve open.

WITT (HQ): Okay, can you go and/get back to us in about 10 minutes and we will know if it is working.

HIGGINS: I'll do that.

WITT: Thank you very much.

SMITH: Baunack, Neely, Nimitz and Higgins and myself. Now, Nimitz was here - he's out getting some data. As far as I know, Gallina is still at Unit 1 in the center there, and the last I heard, Plumlee was also out getting some measurements.

HIGGINS: Hello, this is Jim Higgins - is this Don Caphton still?

CAPHTON: Yes.

HIGGINS: Don Neely just told me he got a call from George Smith - and we're supposed to call Harrisburg to talk to somebody in the Governor's office and the Senior NRC people on site to give them some information - so we are going to do that now - I just wanted to let you know.

CAPHTON: Okay, hang on just a second, Jim.

WITT: Hey, Jim - are they steaming?

HIGGINS: Yes.

WITT: Did it work?

HIGGINS: What's that?

CAPHTON: Go ahead, Him - proceed as instructed, okay?

HIGGINS: Okay, I', going to make that call right now.

(Time check - 1728)

CAPHTON: Smitty - hello - Smith...Smitty - Smith - Smith - Ray Smith.

SMITH: They're going to make this call, Don.

CAPHTON: Okay. Do you have any late information regarding activity at the north gate? Smitty -

Side 2 - Tape #13

(Time check - 1732)

CAPHTON: Smitty - we're trying to get an update on the activity at the north gate - did you get that request?

SMITH: Yeah - as soon as we get something I'll let you know.

CAPHTON: Okay - thank you.

SMITH: Don - hello.

CAPHTON: Yes.

SMITH: Are you still in touch with Unit 1?

CAPHTON: Yes - Keimig is.

SMITH: This is Smitty over in Unit 2 - the thing I was wondering is - Unit 1 is where all the data is coming through in the control room.

CAPHTON: Okay.

SMITH: And I was wondering if they couldn't be able to help you with that question much more than I can over here in Unit 2.

CAPHTON: Okay, we'll handle it that way.

SMITH: Because I think it will work a lot better.

CAPHTON: Okay.

WITT: How are we going to handle this?

SMITH: Well, if you are still in touch with Unit 1 that's more or less the focal point of gathering all the information over there - they have a plot board and everything set up over there.

CAPHTON: Okay - we'll take care of that.

SMITH: This is battling the problem in Unit 2.

CAPHTON: Right - okay.

SMITH: Okay - I'll get off the phone.

WITT: Hey, how do we stand right now?

CAPHTON: Who are you talking to?

WITT: Anybody - I guess I don't understand how we are getting pushed over to Unit 2 to Unit 1.

CAPHTON: We have a line open with Unit 1.

WITT: Okay.

CAPHTON: And we are getting updates on rad information via Unit 1 - and I was attempting to get some information out of Unit 2 - but we are now handling that through Unit 1.

WITT (HQ): Okay - were we going to get our information now when Jim comes back to tell us whether or not this process that they just started is working and that in fact we are steaming.

CAPHTON: Okay, you will get that on this line.

WITT: Is anyone on the phone at Unit 1 or 2 right now?

CAPHTON: Yes, we have Ray Smith at Unit 2.

WITT: Can we get anyone - a Shift Supervisor or anyone like that to talk to us?

CAPHTON: Ray - Ray Smith - hello, Ray Smith -

HIGGINS: This is Jim Higgins, again.

CAPHTON: Before we get started - somebody has left the line - and we want to man that line continuously - so, be sure that someone is there all the time, okay?

HIGGINS: Okay. I'll have to try and get Ray Smith, gain the.

CAPHTON: Go ahead, now.

HIGGINS: When they started to perform the steaming on the "A" steam generator - they opened the valves - and they were getting an indication that the valve was opening; however, it turns out that the valve is not opening and they're going to have to do something to investigate to see why the valve is not opening - they haven't started steaming yet - although they sort of hoped that they had because they were getting indications that they valve was opening but it hadn't so they're working on that right now - and they have not started steaming yet.

(BACKGROUND): To the atmospheric bleed?

HIGGINS: No. This is on the valve which leaks steam from the steam generator to the condener.

WITT: Okay. What is it's vacuum - they've got a good vacuum in the --

HIGGINS: That's right.

WITT: Okay.

HIGGINS: Let me switch lines - I've got to talk to the other man on the other line - that's all I have for you right now.

CAPHTON: Okay, you'll get somebody on this line then, right?

SMITH: Yeah, I got the phone - this is Smitty.

CAPHTON: Yeah, Ray, what we're trying to do is to keep someone there all the time - so if you have to leave, have someone spell you, okay?

SMITH: Will do.

WITT: Do you know what this is that they are having trouble with?

SMITH: No, I don't, I'll have to find out for you.

WITT: Well, don't leave the phone - Jim will be right back. The valve in the main steam line that goes to the condenser - do you think that's the one?

SMITH: I only overheard them talking about it just before I came in here and got on the phone.

WITT: Okay - then you don't know anymore than we do.

SMITH: Jim will be off the phone - wait a minute, Jim is off the phone. Jim didn't know either - he's going to get it.

CAPHTON: Smitty.

SMITH: Yeah.

CAPHTON: Don Haverkamp is going to sit in here for me - he's going to expel me for awhile.

SMITH: Okay.

WITT: Smitty.

SMITH: Yeah.

WITT: Do you happend to know what the containment pressure is right now?

SMITH: Containment pressure?

WITT: Yeah.

SMITH: No, I'd have to get it.

WITT: Can you holler for it?

SMITH: Yeah.

WITT: Okay.

HAVERKAMP: You're breaking up, I can't hear you.

SMITH: Don.

HAVERKAMP: Don Haverkamp.

SMITH: I was just talking to Don Neely - I'm getting that containment pressure for you, okay?

WITT: Thank you.

HAVERKAMP: Hey, Kermit.

WITT: Yeah.

HAVERKAMP: This is Region I, we got some information on the north gate rad-level. It appears that all the data the site has been reporting to us has been with an open window monitoring equipment - like an open window cu'ie pie - right now north gate is showing 2 mr/hour with closed window instruments.

SMITH: Don Haverkamp - that pressure you wanted - it's minus .2.

WITT: Minus .2. Is that inches of water or pounds or psi?

SMITH: Yeah, Walt said the psi is essentially zero.

Side 1 - Tape #14

(Time check - 1747)

WITT: Smitty

SMITH: Yeah.

WITT: Do you know when we might get some more information on the valve that you are trying to get open?

SMITH: Yeah - Higgins is out there in the Control Room - he went to get it - and he hasn't come back yet.

WITT: Okay.

HAVERKAMP: Hey, Kermit.

WITT: Yeah.

WHITE: The northwest corner of the island - at the fence - is showing 210 milli-rads/hour - that's with an open window E520.

WITT: That's 210 rad?

WHITE: Millirads.

WITT: Okay.

WHITE: Now with a closed window that reduces to about 20 millirem with a closed window.

WITT: 210 millirem with a closed window?

WHITE: No, 20 millirem with a closed window - 210 millirad open window. There's a ten-fold reduction with the window closed.

WITT: Okay.

WHITE: All the data - apparently all the data that the site has been reporting to us previously has been with an open window so that information we passed on earlier - about 70 millirem at the north gate was actually open window - it was actually only around 7 millirem at the north gate. Apparently right now, closed window, through the Gamma Radiation, picked up 2 millirem at the north gate.

WHITE: You got that?

SMITH: Hello, Don - hello.

HAVERKAMP: Hello, I'm here.

SMITH: Don.

HAVERKAMP: Yes.

SMITH: It's Jim -

HAVERKAMP: Go ahead.

HIGGINS: Hello, Don?

HAVERKAMP: Yeah, Jim.

HIGGINS: Is this Don Caphton?

HAVERKAMP: Don Haverkamp.

HIGGINS: Don Haverkamp - okay Don - They're starting to steam the "A" steam generator down the steam line - and they do appear to be getting some cooldown - just starting now - that's based on steam generator levels going down - and they have some indication of some feedwater flow going back into there from the condenser using the condensate pump back into the "A" steam generator, steaming with the bypass valve to the condenser.

WITT: What's the pressure, Jim?

HIGGINS: Of the steam generator?

WITT: The primary system.

HIGGINS: The primary system pressure is around - I believe - is around 600 right now - I'll have to go back and check to get you the exact value - that has not been varying too much.

WITT: Okay, can you see the equalization between the hot leg and cold leg temperature? Not on the "B" loop yet - the "A" loop they're just watching that now - they're just starting to steam it and they're watching the loop to see what happens - it hasn't moved quite yet.

WITTE: Okay, Jim - you're going to keep us informed then.

HIGGINS: That's right.

WITTE: Okay, thanks a lot.

HAVERKAMP: Do you know how much water they're pumping into the vessel?

SMITH: Just a minute - we think it's about 300 gpm but Jim says he is going to take a check.

WITT: Hey, Smitty?

SMITH: Yeah.

WITT: Are they still wearing respirators?

SMITH: No, not in the control room now.

WITT: What are they wearing?

SMITH: Outside of here, I don't know.

WITT: Okay. They are not wearing them in the control room. (to NRC:HQ staff)

WITT: Hello, Ray.

SMITH: Yeah - Higgins is out there checking on it now.

WITT: Okay.

WITT: We're a little jittery.

SMITH: You ought to be up here where everybody calm, cool and collected. (Ha-ha-ha!)

HAVERKAMP: This is Don Haverkamp - do you know if Rick Keimig is headed out your way?

SMITH: Somebody said that he was coming but I don't know when.

HAVERKAMP: Okay. I just want to make sure that you were aware of that. I imagine he will be there in an hour or so, maybe a little longer.

SMITH: Oh, great.

HAVERKAMP: Do you also know that the van with Stohr is on its way?

SMITH: Yeah, I heard that.

(Time check - 1800)

HAVERKAMP: Hello, Don?

HIGGINS: Don Haverkamp - okay - change of strategy here - apparently Met-Ed and GPU or somebody on site is talking with the people here - I'm not sure - I think it was Jack Herbein - I told you before that they had concerns about whether or not the core was covered - right?

_____: Right.

_____: Okay, apparently - I'm not sure what the scenario was for making making that decision for change - but whatever that is - they are changing now - and they are continuing the cooldown, with the "A" steam generator - they feel that they are getting some cooldown - they have T_h on the "A" loop of 548; T_c of 446; and they feel that they're seeing a definite cooldown on that loop that are steaming the "A" steam

generator. What they're doing now is that have increased their makeup to about 480 gpm - they're only letting down about 40 - so they are filling the pressurizer back up - they are letting pressure increase - they might take pressure up to about 2000 pounds - but the pressurizer goes solid and they want to try and make sure by doing that that they have all bubbles collapsed in the vessel, the loops, whatever - and they are continuing in the meanwhile doing the steaming on the "A" steam generator. The thing here is to collapse all the bubbles - to make sure the core is covered - to make sure they don't have any air bubbles or vapor pockets in there.

HAVERKAMP: Okay.

HIGGINS: And they're filling up right now - they're up to about 900 pounds right now - heading for about 2000 the level of the pressurizer is up to about 340 and it's going up also.

HAVERKAMP: What was the level of the pressurizer?

HIGGINS: 340.

HAVERKAMP: 340.

WITT: Would you give me those hot leg and cold leg temperatures again, Jim?

HIGGINS: 548 and 446.

WITT: Okay, I've got them right.

WITT: How long can they inject water like that, Jim - how much inventory do they have?

HIGGINS: They still have - I don't have an up-to-date BWST level - let me get that, okay? They still were half full on that - so they got plenty of water - but let me get you the actual level.

WITT: Okay.

WITT: Hey, Jim.

HIGGINS: Hello.

HIGGINS: They have 24 feet in the BWST now and that's, I believe, the number we had before was about 8,000 gpm per ft. right Don?

HAVERKAMP: The BWST normally is around 55 feet so this is 53 feet - a little bit less than half full.

HIGGINS: Okay. There is really not a concern running on that right now because all they're going to do is pump in until they fill up the pressurizer and with the pressurizer almost full now, then the pressure will go right up - and they'll be going up to around 2000 pounds and, like I said, collapse the bubbles in there - and then they're going to secure that except the makeup rate.

WITT: Okay, Jim, do you know how much feedwater flow they've got going to the steam generator?

HIGGINS: It's pretty low - and as I looked at that indication - normally the indicator they're trying to lead it on are ranged for the normal feedwater flow - and that's all you've got right now is indications - so you're way down the bottom of the scale and no accuracy - you really can't get a feel for it.

WITT: Okay, but you are sure there is a flow and they are steaming?

HIGGINS: Yeah - you can see - the only way to get it is to do a conversion off the slope on the level decreasing - you can see the steam generator level coming down - I don't have the figures and nobody had them right there at their fingertips - inches per gallon in the steam generator up that high - and they were pretty high - and they are coming down from 90 to 80 to 75% range - and so you can see the steam generator level coming down.

HIGGINS: Okay?

WITT: Okay, Jim.

WITT: Are you going back now to monitor?

Side 2 - Tape #14

HAVERKAMP: Jim Higgins?

SMITH: Just a minute - Jim, someone's hollering for you - just a minute.

HAVERKAMP: Ray.

HIGGINS: Jim Higgins.

HAVERKAMP: Jim, this is Don Haverkamp - we're getting some information - some question about some valves - I guess it was blown off a pump - now does that make any sense to you?

HIGGINS: No.

HAVERKAMP: Something had initiated the event or a release of radio-activity.

HIGGINS: I heard that on the radio when I was driving up this morning and it doesn't make any sense to me and I asked the people here and they don't know what it relates to either.

HAVERKAMP: Do you know why?

HIGGINS: It makes no sense at all - let me tell you - I just don't understand what they're saying - it does not jibe with what's happening on the site. The way intially that they got all the water activity into the Auxiliary Building is by the Reactor Building sump pump pumping down automatically. And that got into the Auxiliary Building before they secured that after the initial blow down of the electromatic

release and the pressurizer and the rupture of the rupture disc in the reactor coolant drain tank - maybe you could stretch your imagination and say that valve opened and let the water come from the containment out to the Auxiliary Building sump like it's supposed to - that's the function - maybe you could stretch it to make that fit - but that's ....

WITT: Do you have any more information on the cooling?

HIGGINS: No - no additional information - they're still seeing a Delta T going into a new Delta on the loop. I'll go and see how it's running for you -let me do that, okay?

WITT: Fine, thank you Jim.

WITT: Hey, Smitty?

SMITH: Yeah.

WITT: Do you know what shift is on there now and whether they have had shift changes - what we really want to know is the graveyard shift still on there or have they switched shifts?

SMITH: They've got some people still here from dayshift but when we were off-site, they were bringing people in.

WITT: Okay, they are bringing other people in.

_____: Yeah - there has been a constant in-and-out - I know that there's some people here that's been here on dayshift but I don't think anybody's still around here that was on the graveyard shift.

WITT: Okay, that's fine, Smitty.

BRUNNER: Smitty?

SMITH: Yeah.

BRUNNER: Do you know Jack Herbein?

SMITH: Pardon.

BRUNNER: Do you know Jack Herbein?

SMITH: He's at the observation center so we're told.

BRUNNER: He's still the Met-Ed man in charge, right?

SMITH: Yeah, I would assume so.

BRUNNER: Both he and Miller were there all day - I assume they will stay 'till midnight or so.

SMITH: I really don't know.

BRUNNER: Okay.

WITT: Smitty?

SMITH: Yeah.

WITT: I'm sure that Jim is checking on this - what we're both asking now is hot leg temperature in case it is getting lower.

SMITH: The hot leg temperature?

(The time is now 1812)

SMITH: Hello, Don?

HAVERKAMP: Yeah.

SMITH: Hang on a minute - I'm going to lay this down for just a second.

SMITH: Hello, Don?

HAVERKAMP: Yeah.

SMITH: Here comes Jim through the door.

HIGGINS: Hello.

HAVERKAMP: Hello, Jim.

HIGGINS: Okay - they're continuing the colddown in the steam generator - I'm not sure exactly how much they're getting but it's continuing - the Delta T on the "A" loop is increasing so that's some indication that they are getting more cooldown - the T_h on "A" is 555, the T_c is 300, okay?

HAVERKAMP: The T_h is 555 and the T_c is 300.

_____: Right.

HIGGINS: On the "B" loop, they still appear to have the bubble in the "B" loop hot leg, and they're still up in the range from 650 to 700, okay? The reason you get variations on this - on the control panel they only go as high as 620 - that's pegged high - it's been pegged high - periodically they go back and take thermocouple readings on the back panel - the B&W people are doing that - and they shoot up to around 700, 750 - from the thermocouple readings - they're not taking those right now from looking at the pegged high value on the "B" loop on the control panel - and that's at 620 - but that's where it's been - running around 650 - 700 on the thermocouple - that's probably about the same - the T_c on the "B" loop is 200.

WITT: Why do you say the steam cooldown is working if the Delta T we are getting further apart on our Delta T.

HIGGINS: Well that's why - you're losing more heat when the steam generator is dropping the T_c lower - the more heat pulled out of the steam generator - the lower it's going to drop -

WITT: What was our last reading?

HIGGINS: The last one we had was 548 and 446 - that's going all the way down from 446 to 300 on the T_c in the "A" loop.

WITT: What's the pressure in the primary system?

HIGGINS: It's still increasing - to about 450 psi - they are injecting with the makeup pumps - like I said, they're shooting for 2000 and they're at 1100 now - the pressurizer indicates full but the system does not indicate solid - the pressure is going up but it's been going very slowly - and they still have indications they have a bubble in the loop, okay?

WITT: Before you leave, Jim, our people here seem to think this 555 is saturation temperature - they doubt that you're getting circulation - natural circulation flowing through there.

HIGGINS: Okay - that's saturation for what pressure?

WITT: That was 1100.

HIGGINS: 1100?

WITT: Right.

WITT: Can you get any better indication on the flow rate on the Auxiliary feedwater?

HIGGINS: Okay, they're not using off the feed - they're using steam straight from the condenser so they are using the condensate pump - trying to read it off the chart - like I said - it's way down on the bottom range of it - I read .05 times 10 to the minus 6 pounds/hr.

Side 1 - Tape #15

HIGGINS: But I'm not sure how reliable that is, but right at the bottom of the indicating range on the instrument.

HAVERCAMP: Hang on, just a minute. Have any of you seen Bill Raymond there?

HIGGINS: Bill Raymond went out to the motel and still is and get some sleep. He was going to come in a little late to relieve myself and Walt.

HAVERCAMP: Okay, thank you.

HIGGINS: Okay, any other questions right now?

WITT: Yeah, are they running with the steam generator flooded or do you have a level?

HIGGINS: Yes, there's a level its running at 93% now, it's varying up and down a little bit, but with the feed flow going in and the steaming going out, it's maintaining less than constant, with a high of 90% on scale.

WITT: Anymore questions before he goes back?

HIGGINS: The bypass valve that they are bleeding the steam off has an indication in the control room of the percent open, they're running with that 30% open right now.

WITT: Okay, Jim.

HIGGINS: And they have 27 inches vacuum in the condensor.

WITT: 27 inches?

HIGGINS: 27.

WITT: Okay, Jim, appreciate it, get back to us as soon as you can with some more information.

HAVERCAMP: Jim, this is Don Haverkamp. Do you have any indication of the core temperature using the thermocouples?

HIGGINS: No, let me check on that, they don't, let me ask them what the latest status is.

SMITH: Walt Baunack and Higgins both are standing out there right where all the action is so I can get word out to them but I'm only

assuming that if they get anything whatsoever, I'm sure nobody thinks that we are going to _____ sit in a holding pattern for awhile.

WITT: Yeah, we are not going to push I understand that he is out there looking, but he can come back occasionally and tell us, no change, then the people here would feel better.

SMITH: Okay, I'll go speak with him, I'll be off for just a second.

WITT: Thank you.

SMITH: Jim is just getting some other data and he is going to come in and update you, okay?

SMITH: Did you get that?

WITT: Hello.

SMITH: Jim is just finishing some data points and he is going to come in and fill you in.

WITT: Thank you very much.

SMITH: Hello.

WITT: Hello.

WITT: Yeah.

SMITH: Just a minute, here's Jim.

HIGGINS: Hello, Don.

HAVERCAMP: Yeah, Jim.

HIGGINS: Is this still Don Havercamp, they are still proceeding alon the same lines, the primary pressure is up to about 800 - 1800 psi, okay? This is an indication that they may not be getting too much natural circulation on the "A" loop - Th hot is 570, they were able to get a reading off one of the incore thermocouples, a lot of the failed and they can't get readings on them but they did get one which also read 570, which leads us to believe that that T hot varies and the loop is accurate, the primary...the reason we do not think they're getting too much natural circulation because the Delta T has the Tc is all the way down to 220 again, and we can't feasibly be losing that much in the steam generator.

HAVERCAMP: What was the Th value?

HIGGINS: 570.

HAVERCAMP: 570.

HIGGINS: And Te is 220, they're still increasing pressure going to 2000, they're up to about 1800 now, the pressurizer is full, there may be indications that they are starting to maybe collapse some bubbles, I'm not sure, they're getting some shift in the temperatures that they think may be some indication that they're collapsing some bubbles, and getting some water transfer there, but they're not really sure.

WITT: Hey, Jim.

HIGGINS: Yeah.

WITT: If they keep going up in ressure, get up to 2000, do they think, even if there is a bubble in that generator that's going to collapse, then they can get natural circulation?

HIGGINS: Well, that was the thought but as they're getting closer to it, it hasn't happened, it's starting to get a little more doubtful but they're still hoping.

WITT: Okay.

HIGGINS: We have an indication with the "A" steam generator, the are, they're maintaining level constant with some things like steam flow, but feedwater flow again is very low, maybe 100,000 pounds per hour, maintaining level constant. Okay, that's all I got right now. Let me go back out there.

WITT: Hey, Jim, are you there?

SMITH: Hello.

WITT: Is this Smitty?

SMITH: Yeah.

WITT: Do you know whether in talking to Jim that they know where they are going to go from here, Can they remove the decay heat from the steam generator?

SMITH: He's talking right now to Jack Herbein, that the thing that's going on in the background, and Jim is listening to that, you know, what they get through, then he can pass on the t information.

WITT: They are discussing it, and they do know that they are planning something on how they're going to proceed, what they can do to get decay heat removed.

SMITH: Yeah, they're just discussing now what approach to take and what to do.

WITT: Okay.

WITT: Hold on a second.

SMITH: Yeah.

WITT: (Time check, 1839): I wonder how they're doing, it looks like it may not be working, as a matter of fact, it surely isn't working or it would be dropping a lot faster, if it was on natural circulation, it would be dropping faster, it doesn't look like it is working, but it looks like the bubble hasn't burst, it hasn't collapsed yet.

SMITH: Okay, I'll have to find out.

HAVERCAMP: Okay.

WITT: Hello, Smitty. Are you there, Smitty?

Your question was, have they been able to stop the releases.

CAPHTON: Yeah, we were getting information from Unit 1 that they're not picking up any radiation outside the facility now, we are wondering if any operations being done in Unit 2 might have contributed to this.

NEELY: There are some operations changes but as far as the removing the water from the basement floor, in the Aux-Building, which they think is the cause of this, they're still in the process of doing that, they're tying to get the transfer pumps ready.

CAPHTON: You say that has been started or is completed, or...

NEELY: They're trying to get the transfer pumps started.

CAPHTON: Okay, it has not been started yet.

NEELY: No, they are having trouble setting the breakers. So, you know of nothing else that you;ve done that may have cut down on releases. No, the changes in the actual vessel, they're trying to change the temperatures, they're getting cooling water into the unit.

CAPHTON: Who is this?

NEELY: Don Neely.

(Unintelligible) operations aspect...

CAPHTON: Don, could you talk closer to the telephone, your voice is coming in here broken.

NEELY: I'm trying not to talk too loud because there is a conference call in the same office.

NEELY: Hello.

CAPHTON: Yes, go ahead.

NEELY: The dosage in the control room has dropped down.

SIDE 2 - TAPE #15

NEELY: Hello.

CROCKER: Yes, what was that reading again Neely?

NEELY: .1 mr per hour in the Unit 2 control room, at 2:00, it was around 4 mr per hour.

CAPHTON: Don, what was the time of that reading?

NEELY: It was about, the .5 reading was at about 5:00.

WITT: Was that .4 or .1.

NEELY: .5 at 4:00 and the current reading is .1, at the bottom of the scale. The air concentrations in the Unit 2 control room are holding.

CAPHTON: Hello, Smitty?

SMITH: Yeah.

CAPHTON: Okay, we just wanted to be sure we had you.

SMITH: Yeah.

CAPHTON: Okay, we just wanted to be sure we had you.

SMITH: Yeah, I'll get with you when this other meeting is over.

HIGGINS: Hello, Don.

CAPHTON: Yes.

HIGGINS: Who do I have, Don Haverkamp?

HIGGINS: Caphton, okay. This is Jim Higgins, Don, what they're doing is that they've got the primary pressure up to 2300 pounds, and they've done that in the hope of collapsing all the bubbles and going solid. It doesn't appear that they ever fully went solid, the pressurizer

is full but is appears that they still have the steam bubble in the "B" primary loop. Right now they're maintaining pressure by injection with the makeup pumps and letdown, and the normal letdown path is about 100 to 150 gallons per minute. They are, the "A" loop Th is 560; the "A" loop Tc is 320. Now, they're still steaming about 100,000 pounds per hour, it appears, it's not, you know, a reliable indication but it's a ball park. There's some indication, because of the widespread of temperatures we feel that the natural circulation flow in the "A" loop is very low, but there is some indication that it's increasing because the Th is coming very slowly and the Tc is starting to go up very slowly, so it looks like we are getting a small Delta T and perhaps that would tell us for a given steaming rate, that we're starting to develop a little more natural circulation flow.

WITT: What was that Tc again?

HIGGINS: 320 at 560, it locks like they are starting to come together again, and, like I said, if you assume a given heat removal rate from the steam generator, then they would have a smaller Delta T for a higher natural circulation rate on the primary side, it looks and appears that maybe that's starting to develop.

HAVERKAMP: Jim, this is Don Haverkamp, they are keeping a continuous steam flow into the generator, into the "A" generator.

HIGGINS: Yes, from the condensate pump.

WITT: We know that they are steaming because of what?

HIGGINS: If they cut down the feed flow, the level drops, they maintain it by keeping the feed flow up around 100,000 pounds per hour, they are able to maintain a constant level in the steam generator. Initially, when they started steaming, they were about 250 pounds in the generator. Right shortly after that they dropped to 50 psi, so the pressure dropped, the level dropped, and we had an indication that they were steaming.

WITT: Okay.

HIGGINS: Now the level is holding constant, with the feedflow of about 100,000 pounds per hour from the condensate pump into the generator.

WITT: Will you repeat that once more, how many pounds per hour?

HIGGINS: About 100,000 pounds per hour, but again now we are still very, very low in the indicating range, it's not that reliable.

WITT: Do you what the steam generator level is?

HIGGINS: Excuse me.

WITT: The steam generator level.

HIGGINS: Around 93%.

WITT: Still 93, okay.

HIGGINS: And they have pretty good control over that with the feed flow they are controlling steam generator level by controlling feed flow and they are keeping it pretty constant.

WITT: Hang on, just a second, Jim.

HAVERKAMP: Jim, Don Haverkamp. Did you say they still believe there is a bubble in the loop?

HIGGINS: Yes.

HAVERKAMP: Even at this pressure?

HIGGINS: That's right.

WITT: Do you know what the secondary "A" steam generator temperature and pressure is, Jim?

HIGGINS: Yes.

HIGGINS: The "A" steam generator?

WITT: Yes.

HIGGINS: Okay, it's around 50 pounds and the temperature, I'm not sure, at saturation 50 pounds, whatever that would be. And they are still running about 27 inches of vacuum.

WITT: I understand, Jim, that you were sitting in on a meeting there where they were determining if this works they can get this natural circulation once they determine and get it, what are their plans after that?

HIGGINS: To cooldown the plant so that they can get down to a temperature and a pressure where they got RHR.

CAPHTON: Jim.

HIGGINS: Yes.

CAPHTON: Do you know if they made any condensation relative to bumping the reactor coolant pump?

HIGGINS: Yes, they have a problem there in the oil pump. They have lost the buss that the oil pumps that get the pressure up. They're trying to get somebody down there to get that buss energized again, but the radiation levels around that area are fairly high, but they are working in that area, if they can get power back to that buss, and they are going to try to bump the pumps again and get some flow into the reactor coolant pump.

WITT: Jim, are you still there?

WITT: Have they considered that maybe they have a gas bubble on the top of that steam generator rather than a steam bubble?

HIGGINS: Secondary or primary side?

WITT: Primary. The reason they still got that bubble in the "B" steam generator.

HIGGINS: On the "B" loop?

WITT: Yeah.

HIGGINS: I haven't heard that discussed.

WITT: Okay, do you think they're going to have to run these pumps to lowe the cooldown, have they looked into that or are they discussin that?

HIGGINS: If natural circulation flow starts to develop, they may not, but it looks like they may have some difficulty with the natural circulation so they may need their pumps, so they are working to try and get power back to the buss so that they can run the pumps.

WITT: Okay, there's some question here. If you don't run the pumps, can you actually cool the loop down, depressurize it, and get on decay heat?

HIGGINS: That's the way they're trying to go, that's what they are planning on doing. Let me ask that question again.

WITT: There's real doubt here in some people's mind that you can do that, that you can get low enough temperature pressure just on natural circulation to get on RHR.

HIGGINS: Okay, let me ask that.

WITT: With the vaporlock that we think they have or...

HIGGINS: I understand that...

HIGGINS: They're getting an indication of the vaporlock in the "B" loop but it appears the "A" loop has been cleared of its vaporlock except that they are not getting a tremendous amount of natural circulation by looking at the temperature difference.

WITT: Yeah, if it was solid, you should be getting that, shouldn't you?

HIGGINS: I would think so, yes.

WITT: From experience with other plants indicates that they should.

HIGGINS: They should, yes.

WITT: Okay, so that indicates that maybe they still have some sort of blockage.

HIGGINS: Maybe so, this is a little bit of a unique arrangement here with a once through steam generator, so there's not a lot of this B&W design a lot of other plant experience like we have on Westinghouse.

WITT: We got experience with B&W just for your information, they did go on natural circulation and cooldown and exceed the cooldown rate.

HIGGINS: Okay.

WITT: But it cooled down very fast.

HIGGINS: Where do you hypothesizing that the gases are coming from in the other loop.

WITT: The hypothesis is that maybe it's non-condensable gases.

HIGGINS: Xenon or Krypton or that type of nitrogen or whatever, I guess.

WITT: Right.

WITT: It could be oxygen, xenon, hydrogen...

WITT: Oh, I guess what we're concerned about is are they looking into actually what they can do.

HIGGINS: Okay, let me get to them with that and I'm going to have somebody else get the phone. There's nobody here right now, I'll send somebody in.

WITT: Okay.

Side 1 - Tape #16

CAPHTON: Yes, go ahead.

SMITH: I just want to make sure that you're there.

CAPHTON: Okay, Smitty.

CAPHTON: Smitty, have you fellows had something to eat there - how are you fixed for food?

SMITH: None of us has ever left here, Don - we don't worry about it - we'll eat some time tonight.

CAPHTON: Well, I was just thinking - maybe you could get one of you to go out and get some sandwiches or something.

SMITH: Well, you see, in about six minutes or so the fellows are going to be leaving here - so there will only be Walt and I left here then see - you know the others will be taking off with Keimig.

CAPHTON: Okay.

SMITH: So, we'll make out.

CAPHTON: Is Rick there?

SMITH: We can ask them to bring back something. Rick hadn't gotten here yet.

CAPHTON: Okay.

SMITH: Listen, are you still in touch with Unit 1?

CAPHTON: Yes, we've got Unit 1.

SMITH: Well, will you make sure - you know I don't know - that's the control center - so Keimig may stop first over there - you know, I don't know where he'll come to when he comes.

CAPHTON: Okay.

SMITH: If they know he's coming and then they can let you know as soon as he gets there.

THONUS: Smitty?

THONUS: This is Lee Thonus - we've called your wife - I also called Tom Stetka who lives a little bit out past you -

SMITH: You what?

THONUS: I called Tom Stetka, who lives a little bit out past you, and what he's going to do is try and pick up your clothes tomorrow morning and bring them to the Region and we'll try to get them from and then we'll try and get them out to you.

SMITH: Okay, good enough.

THONUS: Contact has been made - I don't know how soon they'll get there --

SMITH: Don't worry about it - I'm putting Jim Higgins in the phone.

HIGGINS: Hello - Jim Higgins here -

WITT: Hello, Jim.

HIGGINS: Okay, asked them that question - they are working on that - they were in contact with B&W in Lynchburg - and they are doing calculations and so forth - to see if that is a feasible way to go - they are working on that.

WITT: Okay, fine.

_____: The other one on the noncondensibles, that is a possibility -if that is the case, that means that is even more of a reason that they won't be able to get rid of that bubble - right now they can't - it's probably going to be even more difficult - but there's nothing they can do about it - they have no way to vent to loops to get that out whether it is noncondensible or steam.

WITT: Other than bumping the pumps.

HIGGINS: Bumping the what?

WITT: Bumping the pumps.

HIGGINS: That's right - and this morning when they had power to all the oil in the pumps, and they tried to bump - they were running electrically but they were indicating an amperage of about 100 amps which

is normally about 620 - so they were vapor locked - they were getting nothing. They are going to try again in the "A" loop when they can get power back all the auxiliaries because of an indication they may have enough solid water that will - _____ - so they could run it - so they're going to try that -

WITT: I guess we're agreeing that if you can bump the pump in the "A" loop - and actually be sure that the loop is filled with water - the plan will probably work.

HIGGINS: Right - and they're exploring two types of calculations associated with if they can't get the pump can they do what they are trying to do just on natural circulation.

WITT: Okay, the feeling here is, the way it's going, you're probably going to go right back to where you were - but that's just a postulation.

HIGGINS: Well, that's it - we realize that here too - they have been working on it since 8 o'clock this morning and they haven't made much progress, okay?

WITT: And they're proceeding to try and get that pump ready to bump?

HIGGINS: That's right.

WITT: Thanks, Jim - are you going back down to get some additional data?

HIGGINS: Right.

WITT: Thank you.

(Time check 1904)

SMITH: I'm back.

CAPHTON: Okay, Ray.

GAGLIARDO: This is Jim Gagliardo here, I have taken over for Kermit on the lines here at Headquarters.

CAPHTON: Okay.

GAGLIARDO: Yes I am.

CAPHTON: You drove from Texas - that's an incident response?

GAGLIARDO: Well, I happened to be here at the time fortunately.

CAPHTON: Nothing like being in the right place at the right time.

GAGLIARDO: That is correct.

SMITH: I didn't know the PAT team had a second shift.

CAPHTON: What's going on at Headquarters now?

GAGLIARDO: Well, we got quite a group here - I'm looking at about 30 people right now -

CAPHTON: Who are some of the people you recognize?

GAGLIARDO: Well - the loop might be vapor bound by noncondensables and would appear that natural circulation is not being established and that it appears that it's going to be necessary to bump the pump in order to clear out those noncondensables to get your natural-circ established - I don't know if we were communicating that well enough to Jim - but that we our concern.

SMITH: Their concern was that they might have to bump the pump -

GAGLIARDO: Say that again?

SMITH: Their concern was that the natural circulation might be impeded because of noncondensates.

GAGLIARDO: Noncondensables that you have in that loop.

SMITH: Okay, I'll pass that on.

HAVERKAMP: Are you going to try and get another round of parameters on the reactor coolant system, pressure, temperature, and also the pressurizer? Pressure, temperature and level - I guess the level should be solid.

SMITH: You want the pressurizer?

HAVERKAMP: Pressurizer, pressure, temperature on the "A" loop and the "B" loop data - if you can get that, please.

SMITH: Okay.

(Time check is 1910)

GAGLIARDO: I would like to know too how close they are to being able to bump that pump.

BAUNACK: Jim,

BAUNACK: Whos is this?

GAGLIARDO: This is Jim Gagliardo at Headquarters.

BAUNACK: Okay, Jim, this is Walt Baunack - how are you?

GAGLIARDO: Fine, Walt.

BAUNACK: I guess you want the pressurizer pressure, T-hot, T-cold and things like that?

GAGLIARDO: Right.

GAGLIARDO: Anything that you can get me.

BAUNACK: Okay, I'll give them to you for 7 o'clock and then 7:10 and then you will be able to get the trend, all right?

GAGLIARDO: All right.

BAUNACK: Okay - 7 p.m. - T-hot, that's only T-hot you have, is 560; T-cold on the "A" was 360; T-cold on the "B" was 220.

GAGLIARDO: 220 on the "B"?

BAUNACK: Right. The pressurizer pressure is 2300. 7:10, hot -

CAPHTON: Hang on just a minute - whoa -

CAPHTON: Okay, Walt.

BAUNACK: 7:10, T-hot, 557; T-cold on the "A" was 360.

GAGLIARDO: 380.

BAUNACK: T-cold on the "B" was 240 - the pressurizer pressure is still 2300. And the "A" steam generator is about 20 pounds; the "B" is about 180 pounds.

GAGLIARDO: The steam generator pressure is 180 pounds?

BAUNACK: On the "B" steam generator and the "A" steam generator, which is the one they're steaming to the condensor, is about 20 pounds.

GAGLIARDO: Okay.

CAPHTON: Hang on - what did you say the "B" was?

BAUNACK: 180.

GAGLIARDO: And 20 pounds on the "A".

BAUNACK: Right - the "A" is the one they're steaming.

GAGLIARDO: What about pressurizer level?

BAUNACK: They're talking about full - they're trying to go solid.

GAGLIARDO: Okay.

BAUNACK: Well they're trying to establish a bubble right now - they got heaters on full.

GAGLIARDO: Do you have an indication of pressurizer level or tank full?

BAUNACK: Looks like there's not much natural circulation - wouldn't you say that?

GAGLIARDO: Walt, it's coming down 3 degrees in 3 minutes.

BAUNACK: Yeah, but if you had a fairly decent circulation you'd think T-hot and T-cold would be much closer together.

GAGLIARDO: We agree - that Delta T should tend to decrease when you establish natural circulation.

BAUNACK: It is slowly doing that - you know this last - I've got another reading at about 7:20 and I will give you another 10 minute reading, and I'll see what kind of change we are getting.

GAGLIARDO: Okay, Walt, but the changes are definitely slow.

GAGLIARDO: Hey, Walt - can you find out what their plans are - how close they are to being able to bump the "A" reactor coolant pump?

BAUNACK: I just asked before I came in - you know it's still up in the air at the discussion stage. You know they lost one buss right where the AC pump - the AC lift pumps comes off of - they're trying to energize the DC lift pump down where that is.

GAGLIARDO: I understand.

BAUNACK: Okay, so, I'll put Ray back on and go out and find out if anything develops rapidly, I'll be back.

CAPHTON: Hey, Walt - before you leave.

BAUNACK: Yeah.

CAPHTON: Did you get a pressurizer temperature?

BAUNACK: Well -

HAVERKAMP: Do you have an indication of that?

GAGLIARDO: Smitty?

SMITH: Yeah.

GAGLIARDO: Can you find out the most recent secondary system activity activity in the secondary system?

SMITH: Okay.

GAGLIARDO: And the time of that sample?

CAPHTON: Smitty?

SMITH: Yeah.

CAPHTON: When Rick gets there, would you ask him to call us on 5363?

SMITH: Okay.

GAGLIARDO: We were also interested in what the status of their water inventory is in the refueling water storage tank.

SMITH: Okay.

CAPHTON: We understand that the ARMS people are going to.....

Side 2 - Tape #16

CAPHTON: Their results in about an hour-and-a-half.

GAGLIARDO: Okay, thank you.

(Time check is now 1718)(Should be 1918)

HIGGINS: Okay, the BWST is still at 22 feet -

GAGLIARDO: 22 feet?

HIGGINS: 22.

HIGGINS: Right now, they are still steaming - they're going to try and steam down the generator to a lower level than where they had it before and they've secured the feedwater and they're just steaming and they're watching the level come down - it's coming down pretty slow. They only have about 20 pounds in the "A" steam generator now - the "A" loop temperatures now is still the T_h had decreased a bit - 560 T_h at 395 T_c.

GAGLIARDO: All right.

HIGGINS: The "B" is still in the same situation - it's pegged high on the T_h - the T_c is down around 220. The reactor pressure is being maintained around 2300 pounds - with makeup and letdown are running about 63 gpm each, okay?

GAGLIARDO: Okay.

HIGGINS: They've got about a... - they're running for the last couple of hours around minus 0.2 pounds, psig, in the reactor building.

CAPHTON: Say that pressure again?

HIGGINS: Minus 0.2.

_____: And the pressurizer temperature is - they have the pressurizer - with what heaters they have on - the pressurizer indicates full and they're trying to increase the temperature with the heaters and perhaps be able to draw the bubble with the higher pressure - and they let the temperature up to about 500 degrees, and it's been increasing slowly in the pressurizer.

GAGLIARDO: Okay.

HIGGINS: That's all I have right now.

GAGLIARDO: Thank you.

GAGLIARDO: Okay, Jim, thank you.

HIGGINS: Are you aware that Don Neely and I are going to be leaving at 7:30 to go to that meeting at the Governor's Office?

GAGLIARDO: Okay - are you going to have somebody - who is going to be taking over?

HIGGINS: Walt Baunack will be staying here and continue to relay the information.

GAGLIARDO: All right.

BAUNACK: He's been here for several hours - okay, that's all I have for now.

CAPHTON: Jim?

GAGLIARDO: Yeah.

CAPHTON: Higgins -

GAGLIARDO: I think he's gone.

CAPHTON: Smitty?

GAGLIARDO: This is Jim Gagliardo.

CAPHTON: Walt?

SMITH: Secondary system activity, at 4:00 p.m., the gross beta was less than their MDA and their MDA was 10 to the minus 5 microcuries/millimeter.

GAGLIARDO: Okay.

CAPHTON: 10 to the minus 5th microcuries/millimeter gross beta.

SMITH: Yeah.

GAGLIARDO: It was less than 10 to the minus 5th.

SMITH: Yeah - that the MDA and the gross beta was less than the MDA.

GAGLIARDO: Thank you. That's as of 4:00 p.m.

SMITH: 4:00 p.m.

CAPHTON: Smitty?

SMITH: Yeah.

CAPHTON: Do you know which loop that might of come off of?

SMITH: No, I don't, Don.

GAGLIARDO: Could you check that for us, please.

SMITH: Okay.

GAGLIARDO: An update on primary coolant activity -

CAPHTON: Jim?

G. SMITH: Gagliardo?

GAGLIARDO: Yes.

G. SMITH: Hey, as far as primary coolant activity goes, they have been unable to get a sample since 9 this morning.

GAGLIARDO: Okay, no sample since 9.

G. SMITH: That's right - that's the word we had.

GAGLIARDOL Okay.

GAGLIARDO: Can you get some indication - at 0900 there must have been some direct radiation indication in the area and we are interested in knowing what that reading might be so we can make some inferences as to what the activity might be now - that they've started decreasing activity.

G.SMITH: Okay.

G.SMITH: You want them to go down and remeasure the activity near the sampling sink?

GAGLIARDO: Well, some radiation measurements that they might have near the reactor coolant system at that time - 0900 when the took the activity sample - and an indication now - which might give us some indication of what the activity is now in the reactor coolant.

G.SMITH: All right, Jim - we've given you the previous reading - and now, Smitty? Ray? Ray Smith?

CAPHTON: Ray Smith - are you on the line? Ray Smith....

SMITH: Hello, Don.

CAPHTON: Yes.

G.SMITH: Ray - would you ask them if they have taken any additional readings since 9 this morning down around the primary coolant sampling sink sample area, and, if so, what the results are?

SMITH: All I know is that they said they have not been able to get back down there but I'll go check with them to see if they have any additional readings.

G.SMITH: If you would - if he hasn't been able to get down there, find out what the readings are as far down as you can get.

GAGLIARDO: Or readings something like the equipment hatch.

G.SMITH: Right.

GAGLIARDO: It might give you some indication of what.....

G.SMITH: We just gave you some readings or gave Sniezek some readings, Jim, that were taken very recently by our fellow around the equipment hatch.

GAGLIARDO: Okay, we've got that.

_____: What we're wondering if then something that might indicate, you know, what is happening to activity in the primary coolant systems since that 0900 sample that was taken.

G.SMITH: Oka .

SMITH: You wanted to know which loop the secondary system was?

GAGLIARDO: That is correct.

SMITH: That was sampled at the condensate pump discharge which is a common line.

GAGLIARDO: Okay, so that's at the condensate pump discharge that's not truly an activity then as a secondary in the steam generator.

SMITH: No, it's prior to through that.

GAGLIARDO: That would be a deluted sample - do you have anything indicating what activity might be in the steam generators?

SMITH: I'll have to ask.

GAGLIARDO: Blowdown line monitoring -

G.SMITH: Blowdown line monitoring readout in the control room?

GAGLIARDO: Smitty?

GAGLIARDO: Is anybody on the phone from the site?

CAPHTON: Apparently not.

SMITH: Hello.

GAGLIARDO: Yes.

SMITH: They have not any update on the primary coolant exposure rates and they don't intend to because remote readings are still high so they aren't going to use any more exposure. The steam generator samples -

they didn't do anything except take some very early this morning - they took a couple - they just stuck them up to a frisker that was down there.

GAGLIARDO: Okay.

SMITH: And the one off the "B" generator wound up the frisker and the other sample didn't do anything to the frisker and they said that's what we want to know - the "B" generator is it - so button it up. They didn't do anything with the samples themselves.

GAGLIARDO: Okay.

SMITH: So they don't have any current status on any samples other than that secondary system.

GAGLIARDO: Do you have any update on what the plans - their plan of action?

SMITH: We'll be able to give you some update just now - I was just in the control room getting this and they just bumped the pump as I came back through the door a little bit - they are standing there very tense and everybody is suddenly smiling all over the place - so I know we got some kind of good news.

GAGLIARDO: All right.

SMITH: As soon as Walt can put together, he'll be in.

GAGLIARDO: Good, we need some.

SMITH: Not total success, but I'm sure it had to be something good -of course, I think what happened is we must have moved the bubble.

GAGLIARDO: Good.

GAGLIARDO: We'll be waiting.

SMITH: Walt's out getting some stuff - I'll step out there and tell him that whatever he gets - feed to us - and I'll get it on.

CAPHTON: Sounds good.

SMITH: Okay.

SMITH: I'll be back in a minute.

BAUNACK: They operated the reactor coolant pump for 10 second bump - and it was in the "A" loop - and it appeared to have started to flow at least for those 10 seconds. T-hot on the "A" loop is down below 520, which is as low as it reads.

GAGLIARDO: Okay.

BAUNACK: T-cold did not go up a significant amount, but that's where we stand roughly - you know they're still in the process of changing - they're going to wait the 15 - the normal operating procedure on the pump is wait 15 minutes between bumps.

GAGLIARDO: Okay.

BAUNACK: So they're going to probably wait those 15 minutes then give it another bump.

GAGLIARDO: What is your T_c - did you have an indication?

BAUNACK: I didn't write it down though -

(Time check - 1936)

SIDE 1 - TAPE #17

BAUNACK: The current plan is probably to run that pump.

GAGLIARDO: Okay.

BAUNACK: And once they run that pump, then they can just go down into the normal cooldown. When they bumped it too they went, steam generator pressure I gave you of around 20 pounds.

GAGLIARDO: Right.

GAUNACK: That went up to about 200 pounds, so they got some heat transfer there. So that's roughly where she stands now, the next time I go out I'll write down the numbers again.

GAGLIARDO: Okay, keep us cut in.

BAUNACK: Okay, will do, I'm gonna leave now.

SMITH: Hello.

GAGLIARDO: Yes.

SMITH: Don.

CAPHTON: Yes.

SMITH: Don, Rick didn't come here, the other fellows were asked to go over and get briefed and meet him...

CAPHTON: Yes.

SMITH: Did you have him flagged at Unit 1?

SMITH: Yes, because he'll never show up here.

CAPHTON: We did.

SMITH: Okay, you gave me a message with a number for him to call, so Unit 1 will have to get that word to him.

CAPHTON: All right.

(Time check) CAPHTON: Any information on how long they bumped the coolant pump? (Time is 1945) SMITH: When Walt was talking on the phone, what I understood him to say, about 10 seconds.

CAPHTON: Okay, thank you.

GAGLIARDO: Ray, would you confirm that with Walt when he comes back?

SMITH: Yeah.

GAGLIARDO: Okay.

SMITH: Hang on Don, I'll be back in a second.

SMITH: It was a 10 second job. They're just setting up now very shortly to throw it again but then they'll leave it on.

CAPHTON: Okay.

SMITH: And we'll see what happens then. (Time - 1946)

SMITH: We'll see how it goes, there's just Walt and I here now, and he's out in the control room.

CAPHTON: Okay.

BAUNACK: They just started the reactor coolant pump and left it running.

GAGLIARDO: They just started the reactor coolant pump and left if running? Right, the flow looks pretty good and steady, the current looks good, the pressurizer pressure steadied out around 1200, you know everybody's right around there so I think the intent now is to continue leaving the pump run and cooldown normally.

GAGLIARDO: What's your pressurizer level?

BAUNACK: It was changing pretty rapidly, so I don't know where it really is.

GAGLIARDO: Still going down?

BAUNACK: Well, I suspect by now, you know I came in just shortly after they continued to leave the pump run. It's going to be pretty difficult to get data for the next couple minutes, so many people are interested in it, but it looks like the pump is going to continue to run, so like I said, the pressure steadied out around 1200 pounds. So, I'll go back out there, as soon as I get some valid numbers I'll be back in.

GAGLIARDO: Okay. (Time is 1940, tape off) (Time is 1952) BAUNACK: It's getting high, but they feel they are trying to establish the bubble now.

GAGLIARDO: So they don't have an indication of pressurizer level?

BAUNACK: No, it's still high, it stays high.

GAGLIARDO: Are you seeing any Tau indication, Walt? I didn't look at Tau, but like I said, the T-cold is holding pretty steady now. Around the 320 and 340 range, the consensus is that once they establish the pressurizer level for sure, to come down in the normal cooldown.

GAGLIARDO: Okay. (Time check 1956)

GAGLIARDO: Can you give us an indication of what your thermocouples are reading, fuel temperature?

SMITH: Well, they haven't been able to read any of those, they're taking another look at them to see if they can get some readings.

GAGLIARDO: Okay.

GAGLIARDO: Will you give us that when they get that?

SMITH: Yeah, anything of the fuel thermocouples, okay?

SIDE 2 - TAPE #17 (Time check - 2007)

BAUNACK: 611 is the highest one I know, 254 is the lowest one, so they're just reading at random, I don't think they're of any value at all.

CAPHTON: Walt, confirm which coolant pump is running.

BAUNACK: It's one in the "A" loop.

GAGLIARDO: Just one of the pumps in the "A" loop.

BAUNACK: Right.

BAUNACK: And that's all they intend to run just that one pump, as soom as they get level established they'll just go to a normal cooldown providing nothing else goes wrong the problem now is they're maintaining vacuum off the Aux-Building in Unit 1, and Unit 1 just lost the Aux-Borders so a possibility exists that they may lose vacuum, so that will sort of slow down on the cooldown, you might say, this is just sitting around 240, but everything else looks good. They're just letting down trying to establish pressurizer level, okay?

GAGLIARDO: Okay.

GAGLIARDO: Do you have anymore data for us?

BAUNACK: 240 on the, about 505 on pressurizer temperature, the steam generators, I think go around 100, no real radical canges since the last time, the next time I go out I'll try, you know there's a lot of people around the gages and it's difficult to get an accurate reading.

GAGLIARDO: Okay.

BAUNACK: There have been no radical changes, everything looks nice, the flow looks good, the pump current looks good, so from the point of view of flow, it looks good. Provided we don't lose vacuum, it should come down all right.

GAGLIARDO: Okay.

CAPHTON: Thank you Walt.

BAUNACK: From here on in, they will be getting out the normal curves and plan on just coming down normally, until they get down to shutdown cooling.

GAGLIARDO: Okay.

GAGLIARDO: The status and the ability to operate DHD1 and DHD2 in your shutdown cooling lineup, are they sure they will be able to operate those and establish shutdown cooling.

BAUNACK: The way they talk, that's the way they're planning on doing it, I don't suspect there's any problem, as soon as I get out there I can ask them.

GAGLIARDO: Okay, ask them if they checked it and are sure that those valves are operable.

BAUNACK: Okay, will do.

NIMITZ: Hello, this is Ron Nimitz.

GAGLIARDO: Yes.

NIMITZ: I'm just standing by for, I guess it's for Walt Baunack.

GAGLIARDO: Okay. Say again your name?

NIMITZ: Ron Nimitz, I'm with the NRC, Region I.

GAGLIARDO: Okay.

THONUS: Ron, this is Thonus, while we got you on the line, is there anyway we can get some clothes to you.

NIMITZ: Some clothes to me?

THONUS: Your clothes, like you know, stuff to wear tomorrow, you're going to be pretty ripe after a couple of days.

NIMITZ: I'm worried about eating now. I'm not worried about clothes, I'm worried about eating. I don't think so, is anyone else coming up, Phil Stohr?

THONUS: We might have some people if we can get into your apartment, if you could call your resident manager and tell her to let us in and tell us what you want brought, we'll probably be having people coming to the site on a periodic basis.

NIMITZ: Yeah, I don't know, I didn't think about it.

THONUS: How is the airbourne activity near you?

NIMITZ: The airbourne activity?

THONUS: There should be high airborne activity near you.

NIMITZ: Come again?

THONUS: Never mind, it's a joke.

NIMITZ: No, go ahead.

THONUS: I said there would be high airborne activity near you after a couple of days.

NIMITZ: Oh, yeah, okay, all right, forget it.

NIMITZ: I just came over, I've been over in Unit 1 follow what they're doing on this and that and checking on the off-site doses and how far the helicopters are traveling and what have you. I cam over here because I understand they're going to start doing the cleanup operations over here in Unit 2, and I'll discuss this with the RPM and see what they are going to do in terms of respiratory protection and what have you.

THONUS: Okay.

GAGLIARDO: Headguarters, a question has been asked, do they plan to valve out the accumulators before the initiate the RHR?

NIMITZ: I'll give you to one of our operations inspectors.

BAUNACK: Jim?

GAGLIARDO: Yeah.

BAUNACK: You want to know about the accumlators?

GAGLIARDO: Yeah.

BAUNACK: I don't know if they plan to valve them out or not, I would suspect they would, right? There's no point in discharging them now.

GAGLIARDO: Are the valves operable and racked out, or do they plan to rack them out?

BAUNACK: You know, they haven't mentioned it one way or the other. The decay heat valve seems to be good as far as I know.

GAGLIARDO: Okay, Yeah, those are the real valves obviously you can't trust, they don't expect any problems, they got status lights on and everything showing power indication.

GAGLIARDO: Okay.

BAUNACK: I'll go out and check about the accumulators, I would suspect that they are not going to discharge, there's no point to it.

GAGLIARDO: Okay.

GAGLIARDO: We would prefer that they not. (Pause) BAUNACK: Yeah, the accumulators are valved out.

GAGLIARDO: The accumulators are valved out?

BAUNACK: Yeah.

GAGLIARDO: What is the status of the breakers for the valves?

BAUNACK: I don't know.

BAUNACK: Okay, they misunderstood me the first time, they call them safety injection tanks rather than accumulators.

GAGLIARDO: All right.

BAUNACK: The valves are all racked out, right while they're up in pressure.

GAGLIARDO: Okay.

BAUNACK: That's I guess by requirement, right, then when they come down to some wet point or something they set the valves.

GAGLIARDO: Okay, but the valves are shut now?

BAUNACK: No, no, the valves are still open now and when the reach a certain poing the breakers they're racked up.

GAGLIARDO: Okay, the valves are open, the breakers are racked out.

BAUNACK: Right, I think that's their requirement the way they're talking.

GAGLIARDO: Okay.

BAUNACK: I think it's 700 that they can shut the valves.

BAUNACK: So that part of it would be in accordance with the normal shutdown routine.

GAGLIARDO: The question has been raised, can they get to the breakers for the valves? Again, I have to say I don't know. The way they talk, yes, you know there doesn't seem to be any problem in that area.

GAGLIARDO: Okay.

CAPHTON: Walt? The technical specifications require that the valves be open above 800 pounds.

BAUMACK: Right.

GAGLIARDO: A question has been raised as to what is the licensee's plan in regard to what they will do with the SI valve?

GAGLIARDO: Walt?

Side 1 - Tape #17A

GAGLIARDO: Ray, this is Jim Gagliardo at Headquarters - we have a couple of questions that we need for you to determine. The first one has to do with the cooldown and does the plant plan to use the plant cooldown procedures - that's 1102-11 - to perform the cool? The second question is, we need to know the status of where they are in drawing the bubble?

HAVERKAMP: Let me stop you there, jim - I'm at NRC 1.

GAGLIARDO: Okay. I thought you were at the site.

SMITH: Jim what was the number of the procedure?

GAGLIARDO: We have a procedure No. 1102-11 here which is a plant cooldown procedure for Unit 1 and we are interested if they plan to use that procedure or the equivalent procedure for Unit 2 in their cooldown. That procedure talks about the flood tank isolation valves being isolated at 700 pounds.

SMITH: Okay.

GAGLIARDO: And the breaker opened up.

SMITH: Okay, I'll find out what their plan is.

HAVERKAMP: Don Haverkamp. They probably would use the corresponding Unit 2 procedure -2101 or something.

GAGLIARDO: 2102.

HAVERKAMP: Just check and see if they use a normal cooldown procedure.

GAGLIARDO: The other question is with regard to the status of the bubble - where they stand on drawing the bubble - we are interested in knowing charging rates and letdown rates. The third question has to do with the contact at the site for the NRR people - I understand that's Don Neely - we need to know where he can be contacted by the NRR people when they arrive.

SMITH: What's his name?

GAGLIARDO: Don Neely.

SMITH: Where Don Neely will be?

GAGLIARDO: Yes, where the NRR team can get him.

SMITH: You mean, Don Neely out of our office?

GAGLIARDO: Well, that's what we understand - he is the team leader there at the site - the NRR people will want to contact him when they get there - and they want to know how to contact him.

SMITH: When are they coming?

GAGLIARDO: Tomorrow morning.

SMITH: Well, it may change, but the team leader at the site out here is Rick Keimig.

GAGLIARDO: Rick Keimig?

SMITH: Yeah.

GAGLIARDO: Okay. Is Rick at the site now?

SMITH: Well, he will be in a little bit - he's off on a special mission now.

GAGLIARDO: Okay. Now where -

SMITH: He was here and left.

GAGLIARDO: Where should the NRR people contact him - at the motel or at the site, or can we have a number where they can reach him?

SMITH: Well, if they call Unit 1 or Unit 2 control room, they can page him - he will be in one or the other - well he'd be in Unit 2 but it would be a question of getting through to him, but they can page him if they can't get somebody to reach him.

GAGLIARDO: How about the motel?

SMITH: I'd say Keimig will probably be out here at the site - or his counterpart or whoever is in charge.

GAGLIARDO: So he should be contacted at the site then?

SMITH: Yeah. If he takes off, he will delegate someone else to be in charge.

GAGLIARDO: Okay. They are also interested in the motel where he is staying - they are interested in staying at the same motel too.

SMITH: Is Region I on the line?

HAVERKAMP: We're here.

SMITH: Reservations were made for us out here. I personally don't even know what they are - somebody said there were motel arrangements made - don't know whether we'll ever get to use them or not - so I don't know where that is - someone in Region I knows.

HAVERKAMP: Will try to find out, hang on.

GAGLIARDO: Okay.

BETTENHAUSEN: Okay, NRC-Region I people are staying at the Nationwide Inn - Harrisburg - Area Code 717-233-1611.

GAGLIARDO: Say that number again - 717-233-1611. That's the Nationwide Inn in Harrisburg - 717-233-1611.

BETTENHAUSEN: NRC has four rooms there - they will be occuppied by different people at different times.

GAGLIARDO: Okay. That's all we need to know on that. We'll give you the names of the people coming in a few minutes. Okay, are you ready to copy?

HAVERKAMP: Just a minute - how about at the site?

SMITH: Yeah.

GAGLIARDO: Okay. The NRR people coming are Dick Vollmer, he will be the team leader; there'll be a Carl Berlinger; a Gary Mazetis (that's almost as bad as Gagliardo) and the next man is Frank Ashe - and the fifth one is Matt Chiramal.

SMITH: Okay.

GAGLIARDO: And they'll be coming up tomorrow. They'll be trying to contact when they get there.

SMITH: Okay.

BETTENHAUSEN: Smitty - Lee Bettenhausen, here.

SMITH: Yeah.

BETTENHAUSEN: Did Keimig actually get in on the briefing team?

SMITH: As far as I know he did - he came in from Region I and went up to Unit 1 - Region I flagged him over there.

BETTENHAUSEN: Okay, thank you.

SMITH: So, as far as I know, they left here. Our gang left - they were going to get in touch with him someplace. Hey, you want to take this thing a minute - I'll be out in the control room.

BETTENHAUSEN: All right.

NIMITZ: Hello.

BETTENHAUSEN: Yeah.

NIMITZ: Lee Thonus, please.

BETTENHAUSEN: Go ahead, he's here.

NIMITZ: Lee - I'll just give you some general dose rates taken with a teletector at the Auxiliary Building where water leaked.

THONUS: Okay. This is a teletector in the Aux Building near - you've got water on the floor?

NIMITZ: Water on the floor in the general area.

THONUS: Okay, give me some numbers.

NIMITZ: Okay, the Aux Building access, elevation 305, 8R per hour. The waste disposal area is 2R per hour. The makeup tank area is greater than 10R per hour, the meter is offscale.

THONUS: The makeup is --

NIMITZ: The makeup tank area is greater than 10R per hour.

THONUS: 10 - doesn't your teletector go up to 50?

NIMITZ: I'm getting this off a meter - GM tubes positioned in the area. The reactor building emergency cooling area is 4R per hour. These are all ARM's.

THONUS: Ron, what's the last number there, 8R per hour?

NIMITZ: 4R per hour.

THONUS: 4?

NIMITZ: Yes. Okay, the fuel handling building exhaust unit area, where the building exhausts that's greater than 10R per hour. Now then one's in the reactor building dome, it's an ion chamber apparently

it's right in the dome of the reactor - and it's got a lead sheet in front of it the factor reduction in the activity of about 100 - the dose rates from the dome area.

THONUS: We're familiar with that.

NIMITZ: Okay, they're saying that things reading 20,000R per hour.

THONUS: After the 100 you take into account?

NIMITZ: Yes.

THONUS: Okay, so that's - they're reading 200 in their thing and it's equivalent to --

NIMITZ: 20,000.

THONUS: Okay.

NIMITZ: Okay, now one of the operators went down to the Auxiliary Building - 281 ft. elevation - this is right near the elevator - they observed some water on the floor at approximately 1 to 2 inches of water and the base level dose rates were a factor of 7 to 10 R per hour.

THONUS: Okay.

NIMITZ: Throughout the Auxiliary Building - elevation 305 - the average dose rate was - no water in the area - no external radiation - apparently the radiogas is producting dose rates as high as 1 R per hour.

THONUS: 1 R?

NIMITZ: 1 R per hour. And, just looking at reactor coolant, the letdown they are using when they are letting down is 3×10^{-2} microcuries/cc and this is based on Iodine-125.

THONUS: That's the letdown water?

NIMITZ: Yes.

THONUS: 3×10^{-2} microcurie/cc.

NIMITZ: Right. And that meter's calibrated is based on iodine-125. Okay, I'll turn you over to Walt.

BAUNACK: You have a couple of more questions? The cooldown is in accordance with normal cooldown procedures.

WILBUR: Do you know what the procedure number of that is, Walt?

BAUNACK: What's the Electromatic Cooldown Procedure No., Gary? Okay, he's getting the number. With regard to letdown and charges?

WILBUR: Yeah.

BAUNACK: Letdown is 60 gpm and charging 30.

WILBUR: Letdown 60, charging 30.

BAUNACK: I can give you some temperatures for these -

WILBUR: Okay.

BAUNACK: That's procedure 2102-3.2. T_{cold} is about 320.

WILBUR: Say that again, Walt?

BAUNACK: The T_{cold} at 8:40 was 320; pressurizer pressure was 1180; pressurizer temperature 520.

Side 2 - Tape #17A

GAGLIARDO: The bubble has been established and pegged high.

BAUNACK: Still pegged high?

GAGLIARDO: Is the pressure in the reactor coolant system steady and not spiking which would indicate that they have a bubble but you just don't have level indications?

BAUNACK: Steady and not spiking.

GAGLIARDO: It is steady and not spiking.

BAUNACK: It's slowing coming down - you see we went from 1300 to 1180 from 8:15 to 8:40.

GAGLIARDO: Okay, good. Walt, do we have anybody onsite?

SMITH: Yeah.

GAGLIARDO: We got two more names for NRR people who are coming.

SMITH: Okay.

GAGLIARDO: You'll have an Eleanor Adensam and a Hans Chierling.

SMITH: Okay.

GAGLIARDO: So there'll be a total of 7 NRR people coming up tomorrow morning.

SMITH: Okay. Do you have any idea at all what time they figure on getting here?

GAGLIARDO: I can check. I understand you have the Aux boiler back - are you maintaining vacuum okay now?

SMITH: We didn't see anything awhile ago. I don't know whether any change has come up on it or not.

GAGLIARDO: Okay.

SMITH: I'll go back up and check. I'll be in the control room for just a minute.

GAGLIARDO. All right.

SMITH: Hello.

GAGLIARDO: Yeah.

SMITH: It's back up to 45 pounds and it's back on the way up.

GAGLIARDO: What's back up to 45 pounds? Oh, the Aux boiler?

SMITH: Off the boiler.

GAGLIARDO: Okay. So you don't have any vacuum problems - not at this time?

SMITH: No.

GAGLIARDO: Okay.

SMITH: And that's raised on up - it's up to 45 right now.

GAGLIARDO: Okay. Do we have anybody onsite?

SMITH: Hello.

CAPHTON: Smitty?

SMITH: Yeah.

CAPHTON: Would you determine whether or not the Aux Building vent monitors are for offscale the last indication I think we had they were?

SMITH: Okay, I'll find out.

GAGLIARDO: Smitty - we have another question.

CAPHTON: If you have a reading on them, we would appreciate that reading.

SMITH: Okay.

CAPHTON: The other thing we are interested in the results of the ARMS flights.

SMITH: Well, I think that's coming in to Unit 1, Don.

CAPHTON: Okay, we'll check with them, then.

SMITH: We don't get anything like that over here.

GAGLIARDO: Smitty, the teletector readings that were given in the Aux Building - is that Gamma or Beta and Gamma?

THONUS: They're taken with a teletector and the area radiation monitoring system without him going back those things don't measure much in the way of Beta - the correction factor is about 70 for a telector.

GAGLIARDO: Okay.

THONUS: They would receive very little Beta if it was there and the area radiation monitors would see none.

GAGLIARDO: Okay. Yeah, that was Nimitz who called in the data.

SMITH: I'll see what I can get on the vent monitors.

CAPHTON: Is Nimitz with you, Smitty?

GAGLIARDO: Don and Smitty- This is Gagliardo - I'm going to turn it over to Kermit for awhile.

CAPHTON: Okay. Smitty, is Nimitz there? Smitty? Ray Smith....

NIMITZ: Ron Nimitz speaking.

CAPHTON: Okay, standby.

WHITE: Hey Ron. Yes, John White. Can you break away from there and get a rad survey on equipment hatch?

NIMITZ: What?

WHITE: A rad survey on equipment hatch.

NIMITZ: On the equipment hatch?

WHITE: Right.

NIMITZ: What equipment hatch?

WHITE: Unit 2

NIMITZ: Unit 2 equipment hatch? From where?

WHITE: It's in the passage way between the buildings.

NIMITZ: Between Unit 1 and Unit 2? I don't understand what you want John.

Tape #18

NIMITZ: All the monitors eventually, the plant vent, the fuel handling building, exhaust monitors, are all off-scale. What they're doing now, they're trying to pull samples - tap in and take samples manually, and they haven't been able to do that because of the does rates. All right, let me give you back over to Ray.

SMITH: I'm back. He's going to leave. Do you want me to give this list of names to the licensee and tell them that NRR will be up here in the morning?

CAPHTON: I think we'll need to get clearance for them to get in or else they're going to have a problem, so I think yes, we should do that, Ray.

SMITH: Okay, I'll just make a list and give it to them.

CAPHTON: Okay.

SMITH: Tell them that they will be in in the morning.

CAPHTON: We might have to get badge numbers for these people, or else it might be a problem, they ought to have some kind of means of identification.

SMITH: Yeah, as long as they have some kind of identification, they ought to be all right.

WHITT: Mr. Whitt at Headquarters, we need to know which of these last numbers that were given for radiation readings is equivalent to the off-reading level - operating floor? They gave us a 10 r earlier and we don't see anything to correspond to this last group of readings that came in.

SMITH: I don't even know anything about that from here at Unit 2.

CAPHTON: Standby, we'll try to field your questions.

BELLENHAUSEN: Kermit, all these numbers were taken in the Aux-Building.

WHITT: All the last numbers you gave were in the Aux-Building?

BAUNACK: Except one, Reactor Building...

CAPHTON: Fuel handling...

BELLENHAUSEN: One number was from fuel handling and one was from the reactor containment dome.

WHITT: Okay, so the last one's you gave us had not readings for the top ops floor.

BAUNACK: You mean the control room?

WITT: The operating floor - I don't think that means inside the control room but...

HAVERKAMP: That's the reactor building - there's nothing here on the reactor building operating floor.

BRUNNER: Nothing here that compares with anything that we had before.

SMITH: I'll be gone just a minute - hang on.

WITT: Up around the refueling deck. That's what we are interpretting to be the operating floor.

BRUNNER: We have no numbers from that area.

WITT: Okay, could we get one as early as possible.

WITT: Who provided these numbers?

CAPHTON: Ron Nimitz.

WITT: Is Boyce Grier still in the Region I office?

BETTENHAUSEN: Yes he is.

WITT: Okay, Norm Moseley is going to try and contact him.

GRIER: Tell to call me on 5363.

WITT: 363?

CAPHTON: No. 5363.

WITT: 488?

CAPHTON: That's right.

CAPHTON: We will try to get some more definition on those locations of the numbers that we provided for the rad-readings and it might take a little bit to time because the fellow who took - provided the numbers is in the transient in Unit 1.

WITT: Okay, that's fine - as soon as you can.

CAPHTON: When he comes back in, we'll try to get some more definitions.

WITT: It's up around the refueling levels.

(Time check - 2108)

WITT: Do we have anymore information on the status of the bubble?

BRUNNER: Not since about 8:40.

WITT: Someone's out there looking at it now, is that correct?

BRUNNER: Is Walt still alive and awake there, Jim?

BRUNNER: Ray [illegible]h?

SMITH: Hello.

BETTENHAUSEN: Is Walt Baunack still alive and awake?

SMITH: Yeah, he's still out in the control room.

BAUNACK: Is he going to give us a set of readings in a little bit?

SMITH: Yeah.

WITT: Sounds like you folks are probably getting tired up there.

SMITH: That's for sure - mostly just hungry - it's been a long time since I had that toast this morning for breakfast.

WITT: Yeah, I'll bet it is.

SMITH: For both you people's information - is Region I on there too?

CAPHTON: Yes, we are.

SMITH: For both of you, I just got a call from Phil Stohr -he and Kottan are out here and they got the Mobile Lab set up - they're over at the Observation Center.

CAPHTON: The Mobile Lab is now set up.

BETTENHAUSEN: Ray?

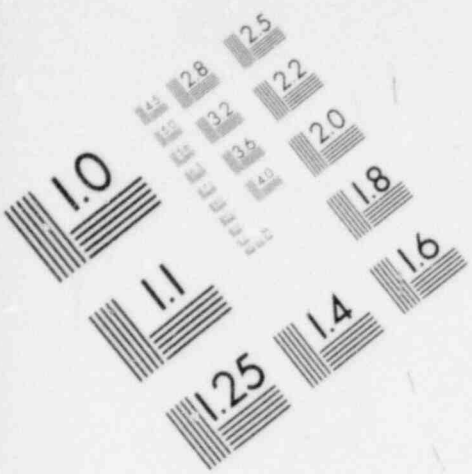
BAUNACK: Would you have Phil Stohr call 337-5362?

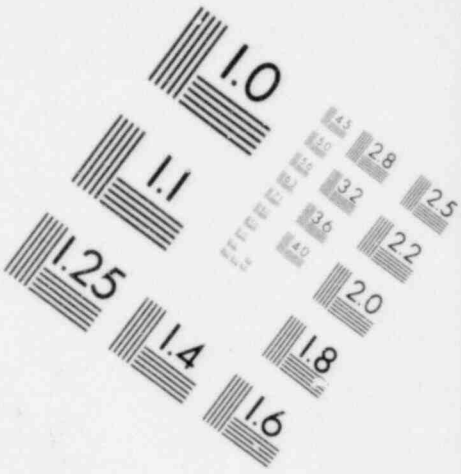
SMITH: 337-5362.

BAUNACK: Mr. Smith would like to talk to him.

BETTENHAUSEN: The other Mr. Smith.

SMITH: Will do.





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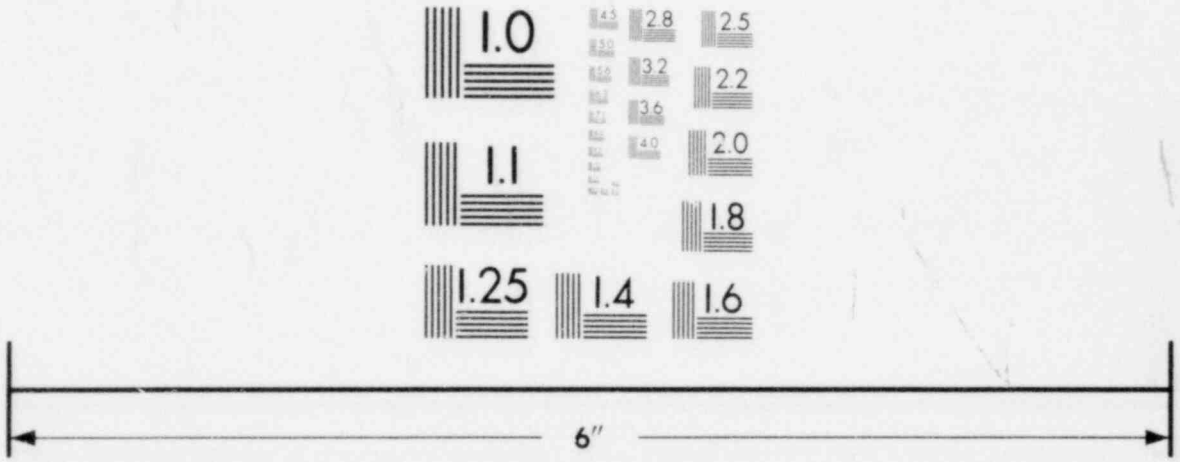
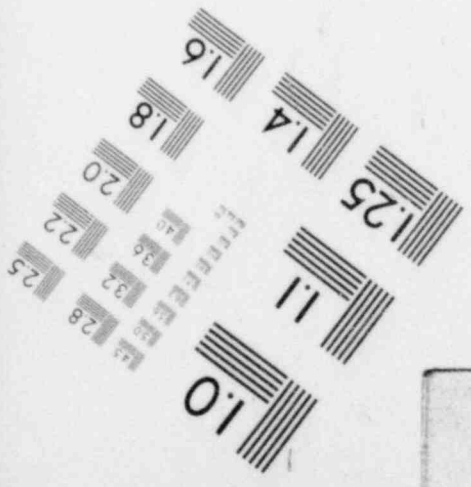
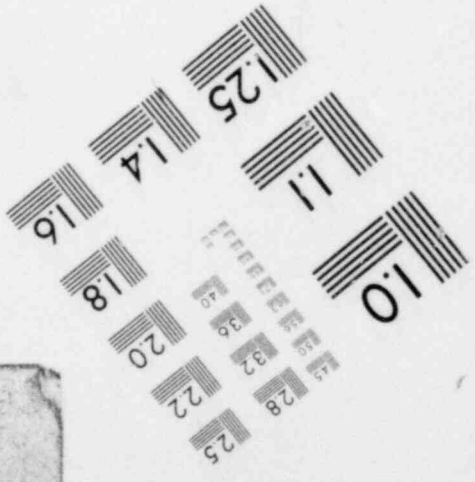
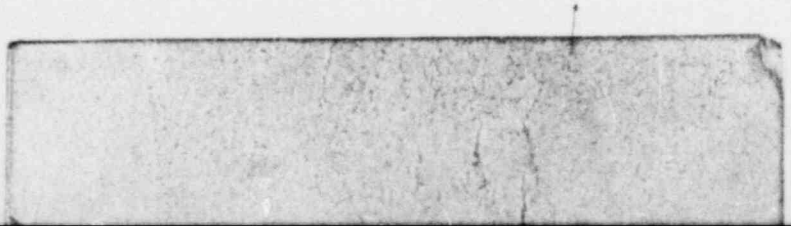


MICROCOPY RESOLUTION TEST CHART







CAPHTON: Go ahead, Smitty.

SMITH: We have some problems here - with phones - you know, getting on telephones.

CAPHTON: Yes.

SMITH: Why don't you ask George Smith to just go ahead and call Phil Stohr -I've got a phone number over there for him.

CAPHTON: That'll do fine, that'll do fine.

SMITH: It's an outside phone number.

CAPHTON: Give us the number.

SMITH: 367-0511.

BETTENHAUSEN: I copy 367-0511.

SMITH: Correct.

BETTENHAUSEN: That's area code 717?

CAPHTON: Thank you.

BAUNACK: I can give you the latest numbers but there's not much change. Okay? 9:15 numbers - T cold, 310.

CAPHTON: Say that again, Walt, we didn't hear you.

BAUNACK: At 9:15, 310.

CAPHTON: On what?

BAUNACK: Pardon me?

CAPHTON: I'm sorry we didn't understand what you're conveying to us?

BAUNACK: T_c is 310.

CAPHTON: Okay.

BAUNACK: The pressure is 1050.

BETTENHAUSEN: They're just coming right down on the curve - no real big changes.

BAUNACK: Everything's holding just about normal.

WITT: We don't have the bubble yet?

BAUNACK: Pardon me? - No, they don't have the bubble yet. That's the only thing they're kinda wa ting for - other than that it's just a normal cooldown. There's really not much in the way of new numbers to give you. The problem with the Auxiliary boiler seems to have cleared up and the vacuum is back.

BETTENHAUSEN: What kind of vacuum are they running, Walt?

BAUNACK: They got a full vacuum not about 30 inches. Then it dropped down to about 24 there for awhile - then it turned the corner and came back up.

WITT: This 1050 is pressurizer pressure or...?

BAUNACK: 1050 pressurizer pressure.

BETTENHAUSEN: Pressurizer temperature 520 if that will do you any good.

WITT: Yeah, okay.

WITT: Anything on T-hot?

BETTENHAUSEN: How about a T-hot, Walt?

BAUNACK: We have no T-hot indications. The incore thermocouple are not really reliable and there's no other temperature in that range. T_{av} average below scale too - so the only good temperature we have is T-cold. Cooldown is going very well and normally there's no more problems.

BETTENHAUSEN: Okay, thanks, Walt.

BAUNACK: Okay.

WITT: Don't forget us.

BAUNACK: Yeah.

BETTENHAUSEN: There's nothing changing radically, you know.

WITT: That's great - we like to hear that, too.

WITT: We need a little information here - just a minute -

BAUNACK: Okay.

WITT: What's being done to pump out the Auxiliary Building sump?

SMITH: That's in discussion right now in the planning stage.

WITT: Okay - you'll get that for us as soon as possible - we're having a little trouble through the other channels and they've asked us to go through the Operations people's channels and try to get that information.

SMITH: Yeah.

WITT: Okay.

SMITH: That's what they're discussing now.

WITT: All right, then Walt will probably have it when he comes back.

SMITH: Yeah.

WITT: Okay.

WITT: The condensate polishers, have they been secured?

WITT: Got that one?

SMITH: Can you run that by me again, I couldn't get it on account of background.

WITT: Condensate polishers, have they been secured?

SMITH: Okay.

WITT: Question 2, is there anything going down the Turbine Building drains?

SMITH: The Turbine Building drains?

WITT: Yeah.

SMITH: Okay.

WITT: The feeling here is that that might be unmonitored and an escape for some of that liquid.

SMITH: They're being bypassed.

WITT: Does that mean they are secured?

WITT: I guess it does, because if they're being bypassed, they have to be shut off.

WITT: Okay.

SMITH: And there's nothing going down the...

BAUNACK: Hello - on that Turbine Building drain -

BAUNACK: Hello - you know that question on the Turbine Building drains?

WITT: Yes. We want to know if...

BAUNACK: There's no problem with the Turbine Building drains - they're essentially dry - the problem is in the Aux Building - the floors there are flooded - alright, they have some water on the floors.

WITT: Okay.

BAUNACK: They're discussing right now what to do with the water - whether they get trucks for it - they're going to have to get someplace to put this water.

WITT: Okay - so the sumps right now are not being pumped out but they are having a planning session on where to pump it.

BAUNACK: Right.

WITT: Okay, we have one other question that's still unanswered and that is the radiation reading on the operating floor?

BAUNACK: Let's see - I'll see if one of the HP's is around here - they're staying on top of that.

WITT: Okay.

BAUNACK: You know there's various levels throughout the building - some areas are quite high and others are very low.

WITT: Yeah - we got a lot of readings here - earlier we had readings on the operating floor - this last time we didn't get any - the Health Physics people would like to have that.

BAUNACK: Yeah - I don't see any of the HP's around right now - as soon as one come in, we'll have them talk to you, all right?

WITT: All right, fine - thank you.

BAUNACK: I got some more numbers for you if you are interested.

WITT: Yes, please.

BAUNACK: Pressurizer pressure - 1025.

WITT: Okay.

BAUNACK: T-cold - 310.

WITT: 310, okay.

BAUNACK: The pressurizer temperature is 530. If you're keeping track you can see they've been coming down in pressure and temperature. There are no significant changes in the plant. The cooldown is still running what you would say normal.

WITT: Okay - and still no bubble.

BAUNACK: Right - no level established yet.

WITT: Hang on for just a minute - I think I have a question here.

WITT: Okay, I guess we are still looking for two questions that I guess we will ask of anybody coming on the phone - the radiation reading on the operating floor and the Auxiliary Building sump - what they're doing to pump it out - and I understand there's a planning session going and we'd like to know as soon as they make a decision.

BAUNACK: I don't think they're going to do anything in a hurry with that sump - like I say, as soon as we get an HP, we'll give you some word on the status.

CAPHTON: Walt, is there a readout of the area rad-monitor for the - in the control room?

BAUNACK: Yeah - there's a number of rad-monitors - there's a whole lot of them in the control room - some are pegged outright - some are reading low - there's about 30 different rad-monitors out there.

CAPHTON: Do you have any... let's see... Nothing going out through the air ejection, that one's clear - some of the building exhausts are pegged high - you know you've got a while cross-section of different ones.

CAPHTON: Walt?

BAUNACK: Yeah.

CAPHTON: Who do you have working with you right now, Smitty?

BAUNACK: Smitty and I - we're the only two here.

CAPHTON: Okay.

CAPHTON: I wonder if one of you could get some readings for the Reactor Building.

BAUNACK: The last time I heard, the Reactor Building was way up there - 200 R or something like that -

CAPHTON: Would you go over and take a look and see if there are any that are on scale now?

BAUNACK: Yeah, I can tell you for sure some of them are off-scale - some of them are... - some of them have relatively low reading - let me see if I can get somebody out here to talk to you about that.

CAPHTON: Okay.

BAUNACK: Don?

CAPHTON: Yes.

BAUNACK: Here's a man from the site - he is pretty much familiar on what the radiation levels are around, okay?

CAPHTON: Okay.

LANDRY: Hello, this is Len Landry.

CAPHTON: Hello - who are we talking to?

LANDRY: This is Len Landry.

CAPHTON: What we're trying to do is get a feel for rad-levels around the Reactor Building - I understand that some of your monitors are operating in the control room - is that correct?

LANDRY: Yes.

LANDRY: Some are on scale right now.

CAPHTON: Okay. Could you give us readings in the Reactor Building from the available monitors.

LANDRY: I'll tell you what, why don't you give me a list of areas of interest and I'll go to the ____ and get these numbers for you.

CAPHTON: Okay.

HAVERKAMP: In the Reactor Building we'd like the monitors for fuel transfer canals, the dome, the hatches - personnel hatches - or whatever you may have on the operating floor. Basically, all the monitors for the Reactor Building -area monitors.

LANDRY: Okay - hold the phone - I'll be right back.

BAUNACK: And the pressure is about (unintelligible), and the T-cold is 305.

CAPHTON: Okay.

BAUNACK: The pressurizer pressure is 535, still no level though.

(Time check - 2150)

WITT: Okay - no bubble.

WITT: Okay - who am I talking to now?

BAUNACK: Walt Baunack.

WITT: Walt, I don't know whether it was you or Smitty told me that the Auxiliary Building ventilation was being used.

BAUNACK: Yeah - I relayed that information to him.

WITT: Okay - I guess that shook up a few people here. Do you know whether there's filters on that, through absolute filters or charcoal filters or any of that sort of stuff?

BAUNACK: I'll try to find out for you - no, I haven't been following the inventory end of it - I don't see any HP's around - I don't know where they are.

WITT: I understand that - I understand they couldn't get a line through to the HP's or something like that - so we have to go this route.

HAVERKAMP: Is the Unit 1 HP there? (background)

BETTENHAUSEN: Do you know what the filter situation is on the Auxiliary Building vent system?

BAUNACK: You know all that release information and that is all going over to Unit 1, and that's why you should be ____ to Unit 1 - do you still have a line for that control room?

BETTENHAUSEN: That's affirmative - Region I has a line to the Unit 1 control room.

BAUNACK: Okay, they can probably fill you in on that kind of information because that's where it all goes - over there.

WITT: Okay, maybe I can have the HP's call Region I or Region I call the HP's down here.

BAUNACK: But you see we're at a little disadvantage over here - all that information is over at Unit 1 - that's where they funnel it all through.

WITT: Okay.

BAUNACK: That's where their control center is set up.

Okay - Sometime ago someone...

(NOTE: This seems to be the end of the tape -- Apparently the tape was not cleared entirely and contains some dictation unrelated to the TMI-2 incident.)

RAYMOND: F3.

HQ: F3.

RAYMOND: F3 is 294.

HQ: 294.

RAYMOND: F7, 355.

HQ: 355.

RAYMOND: F12, 298.

RAYMOND: F13, 297.

HQ: Okay.

RAYMOND: G6, 335.

HQ: 335?

RAYMOND: Correct.

RAYMOND: G9, 525.

HQ: Okay.

RAYMOND: G11, 297.

RAYMOND: G13, 290.

HQ: Okay.

RAYMOND: H1, 295.

RAYMOND: H9, 342.

RAYMOND: H13, 291.

HQ: Okay.

RAYMOND: K5, 299.

HQ: Okay.

RAYMOND: K12, 311.

HQ: K12 was 311 and K11 was 617?

RAYMOND: Correct.

HQ: Okay.

RAYMOND: L2.

HQ: L3?

RAYMOND: L2, 294.

HQ: Okay.

RAYMOND: L11, 207.

HQ: Okay.

RAYMOND: M3, 298.

RAYMOND: M7, 235.

RAYMOND: M10, 379.

RAYMOND: N4, 310.

RAYMOND: N8, 392.

RAYMOND: N9, 301.

RAYMOND: 05, 305.

RAYMOND: 06, 298.

RAYMOND: 010, 296.

RAYMOND: 012, 296.

RAYMOND: P6, 296.

RAYMOND: R7, 296.

RAYMOND: R10, 296.

RAYMOND: Mike, as I look at this plot, I see high readings at B10, at 568, B7, 580.

HQ: Yeah.

RAYMOND: F7, 355.

HQ: Yeah.

RAYMOND: G9, 525.

RAYMOND: H9, 342.

HQ: H9, 342, I had 343, Okay.

RAYMOND: K11, 617 and we have a couple of other ones there - N8 was 392.

HQ: Right.

HQ: That was 392?

RAYMOND: Right.

HQ: Okay, that's what we got.

RAYMOND: Just off-hand, I don't seem to believe those high numbers - did you look at that 617...

HQ: Yeah, that one looks...

RAYMOND: You got 207, 311, 342, 291 around it.

HQ: Your D10 and E8 look like they've got a matched set.

RAYMOND: E8, I don't have an E8.

HQ: E, what did you - you gave me a 580 on E somewhere.

RAYMOND: 7.

HQ: E7, I'm sorry, I'm off one.

RAYMOND: But there you have a 298, a 301 or 296 there up on the lefthand side around it.

HQ: Yeah.

RAYMOND: I'd say - okay, with the one cooant pump running, they should have a fairly equal flow distribution through there. I don't know of any reason why we have these hot spots.

HQ: Maybe not, what's the relative inlet to outlet can you bypass part of the core?

RAYMOND: There is some flow bypass, I don't know what percentage it --- it's just one pump running.

HQ (to HQ staff): Yeah, relative inlet/outlet, I don't what the diffision is at the lower side of the core end, but... that's right - maybe that what we're seeing...

HQ: Do we know where the A loop is relative to this?

HQ: Bill, the question is do we know where the A loop is relative to this plot that you have given us?

RAYMOND: I didn't get it but I'll look it up - I've got to do that. Why don't you look at this a little longer, I'll look that up.

HQ: Okay, go ahead give us another round of readings, right?

RAYMOND: Yeah, I can do that too.

HQ: Another thing you have to remember also is that these thermocoupl inputs in processed by the plant computer and the readings are scaled that they are calibrated under hot conditions.

HQ: Yeah, I understand.

RAYMOND: All right - I'll get back to you.

HQ: Hey, Bill:

REGION I: You're off, arent' you Bill?

HQ: Between the X and the W...

HQ: I'm sorry, I can't hear you, Bill.

RAYMOND: Between the X and the W axis. What I want you to do first of all is start on the lefthand side of the page, where you've got an H, label that W.

HQ: Label it W...

RAYMOND: Okay - opposite that is the Y axis.

HQ: Okay.

RAYMOND: On the bottom of the page is Z.

HQ: Z on the bottom.

RAYMOND: On the top of the page is X.

RAYMOND: The direction north uns along the W-Y axis.

HQ: Say that again.

RAYMOND: North runs along the W-Y axis.

HQ: Okay, we got it.

RAYMOND: Okay - where the Z - where you labelled X? That's an outlet nozzle.

HQ: Outlet nozzle...

RAYMOND: Where you _____ that's an outlet nozzle.

RAYMOND: Four inlet nozzles that are located between X and Y, Y and Z, Z and W, W and X.

HQ: Okay.

HQ: Do you know which one is which on those...

RAYMOND: Yeah.

HQ: Okay.

RAYMOND: On the W-X quadrant, that's the 1A reactor coolant pump inlet.

HQ: Okay - we got 1A inlet between W and X.

RAYMOND: Right.

HQ: Okay.

RAYMOND: Between the X-Y quandrant you got 2A.

HQ: 2A between X and Y.

RAYMOND: Yeah - between W-Z quadrant you got 1b...

HQ: 1B...

RAYMOND: And the Y-Z quadrant has got 2B. Okay, you can put that aside and go on the the next...

HQ: What's the outlet - is this the A outlet is the X?

PAYMOND: Right.

RAYMOND: You have 1A, 2A - that goes to the A generator - we have 1B, 2B that goes to the B generator.

HQ: Yeah, but I want to make sure that you gave me the outlet nozzles and I wanted to see what the X point - is that the A outlet nozzle?

RAYMOND: Correct.

HQ: Okay, I'm with you.

RAYMOND: And then the Z is the B.

HQ: Got it - Z.

RAYMOND: Okay.

RAYMOND: Let's get these numbers down -- these were taken at 6:45.

HQ: 6:45?

RAYMOND: The pressurizer pressure was 898.

HQ: 898.

RAYMOND: Hoop loop A-T inlet - 284.

HQ: 284 on T-A.

RAYMOND: Pressurizer level is 362 inches, increasing.

HQ: Say that again...

RAYMOND: Pressurizer level is at 362, increasing, and I'll talk about that as soon as I get the rest of the numbers.

RAYMOND: The pressurizer level as soon as I give you the rest of the numbers.

RAYMOND: Are you with me?

HQ: I didn't hear you.

RAYMOND: I said I'll come back with the pressurizer level as soon as I...

HQ: Okay, go, I'm with you.

RAYMOND: The pressurizer temperature is 535.

HQ: 535.

RAYMOND: RC loop B-T inlet, 284.

HQ: 284.

RAYMOND: Steam generator pressure, 32 on the A and 37 on the B.

HQ: Okay.

RAYMOND: What has ahppened since the last time we talked is that they increased temperature on the intermediate closed cooling water loop.

HQ: Pardon.

RAYMOND: They increased temperature on the intermediate closed cooling water loop - for the letdown cooler.

HQ: Okay.

RAYMOND: It appears that they have som boron crystallization in that letdown flow path - after having raised the temperature in the intermediate cooler and the intermediate closed cooling water and therefore the letdown

coolant - they removed some of the blockage and have regained some letdown flow.

HQ: Okay, they have regained letdown?

RAYMOND: Some - I haven't got a number - it's not full letdown flow.

HQ: Okay.

RAYMOND: Once they had done that, they tried the spray again on the pressurizer.

HQ: Okay.

RAYMOND: They got the same results they had been getting.

HQ: Okay.

HQ: Do you know how long they sprayed?

RAYMOND: The spray duration was on the order of 15 to 20 seconds.

HQ: 15 to 20 seconds.

RAYMOND: During that 20 secondperiod the pressurizer level increased from 343 to 360 inches.

HQ: 343 to 360 inches at 15 to 20 seconds.

RAYMOND: Right.

RAYMOND: The net result was that they sprayed a little bit - stopped - you know, because they weren't sure - they thought it was going to turn around and they stopped - and sprayed a little bit more for several seconds and then they stopped and let this come back down again. The net result of all that spraying was a 50 pound decrease in RCS pressure but it didn't go - the point is they couldn't get all the way down in pressure without going solid again in the pressurizer.

TAPE #23 -

RAYMOND: Raise your volume.

HQ: Yes.

RAYMOND: If they put T cold water in the system and the pressurizer water, you know, up to 535, a decrease in pressure creates more void and therefore you get an increase in the indicator level.

HQ: Okay.

RAYMOND: That's something that we've postulated.

HQ: Okay.

HQ: It should come down I would think at a higher rate.

RAYMOND: Does that sequence make sense to you people?

RAYMOND: I'm just now trying to think whether or not I would expect the opposite response of the a pressure level. The thing is, if you remember, what we've done on the simulator you've offered a normal letdown, charging they're programed level for you which you don't have in this case.

HQ: The question is can we get the spra, flow rate to see if the 343 to 360 makes any sense for a volume.

RAYMOND: Yeah, a change in indicator levels?

HQ: Yeah, what they're saying is they think there's flashing occuring in the reference leg.

RAYMOND: That could very well be, I haven't seen the print yet that would tell me where that reference leg is relative to the operational range indication, but it's getting close to 7 o'clock now.

HQ: Let me lay one more question on you while I have you here, we've asked the Region, do you know of any, that they ever vented the building either yesterday or today?

RAYMOND: The Reactor Building?

HQ: Yeah, containment.

RAYMOND: I'm not aware of anything like that, I'll ask.

REGION I: Karl Plumlee is on his way to the control room to find out.

HQ: Okay, we've got some more question, we want to know what the water level is in the basement of the Auxiliary Building?

RAYMOND: Okay.

HQ: Are they in the process of getting rid of the water now, do you know?

RAYMOND: Just a second.

RAYMOND: They're trying to do that Mike, they've got the two neutralizing tanks on Unit 2, 8A and 8B, they've finished transferring the low level waste from the 8B tanks, I'm going to check my notes here...Yeah, the 8B tank was transferred to Unit 1, they are in the process of trying to pump some of that water out of the Aux-Building basement, into the 8B tanks.

HQ: Okay, but they've transferred all the water they can from the neutralizer tanks, is that what you're saying?

RAYMOND: They've transferred 8B, they have yet to transfer 8A.

HQ: They've transferred 4B?

RAYMOND: 8B, correct, 8 Beta.

HQ: Okay.

RAYMOND: 8 Alpha is still full from the low level waste tjat was entered prior to transient. The other things they're working on, apparently before they had a, one of the previous shifts, they had a flooding condition in the vicinity of the Aux-Building sump tank transfer pump. The previous shift, because of the flooding condition, tripped the busses, tripped the buss that that pump was tied to.

HQ: Aux-Building, what was the transfer pump's problem?

RAYMOND: The Auxiliary Building sump tank pump.

HQ: Okay, that didn't give them any power to it right?

RAYMOND: Well, they are in the process of reestablishing the line up now, the buss had been tripped by the previous shift and they are in the process of putting it back on.

RAYMOND: Once that is done, they will be able to start pumping into that 8B tank.

HQ: Okay.

RAYMOND: They figure they will working with the 8A tank some time on the day shift.

HQ: Okay, Do you know what the capacity of that tank is?

RAYMOND: They told me it was 8000 gallons.

HQ: 8000 gallons, but that's not very much if we got a...

RAYMOND: If they've got a 200K gallons, right.

HQ: The concern is up here, quite concerned about them getting that stuff off the floor, I quess that's your source of radiation.

RAYMOND: Right. They're working towards that end.

HQ: Okay, did you get anything on the water level?

RAYMOND: I'll have to get off the phone. Karl Plumlee just came in.

HQ: Pardon.

RAYMOND: Hey, I'm going to drop off, here, guys, I'll be back.

BACKGROUND: Did you get the water level in the Aux-Building? Which is an L-shaped room by the looks, or is it beyond that and out into the next area where, let's see, you get your makeup purification pump, that type thing... Let's see, you can't get in this area.

RAYMOND: Mike, I'm having a hard time with this. I just talked to the guy here on shift who is responsible for the waste treatment system.

HQ: Yeah.

RAYMOND: And they tell me, he tells me that the guy he talks to, sometimes during the shift they had an Aux-operator in the building, he didn't get down into the basement but from a vantage point on the stairwell he looked at the, what elevation was it, the basement elevation and he couldn't see large amounts of water, okay?

HQ: Okay.

RAYMOND: Some dry spots and some wet spots, had a teletector with him, took some readings at the water, almost in contact, he couldn't get anything above background.

RAYMOND: Now, that's at 281 feet eleveation. Now, they've got other things below that elevation, notably their decay heat removed pumps at 260 feet and there's some question as to what's the status of that is.

HQ: Okay.

RAYMOND: I think maybe what we ought to do is to settle this one way or another, you know, when someone else comes in here, one of us get suited up, go down and take a look.

HQ: It's beginning to sound like that we've got to determine that.

HQ: Did you hear that, Bill?

HQ: We do have the key to the off-site release.

RAYMOND: Yeah, I'm with you.

HQ (to staff): Now, he says at the 281 elevation they looked and they can see only wet spots and dry spots.

RAYMOND: On your figure there does that have the elevations marked.

HQ: Well, the drawing I have is clipped off a little bit, Bill, we're looking at it now.

RAYMOND: Okay.

HQ: No, they're talking...

RAYMOND: Okay, here we got the ventilation system.

HQ: Yes.

RAYMOND: Okay, the fuel Handling Building, the Aux-Building, are normally exhausted through the filters.

HQ: Fuel Handling...

RAYMOND: And the Aux-Building are normally exhausted through the filters.

HQ: Aux, are normally exhausted through filters.

RAYMOND: Right.

RAYMOND: Control Building is on internal recirculation, nobody has done anything to the containment as far as the ventilation goes.

HQ: Control Building on recirculation.

RAYMOND: Right.

HQ: Okay.

RAYMOND: Nobody, containment has not been opened.

HQ: Containment has not been operned that you can find anybody on that.

RAYMOND: Right. The pressure is narrowed down to minus .8 psig, so we got a slight vacuum on it.

HQ: Minus .8.

RAYMOND: Correct.

RAYMOND: Psi guage, so slight vacuum.

HQ: Bill.

RAYMOND: Yeah.

I think we're going to, the elevation I was talking about is that the two, yeah, our drawings say 280 feet, 6 inches, so that's your 281 elevation you're talking about I believe.

RAYMOND: That's at the bottom of the bleed holdup tanks?

HQ: Pardon?

RAYMOND: Is that the bottom of the bleed holdup tanks?

HQ: I believe that it is, some are talking floor level.

RAYMOND: Well, you see, I don't know how far around that individual was able to see from the vantage point of the stairwell.

HQ: Yeah, right.

HQ: I think we're going to have to go down and find out the extent of that.

RAYMOND: All right, I can get someone to do that now, if you don't want me to wait for this call.

HQ: No, we don't want to lose the contact...

HQ: Are you on, Region I?

REGION I: Yes, Region I is still here.

HQ: Can we get someone else on the, what's the Unit 1 man doing?

RAYMOND: Karl Plumlee was in the Control Room here and I'm not sure where he went. He's not in the Shift Foreman's office anymore.

HQ: Okay.

HQ: Can you people work that out Region I?

Region I: Okay, we'll look for him and have him come out just to help.

RAYMOND: In any case, that's about where they stand.

HQ: Okay, did you get any more priorities?

TAPE #23 - SIDE 2 -- BLANK

Tape #24 -

HQ: Do you want me to read that again slowly?

(0730 hrs. time check)

30 degree F per hour. Cooldown until the decay heat removal system can be placed into operation.

REGION I: Okay, now they can't cooldown at the 30 degree Farenheit per hour - you're cooling down something like a half a degree to one degree per hour at the present time.

HQ: I'm not talking about now - I'm taling about the three o'clock conditions yesterday. Like the 350 degree F.

RI: I think that's right.

HQ: Okay. As of 3:30 p.m., a plume, approximately 1/2 miles wide, and reading generally 1 mR/hr, was moving north of the plant. The ARMS helicopter - the ARMS helicopter is being used to define the length of the plume. Airborne iodine levels of up to 1×10^{-8} microcuries per milliliter have been detected in Middletown, Pennsylvania, which was located by plant personnel.

RI: That sounds about right.

HQ: Yeah, there's a misplaced modifier there, we'll correct that. All right, let's go.... 4:31 p.m. - A decision has been made to open electromatic relief valve to depressurize. 4:47 p.m. - Planned plan to put A loop into service, produced steamed on natural circulation and cooled the primary down to a point where the RHR can be put in service. Gary Miller, Station Superintendent at the site, plus six Shift Supervisors. 5:24 p.m., starting to steam on the A steam generator. The fact it was established that the condenser about 15 inches. 5:39 p.m., the valve between the steam generator and condenser is not open, the steam has not really started yet, they're sending someone to investigate. At 5:50 p.m., started steaming from A steam generator, steam generator level dropped slightly, using some makeup water. 6:02 p.m., steaming in A steam generator is continuing, plan to raise primary system pressure to 2000 psig to collapse any existing air steam bubbles. Okay, that takes us to 6 this morning at 6:02 p.m.

RI: You're saying p.m. and you're saying morning.

HQ: I mean a.m., excuse me.

RI: No, no, that's not right Sam, it should be p.m. yesterday.

HQ: It is p.m., I'm sorry yeah, it is 6:02 p.m., I guess we don't have anything on that after that. Okay, the iodine number is wrong, we'll get that to you. I want to get that changed, okay? Let met get the recent readings here. We're trying to describe now, these are comments on the 4:00 a.m. event - let me describe some of the things that happened. It appears that the combination of the reactor coolant system cooldown and loss of steam through the pressurizer relief valve resulted in shrinkage. The primary coolant facility indicated water levels out of the pressurizer and some voiding occurred in other parts of the primary system. Apparently the reactor coolant pumps were stopped before enough water had been pumped into the primary system by the ECCS to collapse the void in order to prevent damage to the recirculation pump seal. With the primary pump stoppped.

RI: That sounds like a highly speculative statement. Yeah, that doesn't help us any.

HQ__: Say that again.

RI: That sounds like a highly speculative statement which probably will not be verified.

HQ: Apparently the reactor coolant pump was stopped before enough water was pumped into the primary system to collapse the void in order to prevent damage to the recirculation pump seal, if they didn't g\ that, they stopped the pump and I thought that was the reason.

RI: They stopped the pump because because.....

HQ: What about the seals?

RI: No, the pumping limits on the pumps were approached. It's wrong to refer to them as recirculation pumps, they are reactor coolant pumps, recirculation pumps are BWR pumps.

HQ: Yeah, I think you're right.

RAYMOND: Yeah, I'm a little bit confused about the statement that the reactor coolant pump was stopped because they injected enough water?

HQ: To collapse the bubble, yeah.

RI: Actually, the pumps were vapor-locked very, very early. I don't know.

HQ: Yes, that is still a question. Apparently the reactor coolant pumps were stopped before enough water had been pumped.

RI: That implies the stoppage of the reactor coolant pump prevented the water from getting into the reactor which I do not think was a true conclusion.

HQ: I think it's going to be rephrased.

RAYMOND: Yeah, I think the phraseology is going to give you more trouble than you're looking for there.

HQ: Yeah, we made that speculating detail, we might just drop the whole thing, it don't look right to me.

RAYMOND: The general situation is that they did have vapor either in one of two different places, in the loops, A and B hot legs as well as on top of the vessel.

HQ: Yeah, I'm going to ask that that be rephrased, okay?

RAYMOND: Okay. With primary pumps stopped, apparently the voids collected in the primary coolant loops at the highest point in the system, the top of the steam generator, these voids resulted in the loss of natural circulation in the core and probably inadequate cooling of the fuel and possible fuel damage. At some later time, ECCS was restarted manually, in order to improve cooling to the core - up to 500 gpm of water was pumped into the primary system - via high pressure cooling injection pump - these are the same as the makeup pumps. Steam venting was accomplished by opening the electromatic relief valve on the top of the pressurizer. This is one valve, is it not?

RI: No, it's several valves - I think they only opened one.

RAYMOND: Two safeties and two power operated valves.

HQ: Are there two?

RAYMOND: Okay.

RAYMOND: Just one.

RAYMOND: One power operated and two safeties.

HQ: Okay, let's go.

HQ: This steam blows down a tank take in containment - when the capacity of this tank is reached - after a short time - the steam is vented directly into the containment where it is condensed, resulting water flows into the containment sump where it is available for recirculation to the primary system. The source of the high pressure cooling injection water is borated water storage tank which is required by technical specifications to contain at least 350,000 gallons of borated water. Over 120,000 gallons of this water was pumped into the primary system. And that's all the explanation we have right now. I don't think this tank is right, is it? Borated water storage tank? Isn't it..... Do you know what they call it?

RAYMOND: Yeah, thats B&W terminology for the RWST.

HQ: All right.

HQ: Any comments other than that? Any general comments on the time.

RI: Yeah, that statement about condensation inside containment - saying it goes to the sump and it is available for recirculation - does not belong in at that time. That's true but it doesn't belong there -

it's misleading. The electromatic - the relief valve actually goes to a surge tank - the pressure surge tank where it's supposed to discharge under water and evidently they overpressurized that tank and the rupture disc burst.

HQ: Yeah.

RAYMOND: The tank didn't burst - they ended up blowing the ruptured disc.

HQ: Rupture disc - you're right.

HQ: Yeah, we are aware of that - we can fix that.

RI: Yeah, that's the kind of detail that Congressmen don't care about.

RAYMOND: The only input I've got is that out of that 142,000 gallons, no one really has a good feel as to how much went to the vessel and how much ended up on the floor.

HQ: It all went to the vessel.

RAYMOND: Yeah, but eventually - how much ended on the floor.

RI: Essentially, all of it had to go to the floor because....

HQ: Right.

RI: At 140,000 gallons charged gallons and we have a full system now, we've obviously lost 140,000 gallons some place before.

RAYMOND: There's contraction of the primary water too that you got to make up for.

HQ: Okay.

HQ: I've heard your comments and thank you for listening - I think we can straighten out a couple of these points and go with it, okay?

RAYMOND: Okay - is that it then?

HQ: Yeah, we'll try to get it typed and.....

RI: Are you going to send us a copy to the site, Sam?

HQ: Hold on, one second, please.

HQ: I understand Met-Ed is trying to do the same thing we're doing?

RAYMOND: Hello.

HQ: I've got a plant person with me --

RAYMOND: Bill Raymond here....

HQ: We'd like to get a copy of the Met-Ed release as soon as we can.

RAYMOND: Okay.

HQ: A chronology - would somebody see that we have someone available to get it - and get it in here - it will help us fill in some gaps - and by the same token, we can try to polish ours - and see what we've got up there. All we need now is a FAX number - let me give you a FAX number - will somebody give me a FAX number. FAX number - one second - I'll give you a FAX number -

RAYMOND: Hey, Sam - hold on - I'm going to get a TELEX phone number too.

HQ: Yeah.

RAYMOND: Hold on.

HQ: Hello.

RI: Yes, Sam.

HQ: I don't have Bill Raymond back yet, do I.

RI: Sam, he's on.

HQ: Okay.

HQ: Hello, Bill?

RI: Yeah, here he is.

HQ: What is it.

HQ: Can't hear you, Bill.

HQ: Hello.

HQ: Cannot hear at all.

RI: He must be in the background.

HQ: Going to get a FAX number back to him.

RI: Sam, we'll get it if you want to leave - somebody else will relieve you.

HQ: Let me give you the number then - I really want to get his number too so he can - so I can get.....

RAYMOND: Sam?

RAYMOND: Okay, I have a number for you -

HQ: Okay.

RAYMOND: Area code 717-944-4041 - and that will get you into Ext. 210 - tell them it's for the TELEX.

HQ: All right. Let me read it back - area code 717-944-4041, Ext. 210, and ask for TELEX?

RAYMOND: Right.

HQ: All right, let me give you my numbers - I have - do you want four or six machines?

HQ: Let me give you both.

RAYMOND: All right.

HQ: 50 second machine - Rapifax - that number is 492-8187; .

RAYMOND: 492-8187.

HQ: Right - and that's automatic.

RAYMOND: Right.

HQ: And then I have a four or six minute machine - which is 3M - and that number is 492-

TAPE #24 - Side 2

RAYMOND: Okay, I understand that Jack Herbein, Vice President of Engineering, is giving a television interview right now.

HQ: On National News?

RAYMOND: I don't know who the newscasters are - I've asked Met-Ed for any summary of what they've done.

HQ: Are you saying a live-newscast or an interview?

RAYMOND: It's being taped.

HQ: And it's Herbein?

RAYMOND: Say that again?

HQ: It's Herbein?

RAYMOND: Correct.

HQ: And he is President of Met-Ed?

RI: No - he's Vice President of Engineering from Met-Ed.

HQ: I got'cha.

RAYMOND: Okay.

HQ: I'm going to turn you over to Mike Wilbur, and do my thing.

RAYMOND: Okay - when do you think I might get that summary from you, Sam?

HQ: I'm sorry, I'm on now - this is Mike.

HQ: What is your question?

RAYMOND: When I may be able to go down to pick up that summary that he's going to FAX up to me.

HQ: I don't know - he just walked out the door now with it.

RAYMOND: Okay - I'll stay in touch downstairs.

HQ: Is this Bill?

HQ: Okay. We are ready for some more questions - I think we would like a confirmation on some of those core outlets - are they incore thermocouples?

RAYMOND: Yeah.

HQ: You have some hot ones, remember? I think - if you could get - if I'm reading this thing right - if you could get me all those - let's see - C thru E; - C thru H -

RAYMOND: C thru H.

HQ: Right.

RAYMOND: All numbers in those rows.

HQ: Yeah.

HQ: And at the same time get a round of readings.

RAYMOND: Okay, yeah.

HQ: Ready?

RAYMOND: I'll have to pull those numbers off the computer manually - one at a time - so....

HQ: It's going to take a while....right?

RAYMOND: It'll take 10-15 minutes or so.

HQ: Okay, give us a feel from the plant parameter first and then we'll pick that up later.

RAYMOND: Okay I'll give you some now, go get the numbers and fit it in the back end of that.

HQ: Okay - one other thing - I'm kind of interested in what the game plan is now - I think we know but we'd like to hear it again. As far as water on the floor, coming to RHR and this type of thing.

RAYMOND: Okay - unfortunately, as I sit here talking with you guys I'm missing a staff meeting here.

HQ: Yeah, that figures.

RAYMOND: But I'll try to pick up later.....

HQ: Okay, they've probably developed a little bit of a plan there.

RAYMOND: Right.

HQ: Okay - and you'll get back with the p[illegible]meters rather quickly then -

RAYMOND: Yeah, I'll be right back.

HQ: Okay, thank you.

RI: This is Harry Kister - I'm not familiar with that.....

HQ: I don't know what it was he was talking _____ - whoever is on the night shift there.

RI: He was there - he's in a little conference right now - so....

HQ: Well, anyway, we were talking about getting the - our man on the Unit 1 side and maybe going down and looking at the water level in the Auxiliary Building - how much and the extent of the flooding and we were wondering what the status on that was.

RI: Okay.

HQ: See - we heard a report that one of your people went down to the 281 elevation, with a teletector, and there is nothing but wet spots on the floor - and those had nothing but background counts on them.

RI: Okay.

HQ: Which is a little bit confusing from what we heard earlier.

RI: Yeah.

HQ: People at the Sykways Inn

RI: Skyway Inn?

HQ: Yeah.

RI: That may very well be.

HQ: And I think they've set up a meeting there with some NRR people - Dick Vollmer, and the contact time - I don't know what you had earlier....

RI: We understand that it's 10 o'clock.

HQ: Well, that's been moved to 11.

RI: 11?

HQ: Yeah - can you contact those people? I think they're your people - aren't they Region I people?

RI: Yes.

HQ: Yeah, they are Region I people.

_____: Okay, you tell them that the contact time has been moved from 10 a.m. to 11 a.m.

(Time time is 0830, 3/29/79 - lost communications with Site 2 - Control Room - attempting to reestablish communications.)

RI: Okay, Bill, go ahead with your readings --

(0837)

RAYMOND: Did I give you the 0806 readings?

HQ: No.

RAYMOND: Okay - let's start with them -

RAYMOND: The pressurizer pressur is....

HQ: Wait a minute - hang on a second....

HQ: This is 0806?

RAYMOND: Yeah.

HQ: Okay, go....

RAYMOND: 885 on the pressurizer.

HQ: Say that again?

RAYMOND: 885.

RAYMOND: Okay "A" T-melt is 282.

HQ: 292?

RAYMOND: 282.

RAYMOND: The pressurizer level is 350 inches, decreasing still.

HQ: 350, decreasing.

RAYMOND: Right.

RAYMOND: The pressurizer temperature is 352.

HQ: How much is that?

RAYMOND: 352.

RAYMOND: Loop "B", T-melt is 283.

RAYMOND: The steam generator A pressure is 31.

RAYMOND: The steam generator B pressure is 36.

RAYMOND: There's an incore reading.

HQ: Incore - hang on a second - let me go over to another map - I know we asked you for just half of them - but a request has come in....

_____: Okay.

RAYMOND: I've got all of them.

HQ: You've got all of them.

HQ: Beautiful - have you got time for that?

RAYMOND: Yeah....

RAYMOND: 0800.....

HQ: Okay.

RAYMOND: I'll start with Row B.

HQ: Row B7 is what I have first.

RAYMOND: Okay....291.

RAYMOND: B8 is 295.

RAYMOND: C6 - 297.

RAYMOND: C10 - 299.

RAYMOND: C13 - 291.

HQ: That went up.

RAYMOND: 296 before.

HQ: I've got 286, I'm sorry.

RAYMOND: 291 now.

HQ: Okay.

RAYMOND: B5.....

RAYMOND: Okay, hey, why don't you read off the core locations - I'll give you numbers...

HQ: B5

RAYMOND: 295

HQ: B10

RAYMOND: 571

HQ: 571 - I had 568 before.

RAYMOND: It went up.

HQ: Okay.

HQ: B14

RAYMOND: 278

HQ: E7

RAYMOND: 603

HQ: That went up also.

RAYMOND: Yes.

HQ: Now I've got a little prob'em here - I think it's E12 - is that correct?

RAYMOND: I have nothing else on E.

HQ: Okay - good enough.

HQ: F3

RAYMOND: 290

HQ: F7

RAYMOND: 354

HQ: F12

RAYMOND: 293

HQ: F13

RAYMOND: 292

HQ: G6

RAYMOND: 343

HQ: How much?

RAYMOND: 343. It increased.

HQ: G9

RAYMOND: 527

HQ: G11

RAYMOND: 293

HQ: Say that again?

RAYMOND: 293

HQ: G13

RAYMOND: 294

HQ: H1

RAYMOND: 290

HQ: H9

RAYMOND: 361

HQ: Say that again?

RAYMOND: 361

HQ: H13

RAYMOND: 282

HQ: K5

RAYMOND: 294

HQ: K12

RAYMOND: 305

HQ: L2

RAYMOND: 290

HQ: L11

RAYMOND: 215

HQ: M3

RAYMOND: 288

HQ: M7

RAYMOND: 299

HQ: I had 355 on that before.

RAYMOND: Correct.

HQ: M10

RAYMOND: 381

HQ: That went up considerably.

RAYMOND: 2 degrees.

HQ: N4

RAYMOND: 306

HQ: N8

RAYMOND: 395

HQ: N9

RAYMOND: 295

HQ: 05

RAYMOND: 299

HQ: 06

RAYMOND: 294

HQ: 010

RAYMOND: 298

HQ: 012

RAYMOND: 292

HQ: P4

RAYMOND: 294

HQ: R7

RAYMOND: 292

HQ: R10

RAYMOND: 292

RAYMOND: Mike - one thing you should notice as you look at these numbers - it roughly - you have to count up those readings - I'm getting readings from 38 detectors.

HQ: I can't hear, Bill - you're breaking up or something.

RAYMOND: I can give you 38 detector readings, okay? Thermocouply readings --

HQ: Yeah.

RAYMOND: I believe it's 52 incore - I'd have to verify that.

HQ: What are they?

RAYMOND: 52 strings total.

RAYMOND: So, we're talking about 14 strings inoperable.

RI: You're giving 38 readings and there's actually 52 available.

HQ: Total - so we've got some inoperable.

RAYMOND: What I'm saying Mike is there's something like 14 that I think are inoperable.

HQ: Okay - 14 are inoperable.

HQ: Okay - there was some other -

RI: Mike, I need to get some information in to B&W - so let me go first.....

RI: Bill, are you there?

RI: When do you expect Rick Keimig?

RAYMOND: Harry?

RI: Yes.

RAYMOND: I'm going to have to check on it - I thought he was going to be at the Visitor's Observation Center - I haven't had any contact with him yet.

RI: Can we get some information to him?

RAYMOND: Yeah.

RI: He needs to know that the NRR meeting that was set up this morning for 10 a.m.

RAYMOND: Yeah.

RI: That's changed to 11 o'clock.

RAYMOND: Okay.

RAYMOND: Is that here or at HQ's?

RI: That's the NRR group that's coming out.

RAYMOND: Okay.

RI: To the Skyway Motel.

TAPE #25

HQ: Are you still there Bill?

HQ: We got Bill or Walt?

HQ: Is Bill Raymond the one that's on Region I?

REGION I: No, not now, he's still there.

HQ: The only thing we had floating is the chronology and we're hearing they are not preparing one, all they're giving is the status...

HQ: Bill, are you there?

REGION I: He's not there. He's getting information.

HQ: Do we have anyone on the Unit 2 control room phone?

HQ: Hello.

REGION I: Yes, we have someone on the Unit 2 control room phone.

HQ: Pardon.

TAPE #25 - SIDE 1

RAYMOND: I'm still checking out what Met-Ed's got, I haven't done that yet.

HQ: Okay, we've got some other questions, I'll pass these on to Harry, I don't know if I'm going to confuse it or not, but we're still interested, the question is, Is there water down in the area of the DHR pumps? To the amount that would impair it with their operation? They're in the sump, as I recall.

RAYMOND: Yeah, in a little pit.

HQ: Okay.

HQ: The other question is where are the DHV1 and DHV2 valves, are they in a position where their operation would be affected by water?

REGION I : These are the two letdown valves in containment, Bill, we'de like to know what elevation they're at and if there's a possibility of impaired operation due to the water level.

HQ: Okay.

HQ: And we've asked before, we're still quite interested in what's the deal with the water in the Auxiliary Building because you may know, there is something conflicting with what we're hearing.

RAYMOND: Mike, I think...I'm about to turn over to Walt and as soom as he takes over here, I'm going to chase down these questions on the Met-Ed summary and I'll probably try to get down and tour.

REGION I: Okay, that's a good idea Bill.

HQ: Good enough.

REGION I: You say Walt's going to be taking over for you now?

RAYMOND: Yeah, Walt's in.

HQ Do we have any more questions?

REGION I: Bill?

RAYMOND: Yeah.

REGION I: One more thing to tell you, also, let Rick know that the McCabe will relieve him at 10 o'clock tonight. You got that?

RAYMOND: McCabe will relieve Keimig at 10 p.m.

REGION I: Right.

REGION I: Also, Beckman, Haverkamp and Jon Johnson are on their way out to the site now, they should be there around 10:30.

RAYMOND: Haverkamp, Jon Johnson and Beckman.

RAYMOND: Okay.

RAYMOND: Where are they going to show up, at the Observation Center?

REGION I: We don't know that. I think we're going to have to get them tied into the people at the site to start coordinating.

REGION I: That's affirmative Bill.

REGION I: I'm sure they'll check in with somebody and touch base with either you or Walt Baunack or Rick.

RAYMOND: Okay.

REGION I: Do you know how to get a hold of Rick?

RAYMOND: I'm going to try...yeah...I've got a number here, I'm going to try and get through to him as soom as I pass over to Walt.

REGION I : Okay.

RAYMOND: Okay, you expect Haverkamp and company to be here at 10?

REGION I: About 10:30.

RAYMOND: Okay.

REGION I: Just a moment now, Bill.

GRIER: Bill? Mr. Grier.

GRIER: Would you ask Rick to call me if you can reach him please?

RAYMOND: Yeah.

GRIER: As soon as you can?

RAYMOND: Right.

GRIER: All right.

RAYMOND: Okay, I'll pass you on to Walt.

HQ: Okay, good enough, thank you.

BAUNACK: Good morning.

REGION I: Good morning, Walt, how are things going out there?

BAUNACK: I guess you got the numbers as well as I have, right? They're coming down pretty slowly.

REGION I: Right.

BAUNACK: But I think they're somewhat satisfied with the, that seemed to be their game plan last night when I left.

REGION I: Slow and easy.

BAUNACK: You know they're a little bit hesitant to go on to...

REGION I: Can't hear you Walt.

BAUNACK: They've been a little bit hesitant to go on letdown cooling because they'll be bringing a lot more high activity water outside the containment.

HQ: What's this now?

BAUNACK: Well, they suspect that the primary system is pretty hot, right?

HQ: Yeah.

BAUNACK: So, as you let this hot water out...

HQ: Okay, it's still in piping.

BAUNACK: It's going to raise radiation levels in some areas.

HQ: All right.

BAUNACK: And the plant is holding pretty well now, coming down nice and slowly, so there's no need to do anything in a hurry. I think that's the way they are looking at it, I know that's what they were discussing this morning about 3 o'clock.

REGION I: Okay, Walt.

HQ: Okay, good.

BAUNACK: So. I'll stay here between the Control Room and come back on this line occasionally.

REGION I: Right, and keep giving us the parameters, pressures, temperatures...

BAUNACK: At the rate they're going,

HQ: Walt?

HQ: Norm passed on that one of our biggest concerns is stopping the release that's why we're interested in the water level in the Auxiliary Building and this type stuff.

BAUNACK: Yeah, I'll have to get together with Ray and what he's doing and what they plan on doing with that.

HQ: Okay, and

REGION I: We gave Bill some questions to answer and we understood that he would go out and try to come up with answers to those questions after you relieved him.

HQ: Hang on, just a second.

HQ: I think they want it started about right now.

BAUNACK: Okay, that will be a 9 0'clock reading.

HQ: Yeah, right.

HQ: And if you can get the parameters that they've been passing in, you know, the pressure, the TCA, TCB, this type stuff.

BAUNACK: Okay, you don't want to core map...

HQ: Yes we do.

BAUNACK: Okay, you want all of it.

HQ: Yes.

BAUNACK: Yes.

BAUNACK: So, I'll go out, Ray is on the other phone right now. I'll go out and start getting these readings.

REGION I: Okay, check with us once in awhile so we know we got you, we get a little nervous back here if we can't contact you.

BAUNACK: Okay, good enough.

HQ: Hello, are you on Harry?

REGION I: Yes.

HQ: Okay, Ed Blackwood is going to take over here.

REGION I: Okay.

BAUNACK: Yeah, I don't know this plant design, but normally they are high enough off the ground, as a matter of fact, we are even wondering why they don't pump the water right back into the containment.

HQ: Yeah, we're looking for a check on that. So, we're not sure either.

BAUNACK: Yeah, Bill Raymond has that on his list, as soon as he gets a chance, he'll look into it.

HQ: Okay, how about dewatering the Aux-Building floor? Earlier this morning one of the neutralizing tanks had been pumped, we had two neutralizing pump in Unit 2 down yet?

BAUNACK: I don't know that, either way you're not going to have enough tank capacity to put a big dent into what's on the floor.

HQ: Yeah, okay, there's still about 75,000 gallons of room in the bleed holdup tank, isn't there?

BAUNACK: I don't know what the room is in there. At any rate, if the way they were talking last night, there was just not enough tank capacity for the amount of water they have.

HQ: Yeah.

BAUNACK: You know they were discussing getting trucks in and things like that.

BAUNACK: There's been no discussion this morning since I've been in here on that subject, you know it may be going on someplace else.

HQ: Okay, our question is what are they going to do with the water and it looks like that's becoming the most time sensitive issue as far as we're concerned because time conditions are reasonably stable right now.

BAUNACK: Yeah, they appear to be, everytime we've said that in the past, something has gone wrong.

HQ: Again, Walt.

BAUNACK: Everytime we've said that in the past, something has gone wrong.

HQ: Yeah.

REGION I: Gee, Walt, if you can get some data on the water situation and if there's been anymore decisions made relative to what they're going to do with the water, please get back to us on it.

BAUNACK: I will, as soon as I hear anything, but I suspect there's probably another meeting going on with Herbein and that group discussing that, obviously that's the primary thing on their mind too because that's the source of their release.

HQ: Right.

BAUNACK: And they want to minimize that, so...

HQ: Okay.

HQ: And also as far as getting into RHR is concerned, we would like prior notification as soon as you get information or as soon as the licensee decides on the time he is going to go into it.

BAUNACK: Yeah.

REGION I: Walt, are you still there?

BAUNACK: Yeah.

HQ: Okay, in other words we want prior notification before they go on to RHR because there's some question as to whether it's a smart idea with failed fuel with and the depressurization. All right?

BAUNACK: They'de be releasing more activity into the primary system? You know, I think they are actually going to have to go on to RHR because they don't have too awful much water in the refueling water storage tank.

HQ: Yeah.

BAUNACK: I think they've made arrangements with Salem to truck over some borated water.

HQ: Right.

BAUNACK: In fact, they have to consider water, also.

HQ: Yeah, I understand.

HQ: And all we're looking for is notification before they actually get into the RHR mode.

BAUNACK: Okay, I will get that for you. As soon as I get out into the Control Room and talking to the people, I'll be able to tell you what their time schedule is.

HQ: Okay, how soon can we expect the 9 o'clock core map.

BAUNACK: We'll go out and get that right now.

HQ: Okay.

BAUNACK: We'll get it for you in about 15 minutes.

REGION I: Walt, one more question. Are you there? Where is Higgins?

BAUNACK: He was in the Control Room when I left because I had his suitcase in my car and didn't know it.

REGION I: Okay.

REGION I: So, you have Higgins as an assistant there.

BAUNACK: No, I think Higgins was planning on going up to the Control Room with Rick out to the Observation Center. To meet with Rick before they left, that was his plan.

BAUNACK: Right now, Karl Plumlee is here, he's been here all night so I suspect he will be leaving.

REGION I: Okay, so right now it's just you and Bill Raymond and Bill will probably be leaving shortly too.

BAUNACK: Yeah.

REGION I: Okay.

BAUNACK: I'll spend a few minutes out in the Control Room and get what information I can and then come back in here.

HQ: Okay, Walt, there's also a plant staff meeting that happened a little bit earlier this morning that Bill was going to try and get some details on.

BAUNACH: Most of the high-powered people have left this area now, so I suspect they're in some kind of a meeting somewhere, so when they get back maybe I'll have some more information.

HQ: Okay.

REGION I: Make sure Bill finishes up with the information we asked him to get before he leaves.

BAUNACK: We'll try to get that core map for you right now.

REGION I: Okay, Walt.

RAYMOND: Mike ____?

HQ: Ed Blackwood is on...

HQ: IS this Bill Raymond?

RAYMOND: Yeah...

REGION I: This is Ed Blackwood and Harry Kister, Bill.

RAYMOND: Okay, you guys had a request about the decay heat removal valves 1 and 2.

HQ: Right.

RAYMOND: In talking to the Shift Supervisor who has been on a tour I quess within the last half hour, he's not sure that those valves are in jeopardy, they are located anywhere from 8 to 10 feet off the 281 elevation, well above any water level.

HQ: All right.

REGION I: Okay.

RAYMOND: For the decay heat removal pump vault?

HQ: Yeah.

RAYMOND: The B pump vault is reportedly clean, no water, the A decay heat pump vault has 4 inches of water, not enough to jeopardize the pump.

REGION I: Okay.

RAYMOND: They can't explain just how the water got in there but it stopped so there's no more water going into it. The conclusion is that the decay heat removal pumps are available.

HQ: All right.

RAYMOND: We're still working on the other questions. All right?

REGION I: Okay.

REGION I : Bill?

REGION I: Bill Raymond, are you still there?

BAUNACK: Okay, that was the last list Bill had there.

HQ: Okay, how about Echo 7?

BAUNACK: I'm going to look up the points on that one. Do you have another one?

HQ: Charlie 13, Delta 14...

TAPE #25 - SIDE #2

HQ: Oscar 6.

HQ: Oscar 12.

BAUNACK: Okay, I'll see if I can get that for you.

HQ: All right, how're you coming on the rest of the list here?

BAUNACK: What list?

REGION I: We need the parameters, primary system perameter, Walt.

BAUNACK: I gave them to you, right?

REGION I: We'de like them again.

BAUNACK: Okay, I'll have to go get them...

REGION I: Okay.

RAYMOND: Hey Region I.

REGION I: Yes.

RAYMOND: This is Bill Raymond. Tell Boyce I did contact Rick, he should be calling in to Boyce.

REGION I : I think he has him on the phone now, just a moment.

RAYMOND: Does Boyce still want to talk to me.

REGION I: Just a moment.

RAYMOND: I'll wait until he's done with Rick and I'll call in.

HQ: We don't know where that number came from and it doesn't look like you're finding that on the Auxiliary Building basement.

BAUNACK: Just a second.

BAUNACK: Okay, the 250,000 is in the Reactor Building. The Aux-Building is estimated about 10,000. So, that changes things considerably.

HQ: 250,000 in the Reactor Building, 10,000 in the Aux-Building.

HQ: Okay, is that based on what, the total makeup that you've used since the scram yesterday?

BAUNACK: I think that's based on an estimate, just a second.

REGION I: Ed Blackwood?

HQ: Yeah.

BAUNACK: Okay, if the rough estimate is possibly based on an inventory and partly based on visual observation, they said it could be off three gallons or so.

HQ: All right, thank you.

REGION I: Ed Blackwood?

HQ: Yes.

BAUNACK: We have a reading on the level of water in the Aux-Building.

HQ: In the where?

REGION I : In the Aux-Building.

HQ: Okay.

REGION I: In the basement, 2 inches above the drain.

HQ: 2 inches above the drain in the Aux-Building basement.

REGION I: That's correct.

HQ: Is that the entire Aux-Building or is that just the rooms containing the bleed holdup tanks?

REGION I: I still don't have that specific information.

RAYMOND: Headquarters?

HQ: Yes.

RAYMOND: I've got the steam generator levels, 0940. Full range indication is 39 inches on the A and 37 inches on the B. Operating range for whatever it's worth is 92% on the A and 97% on the B.

REGION I: Bill, would you call Boyce Grier now, please?

RAYMOND: Okay.

RAYMOND: I've just got one other thing, they've got, the only makeup they've got is through seal injection, pumps about 32 gpm. The letdown is low, it's been sporadic, I'm quessing it's 10 gpm or a little bit better. It spikes a lot, especially with the blockage, the retuction through makeup purification.

HQ: All right, is the pressurizer level going up then?

RAYMOND: The pressurizer level is holding.

HQ: At 353.

RAYMOND: Yeah.

RAYMOND: They may have a very slight positive dose, I'd have to watch it. But yeah, if it continues like this with 30 gpm going in, with about 10 coming out, it's going to come up.

RAYMOND: Okay, I'm going on another line.

REGION I: You're going to call Boyce now, right?

BAUNACK: Did Raymond give you all the readings you needed?

HQ: Yeah.

HQ: We're going to need a round at 10 o'clock.

BAUNACK: Ok we'll get you one at 10 o'clock, I notice he gave you the one at 9.30 so the next one will be at 10 O'clock.

HQ: Okay, that's the one that's going to hit the street.

BAUNACK: Okay and then you want steam generator level and...

HQ: Yeah, put steam generator level, letdown and makeup as near as you can estimate them.

RAYMOND: The 9 o'clock status report that they put out.

HQ: Okay.

RAYMOND: Rather than give you a chronology, it is only a narrative, it just talks about plant status, cooldown...

HQ: As of 9 o'clock.

RAYMOND: Right, addresses exposure, you know, that sort of thing.

HQ: Okay, now did they come up with a chronology for yesterday, is this what you're saying?

RAYMOND: Not, the people I'm talking to said they have no plans to put a chronology out yet.

HQ: Whatever they got, FAX it in.

RAYMOND: Okay.

HQ: But you're talking about the chronology they had yesterday.

RAYMOND: Very limited chronology on yesterday, it addressed the problems in the secondary system that led to the turbine trip, and the

plant cooldown, and the safeguard actuation and that sort of thing. Do you want that? I can have them send it.

HQ: Send that too, I guess.

RAYMOND: Okay.

RAYMOND: Both places, I assume.

HQ: That's correct.

REGION I: Right.

HQ: Yes.

REGION I : As far as you know, Bill, they're not sitting down and establishing any chronology right now.

HQ: Are you still there Bill?

HQ: We got Bill or Walt?

HQ: Is Bill Raymond the one that's on Region I?

REGION I: No, not now, he's still there.

HQ: The only thing we had floating is the chronology and we're hearing they are not preparing one, all they're giving is the status...

HQ: Bill, are you there?

REGION I: He's not there. He's getting information.

HQ: Do we have anyone on the Unit 2 control room phone?

HQ: Hello.

REGION I: Yes, we have someone on the Unit 2 control room phone.

HQ: Pardon.

HQ: Okay.

RAYMOND: I calculated - rough and dirty number of 7 gpm.

HQ: 7 gpm.

RAYMOND: Right.

HQ: Okay.

HQ: That's based on that .2 ft. change in twenty minutes.

RAYMOND: Right.

RAYMOND: I guess there's been some question that's come up on this relief valve - and where it's goint - you better check into that -

HQ: Okay.

RAYMOND: Is that all you wanted? _____

HQ: Did you confirm the status of the neutralizer tanks in Unit 2 - have they been pumped to Unit 1.

BAUNACH: The status of that is they are pumping from the floor into one -- they are pumping the other ones to Unit 1.

HQ: Okay, so they're pumping the floor into one tank and the other tank is being pumped to Unit 1.

BAUNACH: Yes, I'm pretty sure that's the status.

HQ: Okay, thank you.

HQ: The last we heard, yeah.

Baunach: Yeah, I was going to say Raymond gave you all that information earlier, didn't he?

REGION I: Yeah.

HQ: Okay.

HQ: Walt?

BAUNACH: Yeah.

HQ: Why don't you give us the plant parameters readings - not the core map - but the plant parameters.

BAUNACH: Okay, will do.

HQ: Okay, Walt.

BAUNACH: The pressurizer level is 843.

HQ: 343.

BAUNACH: Cooldown rate is zero.

BAUNACH: The A loop T-cold - 280.

HQ: 280.

BAUNACH: Pressurizer level - 353.

HQ: Which way - that's going up again.

BAUNACH: It's going up from 351.

BAUNACH: Pressurizer temperature - 526.

HQ: Right.

BAUNACH: B Loop T-Cold - 280.

BAUNACH: Steam generator pressure is 29.

BAUNACH: The B pressure is 34.

HQ: Okay.

HQ: Have you got anything on the letdown flow?

BAUNACH: No, but it's still about the same way it was.

REGION I: What was the time of that reading, Walt?

BAUNACH: Pardon me?

REGION I: What was the time for those readings?

BAUNACH: 11:30.

BAUNACH: On those pressurizer - you know that relief valve that was lifting up there - that they are actually letting down through - that comes off just before the flow-meter, so - you don't get a good flow indication - right?

REGION I: I didn't understand that they were lifting that relief valve, Walt.

HQ: You mean the relief valve on the letdown line?

BAUNACH: Right.

HQ: Oh - okay.

BAUNACH: Yeah - I think their filters are pretty well plugged up - I think they have a crew on their way down to change out these filters if it's not too hot.

HQ: Okay.

HQ: We heard earlier they thought the cooler maybe had plugged - so they did change the temperature and they did get the flow after that, I think.

BAUNACH: They are letting down as high a temperature as they can, apparently - and when they went to the higher temperature earlier this evening they did get an increased letdown flow - so they thought maybe there was some plugging.

HQ: Yeah, we got a question - did they put the heaters on?

BAUNACH: The heaters on what?

HQ: The pressurizer heater or something.

BAUNACH: No, no - they're controlling letdown temperature with the letdown heat exchanger.

HQ Okay - no, they did not.

BAUNACH: I don't think they want to put the pressurizer heater on ...

HQ: I thought they had them on.

BAUNACH: 11K - 583

HQ: Okay.

BAUNACH: 11L - 244

HQ: Okay.

BAUNACH: 10M - 278

BAUNACH: 9M - 91

HQ: Okay.

BAUNACH: 9N - 289

HQ: Okay.

BAUANCH: 8N - 397

HQ: Okay.

BAUNACH: 7N - 296.

HQ: Okay.

BAUNACH: 5K - 290

HQ: Okay.

BAUNACH: 5H - 418

HQ: Okay.

HQ: Hold it - didn't get that - having trouble with the phone.

BAUNACH: 7F - 345

HQ: Okay.

BAUNACH: 9A -

BAUNACH: 8M - 254

BAUNACH: 9G - 555

BAUNACH: 9H - 354

BAUANCH: 2G - 293

BAUANCH: 1H - 287

BAUNACH: 2L - 285

BAUNACH: 3L - 287

BAUNACH: 4N - 305

BAUNACH: 15C - ____

BAUNACH: 60 - 290

BAUNACH: 6D - 291

HQ: 6 what was that? _____

HQ: Pardon, I'm having a little trouble hearing.

HQ: B?

BAUNACH: No P as in Peter

HQ: Oh, Peter - okay.

BAUNACH: 291

BAUNACH: It's hard to hear around here too.

HQ: Okay.

BAUNACH: 7R - 288

HQ: Hang on a minute.

BAUNACH: Okay.

HQ: 288?

BAUNACH: Right.

HQ: Let me give it again - 60 - would you give me that temperature again?

BAUNACH: 7R?

HQ: No, 60.

BAUANCH: Oh, 60?

HQ: Right.

BAUNACH: 290

HQ: Okay.

BAUNACH: 10 R -

REGION I: I'll have to break here for just a second - Walt?

BAUNACH: Yeah.

REGION I: Ask him to go directly to the Observation Center and report to Rick.

BAUNACH: Okay.

HQ: Okay, go ahead.

RAYMOND: Hey Mike ...

HQ: This is Whitt - Mike's gone _____

RAYMOND: What's your first name?

HQ: Kermit.

RAYMOND: Hermit?

HQ: Kermit.

HQ: Right.

RAYMOND: I just wanted to pass on to you that Met-Ed has been apprised of our observations on the incore trend - what they are doing is starting to trend selected high ones versus pressure - so they can correlate any sensible trend out of it -in addition to that, they may select some of the higher ones and try to get some readings out of it - the point of all that will be either discredit or qualify the indications that we are getting from them. Okay.

HQ: All right - great.

REGION I: Bill?

REGION I: Bill Raymond?

BAUNACH: This is Walt.

REGION I: He's gone then.

BAUNACH: He's just gone out the door.

HQ: Okay - good.

HQ: I'm ready if you are.

BAUNACH: 10 R - 89

BAUNACH: 100 - 96

BAUNACH: 13C - 289

BAUNACH: 14D - 283

BAUNACH: 60 -

HQ: Hang on a second - okay, I'm with you ...

BAUNACH: 291

BAUNACH: 120 - 290

BAUNACH: 10R - 290

BAUNACH: And that should be it unless I missed one.

HQ: Okay - you don't have a "Q" on your matrix, do you?

BAUNACH: I'm giving these right off the computer printout - let me see if they have a matrix -

BAUNACH: No "Q".

HQ: Okay - so that last one is "R".

HQ: Okay - now we need plant parameters for the same time-frame.

BAUNACH: Okay, I'll have to go out and get them ... I'll be back shortly.

HQ: (HQ staff) We're wondering what saturation temperature is for whatever pressure we've got. 863, is that the last one?

BAUNACH: I have the remaining praameters for you.

HQ: Okay.

BAUNACH: Pressurizer pressure - 851

BAUNACH: Cooldown rate - minus .2F/hour

BAUNACH: A loop T-cold - 281

BAUNACH: Pressurizer level - 351

HQ: What's it doing - increasing, decreasing?

BAUNACH: 348 was the 10 o'clock reading.

HQ: Okay.

BAUNACH: Pressurizer temperature - 527.

BAUNACH: B loop T-cold - 281

BAUNACH: A steam generator - 30

HQ: I missed it.

BAUNACH: A steam generator - 30

BAUNACH: And the B - 35

REGION I: What was the time of those readings, Walt?

BAUNACH: I called them 10:50.

HQ: 10:50.

BAUNACH: Okay?

HQ: Okay - let's see - do we have any more questions?

BAUNACH: The Shift Supervisor says he got a hold of Stacey - so, I'm assuming that call was made.

HQ: Walt?

BAUNACH: Yeah.

HQ: Are you there? Okay, we were wondering what the pumping rate is from the Aux-Building floor to the tanks.

BAUNACH: I'll see what I can find out.

HQ: And - we're also - I passed some of this on to Bill Raymond --

BAUNACH: He's out there talking to somebody so if they're the same questions, I think he's getting the answers for you right now.

HQ: Okay.

HQ: Walt - hello, Walt ...

RAYMOND: Mike or Ed.

HQ: Yeah, this is Mike.

RAYMOND: I've got some information on the Aux-Building.

HQ: Information on the Aux-Building - okay.

RAYMOND: And, it's not clear cut - I can't say they have a lot or they don't - I'll discuss it with you.

HQ: Okay.

RAYMOND: It appears that there are mysterious high/low spots on the Aux-Building floor whereever there is a drain - there's water collected there because the Aux-Building sump is backed up and the drains are backing up.

HQ: Water is collected whereever there is a drain, right?

RAYMOND: Right.

RAYMOND: In the vicinity of the drains, whereever you find them - you'll find two or three inches of water - where there is a high spot, it's much less than that.

HQ: Okay - you've got two or three inches of water.

RAYMOND: [illegible]

RAYMOND: The major source of water now - I think Walt is going to try to pursue him. The source of water now and Walt's going to pursue this -they have a reactor building ventilation pump sitting there in the Aux-Building - they have developed a fairly substantial packing leak - putting river water onto the Aux-Building floor.

HQ: Your seal ...

RAYMOND: Basically it's generating a lot more waste for them.

HQ: Yes.

HQ: Okay, let me get this written down - packing leak, putting river water on the Aux-floor. You say it's a bad leak. Do you have any idea of what it is?

RAYMOND: No - they could not qualify it - they've got a team going out there now and they are going to try and tighten down on the packing.

HQ: Okay.

RAYMOND: Walt is going to see if he can get them to back off on those pumps to alleviate the leakage into the building - at least momentarily.

HQ: Okay.

Side 1 - Tape #19

BAUNACK: The last numbers are Tc-299.

WHITE: Tc-299.

BAUNACK: Pressurizer pressure 945 - that's a temperature of 543 - so there's little change between the 10:20 readings and those which I got at 10:55.

WHITE: Okay.

BAUNACK: It looks like it will be a little while before the pressure comes down.

WHITE: Okay Walt.

BETTENHAUSEN: Is Walt there?

SMITH: Just a minute Walt.

BAUNACK: Who's this?

WHITE: They do have the heater pump on right on the pressurizer -

BAUNACK: I don't think so because the temperature is still coming up.

WHITE: How will they get the level down if they got - I mean the pressure down if they keep the heaters on?

BAUNACK: That's a good question. I think they want to make sure they keep that bubble low - but obviously they keep coming up in temperature so they must have their heaters on - I'll go out and double check on that.

WHITE: Okay Walt. Thank you. Hello.

SMITH: Yes.

WHITE: When he gets back we'd like to get a status report from him on the licensee's meeting and any problems that they might be having in resolving how they're going to handle that waste in the Aux Building.

SMITH: Well - there's no real problems. They've got people that's going to be working on it the rest of the night.

WHITE: So you think they have determined how that's going to be done?

SMITH: No. I wouldn't say how it's going to be done. The people's problem is to come up with what is available that can be done. In

other words, well, I heard part of the meeting - in other words they have no more capacity for any water out here.

WHITE: In Unit 2?

SMITH: Onsite.

WHITE: Onsite?

SMITH: So -

WHITE: Both Unit 1 and Unit 2?

SMITH: That's the way I understand it.

WHITE: Oh!

SMITH: So what they're looking at is all the people throughout the night. Well they have some engineering people - outside people - if they can come up with anything tonight on how soon - how rapid - how quick something could be done.

WHITE: Okay.

SMITH: And then by tomorrow morning they're supposed to have something pulled together - you know, that's a possible thing to try.

WHITE: You're saying that all of the waste tanks are full - both in Unit 1 and Unit 2.

SMITH: That's the way I understood it - I'd have to confirm that.

WHITE: Okay.

SMITH: Hang on, just a minute.

(Time is 11:05 p.m.)

SMITH: The tanks here...

WHITE: Say that again?

SMITH: The tanks don't have any capacity available here. The whole thing is they just don't have any available capacity here.

WHITE: They don't have any available capacity.

SMITH: The quantity of water you're talking about to get rid of.

WHITE: Okay.

SMITH: The last thing I heard was something like 225,000 gallons.

WHITE: Smitty? Ask them if they've considered the possibility of pumping the water back into containment.

SMITH: I'll pass that on to Walt and maybe he can find out.

WHITE: Okay.

SMITH: Okay - pumping it back into containment.

WHITE: Right.

SMITH: Okay.

CAPHTON: Say Jim?

GAGLIARDO: Yeah.

CAPHTON: This is Don Caphton. Hey, I thought you were up in Philadelphia?

GAGLIARDO: Oh, that's Tim, Dorwin Hunter and the other guys.

CAPHTON: You didn't come up here for the Peach Bottom thing?

GAGLIARDO: No. I'm not part of the Peach Bottom.

CAPHTON: Okay.

(Time check - 2310)

GAGLIARDO: Approximately how much water is in the Aux Building that needs to be disposed of - in other words if they can give us some indication how long the pump was pumping to pump the water over there, or any other indication that you have of how much water is there.

BAUNACK: Yeah, I'll try and get that information for you. I think it's just going to be a guess though on the amount of water on the floor - just a second. Okay, that's the ball park number - 200,000 gallons.

GAGLIARDO: That's still the ball park number?

BAUNACK: Yeah.

GAGLIARDO: That's in the Aux Building?

BAUNACK: Right.

GAGLIARDO: 225,000?

BAUNACK: 200,000 is what I jost got now as the ball part number.

GAGLIARDO: 200,000.

BAUNACK: You know, 225 may well be right. That's a guess number just by the level on the floor.

GAGLIARDO: Say that again Walt, I missed that?

BAUNACK: It's just a guess on the man's part. I said it was an estimate of 200,000 but that falls in line with the 225 that you had heard.

GAGLIARDO: Okay. Now, the other question that we have. Has anybody measured the activity and the isotopic content of that water?

BAUNACK: I would almost say yes. Again, all the information is going over to Unit 1. You know, we don't have that here.

GAGLIARDO: Okay.

BAUNACK: Unit 1 control room. The only way they are having some activity problem there is offsite, mR readings.

(Time is now 2315)

SMITH: _____ I have a message for you. I can't get there, since you people have a line to Unit 1.

GAGLIARDO: Right.

SMITH: Phil Stohr wants Rick Keimig to call him and Phil Stohr says Keimis is over at Unit 1.

BETTENHAUSEN: We'll check it out.

SMITH: And Phil Stohr's phone number that he wants Rick Keimig to call him on is 367-0511.

BAUNACK: I've got it.

Side 2 - Tape #19

GAGLIARDO: (Time check is now 9:53 p.m.? - starting a new tape)

HQ: The temperature pressure in the pressurizer according to out statement - they have a bubble.

GAGLIARDO: Don't have a level yet, huh?

BAUNACK: No.

GAGLIARDO: I'd think we'd need to draw down the level - with the letdown and makeup - they ought to do that pretty quick.

BAUNACK: Okay. Well they haven't really changed the letdown and makeup - there's still a 33 gpm distance.

GAGLIARDO: Okay.

BAUNACK: So the level should be coming down. Like you say, they probably do have a bubble in there but it's probably above the level indication.

GAGLIARDO: Okay. That's what we think.

BAUNACK: I just heard them say they have their level.

GAGLIARDO: Please?

BAUNACK: I just heard them say they have a level.

(Time check 2205)

(Time check 2020)

BAUNACK: 955 - pressurizer temperature is 339.

GAGLIARDO: 339.

BAUNACK: Yeah - but the 300 degrees in the primary system is just about right for the corresponding pressure to put on decay heat - so they're going to try spraying shortly to try and knock the pressure down.

GAGLIARDO: Okay.

BAUNACK: So after maybe a half hour or so we'll get a feel for how long it's going to take to get the pressure down.

HAVERKAMP: Walt, DOn Haverkamp. May we have the numbers again?

BAUNACK: 300 on the T_c.

HAVERKAMP: Okay.

BAUNACK: 955 on the pressurizer pressure; and 339 on pressurizer temperature.

HAVERKAMP: 339? That's a significant change.

BAUNACK: Well, 337 was the last one.

HAVERKAMP: I thought it was 537?

BAUNACK: Oh, 537 - 539 that's what it is.

HAVERKAMP: 539?

BAUNACK: Right.

GAGLIARDO: Walt?

BAUNACK: Yeah.

GAGLIARDO: What's the level on the pressurizer?

BAUNACK: It's pretty high - it's pretty well up ther - I don't know whether I should mention it it or not, but I'd say say about 90% up on the gauge.

GAGLIARDO: Okay Walt. I've got a request here - as you can, not the primary omission but as you can, get the sequence of events leading to the occurrence and up to approximately 8 a.m. this morning.

BAUNACK: Yeah. That's going to be difficulty - you know they had set up a team here to try and establish that. They want to try and get it by 8 o'clock in the morning to have some kind of a scenario ready. So that's almost impossible to get a good handle on that until tomorrow morning. You know the people involved in getting that information are just too busy.

GAGLIARDO: Okay.

BAUNACK: They suspect they got some water in the air line you know, a couple of valves screwed up as a result of those problems, the feed pump tripped which gave them a turbine trip which is followed by a reactor trip on high pressure - and that took place in what they say 30 seconds.

GAGLIARDO: Okay. Feedwater problem - they got a feedwater trip - they got....

BAUNACK: As a result of the feedwater system problem, the feed pump tripped which gave them a turbine trip, which in turn gave them a reactor trip from high pressure - and the time they figured is 30

seconds. So emergency feed came on as a result they've got their feed pumps tripping so then here they figure the relief valves on the steam generator probably lifted.

GAGLIARDO: Would you repeat that? That last one.

BAUNACK: The relief valves on the steam generators lifted - they think it had, okay.

GAGLIARDO: Right.

BAUNACK: This tended to cooldown the primary system - and then within about 2 minutes - they got a safety injection.

GAGLIARDO: Come in again with that.

BAUNACK: About 2 minutes. So this came about as a result of cold water in the steam generators - the relief valves lifting and also they say the electromatic relief valve on the pressurizer lifted, okay?

GAGLIARDO: Okay. Let's go from 2 minutes, ECCS actuation and then what?

BAUNACK: Okay, then this actuated from low pressure, the low pressure coming down as a result of the feedwater going in, relife valves lifting, and also they figure on the electromatic on the pressurizer lifted, whether the electromatic on the pressurizer reseated properly nobody seems to know. They also blew the rupture disc on the quench tanks so they pressurized that pretty good, that blows around 200 and some thousand. Maybe as a result of that back pressure, the valves didn't work right, but one way or another - they relieved quite a bit through the electromatic, okay.

GAGLIARDO: Okay. Just a second... Do you know when they lost their pressurizer level, was that when the rupture disc went?

BAUNACK: Well, there's nothing real clear in there right now. Within about 8 minutes, they were down to 1300 pounds, and the pressurizer went full, which it should not have done as the system cools down, the pressurizer level should have come down too. So, I think when they lost the pressure, they - that was the pressurizer in the reactor effectively - and maybe the reactor the hottest part in the core.

GAGLIARDO: In 8 minutes they lost the pressure? Is that what you said?

BAUNACK: Within the 8 minutes it was down to about 1300 pounds - so they are assuming that they formed steam in the reactor, right? It

went out into the hot leg - perhaps it pushed the water up into the pressurizer because the pressurizer being vented by the electromatic relief valve.

GAGLIARDO: It probably lifted with the pressurizer relief valve on high pressure. The electromatic relief valve that lifted - did it lift at the same time that the pressurizer relief valve lifted?

BAUNACK: Well, the electromatic is the pressurizer relief valve.

GAGLIARDO: Okay, but you said...

BAUNACK: The relief valve on the steam generator also lifted.

GAGLIARDO: At the same time?

BAUNACK: Well, about... This is just talking to people - we're not getting this off charts or anything.

GAGLIARDO: I understand that.

BAUNACK: From memory.

GAGLIARDO: I understand that. We told you before hand that we weren't concerned with the timing.

BAUNACK: The actual pressure they figure they got in the primary system is 2255, which I think is why electromatic relief valve lifted.

GAGLIARDO: Say again that pressure Walt?

BAUNACK: 2255.

GAGLIARDO: Thank you. What was the 25 -- 2255?

BAUNACK: Maximum pressure in the primary system. You know, this is from people's memory now - we'll have to check - these numbers might change.

GAGLIARDO: I understand that, Walt - this is just preliminary information.

BAUNACK: Right. As a result of the pressurizer going sold they secured safety injection.

GAGLIARDO: Do you have any idea, Walt, when after the safety injection came on - I understand they were manually secured. Do you have any idea of the time - a few minutes or a long time?

BAUNACK: Well, the man who was here at the time has gone home - and there is no way to find out what the time was - but I don't think they got much water in, if any. Because they secured it on the pressurizer

filling up. Or apparently, filling up. But that's basically how the vapor binding and bubbles got established in the steam generator.

GAGLIARDO: Okay. Let me ask you one more question. The pressurizer relief valve, you got an electromatic relief valve, and don't you have an motor relief valve on the pressurizer?

BAUNACK: There's a safety valve on there but there's no way of telling whether they lifted or not.

GAGLIARDO: Okay, so the only thing we know is the electromatic relief valve.

BAUNACK: Right. The higher activity - the vapor - what little pressure they got in the containment - 4.2 pounds they said was the maximum containment pressure - but that's probably came as a result of the ruptured disc blowing on the quench tank.

WHITE: Kermit?

WHITT: Yes.

BRUNNER: This is Brunner. Got some feed by the radio of the Governor's conference. Gallina, our man was apparently on the radio for thirty minutes, Abraham not here but heard it, called back to say the press

is quite, quite happy that now they're getting straight answers and Gallina came across very, very well and very smooth.

WHITT: Okay Eldon. Appreciate that little bit of information. Everyone here has it now.

BRUNNER: And we just had two TV stations here and they left.

WHITT: Okay. They had TV cameras taking pictures of you all?

BRUNNER: Strasma - here - yeah. Channel 3 and Channel 10. NBC - CBS - Philadelphia, local channels.

WHITT: Okay Eldon. Is that all you had Eldon?

BRUNNER: Yes.

WHITT: Do we still have Walt on the phone?

BAUNACK: Yeah, I'm still here.

WHITT: Okay, the question is. As you know it, did the steam valve and the electromatic valve both lift as a result of the transient?

BAUNACK: We don't know that - there's no way of telling right now.

WHITT: Okay. That's fine. Walt, we won't pursue that anymore. How about the primary system, have you heard the latest information on that?

BAUNACK: No, I've been on the phone with you, but I'll go back out, it wasn't changing very much the last time I was out there. The level is coming down very slowly in the pressurizer and they're waiting for the level to come down some before they spray - because the last time they sprayed the level came right back up.

WHITT: Right. But the level was probably going down.

Side 1 - Tape #20

GAGLIARDO: Would you ask Boyce Grier to call Harry Thornburg at the Incident Response Center here at Headquarters?

BETTENHAUSEN: Will do.

GAGLIARDO: You might want to inquire about - you know - they've got a problem with loss of letdown flow, and they stopped their cooldown - that's only going to make the levels in the pressurizer worse - have they considered the possibility that if they continue to cooldown, that you will have the shrinkage of your primary coolant, and you will have a subsequeny loss of level, so that if they increase their steaming rate to increase their cooldown, it might help them our of this situation.

SMITH: I've been here too long and I'm getting confused. Let me get Walt.

GAGLIARDO: Okay.

SMITH: Go through this with Walt.

GAGLIARDO: Okay.

BAUNACK: Jim.

GAGLIARDO: Hey Walt - this is Jim - we've been talking - you know one of the concerns we have right now is that you've lost the letdown flow -

BAUNACK: Yeah.

GAGLIARDO: And with the stop of the cooldown and you're continuing to charge, that's making you worse as far as your pressurizer level is concerned. Have they considered the fact - you know - if they increase the steaming rate now and increased your cooldown rate, that that shrinkage of your water in the primary coolant system will help them out as far as pressurizer level is concerned.

BAUNACK: They're steaming as hard as they can - I think they are down to about 50 or 60 pounds in the steam generator - so you know you're not getting much holdup.

GAGLIARDO: Okay.

BAUNACK: So they're steaming as hard as they can.

GAGLIARDO: They are steaming as hard as they can.

BAUNACK: Yeah.

GAGLIARDO: What kind of levels do you have in the steam generator now?

BAUNACK: I don't know - but it's been maintaining pretty much steady - there's been no problems with the steam generator levels - and the pressure has just been hanging right in there at 50 pounds - but they're driving all the steam they can out of it. You know they're only steaming one steam generator right?

GAGLIARDO: That's correct.

BAUNACK: So, the cooldown from that source is about all they can take. The letdown, you know, if they really ever get it much slower it will block orifice at this low pressure - the letdown flow control valve is an air operated valve - and one of the initial problems that started this is was an air operated valves on the polishers so there might be water in that control system.

GAGLIARDO: Okay.

BAUNACK: I think they're looking around for some manual valves to open - but I think they're down in the high activity area - so that's whats delaying things.

GAGLIARDO: Okay.

BAUNACK: The last numbers I got was essentially the same as the numbers I had before - they are holding essentially steady.

BETTENHAUSEN: You want to give them to us for the record Walt?

BAUNACK: Pardon me?

BETTENHAUSEN: You want to read them to us for the record?

BAUNACK: Okay - 296 for T_c; pressurizer pressure 978 - it went up a little bit; pressurizer temperature 546.

GAGLIARDO: What is your pressurizer level?

BAUNACK: I don't know but it's I'd say about 85% or something like that. You know, it's way up near the top.

GAGLIARDO Do they still have the heaters on?

BAUNACK: No. The last time I went out there they were securing the heaters. They still think that the couple of degrees there is just residual stuff.

GAGLIARDO: Okay.

BAUNACK: The main concern now is trying to minimize the release - apparently they're still releasing - so they're looking into now another possible source for the leakage out of the containment.

GAGLIARDO: They think they have some leakage out of containment?

BAUNACK: No. They're trying to think of every possible release path - you know it might just be coming off of that water that's in the Aux Building - you know they're just going round-and-round, trying to figure out what to do to stop the leakage.

GAGLIARDO: Okay.

BAUNACK: So, if anything develops, we'll certainly let you know, but right now, everything is at a standstill.

GAGLIARDO: All right. Walt? Smitty? Do we have anybody here from the site? Anybody from the site? Anybody from the site on the phone?

SMITH: Yeah.

GAGLIARDO: Who is this, Smitty?

SMITH: Yeah.

GAGLIARDO: Smitty, I've got a question for you here - just a minute - let me get it straight here - Okay - Smitty?

SMITH: Yeah.

GAGLIARDO: If you can get a hold of Gilbert drawing - C302712 - the reactor building spray system - we have a question that may give us something to propose.

SMITH: C302712?

GAGLIARDO: Right.

HAVERKAMP: Say, this is Don Haverkamp in Region I - a Gilbert drawing would most likely be a Unit 1 drawing.

GAGLIARDO: Yes, it is a Unit 1 drawing.

SMITH: It's a Unit 1 drawing?

HAVERKAMP: It will not be identical although similar.

SMITH: The number is C302712.

HAVERKAMP: The spray system is not the same.

SMITH: What?

HAVERKAMP: The system will not be identical - do you have a Unit 2 drawing - if...

GAGLIARDO: The reactor building spray system drawing for Unit 2.

SMITH: Do you have the number on it? Hello.

BETTENHAUSEN: We're looking Ray, we're looking.

HAVERKAMP: This is a Burns and Roe Drawing No. 2034 - you'll have a set of - there are prints available - not too far from where you are. What's the question you have on the spray system?

GAGLIARDO: Smitty, can you put Walt on the line?

SMITH: Just a minute.

GAGLIARDO: Hey Walt?

BAUNACK: Yeah.

GAGLIARDO: Okay. The thing that we're looking at here is that on the reactor building spray system for the Unit 1 and that's a Unit 1 drawing we're looking at - it shows four lines - one inche lines that are blank flanged - that are connected to the suction of the reactor building spray pump. The question is if Unit 2 have the similar arrangement - has the licensee considered the possibility that they could rig a temporary hose connection from the Auxiliary Building sump, into those connections, and pump that water back into the containment building through that spray system?

BAUNACK: Well, I talked to them about that - they figure there are probably several different routes they can take to eventually route water back in containment - right now, I tell you, they're not convinced that they have stopped the leak. Okay? Now they're still releasing, right, and they feel the water has been laying there for this long and it probably shouldn't be releasing that much any more - so they are pursuing the possibilities of still adding water - releasing water.

GAGLIARDO: Still leaking water into the Aux Building?

BAUNACK: Maybe - that is a possibility, right? The release rate seems to indicate something like that.

GAGLIARDO: Okay.

BAUNACK: So that is what they're doing right now they're thinking maybe this problem with the letdown is related to it - I think they are currently out there securing letdown. So everything is up in the air right now. They are not really considering pumping it back into the containment - although they feel there are probably some lines that they could line up and pump it back in.....

Side 2 - Tape #20

BAUNACK: Maybe they will pump it back.

GAGLIARDO: Can you find out what the status is of the - as far as the cooldown of the plant - what's happening with the pressurizer level?

BAUNACKL Okay - the pressurizer level seems to be comding down very slowly along with the primary system cooldown - right? There's still a slight cooldown rate on it - but they're not establishing any letdown flow - right now they're thinking maybe that letdown flow control valve is enatic or something and lifting a relief valve just before the flow orifice and maybe the release is coming through that path.

GAGLIARDO: Okay.

BAUNACK: So that's apparently what they're working on now. The monitor that's on that relief valve vent header is pegged - that's because of high activity probably there already - so - you know - it's useless to them.

CAPHTON: Hey Walt?

BAUNACK: Yeah.

CAPHTON: What's the status of the pressurizer heaters?

BAUNACK: I think they turned them back on because they weren't sure whether they were still getting another bubble in there or not - the last time I was out there, they were turning the heaters back on again - they might've turned them off since - about ten minutes ago, they turned them back on.

GAGLIARDO: What's the status, Walt of the steam generator level?

BAUNACK: I don't know - but as far as I know, the steam generator levels are no problem - you know I think they are within their normal range. They are continuously steaming that one steam generator as hard as they can.

GAGLIARDO: All right - I guess the question is are the steam generator levels high to you know - affect maximum heat exchange or are they riding with the levels low?

BAUNACK: I'll go and see the next time I'm out there. Do you think that would make that much difference?

GAGLIARDO: It might.

BAUNACK: At any rate, the current interest is in minimizing that release - and they are trying to tie it in with the letdown - possibly - you know that's one possibility.

GAGLIARDO: Okay.

BAUNACK: Until - you know - their concern is in that area rather than a rapid cooldown, okay?

GAGLIARDO: Hold on a minutes Walt I'm getting some other instructions here - just a minute. One of the pieces of information that we have received here from the people here is that they should recognize that the coolant in the Aux Building is going to continue to offgas for days - and so the fact that they haven't seen a decrease in activity level - does not necessarily mean that the release is continuing or that they still have a release into the building.

BAUNACK: Okay.

GAGLIARDO: Have they recognized that?

BAUNACK: Okay - I think maybe not. You know, I'll pass that on to them, certainly. So you figure it will offgas pretty much at a steady rate?

GAGLIARDO: The people here think that the offgassing will be large at first but it will continue for a number of days and recognize that the half-lives especially if something like the Xenon is very large, so that you might not expect to see that activyt level decrease even though your release has stopped to the building. In other words, just the release from the water that you have in the building already.

BAUNACK: Yeah, all right, I'll oass that on to them - I'll go over there right now.

GAGLIARDO: Okay.

CAPHTON: Now, Smitty? Smitty?

BAUNACK: Pressurizer pressure is 1010.

GAGLIARDO: 1010?

BAUNACK: Yeah. T_{cold} is 292.

GAGLIARDO: 292.

BAUNACK: Pressurizer temperature is 550 - they're making progress in the wrong direction.

GAGLIARDO: How about levels in the pressurizer and the steam generator?

BAUNACK: Okay. I didn't get the steam generator - the pressurizer level, I could see that - that's still about 80, 85% - something like that - pretty well up there. Still haven't got any letdown established.

GAGLIARDO: Okay.

BAUNACK: I'll go out and see the steam generator and I'll be right back.

GAGLIARDO: Okay.

(Time check 0005 - 3/29/79)

SMITH: Are very high now - they're up to around 400 inches.

GAGLIARDO: Say that again?

SMITH: I say in the steam generator now, they tell me that they're up very high, they're up to about 400 inches.

GAGLIARDO: Okay. Have they considered taking it solid to enhance their cooldown?

SMITH: I asked them that but I haven't gotten an answer yet.

GAGLIARDO: Okay.

BAUNACK: Because with the reactor coolant pump, you always got water going in through the seals, right? But they're not making much progress right now - and the one valve they wanted to try and get at, people couldn't get in even with a Scott Air Pack or - the radiation levels in the area were pretty high - and now they're starting to get a little concerned about - if they go out to decay heat - you know - they're going to raise the radiation levels some more in the Aux Building - by virtually letting the hot primary water - I don't think they've gotten a good primary sample yet either - so this really don't know where they stard there, okay? So things are going through an interesting phase right now. We'll keeo you updated as things go along - but bear in mind that things are moving very slowly.

GAGLIARDO: Okay, just a minute Walt. Do you have anything about the water on the Aux Building floor?

BAUNACK: Just that they're having discussions and they're going to make sure the right people here by 8 o'clock in the morning to be able to talk about it - that's as far as they'ver gone in the control room.

GAGLIARDO: Right now you don't anticipate that they're going to do anything on that until 8 in the morning.

BAUNACK: I would say that's true - but bear in mind that there are a number of different areas where people are making plans - you know - this is only one of them.

GAGLIARDO: Right.

BAUNACK: So I would think that's essentially true - from the information that I can pick up here. This room right here is obviously concerned with the plant, right - not so much with getting rid of the water and things like that.

GAGLIARDO: Right.

BAUNACK: That's going to take some offsite effort and the plant doesn't have the capability to handle on its own - so it's going to

mean getting trucks, extra people, and whatever to get rid of it - which you can't possible do from the control room.

GAGLIARDO: Okay, keep me cut on the progress of their efforst in establishing the letdown flow.

BAUNACK: All right, will do.

GAGLIARDO: The cooldown rate, the reactor cooldown system, and shrink the water the brings the level down and the pressurizer will enable you to then spray down and get your pressure under control. The other choice they have would be to open the electromatic relief for a short period of time and draw that pressure which would enable them to get on RHR.

BAUNACK: Yeah, but I think you will have to blow an awful lot out that relief valve because you got the bubble in there now - you might have to go solid before you do that. But I think they're a little bit concerned about maybe re-establishing a bubble in the steam generator.

GAGLIARDO: About what?

BAUNACK: Re-establishing a bubble either in the reactor head or the steam generator. That was the reason they had left the heaters on as long as they did.

GAGLIARDO: You don't think that a limited blowdown of about a minute would do the trick in knocking the pressure down?

BAUNACK: I wouldn't think so - quite a good size steam spray system - you know they haven't come to that point yet - they're still going down and try to open up some more valves on the letdown lines.

GAGLIARDO: It would seem that they're running out of time.

BAUNACK: Well, you know, it coming up very slowly - so, you know - it's cause for concern but not immediate cause for concern.

GAGLIARDO: Now, are you saying that the man they had go in there with Scott Air Pack and to open that second bypass valve was unsuccessful in establishing wet downflow?

BAUNACK: Right.

GAGLIARDO: He got the valve open and then....

BAUNACK: No, no, he didn't get the valve open because he couldn't get to the valve.

GAGLIARDO: He couldn't get to the valve?

BAUNACK: Right. So now they've got another valve in mind which they're on their way down to open.

GAGLIARDO: Okay.

BAUNACK: So now you know essentially as much as I do, okay?

GAGLIARDO: All right. Keep us cut in as things develop.

BAUNACK: Pressurizer pressure 1103; T_{cold} 290; pressurizer temperature 553.

GAGLIARDO: How about level?

BAUNACK: I think about 90% - you know it's slowly creeping up. Okay.

GAGLIARDO: Okay.

SMITH: They took an air sample and they are running it now and they're going to let us know if the activity is going up but they haven't told us anything yet.

GALIARDO: Okay.

Side 1 - Tape #21

RAYMOND: The pressure is 1036.

NRC:HQ: 1036.

RAYMOND: Loop A, T - inlet 287.5.

HQ: Okay.

RAYMOND: Pressurizer level 385 inches and decreasing.

HQ: 385 and decreasing?

RAYMOND: Correct. Pressurizer temperature 549. Loop B T - inlet 287.6. Incore thermocouple 569.2. Steam Generator "A" pressure is 36 psi. Steam Generator "B" is 40 psi.

HQ: Say that one again, 43?

RAYMOND: They are sitting around 40 inches level full range indications on the steam generator. The last number on that full range indication is around 60 inches. They're sitting in there now with feedwater going into the "A" generator and steaming through a bypass valve back to the condenser. Okay, so they have a constant makeup with relatively

cold water to the generator and they are pulling steam off of it. But still they'd rather go that way rather than try to fill up the generator because it will essentially kind of be plugging it. If you run water into it you won't get a cooldown on the RCS - but then you have to sit there and wait for the steam generator level to come back down - you won't be able to get more feedwater back into it.

HQ: No, I think we're saying go solid on the steam generator?

RAYMOND: Say that again?

HQ: I think what we were questioning is why they wouldn't go solid on the steam generators.

RAYMOND: I think they feel that they are better of by being able to steam it - because if it went solid you won't be able to steam anymore.

HQ: Okay. Did you hear that one Bill?

RAYMOND: No I didn't.

HQ: They say, yes we agree with that but they don't know what the problem is with that.

RAYMOND: With what?

HQ: With not steaming it.

RAYMOND: Without steaming? I guess they feel they get more heat out of the loops this way.

HQ: _____.

Yeah, that's what he saying. (To NRC personnel at HQ).

HQ: Bill, one other thing, on this incore temperature measurement, there is some question on that.

RAYMOND: There are thermocouples that are part of the incore detectors.

HQ: We understand that but this reading you're getting, did you get a map of that, is this one reading, is it an average? What are you giving us?

RAYMOND: I have to look at ... basically what I'm doing is pulling off parameters off the plant computer - CRT display - operator group - I have to look at what that point ID is and find out what it is.

HQ: Hang on one second - just a second.

REGION I: Bill, while you're waiting - Region I - could you tell us about the sample line being bled off the makeup tank - is that primary coolant sample lines?

RAYMOND: Right. They're still working on that change though.

RI: Okay, they haven't started that yet?

RAYMOND: Right.

RI: Okay.

RAYMOND: Basically they're getting letdown through that relief valve going back to the bleed holdup tanks.

RI: Right.

RAYMOND: Hey listen, they've come back to us with a request on whatever help if we could do - you know give them. They're in the process - they're in a position where they are at 21 ft. in the boron water storage tank, of water left, they would like to makeup to that tank. They've got demin water, boric acid here onsite but in order for them to do the exchange and makeup to the tank, you know, the people would

be getting some radiation exposure. They're wondering if we have any contact with other plants that might be able to help them out by supplying the trucks - of this boric acid, or demin water borated to 2270 ppm. The idea is to get the trucks here onsite, tie into the tank, pump in it and that would be it.

RI: Wait a minute Bill, they want a truck of borated water at 2270 ppm?

RAYMOND: Right. This is, you know, a contingency, to get water back into the boric water storage tanks.

RI: We'll check on it.

RAYMOND: Now I don't know what they've done, they may be thinking along the same lines.

RI: Have they made calls, do you know?

RAYMOND: I understood that they were pursuing it I don't know whether they've called or how far they've gotten.

RI: Okay, thank you.

HQ: Are you going to pick that up Region I?

RI: Region I will pick that up.

RAYMOND: Mike in answer to your questions on the heaters, they have all of them back operable.

HQ: All heaters are operable?

RAYMOND: Operable. As I understand it now they corrected a ground fault in one of the banks.

HQ: Okay. And what's on?

RAYMOND: None.

HQ: Let's get back to the incore thermocouples. (Mike Wilbur at NRC:HQ)

RAYMOND: Right.

HQ: Can you get a map - is there a way of getting a map on that?

RAYMOND: I'll look into it, Mike - I think there's a ... as I remember they have a recorder in the back panel - with individual readouts -

I'll check into it. Now what's coming through the computer, I doubt if it's an average. I think they just select one of the incore probe, take the thermocouple associated with it.

HQ: Okay. Now, you want him to look at the range while he's back there (to HQ personnel). Can you get the map and bring it out or do you have to take numbers off or what?

RAYMOND: If I can get a map from the computer, I'll bring the map over to this phone and read off the numbers to you.

HQ: Okay.

RAYMOND: If I have to, I'll take the numbers manually off the recorder if there's one available. Let me see what the situation is.

HQ: Okay, if you can get the map, fine, otherwise, come back and tell us what you can get, okay?

RAYMOND: Okay. So you had some questions on heaters?

HQ: No, I think you got the answer.

RAYMOND: Anything else outstanding? Okay, they're not spraying yet, of course, because they're still waiting for the pressurizer level to

come down - as soon as that gets down around 300 inches or so they will probably start bringing in some spray that will help temperature and pressure come down. Anything else? If there's anything else, I'll get back to you.

HQ: Okay, in about a half hour?

RAYMOND: Yeah.

HQ: Okay. Hello. (unintelligble conversation in background).

RAYMOND: I see one here at 207, that's 11L which is in the second core flow region, by second flow region, you take a core grid and you kind of draw a square around the center assemblies, call that core region I, then go about two-thirds of the way should be the periphery of the core, just draw a circle around those points and that's core region II and core flow region III will be periphery assemblies. The point is, Mike, in any case, the numbers go from as low as 207 to as high as I guess 617. Now the higher numbers are questionable. Talking a while ago with control operators since the nuclear engineers have gone home, getting some sleep before coming in again in the morning, they indicate that the information passed onto the operators from their engineering people is that some of these readings are questionable and I presume they were damaged through the transient. Presumably all thermocouples were working prior to getting into this evolution.

HQ: Okay, and what's the location of the 617° reading?

RAYMOND: 617, core location is 11K. Do you have a core grid there?

HQ: We don't have any coordinates on it.

RAYMOND: Say that again?

HQ: I don't have any coordinates on it.

RAYMOND: Okay. Well what arrangement do you have down at Headquaters?

HQ: Figure 4.2-4 out of the FSAR.

RAYMOND: 4.2-4. All right, let me continue to plot it, let me look at that figure and let me plot this out, we'll be able to talk about them then, okay?

HQ: Okay. How about the steam generator levels?

RAYMOND: They're still maintaining around 40 inches on the full rnage.

HQ: They're still steaming on the bypass on the steam generator "A"?

RAYMOND: Correct. It's coming down slowly but it's coming down.

HQ: Okay. Pressurizer heaters still secured?

RAMOND: Yes.

HQ: Okay. I have a few more questions before you go.

RAYMOND: Okay. Hold on, let me.... Whose talking?

HQ: This is Ed Blackwood.

RAYMOND: Hey Ed, how have you been?

HQ: Fine. Okay. Regarding the Auxiliary Building ventilation, what's the current status right now? Is it still secured?

RAYMOND: I have to check, a half hour or so, well, a half hour to 45 minutes ago I think they opened it up, but I'll check the current status.

HQ: Okay, and if you have....

RAYMOND: Wait a minute -- (to control room staff) Aux Building ventilation, is that still opened up?

HQ: Are they still ventilating the Aux Building as well as the Fuel Building?

RAYMOND: Okay, they're ventilating the Aux and Fuel Buildings.

TAPE #22

RAYMOND: I came in around one in the morning into the Unit 2 control room... Walt Baunack was telling me then they had just lost the letdown - but they were using the (unitelligible) at that time - so I presume it was some time before then - before one o'clock in the morning.

HQ: Okay, and when they lost letdown - let's see, how long has it been since they stopped dumping water on the Aux-Building floor.

RAYMOND: I'll look that up too.

RAYMOND: Anything else?

HQ: Back to the blled holdpu tank - the concern is how much longer they can stay in this mode before they fill this thing up?

RAYMOND: I'm with you...

HQ: Or however much level is left when - I think the time is more relevant than numbers as far as we're concerned. And the other thing is - the other big question is - whether or not...

RAYMOND: They can start spraying in the pressurizer.

HQ. Yeah, right - you know. [illegible] the basis for not at least trying it right now to see if they can control pressure without screwing up the inventory and causing uncontrollable pressurizer level.

RAYMOND: Okay - and you want to know what it would do to the steam flow out of the generator.

HQ: Right.

RAYMOND: Right.

RAYMOND: I'll get back to you.

(The time is now 03300 - 3/29/79)

HQ: Okay, we're still looking for some data -

RAYMOND: Okay, I've got some 445 reading.

HQ: 445 or 545?

RAYMOND: 545.

HQ: 545?

RAYMOND: Right. Pressurizer pressure is 957.

HQ: 957?

RAYMOND: Right. Loop "A" T-inlet, 285 degrees.

HQ: 285?

RAYMOND: The pressurizer level is about 350 inches.

HQ: 350.

RAYMOND: The pressurizer temperature is 542.

HQ: 542.

RAYMOND: The hoop "B" T-inlet was 285.

HQ: 285.

RAYMOND: Steam generator "A" pressure 83.

HQ: 83.

RAYMOND: Steam generator "B" is 38.

HQ: 38.

RAYMOND: Okay, I have some other things I check out that Ed was asking about.

HQ: Okay.

RAYMOND: It looks like at 2235, on 3/28, when they first started to notice a loss of letdown flow.

HQ: 2235?

RAYMOND: Right. And by 0024 and 3/29 letdown pre-fitter (unintelligable) that's when, you know, it was gone.

HQ: What was that time?

RAYMOND: 0024.

HQ: 0024 all flow was gone.

RAYMOND: Right. At that point I guess it started popping through that relief valve intermittantly on that letdown line.

HQ: Okay. Now, I've pumped a blank on when they stopped dumping water to the PAB floor.

HQ: You don't have any numbers on that.

RAYMOND: No, not at all - at least the people that I talked to right now in the Control Room don't have any idea as to what was overflowing and when it was stopped.

HQ: Okay.

RAYMOND: On the four bypass valve - they have two on the "A" generator and two on the "B" generator - nothing's happening on the B - on the A generator, both bypass valves are wide open - and they're pulling off as much heat as they possibly can on the secondary side.

HQ: They've got two bypass valves wide open.

RAYMOND: Right - 100%.

HQ: So that says you're cooling down at your max-rate.

RAYMOND: Right. I guess it's being monitored by that 285 degree steam temperature.

HQ: What's that again.

RAYMOND: 285 degree steam temperature. When you, ... in delta-T between the steam temperature and the condensor, it's getting smaller.

HQ: Okay.

RAYMOND: In regard to the bleed holdup tanks, I gave you some numbers earlier, right?

HQ: Yes.

RAYMOND: I want to correct one of those numbers.

HQ: Okay.

RAYMOND: On the 1A tank I told you 9.5 feet. Hang on a second, I've got to flip back here a little bit.

HQ: Okay, La you said 9.5.

RAYMOND: Yeah, I'm going to correct that, it should be 6.4.

HQ: 6.4.

RAYMOND: Right.

HQ: That's more space, right.

RAYMOND: That's more room, correct.

HQ: Okay.

RAYMOND: If you take the levels in A, B and C tanks - they still have on excess of 75,000 gallons.

HQ: How many?

RAYMOND: 75,000 gallons.

HQ: Okay, right now they've got capacity for 75,000 gallons.

RAYMOND: Right. And, other than what's coming out of that relief valve off the letdown line - they're not putting anything else in there for the moment.

HQ: That's what? Have you got any idea?

RAYMOND: Say again?

HQ: How much is that?

RAYMOND: Probably from the relief valve?

HQ: Yeah.

RAYMOND: It spikes up and is probably maybe 25 gpm, if it's that much.

HQ: Okay.

HQ: Yeah, we were interested in the spray - on status - what they've done?

RAYMOND: I don't think there's any change in status on that the last time I was out there they hadn't initiated any spray yet - they're still waiting to get it down, you know, further down range.

HQ: I think we got some questions here - the question is when they attempted to spray the level came up, right?

RAYMOND: Right.

HQ: And they're wondering did it - is it some kind of a transient - did it go bakc down?

RAYMOND: It did, okay? If you picture the down sloping curve, okay? Just draw that on your paper when you start spraying the level indications, just take a step increase.

HQ: Yeah.

RAYMOND: Give it 10% or whatever you want.

HQ: Okay.

RAYMOND: Shut the spray off and it will start decreasing with the same slope as prior to when you initiated the spray.

HQ: Okay.

RAYMOND: They did that two times in a row, okay? And they got an increases both times.

HQ: Do you know how long they sprayed?

RAYMOND: I'll have to go back out and look at the recorder. Shall I get the times?

RAYMOND: It's going to be kind of hard.

HQ: The spray duration if you can get it.

RAYMOND: Yeah.

RAYMOND: Anything else?

HQ (to HQ personnel): Yeah, but what he is saying, you get an off-set and then it comes down at the same slop that your coming down before - it was a transient - this stroke should be steeper here I would think. That would still made th slop steeper, wouldn't it? Somehow you should try - if it's in transient, you should try to get back close to that curve. Okay, any other questions?

HQ: They're talking about a reference light flash on the pressurizer level - why are they considering that?

RAYMOND: Reference light flash on the pressurizer level?

HQ: The reference light flash on your pressurizer level, yeah, right.

RAYMOND: Okay, I'll have to look at some prints to see where that tap-off comes.

HQ: Okay.

RAYMOND: I'll look into it.

HQ: Okay.

RAYMOND: Are you interested in this data then?

HQ: Pardon.

RAYMOND: Are you interested in thermocouple data?

HQ: Can you give me a quadrant or something to work from?

RAYMOND: Yeah.

HQ: Okay.

RAYMOND: Hey, I looked at that Figure 424.

HQ: Yeah.

RAYMOND: I think if you pull out Figure 432...

HQ: 432?

RAYMOND: Yeah, I think it would be better.

HQ: Okay, I don't have one right here but is it the same thing?

RAYMOND: That's basically just a core grid that doesn't have - doesn't show...

HQ: Okay, I think I've got one of those in from of me - its 784 - it's called "Incore Detector Locations."

RAYMOND: Is it big enough to write on? Can you write some numbers down?

HQ: If you go real slow and I write real small.

RAYMOND: Okay.

HQ: How many are you goint to give me?

RAYMOND: Okay, is this Mike Wilbur back on again?

HQ: Hang on - I think we've got one here - maybe we can get a copy of it right now.

RAYMOND: 432? It's the same thing but it's bigger - it gives you more room to write on.

HQ: There's no coordinates on it.

RAYMOND: Let's see, I'll tell you how to label it.

HQ: Okay.

HQ: We're going to get some copies of it, Bill, okay?

RAYMOND: All right.

RAYMOND: Okay, listen, when I talked with Keimig he indicated that Region I wanted update at 7 o'clock.

HQ: Yeah.

RAYMOND: What information other than what I have been giving do they want?

HQ: Well, you want to talk to the Region not me, right?

RAYMOND: Okay - I understand this is for the Udall briefing at 11 or 10.

RAYMOND: Do you still have the Region on the phone?

REGION I: Yeah - the Region I here - as I understood it, the 7 o'clock to 7:30 update was going to be a reading from HQ's of the information that was being prepared to brief Senator Udall this morning and that the Region and the site would comment upon that. That HQ's was preparing a briefing paper

for the Senator Udall briefing that will be done to the Commissioners first and to Senator Udall about 11 o'clock.

RAYMOND: Okay, what do you want from me?

REGION I: Just to standby to listen when it comes over.

RAYMOND: Say again?

REGION I: Just listen and comment when they make it up.

HQ: Okay, I guess we're...

RAYMOND: Okay, you just want me on the phone.

REGION I: Yes.

RAYMOND: While we're talking and addressing this briefing paper.

REGION I: Yes.

RAYMOND: I'm with you.

HQ: Okay, I have one of those plot plans in front of me.

RAYMOND: Okay.

HQ: Are you there Bill?

RAYMOND: Start with the first column on the top of the page.

HQ: First column?

RAYMOND: Yeah - first column, first row, going from left to right - you got 1, 2, 3, 4, 5 blocks there.

HQ: Yeah, I got it.

RAYMOND: Label that A.

HQ: A.

RAYMOND: Okay and go all the way down - moving - you know - counterclockwise to the left Label B, C, D, E.

HQ: Going to the left?

RAYMOND: Right.

HQ: Okay - I got two assemblies lef, is that correct? Then A...

RAYMOND: Well, B has got two assemblies - okay - you looking at colums - right - it's got 4 more looking at rows, right?

HQ: Pardon?

RAYMOND: B has got four more assemblies if you are looking across - from left to right at the rows.

HQ: Okay - you want me to label rows for this sign.

RAYMOND: Right.

HQ: Okay - A, B, C, then D and E are the same length.

RAYMOND: Right.

HQ: Okay.

RAYMOND: Now your left most assemblies is an F, G, H.

HQ: Yeah.

RAYMOND: Skip to K, L.

HQ: No J?

RAYMOND: No J or I.

HQ: Okay - F, G, H, K, L.

RAYMOND: Continuing down to M, N...

HQ: Okay.

RAYMOND: O, P and then R.

HQ: Okay, I'm with you.

RAYMOND: Now, starting from the left most column - cross some lines there - you know where you labeled N and M on those rows...

HQ: I'm sorry, I didn't hear you.

RAYMOND: You know where you labeled M and N?

HQ: Yes.

RAYMOND: Just draw yourself some lines - starting with - you know - with a (unintelligable), just extend it down so you can label the column across the bottom of the page.

HQ: Okay, I got you.

RAYMOND: Label those 1 thru 15.

HQ: 1 thru 15, okay, I'll do a check on this for you.

RAYMOND: 298.

HQ: Wait a minute - I'm sorry - I got a problem here. Was that 298?

RAYMOND: 298.

HQ: Okay, I'm with you.

RAYMOND: D5.

HQ: That was D5.

RAYMOND: I'm sorry - D10 is 568.

HQ: D10 is how much?

RAYMOND: 568.

HQ: 568.

RAYMOND: D14 is 294.

HQ: 294.

HQ: You only have three readings on the D?

RAYMOND: That is correct.

HQ: Okay.

RAYMOND: One reading is E7, 580.

HQ: What was it?

RAYMOND: 580.

HQ: Okay.