Official Transcript of Proceedings

NUCLEAR REGULATORY COMMISSION

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RST Podium Audio File

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UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

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JAPAN'S FUKUSHIMA DAIICHI

RST PODIUM AUDIO FILES

+ + + + +

WEDNESDAY

MARCH 23, 2011

+ + + + +

(CONFERENCE CALL INITIATED)

(01 Track 01)

ERIC THOMAS: Reactor Safety Team, Eric Thomas.

AMANAPUR: This is Amanapur (phonetic), with USFJ, or U.S. Forces, Japan

ERIC THOMAS: Yes.

AMANAPUR: And we sent an email a little while ago trying to get some information on fresh water supplies. Because we were basically looking at procuring foragers and trucks to provide for the Ministry of Defense.

ERIC THOMAS: Okay.

AMANAPUR: We're just kind of curious to see if you guys got the, had taken a look at the questions we had. And they were basically going to use that to decide what size of the trucks we needed, or possible --

ERIC THOMAS: Ah, okay. I see the email. How the seawater's being inserted into the reactors, okay.

AMANAPUR: Yes, that's it for around --

ERIC THOMAS: Yes. So what volume of water do we need?

AMANAPUR: Yes. Because we've had reports, and I don't know what you guys have had. But that they're, through Reactor II there's 18 tons per hour. It seems unreasonably high. But, I mean, I don't have any frame of reference.

ERIC THOMAS: That's not high at all.

AMANAPUR: It's not? All right.

ERIC THOMAS: Well I'm just trying to think. We did a conversion the other night on, what is it, one ton is -- I've got to convert that gallons per minute. Hold on a second.

Eighteen tons per hour, 16 minutes. A ton is 2,000 pounds, that's eight pounds per gallon. So that's, what is that, one, four -- Yes, that's 500 gallons per minute. That's not unreasonable. These things take a lot of water.

AMANAPUR: Yes. And that was of course the first question, is how much water, what is the water volume of the suppression pool and the --

ERIC THOMAS: Yes. The suppression pool is on the order of -- Hold on a second. Hey, Jeff, volume of the suppression pool?

JEFF: Volume in the suppression pool?

ERIC THOMAS: Like a million gallons or something like that? It's like a million gallons isn't

it? Or is it?

JEFF: (Inaudible).

ERIC THOMAS: Smaller?

JEFF: (Inaudible).

ERIC THOMAS: Okay. Not the spent fuel pool, the torus.

JEFF: Oh, the torus?

ERIC THOMAS: I've got a guy --

JEFF: Eight hundred thousand gallons.

ERIC THOMAS: Eight hundred thousand gallons. Yes. The torus is 800,000 gallons.

AMANAPUR: All right.

ERIC THOMAS: Let me take a look at these, and I'll get back to you, okay?

AMANAPUR: Okay. Yes, so you kind of see where we're going is, how much water do we need to try to start providing it, which is a consistent flow rate of 18 tons per hour.

ERIC THOMAS: Right. Because we're also hearing that TEPCO is trying to get a barge in there.

AMANAPUR: And that's what we're looking at providing.

ERIC THOMAS: Okay. So you're looking at barge supply also?

AMANAPUR: Yes. I think it might be a dual

effort. But it doesn't sound like one barge is going to be --

ERIC THOMAS: No.

AMANAPUR: -- large duty water volume that we --

ERIC THOMAS: Right. Right, right, right. Okay. Let me get a couple of folks working on this. And I'll just reply to your email.

AMANAPUR: All right. Thank you, sir, I appreciate it.

ERIC THOMAS: Thank you. Bye.

(CONFERENCE CALL ENDED)

(CONFERENCE CALL INITIATED)

(02 Track 02)

RIASOLET BUCHAREN: Reactor Safety Team, Riasolet Bucharen (phonetic).

HEADQUARTERS OPERATIONS OFFICER: Yes, this is the HOO. I got this email traffic from Marty Virgilio and Chuck Casto concerning some DoE talking points you all are working on?

RIASOLET BUCHAREN: Yes.

HEADQUARTERS OPERATIONS OFFICER: You want me to forward this email to you all?

RIASOLET BUCHAREN: Yes, please do.

HEADQUARTERS OPERATIONS OFFICER: What's your RST?

RIASOLET BUCHAREN: It's 01.

HEADQUARTERS OPERATIONS OFFICER: Okay, thank you.

RIASOLET BUCHAREN: Okay.

(CONFERENCE CALL ENDED)

(CONFERENCE CALL INITIATED)

(03 Track 03)

(Contains no words to transcribe)

(CONFERENCE CALL INITIATED)

(04 Track 04)

(Contains no words to transcribe)

(CONFERENCE CALL INITIATED)

(05 Track 05)

ERIC: RST, this is Eric.

VINCE: Hey, Eric, this is Vince over here, HOO. Hey, you guys are getting an RST call at 0900, right?

ERIC: Yes.

VINCE: With INPO?

ERIC: Yes.

VINCE: Do you want to go on a bridge? Can we expect more than one call coming in?

ERIC: I'm not sure. So, yes, maybe we should just call into you, and have you guys put us up on a bridge.

VINCE: Yes, we'll use your RST bridge.

ERIC: Okay.

VINCE: Okay?

ERIC: All right. Thanks, Vin.

VINCE: Bye.

(CONFERENCE CALL ENDED)

(CONFERENCE CALL INITIATED)

(06 Track 06)

ERIC THOMAS: NRC Reactor Safety Team, this is Eric.

VINCE: Hey, Eric Thomas?

ERIC THOMAS: Yes.

VINCE: Yes, this is Vince over at HOO. Hey, do you have time to go over what you guys got coming up in the next hour on your bridges? Yesterday we kind of fumbled around. You all had like four conferences going on at the same time.

ERIC THOMAS: The only thing I know of is at nine o'clock the INPO call.

VINCE: Okay, that's --

ERIC THOMAS: And then we've got something listed as a U.K., Canada, France call.

VINCE: Yes, at 0930.

ERIC THOMAS: Is that what you're --

VINCE: Yes. And then, but you got a call here, or I think you can call the 6108. Is that what you show?

ERIC THOMAS: No. It just says arranged

by the HOO.

VINCE: Okay. You can call here and we'll put you on 6108.

ERIC THOMAS: Okay.

VINCE: And then on the industry call, are you folks in on that ten o'clock?

ERIC THOMAS: I don't think so. I think if we are on that, it will just be Fred going into the executive team room.

VINCE: Okay.

ERIC THOMAS: So yes, we're having a team meeting right now. What I'm going to do is, when we get off -- Fred was on days yesterday. And I'll talk to him and make sure I understand how he wants to work these things.

VINCE: Fair enough.

ERIC THOMAS: And then I'll come in and talk to you.

VINCE: Thanks, Eric.

ERIC THOMAS: Okay, thanks.

VINCE: Bye.

(CONFERENCE CALL ENDED)

(CONFERENCE CALL INITIATED)

(07 Track 07)

JOE WILLIAMS: Reactor Safety Team, Joe Williams.

VINCE: Yes, Joe, this is Vince, HOO. Hey, INPO has just dialed in to the RST. I think that's for your call at 0900.

JOE WILLIAMS: I believe that's correct. You know, I guess Fred Brown was going to participate in that. Hold on, wait one, please.

VINCE: Okay. I'm on hold here. Yes, this an operator call, sir. The first gentleman called in and we put him up on the RST bridge. And I think he kind of messed up. So we're having to help him out.

MALE PARTICIPANT: If he calls in I'll walk him up. I don't know how to transfer him up.

JOE WILLIAMS: One of the other members of the safety team is going to listen in on the call, and participate as needed. So I'll turn that over to him.

JEFF CIRCLE: Hi. This is Jeff Circle with the Reactor Safety Team. This is a recorded line. And I'll be filling in for Fred.

HEADQUARTERS OPERATIONS OFFICER: Okay. Now this is the Headquarters Operation Officer. I need to put you up on --

JEFF CIRCLE: Oh, okay. I thought that we were already there.

HEADQUARTERS OPERATIONS OFFICER: I'll transfer you up on the RST bridge. Hang on a second. Just follow the prompts when you get there.

JEFF CIRCLE: Sure.

RECORDING: This call may be recorded. If you need the assistance of an operations officer, press *0. Transferring to the reactor safety field cycle counterpart link conference. Please select from the following menu.

If you are a licensee, press 1, followed by the pound key. If you are a regional NRC responder, press 2 followed by the pound key. If you are a headquarters NRC responder, press 3 followed by the pound key.

MALE PARTICIPANT: All right. Yes, go ahead.

RECORDING: Transferring. This call may be recorded. If you need the assistance of --

RECORDING: No security code has been detected. To obtain a security code, please contact

the meeting organizer.

RECORDING: Bridge. Please stand by for assistance from the Headquarters Operations Officers. Or hang up and call --

HEADQUARTERS OPERATIONS OFFICER: Yes, this is the Headquarters Operations Officer.

JEFF CIRCLE: Yes, can you please transfer this back to the INPO bridge call?

HEADQUARTERS OPERATIONS OFFICER: Okay. And is this INPO or RST?

JEFF CIRCLE: This is RST.

HEADQUARTERS OPERATIONS OFFICER: Okay. That's what I'm trying to do, sir.

JEFF CIRCLE: Okay, thanks.

HEADQUARTERS OPERATIONS OFFICER: It's 6113, correct?

RECORDING: -- Headquarters Operations Officer. Or hang up and call back. Thank you.

HEADQUARTERS OPERATIONS OFFICER: This is the Headquarters --

RECORDING: Thank you for your patience. Please stay on the line for the next available operator.

RECORDING: -- by for assistance from the Headquarters Operations Officer. Or hang up and call back. Thank you.

HEADQUARTERS OPERATIONS OFFICER: This is the Headquarters Operations Officer. We've had difficulty transferring you to the Spectel (phonetic) conferencing bridge.

(CONFERENCE CALL ENDED)

(CONFERENCE CALL INITIATED)

(08 Track 08)

ERIC THOMAS: RST, this is Eric.

VINCE: Hi, Eric, this is Vince at HOO. You're starting to populate the U.K, Canada, France call?

ERIC THOMAS: Can I dial right in with 6108?

VINCE: You should be able to from your phone.

ERIC THOMAS: Okay. We're going to go to a different phone and dial it in.

VINCE: Okay, thank you.

ERIC THOMAS: Yes.

VINCE: Bye.

(CONFERENCE CALL ENDED)

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UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

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JAPAN'S FUKUSHIMA DAIICHI

RST PODIUM AUDIO FILES

+ + + + +

THURSDAY,

MARCH 24, 2011

+ + + + +

1-01 Track 01

(CONFERENCE CALL INITIATED)

EVA BROWN: Reactor Safety Team, this is a recorded line.

HOO: Yes, this HOO, I have your Japan counterpart, wants to connect with you.

EVA BROWN: Yes, sir. Thank you, go right ahead.

HOO: Connecting.

: Hello?

TONY NAKANISHI: Hello, this is Tony Nakanishi.

EVA BROWN: Hi, Tony, this is Eva. How are you?

TONY NAKANISHI: Oh hey, Eva. how are things over there?

EVA BROWN: So far, so good. I hope you're doing okay.

TONY NAKANISHI: Yes, we're doing good. I guess we have our daily call, right?

EVA BROWN: Right.

TONY NAKANISHI: Okay, so I'm just calling in to just touch base. Is there anybody else there?

EVA BROWN: Yes, I've got Mike and --

MIKE: Yes, this is Mike (indiscernible, possibly Goulet.)

EVA BROWN: -- International Liaison and Protective Measures. Ed is our team director. And I think we're waiting on Protective Measures.

TONY NAKANISHI: Okay, my understanding is that Jack already connected with PMT.

EVA BROWN: Okay, well then we can go ahead then.

TONY NAKANISHI: So, you know, there's really not much to report other than we're getting some people, relief from Headquarters. Mike Scott arrived and Alan Blamey. Blamey.

So they're here now and I guess we're expecting more. (b)(5)

(b)(5) I don't know if you're aware, but historically we've just been having a hard time getting frank conversations about the status of the reactors and whatnot.

And we were all speculating that these are all in pretty bad shape. But when we go talk to them they show us these one-pager with reactor parameters. And, you know, it's basically here's where we are.

(b)(5)

(b)(5)

(b)(5)

(b)(5) NRC, like probably Chuck (inaudible) or somebody, go talk to one of the senior officials at NISA to see, you know, if we could discuss these things in more detail (b)(5)

(b)(5)

They're sort of doing the (b)(5)

(b)(5)

because like we all think that the core is probably melted. And it's probably even outside the vessel.

(b)(5)

So anyway I think that was kind of a productive, in a way productive. And hopefully we could draw more information (b)(5) So we're going to work on that angle.

But do you guys have any questions on anything?

EVA BROWN: We have a lot of questions, but let's start with the basic one. Which unit are you talking about that (b)(5) are ex-vessel?

TONY NAKANISHI: Okay, let me try to find the paper that I took the notes on.

BRIAN HOLIAN: Tony, Brian Holian.

TONY NAKANISHI: Oh, hi, Brian.

BRIAN HOLIAN: How you doing?

TONY NAKANISHI: Pretty good.

BRIAN HOLIAN: Just you there?

TONY NAKANISHI: It's just me. Everybody's, well there are other people here but they're not plugged into this call.

BRIAN HOLIAN: Had anybody given you a draft sheet of an assessment, about five pages long if you printed it out? It was done on swing shift, on Reuben's shift I think, and it talks about RST Assessment of the unit?

TONY NAKANISHI: Did we get that? Was that sent over here?

BRIAN HOLIAN: Yes, I'm asking you.

TONY NAKANISHI: I haven't seen it.

EVA BROWN: I don't think we sent it.

BRIAN HOLIAN: Okay. You're going to look for that in the next hour or so, okay? And we're getting some push here for general thoughts on accident progression, where would it go next.

TONY NAKANISHI: Right.

BRIAN HOLIAN: And I think the general interest there is should we be making any recommendations to the Japanese? We haven't made any really. But should we say basically flood the dry well? You know, you get to the NUREG kind of perspective on reactor safety. The NUREG 6042, I don't know if you

guys have that there. You know, the 0800 Book, Reactor Safety Book, which talks about forget (inaudible) water into the vessel. Let's protect ourselves for an Ex-Vessel issue.

TONY NAKANISHI: Well that's what they have it looks like.

BRIAN HOLIAN: That's what who has?

TONY NAKANISHI: That's what, at least two of the units. I'm trying to look, I think 2 and 3 basically kind of piecing together the containment atmospheric monitoring system doses.

BRIAN HOLIAN: These doses, these 4,000 is that what you're talking about?

TONY NAKANISHI: Yes, and I think that's basically a clue that the core is outside the vessel.

BRIAN HOLIAN: On Unit 2 and 3?

TONY NAKANISHI: Yes. And it happened probably a while ago. (b)(5)

(b)(5)

BRIAN HOLIAN: (b)(5)

(b)(6)

TONY NAKANISHI: Well no. (b)(5)

(b)(5)

(b)(5)

(b)(5) I'm about four years with the NRC so I don't know too many people. (b)(5)

(b)(5)

BRIAN HOLIAN: Yes.

TONY NAKANISHI: (b)(5)

(b)(5)

(b)(5) These indicators that may or may not be reliable. But then, you know, basically okay so the water level indicator shows that the core is about half covered, blah, blah, blah. But then the core could actually be on the containment floor or actually in the water in the containment. (b)(5)

BRIAN HOLIAN: Yes, on which units (b)(5)

(b)(5)

TONY NAKANISHI: I think 2 and 3.

BRIAN HOLIAN: (b)(5)

Is it because of the RAD levels?

TONY NAKANISHI: That's a pretty big clue.

(b)(5)

(b)(5) the reactor pressure hasn't, you know, I think for one of the units the reactor pressure actually changed fairly recently. So that's sort of kind of puzzling. If everything's outside the vessel already and so there's a hole in the vessel, then there really shouldn't be much perturbation on the reactor pressure.

But in this one case I think (b)(5)

(b)(5)

BRIAN HOLIAN: (b)(5)

(b)(5)

Some people here are thinking what should we be doing for safety wise, for accident progression,

in case your melted core is down at the bottom of the vessel and it's still acting right now on the penetrations there and working its way Ex-Vessel. Which would mean, because I'm just trying for the whole reactor safety team here, we have not heard of them flooding dry wells, right?

TONY NAKANISHI: Well I think they might be there already actually.

BRIAN HOLIAN: They might be there just because --

TONY NAKANISHI: Because the reactor has a hole in it.

BRIAN HOLIAN: Yes, right. If it's there they're flooding it because of the damaged primary, right. But we don't have that on our status sheet.

TONY NAKANISHI: Well no, exactly. And we haven't been putting that stuff on the status sheet either because we haven't been able to bounce these ideas with them.

BRIAN HOLIAN: I know. I know. So I don't even know if they do have that hole there, if some of this water would be in secondary containment and may very well be up around the vessel height, right?

TONY NAKANISHI: Right. My thinking is the bottom head might be covered with water. You know

just from the bottom of the dry well, up to -- And there's some level indicator, you know, the core water level indicator. So that actually --

BRIAN HOLIAN: But do we have readings on that, Tony?

TONY NAKANISHI: We do have readings. And that shows, obviously the indicator is probably not too reliable, but it's basically showing about half of the active fuel is covered even though the active fuel is not there at this point. If you see what I mean?

BRIAN HOLIAN: At this level. You're talking about primary containment water level, right?

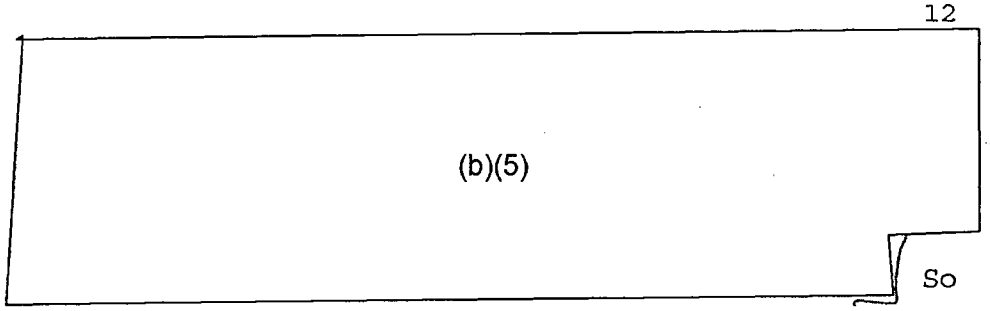
TONY NAKANISHI: Yes, primary containment water level is probably flooded all the way up to about, you know, the core mid-plane.

BRIAN HOLIAN: But I'm talking about taking up, if you could, the whole dry well, right? Flood the dry well.

TONY NAKANISHI: Well I think my understanding is the dry well is flooded too. Up to that point.

BRIAN HOLIAN: Okay.

TONY NAKANISHI: You know, like I said I'm going to have to confirm all this (b)(5)



So I haven't gotten that but if you could send that to me.

BRIAN HOLIAN: Okay and we might not have in this yet, it was made last shift, that we say in a recommendation there, like on Unit 1, it says, "Recommendation. Flood the primary containment to cover the lower head of the reactor vessel."

TONY NAKANISHI: Right.

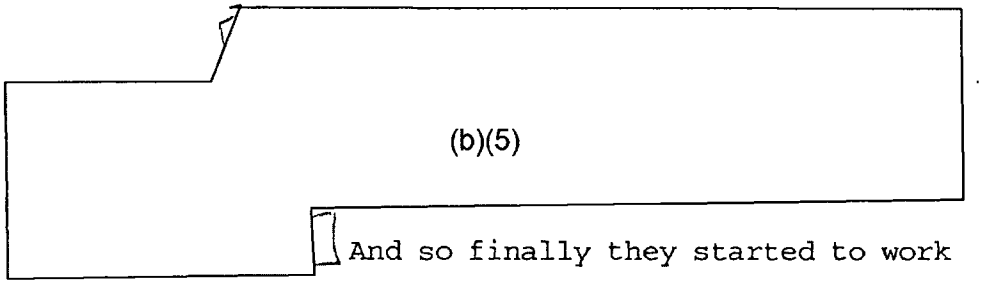
BRIAN HOLIAN: And so that would be our thought. And whether they think they're there already or not is a separate, you know. But they're throttling water in doesn't indicate that they're moving toward that kind of action. You know what I mean?

TONY NAKANISHI: Well I think throttling they're concerned about --

BRIAN HOLIAN: The salt addition?

TONY NAKANISHI: No. You know that thing is like, it's a moot point at this point. Things are so, you know, core coolability, due to salt, you know this whole thing is just interesting because TEPCO basically asked the U.S. to help us with the salt issue. But they were basically urged by their regulator to

look into it.



And so finally they started to work on it. And so then they wanted our assessment of their analysis. But I think the people that really know, probably knew already that the situation is beyond the stage where the salt issue is even relevant.

BRIAN HOLIAN: Yes, all right. Well we're with you on that. I know it's --

TONY NAKANISHI: Yes, and so it's sort of --

BRIAN HOLIAN: Just respond to them because it was the first time they asked.

TONY NAKANISHI: Right, we were just trying to be responsive to TEPCO. But, yes.

BRIAN HOLIAN: We can move it to the next level with responsiveness but they've almost got to ask.

Okay. So on your, that would be interesting for you guys to look and maybe have another call in an hour or two. At least with your comments. Are you going to be around for awhile?

TONY NAKANISHI: Yes, I'll be here.

BRIAN HOLIAN: Yes, so we'll shift you this

draft and as you're looking at it maybe we can get together in an hour or so and -- Let's see what time is it now? It's 3:17 our time. How about like 4:30 our time? And hour and 15 minutes from now?

TONY NAKANISHI: Okay.

BRIAN HOLIAN: Skim through this with whatever people you have there and then our team's going to try to spruce up this thing a little bit. Maybe point to the NUREG 0800 Reactor Safety Series that talks about maintaining a level up to the lower head just in case it's gone Ex-Vessel, you know what I mean?

TONY NAKANISHI: Right. Let's do that. But just another point for your consideration, one of the things that they would actually really appreciate assistance on, or some kind of an assessment on, is basically how to vent the dry well safely. And that's in relation to the hydrogen.

EVA BROWN: Hey, Tony, how are they venting it currently?

TONY NAKANISHI: Well they haven't done it in awhile, I think.

MALE PARTICIPANT: Do you know the pathway? I mean we're really uncertain about that.

TONY NAKANISHI: You mean the dry vent?

BRIAN HOLIAN: What unit, yes. How have

they been venting the dry well?

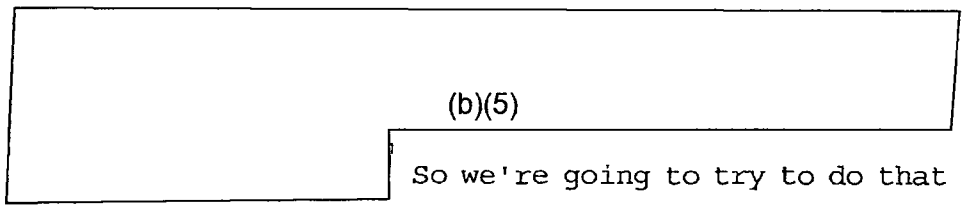
EVA BROWN: Any unit.

BRIAN HOLIAN: How have they been?

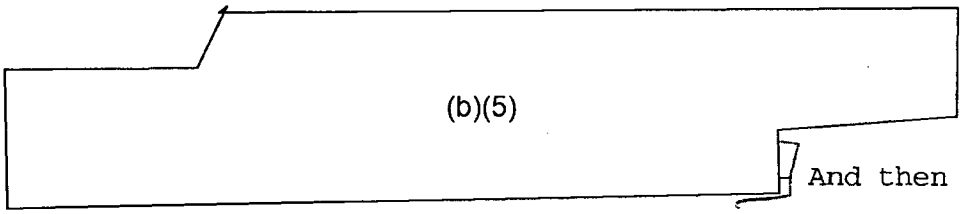
TONY NAKANISHI: Yes, you know, I don't know. (b)(5)

(b)(5)

(b)(5)



So we're going to try to do that probably today or tomorrow.



And then we'll actually really be in a position to do our analysis and recommend some real meaningful recommendations. You know, this salt thing was sort of again, it was an exercise just to be responsive but nothing more really.

MALE PARTICIPANT: You guys have been trending you said. Can you send us the --

TONY NAKANISHI: Yes. And this information is a couple of days old but I'll send you. It's in Japanese, but you said there's a translator there, right? Sometimes they come in?

MALE PARTICIPANT: We have them there around the clock. So we can have them translated if you give us --

TONY NAKANISHI: Okay. Yes, let me send this to you, you might appreciate. I think --

BRIAN HOLIAN: We've been getting this sheets and we have been translating them. We haven't gotten one recently. You know I have one 03/22 at 1100.

Is one I'm looking at here that's translated. Current picture of the dry well on the left, you know, with the (inaudible) and then little boxes coming off of that.

EVA BROWN: But you can go to the website and get those anyway.

TONY NAKANISHI: No, no, no. That's not what I'm talking about. It's a little more than that. Let me send it to you. And then if you have a translator there's some analysis, you know, key points on that plot that basically says that we think the core has melted and it's basically starting to, it's dropping is what it's saying.

BRIAN HOLIAN: On what units is that?

TONY NAKANISHI: Well this is as of 03/22, for both Units 1 and 2.

BRIAN HOLIAN: Is this a table that looks like, do you have actually trend graphed? Or is this a table, I'm looking at 03/22 at 1100 where it goes across the page, 1 Unit, 2 Unit, 3 Unit?

TONY NAKANISHI: No, no, no. It's not a table. It's a figure. It's a plot.

BRIAN HOLIAN: All right. Yes if you could send that. How would you send it, email or fax?

TONY NAKANISHI: I'll email it. It's in color so it's nice. It's pretty telling.

BRIAN HOLIAN: You already, if you could just give what does it say right now? What units have, and where on fuel? Does it say? Does it hint Ex-Vessel at all?

TONY NAKANISHI: Well no, it doesn't say about Ex-Vessel.

BRIAN HOLIAN: But it does say fuel meltdown? You know, because we had hear TEPCO saying well we're not so sure, on that call last night, that it would get down below the core plate, you know.

TONY NAKANISHI: Right. Well this one, yes the TEPCO guy basically said, yes you're right, he said it might have melted. But it's probably not at the bottom head, right.

BRIAN HOLIAN: We don't believe that.

TONY NAKANISHI: Right. But this thing doesn't necessarily say anything about Ex-Vessel.

(b)(5)

BRIAN HOLIAN: Yes.

TONY NAKANISHI: But I told them to send me the updated trending with a couple more days. (b)(5)

(b)(5)

BRIAN HOLIAN: Okay, go ahead and give us

that.

Are you aware, a separate question, of these dose rates that we got from INPO? Did anybody give you those? And we had some questions about it because it had levels of 4,000 R at the dry well on three of the units.

TONY NAKANISHI: Yes. That's consistent with --

BRIAN HOLIAN: -- seeing that. And Unit 1 had a torus reading of like 3,800. I'm just looking for my numbers now. But Unit 2 and 3 did not. They were down at like 160 REM on the torus. Hoped you had seen that. I've got Unit 1 dry well at 4,780 R. Unit 2 dry well 4,590. Unit 3 dry well at 6,000 R.

And the torus, Unit 1 was very high, 3,490 R. Unit 2 was 193. Unit 3, 158. Does that make sense? We were going to ask --

TONY NAKANISHI: Well I've got, yes. I've got it in sieverts here.

BRIAN HOLIAN: All right, but it shows Units 2 and 3 torus being much less.

TONY NAKANISHI: Let's see, it's about, for Unit 1 the dry well is maybe two times. Maybe slightly less than two times the suppression chamber.

BRIAN HOLIAN: The torus?

TONY NAKANISHI: Yes. And then Unit 2, it's probably about a little more than twice. Well no, this is actually Unit 2 dry well is significantly higher.

BRIAN HOLIAN: Yes. What we've got is an R, it's almost 4,600 R and only 193 in the torus.

TONY NAKANISHI: Yes.

BRIAN HOLIAN: And the same on Unit 3. It's even a higher dry well, 6,000 R, and 158. We were trying to come up with a physical reason why those toruses are so much less R. If you ask around there?

TONY NAKANISHI: Yes, that's a good point, yes.

BRIAN HOLIAN: All right. Well we're going to shift to this other thing for commenting on and what we're getting asked for a little bit is this accident progression. You know, what would we recommend, if anything, to the Japanese. And we recommend basically flood primary containment.

TONY NAKANISHI: Yes, right.

EVA BROWN: We could probably recommend that right now.

TONY NAKANISHI: Well you know they might already be doing that actually.

BRIAN HOLIAN: Yes, they're doing it but not saying they're doing it. It's happening you know.

TONY NAKANISHI: Right. They don't know maybe. Or they don't know for sure that --

BRIAN HOLIAN: They're doing it, but to just state that they're doing it would make people feel like, okay, you're handling what might actually be occurring, or what might occur, you know what I mean?

TONY NAKANISHI: Yes.

BRIAN HOLIAN: All right. Have you got anything else for us?

TONY NAKANISHI: No, I think that's it. I appreciate all the help as always.

BRIAN HOLIAN: Well let's try 4:30, an hour and a half. Or an hour about now, all right?

TONY NAKANISHI: Okay, sounds good.

BRIAN HOLIAN: All right, thanks.

TONY NAKANISHI: All right. Bye.

2-01 Track 01

(CONFERENCE CALL INITIATED)

HOO: This is the Headquarters Operations Officer, I have two other gentleman on the bridge. INPO and GE.

BRIAN HOLIAN: Good, thank you.

HOO: And how many other people are we waiting for?

BRIAN HOLIAN: We're waiting for, this is the Reactor Safety Team, we're waiting for just the Japan Site Team.

HOO: Okay, roger that.

BRIAN HOLIAN: Let me just see who's on.

This is Brian Holian, Reactor Safety Team. Who do we have on from GE?

GLEN WATFORD: This is Glen Watford.

BRIAN HOLIAN: Okay. INPO?

GEORGE MANASKIE: This is George Manaskie, the INPO ERC Director.

BRIAN HOLIAN: Okay. We're waiting for just the Japan Site Team. I'm just going to put you on mute for a second. You did get an email from us on kind of draft recommendations?

GLEN WATFORD: Yes, sir, we did receive that.

BRIAN HOLIAN: Okay. I'll just give you a preface while we're waiting. We're making some edits to that right now. We'll kind of read those to you, it's a quick skim. This was done on the previous shift, I don't think it had been sent out to you previously though, right?

GLEN WATFORD: I have not seen a copy of this. I'm not sure if the prior shift saw it or not. I don't think so.

BRIAN HOLIAN: I don't think it had been. But we're glad to provide it to you. You know, we haven't done many recommendations down at the bottom like this, to TEPCO. But there's been some discussion

as to why not. It's getting to the point that some decision makers are trying to make better protective action guidelines or assess that. I won't say make better ones, but assess whether they need to change to U.S. people in Japan.

So whether TEPCO takes any recommendations or not from us, this would as a minimum would inform our folks who are involved in that aspect.

HOO: This is the Headquarters Ops Officer, the Japan Team is online.

BRIAN HOLIAN: Good.

TONY NAKANISHI: Hi, this is Tony Nakanishi. And we have Mike Scott, Alan --

ALAN BLAMEY: Blamey.

ALVO CHEER: Alvo Cheer (phonetic) from Institute of Nuclear Power Operations.

TONY NAKANISHI: We've got a few more people.

BRIAN HOLIAN: Good, Tony. Alan Blamey, good hearing you're up there. That's good. This is Brian Holian, Director of Reactor Safety Team at Headquarters on this shift. We have three or four people here on the Reactor Safety Team. Just quickly cover that. Mike, your last name again?

MIKE SALAY: Salay.

BRIAN HOLIAN: Mike Salay from Research. Frank Collins from (inaudible). Eva Brown from NRR. Bill from (inaudible).

So I want to make this call relatively efficient. We sent each of you -- Tony, did you get our sheet?

TONY NAKANISHI: Yes, I did. And I'm kind of quickly going through that as I'm talking.

BRIAN HOLIAN: That's fine. Do Alan and them have a copy or not?

TONY NAKANISHI: I hadn't got a chance to make copies.

ALAN BLAMEY: And we just got back in from a meeting anyway.

BRIAN HOLIAN: And that's Al from INPO. Well we sent, Al, you've got George Manaskie, I don't know if you heard them. We've got INPO on, George, it's Manaskie, right?

GEORGE MANASKIE: Yes, that's correct.

BRIAN HOLIAN: And GE we have Glen Watford on. And let me just preface this, I anticipate this call won't take much more than 15 to 20 minutes but if it goes a little longer this is kind of a primary task we have on Reactor Safety Team.

The genesis for this, as I was discussing

just prior to the Site Team coming on. And, Tony, I gave you a little bit of this. Is a little bit of forward thinking on mainly down to the bottom portion of each of these sheets, which are recommendations for what might we recommend.

The primary one is should we be recommending, or suggesting to the Japanese, that you go ahead and flood primary containment if that's not already occurring. At least state that as a goal just in case of Ex-Vessel concerns.

So why are we making recommendations right now? You know, they're filling as best as they can in vessel and are we sure of what kind of cooling they're getting or will they maintain that. A push from some people and decision makers who are wondering whether protective action guidelines need to be assessed for U.S. people in Japan, would like this input into their decisions on that. Which is an NRC assessment of the current status. And maybe an assessment of where it might go.

And with recommendations that we would have. So with that being said does everybody understand kind of the goal of this document?

GEORGE MANASKIE: INPO understands.

GLEN WATFORD: Yes, GE understands.

BRIAN HOLIAN: Okay, thank you. And this is a living document. We've been sitting here for the last 20 minutes at Reactor Safety Team making some changes to it. So, Tony, I know that you just got it out at the site. We'll be able to email a version to all of you again with these edits, you know, within 20 minutes after the end of this phone call. So we actually have it up and we're typing to it right now as we make changes.

Let me just take us through it as we're reading it. On Unit 1, you can be looking at the core status. Damaged, fuel partially or fully exposed. I won't tough this. I'm just going to jump down, we didn't make any changes to the Unit 1 core status except on the spent fuel pool. I wanted to raise the question, it says now that no seawater was injected. And I thought I had read something where they had. But does anyone know anything different than that on status for Unit 1 spent fuel pool?

TONY NAKANISHI: Did you guys hear anything today at the NISA meeting?

GEORGE MANASKIE: No, not that I recall specifically dealing with seawater injection.

BRIAN HOLIAN: But the fact that it says no seawater on the Unit 1 spent fuel pool, I'm just taking

that as an action for us to verify. So right now we thought we had seen something different. But that's just an action for us. So we've got that at Reactor Safety Team here.

Jumping down to the assessment. You know, GE, this when verbally passed on to me, in the middle of that paragraph we say injecting seawater through the feedwater system is cooling the vessel but with limited, if any, flow path to fuel. We added in here that GE believes that feedwater is only filling the annulus region of the vessel to the level of potentially failed recirculation pump seals.

GE, I had that verbally turned over to me that that had come from you, is that correct?

GLEN WATFORD: Well, no. I think it would be if you're not blocked in the lower plenum you could fill to 2/3rds core height. Because of the jet pumps.

BRIAN HOLIAN: All right, so you're rewording as, "if you're not blocked you're able to fill?"

GLEN WATFORD: Correct.

BRIAN HOLIAN: And why is it only 2/3rds? Because the jet pumps --

GLEN WATFORD: That's the height of --

BRIAN HOLIAN: -- height of the jet pumps.

Okay.

TONY NAKANISHI: This is Tony. My understanding is core spray is being used for Unit 1.

BRIAN HOLIAN: We understood, Tony, that core spray had been used and might still being used, but that they swapped yesterday to seed water. So if you hadn't gotten that it was our understanding. And are you back --

MALE PARTICIPANT: They told us that.

BRIAN HOLIAN: Yes, so we heard yesterday or last night at this time that they had swapped over to feed water injection. We had an understanding that core spray might still be injecting but we were trying to firm that up.

TONY NAKANISHI: Mike is confirming here that, I guess NISA told you that?

MIKE SALAY: Yes, they told us this morning that they made that swap and that the shell temperatures were coming down and they thought that was a success for them.

GLEN WATFORD: In fact they are continuing to come down. Last we heard core spray is not on at this time.

BRIAN HOLIAN: Okay, core spray not on. So core cooling up top we'll just say injecting through

feed water. That they had been doing through core spray.

GLEN WATFORD: And the temperatures are about 100 C. lower than what you've got.

BRIAN HOLIAN: Up top, where we say vessel temperatures at 350 at bottom. I guess I had seen, we will update those, we had seen earlier on the shift that they were about 305 degrees. Have they gone below that?

GLEN WATFORD: Yes, we've got them like 230 and 240.

BRIAN HOLIAN: 230 at bottom. Okay. Now the other thought there though is that of course you're going to get, with a feed water injections, you're going to get that feed water nozzle go down. And that that still might not be indicative of obviously temperature down in the lower head region, right?

GLEN WATFORD: But if they're showing temperatures in the lower head coming down also, which at least the indications are it's coming down at the same rate that it's coming down at the feed water line, that would imply that you're getting flow to the bottom head area also.

BRIAN HOLIAN: Yes. And was that GE there?

GLEN WATFORD: Yes, sir.

BRIAN HOLIAN: Okay, thank you. Okay,

good. And I guess these are trending, that's data from them, right?

GLEN WATFORD: Correct.

BRIAN HOLIAN: Do they have, I guess we assume, they have power to those instruments then?

MALE PARTICIPANT: They're thermocouple.

BRIAN HOLIAN: All right, I got it. All right. Off of that, I'm back to GE. When you said, I thought that it had come from GE that you might have potentially failed recirc pump seals?

GLEN WATFORD: That's correct.

BRIAN HOLIAN: Okay, where do you get that thought from?

GLEN WATFORD: Just general condition. Yes, that's a typical assumption for a station blackout.

BRIAN HOLIAN: Okay. And so on a station blackout with those failed recirc pump seals, that will limit the height then?

GLEN WATFORD: To 2/3rds core height.

BRIAN HOLIAN: All right, so you would reword that just to say feedwater is only filling the annulus of the vessel to 2/3rds core height, due to --

GLEN WATFORD: I mean it depends on, in the annulus, it depends on the rate you're losing through the seals versus the rate that you're pumping in minus

whatever you're steaming off.

BRIAN HOLIAN: Okay.

ALAN BLAMEY: This is Alan. I thought that the recirc seals, there is a bushing in there that would limit your leakage to 60 GPM.

GLEN WATFORD: It will be limited to a certain level, that's correct. Probably lower that.

ALAN BLAMEY: Yes, that's GPM at rated pressure.

GLEN WATFORD: So it's lower when you're down at 50 pounds or so that they're at now.

ALAN BLAMEY: Well I guess the point that I wanted to make is if they're able to pump a lot of water into the vessel I think that that will probably have a negligible effect.

GLEN WATFORD: Well right now the numbers I think we've seen, they're talking like 80 GPM.

ALAN BLAMEY: So that would have a more significant effect on it then?

GLEN WATFORD: It could.

ALAN BLAMEY: It could have a more significant effect. Okay.

BRIAN HOLIAN: That it's you're losing water out of there.

GE: They most likely isolated the line

before they lost (inaudible). Because that's pretty early on step in the procedures.

BRIAN HOLIAN: So who was that? That was GE?

MALE PARTICIPANT: Yes, somebody else at GE.

GLEN WATFORD: Yes, we've got some others that have come in.

BRIAN HOLIAN: Okay, good. And if they could isolate that line and not be losing water because they would do that in advance of losing the seals?

GLEN WATFORD: Yes --

BRIAN HOLIAN: Yes, that's a question. Whether they got around to do that though, right?

GLEN WATFORD: Yes, we don't know for sure.

BRIAN HOLIAN: Yes, okay. So we added on, at the end of this assessment, natural circulation is, we believe, impeded by the core damage. Vessel temperature readings are likely metal temperature which lags the actual conditions by six hours. Is everybody okay with that thought?

GLEN WATFORD: Could you repeat that again?

BRIAN HOLIAN: We were adding in vessel temperature readings are likely metal temperature which lags actually condition by six hours. I don't know if that's needed, but and nature circ believed impeded by

core damage.

We're just trying to get the thought that you've got probably some core damage down in there that's on its own temperature, I guess isolated.

GLEN WATFORD: Yes, I think the gist, the question is, how much cooling are you getting to the fuel?

BRIAN HOLIAN: Yes, that's right.

GLEN WATFORD: Very difficult to determine that.

BRIAN HOLIAN: Difficult to determine, that's right. That's a better way of saying it.

GLEN WATFORD: Now one other piece of information on Unit 1 is the RPV dry well and suppression pool pressures are increasing, as they went to the higher injection through the feedwater.

BRIAN HOLIAN: So you've send a trend of reactor pressure vessel and the dry well and torus?

GLEN WATFORD: Yes.

BRIAN HOLIAN: And torus pressure increasing, okay.

GLEN WATFORD: We concur with that assessment over the last couple of days.

ALAN BLAMEY: And based upon that, does it appear that what you're seeing is normal heating in a

suppression pool with SRVs or does it appear to be more of a seam leak into the dry well or can't really tell?

GLEN WATFORD: Can't really tell.

BRIAN HOLIAN: I will add in reactor pressure vessel assessment, dry well and torus pressure increasing. When you get into recommendations we've only changed them, I guess slightly here, on the wording.

I don't know what we had before, but we start off with referencing with the Site Team. I think you've given NUREG 6042 to the Japanese perspectives on reactor safety?

TONY NAKANISHI: We did that last night.

BRIAN HOLIAN: Yes, so they have that. We started off with just adding, in accordance with NUREG 6042 perspectives on reactor safety, we reference a section for the Site Team at 3773 effectiveness of external water cooling. A recommendation to flood primary containment to cover the lower portion of the vessel.

ALAN BLAMEY: And I think you understand, Brian, that they probably won't be able to fully cover the lower head.

BRIAN HOLIAN: And that was Alan. Why is that?

ALAN BLAMEY: Because of the air pockets

on, when you look at the vessel skirt when it comes down and meets up with the pedestal, there's typically no way to vent the air space as the water fills up underneath the vessel head. I can provide some references to you, it's in another NUREG. We had a NUREG that dealt with severe accident management guidelines.

BRIAN HOLIAN: Yes.

ALAN BLAMEY: And in there one of the chapters talk about that. Specifically you'll end up with an air pocket in there that you probably won't be able to remove.

BRIAN HOLIAN: Okay. But the general thought now, and we're going to repeat this same recommendation on Unit 2 and Unit 3, so just spending time on it now we'll just repeat it is, is we say go ahead and flood primary containment to cover lower portion of the vessel. There's some thought, when I was talking to the Site Team, that that might already be happening.

I don't know if we have any indication of that. But especially maybe on Unit 2 and 3 if there's primary containment damage maybe that waters already there.

But we add in a sentence there, do not overfill in accordance with the reactor management

guidelines. GE or INPO, do you want to comment on that? For flooding the primary containment?

MALE PARTICIPANT: Well yes, I think it SMAG, should be SAM-G.

BRIAN HOLIAN: Yes, we were fixing that.

MALE PARTICIPANT: But they shouldn't go above the vent line. So the severe accident management guidelines, which say above top of active fuel, you know, the equivalent level in the containment but below --

BRIAN HOLIAN: Yes, that's why I just left it at lower portion of the core, or the vessel. But above top active fuel, we could just say around there. All right.

MALE PARTICIPANT: It's actually right where the spray header is in (inaudible).

BRIAN HOLIAN: You want to stay below?

MALE PARTICIPANT: Yes.

BRIAN HOLIAN: Okay but the big issue is they haven't talked about doing that, we haven't recommended that. But we're thinking why not do that at this point?

MALE PARTICIPANT: Right.

BRIAN HOLIAN: The only other items there is make protection of primary containment a priority. Do not inject -- You know, we had an item here that

was on your versions. It didn't make sense to me. Do not inject sea water into the fuel pool. We were just deleting that. You know, we think on Unit 1 maybe they're just keeping regular water in there I guess. We need to verify that.

But on the other units if they need that sea water into the spent fuel pool they're doing that. So we're getting rid of that if that's okay with everybody.

GEORGE MANASKIE: Yes, this in INPO. We kind of had the same thought when we saw that and didn't understand why it was there.

BRIAN HOLIAN: We took it out, it was a previous shift here. So that's gone and we just of course have switch to freshwater injection as soon as possible.

GEORGE MANASKIE: Just so you know, based on the increasing containment pressures we asked our folks at (indiscernible, possibly Ueno), Tokyo if they were considering venting containment again and they are considering that. TEPCO is considering venting containment.

BRIAN HOLIAN: All right. How are they venting?

GEORGE MANASKIE: I don't know the

specifics of how they're venting.

BRIAN HOLIAN: Okay, so that's just on Unit 1 they're considering?

GEORGE MANASKIE: That's correct, based on the increasing pressures. It's up to 58 pounds.

BRIAN HOLIAN: Reactor pressure vessel was 58?

GEORGE MANASKIE: Containment.

BRIAN HOLIAN: Oh, containment pressure. I don't have that on here do I?

GEORGE MANASKIE: You don't. Vessel pressure was 77 pounds at that last reading.

BRIAN HOLIAN: 77 pounds, all right.

MIKE SALAY: Excuse me, this is Mike Salay. Does anybody know what pathway they're using for venting and which --

BRIAN HOLIAN: He said they didn't know.

EVA BROWN: Can you repeat the pressure numbers again?

BRIAN HOLIAN: Yes, you had primary containment not damaged, we should add in the pressure there, 5-8 pounds?

GEORGE MANASKIE: 5-8 pounds, that's correct.

BRIAN HOLIAN: And then put in parenthesis

considering venting. Okay?

The last item of recommendation we had was switch to freshwater injection. That's common sense and they're heading that way as soon as possible.

Any other thoughts on recommendations? And I raise that, let me raise that with GE and INPO also, I think DOE had a recommendation last night that did not get forwarded but got some discussion last night about going to RHR, of course if that's available at some point.

And there was some thought and so I just wanted to raise it here for a minute, from NRC folks also that if you go to RHR, you know, do you really want to do that because then you're making the reactor building kind of inaccessible. You're moving stuff out. That was one con for doing that.

The pros were, from our view, were well you're going to get a bigger force cooling, if it's available. You're going to move some of the salt out possibly. Has GE and INPO thought about, and that's assuming you're going to get those RHR pumps and everything. Has GE or INPO thought about if RHR is available eventually do you go to that?

GLEN WATFORD: Yes, I thought there was some discussion today on that.

MALE PARTICIPANT: The day shift guys have looked into that and they felt that the first choice should be going to reactor water cleanup. Just because it would be better not to risk eliminating access to the plant any more than we already are.

EVA BROWN: Was that both GE and --

BRIAN HOLIAN: Okay, I hadn't read that so I guess that was on some questions that had come out. And Eva just tells me that's in that salt analysis. So the first recommendation would be go to reactor water cleanup. And was there a second and a third recommendation if that's not available?

GEORGE MANASKIE: The way I read the response the second recommendation probably would have been RHR.

BRIAN HOLIAN: Okay. And refresh my memory. Maybe, Alan Blamey, you got that. Reactor water cleanup much lower flow rate, right?

ALAN BLAMEY: 200 GPM, but it should pull off the bottom of the vessel. And also there's an RTV, if I'm not mistaken, on that line too. So it may be interesting if they have RTD information on that line to see how that compares to the bottom of the vessel. And if the bottom of the vessel appears to be different than what's in the reactor water cleanup by a significant

amount that may aid in the thought of how this crud or salt buildup is occurring.

In other words, is it just setting at the bottom of the vessel? Or is it building up on the fuel rods or whatever configuration the core is in as it steams off?

BRIAN HOLIAN: Okay. You know as we make this recommendation a separate thought here also, and GE, INPO -- So Alan I do have that, that's another pro for going reactor water cleanup to check that temperature indication, right?

ALAN BLAMEY: Yes, but I think GE and INPO hit it on the head when, you really want to try and limit the exposure to the rest of the plant by using reactor water cleanup.

BRIAN HOLIAN: Yes, okay. And make RHR secondary to that. As we talk about the recommendation for flooding dry well, considerations on thermal shock to the vessel as a result of flooding. GE, INPO, have you considered that?

GEORGE MANASKIE: This is INPO, we haven't specifically considered that. But I think as part of the work done earlier today, we think there's a certain level of water already in the containment.

BRIAN HOLIAN: Yes, I was talking to the

site team. They thought at Unit 2 and 3 maybe it was already maybe at that level. They also had some thoughts, you know, we've got some trending data. I'll wait until I get to Unit 2 and 3. But I want to ask all of our thoughts whether there's any potential that some of the core is Ex-Vessel right now?

But anyway, back to thermal shock. One thought is that water might be there on all three units. GE, is that what you were thinking? Or that was INPO?

GEORGE MANASKIE: Just 2 and 3.

BRIAN HOLIAN: Just 2 and 3. Well that's what I heard. Water might already be there on Units 2 and 3. I think that was the Site Team was thinking that also. All right, so if we had a recommendation on Unit 1 where in prep for, if it hadn't gotten there, to raise water. GE, any thoughts on thermal shock?

GLEN WATFORD: I don't think there's a temperature gradient high enough. It seems like especially how it's come down over the last day.

BRIAN HOLIAN: Okay. And I don't know if the NUREG, we'll look back at the NUREG, whether that considered it when it recommends it anyway. I would presume that would be something that should be addressed in there. But we'll try to look at that also.

Okay, any other thoughts and

recommendations? We'll add in reactor water cleanup if that becomes available. Any other thoughts on Unit 1?

GLEN WATFORD: Well our only other one, and it's similar to flooding, is to get containment spray going.

BRIAN HOLIAN: Okay, that was GE saying?

GLEN WATFORD: Yes. Which would help bring down the pressure, the dry well. And it also would help mitigate hydrogen.

BRIAN HOLIAN: All right, consider initiating containment spray. Okay.

MALE PARTICIPANT: And one 1, F1, that's a separate system. Not like the --

BRIAN HOLIAN: That's right, not like on 2 and 3?

MALE PARTICIPANT: That's right.

MALE PARTICIPANT: (Inaudible) in Unit 1?

GEORGE MANASKIE: This is INPO. We're going to sign off to go on with our (indiscernible, sounds like Euno), Tokyo Center here. Just overall, other than the issue we already talked about in recommendations for the spent fuel pool, we don't have any significant objections to anything listed in the document.

BRIAN HOLIAN: Okay, thank you, INPO. And the recommendations that we just went over on Unit 1 we believe we would repeat on Units 2 and 3.

GLEN WATFORD: Okay.

BRIAN HOLIAN: And one other though, INPO, before you leave, if you have 30 seconds. I mentioned the potential for Ex-Vessel right now. We were getting some trending data we were just starting to look at here. Site Team, Tony, did you want to talk about that at all?

TONY NAKANISHI: Yes. (b)(5)

(b)(5)

BRIAN HOLIAN: Thanks, Tony. And, GE, INPO, had you either assessed that separately or heard that at all?

GLEN WATFORD: No we haven't. But it's probably something that if we think that is a potential

we ought to be adding that to our list of things to take in to account. I think we have a 10:00 o'clock technical, an 11:00 o'clock technical call each day, and maybe that's something that we ought to add to the list for discussion on that call.

BRIAN HOLIAN: All right, we will add that from here. And I did add it in on my assessment on Unit 2 and 3, if I'm just jumping to those stages. And thank you, INPO, anything else from you guys?

GEORGE MANASKIE: No, nothing else for us now. We're going to --

BRIAN HOLIAN: All right, thank you. And, INPO, we will email you another version of this within half hour, 45 minutes.

GEORGE MANASKIE: Okay. We'll be looking forward to it.

BRIAN HOLIAN: All right, thank you. For the rest of you we did add that in. I'm just jumping to the Unit 2 status. We didn't make any changes there. We'll make some similar changes on the recirc seal paragraph. We made some changes, I'm at the first paragraph on the assessment, at the bottom of the first paragraph. While core flow capability may be affected due to continued salt buildup, level indication is probably equivalent to water level inside the dry well.

Natural circ believed impeded by core damage.

In the next paragraph down we say reactor cooling system potentially breached. There may be some scrubbing of the release. And then we added in there a potential exists a portion of the core maybe have gone Ex-Vessel. And similar recommendations on Unit 2.

TONY NAKANISHI: Hey, Brian, so some of the things you're talking about, those are updates that have been made to the version you sent me, right?

BRIAN HOLIAN: Yes, that's right, Tony.

TONY NAKANISHI: Okay, I don't see it here.

BRIAN HOLIAN: No, you don't see it. We were making those after we sent it here, as we're starting to edit it. So I'm just reading those and we'll send this version, a revised version out after this call. Anything else on Unit 2 then?

Unit 3 will also be similar. I mean, we've left it like that. I don't know if --

GLEN WATFORD: Can we have one comment on 2?

BRIAN HOLIAN: Yes, thank you. Any other comments on 2.

MALE PARTICIPANT: I think on Unit 2 it's the least likely to be Ex-Vessel because -- And none of them have a breach signature that I could see from

the data. As far as bottom head temperature. And Unit 2 has the lowest bottom head temperature.

TONY NAKANISHI: Yes, where are you getting the temperature data? Is that NISA published temperature information?

MALE PARTICIPANT: Yes. That's what we have.

TONY NAKANISHI: Yes. (b)(5)

(b)(5)

MALE PARTICIPANT: So what information do you have?

TONY NAKANISHI: Well we don't have good information either.

BRIAN HOLIAN: Tony, the trending sheet that you sent out, we're getting that translated now.

TONY NAKANISHI: Okay. (b)(5)

(b)(5)

(b)(5) That one stops, I think, a few days ago. So I believe they have a more current version of that. And so once I get it I'll send that off also.

BRIAN HOLIAN: And just for GE, it was really Tony's verbal discussion with them. (b)(5)

(b)(5)

(b)(5) You know, GE, we're not basing it on data that we've seen, other than that discussion, right now.

TONY NAKANISHI: Right. (b)(5)

(b)(5)

BRIAN HOLIAN: (b)(5)

(b)(5)

TONY NAKANISHI: Right. (b)(5)

(b)(5)

BRIAN HOLIAN: (b)(5)

(b)(5)

TONY NAKANISHI: Right.

BRIAN HOLIAN: Maybe the potential exists.

(b)(5)

(b)(5) In the recommendation we can say that flooding would be a good preventive in case core goes Ex-Vessel. Just leave that thought there, right? Is that better way to do it?

MALE PARTICIPANT: Yes, that's what the mitigating actions would be under the conditions as we understand it now.

BRIAN HOLIAN: Yes, right. You're saying doing it whether --

MALE PARTICIPANT: Yes, whether it's

Ex-Vessel or not.

BRIAN HOLIAN: That's right.

MALE PARTICIPANT: If the core is relocated to the bottom head, or at least partially --

BRIAN HOLIAN: Yes, go ahead and do it. But if it is gone Ex-Vessel a little bit on Unit 2 or Unit 3, and particularly in 3, there's no concern in still raising that level?

MALE PARTICIPANT: Correct.

BRIAN HOLIAN: Right. (b)(5)

(b)(5)

TONY NAKANISHI: That's right.

BRIAN HOLIAN: (b)(5)

(b)(5)

All right. Unit 3. I don't want to go too much longer. Unit 3, anybody have any other changes

to either temperatures up there in status. I don't know if anybody has better bottom head temperatures. It shows 225 and 304.

GLEN WATFORD: Seem to be coming down more, 185 and 80.

BRIAN HOLIAN: 185 for bottom head?

GLEN WATFORD: Yes.

BRIAN HOLIAN: And what is it for water nozzle?

GLEN WATFORD: Eighty-one.

BRIAN HOLIAN: Eighty-one, wow. So that 304 is real old huh?

GLEN WATFORD: Day and a half I think.

BRIAN HOLIAN: Yes. Okay we'll correct those.

TONY NAKANISHI: I don't know if you, Brian, do you want to put any containment atmospheric monitoring data in there as part of --

BRIAN HOLIAN: Yes, go ahead. You mean the REM?

TONY NAKANISHI: Yes, the dose rates.

BRIAN HOLIAN: I wanted to jump on that again at the end, Tony, that discussion we had and ask GE their view of that. Let me summarize those right at the end, okay?

So Unit 3 will be similar, kind of similar assessment and similar recommendations.

ALAN BLAMEY: Yes, this is Alan. I have one more recommendation for consideration in Unit 3.

BRIAN HOLIAN: Only on 3? Okay, Alan.

ALAN BLAMEY: Yes. (b)(5) (b)(5) we think that there is a, the steam plume is coming off of Unit 3 may be coming off of the dry well head seals. And if that cavity is still somewhat intact they should be able to spray that and if it holds water that may do some -- If it is coming from the dry well seal, the dry well head seals, that may scrub some of the fission products or the iodine out of the steam plume.

BRIAN HOLIAN: Good. So just why not put a spray plume from one of those concrete trucks or whatever onto that steam plume on Unit 3.

ALAN BLAMEY: Yes. And I'm not sure we've done a whole lot of discussion on that here. It's something that came up in conversation today.

BRIAN HOLIAN: That seems to make sense. GE, you got a comment on that?

GLEN WATFORD: That would be fine, yes.

BRIAN HOLIAN: Now the other thing was, Alan, let me just open that up. (b)(5)

(b)(5)

ALAN BLAMEY: On Unit 3?

BRIAN HOLIAN: Yes. (b)(5)

(b)(5)

ALAN BLAMEY: Okay, so do we know if there's, it sounds like there's two separate plumes. Okay. So of course, if we can, spray both.

BRIAN HOLIAN: Spray both, thank you. All right, I'll add that in. Anything else on Unit 3? Oh, reactor water cleanup would still be a recommendation on 2 and 3, right?

GLEN WATFORD: Yes, I think that's the preferred method for any attempted cooling.

BRIAN HOLIAN: Okay. Thank you.

ALAN BLAMEY: And I have one more comment back on Unit 1.

BRIAN HOLIAN: Yes.

ALAN BLAMEY: Okay. I think GE was making a recommendation to spray the dry well. And while I think that's a good idea I think we have to communicate if they do spray the dry well you don't know what condition your vacuum breakers are in from secondary containment into the dry well. And on this particular

containment there is a caution in the EOPs that you want to terminate dry well sprays before they get to two pounds.

If there's no non-condensables in the dry well and it's mainly steam, that dry well pressure is going to decrease, or could potentially decrease, very rapidly. So while I think the recommendation sounds reasonable, we should probably also communicate to TEPCO that they want to be cautious in the way they do that.

BRIAN HOLIAN: Cautious. What would you add, caution exists on terminating dry well spray prior to, did you say two pounds?

ALAN BLAMEY: Yes, that's correct. It's the reactor building to suppression chamber vacuum breakers that you're concerned with.

BRIAN HOLIAN: Okay. Thank you.

MALE PARTICIPANT: Now I think it comes into (inaudible).

ALAN BLAMEY: The vacuum breakers are actually connected to the air space of the wet well.

BRIAN HOLIAN: All right.

ALAN BLAMEY: Well you know if you turn on your spray and your non-condensables back in you may be bringing more air in. So that may be part of the mixture and I didn't think about that, but that's a good

question. Depending upon your mixture you may start to get to a more flammable mixture. But at the same time if you have dry well sprays on perhaps that's going to mitigate any detonation that would occur.

But at the same time I think if those vacuum breakers aren't working or have been damaged that they don't allow air to come back in. Then I think there's the potential that if it drops rapidly and they don't terminate the dry well sprays quick enough you're going to have a compressive force in the dry well liner which could damage the dry well liner.

But I don't know to what extent that would be. And that may be minor compared to some of the other items that are going on. So that's why I would probably just recommend a caution that when they do this evolution that they may see a more rapid reduction than what the simulator shows them. What they're used to.

BRIAN HOLIAN: And they may see it more rapid, Alan, just following that, because of the condition of the vacuum breaker?

ALAN BLAMEY: Yes, at this point in time I'm not sure if we know the vacuum breakers will work or not. But I think the other good point that I heard here, which I didn't think about, is if you start to induce -- If the vacuum breakers do work you have the

potential then to induce oxygen.

BRIAN HOLIAN: Yes.

MALE PARTICIPANT: That's right.

TONY NAKANISHI: So based on my conversation with the NISA officials, they're really cautious about preventing hydrogen explosion.

BRIAN HOLIAN: Yes, so the caution would be if containment spray and your vacuum breakers will working there would be a potential for introducing oxygen and we should state that?

TONY NAKANISHI: Yes.

BRIAN HOLIAN: And would that be a reason to remove that?

MALE PARTICIPANT: -- conditions are superheated in the dry well and then you quench the dry well and then there's, you know, they have a dry well initiation limit curve that you can determine that. But even though that is the case the EOPs would direct, or the SAM-G procedures would direct if they spray.

BRIAN HOLIAN: Okay. That was taken into consideration you're saying?

MALE PARTICIPANT: Yes.

BRIAN HOLIAN: Okay. I think at least word it consider containment spray in accordance with --

MALE PARTICIPANT: Yes, EOP/SAG

guidelines.

BRIAN HOLIAN: Okay. I won't spend much more time here. I've got everything I think people have got going. Unit 4 I hadn't read through myself yet. Unit 4, Unit 5 and 6. But had anybody heard whether we had gotten a recirc pump back on Unit 5? I'm just jumping to 5. We had heard that the recirc pump had been lost, had anybody else heard that.

MALE PARTICIPANT: Yes, we had not heard that it was back yet.

BRIAN HOLIAN: Okay. So we're still waiting on that. I just wanted to check on that. Unit 4. You know, this assessment or status, any changes to that? You know, there's some words on Unit 4 about fuel may have been ejected from the pool. I had seen that also as a possibility on Unit 3. Had anybody else heard that?

MALE PARTICIPANT: Had not heard that.

BRIAN HOLIAN: You know, portion of fuel from the spent fuel pool, that might be why it's here on 4. Had you heard it on 4 on not on 3?

MALE PARTICIPANT: Had not really heard it on either one. I mean the explosion on 3 was clearly the most spectacular. But containment damage is actually worse on 4 than it is on 3.

BRIAN HOLIAN: Yes, I know. So I had seen that in something. So if I've got it on 4 I'm going to add it in on 3. I'm just telling people that. You'll see that on both.

MIKE SCOTT: Brian, this is Mike Scott. Just one thing for you to know, they told us today, NISA did, that they have put a video on their (inaudible) that pumps the water into the pool there, for Unit 4, and they're going to show us the videos tomorrow. So they --

BRIAN HOLIAN: Good, they have video. And you haven't seen them yet. Okay.

MIKE SCOTT: Haven't seen them yet but they're promised to us for tomorrow.

BRIAN HOLIAN: Okay, good. Thank you, Mike.

MALE PARTICIPANT: They did say the pool temperature went back up to 100 degrees on Unit 4.

(b)(5)

BRIAN HOLIAN:

All right, 100 degrees.

MALE PARTICIPANT: That would be boiling.

MALE PARTICIPANT: Pretty sketchy though.

BRIAN HOLIAN: That's 100 degrees, all right, that's boiling on 4 and we've picked that up.

All right. Okay we'll wait on that video I guess. Unit 5 or 6, anything else on those?

Well let me, I think we've spent enough time, if no one has other issues I wanted to go back to the doses that I had read for Tony that I believe we got from INPO. And I was trying to look for some physical reason for this. And we've been scratching our heads here.

One, I wanted to check whether you've seen this data. And then, two, whether it makes any physical sense. So I'm going to read to you numbers that I had handed over to me. These are Unit 1, 2 and 3. And I'm going to give you a dry well and torus RAD reading in REM per hour. Now this was given to me at midnight that had, I believe had come from INPO.

Unit 1, dry well 4,780 REM per hour. Unit 1 torus, 3,490 REM per hour. Unit 2 dry well, 4,590 REM per hour. Unit 2 torus, 193 REM per hour. Unit 3 dry well, 6,000 REM per hour. Unit 3 torus, 158 REM per hour.

So I think the site had some of this data in sieverts and was converting it, when I was talking to Tony earlier. But as we looked at this we were trying to scratch our head on coming up with a physical reason why the toruses on Unit 2 and 3 were, you know,

significantly lower than the dry well readings.

GE, had you seen this?

GLEN WATFORD: Yes, we have that data.

BRIAN HOLIAN: You have that data. Did you have a physical reason, piecing that together, why torus would be so much lower on Unit 2 and 3?

MALE PARTICIPANT: One idea might be, depending on how they vented, they could have put a lot of iodine in the suppression pool on Unit 1. And then the other one, you know, maybe it didn't go through the scrubbing path. Maybe it went straight out the vent.

BRIAN HOLIAN: Yes, on Unit 2 and 3, they might not have gone through the suppression pool on venting, that's one reason. Okay.

Well good, I just wanted to make sure, one, everybody had that data and we're all thinking about reasons why.

Anything else from anyone?

ALAN BLAMEY: Yes, this is Japan Office. Two things real quick. Bill Cook just whispered in my ear that shouldn't we be spraying the torus before the dry well? So I'd probably make that recommendation to GE and have them look at it.

And in addition to that INPO had a couple of questions.

BRIAN HOLIAN: All right.

AL HOCHEVAR: This Al Hochevar from INPO. John Monninger asked me to ask INPO two question. And I'm posing a little bit here so you'd have the same information, Brian.

One question that he was asked by TEPCO, spent fuel pool cooling system, should that be reactivated? Or will that end up as the same result as we had the discussion on RHR in terms of habitability of the building. So that's the one question he wanted to find out and INPO is working on that.

The second question is again related with this hydrogen and oxygen question of flammability and explosions. Going back to the Three-Mile Island TEPCO requested some analysis and data that was done in the past for Three-Mile Island and I've got INPO working on that in terms of how was that discussion held. What was the final outcome? Obviously we started the cooling pumps, but what gave them the confidence that there would not be an explosion due to radiolytic decomposition of water? That was the second question.

BRIAN HOLIAN: Okay. Good. Thank you.

AL HOCHEVAR: You're welcome.

BRIAN HOLIAN: And you don't have an assessment on how long -- You'll get back to them on

both of those, right?

AL HOCHEVAR: I asked INPO to give me a 24-hour turnaround on that. And George Manaskie has that for action, for about an hour.

BRIAN HOLIAN: Okay. And, Al, we might maybe from here do a dual tasking and gather some of that ourselves also and compare notes.

AL HOCHEVAR: Sounds like a plan.

BRIAN HOLIAN: Okay, great. Back to the spray, the torus vice dry well, Alan, and that was on all three units?

ALAN BLAMEY: Yes, I think the EOPs talk about spraying the suppression pool first. But once again, I'm sure GE would have --

GLEN WATFORD: But if it's full, if it's already full of water, it won't do you any good.

ALAN BLAMEY: Yes, that's very true. That's very true.

GLEN WATFORD: But you're right, the procedures would direct you to do pool spray first then dry well. I said dry well spray because I'm assuming the pool is full.

BRIAN HOLIAN: Okay. On all three units, huh, GE?

GLEN WATFORD: Yes, that's just because

they've been, but we don't know how much they've been injecting. But it seems like they've been injecting long enough to easily fill the pool up.

BRIAN HOLIAN: Yes, good.

MALE PARTICIPANT: Pressure is not as big a concern on 2 and 3.

BRIAN HOLIAN: Okay. One other thought here. You know we were scratching our heads last night on them throttling flow to the vessel a little bit. You know, we're worried about throttling flow. I guess, you know, I don't know if that's a separate recommendation we want to make. Has anyone thought about that? This is primary flow going in. I think they've been worried about, the best our guess is, maybe the salt coming out.

I guess the one us getting around that is going ahead with a recommendation to fill the dry well to the lower level. But has GE been scratching their head, or have you heard, that they've been throttling flow a little bit more than, or as a best guess from what we're guessing on, to minimize salt? Had you heard that?

GLEN WATFORD: No, we have not heard that.

BRIAN HOLIAN: Okay, but you wouldn't recommend throttling flow would you?

GLEN WATFORD: No, I'd say they should be maintaining flow above the boil-off rate and, you know, watching whatever indication of level that they have to ensure that they're --

BRIAN HOLIAN: Yes, maintaining, right. Okay, very good. And we thought that they were trying to match kind of the decay heat. But okay.

Anything else from anyone? I appreciate your patience with this. This will still be draft, we'll send it back out to you all.

GLEN WATFORD: Hey that Tony guy sounds sharp where'd he come from?

EVA BROWN: Oh please.

TONY NAKANISHI: Hey, Glen, how are you?

GLEN WATFORD: Hey, Tony.

BRIAN HOLIAN: All right. And that whole Site Team's awful sharp too. So the whole gang of them.

All right, thanks folks. Take care.

TONY NAKANISHI: Thank you.

BRIAN HOLIAN: Yes.

(CONFERENCE CALL ENDED)

3-01 Track 01

(CONFERENCE CALL INITIATED)

FRANK COLLINS: Reactor Safety Team recorded line.

HOO: Yes, Hi. It's the ops officer. I've got Bill Ruland for Brian Holian.

FRANK COLLINS: Brian is tied up at the moment. But you pass it through I'll take a message.

HOO: All right, thanks, Frank.

FRANK COLLINS: Bill, Frank Collins.

BILL RULAND: Hey, Frank. Is Brian available by any chance?

FRANK COLLINS: Brian's on the phone at the moment.

BILL RULAND: Okay. A couple of things, one, I forgot to sign out with you.

FRANK COLLINS: Yes, I signed you out.

BILL RULAND: Oh, you did. Okay, great. Thanks.

I was just wondering. I'm getting ready to go work out. I was just wondering if Brian had any questions.

FRANK COLLINS: He hadn't expressed a gap there.

BILL RULAND: Okay. Let's see.

FRANK COLLINS: We just came off the two fairly extensive discussions where we had the flight team, GE, and INPO all in the same discussion updating the status, and what do we really think the status is, and based on what.

BILL RULAND: Oh, good, good.

FRANK COLLINS: And working toward the idea of recommendations for a longer term from here.

BILL RULAND: Good. So you're using that --

FRANK COLLINS: Considering the prospects that this situation may have deteriorated beyond what we've been discussing so far.

BILL RULAND: Oh, okay. So you were using that assessment document that we had generated?

FRANK COLLINS: Yes, sir. And we were refining it and adding some recommendations.

BILL RULAND: Good, good, good. That was the idea.

FRANK COLLINS: And we did it with the flight team, and INPO, and GE all along the line together and went over it. So everybody's kind of coming to a common understanding --

BILL RULAND: Oh, outstanding.

FRANK COLLINS: -- of what might be recommended.

BILL RULAND: Outstanding.

FRANK COLLINS: We're not to the point yet. I'm saying this is an agency's recommendation. But we have something to take into the executive and say this is a common consensus.

BILL RULAND: Outstanding.

FRANK COLLINS: So what you had put together has been a very useful starting point.

BILL RULAND: Okay, yes. Well, heck I didn't it together. Chuck put it together, lots of people. There was an idea hatched, so I was just part of it. Okay, well --

FRANK COLLINS: I hear Brian wrapping up his phone call. I'll see if he wants to grab this one here.

BILL RULAND: Yes. Sleeping under these

conditions is not easy. If you know what I mean, you wake up.

(Pause)

BILL RULAND: Hey, Brian. I was just wondering. I'm going to go work out. I was just wondering if you had any questions for me.

BRIAN HOLIAN: No.

BILL RULAND: Okay.

BRIAN HOLIAN: Thanks, yes.

BILL RULAND: Sounds like you guys are doing a great job.

BRIAN HOLIAN: What'd you just wake up, or what?

BILL RULAND: Yes, yes.

BRIAN HOLIAN: No, we're fine. We were updating your sheet. So I don't know if you're back here or not, but we'll get that out for you. We had a good discussion with GE and them.

BILL RULAND: Good, good, good. Well, hey, thanks a lot.

BRIAN HOLIAN: All right, bye.

BILL RULAND: Goodbye.

(CONFERENCE CALL ENDED)

3-02 Track 02

(CONFERENCE CALL INITIATED)

FRED BROWN: This is Fred Brown with the NRC. This is a recorded line. I'm returning a call from Dave on the 11 o'clock --

DAVE GARCHOW: Yes, Fred, this is Dave Garchow. I think I know who you are.

FRED BROWN: Okay.

DAVE GARCHOW: How are you doing, Fred? You were here at INPO at a meeting a couple of Junes ago.

FRED BROWN: Oh, yes, actually I was.

DAVE GARCHOW: Yes. And so I can put a name with the face.

Hey, in this 10 o'clock call I think it was related, but you sent us a document this morning that

had a status of the six reactors at Fukushima Daiichi, and some proposed high level recommendations you want to promote to TEPCO.

Here's what we're doing. And I just wanted to make sure this is what you expected, so that we do what you need.

I have already sent these out to EPRI and GE Hitachi, who will coordinate their technical resources. And I have technical resource of my own. And we are going to collaboratively review those recommendations.

And for each recommendation we're going to provide you back the following. We concur that that's a good recommendation and that would be very helpful if they would go do it, something like that.

Or this is a good recommendation, but there's a few other things that need to be considered along with doing this.

FRED BROWN: Okay.

DAVE GARCHOW: And we'll list those. Or we don't recommend doing this because. And we'll be very clear what the technical reason why we think that would not be a helpful thing to do.

FRED BROWN: Okay.

DAVE GARCHOW: Would that meet your needs

if we gave you responses in those three categories?

FRED BROWN: Good. That would be fantastic. And quite honestly, my invitation to you is to feel free to provide a red line strike-out of your recommended product.

DAVE GARCHOW: Right. So you will get a document back, probably some version of what you sent us, that lists the recommendation and gives you the results of our collaborative review.

We're hoping to be able to get that done this afternoon. We haven't done one of these yet, so I want to make sure we do it with quality.

FRED BROWN: Okay.

DAVE GARCHOW: Our thinking was we've got the EPRI, and our folks are working on it, and GE looking at it now. And I think if we come together in a collaborative phone call that shouldn't take more than a couple of hours.

FRED BROWN: Okay.

DAVE GARCHOW: And we should be able to get you this back this evening at the latest, or first thing tomorrow morning. I can't imagine it would take that long. But sometimes I'm surprised.

FRED BROWN: Right. That's fantastic. And I had just talked to Jim Maddox and Rick Nielson

in your op center for a daily. They indicated you were looking at a 1 o'clock internal call with the group that you described.

DAVE GARCHOW: Correct. That's all set up. And as we work through that, I would think by the evening we should have a response to you.

It's not going to be a 500 pound gorilla. It's going to be a summary in the manner I just discussed with you, if that's acceptable.

FRED BROWN: Yes, that's perfect. What I suggested to Jim and Rick was that final product be distributed directly to Al at DART and our team as well as the RST. And I continue to be fine with that approach.

If you reach a conclusion in your discussion where you think there's some critically fundamental flaw in what we had, I just ask that you call us here at op center, the RST, and let us know what it is in advance of sending the final product out.

DAVE GARCHOW: Okay. We'd be glad to do that.

FRED BROWN: That would be great. And it's not that I think that we will disagree. It's just so that I can communicate internally about what the thought process was before it goes to Japan.

DAVE GARCHOW: Right. Well, I'm fine.

Here's something that I'm fine with doing to just eliminate that problem.

We feel no need to communicate directly, or cross over lines, even though I have Al Hochevar, who works for me in Japan.

FRED BROWN: Right.

DAVE GARCHOW: I'm fine. This request came from RST. I'm fine with giving the response to RST, and then let you forward it through to your contacts in Japan, the Cathro (phonetic) group.

FRED BROWN: And here's my personal fear. I don't want to become a choke point as we turn information over, have something come in email and it could be of value in the field and we're sitting on it.

So I really, honestly, don't have an issue. We're going to defer heavily to GEH and your folks on the technical content here.

So maybe if we could just talk after your 1 o'clock, and you could give me an assessment. And then if there's something that makes us think we need to do something different, that's fine. But otherwise, let's just go with a wider distribution.

DAVE GARCHOW: Okay. I'll just give you the one example. You say like clean, this is obvious to all of us that are licensed PWR folks.

You'd want to think hard before we start transferring water out of the primary containment in any way to RHR reactor water cleanup. Because you're going to be moving fuel particles and tremendously change the dose rates.

And so if you were going to do that, that might be in our Category 2, great thing to do but maybe we need to get another activity to design a shielded enclosure outside the reactor water cleanup area.

Just think ahead about the dose consequences and get some contingencies in place before we just start moving that water out of primary containment.

FRED BROWN: Right.

DAVE GARCHOW: That's the kinds of things we'll be talking about. Not that it's flawed, it's the right thing to do. But there's kinds of things you'd want to do before you did that. That's the kind of information we'll give you.

FRED BROWN: Okay. And that's perfect. And in your discussions, of course, the recurrent cooling is feed and bleed and --

DAVE GARCHOW: Right.

FRED BROWN: -- no confidence in any of the three containments as of today.

DAVE GARCHOW: Correct. I got that.

FRED BROWN: Yes.

DAVE GARCHOW: And I'm not saying we were even going to recommend that. But that would be just the level of detail we're thinking of providing you back.

FRED BROWN: Perfect, perfect.

DAVE GARCHOW: Okay.

FRED BROWN: Fantastic.

DAVE GARCHOW: I'm glad we had this call to get aligned, and so I could absolutely meet your needs. And I'll make sure our process has, if there's anything we would recommend not doing, we'll socialize with you before we send a response in.

FRED BROWN: Very good. So I think our 11 o'clock call should go pretty quick then. And that'll free you up to actually work.

DAVE GARCHOW: Okay. Thank you.

FRED BROWN: Thank you, Dave.

DAVE GARCHOW: Yes, bye.

FRED BROWN: Yes, bye.

(CONFERENCE CALL ENDED)

3-03 Track 03

(CONFERENCE CALL INITIATED)

FRED BROWN: Reactor Safety Team, this is Fred Brown.

HEADQUARTERS OPERATIONS OFFICER: Yes, this is the Headquarters Ops Officer. I have Lee Smith from Naval Reactors wants to connect with you.

FRED BROWN: Okay.

HEADQUARTERS OPERATIONS OFFICER: Transfer you now.

FRED BROWN: Thank you. This is Fred Brown.

LEE SMITH: I'm sorry, who is this?

FRED BROWN: Fred Brown.

LEE SMITH: Hi, Fred. This is Lee Smith at Naval Reactors. I'm trying to get in touch with our Naval Reactor person that's over there.

FRED BROWN: Ah, yes, Tom?

LEE SMITH: Yes.

FRED BROWN: Just a moment.

LEE SMITH: Thank you.

FRED BROWN: He's walking over here.

LEE SMITH: Thank you very much.

FRED BROWN: Sure.

(Pause)

TOM REVOSO (phonetic): Revoso.

LEE SMITH: Hi, Mr. Revoso, this is Lee Smith, the (indiscernible, sounds like reactor table) in (indistinguishable, sounds like NRCC).

TOM REVOSO: Yes.

LEE SMITH: A couple of questions for you if you have just a moment.

TOM REVOSO: Yes, hold on just one minute. Give me a number I call you back on so that I'm not tying up the lead table phone here.

LEE SMITH: 5993.

TOM REVOSO: Just a minute. Okay. I'll call you right back.

LEE SMITH: Thank you.

TOM REVOSO: Bye.

(CONFERENCE CALL ENDED)

3-03 Track 04

(CONFERENCE CALL INITIATED)

BEN FARTHINGHAM (phonetic): NRC, Ben Farthingham.

FRED BROWN: Yes, this is Fred Brown, the reactor safety team.

BEN FARTHINGHAM: Hi, sir.

FRED BROWN: Hey, I've got the markups for those two documents.

BEN FARTHINGHAM: Okay.

FRED BROWN: And let me leave them with the HOO and you can come by and get them.

BEN FARTHINGHAM: Okay.

FRED BROWN: Thank you.

BEN FARTHINGHAM: Thank you very much.

FRED BROWN: Yes, bye.

BEN FARTHINGHAM: Bye - bye.

(CONFERENCE CALL ENDED)

3-03 Track 05 (Contains no words to transcribe)

3-03 Track 06

(CONFERENCE CALL INITIATED)

BRETT REANY (phonetic): Reactor Safety Team, Brett Reany.

TONY NAKANISHI: Hi, this is Tony Nakanishi with the Japan team.

BRETT REANY: Hi, Tony.

TONY NAKANISHI: Hi, how are you? Hey, I just wanted to call. I've been sending you a couple of things and I wanted to make sure you're getting them. I'm sure you get a ton of emails.

BRETT REANY: Yes, I just got an email from you three minutes ago.

TONY NAKANISHI: Okay.

BRETT REANY: Response line for cooling the reactor.

TONY NAKANISHI: Right. And that's in

Japanese. But I think it has some good information. It's basically a procedure, a flash (phonetic) plan, that the Japan folks are planning to use --

BRETT REANY: Yes.

TONY NAKANISHI: -- for going forward. And it's got some points on hydrogen explosions or preventing hydrogen explosions, team explosion.

BRETT REANY: Is there any way you can convert it to PDF or something. Because when I open it here, it's completely blank except for numbers. Like I see like heading section numbers. Like one --

TONY NAKANISHI: Oh, yes.

BRETT REANY: So I don't know. We can't recognize the fonts or something. Because it's not even, it's blank.

TONY NAKANISHI: Okay. Should I just fax it to you then?

BRETT REANY: Yes, that would work.

TONY NAKANISHI: Or --

BRETT REANY: If you want to.

TONY NAKANISHI: The problem is we don't have a --

BRETT REANY: PDF converter?

TONY NAKANISHI: -- PDF here. Yes, we're not really equipped. The other thing to do is to change

the setting there to have a Japanese regional setting.

BRETT REANY: Okay. I'll --

TONY NAKANISHI: If you can. And the other files that I sent you, those are the plant parameter trending data.

BRETT REANY: Okay.

TONY NAKANISHI: And there's probably some Japanese in there also, with some conclusions that NISA reached. And those are going to probably require that same kind of adjustment in the setting.

BRETT REANY: I've only gotten one. You sent them to RCO1 (phonetic), right?

TONY NAKANISHI: Yes. And that came yesterday, I think.

BRETT REANY: Oh, okay.

TONY NAKANISHI: Let's see.

BRETT REANY: Okay. I have one.

TONY NAKANISHI: No, I think Brian Holian was the director there.

BRETT REANY: So you don't know if that was addressed?

TONY NAKANISHI: What's that.

BRETT REANY: You don't know if someone addressed that yesterday then?

TONY NAKANISHI: No, no. Well, it's for

your information partly. But I think it might be good to analyze the data.

BRETT REANY: Okay.

TONY NAKANISHI: To evaluate where they might be and what the status of the reactor might be. So I just wanted to call to make sure those are probably useful information.

So I just didn't want it to sit in the inbox, and nobody pay attention to it.

BRETT REANY: No, that makes sense.

TONY NAKANISHI: Yes.

BRETT REANY: Okay. I see you sent some stuff this morning at 6:28 a.m. our time, following Excel files.

TONY NAKANISHI: Yes, that's right, six of them?

BRETT REANY: Eight of them.

TONY NAKANISHI: Is it eight? Okay, could be eight, yes. That's probably right, you're right, yes. And what happens if you open those?

BRETT REANY: I get the chart.

TONY NAKANISHI: You get the data but the letters are all messed up?

BRETT REANY: It's hard to tell. It looks --

TONY NAKANISHI: Go to some of the other tabs. Because they have more words.

BRETT REANY: Okay. Yes, the last one, it's showing the characters in drywell.

TONY NAKANISHI: Okay, so it's showing the characters properly for those?

BRETT REANY: Yes, it is.

TONY NAKANISHI: Okay, good, good. And do you guys have an interpreter usually, or during the day at least or --

BRETT REANY: Honestly, I'm not sure. I'll have to find out.

TONY NAKANISHI: Okay, yes. I've been told that you guys have an interpreter there.

BRETT REANY: I haven't been on shift in about a week, so I wasn't aware of that. But I'll check.

TONY NAKANISHI: Uh-huh.

BRETT REANY: Okay. What else did you need from us?

TONY NAKANISHI: No, that's it. I just wanted to relay that information, I think. And you guys are working on the -- oh, the other thing I wanted to ask was I got this email from Eva Brown. BRETT REANY: Okay.

TONY NAKANISHI: It's a follow-up to the

salt issues.

BRETT REANY: Okay.

TONY NAKANISHI: Do you understand what I'm talking about?

BRETT REANY: Yes.

TONY NAKANISHI: Okay. And I wanted to know if that was approved for transmittal to TEPCO?

BRETT REANY: And no one's responded to your email from this morning, I'm guessing.

TONY NAKANISHI: Well, nobody really answered my question. Somebody responded, but I didn't get a direct answer, yes, it was approved.

BRETT REANY: I see. Let me ask Bill if he knows. Hold on one second.

TONY NAKANISHI: Okay, okay.

BRETT REANY: Hey, Bill. Okay, I'm going to put you on speaker.

TONY NAKANISHI: Okay.

(Pause)

BILL RULAND: Tony?

TONY NAKANISHI: Yes.

BILL RULAND: Hey, how you doing, Tony?

TONY NAKANISHI: Hi, Bill.

BRETT REANY: So he had a question (indiscernible) questions for TEPCO.

MALE PARTICIPANT: Okay.

BRETT REANY: And Fred responded and said to call and (indiscernible).

MALE PARTICIPANT: Hold it, I just want to, 4:00, 11:00, it's 6:43 p.m. Okay, yes. Go ahead, Tony.

TONY NAKANISHI: Yes. I was just wondering if that TEPCO, or it's a salt water issue response, can be forwarded on to TEPCO at this point?

BILL RULAND: Yes. Just one question. Hold on a second. Hey guys, guys. This is Tony Nakanishi. And he's asking for the document, as we predicted.

MALE PARTICIPANT: Tell him we'll give it to him in 15 minutes.

BILL RULAND: Yes, hold on a second. Hold a second, Tony.

TONY NAKANISHI: Oh, okay.

BILL RULAND: We have vetted this thing with the key nuclear organizations in the United States.

TONY NAKANISHI: Right.

BILL RULAND: KAPL, Bettis, Naval Reactors, us, GE Hitachi, INPO, EPRI, okay.

TONY NAKANISHI: Uh-huh.

BILL RULAND: DOE, I'm sorry. There's a DOE guy here and I almost forgot to include them. So

we did all that.

And at the last minute there was a question about priorities of which plant should be dealt with first. And that led us to take another look at these assessments.

And as a result of that we discovered that they might not be entirely accurate, but it doesn't sound like it changes our recommendations, other than maybe the priorities.

TONY NAKANISHI: Right.

MALE PARTICIPANT: We're thinking that it might change, put the priority on Unit 1 to try and save that containment, and then Unit 3 next, and then Unit 2, as far as getting fresher water.

BILL RULAND: Okay, right. But that being the case, that's the only thing we've got.

(Off microphone discussion)

This is Tony Nakanishi.

MALE PARTICIPANT: Okay.

BILL RULAND: Actually, Tony works in my division, right, Tony?

TOM ROBERTS: Good morning, Tony. This is Tom Roberts. We talked yesterday morning.

TONY NAKANISHI: Hi, good morning.

BILL RULAND: Anyway, these guys are

telling me 15 minutes.

TONY NAKANISHI: Okay.

MALE PARTICIPANT: Well, 8:30 their time.

TONY NAKANISHI: Okay. Should I call back.

BILL RULAND: That's 45 minutes. That's must be a regulatory 15 minutes.

(Laughter)

MALE PARTICIPANT: Safety factor of three.

BILL RULAND: Okay, okay, 45 minutes, Tony?

TONY NAKANISHI: Yes. I'll call you back then.

BILL RULAND: Okay. Time out. Any other new information you could provide us?

TONY NAKANISHI: (b)(5)

BILL RULAND: Right.

TONY NAKANISHI: (b)(5)

(b)(5)

(b)(5)

BILL RULAND: (b)(5)

(b)(5)

TONY NAKANISHI: (b)(5)

(b)(5)

BILL RULAND: Okay.

TONY NAKANISHI: (b)(5)

(b)(5)

BILL RULAND: (b)(5)

(b)(5)

TONY NAKANISHI: (b)(5)

(b)(5)

BILL RULAND: Yes, correct.

TONY NAKANISHI: Right. (b)(5)

(b)(5)

BILL RULAND: Hold on a second. (b)(5)

(b)(5)

TONY NAKANISHI: Okay, well, I'm just

translating based on my interpretation. (b)(5)

(b)(5)

BILL RULAND: Right.

TONY NAKANISHI: (b)(5)

(b)(5)

BILL RULAND: Okay. Yes, warnings, whatever.

TONY NAKANISHI: (b)(5)

(b)(5)

BILL RULAND: And meanwhile we have a translator here.

TONY NAKANISHI: Okay.

BILL RULAND: She's in a room over there.

TONY NAKANISHI: Okay, that's great,

because --

BILL RULAND: (b)(5)

(b)(5)

TONY NAKANISHI: That's great. Because we (b)(5) But they usually go out to support meetings. So what's the fax number there?

BILL RULAND: Let me get it. Hold on a second.

TONY NAKANISHI: Okay.

BILL RULAND: How are you holding up otherwise.

TONY NAKANISHI: I'm doing well. Yes. And we've got help. Mike Scott and Alan are here. So that's great. And I'm assuming they're more --

BILL RULAND: More on the way.

TONY NAKANISHI: Yes.

BILL RULAND: There was some comment that somehow they were injecting fresh water into Unit 1. But are you aware of this, or what?

TONY NAKANISHI: Hang on, let me ask the people here?

(Off microphone discussion)

TONY NAKANISHI: Okay, that is confirmed. Chuck is nodding his head. There's a press conference that communicated that they're injecting fresh water

in Unit 1.

BILL RULAND: And is that like from a CST? It doesn't sound like they would be able to do it for that long.

TONY NAKANISHI: Okay, we haven't confirmed that they're claiming it. That's just Chuck's clarification. Hey, Chuck, do you know, if that coming from CST or --

(Off microphone discussion)

TONY NAKANISHI: Chuck, is it CST line or we don't know.

(Off microphone discussion))

TONY NAKANISHI: We don't know?

(Off microphone discussion)

TONY NAKANISHI: Okay. We don't know the details of where it's coming from and stuff like that. But --

BILL RULAND: Okay. But I would infer that whatever it's coming from it's a limited supply. And they're going to have to go back to salt water at some point.

TONY NAKANISHI: Sure. And that's a reasonable assumption, unless they --

TOM ROBERTS: Also, this is Tom Roberts. That's Unit 1, right?

TONY NAKANISHI: That's right.

TOM ROBERTS: In the telecon this afternoon we were told that TEPCO's priority for fresh water was Unit 3. So I guess I wonder why they chose Unit 1 if their priority is Unit 3. Maybe we got bad dope on what their priorities are.

BILL RULAND: Or maybe this is the only unit they can get the fresh water in.

TOM ROBERTS: Right, right.

TONY NAKANISHI: Right. There's so many variables. It's just hard to piece everything together.

BILL RULAND: Okay, here's the fax number.

TONY NAKANISHI: Okay.

BILL RULAND: 301-816-5151.

TONY NAKANISHI: 816-51 --

BILL RULAND: 51.

TONY NAKANISHI: 5151, let me just read it. 301-816-5151.

BILL RULAND: Right, correct.

TONY NAKANISHI: Okay. (b)(5)

(b)(5)

(b)(5)

BILL RULAND: Which one is this?

TONY NAKANISHI: Hum?

BILL RULAND: You got our attention.

TONY NAKANISHI: Yes, I know, (b)(5)

(b)(5)

BILL RULAND: Which unit?

TONY NAKANISHI: Well, let me see. And this is, again, if you want you could look on with me.

(b)(5)

BILL RULAND: Okay, (b)(5)

TONY NAKANISHI: Okay, do you have the email that I sent you (b)(5)

BILL RULAND: Yes.

TONY NAKANISHI: Okay. (b)(5)

(b)(5)

BILL RULAND: Yes, I see it.

TONY NAKANISHI: (b)(5)

(b)(5)

BILL RULAND: Yes. Okay, okay.

TONY NAKANISHI: (b)(5)

(b)(5)

BILL RULAND: (b)(5)

(b)(5)

TONY NAKANISHI: (b)(5)

(b)(5)

BILL RULAND:

TONY NAKANISHI: (b)(5)

(b)(5)

BILL RULAND: Yes.

TONY NAKANISHI:

(b)(5)

BILL RULAND:

TONY NAKANISHI: (b)(5)

(b)(5)

BILL RULAND: This is Unit 1?

TONY NAKANISHI: Yes, (b)(5)

BILL RULAND: Yes.

TONY NAKANISHI: (b)(5)

(b)(5)

BILL RULAND: (b)(5)

(b)(5)

TONY NAKANISHI: (b)(5)

(b)(5)

BILL RULAND: Yes. (b)(5)

(b)(5)

MALE PARTICIPANT: (b)(5)

(b)(5)

TONY NAKANISHI: (b)(5)

(b)(5)

BILL RULAND: Yes.

TONY NAKANISHI: And then what does it come out as?

MALE PARTICIPANT: One great read.

BILL RULAND: (b)(5)

(b)(5)

TONY NAKANISHI: Right.

BILL RULAND: I think I'm not exactly --

TONY NAKANISHI: Yes, right. But that's close enough.

BILL RULAND: (b)(5)

(b)(5)

TONY NAKANISHI: (b)(5)

(b)(5)

BILL RULAND: Yes. No, no --

TONY NAKANISHI: But it's good to evaluate.

BILL RULAND: Right.

TONY NAKANISHI: Yes.

BILL RULAND: (b)(5)

(b)(5)

TONY NAKANISHI: Yes. (b)(5)

(b)(5)

(b)(5)

BILL RULAND: (b)(5)

(b)(5)

TONY NAKANISHI: Yes. Well, right. Well, Chuck might be busy with other stuff.

BILL RULAND: Right, right, right. (b)(5)

(b)(5)

TONY NAKANISHI: Uh-huh, Uh-huh. So anyway, that's what we're trying to do. (b)(5)

(b)(5) So anyway, I just wanted to make sure these things didn't fall through the crack.

BILL RULAND: Okay, okay. And these guys -- hold on a second. Guys, what's the ETA on this thing?

MALE PARTICIPANT: Probably only (indiscernible).

BILL RULAND: Okay, you're going to be able to circle back to the --

(Off microphone discussion)

BILL RULAND: If we can't make 8:30, would 9:00 be okay?

TONY NAKANISHI: Yes, yes. It's whenever you can.

BILL RULAND: Okay, okay.

TONY NAKANISHI: Don't sweat it.

BILL RULAND: Well, no. We're here to

support you. And that's why I would be afraid that it would be too late for you to use it.

TONY NAKANISHI: Right. No, it's not that urgent, but as soon as practical kind of thing.

BILL RULAND: Okay, great, okay. Anything else you can tell us?

TONY NAKANISHI: No. I think that's it for now. Mike is here also, Alan's here. I don't know if you need to talk to them.

BILL RULAND: Hey, tell Mike I said hello.

TONY NAKANISHI: Okay. Bill says hello, Mike, Ruland.

BILL RULAND: And actually tell Alan I said hello too. I know Alan.

TONY NAKANISHI: Yes. He says he wishes you were here. Maybe you will one of these days. But okay, I'll let you go then.

BILL RULAND: Okay. Hey, thanks.

TONY NAKANISHI: All right, thanks. Bye.

BILL RULAND: Wow.

(CONFERENCE CALL ENDED)

3-03 Track 07

(CONFERENCE CALL INITIATED)

FRED BROWN: Reactor Safety Team recorded line.

HEADQUARTERS OPERATIONS OFFICER: Yes, this is the HOO. We have NRR gentleman that wants to talk to a technical person on the reactors.

FRED BROWN: Hang on a second please. Anybody in particular they're looking for?

HEADQUARTERS OPERATIONS OFFICER: No. He's just from NRR, NRC.

FRED BROWN: All right, hold on a second. We have an NRR person who wants to speak with one of the technical analysts here.

FEMALE PARTICIPANT: Hello.

HEADQUARTERS OPERATIONS OFFICER: Yes. This is the HOO. I have a person from NRR that wanted to speak to somebody about the technical information on the reactors.

(Off microphone discussion)

MIKE SALAIT (phonetic): Hello. This is Mike Salait. This is a recorded line.

HEADQUARTERS OPERATIONS OFFICER: This is the HOO. I have a gentleman from NRR that wanted to get some technical information on the reactors.

MIKE SALAIT: Okay. Hello, this is Mike Salait. This is a recorded line.

WARREN LYON: Hi, Mike. Warren Lyon, NRR Reactor Systems. You folks are probably on top of it,

but I figured I'd give you a call anyway.

I just read some disturbing stuff about Unit 1. And basically they said the core temperature had gone up to 400C. And BWRs in general don't have any core temperature measurement. What they have is vessel temperature.

MIKE SALAIT: Yes. What we heard is that the 400 degrees C is actually on the bottom of the vessel.

WARREN LYON: Okay.

MIKE SALAIT: Yes, not in the core.

WARREN LYON: Okay, good. So you're on top of that one. I didn't even know that they had it on the bottom of that site.

MIKE SALAIT: I don't know either. I'm not the BWR person, the reactor person here.

WARREN LYON: I know they normally have them up around the top. In any event they decided, as a result of that, and increasing vessel and containment pressure, to back off on injection from what I read.

MIKE SALAIT: Yes. It has been a concern that, I think we did provide them recommendations to increase injection.

WARREN LYON: Yes. Because that kind of behavior is exactly what I would expect for initiating core cooling effectively under these circumstances.

So I was right. You guys are already on top of it. And I didn't need to have called.

MIKE SALAIT: That's all right. Thank you very much for your call.

WARREN LYON: Hey, bye now.

MIKE SALAIT: All right. Bye-bye.

(CONFERENCE CALL ENDED)

4-01 Track 01

(CONFERENCE CALL INITIATED)

RICK HASSELBERG: Reactor Safety Team, Hasselberg.

MALE PARTICIPANT: I've got Holly Harrington on the line.

RICK HASSELBERG: Holly Harrington, I thank you.

MALE PARTICIPANT: Connect you now.

RICK HASSELBERG: Holly, Rick Hasselberg, what's up?

HOLLY HARRINGTON: Hello there. What's the email address for the reactor safety team?

RICK HASSELBERG: rst01.

HOLLY HARRINGTON: rst01, okay.

RICK HASSELBERG: And then it'll say hoc when you type that in.

HOLLY HARRINGTON: Right, okay. I'm sending, we're getting a lot of these we think you should be doing X, Y, Z to help Japan. And we have some standard language that we send to them to make them go away.

RICK HASSELBERG: Yes.

HOLLY HARRINGTON: This particular person didn't go away. And my people think that there might actually be something important to look at --

RICK HASSELBERG: All right.

HOLLY HARRINGTON: -- in their suggestions. So I'm going to send it to you. You are under no obligation. But I'm just, in case it's something important, I'm sending it to you.

RICK HASSELBERG: All right. Based on

that, I'll probably put it in my log and attach it, and those things. So it looks like we are giving it due diligence.

HOLLY HARRINGTON: Perfect.

RICK HASSELBERG: Thank you.

HOLLY HARRINGTON: Thank you, bye.

RICK HASSELBERG: Right, bye-bye.

(CONFERENCE CALL ENDED)

4-02 Track 02

(CONFERENCE CALL INITIATED)

BRETT REANY (phonetic): RST, Brett Reany.

MALE PARTICIPANT: Yes, I've got a Harold Chernoff on the line for Rick Hasselberg.

BRETT REANY: Rick's gone for the day. I'm

his relief.

MALE PARTICIPANT: Oh, okay. Well, maybe you can help him then. Let me connect you.

BRETT REANY: Who is it again?

MALE PARTICIPANT: Harold Chernoff.

BRETT REANY: Okay.

MALE PARTICIPANT: Connecting.

BRETT REANY: Thank you.

HAROLD CHERNOFF: Rick?

BRETT REANY: This is Brett Reany. I replaced Rick.

HAROLD CHERNOFF: Oh, Hi, Brett. Harold Chernoff over in DRL (phonetic).

BRETT REANY: Hi, how are you?

HAROLD CHERNOFF: Pretty good. Hey, I'm trying to unwind something a little bit, a follow-up on, actually it's, I guess, a couple day old request for some information on TMI2.

BRETT REANY: Okay.

HAROLD CHERNOFF: This came from a Dorman email from the 22nd looking for --

BRETT REANY: What happened at TMI the 16 months after the accident?

HAROLD CHERNOFF: Or during the 16 months.

BRETT REANY: Yes.

HAROLD CHERNOFF: Yes.

BRETT REANY: Yes.

HAROLD CHERNOFF: And a couple of just the feedback items. Apparently we ended up with multiple people, one guy from research, and our NRC historian, both calling out to the licensee and kind of confusing our licensee.

BRETT REANY: Wow, okay.

HAROLD CHERNOFF: To the extent we can work through the project managers, I think that'll help with that interface.

BRETT REANY: Okay.

HAROLD CHERNOFF: And the licensee's working on some stuff. And I wanted a clarification. Tom Wellock, our historian, apparently had indication that there were a couple of reports.

And I just need to know is there any specific document that the team over in your place is looking for.

Or is it just a general request for what the licensee thinks might be applicable covering that period of information?

BRETT REANY: I don't think there's anything specific. It was more of a, and I can get the exact question, but I think it was just --

HAROLD CHERNOFF: I've got it sitting in front of me on the screen --

BRETT REANY: Okay.

HAROLD CHERNOFF: -- what came over from Dorman. But I just wanted to make sure that, well, we have indicated the licensees look at the stuff, and if you think it's relevant, then we would be interested in getting that information into the Japanese people's hands.

BRETT REANY: Yes.

HAROLD CHERNOFF: Is that okay, just let them use their judgement on that?

BRETT REANY: Yes. I think so.

HAROLD CHERNOFF: We don't have any specific documents we're looking for.

BRETT REANY: No.

HAROLD CHERNOFF: Okay.

BRETT REANY: No. I don't think anyone had anything specific in mind.

HAROLD CHERNOFF: Okay. The second item related to this, the licensee is checking right now, there's a potential that this information, that they may have concerns about it being publicly available.

And my project manager ran by Rick, if they have that concern, we could still quickly move the

information overseas by the licensee using INPO, who's more than willing to forward the information to their point of contact up there.

BRETT REANY: Okay. Yes, they have someone embedded.

HAROLD CHERNOFF: Right. Rick was concerned, apparently, that we have the same information here that they have there.

And all I want to point out is if there is a concern with, it's called proprietary aspects of some of the information, if we go through the normal getting it in here, that may slightly delay the availability of the information.

So I would recommend if like the (indiscernible) got that concern that we let the INPO channel go forward, and we can, after the fact, work on getting the same information here.

BRETT REANY: Okay.

HAROLD CHERNOFF: Does that make sense?

BRETT REANY: Yes. I think that makes sense.

HAROLD CHERNOFF: Okay, all right.

BRETT REANY: I really do want to get it to them. But I guess you're saying they could send it to us at some point. And we would do a proprietary

evaluation.

HAROLD CHERNOFF: Yes. But if they think it's proprietary, and they send it to us without that, they have no protection under FOA, et cetera. And it's a big headache to try to impose that after the fact.

BRETT REANY: Okay.

HAROLD CHERNOFF: So if that makes sense, we'll feedback to you what they've got and how it's going to be provided. Okay?

BRETT REANY: All right.

HAROLD CHERNOFF: Are you the right person to get that to? Or is it somebody else?

BRETT REANY: Well, yes, I am. But the email address is rst01.

HAROLD CHERNOFF: Right, right.

BRETT REANY: And that's the ERC coordinator address that we've been using.

HAROLD CHERNOFF: Let me just double check I've got that. Because I think this is, oh, I see. That's Dorman's. So yours is rst?

BRETT REANY: rst01 --

HAROLD CHERNOFF: hsc?

BRETT REANY: hsc, yes.

HAROLD CHERNOFF: Understand. All right, thank you, sir.

BRETT REANY: Thank you.

HAROLD CHERNOFF: Bye.

BRETT REANY: Okay, bye.

(CONFERENCE CALL ENDED)

4-03 Track 03

(CONFERENCE CALL INITIATED)

BRETT REANY: RST, Brett Reany.

LT. OPFER: Yes. This is Lieutenant Matt Opfer with USFJ. We are preparing for a watch turnover. I just wanted to get a quick update on something that

we were informed of last night, as far as the pressure in Reactor Number 1.

BRETT REANY: Okay.

LT. OPFER: Do you have any updates for that, since --

BRETT REANY: Let me ask. We just had our shift turnover here.

LT. OPFER: Okay.

(Off microphone discussion)

BRETT REANY: Are you asking about reactor pressure or containment pressure?

LT. OPFER: It was the containment pressure.

BRETT REANY: Containment.

LT. OPFER: Containment pressure on the reactor.

(Off microphone discussion)

BRETT REANY: We were told 58 pounds.

LT. OPFER: Okay. So you haven't got a further update since then?

BRETT REANY: No. I don't believe so.

LT. OPFER: What should the normal containment pressure be right now?

BRETT REANY: Here, let me put you on with our BWR expert. He might be able to help with that.

LT. OPFER: All right.

BRETT REANY: Here he is.

MALE PARTICIPANT: Hello?

LT. OPFER: How's it going, sir. This is Matt Opfer, down with USFJ.

MALE PARTICIPANT: U. S. who?

LT. OPFER: U. S. Forces Japan.

MALE PARTICIPANT: Oh, okay, Hi.

LT. OPFER: Sorry. We saw your report. And we need to ask a couple of follow-up questions on it. On the 58 pounds --

MALE PARTICIPANT: Which report are you looking at?

LT. OPFER: It says, "NRC understands as of 0600 that Unit 1 containment pressure is 58 PSI and TEPCO is considering venting containment."

And I've got a report from someone with the Japanese Government that they're not venting. But I didn't get a report on why they're not going to vent, whether the pressure came down. So I was just curious if you guys had an update.

MALE PARTICIPANT: No. We do not have an update on what they're doing. So the report, what's the time of your report, 0600? And that's a report from us? What's the title at the top of it. Is it the RST

Assessment of Fukushima Daiichi Units?

LT. OPFER: The email we have, let's see here. Let me go back to the very beginning. It was the (indiscernible, sounds like Dechiami Norika) subject, Reactor Number 1 may be vented.

MALE PARTICIPANT: Okay.

LT. OPFER: Have ... question. I guess, I'm not doubting the 58 PSI. What I'm curious is, is what would you expect the normal containment pressure to be right now?

MALE PARTICIPANT: Oh, I would expect it to be, if they were doing things right, it should be around five pounds or so, if they were venting and doing everything they should be doing.

LT. OPFER: Okay. So you would normally expect it to be five pounds.

MALE PARTICIPANT: Yes. Now, I don't know why they're not venting. I was surprised to hear it had gone up to 58 pounds. I was curious to know why it had gone up to that. I was wondering, have you received an explanation on that?

LT. OPFER: I have not received an explanation on that. I've seen some reports that basically it went up when they were pumping water in, when they were injecting water continuously, and there

was no relief path.

And then I think they're trying to avoid doing any kind of releases due to, they don't want to release any radiological, I guess any additional containment that's --

MALE PARTICIPANT: So they stopped injecting water into the vessel to cool it, or to fill --

LT. OPFER: To cool it. And then they stopped injecting water to reduce the need for pressure, or to reduce the pressure, I'm sorry. I get tongue-tied here.

That's what I understand. And I was just trying to confirm with you whether you'd heard one way or the other if anything had happened.

The only report I have was basically from someone saying the JJS (phonetic) rep had reported that no venting will occur today, or tomorrow.

MALE PARTICIPANT: Okay. Well, what you've done is provided me more information that I was able to help you with.

So we're going to take that information and throw that into our mix for assessment here, that they have informed you that they're not going to vent today, and today being the 25th.

LT. OPFER: Yes. Well, at the time it said tomorrow. So it would have been --

MALE PARTICIPANT: Okay.

LT. OPFER: Yes. Today's the 25th.

MALE PARTICIPANT: And so you're the joint, what's your position again, joint --

LT. OPFER: We're with United States Forces Japan.

MALE PARTICIPANT: U.S. Forces Japan.

LT. OPFER: That's correct.

MALE PARTICIPANT: And what was your rank and name again?

LT. OPFER: Lieutenant Matt Opfer.

MALE PARTICIPANT: Lieutenant, how do you spell that?

LT. OPFER: O-P-F-E-R.

MALE PARTICIPANT: O-P, Lieutenant Opfer.

LT. OPFER: Oscar, Paul, Foxtrot, Echo, Romeo.

MALE PARTICIPANT: Oscar, Paul, Foxtrot, Echo, Romeo. Okay.

LT. OPFER: Yes, sir.

MALE PARTICIPANT: That's good information for us. But we just got here. I heard this morning

when I called in that pressure had gone up to 58 pounds in containment. And that's kind of concerning to me is how it got there.

And you're saying they're thinking it's because of the injection water going in. It must not be being quenched in the torus or something in order for the pressure to go up that high.

I was worried that maybe something had gone X-vessel and got in the sump, and they had like a flash of steam or something in the drywell.

LT. OPFER: Let me see if I can find that report that I was reading off of that said that they were, they had said the power company cut back on water injection.

And this resulted in pressure inside the container dropping to 0.3585 megapascals, which is below the safety limit.

MALE PARTICIPANT: Okay.

LT. OPFER: That's the report that I was basing that on. But like I said, I was informed through a much more reliable source that they were not going to be venting today.

MALE PARTICIPANT: Okay. They will not vent today. They stopped all injection at what time?

LT. OPFER: I don't have a time on that.

That's why I said that was kind of a --

MALE PARTICIPANT: Okay. But they stopped all injection. And this is into Unit 1. They stopped all injection and pressure went from what to what?

LT. OPFER: They just said it went down to 0.3585 megapascals.

MALE PARTICIPANT: Okay. I'm going to have to convert that.

LT. OPFER: Yes. I didn't have a chance to convert it either. But you said you would normally expect five PSI.

MALE PARTICIPANT: Yes, down around there, if they're doing things right. It can go up to 15 pounds. During accident conditions you expect it to go up and down.

But you're trying to keep it low. And you're trying to vent mainly from the torus, so that you're scrubbing the atmosphere that get's released. So you contain some of the stuff.

But as long as they're protecting primary containment, they're doing the right thing.

LT. OPFER: Yes. They said that they cut back on water injection, not stopped it. So maybe they're cycling it --

MALE PARTICIPANT: Yes.

LT. OPFER: -- just enough to keep it cool.

MALE PARTICIPANT: I'd like to see them flood the containment and vent -- they have to, to flood it -- and get that water level up covering the lower core.

But that's just me. Don't take that as a recommendation from the NRC or anything. That's just me. We're just brainstorming between us.

LT. OPFER: It's personal --

MALE PARTICIPANT: Yes.

LT. OPFER: -- what your thoughts would be if it was you making that decision.

MALE PARTICIPANT: And that's an argument that I'm going to put out for debate here in the RST, reactor safety team, later this evening, or morning to you. We've got the time. I guess it's almost 5 o'clock there, in the morning.

LT. OPFER: Yes, sir. It is almost 5 o'clock here.

MALE PARTICIPANT: Yes. Well, I tell you, I'd rather be here than there right now. All right, well, thank you very much, sir, for the information.

LT. OPFER: All right. We'll keep you informed if we hear anything else. Like I said, they're supposed to report to us through our contacts with

Government of Japan, that they're going to forward us information and let us know if they do vent.

MALE PARTICIPANT: Okay. And if you get some back channel information, that's always useful to us.

LT. OPFER: All right. We'll definitely keep you informed.

MALE PARTICIPANT: Thank you very much.

LT. OPFER: All right. Thank you, sir.

MALE PARTICIPANT: Bye.

LT. OPFER: Bye-bye.

(CONFERENCE CALL ENDED)

4-04 Track 04

(CONFERENCE CALL INITIATED)

BRETT REANY (phonetic): RST, Brett Reany.

LT. CDR. SAM YOUNG: Hello. This is Lieutenant Young from USFJ. How are you today?

BRETT REANY: Good, how are you?

LT. CDR. SAM YOUNG: Good. Hey, we've got

some questions here. Actually we heard a report that Unit 1 had been switched to fresh water from on site tanks.

BRETT REANY: Let me put you on speaker.

LT. CDR. SAM YOUNG: Okay.

(Off microphone comments)

LT. CDR. SAM YOUNG: I am on speaker.

BRETT REANY: Yes, he is on speaker.

LT. CDR. SAM YOUNG: So this is Lieutenant Commander Young, Sam Young. I'm one of the Navy Nukes out here that's helping USFJ keep track of the situation.

And I'm just following the SITREPs that we've been seeing. But we just heard from NR, and also PACOM is saying it, that Unit 1 reactor cooling had been switched to fresh water from on site tanks.

And we're just trying to find out, we're trying to verify that report and find out where that's coming from.

TOM ROBERTS: This is Tom Roberts. I'm the Naval Reactors rep here at NRC. We heard that verbally from the NRC team in Japan about an hour and a half ago.

And they said they didn't have anymore details of which pathway was used, or how they're removing heat, just that they'd hooked up from a local tank.

LT. CDR. SAM YOUNG: Aye, sir. We're very interested in that, I guess. We've been making a real effort here to get some water, fresh water barges available to the Japanese.

And actually both barges, which have a capacity of 350,000 gallons, are filled and ready. And the Japanese are supposed to be picking one up this morning. Actually it should be there already (indiscernible).

But it takes 32 hours for a barge to get up to Fukushima, we estimate. So we're very happy to hear that maybe they're getting fresh water from on site. Because we hadn't heard they had that capability still.

TOM ROBERTS: All right. What we had heard before, and this has not been confirmed, is that they found a tank that had some fresh water in it.

And it didn't sound like that was going to last for a long time. So it doesn't seem like they've solved the problem, if they found a way to get fresh water in for something, another time period. But we don't have a solid report of exactly what this pathway is, or what they have.

LT. CDR. SAM YOUNG: Okay. Another reason we wanted to verify this information is because we expect three people from USFJ, including Admiral Rowden, to

be taking a helo and going up to J-Village today to meet with Major General Nemiroff (phonetic) up there, and the JMSDF command that is fighting this casualty from that command post.

So we want to make sure he's got the most up-to-date information, so when he's up there, he's able to ask the right questions so we can get the best information, so just to let you guys have that situational awareness to know that we will have somebody at J-Village today.

MALE PARTICIPANT: Okay, good.

TOM ROBERTS: Yes, any questions from this team that, I don't know if he's going to get much more information than the embedded NRC team has. But certainly, I'm sure, he's a smart guy and will ask questions. And anything he learns will be good.

MALE PARTICIPANT: Do we have a number to contact him if we do get some sort of confirmation?

MALE PARTICIPANT: I don't have a number.

TOM ROBERTS: Can you give us a way to contact you? I don't know that we're going to get any confirmation. but if we do get additional information, how do we get in touch with you?

LT. CDR. SAM YOUNG: I'm going to offer up two ways. One is just email. That could be simplest.

(b)(6)

MALE PARTICIPANT: Did you get all that? Because I was not writing.

TOM ROBERTS: Yes. Okay, we've got it. And we'll try both means if we get any information.

LT. CDR. SAM YOUNG: Okay. We appreciate it.

TOM ROBERTS: Thank you. Anything else?

LT. CDR. SAM YOUNG: All right, thank you. No, that's it for now.

TOM ROBERTS: Take care.

LT. CDR. SAM YOUNG: All right, thank you.

(CONFERENCE CALL ENDED)

4-05 Track 05

(CONFERENCE CALL INITIATED)

BRETT REANY: RST, Brett Reany.

BILL HUFFMAN: Hey, Brett. Bill Huffman here. I just sent over a --

BRETT REANY: Okay.

BILL HUFFMAN: -- that has some translation that was for the RST.

BRETT REANY: Okay, great.

BILL HUFFMAN: And it's RST01.

BRETT REANY: Thank you.

BILL HUFFMAN: Bye-bye.

BRETT REANY: Okay, bye.

(CONFERENCE CALL ENDED)

4-06 Track 06 (Contains no words to transcribe)

4-07 Track 07 (Contains no words to transcribe)

4-08 Track 08

(CONFERENCE CALL INITIATED)

MALE PARTICIPANT: NRC, this is a recorded line.

FRED BROWN: Yes, this is Fred Brown in the RST. Can you connect me to the bridge for the consortium

technical 11 o'clock call please.

MALE PARTICIPANT: Yes. The pass code is 6543.

FRED BROWN: 6543.

MALE PARTICIPANT: Correct. Just follow the --

MALE PARTICIPANT: I'm going to connect him now.

FRED BROWN: Thank you.

MALE PARTICIPANT: Hey, make sure you tell them you're tell there. Because they're probably waiting for you.

FRED BROWN: Okay.

(Pause)

OPERATOR: Welcome, you have reached the audio --

(Pause)

OPERATOR: After the tone, please state your name and organization followed by the pound key.

FRED BROWN: Fred Brown, reactor safety team.

HEADQUARTERS OPERATIONS OFFICER: Okay. This is the Headquarters Ops Officer. I see you up on the conference, sir.

FRED BROWN: Very good, thanks.

HEADQUARTERS OPERATIONS OFFICER: Yes.

FRED BROWN: This is Fred Brown with the NRC's reactor safety team.

MALE PARTICIPANT: Hi, Fred. You've got the INPO Emergency Response Center technical folks on the line also.

FRED BROWN: Fantastic.

MALE PARTICIPANT: The guys from GE Hitachi are here.

MALE PARTICIPANT: Hey, Mr. Brown. I can do a roster playback if you'd like, sir.

FRED BROWN: That'd be great, thank you.

MALE PARTICIPANT: Standby.

OPERATOR: There are currently ten participants in your conference. The following people are in the conference. Gerald O'Hara (phonetic), Headquarters Operations Officer, Eva Doyle (phonetic, KAPL.

This is the INPO Emergency Response Center. (Indiscernible), GE Hitachi, (indiscernible) Bettis Laboratory reactor safety, Einhurst (phonetic) and Bell from Naval Reactors, Jim Heishman at EPRI, Sal Golub, DOE Office of Nuclear Energy, Fred Brown, Reactor Safety Team, Greg Selby, EPRI.

OPERATOR: Roster playback is complete.

FRED BROWN: Great. Dave, do you want to start the meeting before we talk about the specific tasks, Garchow.

MALE PARTICIPANT: He's not on the call with us at this moment.

FRED BROWN: Okay. Well, he and I had talked earlier about today's topic. I guess I would start by thanking everyone for being on.

I think the genesis for an 11 o'clock daily technical call came out of yesterday's management consortium call to have a call at the level to discuss specific technical details.

And I believe that INPO has put the structure together for the call, that looks really good to keep us focused, and then a process for canceling a daily call if we don't have one.

I think the item that we had to discuss today was an assessment document with recommendations for the U.S. folks in Japan to use in their discussions with the Japanese Government and TEPCO. And we've put together a framework that was a call on midnight shift this morning that involved the U.S. personnel in Japan, as well as GE Hitachi, and INPO, and the reactor safety team, that resulted in a draft assessment document that was emailed around. Hopefully all the participants

to this call have it.

The concept is to attempt to provide some assessment of the most current information, and then provide insights on recommendations that are at a level that respect the capacity of the folks closest to the event to find engineering solutions, but to help them in that by providing high level recommendations on priorities and considerations.

I think there'd be some expectation that this document would evolve if it's found useful by the folks in Japan in their interactions with the Japanese.

But what we had hoped to do was to be able to provide an initial edition by late this afternoon or early this evening Eastern time, for the folks in Japan. It would be available in their email when they came in this morning.

I also think that there's been a lot of communication done between INPO and GEH for a follow-up call or meeting after this to get themselves together, and to mark up in a red line strike-out their thoughts on this assessment, and expand it as appropriate, and provide whatever clarification or alternate thoughts that they would have.

What I think we'd like to accomplish on this call is answer any questions.

And we also have, as you heard going through the participant list, we have Naval Reactors and their labs on.

And so this should be a great opportunity for them to provide insights and questions so that the GEH and INPO folks have the benefit of that prior to their call.

Any other high level introduction or clarification questions before we move to specific discussion of the draft document?

DAVE GARCHOW: This is Dave Garchow, Vice-President of Engineering and Tech Support at INPO. And we have this as our highest priority.

We also were including EPRI in our working call. They have a lot of technical expertise in service to the nuclear industry. So our comments to this document will be based on a collaborative review by GE Hitachi, INPO, and EPRI technical expertise.

FRED BROWN: Fantastic. Well said, Dave. Thank you.

DAVE MODEEN: And this is Dave Modeen at EPRI. I just had one question based on the introductory remarks. And when you mentioned U.S. folks in Japan several times, where is the focal point with the back -- who are those folks. Is that U.S. NRC folks? Is

that a broader group?

FRED BROWN: Yes. I'll answer and then Dave may want to add in. The Federal Government response is coordinated through an organization USAID, which I believe is under Department of State.

That USAID mission in Japan includes an NRC team. And it was recently supplemented with an INPO representative. And, Dave, do you want to pick it up from there?

DAVE GARCHOW: Yes. The U.S. representatives, one of our senior managers, very experienced, and embedded on the NRC team.

And the whole purpose of this is being as close to TEPCO as we can get, be willing to be looking ahead, and then providing them just the type of recommendations that you've drafted so that we can actually be helpful to TEPCO in stabilizing the situation as it currently exists at Fukushima Daiichi.

So we're all aligned on this. And as I said, this is our highest priority for the U.S. industry technical response team, which INPO coordinates with EPRI and the U.S. vendors that we need. And in this case, obviously GE Hitachi is really the expert in a lot of this.

FRED BROWN: Did that answer the question?

DAVE MODEEN: Yes, thank you very much.

FRED BROWN: Uh-huh. Okay, I guess I'll go ahead and open up to any questions about the draft itself.

DAVE GARCHOW: Yes. We haven't had a chance to technically review it yet. So I talked to Fred Brown this morning, of the U.S. NRC.

And we thought maybe we'd just make sure everyone knew what we were doing on this call. And then release thoughts to go -- actually start doing the thinking so that we could maybe meet the early evening time frame.

FRED BROWN: Thank you, Dave. Excellent. And this is Fred Brown speaking from the reactor safety team and NRC Operations Center. For the NR and KAPL and Bettis folks on the line, any insights you want to offer or thoughts at this time?

MALE PARTICIPANT: EPRI had some.

FEMALE PARTICIPANT: Einhurst from Naval Reactors. Likewise, we've only had the draft doc for a half an hour or 20 minutes. So we will have to coordinate technical input through the afternoon to meet your goal.

FRED BROWN: Okay, very good. I understand. And speaking with our Naval Reactor embed person here, I think his interest was having your

comments sent to us.

And then we will forward them to Dave and the team so that they've got them as early as possible in their work as well.

KEN CANAVAN: Okay. this is Ken Canavan at EPRI. I have a couple of real preliminary thoughts for you to think about as everybody walks through their comments.

I went pretty quickly to the recommendations and just thought of a couple of quick things that everybody might want to think about.

In the recommendations there's a recommendation when available use reactor water cleanup for cooling. Reactor water cleanup has filters.

It can bypass those filters. But there should be a caution here that they'll probably plug relatively quickly, and that they should be ready to use the bypass or restore the previous method of cooling.

DAVE GARCHOW: Hey, Ken?

KEN CANAVAN: Yes.

DAVE GARCHOW: There's about 100 questions we have, and things that we're going to work at 1 o'clock. I'd suggest that, rather than providing this input one by one, we use the process supporting aiding that through INPO and getting that back as one mark-up.

KEN CANAVAN: Perfect, Dave. I'll send it to you.

FRED BROWN: Very good. So if there're no high level questions prior to that kind of detailed work, the summary that I think that I have is that, through INPO, all the appropriate industrial resources are aware of this, recognize the importance of it.

They will work collectively to produce a final product. Naval Reactors will provide input through us that we will forward on to INPO for inclusion and consideration in the final document.

The time frame that we're looking at, as I said, if we can get something to Japan by 5:00 p.m., or 6:00 p.m. Eastern time this evening, that'll be great.

I do believe that this will be an evolving document. So perfection is not the goal as much as our best available thoughts to be updated as information becomes available.

If I could ask the Naval Reactor folks to keep in mind that their information will be blended in, so the earlier they can get that to us the better it'll be. Any other thoughts or comments on that?

DAVE GARCHOW: Hey, this is Dave Garchow, Fred. If somehow we could get the Naval Reactor contact, they're welcome to sit in on the 1300 call and provide

their comments directly.

I'm just wondering if speed is the name, and we're all really just engineers. And it'd be probably good to have them involved so we don't create this parallel universe.

FRED BROWN: I think that's a great recommendation. And I certainly would support that if the Naval Reactor folks would like to coordinate with you on getting a contact information, if they're comfortable doing that.

FEMALE PARTICIPANT: This is Steiners (phonetic) from Naval Reactors. So whom do we contact, how, for the 1300 discussion with INPO?

TOM HUCKABY: This is Tom Huckaby. I'm the contact for that. I want, as a function of this meeting, to get who will be participating. And we're going to send out a meeting notice with a conference call line. So I'm the contact for this.

MALE PARTICIPANT: And how do we -- this is Bell at Naval Reactors. How do we contact you then?

MALE PARTICIPANT: NRC has that (indiscernible).

FRED BROWN: Greg, do you have our contact number for our INPO tech email, right?

GREG SELBY: I have the INPO Emergency

Operations Center email.

FRED BROWN: Perfect.

GREG SELBY: What we'll do is forward that email address to everyone. We'll use Tom, the NR embedded rep here, to distribute it within NR.

And then I believe, so that EPRI and GEH folks already have that info. Or would you like us to do a blast mail to everybody?

FRED BROWN: No. All we need is one contact email for us to send the teleconference information to for Naval Reactors and Bettis Labs.

GREG SELBY: I'm sorry. Go ahead. So use the rst01.hoc@nrc.gov. And we'll forward it to them.

FEMALE PARTICIPANT: Naval Reactors will send one contact to rst01 --

MALE PARTICIPANT: Right. But our contact should be the tech. Or we can get it off the (indiscernible) get them off the RC level.

FRED BROWN: Okay. So I will expect to see an email from your RST email into our Emergency Response Center with that contact information. We probably need that within about the next 20 or 30 minutes so we can get the calendar notice out.

GREG SELBY: Very good, understand.

FRED BROWN: The other participants are going to be someone from GEH and then someone, or several someones, from EPRI. Is there anyone else who wants to be included in the 1300 call?

MALE PARTICIPANT: Yes. I wanted to stay out of it. But if you provide a slot for someone from the reactor safety team here, and then we'll tie our DOE embedded rep into that as well, so they're at least -- I actually had hoped to have them on this call. But add one more slot for reactor safety team.

FRED BROWN: I understand to add a slot for the reactor safety team.

DAVE GARCHOW: But just as a way we're going to run this call, so your call doesn't take all the way until 7:00 p.m., we want people to be prepared.

And for each of the recommendations we're going to have three categories, that it's good recommendation and should proceed, that it's a good recommendation, but there're some other considerations.

And I think Ken Canavan gave an excellent example of what some other considerations would be. Or it's not a good recommendation because, and we can list the two or three technical reason bullets why we would not recommend doing that.

FRED BROWN: And preferably an alternate

when that comes up.

DAVE GARCHOW: Right. And I don't think it needs to be necessarily group consensus, because this has sort of got bigger than what the direction was that I had at 6:00 this morning.

But the U.S. industry has a set of SAM-G guidelines and approaches we would do in the same situation.

And we're going to weigh heavily on using those which we believe are technically sound. And we have experts here at INPO very knowledgeable of those.

FRED BROWN: Dave, this is Fred. I think that was beautifully said. And I fully support that approach.

(Pause)

Very good. So we'll, within 20 minutes, have the contact information for Naval Reactors to you for the bridge call.

And we'll look for information on the 1 o'clock call here in the next 20 minutes or so. And then we'll all be prepared at that time to go through the details.

Is there a specific name within GE or EPRI to target? Or has the GE task force email been reaching you?

TOM HUCKABY: Yes. They were reaching us. So if you send it to that, we'll know.

DAVE GARCHOW: Tom, I've asked Hernando, and I have his contact, the vice-president at GE. And Jim Heishman of EPRI, personally asked to be on those calendar notices when I talked to both of them this morning.

TOM HUCKABY: Yes. You've got it, Dave. Thank you.

MALE PARTICIPANT: Dave, this is Hernando. I've got a room full of engineers who are eagerly awaiting all the discussions we're going to have.

DAVE GARCHOW: Great.

SAL GOLUB: Fred and company, this is Sal Golub from DOE NE. So I just joined this call today for the first time. But we've got somebody embedded over their in the NRC EOC.

I believe it's Rob Versus today, and maybe Rick Stark. And those are the two gentlemen I'd like to have participate in the 1300 call if possible.

FRED BROWN: Excellent. Rob's right here and he'll participate at that time.

SAL GOLUB: Terrific. But if you could make sure I'm on distribution for the materials that are floating around related to this, that would be

helpful. then I'll get them to the rest of the NE team.

FRED BROWN: Very good. We'll work through Rob to get your email and add it to our distribution. And then others can pick it up from there.

SAL GOLUB: All right, thank you very much.

DAVE GARCHOW: Hey, Fred. This is Dave Garchow. Since you guys are going to be on the call, perhaps you could just take good notes. You'll get the information you need.

I really don't see any value in us trying to assemble now with six or seven sets of comments into a comment red line document.

If you're participating, you ought to be able to take notes on it and get what you need. Would that be an acceptable approach?

FRED BROWN: Yes, I understand. Yes, we'll do that.

DAVE GARCHOW: Okay, thank you.

FRED BROWN: Very good. Anything else? Otherwise we'll break and look forward to the 1 o'clock call.

MALE PARTICIPANT: Good from INPO then.

MALE PARTICIPANT: Good for GEH.

MALE PARTICIPANT: We're ready for EPRI.

MALE PARTICIPANT: DOE NE's all set.

FEMALE PARTICIPANT: Naval Reactors program, please call in to our reactor discussion group, and we'll organize.

FEMALE PARTICIPANT: Okay, thank you. This is Lena (phonetic) speaking.

MALE PARTICIPANT: Hang on.

FRED BROWN: All right, thank you very much, everyone. Talk to you again in about an hour and a half.

(CONFERENCE CALL ENDED)

4-09 Track 09 (Contains no words to transcribe)

4-10 Track 10

(CONFERENCE CALL INITIATED)

DAVE GARCHOW: Dave Garchow.

FRED BROWN: Hey, Dave, Fred Brown. Sorry to bother you. I know you're real busy. Did the email go out with the bridge information for 1 o'clock? Because we didn't see it.

DAVE GARCHOW: It's coming out, I think, momentarily. We didn't get all the information that we needed from everybody.

FRED BROWN: Okay.

DAVE GARCHOW: I know the guy's working it. I'll have you inquire to him upstairs.

FRED BROWN: Okay. No problem. I just wanted to make sure it hadn't gotten lost somewhere between here and there. But if they're working it, we'll wait.

DAVE GARCHOW: Okay.

FRED BROWN: Very good.

DAVE GARCHOW: It might even be out.

FRED BROWN: Okay.

DAVE GARCHOW: No, it's not out yet, but it should be momentarily.

FRED BROWN: Okay, great. Thanks a lot.

DAVE GARCHOW: Okay, bye.

FRED BROWN: Bye.

(CONFERENCE CALL ENDED)

04-11 Track 11

(CONFERENCE CALL INITIATED)

RICK HASSELBERG: Reactor Safety Team, Hasselberg.

PETER BAMFORD: Hi, Rick Hasselberg. This is Peter Bamford calling.

RICK HASSELBERG: Peter, how are you, sir?

PETER BAMFORD: Well, I'm pretty good. Hey, listen, I have a question that came up regarding our information request that came out of reactor safety team.

RICK HASSELBERG: Well, there've been hundreds. Which one is it?

PETER BAMFORD: No, no. I'm going to tell you in a minute. I'm going to tell you.

RICK HASSELBERG: Okay.

PETER BAMFORD: Okay. A request went out to TMI Unit 2, to get some of the initial containment entry, I guess radiological information, or RP package type thing.

RICK HASSELBERG: Okay, okay.

PETER BAMFORD: And this came from Eric Thomas originally.

RICK HASSELBERG: Yes.

PETER BAMFORD: Okay. And some of the folks up in research were working on it. And they kind of did some back channel work.

RICK HASSELBERG: Uh-hum.

PETER BAMFORD: And they've actually got to the point where they've contacted somebody at TMI who at least knows the file location that might have the information they're looking for.

RICK HASSELBERG: Okay.

PETER BAMFORD: Okay. So I got wind of this on the back end. And I'm the TMI project manager.

RICK HASSELBERG: Right, right.

PETER BAMFORD: That's why I'm calling. We have a suggestion. As we understand it, this was an information request from NISA originally.

RICK HASSELBERG: Okay. I didn't know the source of the request. But we knew that somebody'd be asking for it.

PETER BAMFORD: Yes. But we're concerned about the licensee sending it to us, and then it being foible (phonetic) and --

RICK HASSELBERG: Well, everything is foible, everything. No, listen, don't do any of this concern crap.

PETER BAMFORD: Say again.

RICK HASSELBERG: Oh, this is small fry compared to some of the stuff that's going on.

PETER BAMFORD: Yes. But we're thinking that we can potentially get it to the people in Japan quicker and easier if we just have the licensee give it to INPO.

RICK HASSELBERG: Well, yes. I guess they could do that. But then we'd ask INPO to give it to us anyway, because we're all trying to work from the same sheet of information.

PETER BAMFORD: Okay.

RICK HASSELBERG: So if whoever has it, if they can give it to rst01, we'll keep it in process and then we will distribute it to all parties at the same time. We're not holding back FOIA wise. This is too big.

PETER BAMFORD: Okay.

RICK HASSELBERG: If KMI is willing to give it, and I assume they are, that's all historical.

PETER BAMFORD: Yes. They seemed to be initially responsive.

RICK HASSELBERG: I think so, yes. Don't worry about who's going to see, or who's going to not see it.

The biggest problem is who didn't see it, who should have seen it, in a timely manner. So that's my opinion, and blame me if I'm wrong.

PETER BAMFORD: Okay.

RICK HASSELBERG: Okay, sir.

PETER BAMFORD: All right, thank you.

RICK HASSELBERG: Thank you. So rst01, hoc.

PETER BAMFORD: Yes, rst, that's an email, right?

RICK HASSELBERG: Yes, sir, rst01hoc, you'll see it when you type in the addresses.

PETER BAMFORD: Good, just start typing.

RICK HASSELBERG: Thank you, sir.

PETER BAMFORD: Okay.

RICK HASSELBERG: Thanks, Pete.

PETER BAMFORD: All right, bye.

RICK HASSELBERG: All right, bye-bye.

(CONFERENCE CALL ENDED)

ProFIT Club

14 reviews

Categories: Yoga, Gyms, Dance Studios

304 E Diamond Ave
Gaithersburg, MD 20877

(301) 602-8142
http://profitclubmd.com/

Buy a Yelp Deal | Buy a Gift Certificate

$40 for $50 Deal at ProFIT Club

- You get a voucher redeemable for $50 at ProFIT Club.
- New customers only.

Promotion lasts for 1 year from date of purchase. After that period, your voucher is redeemable for the amount you paid, less any value you may have received. Not valid with other vouchers, certificates, or offers. Voucher can only be used for services, not retail products. All equipment provided. Only 1 voucher(s) can be purchased and redeemed per person. Up to 1 can be purchased as gifts for others. Tax included. Subject to the General Terms. Learn more.

Hours:
Mon-Thu 9:30 am - 9 pm
Fri 11 am - 8 pm
Sat 9:30 am - 12 pm

Good for Kids: Yes

14 reviews for ProFIT Club

14 reviews in English

Amy H.
Montgomery Village, MD

3/9/2013

All truly are welcome there. I've never walked in and not been greeted with siastic and genuine smile. The energy is contagious and the decor is great. most of a smaller space and the VARIETY of classes is perfect! The love what they do and want to share that experience.

D

1/31/2013

LOVE profit club. The classes are a blast. The owner and one of the main instructors, Alex is a blast and will have you feeling her workout the next day. Workouts are always done along to great, fun music which makes it a joyful experience. The studio is really affordable and the instructors are knowledgeable. If you live in the suburbs and are looking for high-notch fitness classes in a friendly, community environment- try Profit Club!

Amber
Gaithersburg, MD

3/8/2013

ProFIT Club is AMAZING!!! I have been going here for two weeks now since I have moved back to the area. Alex is awesome, she's so friendly, energetic, and makes you feel right at home. Her Zumba class is so fun, and the time flys. Jen's Zumba class is also a lot of fun, it's more Zumba with a hip/hop feel, which makes Zumba even more enjoyable being able dance to popular hip hop music. Alex and Jen started doing a co-teaching Zumba class together and with their two different styles it really kicks your butt for a great workout! I've also been to Joy's class as well, and hers was great as well, lots of great music and dance moves. You really can't go wrong with any of the instructors here, they are all really nice and provide such a fun atmosphere to make your workout fun, but definitely a success! So, if you're looking for a great work out with great instructors to have a fun time and sweat make sure you check out profit club :) !!

Susan C.
Crofton, MD

9/6/2011

I attended Julie's 6:45 Zumba class on Labor Day as a walk-in. There were only five of us but we had a great time. Julie is a friendly and energetic instructor - I'd go back and take her class in a heartbeat. From what I've heard, her classes are generally packed.

The studio is on the small side but it is clean, cozy (the waiting room is great), and the big fans offer much relief during class. I also like the fact that they have a big recycling bin for water/juice bottles.

across the street is sketchy so be street smart, especially after sunset.

Micah
Kickmonic, VA

7/12/2011 **24** Check-ins Here

So the studio I was going to for Zumba started getting expensive... on top of that, they didn't have a steady location, and now they have moved farther away from me.. In this transition, I decided to look for another studio.

I stumbled upon ProFIT club and have been going pretty regularly. I admit that their Zumba classes are NOT as fun as the previous studio I have been attending, but it still [illegible] fun time. In addition, I absolutely recommend Lubomyr's Cardio Kickboxing class! It's a shame that I have been traveling out of town almost every weekend and can't make his Friday night classes, but I absolutely love that class.

Rafael B.
Germantown, MD

12/27/2010

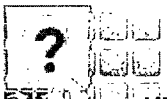
[illegible] Patricia's class!!

The music is awesome and Patricia is really fun and energetic!
Who knew working out could be so much fun?
If you get frustrated the first couple times you go, don't give up!
I was a little discouraged the first time I went, since I didn't know the moves and it was a bit challenging,
but I am so glad I went back because it just gets better every time!

Iryna B.
Silver Spring, MD

6/10/2011

This place is unique in a way. It is small and cozy, and instructors are extremely friendly. They do care about you and your workout. They will make sure you have as much fun as they do during the class and don't leave without a happy smile on your face.
Great experience for a fair price!



Gaithersburg, MD

11/20/2011 Purchased a Yelp Deal

I get a great workout from the Thursday 6:45 zumba class with Jen. Her classes are high energy and fun, and I really enjoy her mix of dancing and aerobics. I've been to two classes there- both the Thursday PM classes, and they've been pretty packed... so try to get there early!

The studio is on the small strip and is easy to miss. Parking is both around the back of the building and across the street.

Kristadin V.
Reisterstown, MD

3/1/2011

Great experience every time I go after work. Staff and Instructors are very helpful. Yoga is hard but worth it. Maybe one day i'll be able to do a half moon without falling over :)

Derwood, MD

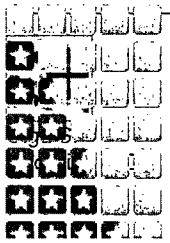
3/1/2011

Gyms usually intimidate with their body builders and the overall blahness. I never feel this way when I come for my nightly Zumba class. The staff and the instructors are super friendly and the classes are awesome!

Gabrielle M.
Derwood, MD

6/17/2011 1 Check-in Here

I had been wanting to try out Zumba for the longest time...wow was that fun! I can't wait to go back :) great workout, nice place!



4/18/2011

Really fun way to work out! After attending a Zumba class at a different location I thought its not a work-out, but a waste of time. However decided to give it another chance at the ProFit. Instructors are energetic, attentive and won't let you stop (in a good way). Definitely felt like a work out! A work out that you want to do again. If you hate gym, but want to get some exercise, ProFit Zumba classes are way to go! Also love how they have so many different times available to chose from, unlike my previous gym, which only had it once a week.

Alicia P.
Burtonsville, MD

2/14/2011

There are plenty of better ones then why to go to this place, we have better popular clubs like sports and health, WSC, horrilble customer service, this club is kept only to make profit for owners. thats why the name is profit club... he he he

Comment from Jose And Alexandra R. of ProFIT Club *6/10/2011*

Alica, thank you for your feedback. We are sorry you had a... More »

?

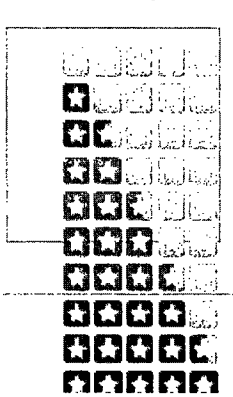
Germantown, MD

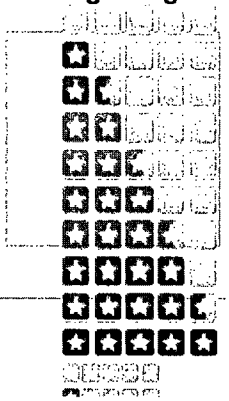
6/10/2011

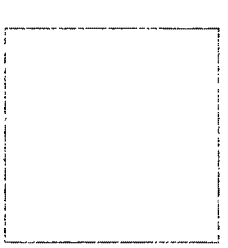
Zumba is one of my favorite work outs and this is the best place to do it! Staff and instructors are super friendly and the whole place just has a great vibe. Plus if your not into zumba they also have kickboxing, yoga and even zumba for kids! Prices are very reasonable too. I definitely recommend this place!

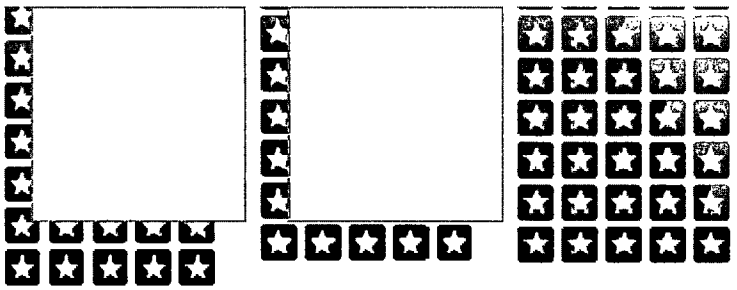
(16 Filtered)

Best of Yelp: Gaithersburg - Yoga See More









Yoga Bliss Studios

4 reviews

Category: Yoga

404 Main St
2nd Fl
Gaithersburg, MD 20878

(240) 720-7954
http://www.yogablissstudios.com

4 reviews for Yoga Bliss Studios

4 reviews in English

Laura M.
Germantown, MD

3/27/2013

Yoga Bliss is a fantastic yoga studio. I tried a few local studios before finding this one, which I felt very comfortable with right away. It's a small, intimate studio and is not at all intimidating. The instructors are very friendly and helpful, and it's a really positive environment for practicing yoga. Over the past year they've really added a lot of classes to the weekly schedule, and I think the variety is excellent. Also I think the prices are very reasonable for the area and compared to other local studios, and throughout the year they run specials, which are a great deal.

Carol C.
Palo Alto, CA

2/19/2012

A small, cozy, relatively new yoga studio nestled in the heart of the Kentlands. The space consists of a single simply decorated room where a modest variety of classes are offered a couple times a day. The instructors are very kind and encouraging and teach many

, mostly vinyasa but with occasional, prana flow, hatha, and power classes. classes especially tailored to beginners as well. The studio atmosphere is ndly, and the classes are definitely very accessible to anyone who wishes actice.

I would say the pricing is currently a little steep for the space and number of classes ow they are currently planning to add more sessions and workshops. I ee more hot power and perhaps a few more intermediate-advanced level dless, I'm very glad there's finally a yoga studio in this area and am excited ure holds for this up and coming space!

Amanda T.
Potomac, MD

4/12/2012 **4** Check-ins Here

Yoga Bliss is a great yoga studio. The atmosphere is perfect for relaxing while also providing motivation. All of the instructors are very friendly. The classes are offered at various times to suit everyone's needs. I believe they are in the process of adding even more classes as the studio is growing. They also hold workshops such as headstand workshops. I definitely recommend this cozy studio to any yoga lovers!

?

Gaithersburg, MD

4/11/2012 **5** Check-ins Here

Friendly teachers and a good variety of classes and workshops. Great vibe in the studio!

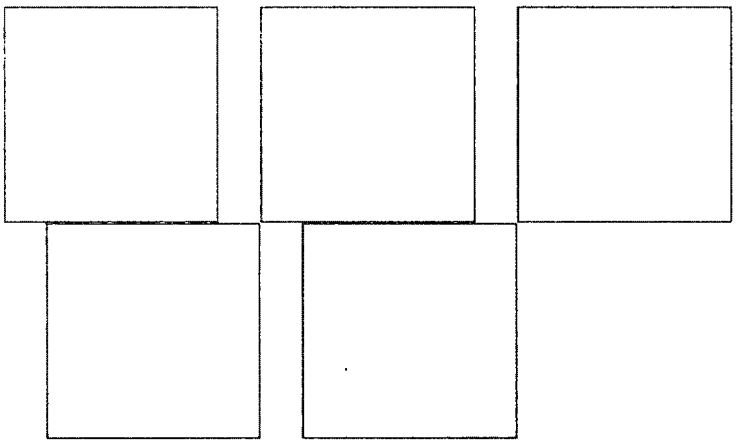
About This Business *Provided by business*

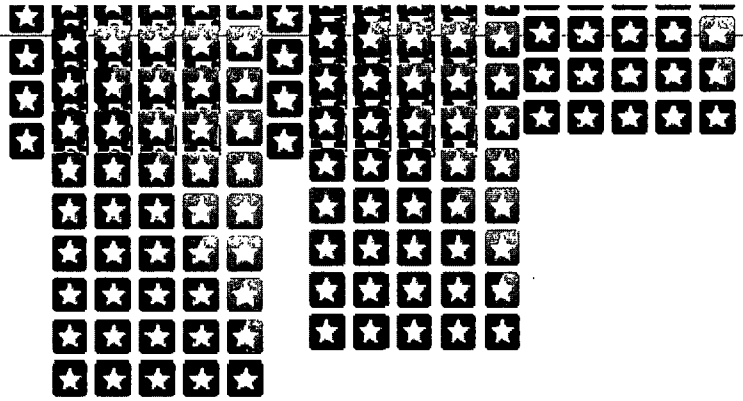
Specialties

Hatha Yoga, Hot Power Vinyasa Yoga, Vinyasa Yoga, Prana Flow Yoga, Kid's Yoga, Restorative Yoga, Workshops

Flag as inappropriate

Best of Yelp: Gaithersburg - Yoga See More





Official Transcript of Proceedings

NUCLEAR REGULATORY COMMISSION

Title: Japan's Fukushima Daiichi
RST Podium Audio File

Docket Number: (n/a)

Location: (n/a)

Date: Friday, March 25, 2011

Work Order No.: NRC-3086 Pages 1-46

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NUCLEAR REGULATORY COMMISSION

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JAPAN'S FUKUSHIMA DAIICHI

RST PODIUM AUDIO FILES

+ + + + +

FRIDAY,

MARCH 25, 2011

+ + + + +

(CONFERENCE CALL INITIATED)

01 Track 01

MR. RINI: RST, Brett Rini.

MALE PARTICIPANT: Yes, I've got Bill Berg from GE Hitachi on the line. Wants to speak with Chuck Norton.

MR. RINI: Okay. Chuck, it's GE Hitachi. All right, you can patch him through.

MALE PARTICIPANT: All right, connecting now.

MR. RINI: Thank you.

MR. NORTON: Hello. Hello?

MR. BERG: Hello. This is Bill Berg from GE Hitachi.

MR. NORTON: Okay. Let's see, I had an email here from -- do you know Tony Mendiola?

MR. BERG: I do not but I have seen the email.

MR. NORTON: Okay. What the email says is that you may have some information on the status of the fuel and cores at Fukushima that might be different than what we have already. And it said the point of contact recommended is Bill Berg and he recommends that we contact you. Is that similar to the email you have?

MR. BERG: It is not. The email I have asks

has GEH ever performed analysis of the survival of control blades during a core uncovery scenario? (Inaudible) is the blades melt before the zirconium.

MR. NORTON: Okay. So we think the blades have melted. What I have here is, "This is to advise the RST," which is where I work, "that I and my staff have become aware that GE Hitachi has developed their assessment of the current status of the fuel and cores for Fukushima Units 1, 2 and 3. I recommend that GE Hitachi Operations Center be contacted to formalize this assessment information to the NRC."

And then a couple of forwardings of this information got back to us and said that you were the one that could probably, the point of contact that was recommended to get that core information to us.

MR. BERG: Well, I have been part of the team off and on. Today I am not part of the team. I'm wondering maybe if that contact was Jim Harrison. He was part of our licensing team. The question from Tony that I got in an email actually came from Jim Harrison and since I'm not part of the team today, the --

MR. NORTON: You're not up to speed with what they were developing today.

MR. BERG: That's correct.

MR. NORTON: But the information about the

fuel blades melting we've already factored into our assessment. That's information we had. I think a couple days ago you provided that to us, didn't you?

MR. BERG: Well, yes, I was able to locate a question. In our databank it was Question 187 that had to do with recriticality and I did see that we provided an answer on that particular issue.

MR. NORTON: Okay. You know, Tony Mendiola's email is rather vague. It doesn't sound like you have any information that hasn't already been incorporated to the GE Hitachi assessment and already been shared with us probably at the (indiscernible, possibly consortium) call they had at 11 o'clock today. That information's probably already there.

So I'm going to disregard this urgent email that I had because I can't see that there's any new information and I do appreciate you taking the time to call us back.

MR. BERG: Am I talking to Chuck Norton?

MR. NORTON: You sure are.

MR. BERG: Okay, Chuck, I certainly appreciate that. I'll turn that question off, the one about the control blade melting. But does it make sense for us to still follow up on the question about the status of the core and fuel?

MR. NORTON: If they're working on that assessment, we'll take that as soon as it's completed. But I think there's no information that you can give me at this time, so I do appreciate you calling back.

MR. BERG: Very good. Thank you, Chuck.

MR. NORTON: Thank you. Bye.

MR. BERG: Bye.

(CONFERENCE CALL INITIATED)

02 Track 02 (Contains no words to transcribe.)

03 Track 03

MALE PARTICIPANT: (Indiscernible, possibly This is the Op Center. This is a recorded) line. May I help you?

MR. RULAND: Yes. This is Bill Ruland, the RST Team Director.

MALE PARTICIPANT: Yes, sir, Mr. Ruland.

MR. RULAND: Who is the OGC person on call?

MALE PARTICIPANT: I don't know but I could find out. Do you know who the OGC on call is right now?

MALE PARTICIPANT: No.

MALE PARTICIPANT: Let's find out.

MALE PARTICIPANT: I didn't know there was an on-call OGC but we'll find out.

MALE PARTICIPANT: Okay. We're going to have to check, Mr. Ruland. You got us stumped here.

MR. RULAND: All right. Call me back.

(CONFERENCE CALL INITIATED)

04 Track 04

MR. RINI: RST, Brett Rini.

MALE PARTICIPANT: Hey, Brett. Bill Ruland had asked about --

MR. RINI: OGC?

MALE PARTICIPANT: Hey, Brett?

MR. RINI: Yes.

MALE PARTICIPANT: Yes, this is the Op Center.

MR. RINI: Yes. He asked about OGC, right?

MALE PARTICIPANT: Yes. We can't find any duty roster so do you want us to reach out to like Burns?

MR. RINI: He's the Director, right?

MALE PARTICIPANT: Right.

MR. RINI: You want to reach out to OGC Director? They don't have anyone on call.

MR. RULAND: Steve Burns?

MR. RINI: Yes.

MR. RULAND: Yes.

MR. RINI: Yes, please call Steve.

MALE PARTICIPANT: All right. I'll reach out and call back.

MR. RINI: All right, thanks.

MALE PARTICIPANT: Bye.

(CONFERENCE CALL INITIATED)

05 Track 05

MR. RINI: RST, Brett Rini.

MALE PARTICIPANT: Hey, Brett. I got Steve Burns. I'll connect you through.

MR. RINI: All right, thanks.

MR. RULAND: Hello.

MR. BURNS: Hey, Bill?

MR. RULAND: Yes, Steve?

MR. BURNS: Yes, this is Steve.

MR. RULAND: How you doing?

MR. BURNS: Good.

MR. RULAND: (b)(5)

(b)(5)

(b)(5)

(b)(5)

(b)(5)

(b)(5)

MR. BURNS: (b)(5)

(b)(5)

MR. RULAND: (b)(5)

(b)(5)

MR. BURNS: Okay. All right, so --

MR. RULAND: (b)(5)

document.

MR. BURNS: (b)(5)

(b)(5)

MR. RULAND: (b)(5)

(b)(5)

MR. BURNS: (b)(5)

(b)(5)

MR. RULAND: (b)(5)

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MR. BURNS: (b)(5)

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MR. RULAND: (b)(5)

(b)(5)

MR. BURNS: (b)(5)

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MR. RULAND: (b)(5)

MR. BURNS: (b)(5)

(b)(5)

(b)(5)

(b)(5)

MR. RULAND: (b)(5)

(b)(5)

MR. BURNS: No, no. I think that's fine.

MR. RULAND: Okay. Okay, thanks a lot, Steve.

MR. BURNS: Okay, sure.

MR. RULAND: Appreciate it. Bye.

MR. BURNS: Bye.

(CONFERENCE CALL INITIATED)

06 Track 06

MR. RINI: RST, Brett Rini.

MALE PARTICIPANT: Hey, Brett. I've got Mike McBrearty from San Onofre.

MR. RINI: San Onofre?

MALE PARTICIPANT: Yes.

MR. RINI: Okay. I'll connect him to Bill Ruland.

MALE PARTICIPANT: Okay.

MR. RULAND: Bill Ruland. I'm the Reactor Safety Team Director. How may I help you?

MR. MCBREARTY: Hi, Bill. This is Mike McBrearty from San Onofre Nuclear Generating Station.

MR. RULAND: Okay, and you're calling from where, Mike?

MR. MCBREARTY: I'm calling from the plant, San Onofre.

MR. RULAND: Oh, okay. Is this like on your (indiscernible, possibly EMS) phone or --

MR. MCBREARTY: No, I'm calling just to report our air sample results. Actually I sent them to the Protective Measures Team on email so I just wanted to confirm they had received them.

MR. RULAND: Okay, and I'm the RST Director

so you probably have the wrong number. They probably connected you to the wrong guy, but hold on a second.

MR. MCBREARTY: Okay.

(Off microphone discussion)

MR. RULAND: Hold on a second. Star 0, I think.

MR. MCBREARTY: No problem.

MR. RULAND: Okay. I'm supposed to be able to press Star 0 and --

MR. MCBREARTY: I can never figure it out on our phones.

MR. RULAND: Brett, that doesn't work. I'm not getting --

MR. RINI: Are you trying to transfer him back to the HOO?

MR. RULAND: Yes.

MR. MCBREARTY: Want me to call back through --

MR. RULAND: No, no, no, no, no. No, you shouldn't have to do that. This is the air sample results you're getting?

MR. MCBREARTY: Correct. I emailed them to them and I --

MR. RULAND: You're just kind of tying up a loose end here?

MR. MCBREARTY: Correct.

MR. RULAND: Okay, good. It's the nuclear way to do things.

MR. MCBREARTY: (Indiscernible, possibly dissent and death), right?

MR. RULAND: Yes, sir. Do you know a guy named Bruce Hartaugh (phonetic)?

MR. MCBREARTY: I do know Bruce. Not real well but I know Bruce.

MR. RULAND: Okay. He was my shipmate on the Billfish.

MR. MCBREARTY: Really?

MR. RULAND: Yes, back in 1972, '73, '74, '75, back in the dark ages.

MR. MCBREARTY: You probably don't remember, Bill, but I used to work with you in Region I.

MR. RULAND: No. Who's this?

MR. MCBREARTY: Mike McBrearty.

MR. RULAND: Oh, yes. Oh, yes. Okay, I remember.

MR. MCBREARTY: I was there for about a year and a half and then I came out to California.

MR. RULAND: Oh, wow, wow.

MR. MCBREARTY: In fact, you visited our plant a couple years ago.

MR. RULAND: Yes. Yes, I did. Yes, I did. Wow. Things have been a little busy here today so I --

MR. MCBREARTY: I can understand that.

MR. RULAND: Yes, and for the last several weeks.

MR. MCBREARTY: Yes. Yes, we had a couple Senators and Commissioner Apostolakis out here earlier in the week.

MR. RULAND: Oh, wow.

MR. MCBREARTY: So we're getting a lot of attention ourselves.

MR. RULAND: Maybe what I have to do is hit hold and then do that. Yes, you know how often we're in the Incident Response Center. Very, very, very few times.

MR. MCBREARTY: Yes.

MR. RULAND: Go ahead.

MR. MCBREARTY: The Protective Measures Team, they're located in a different area?

MR. RULAND: Well, yes, they're in the same center but there's a wall kind of between us.

MR. MCBREARTY: Okay.

(Off microphone discussion)

MR. RULAND: Transfer, okay.

MALE PARTICIPANT: And then --

MALE PARTICIPANT: NRC Operation Center, Huffman (phonetic) speaking.

MR. RULAND: Yes, could you transfer this phone call that I got on here to the PMT?

MALE PARTICIPANT: Yes, go ahead and hit connect right now on the bottom of your phone.

MR. RULAND: Okay.

(CONFERENCE CALL INITIATED)

07 Track 07

MR. HILAND: Reactor Safety Team, Pat Hiland.

MALE PARTICIPANT: Yes, I got Charlie Tinkler on the line. Wants to speak with you, sir.

MR. HILAND: Okay.

MALE PARTICIPANT: Connect you.

MR. HILAND: This is Reactor Safety Team, Pat Hiland.

MR. TINKLER: Yes, this is Charlie Tinkler from the NRC staff in Research. I was trying to reach Steve Arndt.

MR. HILAND: Yes, he's here. Let me get him for you.

MR. TINKLER: Sure.

MR. HILAND: Steve, Charlie Tinkler from Research. I don't know how to transfer it so.

(Off microphone discussion)

MR. ARNDT: Yes, Charlie.

MR. TINKLER: Hey, Steve. Hey, I want to let you know, we did a little more thinking here about these questions about flooding and I asked you about before.

MR. ARNDT: Right.

MR. TINKLER: We kind of have come to the conclusion that maybe Unit 3 is flooded and maybe Unit 2, okay?

MR. ARNDT: Yes.

MR. TINKLER: So to the extent you can come up with any confirmation of it, and the reason I say that is because Unit 3, we're still getting information that the drywell's at 1 bar and the torus is at 2 bar, okay? Can't think of a whole lot of other ways for that actually to happen, other than (indiscernible, possibly they maybe) flooded that building, okay?

MR. ARNDT: Right. I think there's at least some flooding in both those buildings.

MR. TINKLER: Okay, because 30 feet of water would explain the additional bar in the torus. Otherwise you couldn't maintain that difference in pressure because vacuum breakers would cause them to equilibrate going back, okay?

MR. ARNDT: Yes.

MR. TINKLER: And the rad measurements also seem to suggest that so, anyway, to the extent that helps you. Like I said, you could normally assume that 1 bar represents, you know, roughly 30 feet of water, a little different.

MR. ARNDT: Right.

MR. TINKLER: So, anyway, I don't want to tie you up. I just wanted to pass that along because we're looking at this independently a little bit.

MR. ARNDT: Okay.

MR. TINKLER: Okay.

MR. ARNDT: Thanks.

(CONFERENCE CALL INITIATED)

08 Track 08

MR. RINI: RST, Brett Rini.

MALE PARTICIPANT: Hey, Brett, I got Mike Cheok on the line. Can he get a brief from you or ask you a question?

MR. RINI: Sure.

MALE PARTICIPANT: I'm going to put him through. Here he is.

MR. RINI: Okay. (Inaudible).

MR. CHEOK: Hi. This is Mike Cheok. Who is this?

MR. RINI: Hi, Mike. It's Brett Rini. How are you?

MR. CHEOK: Hey, Brett. I'm doing all right, man.

MR. RINI: Good.

MR. CHEOK: Hey, quick thing. I was calling in on the TA brief that just happened.

MR. RINI: Okay. The TA brief you called into?

MR. CHEOK: Yes.

MR. RINI: Okay.

MR. CHEOK: And one of the TAs asked for the TI that came out today, the temporary instruction, that

came out today for the Japanese event.

MR. RINI: We issued a TI today?

MR. CHEOK: No, the agency sent out a TI today to the regions.

MR. RINI: Okay. I wasn't aware of that.

MR. CHEOK: Well, yes. And the TA was asking about it and where he can find it. And I got a number and ML number for you.

MR. RINI: Okay, let me get --

MR. CHEOK: When Bill Ruland comes out of the (indiscernible, possibly ET) room, he's going to want to look for this.

MR. RINI: Okay, what's the number?

MR. CHEOK: Okay, it's TI 2515-183.

MR. RINI: 183?

MR. CHEOK: Yes.

MR. RINI: Okay.

MR. CHEOK: And the title is "Followup to Fukushima Daiichi Nuclear Station Fuel Damage Event."

MR. RINI: Okay.

MR. CHEOK: And ML number is ML 11077, A as in Alpha, 007.

MR. RINI: 007, okay.

MR. CHEOK: Yes. And so, I mean, one of Ruland's action items was to get that for the TA so you

got it.

MR. RINI: Okay, thank you. When you coming back on shift?

MR. CHEOK: Hopefully never.

MR. CHEOK: All right, man.

MR. RINI: All right. Thanks, Mike.

MR. CHEOK: See you.

MR. RINI: Bye.

(CONFERENCE CALL INITIATED)

09 Track 09

MR. RINI: RST, Brett Rini.

MALE PARTICIPANT: Hey, Brett, this is Headquarters Ops Officer. I got a Lieutenant Commander Mercer from United States Forces Japan but he wanted to talk to RST.

MR. RINI: Okay. Yes, he called us yesterday.

MALE PARTICIPANT: He called you yesterday?

MR. RINI: Yes.

MALE PARTICIPANT: All right, well, I'll just put him through then.

MR. RINI: Okay, thank you.

MALE PARTICIPANT: Here he is.

MR. RINI: Hi, Reactor Safety Team.

LCDR MERCER: Yes, good evening. My name is Lieutenant Commander Mercer I'm calling from United States Forces Japan.

MR. RINI: Okay.

LCDR MERCER: Go ahead.

MR. RINI: It's Brett Rini, Reactor Safety Team. This is a recorded line.

LCDR MERCER: Okay, understood. I'm

calling in regard, I've got the Emergency Operation Center status update from last night regarding Fukushima Daiichi and I see for Unit 3 under the primary containment line it says damage suspected and that's coming from the utility and from NISA but then the report of not damaged from JAIF.

MR. RINI: Yes.

LCDR MERCER: So what I'm trying to get an understanding of is if there is damage for primary containment where do you guys hypothesize it might be because we're not really sure where it would be and, you know, I think they're basing it off of the water they found in the turbine building on Number 3 on Thursday but we just want to see what your thoughts were on that.

MR. RINI: I don't think it's being based off of the turbine building water. Let me ask if we have any thoughts.

LCDR MERCER: Great, thanks.

(Off microphone discussion)

MR. RINI: I don't think we have any sense of where the damage could be if it exists.

LCDR MERCER: Okay.

(Off microphone discussion)

MR. RINI: Go ahead.

LCDR MERCER: And then from our

perspective, from the Japanese military, they're not saying anything at all about that so like you say in the report it's all open source so we were just trying to -- we kind of agree here that if we don't check the water in the turbine building we don't see how that possibly could be an indication of containment damage but the media, particularly in Japan, is kind of linking the two so, all right, we just (indiscernible, possibly wondered if there was) any ideas.

MR. RINI: I just heard from another individual there was an ABC News report that containment and the vessel may be damaged but we haven't gotten information on that.

LCDR MERCER: Okay, yes, like I said, we've seen a lot of -- (b)(5)

(b)(5)

MR. RINI: Yes. And you're looking at our assessment from the 24th or the 25th?

LCDR MERCER: 25th at 1800 Eastern Daylight Time.

MR. RINI: Okay, the SITREP?

LCDR MERCER: Yes.

MR. RINI: Okay. Okay.

LCDR MERCER: Okay, I appreciate it. Thank you very much.

MR. RINI: Yes, bye.

LCDR MERCER: Bye.

(CONFERENCE CALL INITIATED)

10 Track 10 (Contains no words to transcribe.)

11 Track 11 (Contains no words to transcribe.)

12 Track 12

MR. HOLIAN: Holian, Op Center, recorded line.

MALE PARTICIPANT: Yes, this is the HOO. I have Bill Ruland on the phone.

MR. HOLIAN: Yes, okay.

MALE PARTICIPANT: Connecting now.

MR. HOLIAN: Thanks. Holian.

MR. RULAND: Hey, Brian. Bill Ruland.

MR. HOLIAN: What's up, Bill?

MR. RULAND: Yes, finally got home and I'm getting ready to go to sleep.

MR. HOLIAN: All right, good.

MR. RULAND: Hey, I don't know about you but this thing drives me crazy. But to help me go to sleep here, you know, the Unit 1, this thing is at 50 pounds, right?

MR. HOLIAN: Yes, we just got off with the site team. It was at 58 or 59 pounds and we show some data that just came in from JAIF that has it back down to 51, so they may have vented.

Mike Scott was on the phone and said, gee,

they didn't mention it at a meeting just an hour or two ago but, you know, the data from JAIF shows it went back down. So is that what you're worried about, just how high the pressure is?

MR. RULAND: Well, no, no. (b)(5)

(b)(5)

MR. HOLIAN: Yes, yes.

MR. RULAND: If they continue, I mean, the catastrophe if this containment fails, you know, you could end up (indiscernible, possibly selling) all the units because you can't get there. I mean, what are the radiation doses?

MR. HOLIAN: Yes, (indiscernible, possibly the IT) would have to evacuate again, you know, right?

MR. RULAND: You'd have to not evacuate that. You might have to evacuate the whole bloody site.

MR. HOLIAN: Yes. (b)(5)

(b)(5) you know, we verified that the, you know, air flow is out to sea again so if he's going to vent it's going to go out to the ocean. You know, it wasn't towards Tokyo.

We heard two things just within the last hour or so if it helps you, is that, one, they are still injecting water. So whatever you guys heard verbally, that they had stopped injecting, that's not true.

They're still doing seawater. They might have lowered it a little bit.

And now also we have data now that shows pressure went down so we think that they vented although Scott says they didn't mention that so that should help. And they are switching to freshwater injection tonight some time.

MR. RULAND: Yes, yes. See, they told us it was fresh.

MR. HOLIAN: They told you it was already but it's not. It's still seawater and freshwater today. And it's coming from that dam source. How about that? They got that dam. There was a line from the dam or reservoir, whatever it is. All right.

MR. RULAND: (Inaudible).

MR. HOLIAN: See you. Yes, bye.

MR. RULAND: Bye.

(CONFERENCE CALL INITIATED)

13 Track 13

FEMALE PARTICIPANT: Reactor Safety Team. This is a recorded line.

MR. KNOKE: Hi, this is the HOO. Are the RST having their pumping rig discussion this morning or is that --

FEMALE PARTICIPANT: Hold on just a minute.

(Off microphone discussion)

FEMALE PARTICIPANT: Who's calling in?

MR. KNOKE: Headquarters Ops Officer John Knoke.

FEMALE PARTICIPANT: Hi, John. We had it yesterday.

MR. KNOKE: Is this an every day occurrence or not?

(Off microphone discussion)

FEMALE PARTICIPANT: Is anyone calling in for the call?

MR. KNOKE: No. No one's called in so that's why --

(Off microphone discussion)

FEMALE PARTICIPANT: He doesn't think we have it.

MR. KNOKE: Okay.

FEMALE PARTICIPANT: All right.

MR. KNOKE: Thanks.

FEMALE PARTICIPANT: Thank you.

(CONFERENCE CALL INITIATED)

14 Track 14 (Contains no words to transcribe.)

15 Track 15

MR. HILAND: Reactor Safety Team, Pat Hiland.

MALE PARTICIPANT: Yes, this is the Headquarters Ops Officer. We have info on the bridge 6113. Looks like they just dropped off so I guess they were tired of waiting on that but --

MR. HILAND: Okay.

MALE PARTICIPANT: Do you know are we having a conference call with INPO right now?

MR. HILAND: Yes, with INPO but Eric Thomas is on the line and you'll probably hear him in the background. He was trying to get on the bridge at that phone that he's at.

MALE PARTICIPANT: Okay.

MR. HILAND: All right, I'll hang this one up.

MALE PARTICIPANT: Okay.

(CONFERENCE CALL INITIATED)

16 Track 16

MR. RULAND: Reactor Safety Team, Bill Ruland.

MR. FUNK: Hi, this is Dan Funk from the Office of Nuclear Energy at DOE and I had this number to try to reach one of our guys that's over there, Rich Stark, and I didn't know if he might be available or if we got the right number.

MR. RULAND: Hold it. Hold on a second.

MR. FUNK: Okay.

(Off microphone discussion)

MR. RULAND: I think he left.

MR. FUNK: Oh, man. Well, I got a request from him by email and so I guess I'll just try him back in case he's got a BlackBerry. I don't know if he does or not but he --

MR. RULAND: Well, hold on. Let me double check. I'll take a little --

(Off microphone discussion)

MR. RULAND: Yes, okay. He was just here on day shift and, you know, he was leaving so.

MR. FUNK: Oh, man. Well, he said the Incident Center would like to have a DOE contact on their contact posting list and I'm not sure what, my boss asked

me to see what --

MR. RULAND: Oh, okay, okay, okay. I had asked him, I said, you know, because you guys aren't here all the time, you know, Naval Reactors is but you guys aren't here all the time. I wanted to have a phone number so I could reach out to you folks if I needed to.

MR. FUNK: Okay.

MR. RULAND: A contact so if we need, you know, because we're here 24/7 and there must be somebody I could call, you know, in case we need --

MR. FUNK: Yes, somebody who has a BlackBerry on 24/7 and is willing to answer it basically.

MR. RULAND: Yes, correct.

MR. FUNK: Yes, I mean, and we have an EOC person and they're there most of the time but we're not manning it --

MR. RULAND: Okay, well --

MR. FUNK: I don't think we're manning it around the clock. I could find out though but --

MR. RULAND: I'm just looking for a contact in case we need to reach you because, you know, several days ago there was, you know, a little dust up about, you know, are we making sure we include DOE in this so I just want to make sure that we can reach out to you guys.

MR. FUNK: Yes, I understand. I

understand, yes. And let me check with my boss to see who we should. You know, if we make it the EOC watch, a lot of times it's an NNSA guy but that's fine I think.

MR. RULAND: Yes. It's just your, you know, it's your call.

MR. FUNK: Yes. I'll --

MR. RULAND: If you don't think you need somebody, I'm okay with that too.

MR. FUNK: No, no. I think it's a good idea but your name again is --

MR. RULAND: Bill Ruland. Right now I'm the Reactor Safety Team Director.

MR. FUNK: Oh, okay. How do you spell your last name?

MR. RULAND: R-U-L-A-N-D.

MR. FUNK: Okay, Bill. I'm Dan Funk.

MR. RULAND: Okay, Dan.

MR. FUNK: I'm actually on Advanced Modeling and Simulation Team but I've been involved in our Reactor R&D Teams before but I decided to take up a new effort but still dragged in on this, I mean participating in this. But let me call you back. Can I call you back at this number?

MR. RULAND: Yes, this is the 301-816-5100.

MR. FUNK: Actually what I dialed was --

where is it here? I just want to make sure. What I dialed was 5189.

MR. RULAND: Yes, yes. The right number to call is 301-816-5100. That gets you the HOO, the Headquarters Operations Officer. That's 24/7 always and they'll just send your phone back to here.

MR. FUNK: Oh, okay. And I'll just say I'm -- okay.

MR. RULAND: You just tell them you want to speak to the Reactor Safety Team Director or somebody from the Reactor Safety Team and we'll answer.

MR. FUNK: Okay. All right, sir. Appreciate it very much. Get back to you right away.

MR. RULAND: Okay, thanks. All right, bye.

MR. FUNK: Bye.

(CONFERENCE CALL INITIATED)

17 Track 17

MR. RINI: RST, Brett Rini.

MR. KERBER: Hi, good afternoon. I'm calling from Marine Corps Forces Pacific in Hawaii and I'm trying to get an understanding of the last status update from this morning at 0430, specifically on the reactor units. The priority had changed and I'm trying to understand why the priorities were shifted.

MR. RINI: Okay. I just sent an email. Okay, So the, what we said was that Unit 1 is Priority 1 based on the fact that primary containment integrity can still be preserved if the (indiscernible, possibly responders) take the correct actions to inject to the RPV and primary containment.

Unit 2 is Priority 2 because of the apparent damage to primary containment and the other barriers to release requiring continued attention to cool the core and provide water to the primary containment.

Unit 3 is Priority 3 because primary containment may be okay but continued attention is required to pursue core cooling and injection.

And then Unit 4 is Priority 4 because of progress in addressing (indiscernible, possibly essential pool) heat removal requirements.

MR. KERBER: Okay, so on Unit 1, again, that was the primary containment?

MR. RINI: Yes, the fact that primary containment integrity can still be preserved.

MR. KERBER: Okay, but there is a breach?

MR. RINI: Let me check. I don't think we said that.

MR. KERBER: Okay. I'm just wondering why that's priority over, say, Number 2 or Number 3.

MR. RINI: Yes, we said primary -- hold on one second.

MR. KERBER: Okay.

(Off microphone discussion)

MR. RINI: Okay, are you still there?

MR. KERBER: Yes.

MR. RINI: Okay, so the reason we put Unit 1 as Priority 1 was because we don't believe that the primary containment is damaged and so we want to make sure that that continues.

(Off microphone discussion)

MR. RINI: We're pretty confident Unit 2, the primary containment's damaged and we think Unit 3 primary containment is damaged.

MR. KERBER: Okay, so you're just making sure that that doesn't get damaged on 1?

MR. RINI: Yes, that it doesn't get worse.

MR. KERBER: Okay, okay. All right, appreciate your help. Thank you.

MR. RINI: And can I get your name again?

MR. KERBER: Yes. It's Mark Kerber.

MR. RINI: How do you spell that?

MR. KERBER: K-E-R-B-E-R.

MR. RINI: Okay, and you are with --

MR. KERBER: Marine Corps Forces Pacific.

MR. RINI: Pacific. And can I get your phone number?

MR. KERBER: Yes. It's 808-477-8461.

MR. RINI: Okay.

MR. KERBER: Thank you, sir.

MR. RINI: Yes, give us a call if you need anything.

MR. KERBER: Bye-bye.

MR. RINI: All right, bye.

(CONFERENCE CALL INITIATED)

18 Track 18

MR. RULAND: Reactor Safety Team, Bill Ruland.

MALE PARTICIPANT: Oh, good. Mr. Ruland, I got your TA, Mr. Quinn (phonetic), on the line.

MR. RULAND: Okay.

MALE PARTICIPANT: I'll connect you.

MR. RULAND: Yes, Quinn.

MR. QUINN: Bill, I just sent you an email. We got a request from a Congressional staffer to brief someone that is part of the Appropriations Committee.

And one of the items is about Mark 1 containment design and improvements to it. The phone call, it's supposed to be at 9:00 a.m. on Monday. Who would you like me to task to do it? I sent you the email. I just want to make sure you're aware.

MR. RULAND: Tim Collins is the right guy for that job.

MR. QUINN: Perfect. Should I cc someone just in case he's out Monday?

MR. RULAND: cc myself, cc Sher Bahadur, cc -- (indiscernible, possibly let's see), who else could do this? Barry Westreich and also cc Dave Nelson. I'm sorry, not Dave Nelson. Bob Nelson, right, to

communicate, right, because he's the Communication Coordinator.

MR. QUINN: Okay. I will do all that and I will say that you have assigned it to Tim for that section, okay.

MR. RULAND: And, yes, I don't, yes, well, he's the right guy to do this.

MR. QUINN: Got it.

MR. RULAND: Okay, bye.

MR. QUINN: Thank you. Bye.

(CONFERENCE CALL INITIATED)

19 Track 19

MR. RINI: RST, Brett Rini.

MALE PARTICIPANT: Hey, Brett. I got Dan Funk from DOE. Says he's returning a call request to you guys.

MR. RINI: Dan Funk?

MALE PARTICIPANT: Yes.

MR. RINI: Okay. Patch him through.

MALE PARTICIPANT: All right.

MR. RINI: Hello.

MR. FUNK: Hello, this is Dan Funk from NE over at DOE. I'm on the Nuclear Energy Response Team and I think Bill Ruland had asked that we provide a 24/7 contact number and our representative had left without being able to get that so I'm following up.

MR. RINI: Okay.

MR. FUNK: And the number we were going to suggest is our EOC number which you all may already have but they have been instructed to reach out and touch us when they need to. So I'm going to provide that.

But I would also like to provide our Communications Director. His BlackBerry's on 24/7 although, you know, as a single human being he can't be absolutely 24/7 but he's very responsive.

He works directly for the Director of our Response Team and who's also a DAS and so he is well placed in management to provide a kind of engagement that you might need, rapid engagement to, you know, avoid any dust ups or misunderstandings and to coordinate better. So he's perfect for that kind of engagement.

But first is our EOC number. It's 202-287-2368.

MR. RINI: 2368?

MR. FUNK: That's correct. And our Communications Director for the response team is Alex, A-L-E-X. And it's Larzelere, L-A-R-Z-E-L-E-R-E.

MR. RINI: L-E-R-E.

MR. FUNK: Yes, as Larzelere, yes. And his BlackBerry is (b)(6).

MR. RINI: Say that again, I'm sorry.

MR. FUNK: (b)(6)

MR. RINI: (b)(6)

MR. FUNK: (b)(6)

MR. RINI: Okay.

MR. FUNK: And I can give, you know, if Bill would like his email, Alex's email, since it's a BlackBerry I can give that to you too. I don't know if that's overload.

MR. RINI: No, that should probably be

fine.

MR. FUNK: Okay, so we're okay?

MR. RINI: Okay, yes.

MR. FUNK: All right, but call on us or, you know, our liaison if you need anything else.

MR. RINI: Okay. Thanks for your help.

MR. FUNK: Thanks.

MR. RINI: Bye.

MR. FUNK: You're welcome. Bye-bye.

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JAPAN'S FUKUSHIMA DAIICHI

RST PODIUM AUDIO FILES

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SATURDAY,

MARCH 26, 2011

+ + + + +

1-01 Track 01 (Contains no words to transcribe)

1-02 Track 02 (Contains no words to transcribe)

1-03 Track 03

(CONFERENCE CALL INITIATED)

RICK HALEY: Rick Haley, INPO Emergency Response.

PAT HILAND: Yes, hi Rick, this is Pat Hiland from the Nuclear Regulator Commission Response Team. I'm looking for Dave Garchow please.

RICK HALEY: Looking for Dave Garchow, let me see if I can locate where he is all right? Hang on just a moment.

(Off microphone discussion)

RICK HALEY: Pat, I'm going to put you on hold for a moment.

PAT HILAND: Okay.

RICK HALEY: Pat?

PAT HILAND: Yes?

RICK HALEY: Could I get a number to contact you at? He's not in his office, I know he's in the building.

PAT HILAND: Oh yes, he was just on a call with me until five minutes ago. Okay, I'm at the NRC's Incident Response Center, and I'm the Reactor Safety

Team Manager.

RICK HALEY: RST Manager, okay.

PAT HILAND: And so whatever number they called in as, have him just call the HOO and he'll ring him in to me.

RICK HALEY: Okay, so call the 5100 number?

PAT HILAND: Yes.

RICK HALEY: Okay.

PAT HILAND: All right, and just ask for the Reactor Safety Team Manager.

RICK HALEY: Reactor Safety Team Manager.

PAT HILAND: Yes.

RICK HALEY: Thank you.

PAT HILAND: Thank you.

(CONFERENCE CALL ENDED)

1-04 Track 04

(CONFERENCE CALL INITIATED)

FRANK COLLINS: Reactor Safety Team recorded line.

HEADQUARTERS OPERATIONS OFFICER: Yes, this is the HOO, I have Dave from INPO, I guess you're having a conference call back there.

FRANK COLLINS: Yes, and you're going to get a call momentarily from GE wanting to be added to this.

HEADQUARTERS OPERATIONS OFFICER: Well what number are you guys doing?

FRANK COLLINS: Right now they're on Extension 5517 and not an a bridge. They had called in here directly.

HEADQUARTERS OPERATIONS OFFICER: Okay, so do you want me to just call the 5502 number, which I called now?

(Off microphone discussion)

(CONFERENCE CALL ENDED)

1-05 Track 05

(CONFERENCE CALL INITIATED)

MALE PARTICIPANT: NRC Operations Center, recorded line, may I help you?

BILL RULAND: Oh. Hey, this is Bill Ruland, RST Director. Could you get me a hold of Bernie White?

MALE PARTICIPANT: Sure, I'll --

BILL RULAND: His house please.

MALE PARTICIPANT: Sure, will do, Bill, hold on.

(Off microphone discussion)

MALE PARTICIPANT: Okay, I'm going to try to connect you.

(Off microphone discussion)

BERNIE WHITE: Hi Bill.

BILL RULAND: Hey, Bernie.

BERNIE WHITE: How are you doing?

BILL RULAND: Good, I got your email.

BERNIE WHITE: Okay.

BILL RULAND: So, somebody's got to do it.

BERNIE WHITE: Yes?

BILL RULAND: Have you been in touch with Steve Jones?

BERNIE WHITE: I have not heard anything

from Steve, no.

BILL RULAND: I mean, has he sent you something?

BERNIE WHITE: No. I could shoot him the email.

BILL RULAND: Yes, yes, hold on a second. Let me see if I can get him on the phone with you.

BERNIE WHITE: Okay.

BILL RULAND: I think star 0. Oh I'm sorry, conference, hold on. Hold on, I'm going to try to conference you in, hold on.

BERNIE WHITE: Okay.

MALE PARTICIPANT: NRC Operations sir, this is a recorded line, how may I help you?

BILL RULAND: I have Bernie White on the line with me.

MALE PARTICIPANT: Yes.

BILL RULAND: Could you add Steve Jones?

MALE PARTICIPANT: Okay, stand by. Are you guys up on our conference or --

BILL RULAND: No, but --

MALE PARTICIPANT: Oh, you just want us to conference in Steve Jones.

BILL RULAND: Yes, hold on a second here, let me --

MALE PARTICIPANT: Okay, why don't I transfer both of you guys up? Have you still got him on the line?

BILL RULAND: No, I got Bernie on the line.

MALE PARTICIPANT: Okay, is Bernie conferenced in with me right now?

BILL RULAND: No, no, I hit the conference button on here.

MALE PARTICIPANT: Okay yes, well you, yes. Here's what you need to do. Yes, I will give you a --

BILL RULAND: Get both of these guys on a bridge for me, could you? Could you do that?

MALE PARTICIPANT: Well, because you have him on hold you can't do that.

BILL RULAND: Well you just tell me what you want me to do.

MALE PARTICIPANT: Yes. If you can, can you transfer him up to, here let me go pick on, just transfer him up to 6101.

BILL RULAND: 6101, and I would do that --

MALE PARTICIPANT: Right, then you dial in the 6101 as well and I'll get Steve Jones on 6101.

BILL RULAND: Okay, how would I do that? How would I transfer him to 6101?

MALE PARTICIPANT: Well, you're going to hang up in talking to me and --

(Off microphone discussion)

MALE PARTICIPANT: Yes, yes, that's what you need to do. You maintain your conference with Mr. White, transfer yourself up to, or call in to 6101, take you both up there, or he could call back in or we'll call him and connect him, we'll make it easy. You dial in to 6101, hang up with him, tell him we're going to call him up and transfer him up and I'll get Mr. Jones up as well.

BILL RULAND: Okay, so what I'll do is tell him to call in --

MALE PARTICIPANT: No, we'll just call him.

BILL RULAND: So I'm going to hang up with him.

MALE PARTICIPANT: Yes, hang up with him, tell him we'll call him.

BILL RULAND: Okay, thank you.

MALE PARTICIPANT: Yes, sir.

BILL RULAND: Bye.

MALE PARTICIPANT: Bye.

(CONFERENCE CALL ENDED)

1-06 Track 06

(CONFERENCE CALL INITIATED)

FRANK COLLINS: Reactor Safety Team, recorded line.

LT. AVILES: Yes, how are you doing? This is Lieutenant Aviles out here at USFJ. I'm one of the few Navy Nukes here keeping track of the reactor status and wanted to ask a few questions if you guys have a minute to spare or so.

FRANK COLLINS: What was your last name, sir? I'm sorry, I didn't catch your last name, sir.

LT. AVILES: It's Aviles.

FRANK COLLINS: Spell please.

LT. AVILES: A-V-I-L-E-S.

FRANK COLLINS: A-V-I-L-E-S, okay, sir.

LT. AVILES: Alpha, Victor, India, Lima, echo, Sierra.

FRANK COLLINS: Okay sir, if you can hold on for just a second, I want to see if I can get our Reactor Safety Team Director on the line.

LT. AVILES: Okay, or just a representative, it doesn't really need to be the Director himself.

FRANK COLLINS: That would be your best bet, if you could hold just a second, sir.

(Off microphone discussion)

BRIAN HOLIAN: Yes, this is Brian Holian.

LT. AVILES: Yes, how you doing, sir?

BRIAN HOLIAN: I'm fine.

LT. AVILES: This is Lieutenant Aviles from U.S. Forces Japan.

BRIAN HOLIAN: Yes.

LT. AVILES: I'm one of the Navy Nukes here tracking the status of the reactor, also tracking the delivery of the freshwater to the site itself.

BRIAN HOLIAN: Correct.

LT. AVILES: A question was posed to me that I don't know the answer to is one, what were the preexisting freshwater capabilities that they were using, basically for generating their freshwater, their pure water there at the site. And the other one is, how feasible or if it was thought of, of using a freshwater source at the plants to the south, the Daini Plant, to use as that makeup or source of freshwater in the long term or even short term?

BRIAN HOLIAN: So how feasible for getting freshwater from the southern plant, right?

LT. AVILES: Yes, it's about ten miles to the south.

BRIAN HOLIAN: Yes.

LT. AVILES: We kind of have our Army Engineers here working up a parallel solution, trying to brainstorm that possibility.

BRIAN HOLIAN: All right well good, I'll leave that one for you guys. No, I don't think we've thought of that, but I'll get that question out, you know, here to whether we've thought about that. I haven't heard it come up in the last four days since I've been on here. The first question was, what is the current freshwater flow? You know freshwater flow's going to all three units, right?

LT. AVILES: I was aware that it was going to 1 and 3 and I heard that it was scheduled for later --

BRIAN HOLIAN: Yes, it's on, we just heard about an hour ago that it's going to 2, that it's been going since about 10:00 p.m. our time, Eastern Time here, so about four hours ago. Hang on, let me just see the time.

LT. AVILES: Sure.

(Off microphone discussion)

BRIAN HOLIAN: All right, 10:10 on the 26th, Japanese time.

LT. AVILES: 10:10.

BRIAN HOLIAN: Is when, if I've got that

right. 10:10 a.m. on March 26th, we have been injecting --

LT. AVILES: Freshwater.

BRIAN HOLIAN: -- freshwater, with boric acid. And on there, they've got boric acid going on the freshwater on Unit 2.

LT. AVILES: All right, with boric acid.

BRIAN HOLIAN: Yes. And I don't have any flow rates for you so, you know, that was an open question we had was this new freshwater source, you know, it came down from the dam and it's still running through the fire pump trucks, so we're assuming it's on the same flow rates but I don't have that.

LT. AVILES: Did it come down from the dam, sir? We heard that was --

BRIAN HOLIAN: Yes, that's --

LT. AVILES: -- existing water in one of the site tanks there --

BRIAN HOLIAN: No, no.

LT. AVILES: -- that's what they had been using.

BRIAN HOLIAN: No, that would be gone by now I think. We heard that there might have been some, you might have heard a couple days ago that there, I thought they had some water in one condensate storage

tank, but we were told a day ago that this is the dam source that they didn't think they could get fuel to, I forget how many kilometers away that dam source is. You know, it does come down to normally supply condensate storage tanks, you might have heard that.

LT. AVILES: Yes, that was really my true question which is --

BRIAN HOLIAN: So that was your question then, do they have enough makeup to that.

LT. AVILES: Yes, sir.

BRIAN HOLIAN: Yes, so it's our understanding, I have not got how big that reservoir is behind the dam and how long that would last. We'll try to get that.

LT. AVILES: Okay. And, so I guess prior to the earthquake, was that their freshwater makeup source originally?

BRIAN HOLIAN: I do not know that. I had heard, I do not know that. The way I had heard it I thought it was still a backup freshwater makeup source for that CST, that it hadn't been used in years, you know? That's just what I had heard. I can't give you a reference to that because, but I'll try to get that answer.

LT. AVILES: Right. Okay, sir. So

they're probably using some type of reverse osmosis type plan.

BRIAN HOLIAN: Yes, they might have had a just, (inaudible) normal, you know, demineralized makeup to that PCST. Most plants will have that.

LT. AVILES: Right. Okay, sir.

BRIAN HOLIAN: All right, thank you.

LT. AVILES: I appreciate your time.

BRIAN HOLIAN: Sure thing, bye.

LT. AVILES: Thank you.

(CONFERENCE CALL ENDED)

1-07 Track 07

(CONFERENCE CALL INITIATED)

FRANK COLLINS: Reactor Safety Team, recorded line.

HEADQUARTERS OPERATIONS OFFICER: Yes, this is the HOO, I have Scott from the Japan team on the line.

FRANK COLLINS: Scott from the Japan team on the line. All right, hang on.

(Off microphone discussion)

BRIAN HOLIAN: Yes, Brian Holian here.

HEADQUARTERS OPERATIONS OFFICER: Yes, I have Scott from the Japan team on the line.

BRIAN HOLIAN: Okay.

HEADQUARTERS OPERATIONS OFFICER: Hang on.

BRIAN HOLIAN: Yes, Brian Holian's on line, RST.

MIKE SCOTT: Yes, hi Brian, Mike Scott, how you doing?

BRIAN HOLIAN: Oh Mike Scott, good. I thought they were, I was trying to rack my brain for somebody with the first name of Scott. Hi, Mike, what's up?

MIKE SCOTT: Hi, well I --

BRIAN HOLIAN: You want on speaker or you

just need me right now or what? I'll take a message.

MIKE SCOTT: Either way, what I have here is an email from Bill Ruland, let me, because there had been some correspondence back and forth regarding an information request from the Japanese. And let me just launch this thing again.

BRIAN HOLIAN: This is the five questions?

MIKE SCOTT: Well I don't know if there were five.

BRIAN HOLIAN: I mean we sent back well, it wasn't an email from Ruland, it should have been from Brett Rini --

MIKE SCOTT: Yes, he actually sent the email, yes.

BRIAN HOLIAN: Oh, Brett.

MIKE SCOTT: Brett did.

BRIAN HOLIAN: Yes, Brett, right.

MIKE SCOTT: It said try to call back before 2300 and I probably didn't do that, and ask for Bill Ruland.

BRIAN HOLIAN: Okay, and he's gone, so go ahead. So what document are you looking at?

MIKE SCOTT: Let me find this again. All right, here was a discussion about decommissioning. And what had been provided was more regulatory in nature.

So it was --

BRIAN HOLIAN: What had been provided to you.

MIKE SCOTT: Correct.

BRIAN HOLIAN: Okay.

MIKE SCOTT: So what it was, let's see, there's a note here from Greg Degan (phonetic) that says, here's FSME's input to the question on decommissioning licensing requirements. Now the question, at least the one I asked was not really regarding licensing, and maybe I didn't ask it clearly, but it was, because these guys of course don't use our licensing. I mean they may use a similar system but it's, it was more along the lines of, can you give us some background on what we might do to decommission these facilities?

BRIAN HOLIAN: Okay, so there's got to be a, we've got a NUREG on that then, you know, right?

MIKE SCOTT: Technical challenges more than --

BRIAN HOLIAN: Oh, they want technical challenge. Yes, because they've probably got their own decommissioning plans, right?

MIKE SCOTT: You know, I don't know if they do.

BRIAN HOLIAN: Yes, that might be a

question just for you to ask them but --

MIKE SCOTT: And I can do that but, you know, they've got a, as you already know, they've got a heck of a mess here and --

BRIAN HOLIAN: Yes, so they're probably looking at what are we doing or what's in the planning for TMI decommissioning, right? Or is that more along the lines? But that hasn't been done yet.

MIKE SCOTT: Yes, they're in safe store, right?

BRIAN HOLIAN: Yes, yes. I mean, they did get the fuel out though, you know, right? All that fuel which they moved.

MIKE SCOTT: And we gave them a report on the removal of fuel.

BRIAN HOLIAN: You did, out of TMI?

MIKE SCOTT: Yes.

BRIAN HOLIAN: Okay, well that's good, then you're ahead of it, good.

MIKE SCOTT: Well I don't even know where that came from, it was just handed off to me by Dan Dorman, he said give this to them, so I gave it to them. Yesterday evening at the 8:00 Senior Level, you know, Cabinet meeting, they indicated there are three efforts they're going to work on, more along the longer term.

One would be moving the fuel.

BRIAN HOLIAN: Yes.

MIKE SCOTT: And another would be structural or shielding issues, and there was a third which I don't remember what it was.

BRIAN HOLIAN: Entombment or --

MIKE SCOTT: No, it wasn't entombment per se. Hold on, let me grab my notes, I'll be right back.

BRIAN HOLIAN: All right.

MIKE SCOTT: Oh, the last one was remote control. So they're off working on developing plans for those things. And we were invited to sit in, but they said, we're not going to translate for you, you can have a translator sit in the back and whisper to you, but this is not going to be a meeting with the U.S. per se.

BRIAN HOLIAN: All right.

MIKE SCOTT: So anyhow, so they got these three things going on, shielding to reduce the plume, movement of spent fuel, and --

BRIAN HOLIAN: And that's spent fuel, so you don't mean the fuel out of the core do you? Or yes?

MIKE SCOTT: Well I think they move all of it.

BRIAN HOLIAN: Yes, so the core fuel too,

right, all right.

MIKE SCOTT: Yes, I mean --

BRIAN HOLIAN: Yes.

MIKE SCOTT: -- I mean we're talking way out there along the line for --

BRIAN HOLIAN: Yes, way out there, I got it.

MIKE SCOTT: So, but they're, you know, they're starting to think about that. And we've kind of talked to them and said, it's good you're thinking ahead about things like that as long as it doesn't distract you from the near term safety issues of getting these and the spent fuel pool into --

BRIAN HOLIAN: Yes, cold shut down.

MIKE SCOTT: -- into a safe condition.

BRIAN HOLIAN: Yes.

MIKE SCOTT: Yes, so we've been having that kind of discussion with them.

BRIAN HOLIAN: All right.

MIKE SCOTT: But anyhow, what was provided to me was kind of a litany of this is the regulations that are involved. And I'll be happy to pass that to them, but I kind of thought they were looking for more technical perspective on decommissioning. So I don't know whether Bill wanted to talk to me about that.

BRIAN HOLIAN: He did not turnover, so he might have been probably trying to get some clarification. He did not give me anything on that on turnover. I'll look for a tasker, I would give them that since you have it and then just say we're looking for some, you know, documents we have on, you know, in the short term we won't create something new for them on decommissioning because we believe, you know, I'd move that to NRR, you know, or so it would take a couple days.

So in the short term I'll ask NRR, do you have thoughts on decommissioning with these kind of technical issues that the Japanese are facing. I can put that tasker out but I would, you know, have it for Tuesday or Wednesday and let NRR work it. Does that make sense?

MIKE SCOTT: Yes, I mean that's, you know --

BRIAN HOLIAN: Yes, so I would just tell, yes, I would just tell the Japanese that we'll ask our line organization that with the tasker and meanwhile, here's some regulations and do you need anything, you know, quicker. All right.

MIKE SCOTT: Okay.

BRIAN HOLIAN: So we'll do a tasker, I

think, you know, I mean it's not, you know, for our team, I don't think tonight, they're trying to move stuff to the line organization of those types of questions.

MIKE SCOTT: Okay, that would be great.

BRIAN HOLIAN: Does that make sense?

MIKE SCOTT: Yes.

BRIAN HOLIAN: All right, good. And we'll just give them that and then they'll know it's out there.

MIKE SCOTT: While I've got you on the phone --

BRIAN HOLIAN: Yes, sure.

MIKE SCOTT: -- I've got several new blood out here and I'm going to put you on the box.

BRIAN HOLIAN: Okay.

MIKE SCOTT: And we want to chat about hydrogen for a minute.

BRIAN HOLIAN: Okay.

MIKE SCOTT: So I'm going to get you on here.

(Off microphone discussion)

MIKE SCOTT: Can you hear me, Brian?

BRIAN HOLIAN: I can.

MIKE SCOTT: Okay, so I've got Mr. Geisner (phonetic) here with me and Mr. Taylor, who have just arrived today and they're ready to go.

BRIAN HOLIAN: Good.

(Off microphone discussion)

BRIAN HOLIAN: Taylor's from where, what's his first name?

BOB TAYLOR: Bob, from NRR.

BRIAN HOLIAN: Bob, yes, all right good.

MIKE SCOTT: I wasn't specific enough, my bad.

BRIAN HOLIAN: All right.

MIKE SCOTT: Anyhow, so we met with the Japanese today. They continue to be concerned about the hydrogen issue. We provided them a list of four data needs that we asked for that you all relayed to us to try to give them a better answer on hydrogen. But they don't want to flood up, as the document that the RST developed and recommends until they sort this hydrogen thing out. And they are trying to inert --

BRIAN HOLIAN: And they don't want to flood up what, you're talking about the containment.

MIKE SCOTT: Correct.

MALE PARTICIPANT: Well it's both, containment or --

BRIAN HOLIAN: Or the vessel, okay. And is that on Unit 1 only?

MIKE SCOTT: All three units, on all of

them. Now two of them are basically at atmospheric pressure.

BRIAN HOLIAN: Yes.

MIKE SCOTT: But 1, Unit 1 is not.

BRIAN HOLIAN: Unit 1's not, I know. That's the one that I know they didn't want to flood up because in our thinking from them, that they didn't want to increase pressure by flooding up and kind of cause them to vent. That was, and that's our understanding.

MIKE SCOTT: Yes, it's probably accurate. They got the impression from the document you all developed --

BRIAN HOLIAN: Yes.

MIKE SCOTT: -- that we were significantly more concerned about Unit 1 than the others. And I don't think that was what you had in mind but --

BRIAN HOLIAN: Well, you know, on priority wise we listed that one just because we're trying to help them save that containment, you know?

MALE PARTICIPANT: Right, right.

MIKE SCOTT: Okay, well that's a good perspective.

BRIAN HOLIAN: So that's the only reason it's our priority and it's hey, try to keep that

containment intact. And we know they're telling us Unit 3's okay maybe, but other people say that's not the case. And I guess there was even a press report out, you know, early this morning here about, you know, Unit 3 containment being damaged even though last night JF said it wasn't. So in that paper, we're just concentrating on Unit 1 just because of the high pressure and because they don't want to vent, so we're getting worried about that.

MIKE SCOTT: Right.

BRIAN HOLIAN: Now I did have a question for you on that, and Mike I'll get right back to you, but on that Unit 1 containment, it looked like it went down in pressure from when I was on mids last night, down to 40 now. Did they vent yesterday at all?

MALE PARTICIPANT: No I don't think so. I mean the pressure --

BRIAN HOLIAN: Maybe they're cooling down, which is what caused that spill.

MALE PARTICIPANT: Well, but the daily reading that we got yesterday and the daily reading we got today is about the same.

BRIAN HOLIAN: Which was, 60 some pounds in the vessel and 40 pounds in containment?

MALE PARTICIPANT: Well it's not 70 so

that's two atmospheres, two and a half atmospheres, so what's that 30, yes that's about right. But that's pretty consistent, they gave us a chart on --

BRIAN HOLIAN: On containment pressure?

MALE PARTICIPANT: Right. And it's, I mean over the last day and a half it's been relatively constant.

BRIAN HOLIAN: Okay.

MALE PARTICIPANT: A little bit of a drop but not a lot.

BRIAN HOLIAN: Okay.

MALE PARTICIPANT: You know, their big thing about the hydrogen, and I think they're waiting for us to answer them before they do anything, you know, they gave us some numbers of hydrogen production in Unit 1 and 3 on the order of 1.2 to 1.7 kilograms per hour, production of hydrogen. Now I don't know if that's a translation error or not, but that sounds like a lot of hydrogen.

BRIAN HOLIAN: I don't know, do we have that data? Did you guys give us that?

MIKE SCOTT: No, we just got it.

MALE PARTICIPANT: We just got that.

BRIAN HOLIAN: Okay, so their estimate of production of hydrogen --

MALE PARTICIPANT: Right, in the vessel for Unit 1 is 1.2 kilograms --

BRIAN HOLIAN: 1.2 what, kilograms per --

MALE PARTICIPANT: Hour. And on Unit 3 it's 1.7. And we spent a lot of time on it, other than that was their rationale for wanting to wait because Mike asked hey, why aren't you flooding up, why aren't you flooding --

MIKE SCOTT: Well I didn't exactly --

BRIAN HOLIAN: No, but he's sharing that's our concern, why aren't you getting water in, why are you throttling? You know, we want them to, I mean the SAM-Gs, it's not us, it's the SAM-Gs which, you know, are designed on this. Now those weren't written though with saltwater, you know, causing hydrogen, I don't know if that's causing a bigger hydrogen production rate, so I don't know if, you know, you said the hydrogen production rate's large, I don't know. I don't have a good handle on what might be normal.

MIKE SCOTT: It didn't sound like they didn't know, they factored in the effect of the saltwater. It sounded like a true back of the envelope radiolysis calculation.

BRIAN HOLIAN: Including the saltwater?

MIKE SCOTT: It did not sound like they were

including it.

MALE PARTICIPANT: Yes, they didn't make any distinction.

MIKE SCOTT: But we didn't clarify.

BRIAN HOLIAN: You didn't clarify, and I don't know if saltwater would be, you know, if you factor in saltwater it would be more, right? I don't know.

MALE PARTICIPANT: Good question.

BRIAN HOLIAN: Yes, I don't know if they're assuming normal water or not. Okay well, so that's the first data I've seen on that. So with that production, you know, our big point is, you know, on some of those questions, Mike, that you saw earlier was okay, you know, you might estimate a production rate now, fine, that might be a data we can all, you know, and I don't know if we tried on our end to come up with a production rate but on top of that is, when did you last vent? You know, some of these questions here we almost need to know when you last vented and how long and how soon after, you know, the accident, you know, because you got to know what might have been in there and what went out possibly, right?

MIKE SCOTT: Yes, I'm reading here, I'm actually reading this for the first time. The answers that you all sent to these hydrogen questions.

BRIAN HOLIAN: Yes, yes, thank you, okay. Well you just got it an hour ago so --

MIKE SCOTT: I'm always behind on email anyhow.

BRIAN HOLIAN: Yes, but that's all right, you haven't had them too long. So in those, when you read through those it's, you know, thanks for this production rate and we might have guessed at a production rate but we didn't even want to do that because even with the production rate now that they're estimating, you still don't know what was in there and what they vented.

So, you know, some of this was, our answers were still, until you get us, can they get a hydrogen or oxygen concentration by sample in either of those spaces? You know, have you ever heard from them that they can get, and that's down in Number 3 there, you know, what would we need to give you a better assessment? Well, obviously get us a sample of what's in there.

And then some of that is the time line of venting and, you know, so we can kind of help plot it out, what might have been developed on a normal accident then a venting of, you know, an hour. Gee, how much might have been vented out?

MIKE SCOTT: But let me ask you this.

BRIAN HOLIAN: Yes.

MIKE SCOTT: So we'd say in these answers, we say follow the SAM-Gs.

BRIAN HOLIAN: Yes.

MIKE SCOTT: Now, so they're sitting there in this current condition where they sort of know what the level is and it's below the top of the active fuel, or where the active fuel used to be, and where that level, you know, what the actual level is, they don't really know. They do know it's not changing, which could say that it's at the same elevation as those --

BRIAN HOLIAN: The research field, research fields, right. Or the instrument's off and it's at some lower level, you know?

MIKE SCOTT: Yes.

BRIAN HOLIAN: Right?

MIKE SCOTT: But if it were at the lower level then you would think we'd see more variability in the readings, right? So either the instrument's not reading anything accurately, hence it's not trending --

BRIAN HOLIAN: Yes.

MIKE SCOTT: -- or they're putting enough water in there to keep overflowing it at that seal failure point.

BRIAN HOLIAN: Yes.

MIKE SCOTT: So you got that going on, and that's a condition and so we're arguing in essence about well, what do we do --

BRIAN HOLIAN: Well we're not saying if, you know, oh sorry, Mike, just to interrupt, but then we're not saying, you know, keep flooding up. I mean the good news is, is the temperatures are coming down, you know, with what they're --

MIKE SCOTT: On one of them.

BRIAN HOLIAN: On Unit 1, right? One of them?

MIKE SCOTT: On Unit 1.

BRIAN HOLIAN: Yes, on Unit 1, right?

MIKE SCOTT: Yes, Unit 1.

BRIAN HOLIAN: Yes, right, those are coming down with that. It may be those are working but, you know, we're not telling them keep flooding up if you can't flood up, you know, if the research fields are gone well okay, you're doing everything you can.

MIKE SCOTT: I mean, you can flood the containment up to that.

BRIAN HOLIAN: Yes. Now there we go back to SAM-Gs would say, get the containment up. Now we also think, no one's ever given us a containment water

level, that I know of. So either I'm missing that or they don't have an indicator on that.

But we're thinking, you know, some calculations here of 12 days of putting seawater in that you're up, somebody here calculated 1.2 million to fill, 1.2 million gallons to fill the dry well, and that we think they put in 700,000 gallons already.

Now that's just old numbers that were on an envelope here actually, so that they might already be at the, if the containment's not damaged and at a lower level there and leaking out to the turbine buildings, which we hear is happening, you know, be nice to know. But because of ex-vessel concerns, you know, we'd like to know that, you know, containment is up to the lower head.

MIKE SCOTT: So here's my question --

BRIAN HOLIAN: Yes.

MIKE SCOTT: -- we don't exactly know what the level is, but let's assume it's at the level of, what the vessel level is, let's assume it's at the level of the research pumps.

BRIAN HOLIAN: Yes, go ahead.

MIKE SCOTT: And they don't know what the containment level is.

BRIAN HOLIAN: Yes.

MIKE SCOTT: But I guess it's a reasonable assumption that they may be flooding up slowly even though they don't know it.

BRIAN HOLIAN: Yes. And there is containment damage, supposedly on 2 and 3, so you don't know where that is, right?

MIKE SCOTT: Right.

BRIAN HOLIAN: Right.

MIKE SCOTT: But they don't really know where it is on any of them so --

BRIAN HOLIAN: But I'm sorry, but you get to the end of those questions there, you are getting some water in the turbine building from reactor water. So either it's, we'll talk about those sources later, but so I just don't know about level in the containment. But go ahead, your question is --

MIKE SCOTT: Well, no, my question is this, so given these uncertainties, you know, we know more or less what their present condition is, it's not where we want them to be over the long run clearly, but do we, is it more important that we increase the flow rate if capable of doing so to encourage the flood up at the risk of this hydrogen thing, or is it better to continue to sit in this kind of halfway condition for a longer period while we try to get a better answer on the

hydrogen?

BRIAN HOLIAN: Well, and that's a good question, Mike. And I don't think we're, you know, on Unit 2 and 3 there's no pressure concerns, right, on the primary because they're atmospheric. I mean on the containment.

MIKE SCOTT: Right.

BRIAN HOLIAN: So --

MIKE SCOTT: There's another way, the concerns have already been addressed by, presumably a containment failure.

BRIAN HOLIAN: Yes, that's right, on 2 and 3. So our concern here has been concentrating on Unit 1 because of that fact, we're trying to save that Unit 1 containment. So that's why we call it our Priority 1 and why the paper's kind of written along that line, you know, to try not to fail that one.

And so 1, you got to stop it from getting to high just where pressure might fail it. And then the Japanese are worried about venting it, having the need to vent it and causing a hydrogen explosion that would damage it. So, you know, that's a good concern.

And our point just is well, you know, try to come up with one way to sample what's in there so you can minimize your hydrogen concern when you do vent

it. And so if you can get to those answers to Question 3, do they have any way to get sampling? We haven't heard that yet. I'm sure they're trying that, to get actual concentrations. I'm sure they've thought of that but maybe we need to ask them that.

MIKE SCOTT: We did.

MALE PARTICIPANT: We did.

BRIAN HOLIAN: All right.

MIKE SCOTT: We asked them today and they said they were working on it.

BRIAN HOLIAN: Okay. And so --

MALE PARTICIPANT: Keeping them from getting it done.

BRIAN HOLIAN: Keeping them from what?

MALE PARTICIPANT: Getting it done. They identified two challenges of a power supply to do the measurement and presence of moisture, presence of water when you take the samples to get a good hydrogen concentration, it helps to have the sample be dry but the expect that's a steam environment in there --

BRIAN HOLIAN: Oh, all right.

MALE PARTICIPANT: -- on the sample, they think it will lead to a misreading, they won't get clear numbers about it. So they're trying to figure out how to overcome those two challenges to get a good sample.

BRIAN HOLIAN: Well the power supply's up to them. I'll try to ask here about our, you know, any advice on getting a hydrogen, oxygen reading from a steam environment, right?

MALE PARTICIPANT: Yes.

BRIAN HOLIAN: Yes.

MALE PARTICIPANT: Might be a good idea.

MIKE SCOTT: Yes, that would be a good piece of information.

BRIAN HOLIAN: Yes, I'll try to ask that.

MALE PARTICIPANT: I don't know what they do with the power supplies because they said they got power back.

MIKE SCOTT: Yes, but they might not have power to whatever instrument they're using. This might be a normal instrument --

MALE PARTICIPANT: Oh, okay.

MIKE SCOTT: -- to measure hydrogen, that they're using.

MALE PARTICIPANT: Okay. As far as Units 2 and 3, although we believe that containments are failed, is there some value of trying to flood up what's in the containment to prevent, you know, a potential core going through the vessel?

BRIAN HOLIAN: Yes, well either prevent or

cover what's there. Some people think it's already through, but yes I, you know, and our thought would be yes. Now as they get closer to it they should be able to tell whether, you know, water's coming out if they start putting it in there, but they haven't. But on 3, if the seals are gone, it should be spilling over into there, right?

MALE PARTICIPANT: Yes.

BRIAN HOLIAN: So on all of them it should be spilling over into containment. The toruses are full by now we think so, you know, it would be nice somehow also, I don't know if we've ever asked them or if we've heard whether they can get a level indicator in the containment readings. So that's just a separate question. And then if they think they're already got water up to the lower head, well then we stop asking about that and, you know, go on from there.

MALE PARTICIPANT: Yes.

BRIAN HOLIAN: But, you know, so a lot of point here has been hey, this SAM analysis, there's been a lot of talk about that, or thought over the years into those. So they clearly recommend you do that, you know, however, you know, they understand that maybe sitting, you know, for awhile while you cool down, now Mike, that had that separate question which you guys asked

yesterday well, as they do continue to cool down, will that cause them to go into a, you know, different hydrogen zone there, flammability zone. You know, we've tried to answer that here on this one pager and say, you know, gee we don't know because we don't know what you're starting from, you know?

MALE PARTICIPANT: So it seems like they ought to really be churning and burning to inert those containments.

BRIAN HOLIAN: Yes, thank you. We know they've got a nitrogen rate coming in, if they can get that there and set it up and purge some nitrogen in there and then vent, and then while they're venting, you see that advice on the sheet was get the fog spray up there to minimize, you know, hydrogen burn at the hydrogen when it's coming out.

MALE PARTICIPANT: To minimize what?

BRIAN HOLIAN: Well, the fog spray at the vent point, right?

MALE PARTICIPANT: Oh, oh, oh, oh, so we don't have another explosion at --

BRIAN HOLIAN: Yes, at the vent point, you know, so wherever it's venting, you know, that's the thought on there, you'll see it in those sheets, to get a water spray, fresh water spray on that.

MALE PARTICIPANT: So you figure this thing you sent me here is releasable to the Japanese?

BRIAN HOLIAN: This is these five questions?

MALE PARTICIPANT: Yes.

BRIAN HOLIAN: Yes. It's my understanding, let me get Frank over here, my coordinator. Oh, Chuck's still here.

(Off microphone discussion)

BRIAN HOLIAN: You still there?

MALE PARTICIPANT: We're here.

BRIAN HOLIAN: All right, they're asking --

(Off microphone discussion)

BRIAN HOLIAN: Frank, I've got the Site Team on here and the question is, what we emailed them, these hydrogen questions, it was my turnover that these were vetted, you know, (b)(5) (b)(5)

MALE PARTICIPANT: They were vetted.

BRIAN HOLIAN: They were vetted, okay.

MALE PARTICIPANT: We've got this other document that has all our recommendations in it.

BRIAN HOLIAN: Yes.

MALE PARTICIPANT: And these are going to

change and it's going to change in that other document so I would --

BRIAN HOLIAN: I didn't think the recommendations substance was going to change but --

MIKE SCOTT: Well if there's more focus on inerting and not trying to make plant changes until we get this hydrogen thing sorted out, then I think that would be somewhat of a change to what we gave them.

BRIAN HOLIAN: Yes, in the plan about waiting on inerting. That's a change if we're saying that. But Mike, that was just you and I talking. I hadn't vetted that and I don't think that's, Chuck here is pointing to Number 4, the cooling plan, but that's their cooling plan, preserving in containment. He's pointing to Number 4, this is the Japanese cooling plan.

MIKE SCOTT: But it's our --

MALE PARTICIPANT: Let's see, let me read this.

BRIAN HOLIAN: Chuck's point to Number 4, which was provide feedback on their cooling water plan.

MALE PARTICIPANT: Yes, and we vetted everything in there. But we've got our document, the longer document where we may change our recommendations. And I hate to have this go out with these recommendations and get the life of its own moving

through --

MALE PARTICIPANT: I think you're totally on target. What we need to do is take a look at the ten pager we already did, see if we want to rev that up.

BRIAN HOLIAN: Yes.

MALE PARTICIPANT: Yes, and Steve and I are working on that right now. I think the only thing you'd want to give them is for the NRC recommendations --

MALE PARTICIPANT: I'm sorry, go ahead.

MALE PARTICIPANT: For NRC recommendations for consideration, please refer to the latest RST assessment of Fukushima Dai-ichi Unit. And then delete everything else in Question 4 because that will always contain the latest. And if you hand this out like this and we do change our recommendation, this document might have a life of its own going its own way.

MIKE SCOTT: I agree. I think the ideal way to do this is to not hand them any of this stuff. I will read it to them and indicate that we will as appropriate, reflect this information in the ten pager.

MALE PARTICIPANT: Okay.

MIKE SCOTT: So when do you all think we're going to see an update to that?

BRIAN HOLIAN: I had told Chuck, you know,

within an hour, they're trying to type that up. But now the version we're going to give you will not be vetted again, we have to take it through.

(Off microphone discussion)

BRIAN HOLIAN: GE, INPO, Naval Reactors needs to look at that version. So Site Team, we'll give you a version that has not been vetted. And Chuck's been worried about that, said Brian, I accept what you give me but it will have draft on it and it will be the subject of a 3:00 call, we'll email it out to everybody for comment, okay?

MIKE SCOTT: 3:00 your time?

BRIAN HOLIAN: Yes, that's normally when we have our call with you.

MIKE SCOTT: Oh, the call that we have in an hour, right? It's an hour from now?

BRIAN HOLIAN: Hour from now, hour and eight minutes from now. But we'll try to get you this version before that, this tabular version that Chuck wanted so he could present it to the Japanese.

MIKE SCOTT: Okay yes, I just need to know when you --

MALE PARTICIPANT: And now, Mike --

MIKE SCOTT: -- consider it for prime time.

BRIAN HOLIAN: Okay, and I will --

MALE PARTICIPANT: Mike --

MIKE SCOTT: -- and we do have, as Rob just said, we have feedback on the discussion on Unit 4 --

BRIAN HOLIAN: Yes?

MIKE SCOTT: There is a paragraph in there, do you have that?

MALE PARTICIPANT: I don't have a copy.

MIKE SCOTT: There's a paragraph in there that refers to the neutron events, if you look at the Unit 4 status it says, fuel may have been ejected from the pool --

BRIAN HOLIAN: Yes.

MIKE SCOTT: -- based on information from TEPCO of neutron sources up to one mile from the units, blah, blah, blah, you remember that?

BRIAN HOLIAN: Yes.

MIKE SCOTT: They took issue with that and they don't know, this they is NISA and the TEPCO people. They said they're not aware of this and don't believe it to be the case. So we told them that we had, Chuck Casto had previously told me there were 13 separate neutron, what did he call it, streaming events, suggesting a criticality somewhere outside the --

BRIAN HOLIAN: Yes, that's where that came from.

MIKE SCOTT: But they don't believe, the people that we talked to, don't believe that's going on. So this says the source was TEPCO.

BRIAN HOLIAN: Yes, and TEPCO says no?

MIKE SCOTT: TEPCO people we met with said they don't believe this is accurate. So we might want to consider at least caveating that language in there that we have received contradictory reports on what the story is on that.

BRIAN HOLIAN: All right, we'll do that, Mike.

MIKE SCOTT: Okay, good.

BRIAN HOLIAN: (b)(5)

(b)(5)

(b)(5) Okay, because, you know, we did have a document from that and I'm vague on whether it had TEPCO on it, but we thought it was from, that their site teams actually gave those 13 locations and one of them was 1.5 kilometers from the site, I remember seeing that.

MIKE SCOTT: But if they're having little criticalities on site --

BRIAN HOLIAN: Yes?

MALE PARTICIPANT: Just because you have a neutron stream doesn't mean it's a critacility. I

mean, you can have sources that emit neutrons as well.

BRIAN HOLIAN: That's what we're saying, that those sources came from probably the spent fuel pool.

MALE PARTICIPANT: Yes, and you can have the radionuclides that do emit neutrons. There are fewer of them --

BRIAN HOLIAN: Yes, that's right.

MALE PARTICIPANT: That doesn't mean a criticality, it just means you've got a piece of the pool somewhere else.

MIKE SCOTT: So in a subcritical configuration --

BRIAN HOLIAN: Yes.

MIKE SCOTT: -- you're going to show neutrons a mile and a half away?

MALE PARTICIPANT: Certain radionuclides, when they decay, emit neutrons.

MIKE SCOTT: Yes?

MALE PARTICIPANT: So if you have that radionuclide on the ground, you're going to pick up the neutron --

MALE PARTICIPANT: If you got shot in that a mile away and you're picking it up at a foot away.

MALE PARTICIPANT: Yes.

BRIAN HOLIAN: That's what we're saying.

MALE PARTICIPANT: Yes, not that you have a criticality out there.

BRIAN HOLIAN: The word criticality's not in that thing.

MIKE SCOTT: No, I think they inferred criticality. Maybe that's --

MALE PARTICIPANT: Well I may have even said it. It may be my fault.

BRIAN HOLIAN: But if you --

MIKE SCOTT: They said nothing like that was going on.

BRIAN HOLIAN: (b)(5) (b)(5) I'll leave the data there.

MALE PARTICIPANT: You know, if you have this, you said there was a document, didn't you, Brian?

BRIAN HOLIAN: I know, but, you know, I don't know what it was, what's my word for it?

MIKE SCOTT: Would you be willing to scan that in and email it to me so I can at least see it?

BRIAN HOLIAN: I might not be able to if it wasn't in the right, in with the right cover sheet if you know what I mean.

MIKE SCOTT: Okay.

BRIAN HOLIAN: Well, all right. So anyway, we'll settle that on our end. And like you said, we'll tone it down a little bit, maybe remove TEPCO and say contradictory, that this may have occurred.

MIKE SCOTT: Or may not, yes, okay.

BRIAN HOLIAN: All right. Well go ahead, Don.

DON HELTON: Rob, this is Don Helton. Do you think, in your opinion, would it be more accurate, assuming there's nothing in this document when we look at it that would suggest something different, do you think that it would be more informative to use the term neutron emitter rather than neutron source?

MALE PARTICIPANT: It's six of one, half a dozen of the other, might get lost in translation. I think the thing was they were thinking that there were such large pieces, we were implying there were such large pieces of the fuel ejected from the spent fuel pool that you had many criticalities going on.

DON HELTON: That was the impression I got from Chuck Casto.

MALE PARTICIPANT: Right. And I think hearing from what you guys are saying it sounds like, you know, that there are just radionuclides as part of the dispersal that are neutron emitters. So, you know,

choose the right words --

MALE PARTICIPANT: But if the source was from a national source that you don't want to talk about, we shouldn't put that in there I don't think.

MALE PARTICIPANT: Well, it depends on whether that piece itself was.

MALE PARTICIPANT: Yes, but then when they ask, why are you saying TEPCO gave it to you and they said we never gave it to you.

MALE PARTICIPANT: Well, that would be important to know where it really came from.

MALE PARTICIPANT: But they're going to say, well where did you get it?

BRIAN HOLIAN: Well I think it was an analysis based on TEPCO data, because obviously it was TEPCO who took some dose measurements out there. So anyway, that's my vague remembrance of three days ago or so.

MALE PARTICIPANT: Understood.

BRIAN HOLIAN: Okay, we'll settle with that. Back to this document, you know, Mike, you know, there was some concern from Naval Reactors and got to Chuck about version control of these ten page things. So I don't know what --

MIKE SCOTT: Yes, there are bunches of them

floating around.

BRIAN HOLIAN: Yes, versions floating around and that. (b)(5)

(b)(5)

And so I, what happened on swings and days I don't know, you know? (b)(5)

(b)(5)

(b)(5) So I just wanted you to make aware of that.

This version, now that we're changing, I was told was only format changes, that we're making it in a table format, you know, so Chuck can hand it to the Japanese and get their notes and concurrence on. So this version that's coming up, you know, we have not sent to them yet, we'll get it out and it will have draft on it, but just so I want you to make sure we're sensitive to that. And then we'll get everybody's comments and we'll send you out another formal one that everybody's tied off on later in the shift. That make sense?

MIKE SCOTT: Yes, I guess so now, but the one that you're going to send out later is going to reflect this hydrogen answer thing, right?

BRIAN HOLIAN: Well, the ten pager, does

it have hydrogen in it now?

MIKE SCOTT: It does discuss hydrogen and the implication is, don't let that hold you up.

BRIAN HOLIAN: Yes, and what I'm telling you is we're going to have to talk about it at the 3:00 call with everybody on and say, you know, do we want to change that?

MIKE SCOTT: Yes, (b)(5) (b)(5) we're still cogitating on that thing and we may have change to it.

BRIAN HOLIAN: Yes. But, you know, we don't know until we bring it up with all those players. That's just you and I talking, you know?

MIKE SCOTT: All right.

BRIAN HOLIAN: And these answers, you know, the answers on your hydrogen here still say, you know, we'll raise that. I don't know if that was raised on days or swings, you know, when they created these questions for you, Mike --

MIKE SCOTT: All right.

BRIAN HOLIAN: -- you know, they're answering the questions but it's not in light of that ten page paper. So we should mold it all into one, I agree. So we need to talk about it in context of the --

MIKE SCOTT: Okay. So when do you think that vetting will occur?

BRIAN HOLIAN: Yes, we need to talk about it in context of the ten page paper. That work needs to be done still.

MIKE SCOTT: When do you think that vetting will occur?

BRIAN HOLIAN: Yes, I'm going to try to get (b)(5) on at the 3:00 call and see if we can talk about the words, and do it then.

MIKE SCOTT: Okay.

MALE PARTICIPANT: Yes, I would mention that overall, that when we asked what they thought of it, they said it was relatively consistent with their understanding. This is their picture, it was positive, relatively consistent with their understanding, and not incongruent with their plans --

BRIAN HOLIAN: Good.

MALE PARTICIPANT: -- minus this one, which is a big exception, is not wanting to flood up or fill the containment.

MIKE SCOTT: Yes.

MALE PARTICIPANT: But overall, I think the product was reasonably well received.

MIKE SCOTT: Yes, so we need to make real

sure, and I know you know this, Brian, we need to make sure that we get the tone of that right, the balance between the hydrogen and the flood up.

BRIAN HOLIAN: Okay, understand.

MIKE SCOTT: Okay, so I guess we'll talk to you in an hour then.

BRIAN HOLIAN: Okay, take care. Bye.

(CONFERENCE CALL ENDED)

1-08 Track 08

(CONFERENCE CALL INITIATED)

ERIC THOMAS: NRC, Reactor Safety Team, Eric Thomas.

MALE PARTICIPANT: Hey Eric, is Mike Brown around?

ERIC THOMAS: Yes, just a second.

(Off microphone discussion)

ERIC THOMAS: May I ask who's calling?

MALE PARTICIPANT: Yes, this is the HOO, I have Brian Holian on the line.

ERIC THOMAS: Okay, hold on.

(Off microphone discussion)

MIKE BROWN: Hey.

MALE PARTICIPANT: Hey, this is the HOO, I'll connect you up.

MIKE BROWN: Okay. Hello?

BRIAN HOLIAN: Hello.

MIKE BROWN: Hello?

BRIAN HOLIAN: Yes, who's this, Mike?

MIKE BROWN: Good, yes.

BRIAN HOLIAN: Hey, Mike, Brian Holian.

MIKE BROWN: Okay.

BRIAN HOLIAN: I'm driving. Is Hiland out yet of that meeting?

MIKE BROWN: He is not out oh, he just walked out.

BRIAN HOLIAN: All right.

MIKE BROWN: Yes, he is, he snuck up on me. You want to talk to him?

BRIAN HOLIAN: Yes, and did you email that out yet?

MIKE BROWN: I have not emailed it out yet.

BRIAN HOLIAN: All right, maybe he can look at that and make sure he's okay with those words and I'll talk to him. And then you'll email it to GE and INPO. If he wants, you could put me on the speaker for you and him.

PAT HILAND: Yes, you're on a speaker.

BRIAN HOLIAN: Oh good, Pat, hey. Pat, just a couple other things and checking to see if you got surprised on any thing, Steve Arndt will take you up on that calculation. The Executive Team, you know, that was Jennifer Uhle at midnight and Marty (inaudible).

Our guy did a good calculation on his own based on rad levels between the torus as being different on Unit 2s and 3s, so surmising that, you know, maybe that containment's already flooded up above the toruses to the lower head. And Steve can probably walk you

through a single page --

PAT HILAND: Okay.

BRIAN HOLIAN: -- that had already been emailed out I think on my shift (b)(5) (b)(5) the Site Team like the discussion. As a matter of fact, Chuck Casto listened in and said yes, I think those probably are already and so I want them to concentrate on Unit 1, you know?

So I just wanted, that's not why I called. That was one item, but I wanted to just pass on to you, Pat, that Chuck Casto last night was a little, you know, (b)(5) And I wasn't as aware at midnight or 11:00 when I took over, as what I came upon my shift, that swing shift had been, you know, kind of editing that document and had sent it out.

And Chuck Casto said, you know, we're getting versions of that and, you know, (b)(5) (b)(5)

So you just need to know that sensitivity's there that, you know, (b)(5) (b)(5)

And at the 3:00 call they told me yes, we got this 2300 version editing of the 1400 version, but

with no kind of email description telling us the change. And it wasn't a redline strikeout, it was just a new document, you know? And that just bothered people out there because it takes a lot of time for them to say no one told us it was changing and are you asking us to bless off on this or are you just telling us this is the latest without our bless off? You follow that?

PAT HILAND: Yes.

BRIAN HOLIAN: Okay, so they just wanted, like on this email when Mike sends it out it's hey, here's a redline strikeout. We went back to the 1400 version, which the Japanese have already seen, made some minor edits, and here's the redline strikeout, we're going to talk about it at 9:00 or whatever and, you know, bless off on it again.

And we'll do that same process so when we want your bless off again on a revised version, got it? So that had reached Casto and he had heard that from Naval Reactors and everybody just wants to make sure they have a piece in it.

PAT HILAND: And the problem with that is the time.

BRIAN HOLIAN: Yes.

PAT HILAND: The time that it takes. And I know in the morning yesterday we had, you know, had

an hour and a half discussion over what were all the things, and we compiled that and we said, you know, we're not going to come back out to all ten people that participated to get your blessing, here's what we understand, we're going to publish it. And we did.

BRIAN HOLIAN: Okay.

PAT HILAND: And I hear you and I --

BRIAN HOLIAN: Oh, okay.

PAT HILAND: -- if you've got two or three folks you can probably do it. But with the number of people that were involved and the kibitzers on the sidelines --

BRIAN HOLIAN: Yes, you're right. This is, yes, this is tough. So we --

PAT HILAND: -- hey this is it, this is what we heard.

BRIAN HOLIAN: Yes.

PAT HILAND: And then let them come back, you know, the day after and tell you where you went wrong.

BRIAN HOLIAN: Oh good, good. And that's good, that's good. Yes, so but I --

PAT HILAND: If there's just two or three, (b)(5) maybe I can do that, but --

BRIAN HOLIAN: Yes, you're right, that's

right.

PAT HILAND: -- not when I've got ten people participating.

BRIAN HOLIAN: Yes, well you're right. And I think your version was not a --

PAT HILAND: Hold a minute, we told them we weren't going to send it back out for comments, we're just going to send it to you and final.

BRIAN HOLIAN: Yes, yes, no. And this isn't for you. This 1400 version I think everybody's fine. It was really I think what was happening on swings --

PAT HILAND: Yes.

BRIAN HOLIAN: -- and Naval Reactors --

PAT HILAND: Well we'll try to do a better job communicating today.

BRIAN HOLIAN: Yes, good. That was it, Pat. Mike will show you a little, I didn't change to redline, we just added a paragraph at the bottom if you like it. That was the best we came up with and it was kind of copied from those Qs and As that those folks had seen before. So Mike will take you through that.

PAT HILAND: Okay.

BRIAN HOLIAN: All right, that's it. Anything for me?

PAT HILAND: No, have a good week --

BRIAN HOLIAN: All right, take care.

PAT HILAND: -- you're off now, right?

BRIAN HOLIAN: Yes, I'm off until whenever, until next Thursday.

PAT HILAND: All right, see you Monday.

BRIAN HOLIAN: See you, bye.

(CONFERENCE CALL ENDED)

1-09 Track 09

(CONFERENCE CALL INITIATED)

ERIC THOMAS: Reactor Safety Team, this is Eric.

MALE PARTICIPANT: Yes, Eric, this is the HOO, I have Jack Geisner (phonetic) on the line.

ERIC THOMAS: Yes, put him through.

MALE PARTICIPANT: Thank you.

ERIC THOMAS: Jack Geisner. Yes, hey, Jack?

JACK GEISNER: Yes.

ERIC THOMAS: Hi, it's Eric Thomas at the Reactor Safety Team at headquarters.

JACK GEISNER: How are you, sir?

ERIC THOMAS: Good, how are you?

JACK GEISNER: Good.

ERIC THOMAS: You're calling from Japan, correct?

JACK GEISNER: Yes.

ERIC THOMAS: Okay. Do you want to talk to the RST Director?

JACK GEISNER: Somebody had called me, so --

ERIC THOMAS: Oh, okay.

JACK GEISNER: -- do you guys have something for me or a question? I just sent a bunch

of data I wanted to make sure you got it.

ERIC THOMAS: You sent, yes, I've got something with a NUREG, some hydrogen stuff, NUREG/CR-2726.

JACK GEISNER: Right. But the --

ERIC THOMAS: And I've got another one with a cover sheet, data from TEPCO.

JACK GEISNER: Right. There should be two. One is emailed and one is sort of pressures and temperatures from the start of the event.

ERIC THOMAS: Let me make sure I've got both of them. Okay, I've got one from 2000 local and one from 1730 local.

JACK GEISNER: There you go, you got both of them.

ERIC THOMAS: Okay, got it.

JACK GEISNER: Yes, the only thing I'd point out is that the Unit 3 one seems to, and it may be consistent with what we're seeing as you go through, it does look like it hit a bit transit. It may be the case and not just the containment has damage, it almost looks like everything flat lined, like maybe the vessel has damage too. But I think this is the first time we provided you sort of a progression of data and a lot of redundant instrumentation. So take a look at it.

I mean if you have questions now, I had the Japanese translator translate most of it, but there's a couple sections that he had to go, that he didn't get to. And what I recommend is you can kind of compare the Japanese symbols to say where it says, reactor trip, lost of power, hydrogen explosion. Those terms, if you look at the Japanese symbols, pretty much are mirrored on all the 1s.

ERIC THOMAS: Okay. I'll have to look at that.

JACK GEISNER: And I just wanted to --

ERIC THOMAS: Yes. I just came on watch about 15 minutes ago and still looking through all the turnover documents I got. But we'll, so you're looking at, I think it's Page 9 of the fax from 1730? Or am I kind of off here? I'm just trying to find --

JACK GEISNER: No, go to the second one.

ERIC THOMAS: -- I'm trying to pinpoint in on what you're trying to describe with Unit 3.

JACK GEISNER: Yes it's, go to, if you, do you have the second one from like, is it 2000 I put in there?

ERIC THOMAS: Yes, okay.

JACK GEISNER: It's, you know, I apologize. I should have numbered the page.

ERIC THOMAS: No, that's okay.

JACK GEISNER: We're having a small technical problem in that our PDF imager is not working. So you didn't get it in color, that's one problem. It would be, the title of the graph is 1F3 --

ERIC THOMAS: Okay.

JACK GEISNER: -- and it's one, two, three, I've got it with me here, four, five, six, seven pages back, title 1F3.

ERIC THOMAS: Okay. Yes, I've been looking at it.

JACK GEISNER: And it shows a pretty significant transient. And then --

ERIC THOMAS: Like you're looking at around the 20th?

JACK GEISNER: Yes, 20th is the transient. And then the 22nd, it looks like everything flat lined.

ERIC THOMAS: Yes, I see what you're saying.

JACK GEISNER: And whether that means just the containment's gone or the vessel's gone, in other words you're just reading ambient now --

ERIC THOMAS: Right.

JACK GEISNER: The data presented that way is a little starker than, you know, when I saw the

individuals we didn't have, this is the first time, we just got this data at 1900 our time, so I figured if we hadn't seen it before, the odds that you guys had seen it, and being an engineer junkie, I like data presented so --

ERIC THOMAS: Yes.

JACK GEISNER: -- it might be worth looking and if you have problems translating, I'm sure you don't have a Japanese person tonight, that person's going to be in tomorrow morning.

ERIC THOMAS: Okay.

JACK GEISNER: I would think you can make some general assumptions on that.

ERIC THOMAS: Yes, I think we do have a translator. And what I might do is --

JACK GEISNER: Oh, then they can read this.

ERIC THOMAS: -- make a copy and take it over to her. I'm pretty sure she's here, that's what I was told whenever so --

JACK GEISNER: Okay, great.

ERIC THOMAS: -- I just need to wander around and find her. So, okay. Well hold on.

(Off microphone discussion)

ERIC THOMAS: Okay, I'm going to put you on with Mike Brown real quick.

JACK GEISNER: Okay.

ERIC THOMAS: I'll put you up on speaker phone, okay? Stand by.

JACK GEISNER: Okay. Okay, yes.

ERIC THOMAS: Okay, here's Mike.

MIKE BROWN: Jack Geisner.

JACK GEISNER: Hey, Mike, how are you?

MIKE BROWN: Good. I just wanted to say hi.

JACK GEISNER: Where you been, on Op E?

MIKE BROWN: I'm, no, no, I'm over at new reactors now. I'm --

JACK GEISNER: Oh, why didn't you come out here?

MIKE BROWN: Well, I volunteered, they don't want me, man. I'm not an expert like you, you know. When I think of BWR experts, Jack Geisner is who comes to mind.

JACK GEISNER: Well, core damage, they told me.

MIKE BROWN: Oh, is that it?

JACK GEISNER: They said to me, what do you know about BWRs? I go, I don't know anything about them.

MIKE BROWN: Yes.

JACK GEISNER: Look, I don't need to know

(inaudible).

MIKE BROWN: Right, right. At this point in time it's kind of beyond all of that stuff, you know.

JACK GEISNER: Oh yes, it's all, well --

MIKE BROWN: SAM-G stuff.

JACK GEISNER: -- it's almost now SAM-Gs.

MIKE BROWN: Yes.

JACK GEISNER: And it's almost as it is in SAM-Gs, yes.

MIKE BROWN: Right. So when did you get out there? You're on the Team 2, the Relief Team?

JACK GEISNER: Yes, yes, just got here --

MIKE BROWN: So you're replacing like Bill Cook I guess? Or --

JACK GEISNER: You know, we haven't done a one-for-one.

MIKE BROWN: Oh, okay.

JACK GEISNER: We're just, Cook's been doing, Bill Cook's just doing his process. He's getting the pumper going.

MIKE BROWN: Right, right. Okay, cool.

JACK GEISNER: Have you been in the Op Center for awhile?

MIKE BROWN: Yes, yes, I'm now, for the whole next week I'll be on day shift here in the RST

so --

JACK GEISNER: Yes, yes.

MIKE BROWN: So are you on the back shift then over there? Are you --

JACK GEISNER: No, we're sort of --

MIKE BROWN: Wherever you need to be.

JACK GEISNER: Yes, wherever they tell us. I mean, I did the day shift but I said, if anybody has any questions, but I thought I'd just kind of, this is the first time I had gotten to see the data --

MIKE BROWN: Right (inaudible).

JACK GEISNER: -- it's the first data that we've had so I figured, if we hadn't seen it before, (b)(5)

MIKE BROWN: Right.

JACK GEISNER: -- they were able to create this data (b)(5)

(b)(5)

MIKE BROWN: Have you guys gotten like a vent path yet, for like where, if they vent, like let's say they start venting Unit 1. Where would they vent it to, you know? Because I mean, that's kind of our question here is like we're asked to come up with recommendations for venting and things like that, and we haven't gotten any kind of data on like where would

you, you know, I mean obviously if you could vent it out the stack, that would be great, you know?

JACK GEISNER: Yes.

MIKE BROWN: But it appears they can't do that, you know, and so we're coming up with these things based on venting it into the reactor building. But even there, I don't have a good idea of like --

JACK GEISNER: Yes.

MIKE BROWN: -- you know, what valves are they planning to open and where are they going to be dumping this stuff?

JACK GEISNER: Yes, you know, when we talked to the Japanese today they had just gotten the document.

MIKE BROWN: Okay.

JACK GEISNER: And remember, what they're mostly saying is they can't even get close. We wanted to get some assessment on the status of the primary containments.

MIKE BROWN: Right, right.

JACK GEISNER: But you got dose rates, some dose rates are 10,000 R per hour.

MIKE BROWN: I know, I know, I was looking at that.

JACK GEISNER: And so, yes. I'm beginning

to think, at least my thought is, Unit 1 has got the containment intact and more than likely the vessels intact. But the Unit 3, I think the containment's gone. I'm beginning to think the vessel's not gone, it's on the floor.

MIKE BROWN: Oh gee.

JACK GEISNER: Because, yes, and that's the piece, I had just gotten the data I haven't gone through it, but it looks like everything kind of flat lines. And it's not like instruments failed, or it's like everything kind of, you know, all the vessel thermocouples don't all the sudden flat line together and stay at the same temperature unless something.

MIKE BROWN: Right.

JACK GEISNER: So --

MIKE BROWN: Five thousand R per hour in the dry well, that's pretty high, you know?

JACK GEISNER: Yes.

MIKE BROWN: So, okay, well I'll let you go, okay.

JACK GEISNER: Well yes, and I, yes, just so you know, I'm not an expert on BWR but I can read core damage charts so --

MIKE BROWN: I understand. Okay. Hey, take care. Oh, Pat Hiland says hi too.

JACK GEISNER: Oh, okay. What's, he out there?

MIKE BROWN: Yes here, hold on. All right.

PAT HILAND: Hey, Jack?

JACK GEISNER: Hey, Pat, how are you?

PAT HILAND: Good. How are things going over there for you?

JACK GEISNER: Good, good. It's my first day, yes, busy.

PAT HILAND: Okay, well --

JACK GEISNER: The language barrier's hard, definitely hard.

PAT HILAND: Oh I'm certain. Do they give you an interpreter?

JACK GEISNER: Yes. But you know, even interpreter, it's a non-technical interpreter and so when you're trying to say, what do you believe on the status of the reactor vessel, if she doesn't translate it exactly, you know, it can be containment to somebody.

PAT HILAND: Yes.

JACK GEISNER: So we've gone around and around. But it, you know, at least I'm beginning to sense that TEPCO is not hiding anything from us, I think they're just overwhelmed and --

PAT HILAND: Right.

JACK GEISNER: -- having a hard time interpreting the data.

PAT HILAND: Okay. Well I'm on the day shift today, tomorrow, and Monday.

JACK GEISNER: Okay.

PAT HILAND: And I presume you must have some kind of mid shift over there, a night shift?

JACK GEISNER: I'm sort of holding the ball. I'm actually yes, I'm sort of swinging to mids. I said if anybody had any questions on the data or something comes up, you know --

PAT HILAND: Okay.

JACK GEISNER: -- because I'm still essentially jet lagged so --

PAT HILAND: Okay.

JACK GEISNER: -- I'm not going to sleep that long anyway.

PAT HILAND: All right, sounds good, Jack.

JACK GEISNER: Okay.

PAT HILAND: Got it.

JACK GEISNER: All right, if you've got anything give me a buzz.

PAT HILAND: All right, bye.

JACK GEISNER: All right, take care. Bye.

(CONFERENCE CALL ENDED)

1-10 Track 10

(CONFERENCE CALL INITIATED)

PAT HILAND: Reactor Safety Team, Pat Hiland.

MALE PARTICIPANT: Transferring Mike Scott on the Japan Team, stand by.

(Off microphone discussion)

MALE PARTICIPANT: All right.

PAT HILAND: Yes, this is Pat Hiland, Reactor Safety Team.

MIKE SCOTT: Hi, Pat Hiland, Mike Scott with the Japan Team. How you doing?

PAT HILAND: Good, Mike. Let me put you on the box so I can get the people here gathered around.

MIKE SCOTT: Okay, well this is kind of a status question but if you want to do that, that's fine.

PAT HILAND: All right, go ahead. Go ahead, Mike.

MIKE SCOTT: Okay, well I was just going to check on the ten pager with the recommendations for the reactors and the spent fuel pools. As course as you're aware, we provided a version of that to the Japanese yesterday evening about 24 hours ago. I believe that there has been, based on a discussion I had with the RST maybe six, seven hours ago, there was

a plan to revise that ten page recommendation document to reflect among other things, the additional considerations regarding hydrogen.

And I would like to, if it's possible, provide the revised recommendation set to the Japanese tomorrow, which would be about 12 hours from now. So I'm wondering where you stand on that. I know you wanted to vet it with your consortium, INPO and so on, I just wanted to get kind of a status check on where that stands.

PAT HILAND: Okay, we've gone back overnight and they've crafted some revisions to it, and we're having a call in about 20 minutes with our consortium. So it's 9:00 a.m. here, to go over those revisions. And then hopefully by noon our time, what we'll do is make a final revision, send it back out to achieve some type of a consensus from the group. And once we have that we will send it on to you.

And the other thing is, I don't know, Mike, if this will be helpful, but INPO has suggested that, you know, rather than, well in addition to the 12 pages that we send off that we create a table that would just go down by the units with the recommendations prioritized.

And the priority is too strong of a word because we'll probably list them in order of preference

but you can't, and you need to be able to convey this, is that the licensees and the operators can't follow our recommendations with blinders on.

You know, obviously they're the closest to the event so they know the plant conditions, they know the capabilities, but we're going to follow the SAM-Gs. So anyway, by noon our time I think, maybe a little bit after, we should have it up to you.

MIKE BROWN: Okay, and you say it's 9:00 a.m. over there now?

PAT HILAND: Yes, it's 20 minutes until 9:00.

MIKE BROWN: Okay. So maybe in five or six hours you might have something you'll be proud enough to send over here. Would that be right?

PAT HILAND: That would be correct.

MIKE BROWN: Okay, good. That will work fine. And then that will give us something to take to this meeting tomorrow about 12 hours from now. So that would be good.

PAT HILAND: We're also tasked with giving some talking points, including some brief points out of the assessment to the Chairman, who plans on communicating with the Ambassador sometime probably early evening today. So I would guess that he'd be

talking with the Ambassador, maybe 6:00, 7:00 p.m. our time, which would be 8:00 in the morning I guess over there.

MIKE SCOTT: So the Chairman plans to communicate with the Ambassador --

PAT HILAND: Right.

MIKE SCOTT: -- by morning here.

PAT HILAND: Yes.

MIKE SCOTT: And what's he plan to talk about?

PAT HILAND: He just wanted in general talk about the assessments that we've done, the recommendations we've made, you know, that we're following the SAM-Gs, et cetera. We're putting it together now, but it will be a broader, high level communique.

MIKE SCOTT: So it's a compendium sort of, or a summary of what's in that ten pager.

PAT HILAND: It's a summary that includes what's in the ten pager, yes.

MIKE SCOTT: Okay.

PAT HILAND: So the ten pager will get three or four lines, that's all so to speak.

MIKE SCOTT: Oh, it's a bunch of other stuff going on too.

PAT HILAND: Right.

MIKE SCOTT: Okay.

STEVE ARNDT: Chuck?

PAT HILAND: No, this is Mike Scott.

STEVE ARNDT: I'm sorry, Mike, this is Steve Arndt. Make sure you get your dates right. We're working to get this to the Chairman late this evening, so it won't be tomorrow morning your time, it will be the next day morning.

MIKE SCOTT: Okay, so all right, so you're planning to get it to the Chairman in about 12 hours.

STEVE ARNDT: Yes, something like that.

MIKE SCOTT: Okay. So it won't be here tomorrow morning. Okay, I'll let Chuck Casto know that.

PAT HILAND: Okay.

MIKE SCOTT: All right, thanks and look forward to seeing your product.

PAT HILAND: All right, thanks, Mike.

MIKE SCOTT: Thank you. Bye, bye.

(CONFERENCE CALL ENDED)

1-11 Track 11

(CONFERENCE CALL INITIATED)

ERIC THOMAS: Reactor Safety Team, this is Eric.

JOHN KNOKE: Hey, Eric, John Knoke. Had a question. We took the 11:00 Technical Coordination Industry Consortium at 11:00 and moved it to 9:00. Is that correct?

ERIC THOMAS: Yes, what's the pass code for that?

JOHN KNOKE: 6543.

ERIC THOMAS: Would 3456 work?

JOHN KNOKE: No, 6543.

ERIC THOMAS: Well, I'm glad you called and told me that.

JOHN KNOKE: And also, according to the daily calls, INPO is supposed to call in to RST at 9:00 also as a separate call-in. I don't know if they're going to be on that bridge or not.

ERIC THOMAS: Yes, they'll be calling in. I just, for some reason somebody put it out as 3456.

JOHN KNOKE: Oh really?

ERIC THOMAS: Yes. So that won't work?

JOHN KNOKE: Well, yes, I'll make a bridge up 3456 then.

ERIC THOMAS: Can you do that? Because if either one would work, I mean, I just, I heard it go out and I figured somebody knew something I didn't.

JOHN KNOKE: Okay. We'll use 3456.

ERIC THOMAS: Okay, thanks.

JOHN KNOKE: Bye.

ERIC THOMAS: Okay, bye.

(CONFERENCE CALL ENDED)

2-01 Track 01 (Contains no words to transcribe)

2-02 Track 02

(CONFERENCE CALL INITIATED)

BILL RULAND: Hello.

MIKE SCOTT: Hi, Bill, Mike Scott. How you doing?

BILL RULAND: Hey, Mike, you on a speaker?

MIKE SCOTT: Yes, is that okay? I've got a couple people here.

BILL RULAND: Yes, go ahead.

MIKE SCOTT: We want to talk to you about the latest RST assessment --

BILL RULAND: Yes?

MIKE SCOTT: -- of Fukushima Dai-ishi units.

BILL RULAND: Yes?

MIKE SCOTT: Are you prepared to have that discussion now?

BILL RULAND: Well, we are, hold on a second. This is the document that you just received?

MIKE SCOTT: I don't, I guess I didn't look and see what time you sent it. I certainly just opened it. Let's see, it's for your action dated 5:17 p.m. Saturday, 3-26.

BILL RULAND: Okay, hold on a second. Now

this is the, oh okay, this is the document we just sent.

MIKE SCOTT: Okay.

BILL RULAND: Maybe 15 minutes ago.

MIKE SCOTT: I'm all over it, okay.

BILL RULAND: Okay. So we're on the phone with INPO right now on this thing, but we'll --

MIKE SCOTT: Well, you want me to call you back? I don't mind.

BILL RULAND: Yes, yes, but call me back shortly. Hold on a second.

(Off microphone discussion)

MIKE SCOTT: Hey, Bill?

BILL RULAND: Yes --

MIKE SCOTT: Bill, I'm going to get something to eat, it's breakfast time here. So why don't I, how about if we call you back in 45 minutes. Would that work?

BILL RULAND: Well --

MIKE SCOTT: No?

BILL RULAND: Call me back, hold on a second, hold on, I'm sorry.

(Off microphone discussion)

MIKE SCOTT: Yes, why don't you finish your phone call. This isn't all that urgent.

BILL RULAND: No, no, no, we need to talk

to you guys. Because you guys have a lot of questions, a few questions?

MIKE SCOTT: No, just a couple. I'm just looking over this and I've got some kind of process questions here.

BILL RULAND: Okay, okay. Okay, hold on a second. Let me put you on hold.

MIKE SCOTT: Okay.

BILL RULAND: Hey, Mike, could you pick up the phone, please?

MIKE SCOTT: Done, what's up?

BILL RULAND: Congratulations.

MIKE SCOTT: Oh, thank you, thank you.

BILL RULAND: You know about it, right?

MIKE SCOTT: Yes, Cathy (phonetic) told me about it.

BILL RULAND: Okay, well good. Congratulations.

MIKE SCOTT: Thanks.

BILL RULAND: Of course you're over there having fun too, so it may be double congratulations are in order.

MIKE SCOTT: Yes, there might be other words to describe it but okay, we can let that one go for now.

BILL RULAND: Okay and I'm, you know, when you come back you got to promise me we're going to have lunch at the Thai place.

MIKE SCOTT: Sure, sure.

BILL RULAND: Okay. And you know, they, you know, and they got me acting for Jack.

MIKE SCOTT: Oh yes? Well where's Jack?

BILL RULAND: Jack's on the task force.

MIKE SCOTT: Oh, the what are the implications for us task force?

BILL RULAND: Yes, yes. So not only do I get Jack's job, I get Jack's job when everything's going to, you know, hell in a handcart.

MIKE SCOTT: Right. Are you still chairing the LT?

BILL RULAND: No, no, I'm getting rid of that job.

MIKE SCOTT: Oh, okay.

BILL RULAND: And I'm getting rid of my DSS job too for awhile so.

MIKE SCOTT: Oh, who's going to do that?

BILL RULAND: Sharon (phonetic).

MIKE SCOTT: Oh boy, we've got all kinds of changes going on. Congratulations.

BILL RULAND: Yes, so hold on a second.

MIKE SCOTT: All right.

BILL RULAND: Hold on a second.

(Off microphone discussion)

BILL RULAND: Okay, I'm going to put you on a speaker.

MIKE SCOTT: All right.

(Off microphone discussion)

BILL RULAND: Okay, go ahead, Mike.

MIKE SCOTT: Okay, so you have sent us an update to the previous provided recommendations and assessments of the three reactors and the four pools. There was also a discussion of incorporating a short point paper that had been sent over regarding hydrogen questions that the folks from Japan had asked.

In glancing over this new document, I'm not sure that I catch the flavor or the tone of the hydrogen point paper. Now this is a key point for our Japan counterparts and for us in the sense that the document that has been sent over here, pretty much says, let me see if I can find what it says exactly, flood up to two-thirds core, no, let's see, where is it, the top of active fuel? Bear with me one second.

MALE PARTICIPANT: The recommendation?

MIKE SCOTT: Inject into the RPB with all available resources, stop injecting from sources

outside the primary containment prior to reaching the dry well vent. So the goal is to raise primary containment water level to at least top of active fuel. Now right now they're not doing that. And they're not doing it because they're concerned about hydrogen.

And so the point paper was intended to address, the very short point paper was intended to address those points, those concerns, and I'm not 100 percent that's incorporated in here. Or maybe it is and I don't see it. So that's the number one thing I wanted to talk to you about.

CHUCK NORTON: That hydrogen paper was not incorporated into this. I was told that was going to be a separate document.

MIKE SCOTT: Well the, who is this, please?

CHUCK NORTON: Chuck Norton.

MIKE SCOTT: Okay. We gave the original version to our counterparts yesterday or the day before, and they expressed again the concerns about the hydrogen. And we have passed those on. It's a little difficult for, I think them to act on these recommendations absent our explicit views of the significance of the hydrogen issue.

MALE PARTICIPANT: Do you have that paper on the hydrogen?

MALE PARTICIPANT: Yes. It's like 15, 13 megs. It's a real big paper.

BILL RULAND: No, no, no, this is not the hydrogen document. This is not that document. This is not the attachment we're talking about. This is a point paper that we had written, right?

MIKE SCOTT: Yes, it was like five questions that you answered.

BILL RULAND: Right. This was the questions that were supplied yesterday.

MIKE SCOTT: Right. And my understanding in talking to, I think it was Brian maybe or somebody else yesterday, was that you were going to incorporate and you were going to go around again with your colleagues at INPO and others and try to meld that, your views of the hydrogen situation into this, you know, integrate into this recommendations document. And that's what I thought I was going to see this morning and I'm not, and it sounds like that's not where you were going.

MALE PARTICIPANT: There was talk last night of doing that, of incorporating that when I turned over, but that did not happen. Today, the document that you received today was what was negotiated between everybody. And those hydrogen questions were not

incorporated into the document. That was not part of their call.

BILL RULAND: And are you suggesting that we could not attach it, we could not forward this as like an attachment about hydrogen to this document?

MIKE SCOTT: Well, I suppose we could, Bill, but here's the bottom line, since there is uncertainty about the hydrogen situation, given that we don't really know what the conditions are in there, I mean, do we have a clear message to them to go ahead and flood up anyhow, or not? And I think this point paper is saying flood up anyhow.

BILL RULAND: This is a consensus assessment paper. That's what this document would be, three units and the four pools, right? This document --

MIKE SCOTT: Right, I'm sorry, the ten pager or how ever many pages it is, the one you just sent.

BILL RULAND: Okay.

MIKE SCOTT: I think its intent, just glancing at it, its intent is flood up anyhow. And our peers, our counterparts in Japan are reluctant to do that absent a resolution of the hydrogen issue. So, and this is, you know, this is kind of a, you know, big

deal (b)(5)

(b)(5)

(b)(5) I'm a little unsure about pass forward here. I was hoping to provide this updated version to them, to the Japanese folks at 11:00 our time, which is four hours from now. And I can do that if this is, again, fully vetted by all those organizations. And I'm instructed to ask, does this include their management too? In other words, does this have really high level buy-in from these organizations?

BILL RULAND: Yes well we're, that's actually where we're trying to go, that we're going to get endorsements. And INPO was going to manage that endorsement.

MIKE SCOTT: Okay, so what is your recommendation, Bill, I mean I've shared with you the concern that I have and that our peers from Japan might have regarding the hydrogen discussion not being integrated in here. What's your thoughts on what we should do?

BILL RULAND: Okay, here's first of all, hold on a second, Mike. Now who's gotten this document, this hydrogen question document?

MIKE SCOTT: Outside our team, no one. I

mean, I haven't given it to our Japan peers.

BILL RULAND: Oh no, that's not the question I'm asking, Mike.

MIKE SCOTT: Okay.

BILL RULAND: I'm asking Mr. Dozier here.

(Off microphone discussion)

BILL RULAND: I think this only went to the Site Team. So if this document did not go to INPO, did not go to EPRI and all those other folks, then it's not incorporated, Mike.

MIKE SCOTT: Okay, and I understand that that's the current status so I guess the question is, what's the right path forward here? I want to be able to, you know, we have in front of them a document that really does, we already have in front of them a document that really doesn't say that much about the hydrogen issue.

BILL RULAND: Yes, and apparently it was not received well or something.

MIKE SCOTT: I don't think that's correct. They told us yesterday that they are generally already in alignment with that document.

BILL RULAND: And that was our understanding, right?

MIKE SCOTT: What they don't want to do at

this point is undertake the recommendation in that document that says flood up the top of active fuel because they're worried about hydrogen.

BILL RULAND: Okay, so here's what we're going to do guys. Let's get a phone call with all the parties, get that document to INPO, tell them to distribute it, and let's have another phone call.

TOM ROBERTS (phonetic): Yes, this is Tom Roberts from NR, just for clarification, when they say they don't want to flood up the top of active fuel, at what rate of flooding do they think we're recommending, you know, fast or slow?

MIKE SCOTT: I certainly did not discuss that with them and I don't recall what the document said, so I'm not sure how to answer that. Did it say slow? If it said slow then I assume that's what they think our recommendation is.

TOM ROBERTS: Now the recommendation did not say, the version that's going to come your way soon still does not say. But the INPO team is thinking in terms of a flow rate that exceeds this minimum debris retention, whatever it's called, MDRIR rate, and not much higher. Which is effectively what they're currently doing.

And they acknowledge here in the call this

afternoon it would take weeks to flood the containment at that rate, and they consider that to be prudent because of the inability to purge the containment and the fact that you would have to vent relatively soon if you try to flood up faster with the hydrogen concerns that that leads to, so I'm sensing violent agreement. And that's all to find out what they think was being recommended.

MIKE SCOTT: Well I --

(Off microphone discussion)

MIKE SCOTT: Again, that subject didn't get discussed, okay? So is it your view that a slow flood up poses minimal hydrogen concern?

TOM ROBERTS: The team was concerned about the hydrogen and that's why I was recommending it to be a slow injection rate.

MIKE SCOTT: So, I guess there are a couple of flavors that you could put on this. One would be, try to inert first, because they are working on trying to be able to do that. So try to inert first. If that fails, flood up slowly. We could say flood up slowly without waiting to try to inert because that could take days to sort out. You know, there are different slants to put on that.

TOM ROBERTS: Right. The recommendation

is to flood at a rate in excess of 25 gallons per minute, which they're currently doing, right?

MIKE SCOTT: Right.

TOM ROBERTS: And that's the only injection that's recommended by the white paper. So I think there's even a third option from what you just said which is, keep doing what they're doing. And they are complying with the intent of the white paper.

MIKE SCOTT: Well, but what they're doing is not, well okay, so is it your assumption that what they're doing now is in fact, gradually raising the containment level?

BILL RULAND: Yes.

TOM ROBERTS: Yes, the recommendation is to inject to the RPV, being, you know, the means they're doing at a rate in excess of the MDRIR rate, which is 25 gallons per minute. They're hitting that in all three plants.

MIKE SCOTT: The what rate? Murder rate?

TOM ROBERTS: Yes, the Minimum, what's it stand for?

BILL RULAND: Yes, yes, where's the, you got your SAM-G? Can I --

TOM ROBERTS: Injection, something or other.

BILL RULAND: Mike, hold on a second.

MIKE SCOTT: Yes, I'm here.

(Off microphone discussion)

BILL RULAND: It's called Minimum Debris Retention Injection Rate.

MIKE SCOTT: Oh, okay, yes, I know, I've seen that term. Okay, I just didn't know the acronym, sorry.

BILL RULAND: Column 4.

MIKE SCOTT: Okay, so what you're saying is they are already, you're confident that the net inflow is sufficient, that they are in fact, slowly flooding up in all three units. Is that correct?

BILL RULAND: Yes, Chuck, do you agree with that?

MALE PARTICIPANT: We agree that they're injecting MDRIR right now into all three units.

BILL RULAND: Well hold it, because that was a slightly different question.

MALE PARTICIPANT: But that's what the white paper says to do.

BILL RULAND: Right, I know what the white paper says. But Mike's question was, are they flooding containment in all three units? Well we know they're doing it in Unit 1 because the containment's intact.

We do not know they're doing it in Units 2 and 3 because the containments are suspect.

MALE PARTICIPANT: Right, but you have no choice.

MALE PARTICIPANT: Right.

BILL RULAND: Oh right, you have no choice.

MALE PARTICIPANT: Right, the white paper says to flood at a rate that exceeds the MDRIR rate, which they are doing, right? They're exceeding MDRIR in all three plants based on the data on the internet.

BILL RULAND: Right.

MIKE SCOTT: But if the net objective here is to raise the level to top of active fuel, and if there is an unknown leak rate from 2 and 3, how do you know that they're succeeding and actually adding, you know, a net addition of water?

MALE PARTICIPANT: Right.

MALE PARTICIPANT: And, you know, whether --

BILL RULAND: I think right now this is unknown, and it's not clear to me it's knowable at this point.

MALE PARTICIPANT: And that was something I wanted the team to look at too, was the fact that the SAM-Gs are designed to preserve containment. When

containment's gone, should you still be doing that? Because now you're going to be flooding stuff out of there. But I guess the consensus is you still keep trying to do it.

BILL RULAND: Okay, okay, okay, so now I'm giving you the direction to get this stuff --

MALE PARTICIPANT: Yes, we're getting that out.

BILL RULAND: Now, we need to have another phone call, right?

MALE PARTICIPANT: Yes.

BILL RULAND: And I would, Mike, could you be on this phone call?

MIKE SCOTT: When is it?

MALE PARTICIPANT: Well we haven't gotten that far yet.

BILL RULAND: Yes, well why don't you go get breakfast --

MIKE SCOTT: Well what's the context here, phone call with who?

BILL RULAND: Why don't you go get breakfast and call me back.

MIKE SCOTT: All right, I'll do that. So that will be like half an hour.

MALE PARTICIPANT: That would be good.

BILL RULAND: Okay, okay.

MIKE SCOTT: All right, thanks.

(Off microphone discussion)

MIKE SCOTT: Bill, I'm hanging up unless you got anything else for me.

BILL RULAND: Oh thanks, Mike.

MIKE SCOTT: Okay, bye.

(CONFERENCE CALL ENDED)

2-03 Track 03

(CONFERENCE CALL INITIATED)

VONNA (phonetic): Hello?

BILL RULAND: Hey, Vonna.

VONNA: Hey, Bill, how are you?

BILL RULAND: Good, you?

VONNA: Good, you're on shift now?

BILL RULAND: Yes.

VONNA: Okay, I took a brief look at what our folks put together --

BILL RULAND: Right.

VONNA: -- on the Blackberry, we've been at my mother's 78th birthday party today.

BILL RULAND: Oh, good.

VONNA: I'm about to leave and get home and try to look at it a little bit easier on the computer as opposed to the Blackberry, but a lot of good information was there but it looked (inaudible) both. And I think Bernie sent you an email with it a little bit earlier to see how, because you wanted him to do the integration of yours and ours.

BILL RULAND: Yes.

VONNA: So if you have anything on your end, you could probably submit to Bernie and he could integrate it for us and try to speak with one voice.

BILL RULAND: Yes, I just talked to Steve, I've been on a separate phone call with a whole host of people here, but I did talk to Steve Jones, and he just called me at about 7:00, he claims he's going to have it done by 7:00. But he called me and he's going to be done very shortly. So it's like probably in another 15 minutes. And what my plan is, for him to send it to Bernie once he's done.

VONNA: Okay.

BILL RULAND: And he's going to send it to me. And if it sounds like it's, so Bernie then would take it and try to make a document that was kind of coherent.

VONNA: Right, right. Because we have some key messages there at the beginning and then I'm going to go ahead and forward this one over to you. Do you want me to send what we have to Steve as well just so you can see what we have?

BILL RULAND: Yes, why don't you do that?

VONNA: Okay.

BILL RULAND: And send it, you know, send it to Steve Jones too. He should see it, but so anyway, that's our current plan.

VONNA: Okay, great. Yes, I don't know why I put Sam Jones. We have a Sam Jones in (inaudible).

Anyway, okay, I'll send that out. And how are they doing as far as, when did they want the Chairman to see it? I know the LT sent me an email --

BILL RULAND: Well actually, I think it's going to be, it will be nice to have it in here sometime tonight so the ET could see it and start, you know, editing it or modifying it or whatever.

VONNA: But you're there until 11:00, is that right?

BILL RULAND: Yes, that's correct.

VONNA: All right. Okay, it would be great if, you know, since you're there too and all the paperwork, that whatever Bernie can integrate together and I'll be available the rest of the night.

BILL RULAND: Okay, great.

VONNA: Okay, super.

BILL RULAND: Thank you.

VONNA: Thank you so much. All right, we'll talk to you later.

BILL RULAND: Okay, thank you. Vonna.

VONNA: Bye.

BILL RULAND: Bye.

(CONFERENCE CALL ENDED)

2-04 Track 04

(CONFERENCE CALL INITIATED)

BILL RULAND: Bill Ruland, Reactor Safety Team.

MALE PARTICIPANT: Mr. Ruland, I have Bill Cook from the Japanese Team.

BILL RULAND: Okay.

MALE PARTICIPANT: I'll connect you through.

BILL COOK: Hello.

BILL RULAND: Yes, Bill, yes, Bill.

BILL COOK: Hey, Bill, I'm glad that I caught you.

BILL RULAND: Okay.

BILL COOK: I'm sitting in the J-4's office at U.S. Forces Japan?

BILL RULAND: Yes?

BILL COOK: And they're working very diligently to support all the efforts here.

BILL RULAND: Right.

BILL COOK: And they're getting peppered with questions and I thought perhaps I can help them out with a couple. The gist of the conversation centers around providing adequate freshwater to the --

BILL RULAND: I talked, can I cut this

short? Commander Fallon, Captain Capria? Are these the guys, U.S. Forces Japan?

BILL COOK: Well, not the same ones.

BILL RULAND: Okay.

BILL COOK: These are, you're probably talking to NRR guys, aren't you?

BILL RULAND: No, no, no, these are U.S. Forces Japan.

BILL COOK: Okay, they're not attached to this unit here --

BILL RULAND: Okay.

BILL COOK: -- with J-4. But they're pretty straightforward though, they're not rocket science questions. And they're pretty straightforward with respect to, what's our calculated flow rate to make up or compensate for decay heat? The last I heard it's about 25 GPM.

BILL RULAND: Yes, and that's yes, correct.

BILL COOK: Okay good, that's simple.

BILL RULAND: 25 GPM per unit.

BILL COOK: Per unit, got it, okay. The other number they're looking for which I think is reasonable is a rough estimate, how much water it would take to fill these reactor vessels to get to a flood condition?

BILL RULAND: Yes, and we don't have that information.

BILL COOK: Don't have it, okay. So maybe GE might have a better answer.

BILL RULAND: Well, the problem is, particularly is we don't know how long they've been filling the units. For Unit 2 and 3, they might have leaks --

BILL COOK: Oh I know, I get you, I get you. Just looking at a rough volume, that's all we're looking for, yes.

BILL RULAND: That's okay.

BILL COOK: Well, if you don't have the numbers you don't have the numbers.

BILL RULAND: We'll, yes. If you send us an email, you know, the best way to do it, send us an email, give us the question, and we'll answer it.

BILL COOK: Yes. The third question is maybe one that we do have the answer for, once you get to a feed and bleed, what's the flow rate? Do you have any idea?

BILL RULAND: No, no, you can --

BILL COOK: You're going from latent heat to vaporization heat removal to, you know, essentially freshwater liquid cooling, you know, it's a heat

transfer --

BILL RULAND: Right.

BILL COOK: -- problem. Nobody's done a calc --

BILL RULAND: No.

BILL COOK: -- to support that?

BILL RULAND: No. We've been focused entirely in getting that document out, that assessment document.

BILL COOK: Which one's that? Is that (inaudible).

BILL RULAND: Yes, right.

BILL COOK: Okay.

BILL RULAND: That's, we just got that done.

BILL COOK: Really? Okay.

BILL RULAND: Like within the last five minutes.

BILL COOK: Can you email me?

BILL RULAND: I emailed all the other teams I don't know if, hold up.

(Off microphone discussion)

BILL COOK: I did not, I did not.

(Off microphone discussion)

BILL RULAND: Yes, now Mike, you know, we

talked to Mike Scott about this. Are you in the same place as Mike?

BILL COOK: I'm still chasing down this pumping system issue.

BILL RULAND: Okay.

BILL COOK: I'm not in the same place, but --

BILL RULAND: Okay.

BILL COOK: -- I have a Blackberry that you could send it to. I could pick it up with the Blackberry and then I could print it out here.

BILL RULAND: Yes, but I think, yes --

(Off microphone discussion)

BILL RULAND: Now, you know, it's kind of sensitive about this document about the, you know this, about the order who gets to see it first and all this stuff, right? You know that.

BILL COOK: Yes, yes, I'm good with that. I don't think the Navy's going to subvert you here.

BILL RULAND: Okay, yes. There was someone, this guy, this Commander Fallon and Captain Capria, U.S. Forces Japan, they were going in to brief some flags.

BILL COOK: Yes?

BILL RULAND: And they were going to, and

the guy was asking me best and worst case.

BILL COOK: Yes, I've heard those too.

BILL RULAND: You know, and, you know, I'm, you know, what's the best case, worst case, you know? No idea.

BILL COOK: Right.

BILL RULAND: And, you know, we hadn't gotten to the stage yet of making those kinds of calculations.

BILL COOK: Yes, sir.

BILL RULAND: So that's, you know, we gave them some swags, you know, like 2.5 million gallons per reactor and that maybe these reactors had 750,000 gallons injected into them, ballpark figure, you know, those were the numbers we kind of swagged. But that's all they were.

BILL COOK: And those are numbers to do what, to fill the --

BILL RULAND: You know, 2.5 million to fill up the, you know, to fill up the torus and the dry well.

BILL COOK: Torus and dry well okay, good.

BILL RULAND: Right? And 750,000 is probably what's been injected.

BILL COOK: Okay.

BILL RULAND: Ballpark, and this is I mean,

this is, to call it ballpark is probably being generous.

BILL COOK: Well, I got you, I got you.

BILL RULAND: But we, you know, this is on our plate and we can, you know, we can talk to GE and get those numbers.

BILL COOK: Okay. Is, and this, I'm not looking for an official response, Bill, I'm looking for a sanity check.

BILL RULAND: Okay.

BILL COOK: The end game here, the near term end game is to get into a feed and bleed, correct?

BILL RULAND: Well, the near term, let me tell you what the near term end game is. The near term end game is, to continue feeding at the current rate.

BILL COOK: Yes.

BILL RULAND: Once you get nitrogen onsite, you purge and vent.

BILL COOK: To prevent a hydrogen build up.

BILL RULAND: Yes, correct. So you've got to, before you do anything else, you purge the dry well to keep the, you know, get that hydrogen out of there, you know, fill it with, you know, use nitrogen to purge and vent. That's the near term game. And this document we just sent you has got lots of information to describe exactly where we see this, what the actions they should

be taking.

BILL COOK: Okay, got it, okay. Then the next step is to fill, flood (inaudible)?

BILL RULAND: Yes. Yes, and like I said --

BILL COOK: Okay, that's good.

BILL RULAND: Yes.

BILL COOK: And then after that, what are we going to do with the water? And what are we going to do, or what's our recommendation to prevent hydro in the primary?

BILL RULAND: Well that's why, that's the, you know, prevent hydrostatically, you know, like basically pressurizing the containment and having fail. If you look at this document, I'd suggest you read the document and call us back.

BILL COOK: I will do that. Just again, I'm just trying to get a big picture and make sure I'm not way off base here.

BILL RULAND: No.

BILL COOK: You know, 1 we think we've gotten reasonable primary containment (inaudible), correct?

BILL RULAND: That's correct.

BILL COOK: Okay, so that's the hydro

problem, right?

BILL RULAND: Yes, correct.

BILL COOK: Okay, Unit 2 and 3, we think there's a break of primary there. For (inaudible) and hydro you're just going to spill water someplace that --

BILL RULAND: Yes. And their turbine buildings, you know, got water in them.

BILL COOK: Yes, got them. Okay. I get the big picture so I'm not too far off.

BILL RULAND: Yes.

BILL COOK: And I will read that document if you send it to me.

BILL RULAND: No, we should, it's, you should have already --

(Off microphone discussion)

BILL COOK: I have it. I just got it, thank you.

BILL RULAND: Yes, you got it. Modern electronics are amazing, aren't they?

BILL COOK: Very good. I appreciate your time. I didn't mean to take you away from anything but --

BILL RULAND: No, no, how are you doing there, Mr. Cook? Long time since we've talked.

BILL COOK: I know, I know. I'm doing fine, I'm doing fine, thank you.

BILL RULAND: Okay, good.

BILL COOK: Just honchoing this water barge, freshwater supply thing so.

BILL RULAND: Now you know that Mr., what the heck is his name, you know our OPA guy, right, is going --

BILL COOK: OPA?

BILL RULAND: -- you know, what the heck is, his name's slipped --

BILL COOK: Somebody else wanting to take pictures of me?

BILL RULAND: Yes, no, no. Hold on a second.

(Off microphone discussion)

BILL RULAND: Elliot (phonetic), Elliot, well anyway, Elliot is trying to do some sort of PR thing about this pumping system.

BILL COOK: All right, I don't want to be part of that. I (inaudible).

BILL RULAND: Yes, yes, me too. But anyway, I just thought I'd give you a heads up.

BILL COOK: Thank you, sir. I appreciate that.

BILL RULAND: Okay. Hey, see you.

BILL COOK: All right.

BILL RULAND: All right.

BILL COOK: You've been a wealth of information. Thanks, Bill.

BILL RULAND: Okay, bye.

BILL COOK: Thank you, bye, bye.

(CONFERENCE CALL ENDED)

2-05 Track 05

(CONFERENCE CALL INITIATED)

BILL RULAND: NRC, Bill Ruland, this is the Reactor Safety Team.

MALE PARTICIPANT: Hello, Mr. Ruland, I have Mike Scott from the Japan Team.

BILL RULAND: Yes, sir.

MALE PARTICIPANT: I'll connect you through.

BILL RULAND: Yes, Mike.

(Off microphone discussion)

BILL RULAND: Hey, Mike.

MIKE SCOTT: Yes. Is this Bill?

BILL RULAND: Yes it is.

MIKE SCOTT: Hi, Bill, how you doing? Seems like only a few minutes ago I was talking to you.

BILL RULAND: Mike, you know, this is so that you and I can continue our daily conversations.

MIKE SCOTT: Okay well, since it's not GSI-191 that's okay.

BILL RULAND: Okay.

MIKE SCOTT: Okay, I've got the Reactor Team here and we had a pow-wow and are reorganizing ourselves a little bit.

BILL RULAND: Okay.

MIKE SCOTT: And we're going to propose to do business with you all in a slightly different manner.

BILL RULAND: Okay.

MIKE SCOTT: So we wanted to talk to you about that.

BILL RULAND: Okay.

MIKE SCOTT: And the reason we're doing this is that we, I got staffed up with a number of new folks yesterday and so we now have sufficient resources to kind of step back a little bit and think more big picture than we did before. Before, when I got here and even before I got here, there were, it was just all meetings all day every day and we were just flapping around and not doing all that much to address the problems. But now we're going to do some more thinking and we're going to do some more participation with you. So Rob, I can't read your writing, why don't you explain what you wrote.

ROB TAYLOR: Okay.

MIKE SCOTT: Rob Taylor's going to go through what we developed because he wrote it on the board.

ROB TAYLOR: Hey, Bill.

BILL RULAND: Hey.

ROB TAYLOR: What we decided to do was we

needed to put somebody in charge of each of the specific issues that we're trying to track.

MIKE SCOTT: In charge, in this room here.

ROB TAYLOR: Yes, in this room here.

BILL RULAND: Okay.

ROB TAYLOR: From the standpoint of collecting information and being the positive person to understand the big picture of the state of things so that when we give you information, we're doing it from the most knowledgeable person, rather than grasping at straws and trying to put --

BILL RULAND: No, that's great.

MIKE SCOTT: And also in general, to get more information to you. I don't think we've been all that --

BILL RULAND: This is outstanding. As a matter of fact, this a subject, I looked on our battle rhythm kind of document and we did not have a routine phone call with you folks.

MIKE SCOTT: Right, so we're going to change that around.

ROB TAYLOR: Exactly. So Mike's going to step back and kind of be the honcho to try to make sure we all maintain focus on the bigger picture, but we're going to divide up between Jack Geisner, Alan Blamey,

and myself, the issues with regards to the spent fuel pools and reactors. So as it stands right now, our thinking is that I'm going to take the spent fuel pools and be the cognizant lead on that.

BILL RULAND: Okay.

ROB TAYLOR: Alan is going to take Units 1 and 2. We felt those bend together fairly well. And then Jack is going to take Unit 3 reactor, so that's the reactors themselves.

BILL RULAND: Okay.

ROB TAYLOR: I have all the spent fuel pools but those guys will have 1 and 2 for Alan and 3 for Jack.

BILL RULAND: Okay.

ROB TAYLOR: So, and then each of us responsible for our own specific area of collecting information and using the rest of the team members here to make sure that we're coordinating.

BILL RULAND: Okay.

ROB TAYLOR: And then we also have said we're going to have an imagery here that Ralph Way is going to lead up.

MIKE SCOTT: And the deal with that, Bill, is that they have some intel here that some of us, myself included, are not entitled to see, but that evidently is quite informative as to the conditions of the plant.

BILL RULAND: Yes, as a matter of fact, without going into specifics, we've seen some information here, but we have not been able to, hold on just a second.

(Off microphone discussion)

BILL RULAND: Okay, sorry.

MIKE SCOTT: Are you back, Bill?

BILL RULAND: Yes I'm back. Yes, yes, this is good thinking. Just send me an email and we'll, you know, I'm okay with it.

MIKE SCOTT: Okay, well just to give you a little more information, we're going to propose, we're going to (inaudible) to the current status and the 4:00 meeting or phone call as before, but we're also going to propose an alignment meeting in the morning, in the morning our time I mean, and from your shift perspective, when would it make sense to have that? And please don't say 4:00 in the morning.

BILL RULAND: 4:00 in the morning.

MIKE SCOTT: Thank you very much, that's helpful.

BILL RULAND: Okay what, so you're saying, okay right now, it's 10:00 Japan time right now, right?

MIKE SCOTT: Right.

BILL RULAND: So, you know, this is a, you

know, 9:00 is good, but give me a proposal and let us look at our schedule and see how that fits. What do you think would be a good time for you?

MIKE SCOTT: Bill, why don't we type this up and shoot it out to RST01 and you review it. And this is how we propose to go forward on our side of the house. And if you have feedback or comments if you'd get it back to us.

ROB TAYLOR: But as far as that morning call, he's kind of fishing around for a time.

MIKE SCOTT: Well we'll propose a time. We'll look at all of our --

BILL RULAND: Yes, yes, that's what I'm saying. You just propose a time and we'll then look at our schedule and say yes, we can do that or no, we can't.

MIKE SCOTT: Okay. And we'll count on you of course to get whoever else is on shift on board with all this.

BILL RULAND: Yes, that's correct.

MIKE SCOTT: Okay, all right.

BILL RULAND: No, I'm on board this. And that's all you need. And --

MIKE SCOTT: That's it, thanks.

BILL RULAND: Okay, bye.

MIKE SCOTT: Bye.

(CONFERENCE CALL ENDED)

2-06 Track 06

(CONFERENCE CALL INITIATED)

BILL RULAND: Bill Ruland.

COMMANDER FALLON: Yes, sir, this is Commander Fallon at USFJ.

BILL RULAND: Yes. This is Bill Ruland, I'm the U.S. NRC Reactor Safety Team Director for the Incident Response Center. How can I help you?

COMMANDER FALLON: We had some questions about reactor volumes we wanted to clarify with you.

BILL RULAND: Okay, hold on a second.

COMMANDER FALLON: Are you the right person to do that?

BILL RULAND: Well hold on, hold on.

(Off microphone discussion)

BILL RULAND: You're Commander what?

COMMANDER FALLON: Fallon.

BILL RULAND: F-A-L-L-O-N?

COMMANDER FALLON: That's correct.

BILL RULAND: From --

COMMANDER FALLON: USFJ.

BILL RULAND: USFJ. Okay. What's your question?

COMMANDER FALLON: There's a Captain here that I think wanted to join the call, let me check in

with him before we get started.

BILL RULAND: Okay.

(Off microphone discussion)

CAPTAIN CAPRIA: Hello, this is Captain Capria. Who am I speaking with?

BILL RULAND: Bill Ruland, from, I'm the Reactor Safety Team Director here at the Incident Response Center in Rockville, Maryland.

CAPTAIN CAPRIA: Okay, I was give you as the POC, as our NRC reach back.

BILL RULAND: Okay.

CAPTAIN CAPRIA: Because we're just discussing this similar topic with headquarters following the Command Bridge discussion. But, you know, so they're looking at it and I don't want to necessarily parallel path, but I've told, you know, you're kind of our conduit back there so I'm trying to get back into our normal lines here.

BILL RULAND: Okay.

CAPTAIN CAPRIA: As this, the question of the morning, the questions of the morning and what we're going to do with finding the military staffs out here are all being driven by the white paper that came out yesterday.

BILL RULAND: This is the, like an

assessment document?

CAPTAIN CAPRIA: Yes.

BILL RULAND: Okay, does it say like RST Assessment on the top of it?

(Off microphone discussion)

BILL RULAND: I just want to make sure we're talking about the right document.

CAPTAIN CAPRIA: Okay, RST Assessment (inaudible) out to units.

BILL RULAND: Okay.

CAPTAIN CAPRIA: For March.

BILL RULAND: Okay, I got it, I know what document you're talking about. We're in the middle of revising that right now but go ahead.

CAPTAIN CAPRIA: Right. Okay, yes again, what we're trying to do is look at military capabilities out here to support best case/worst case. What I'm trying to shape is the best case, you know, I'll shape that best case as, you know, if we, what is in our best estimate of water inventory in the containment and/or annulus area.

BILL RULAND: Okay.

CAPTAIN CAPRIA: Our best estimate of that. What would it take in gallons of water per reactor to get it up to the top of the active fuel region, which

is I believe the level we'd want to go.

BILL RULAND: Okay, you know that roughly, they have been pumping at about 25 gallons per minute, that has been the rate that they've been pumping at. And our current document basically says to continue that rate until they get nitrogen at the site so they can purge containment.

So the one way to do this for you is to, you know, make that assumption about 25 gallons per minute, and what I'll do is I'll verify with my team that that number's still spot on, but you know, we're just okay, 75 gallons per, you know, 75 gallons per minute is the number and it will be there until they get the nitrogen to the site. So that's one way to do it.

CAPTAIN CAPRIA: I'm sorry, well I have several questions. One is, do we have an estimate of what's the water inventory in Reactors 1, 2, and 3 currently?

BILL RULAND: You mean in the containment, right?

CAPTAIN CAPRIA: In the containment, I'm sorry, in the containment, because I think we've been trying to fill the containment for the last several days.

BILL RULAND: The containment, well, you

know, containment for Unit 2 and 3, the containments may be breached.

CAPTAIN CAPRIA: Right.

BILL RULAND: So there may be leaks in those containments. And the extent of that leak is unknown. Right now, you know, essentially they're at atmospheric pressure and there is, you know, significant water in the basement of the turbine building.

And there are some speculations that that water, there is some speculation that the water came from the reactor building. But we don't know that for certain. As a matter of fact we had a lengthy discussion here about where that water came from and we didn't arrive at any conclusion. So I realize that doesn't help you too much. But what --

CAPTAIN CAPRIA: If you're going to tell me that we don't, you know, again I'm just trying to push along, better not get into a long discussion but, so are you telling me, you know, currently we, I guess NRC has no estimate of leak rate, or we just don't know what it is?

BILL RULAND: That's, yes, leak rate out of the containment or if it is leaking, that's correct.

CAPTAIN CAPRIA: Right. If it is leaking though, it's currently straight out of the containment.

BILL RULAND: Well, hold on just a second.

(Off microphone discussion)

BILL RULAND: Yes, my team has confirmed that, you know, we don't know.

CAPTAIN CAPRIA: Okay, no that's fine.

BILL RULAND: Yes, right, some of it could be steam but it's, you know, we just don't know at this stage. Now what we can do is, I understand you need that. If you could give me some contact information and I know why, you know, you're basically trying to figure out regarding this barge and freshwater capability?

CAPTAIN CAPRIA: Well we're kind of looking at the worst case scenario if we have to do a rapid fill.

BILL RULAND: Okay, okay. Why don't we do this, you know, we can be in contact with our team in Japan. And what we'll do is we'll put this question to them so that as they talk to the Japanese we can get that information.

You know, right now what we're trying to do is get this, the revisions of this assessment document out and it's something we really got to get done here in short order. So once we get that done, if you could send us an email that we could, you know, and pose your question by email and lets, we'll forward it to the right

people and we'll get this question answered.

CAPTAIN CAPRIA: Okay, well I think at this point, questions by email, got that. You know, we're meeting the flags here in about 30 minutes, the flag officers.

BILL RULAND: Okay.

CAPTAIN CAPRIA: So for that meeting, leak rate's unknown?

BILL RULAND: That's correct.

CAPTAIN CAPRIA: We don't have any level control and we don't know where this water's going anyway.

BILL RULAND: That's, yes, unfortunately that's the answer.

CAPTAIN CAPRIA: Right. And that's fine.

BILL RULAND: Okay.

CAPTAIN CAPRIA: And do we have any idea of the core inventory of (inaudible) water, not core inventory, (inaudible) and annulus, you know, rough order magnitude?

BILL RULAND: Well roughly, and hold on a second, let me walk over to the status report. Both, you know, all three vessels are basically saying it's, you know, somewhere between one half and one third core height.

CAPTAIN CAPRIA: This is the annulus?

BILL RULAND: Yes, not in the annulus, this is the, inside the reactor vessel themselves.

CAPTAIN CAPRIA: So the dry wells, they have not started to seal those? Is that our best estimate?

BILL RULAND: No, what we believe is happening is the recirculation pumps, very likely the seals have failed on those pumps. And so what we believe is the water that's being injected into reactor vessel is either steaming out of the reactor vessel out through the safety relief valves possibly, or it's leaking out the recirculation pump seals and down into the dry well.

CAPTAIN CAPRIA: The dry well. So we're not thinking there's much water in there then. When I say water, relative to approximately 1 million gallons to fill them.

BILL RULAND: Yes, right, 1.2 million, we did a rough calculation a couple days ago and, you know, about 750,000 gallons was a ballpark number that we had.

CAPTAIN CAPRIA: And that will be one of the questions, we asked about that as well. So we don't think there's a significant amount of water when you're talking, you know, if you're talking a million gallons to fill it, not a significant amount of the dry well's

filled currently.

BILL RULAND: Hold on a second, let me ask my team that. I think, hold on.

(Off microphone discussion)

BILL RULAND: Yes, and, you know, my team confirmed, you know, we couldn't really make a judgment on that yet.

CAPTAIN CAPRIA: No judgment, I mean, can we say that not a significant amount, you know, just talking about the leak breach from the --

BILL RULAND: Yes, no, we can't say that, you know, like I said there's, you know, if you just do the math, the simple math, you know, the plants have been shut down almost, it's basically two weeks. So if they've been putting water in there, you know, 50 gallons per minute and you just do the numbers, you know, 25 to 50 gallons per minute and there's a lot of water in that plant. But, you know, how much has leaked out, how much remains in the dry well is, you know, tough to determine.

CAPTAIN CAPRIA: And do we know the, are the annuluses up full or I guess, do we think the dry wells are separated from the annuluses? If we had to do this we don't have to fill up and maintain the dry wells? Or do we think we'd have the --

BILL RULAND: I mean, what, help me understand this. What you're trying to figure out is what's the total amount of water that you believe, that we believe would be needed to fill up these dry wells to the extent that they would need to ensure that the vessels were cool, right? That's the question you're getting to.

CAPTAIN CAPRIA: Well, for the active fuel lines --

BILL RULAND: Right, right, and to the level that's described in their Severe Accident Management Guidelines. Yes, how --

CAPTAIN CAPRIA: Yes, we're just trying to, you know, what the flag officer wants is best case/worst case. I've told him worst case is 2.5 million gallons, if we had to fill both the containment and the annuluses. You know, i.e. the worst case is those are both empty and you have to fill them both up to cover the fuel line.

BILL RULAND: 2.5 million gallons total?

CAPTAIN CAPRIA: Per reactor.

BILL RULAND: Per reactor.

CAPTAIN CAPRIA: You know --

BILL RULAND: Yes, that's, I mean that sounds, as a ballpark number 2.5, hold on a second I think that's a pretty good number. Hold on.

CAPTAIN CAPRIA: Okay.

(Off microphone discussion)

BILL RULAND: Yes, you know, as a ballpark number that's probably pretty good. You know, Unit 1's smaller than the other two units, you know, it's roughly 60 percent of, you know, so it's got, not only was it smaller power level, you know, it was like a 1,380 megawatt thermal plant and the Units 2 and 3 are like 2,381.

CAPTAIN CAPRIA: Okay. So I guess what I'm hearing is we don't have any estimate of the water volume in the annuluses or the dry wells.

BILL RULAND: Annulus, you mean the torus, is that what you said?

CAPTAIN CAPRIA: The torus.

BILL RULAND: Yes, the torus which is the suppression chamber.

CAPTAIN CAPRIA: Suppression chamber, yes that's about 800,000 gallons --

BILL RULAND: Yes.

CAPTAIN CAPRIA: -- their pool or --

BILL RULAND: Yes, because 2 and 3 might have failed, we don't know for certain. But like I said, I can get that, you know, we can get this.

CAPTAIN CAPRIA: Well and I think that will

stick with an email to you, I'll put my Commander back on the line.

BILL RULAND: Okay.

CAPTAIN CAPRIA: But I was just trying to, you know, for the flags, you know, they always want best case/worst case.

BILL RULAND: Okay.

CAPTAIN CAPRIA: The hot topic of the day because we're pushing the JTF support planning, you know, you don't want to waste any more time, but there is no best case or could we, you know, is there someone that --

BILL RULAND: No, no, we really can't, you know, we're not, you know, we're right in the middle of trying to provide recommendations to the Japanese about how to, you know, how to combat this casualty yet. And we haven't got yet to that point where okay, how much water are you going to need? I'd suspect, once we get this document out, that's clearly a question we'll start pulling the string on. But, you know, right at this very moment, you know, we got to get this assessment out.

CAPTAIN CAPRIA: Okay, so no estimate of inventory in the vessel.

BILL RULAND: No, no.

CAPTAIN CAPRIA: Okay, got it.

BILL RULAND: In the primary containment vessel, right, the primary containment.

CAPTAIN CAPRIA: Off of it is a dry well, dry well to annulus. When you say primary containment I think that's the, you know, the area, the reactor vessel itself.

BILL RULAND: Yes, no, let me term. There's the reactor vessel with just a reactor coolant system. Then there's the dry well --

CAPTAIN CAPRIA: Right.

BILL RULAND: -- and the dry well and the torus or the suppression chamber, that makes up the entire primary containment.

CAPTAIN CAPRIA: Correct, that's what I understand as well.

BILL RULAND: Right.

CAPTAIN CAPRIA: But what you're telling me, at the NRC we don't have any estimate of the water level in the dry well and the torus.

BILL RULAND: That's correct.

CAPTAIN CAPRIA: And, you know, I'm assuming, if you're looking at these, you know, a 20 foot tall reactor vessel, it could be empty, it could be full. It's down in the grass with these

calculations, would be my gut feel.

BILL RULAND: Yes, I mean, like I said, the 2.5 million gallons is what I'd call a, you know, for planning purposes at this juncture is probably a good number, you know, is it best case/worst case, I can't render that judgment at this stage. But what I can say is an approximate number to plan for at this juncture, that's probably not a bad number.

CAPTAIN CAPRIA: Well that's worst case, you were kind of, that's on the (inaudible) any number to the left of that, i.e. less than that, the NRC could propose for planning purposes, you know, initial planning purposes, this is all rough order of magnitude.

BILL RULAND: Right.

CAPTAIN CAPRIA: You know, something less than, we estimate 50 percent of that inventory, 20 percent, just a rough order of magnitude.

BILL RULAND: You mean it's already in the dry well?

CAPTAIN CAPRIA: In the dry well and the (inaudible).

BILL RULAND: Yes, we like I said, we calculated about 750,000 gallons is probably in there now.

CAPTAIN CAPRIA: In each of the three

units?

BILL RULAND: Yes, we can't say that.

CAPTAIN CAPRIA: Okay, but for the rough order of magnitude, I'll just use that then. I mean --

BILL RULAND: Yes, just as a rough, this is a round order of magnitude. That's all this is.

CAPTAIN CAPRIA: Yes, we're not expending money on this, we're just trying to bound the problem left and right.

BILL RULAND: Okay. No, I understand.

CAPTAIN CAPRIA: So 750's the current inventory, rough order of magnitude, best case, you know, rough order of magnitude, I don't want to say bets case. The current worst case would be there's nothing in there which we know, I don't think's true just because of the temperatures.

BILL RULAND: Yes, we know that's not the case but, right. But that could be the worst case, it all leaks out.

CAPTAIN CAPRIA: Yes, and we asked in the worst case, what would be the worst case to fill, you know, to fill that. You know, and we'll shoot the question to you unless you have that now, you know, if we had to do the, we need to pull it now to the top,

reactor core region, you know, is that just as much water as you can do with it or --

BILL RULAND: I'm sorry.

CAPTAIN CAPRIA: No, I said but I'll just check off the net here, you know, we're looking at a top passage you want to put it in, so that our part would be --

BILL RULAND: Oh, how fast. Well right now, like I said, you know, 25 GPM per unit, so 75 GPM until they get nitrogen on the site and they start purging these reactor vessels, purging the dry wells.

CAPTAIN CAPRIA: And then once you get the, you know, the nitrogen purge on the dry wells, what would that lower it to?

BILL RULAND: Then you might be able to increase it. But I would say, if 25 GPM is sufficient to keep the plant cool, we could probably keep it at 25 for some time.

CAPTAIN CAPRIA: Okay. Is there a rough, worse case estimate, you know, double that would be --

BILL RULAND: Yes, I'd say double, that's probably a good number. But, you know, the KE's going to continue to decrease so --

CAPTAIN CAPRIA: Right, okay yes, if you're not familiar with military planning, you know, we'll

shoot to the left of the target, we'll shoot to the right of the target and then we'll throw people at it --

BILL RULAND: Yes.

CAPTAIN CAPRIA: -- to figure out any --

BILL RULAND: Yes, you're right, you're right. And we don't quite think that way, but I understand what you're saying.

CAPTAIN CAPRIA: Okay and again we had a lot of people who, you know, my understanding is very low and there's people, you know, less than that so there's a lot of education. But sir, you answered my question. I'll have Commander Fallon follow it up with an email with you.

BILL RULAND: That would be great.

CAPTAIN CAPRIA: I can just put him on the line to get your --

BILL RULAND: Okay, sure, Captain.

CAPTAIN CAPRIA: Okay, thank you very much.

BILL RULAND: Right.

CAPTAIN CAPRIA: Bye.

COMMANDER FALLON: This is Commander Fallon, sir.

BILL RULAND: Yes, I hope I helped the Captain get the information he needed. Could you give

me his name so I know who I talked to?

COMMANDER FALLON: Yes, it was Captain Capria.

BILL RULAND: Spell that.

COMMANDER FALLON: C-A-P-R-I-A.

BILL RULAND: All right, okay. And you're U.S. Forces Japan, right?

COMMANDER FALLON: Or the new task force they're calling it now, the --

BILL RULAND: Okay. Well it's my understanding you were going to send us an email, kind of a question about your, you know, in trying to plan kind of the water needs of these sites. So if you could shoot me an email to the following email address, RST, that's Romeo, Sierra, tango, 01, dot HOC, that's hotel, Oscar, Charlie, at NRC.gov.

COMMANDER FALLON: Okay, I'll do that.

BILL RULAND: And if you shoot that question to us we'll, you know, we'll get you an answer.

COMMANDER FALLON: All right, thank you much.

BILL RULAND: Okay, sure thing, Commander.

COMMANDER FALLON: Appreciate your help.

BILL RULAND: Okay, you know, give us a call and maybe we can, you know, get some more information

for you, okay?

COMMANDER FALLON: Okay, thank you.

BILL RULAND: Sure thing. Bye.

COMMANDER FALLON: Bye.

(CONFERENCE CALL ENDED)

2-07 Track 07

(CONFERENCE CALL INITIATED)

BILL RULAND: NRC, Bill Ruland, how may I help you?

MALE PARTICIPANT: Bill Ruland, I have Randy Crane of INPO. Can I connect you through?

BILL RULAND: Yes, sir.

MALE PARTICIPANT: All right.

BILL RULAND: Randy?

RANDY CRANE: Hi.

BILL RULAND: Hey, Randy.

RANDY CRANE: This is the RST Duty Officer?

BILL RULAND: Yes, I'm sorry, it's been a long night. Yes, sir, this is Bill Ruland, I'm the Reactor Safety Team Director.

RANDY CRANE: Okay, hi, good to meet you. Hey, I just wanted to touch base since I'm our tech lead here tonight and my turnover was that we sent our recommendation document over right around our turnover time which is like 2000.

BILL RULAND: Okay, I'm sorry, what's your last name, Randy?

RANDY CRANE: Crane, C-R-A-N-E.

BILL RULAND: Okay, okay.

RANDY CRANE: Former NRC, back in the day.

BILL RULAND: Say again?

RANDY CRANE: I was NRC at Region 3 in the '90s.

BILL RULAND: Oh, okay.

RANDY CRANE: Anyway, so we sent that over and I just wanted to touch base, make sure that if possible that we could be cc'ed when it gets forwarded to TEPCO.

BILL RULAND: Yes. As we left it, we were going to do that.

RANDY CRANE: Okay.

BILL RULAND: Apparently we must have, there must have been some sort of communication problem with this document. I thought we were going to get a document that was basically, had been modified as we'd agreed on and, you know, we instead got something different. So it's requiring us to take the information we got from you and update this document. So we're doing that now.

RANDY CRANE: Okay, so you didn't get exactly what you thought you were getting.

BILL RULAND: That's correct.

RANDY CRANE: Okay. And this is my first day, I've been off for like five so --

BILL RULAND: Oh, good for you.

RANDY CRANE: Yes, good for me. But now I'm trying to figure out, because it was turned over as, oh yes, we just got them everything that they thought they wanted so --

BILL RULAND: Yes, no, yes, well you gave us the technical information we wanted, but I thought our goal was that you folks were going to finalize the document so we didn't have to do anything to it.

RANDY CRANE: Okay, in other words like make it into a white paper or something?

BILL RULAND: It would be done.

RANDY CRANE: Cover letter, et cetera.

BILL RULAND: Well, it was just going to be done and then we'd just put our buck slip on it and send it out. And that's not what we got. We got a document that listed, you know, this section no change, this section no change, this section no change --

RANDY CRANE: Oh.

BILL RULAND: So --

RANDY CRANE: Well, I have a whole document that has all the changes incorporated. That's weird. If you'd like I can send that back.

BILL RULAND: Hold on a second.

RANDY CRANE: Okay.

(Off microphone discussion)

BILL RULAND: Yes, and that's not what you sent us.

RANDY CRANE: All right, well I can send this off then, right?

BILL RULAND: Yes, why don't you just send it to us.

RANDY CRANE: Okay.

BILL RULAND: Just yes, just to double check. Just send it to us.

RANDY CRANE: Okay, will do. And then the goal is after you guys have gone through it to make sure it says what we all think it's going to say --

BILL RULAND: Well that's what we've been, we've been going it over line by line.

RANDY CRANE: Oh, drat! All right, I will send what I've got, which I believe is the one that has those changes incorporated.

BILL RULAND: Okay.

RANDY CRANE: And I'll call you back in a little bit. How's that?

BILL RULAND: Okay, thank you.

RANDY CRANE: All right, thank you.

BILL RULAND: Randy, maybe you could double check what you sent us?

RANDY CRANE: Yes I will.

BILL RULAND: Thank you.

RANDY CRANE: All right, thanks.

BILL RULAND: All right, bye.

RANDY CRANE: Bye.

(CONFERENCE CALL ENDED)

2-08 Track 08

(CONFERENCE CALL INITIATED)

MARK ORR (phonetic): RST, Mark Orr on the recorded line.

MALE PARTICIPANT: Yes, I got INPO again. I'll connect you in.

MARK ORR: Okay, thank you.

MALE PARTICIPANT: Yes.

(Off microphone discussion)

MARK ORR: Hello.

RANDY CRANE: Hi, this is Randy again.

MARK ORR: Randy, Mark Orr.

RANDY CRANE: Hi. Regarding that document?

MARK ORR: Right.

RANDY CRANE: Is it possible that you didn't open the attachment and that they were just reading the email that summarized the changes?

MARK ORR: No, we opened the attachment. I can forward it to you back again if you want, Randy.

RANDY CRANE: Because I just sent, I was cc'ed I thought on it and it's, the RST Industry Input 2?

MARK ORR: Yes, and if you go through it you'll see big sections in there like, you know, where

it says, okay as is or something, I forget what it says now, no change, no change, no change, and then there's nothing about Units 4, 5, or 6.

RANDY CRANE: You're right, there's nothing about 4, 5, and 6. Were we expecting something on 4, 5, and 6?

MARK ORR: Well yes, if you look at the original document we sent out to you, we had the information on 4, 5, and 6 as well. Yours is called RST Assessment Industry Input. And --

RANDY CRANE: Yes, with a two in parentheses.

MARK ORR: Yes. And if you look through it, if you go to like Page 2, look for Unit 2, it has the assumptions then it says, "Core Status, core is contained in the reactor pressure vessel, reactor water level is unknown. Core Cooling, no changes, Primary Coolant, no changes, Secondary Containment, no changes, Spent Fuel Pool, no changes, no changes, no changes, Assessment, no changes." And see that's, we had to pull all that in from the other document and, you know, merge the two, that's all. I just finished doing it.

RANDY CRANE: Okay. I just, I was looking at it for the first time and saw the red as the changes --

MARK ORR: Yes.

RANDY CRANE: -- to the document, thinking that it always said no changes and that --

MARK ORR: No.

RANDY CRANE: Okay.

MARK ORR: No.

RANDY CRANE: All right.

MARK ORR: But what you did was you lifted out the sections, or whoever did this, listed out the sections where you wanted to make changes and you made the changes. And then the rest didn't, you know, so we have to put them back together again to make the whole document, that's all.

RANDY CRANE: All right, I'm sorry --

MARK ORR: It's done.

RANDY CRANE: -- that's frustrating.

MARK ORR: Ah, hey, you know, a tremendous amount of energy has gone into producing this thing so, it looks good the way it is right now.

RANDY CRANE: Okay. And so then we would expect that you're going to send it off in another hour or so?

MARK ORR: Oh no, I just printed it out, I got all the comments incorporated and everything else, we just printed it, we're going through it one last time,

comparing it to your, you know, redline document, making sure all the words are right. It should be out of here within 15 minutes.

RANDY CRANE: Okay. Hey, I appreciate it. Thanks a lot.

MARK ORR: Okay.

RANDY CRANE: And you have our email here, the --

MARK ORR: Yes.

RANDY CRANE: Okay.

MARK ORR: I'll broadcast it to everybody.

RANDY CRANE: Thanks a whole lot.

MARK ORR: Sure thing.

RANDY CRANE: All right, bye, bye.

(CONFERENCE CALL ENDED)

2-09 Track 09

(CONFERENCE CALL INITIATED)

BILL RULAND: Bill Ruland, Reactor System Division, I'm sorry, Bill Ruland, I'm the RST Director. How may I help you?

COMMANDER FALLON: Bill, this is Commander Fallon at U.S. Forces Japan again.

BILL RULAND: Yes, sir.

COMMANDER FALLON: I was just following up on the email I sent you, wanted to make sure I got you.

BILL RULAND: Okay, hold on a second.

(Off microphone discussion)

BILL RULAND: Yes, we have it.

COMMANDER FALLON: Okay, so I guess you haven't looked at it yet. I wanted to see if you have any questions or --

BILL RULAND: Yes, we're right in the middle of something we can't, we'll take a look at it but we can't really respond right now because we got a priority we need to get out.

COMMANDER FALLON: Okay, got it.

BILL RULAND: And is your phone number included in that email?

COMMANDER FALLON: I gave you a DSN phone number actually.

BILL RULAND: Okay.

COMMANDER FALLON: I don't know if you can call DSN or not.

BILL RULAND: No we can't, but that's all right. The email would be great.

COMMANDER FALLON: That's all I can give you actually. So email's fine, I'll look for a response from you and I suspect you're probably have some questions.

BILL RULAND: Yes, sir.

COMMANDER FALLON: And so I'll keep an eye on my email.

BILL RULAND: Happy to help. Bye.

COMMANDER FALLON: All right, thank you, Bill.

BILL RULAND: All right, bye.

(CONFERENCE CALL ENDED)

2-10 Track 10

(CONFERENCE CALL INITIATED)

BILL RULAND: Bill Ruland.

MALE PARTICIPANT: Hey Bill, (inaudible) Headquarters Ops, I have both gentlemen up on a bridge. Want me to get you up there?

BILL RULAND: Yes, please.

MALE PARTICIPANT: Okay, here you go.

OPERATOR: (Inaudible) This call may be recorded. After the tone, please state your name and organization followed by the pound key.

BILL RULAND: Bill Ruland, Reactor Safety Team Director.

(Off microphone discussion)

MALE PARTICIPANT: Mr. Ruland, go ahead. They're both up on the bridge, sir.

BILL RULAND: Okay, Steve?

STEVE JONES: Yes.

BILL RULAND: Bernie?

BERNIE WHITE: I'm here.

BILL RULAND: Okay. You both have prepared these documents?

BERNIE WHITE: Yes.

BILL RULAND: Steve?

STEVE JONES: I'm still working on mine,

I didn't have a, not quite done.

BILL RULAND: Okay, give me an idea when you're thinking to be done, Steve.

STEVE JONES: Probably 7:00.

BILL RULAND: Okay.

STEVE JONES: Is that workable or --

BILL RULAND: Well, why don't you, well I'll tell you what. Why don't you work towards 7:00 and we'll, you know, we'll work with that.

STEVE JONES: Okay.

BILL RULAND: We'll see, you know, I'll let our staff here know that that's what we're working with and maybe, do you have at least that outline of the document right now?

STEVE JONES: Yes.

BILL RULAND: And Bernie, maybe I could ask Steve to email you an outline of the document.

BERNIE WHITE: Okay.

BILL RULAND: And you can start to look, make it, your part match the way his is going to look.

BERNIE WHITE: Sure.

BILL RULAND: So that, and once Steve gets it done, I'd ask you to put it together.

BERNIE WHITE: Me?

BILL RULAND: Yes, you.

BERNIE WHITE: Bernie you?

BILL RULAND: Say again?

BERNIE WHITE: You're asking me, Bernie?

BILL RULAND: You, Bernie, yes.

BERNIE WHITE: Okay, sure.

BILL RULAND: Yes.

BERNIE WHITE: Okay.

BILL RULAND: Particularly given apparently the time that Steve's got to, you know, have to work on it.

BERNIE WHITE: Sure, I just had to make sure I knew who you were talking to, that's all.

BILL RULAND: No, no, no, I understand.

BERNIE WHITE: Yes, that's fine.

BILL RULAND: Okay, so you guys understand what your tasks are?

BERNIE WHITE: Yes.

STEVE JONES: Yes.

BILL RULAND: Okay, so just to make sure we're clear, you, Steve Jones, are going to email the current version of the document so he can start making the formats and the, kind of the whole presentation of this document similar. Meanwhile, Steve, you're going to work to finish your version of the document by 7:00. Then you could forward that to Bernie and Bernie could

put it all together and send it in to us.

STEVE JONES: Okay.

BILL RULAND: And you would send it in to RST01.hoc --

BERNIE WHITE: Okay.

BILL RULAND: -- NRC.gov.

BERNIE WHITE: Okay.

BILL RULAND: And of course, cc myself and Vonna, you know, and your relevant, you know, organization people.

BERNIE WHITE: Sure, will do.

BILL RULAND: Hey, thanks, guys.

BERNIE WHITE: You're welcome. And sir, if you need to get a hold of me, you can call me directly if you like.

BILL RULAND: Okay, go ahead, what's your number, Bernie?

BERNIE WHITE:

BILL RULAND: (b)(6)

BERNIE WHITE: --

Mobile Phone

BILL RULAND: And your direct number, Steve?

STEVE JONES: It's 301-874-6384.

BILL RULAND: 6384, okay. Steve Jones, Bernie White, you guys have hard names to remember.

Okay, thanks.

STEVE JONES: Okay.

BERNIE WHITE: You're welcome.

BILL RULAND: Bye.

BERNIE WHITE: Bye.

(CONFERENCE CALL ENDED)

2-11 Track 11 (Contains no words to transcribe)

2-12 Track 12 (Contains no words to transcribe)

2-13 Track 13 (Contains no words to transcribe)

2-14 Track 14 (Contains no words to transcribe)

2-15 Track 15

(CONFERENCE CALL INITIATED)

BILL RULAND: NRC, Bill Ruland.

TOM HUCKABEE (phonetic): Hey, is Mr. Norton there, please? This is Tom Huckabee with INPO.

BILL RULAND: Yes, here he is.

(Off microphone discussion)

CHUCK NORTON: Hi, Tom.

TOM HUCKABEE: Hey, I guess I'm calling on behalf of Dave Garchow unless he's spoken to you in the last ten or 15 minutes.

CHUCK NORTON: I haven't spoken to Dave, he called here about an hour ago.

TOM HUCKABEE: Okay. He was just interested in the status or progress of the revision to the assessment document.

CHUCK NORTON: Oh, we are getting ready to send it out. We're having a little technology, IT problem for about the past half hour here.

TOM HUCKABEE: Okay.

CHUCK NORTON: Believe me, that's what I'm struggling with a lot right now.

TOM HUCKABEE: Well you are having the same problem I had this morning, is revising a document and the computer not wanting to play along.

CHUCK NORTON: Oh man, I was having numbering problems and everything. But anyway, we're going to get it out immediately. It's on its way.

TOM HUCKABEE: Okay.

CHUCK NORTON: Sit by your computer, you can, I'm not going to tell you to hold your breath but it's --

TOM HUCKABEE: Yes, do not let us pressure into this, we just was checking on the status.

CHUCK NORTON: Yes, I'm sending it in, but I do want to talk with you guys about it after you get it because I have some questions --

TOM HUCKABEE: Okay.

CHUCK NORTON: -- you know, I'm getting so frustrated with the technology that I'm not doing my job as analyst.

TOM HUCKABEE: Right.

CHUCK NORTON: Okay.

TOM HUCKABEE: And we had the same trouble. So we've got a couple of guys still holding on from the day --

CHUCK NORTON: Okay.

TOM HUCKABEE: -- that had input to it. And if we need to tie NG, we'll try to do that as well. But send us the document, and what number do we call

back?

CHUCK NORTON: Just whatever number you called to get in here, just call it.

TOM HUCKABEE: Okay, and they'll forward us.

CHUCK NORTON: They'll forward it, yes.

TOM HUCKABEE: Okay, thank you.

CHUCK NORTON: Thank you.

TOM HUCKABEE: Bye.

CHUCK NORTON: Bye.

(CONFERENCE CALL ENDED)

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JAPAN'S FUKUSHIMA DAIICHI

RST PODIUM AUDIO FILES

+ + + + +

17th DAY,

MARCH 27, 2011

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1-01 Track 01

(CONFERENCE CALL INITIATED)

MALE PARTICIPANT: How you doing? (Indiscernible).

DAVE SKEEN: Hey, this is Dave Skein with the Reactor Safety Team at the NRC.

MALE PARTICIPANT: Hey, Dave, how are you?

DAVE SKEEN: Good, how are you guys doing?

MALE PARTICIPANT: Good.

DAVE SKEEN: Hey, listen. We've been kicking around a couple of questions here tonight. And I thought I'd pass them along to you guys before our 3 o'clock call just to see if people might have some thoughts by then.

MALE PARTICIPANT: Okay.

DAVE SKEEN: The first question we talked about was I don't know if you've seen these reports on television.

They're now saying that there's a potential that reactor water is getting into the turbine building, the basins of the turbine buildings at the three units.

MALE PARTICIPANT: Yes, we did see it.

MALE PARTICIPANT: We did see that. Yes, we saw that.

DAVE SKEEN: So our thought was, and that

bothered me when I heard it, it's like well how would that be? What are the flow paths that could be doing that?

So we're kind of looking through some things here trying to figure that out. And I thought, well, we may as well ask the guys the know the reactors the best.

And I'm posing the question to you guys to see if you've got any thoughts on what that might be.

And I don't need an answer now, but maybe at the 3 o'clock call we should talk about what --

MALE PARTICIPANT: Sure, at 3 o'clock, okay. All right, we'll kick it around some more.

DAVE SKEEN: Okay.

MALE PARTICIPANT: And it was in, we recall, we saw something in Unit 3 first, and now they see it everywhere.

DAVE SKEEN: Yes. I think it started in three, because that's where the guys got the burns on their feet from wading in the water --

MALE PARTICIPANT: Right.

DAVE SKEEN: -- and there was some betas.

And then our Reactor Safety Team folks said, well, first they were saying, well, they just overflowed in spent fuel pools and maybe that's doing it.

But they're saying some of the radionuclides they're seeing sounds more like it's coming from the reactor than from the spent fuel pools.

MALE PARTICIPANT: I wonder if the spent fuel rods, if they've had damage in the spent fuel pool on like three and four?

DAVE SKEEN: Yes, I mean that could be. That's certainly a case. But I could make an easier argument for you getting it from the fuel pool.

But if they're really saying it's from the reactor, that's what we're trying to figure out. Well, how would that happen? What could be the possible flow path?

Well, if there's no real flow path, is there damage somehow from the quake or the explosion that's causing it to leak. But if they're getting it in all three turbine buildings, it seems like there's some kind of common denominator here.

MALE PARTICIPANT: Yes. Three and four definitely are, they're adjacent, and they had the worst damage. But now two is getting it.

DAVE SKEEN: Yes. So if that's true, that's all we're looking for, is what do we think the flow path might be for doing that?

MALE PARTICIPANT: Everybody's had, and we

can kick it around at 3 o'clock, but everybody's had the sort of stand in the fire hose method on this, right.

DAVE SKEEN: Yes.

MALE PARTICIPANT: Ground water seepage, splashing off the building --

DAVE SKEEN: Right, right.

MALE PARTICIPANT: But with the water in the core at two-thirds core height, you would find it hard for it to be getting through the feedwater line, or the MSI. The MSIVS on the steam line.

DAVE SKEEN: Right.

MALE PARTICIPANT: But it's not up there.

DAVE SKEEN: Right. And it's the same things we've been talking about here. So anyway, we thought we'd, go ahead.

MALE PARTICIPANT: Well, we'll kick it around between now and 3:00.

DAVE SKEEN: Okay. Now, the second question.

Right now they're getting some water from the dam that's so far away. And they're using this pipe that's 30 years old. And who knows if it's been damaged from the quake, and leaking, or whatever.

So the Navy is bringing fresh water, and they're barging fresh water in. But the question they

had for us was worst case how much are they going to need.

Because there's a possibility they could ramp and get more fresh water, depending on what the needs are.

So if we take it to, well, if I had to take all three units and get it up, to get the water up into the drywells at least midway up the reactor vessels to cover the fuel from the outside, kind of thing, how much water is that, that they'll need?

And what would be their ongoing need for fresh water, so that the Navy can come do some scenario planning of what it might take to get fresh water there for awhile?

MALE PARTICIPANT: Okay.

DAVE SKEEN: So if you could think about that one too, I figured you guys probably had the best information on that.

And I'm going to call INPO and give them the same questions, see if there's any of the operators out there, maybe Exelon or somebody might have some information too. But I thought I'd check with you guys first on that. Okay?

MALE PARTICIPANT: How much will they need once the Navy pulls in their barge? And then where's

the radioactivity coming from in the turbine building?

DAVE SKEEN: That's right.

MALE PARTICIPANT: All right.

DAVE SKEEN: Okay?

MALE PARTICIPANT: See you at 3:00.

DAVE SKEEN: All right, sounds good.

MALE PARTICIPANT: Bye, take care.

DAVE SKEEN: Thanks, guys. Bye.

(CONFERENCE CALL ENDED)

(CONFERENCE CALL INITIATED)

1-02 Track 02

DAVE SKEEN: That's better.

DAVID HEMBREE: INPO Emergency Response

Center, David Hembree speaking.

DAVE SKEEN: Hey, Dave. This is Dave Skeen. I'm the Reactor Safety Team director on the night shift here at the NRC.

DAVID HEMBREE: Yes, Dave.

DAVE SKEEN: Hey, listen. I've got a question for you. We've been kicking around here a couple of questions. And I thought I'd pass them along to you guys to think about a little bit too for us.

One of the questions we had was what is the flow path. They're talking about getting reactor water into the turbine buildings right now at Units 1, 2 and 3.

DAVID HEMBREE: Right.

DAVE SKEEN: And we were kicking around here how would that happen. What do we think the flow path might be? So if that's something you guys want to think about a little bit, that would be worthwhile for us, I think.

DAVID HEMBREE: Good, let me just clarify. It's the flow path to get the fresh water from --

DAVE SKEEN: No, no, no. I'm talking about they're reporting now that they have leakage of reactor water into the turbine buildings.

DAVID HEMBREE: Right.

DAVE SKEEN: And so we're trying to figure out, if that's true, what might be a possible flow path.

DAVID HEMBREE: Oh, I see, I see, yes. All right. Yes, I don't know if we'll come up with anything definitive. But we'll talk about and I'll get back to you.

DAVE SKEEN: Okay. And then, well, we'll have the 3 o'clock call anyway. So if you guys are on for that we may bring it up just to see if anybody's got any ideas at that point.

DAVID HEMBREE: Okay.

DAVE SKEEN: The other thing is how much fresh water do we think is needed if we were talking about trying to fill up to the mid-plane on the reactor vessels into the drywell.

DAVID HEMBREE: Right.

DAVE SKEEN: The Navy's looking for worst case scenario. How much fresh water do they think we need to barge up there on barges on to get water to them?

DAVID HEMBREE: Right. And do you know what elevation, or what point in the drywell that is the optimum to feed up to?

DAVE SKEEN: I don't know that. I think our SAM-Gs say you should try to at least get up to mid-point of the fuel, right --

DAVID HEMBREE: Yes.

DAVE SKEEN: -- for filling up to the vessel. But you certainly don't want to get up to the drywell vent.

So it's something below the vent, but at least the bottom third, or bottom half of the reactor vessels into the drywell's probably what you're looking for.

DAVID HEMBREE: Yes, okay. All right. We'll see what we can pull together.

DAVE SKEEN: And I was going to call GE and just ask them the same question to see what they could come up with.

DAVID HEMBREE: That's good. Because we'll have to call Exelon or somebody that has drawings and things.

DAVE SKEEN: Yes.

DAVID HEMBREE: So our path will be pretty slow. And I don't know. It's the middle of the night here.

DAVE SKEEN: Yes. That's why I was going to try the GE folks and maybe they've got something they can say yes about this much.

Because the Navy's willing to ship more fresh water. But they're saying, well, what are we

talking about. How much fresh water are they going to need to do this?

DAVID HEMBREE: Right.

DAVE SKEEN: And worst case is they would lose the dam, the pipe to the dam's 30 years old that they're using right now.

So there could be leaks, or whatever, after the seismic event. And if that would go away, and the Navy had this file about how much do we think that would be.

DAVID HEMBREE: Right, okay.

DAVE SKEEN: So if you could if you could look into that for us, I'd appreciate it. And then we may bring it up on the call at 3:00 just see if anybody's got any thoughts on it.

DAVID HEMBREE: All right, very good.

DAVE SKEEN: All right, sir.

DAVID HEMBREE: Thank you, Dave.

DAVE SKEEN: Thank's a lot.

DAVID HEMBREE: Bye.

DAVE SKEEN: Bye.

(CONFERENCE CALL ENDED)

(1-03 Track 03 duplicate of Track 1, not transcribed)

1-04 Track 04

(CONFERENCE CALL INITIATED)

DAVE SKEEN: Reactor Safety Team, this is Dave Skeen.

MARK ROLLINS (phonetic): Hi. This is Mark Rollins. I've got Randy Crane on the line from

INPO.

DAVE SKEEN: Oh, okay.

MARK ROLLINS: Transferring him.

DAVE SKEEN: Sure.

DAVE SKEEN: This is Dave Skeen.

RANDY CRANE: Hey, Dave, this is Randy --

DAVE SKEEN: Yes, sir.

RANDY CRANE: -- at INPO. You'd called earlier with a couple of those questions --

DAVE SKEEN: Yes.

RANDY CRANE: -- and mentioned that they'd probably also be discussed at the 3 o'clock phone call.

DAVE SKEEN: Right.

RANDY CRANE: And we're the new shift on. And so I just want to confirm that we have the right bridge line for that phone call.

DAVE SKEEN: Okay.

RANDY CRANE: Is that your (b)(6) pass code 6105?

DAVE SKEEN: This says 6104, is what I'm looking at.

RANDY CRANE: 6104, okay.

DAVE SKEEN: That's the email I've got sitting right here that says this is the phone number and this is the pass code. So if it's 6105, I don't

know, I would try 6104 first.

RANDY CRANE: Right, 6104.

DAVE SKEEN: But that's the email I'm looking at right here that says, hey, this is the bridge line for the call.

RANDY CRANE: Okay. And I'm sure you're aware of this, but we'll have to put some assumptions in there. And in reality, I think we're going to try and provide something that might be useful based on those assumptions.

DAVE SKEEN: And that's fine.

RANDY CRANE: I mean, obviously if we don't know the level in containment already, or in the suppression pool --

DAVE SKEEN: Right.

RANDY CRANE: And so that could change by orders of magnitude.

DAVE SKEEN: Sure. But I would say starting from normal operations, right, if the storage (phonetic) was half full, and this is what the condition is, what do we think it would take.

Because I don't mind having too much fresh water in the barge, it's just if I don't have enough to put in that then becomes --

RANDY CRANE: Right. Although we don't

want to cover the vents either.

DAVE SKEEN: That's the other piece.

And I think that's all in the same G stuff, that says get it up to the top of active fuel if you can.

And then it'll even say ways of here's how you can check. You can look at HIPSI pressure, you can look at RDD levels, and that kind of stuff, to tell you kind of if you're up there or not.

RANDY CRANE: Right. Have you passed that along to someone at GE? I tried to call them and I didn't get an answer. But I'm going to give it another try.

DAVE SKEEN: Yes. No, I've already talked to them over there. I talked to GE. I called their op center and they're looking at it too.

And I told them they might have a better answer than the industry guys without waking up people, or asking somebody at Quad Cities or Dresden about it.

RANDY CRANE: Right, right. Because that's who we would use is like --

DAVE SKEEN: Sure.

RANDY CRANE: -- the Quad Cities drawing. But I believe the Japanese Mark 1s actually have been modified to be a little bit larger steam and pool size.

DAVE SKEEN: Yes.

RANDY CRANE: So GE would know that for sure.

DAVE SKEEN: Exactly.

RANDY CRANE: Okay.

DAVE SKEEN: So I've got them working it too. So we'll talk about it at 3:00 and see what we come up with, see what people are thinking.

RANDY CRANE: Okay, good deal. Hey, thanks a lot.

DAVE SKEEN: Not a problem.

RANDY CRANE: Bye.

DAVE SKEEN: Right, bye.

(CONFERENCE CALL ENDED)

1-05 Track 05 (Contains no words to transcribe)

2-01 Track 01

(CONFERENCE CALL INITIATED)

FRED BROWN: NRC Reactor Safety Team, this is Fred Brown.

MALE PARTICIPANT: Hi, Mr. Brown. I have Mike Scott from the Japan team.

FRED BROWN: Very good.

MALE PARTICIPANT: I'll connect him through.

FRED BROWN: Thank you. Good morning, Mike, how are you?

MIKE SCOTT: Good morning.

FRED BROWN: This is Fred Brown.

MIKE SCOTT: Oh, hi, Fred. How are you doing this, I guess it's evening over there, huh?

FRED BROWN: I'm doing well.

MIKE SCOTT: Oh, you're on the back shift, right.

FRED BROWN: Yes, I picked up the swing shift for the next four days.

MIKE SCOTT: Oh, okay, congratulations. I've got a number of folks here and I assume that you were told that we're now doing two calls a day just to get coordinated and aligned on various matters.

FRED BROWN: Have now been told.

MIKE SCOTT: Boy, it's a turnover over there. Sometimes there's a little --

FRED BROWN: It's the weekend. Love to be inside.

MIKE SCOTT: Okay, well, what we decided yesterday, we worked out with Bill Ruland, was that we would call at this time of day.

We actually intended, or understood, that this was going to be on a bridge line that had been reserved for the purpose.

But obviously if you all didn't get the word

about the meeting you certainly didn't get the word about the bridge line. So we can just talk on this line if it's a good time for you to talk.

FRED BROWN: Sure, let's do it.

MIKE SCOTT: Okay. And this is the first one of these calls we've done. So we're going to update you on the individual unit status and what we know about it.

Now, before we get started, did we ever get the update document over to them, this fax thing?

MALE PARTICIPANT: That?

MIKE SCOTT: Yes, that.

MALE PARTICIPANT: Yes, we sent this out after the meeting yesterday.

MIKE SCOTT: Okay, so you all have the status that we get, or we got, yesterday morning at 11:00 a.m. our time, correct?

FRED BROWN: You emailed it to us yesterday?

MIKE SCOTT: Did we fax it or email it?

MALE PARTICIPANT: We faxed it. And they did receive it. Because when we talked to them at the 1600 call, the 0300 for them, they had it. And we talked through it then.

MIKE SCOTT: Okay. All right, well, in any

event, I guess where we'd like to get with this at some point is that you all have that piece of paper in front of you, or email as the case may be. It's handed out to us in hard copy at 11:00 a.m. our time each day.

FRED BROWN: Okay.

MIKE SCOTT: It has all the plant status. Unfortunately it's in Japanese, but you can pick the numbers out if you have a general alignment on which row means what.

MALE PARTICIPANT: When we mailed, or when we faxed it this time, we labeled what each of those rows were so you could easily tell what the data was.

FRED BROWN: But where we do go over that is the 1600 meeting. It's a little more strategy.

MIKE SCOTT: But my point is, this would be an opportunity to say what has changed since then. So we have, for example, the pressure. Now who owns Unit 1? Did we decide --

MALE PARTICIPANT: Alan.

MIKE SCOTT: All right, Alan, would you give them an update on Unit 1 condition please?

ALAN BLAMEY: It looks like Unit 1 pressure has increased over yesterday.

MALE PARTICIPANT: That's RCS or containment?

ALAN BLAMEY: RCS.

MALE PARTICIPANT: Thank you.

ALAN BLAMEY: RCS pressure has increased, it looks like from, reactor pressure was reading about 0.452 and 0.4, excuse me, 452 and 481 megapascals. And it's up to 0.475 and 0.517, which is about an atmosphere, which seems to be a little bit more rapid rate of change from what we have seen in the past.

FRED BROWN: I agree.

ALAN BLAMEY: Reactor pressure vessel level looks like it has remained about constant. And it looks like it's, oh, probably about five and half feet below the top of active fuel.

And feedwater nozzle temperatures, looks like that's coming up a little bit, 212 to 224. And temperature at the bottom head looks like it actually went down a little bit.

FRED BROWN: So were does that take us?

ALAN BLAMEY: Well, I think in the conversations we had yesterday they were not sure why they were seeing the change in pressure. And I think we need to press them a little bit more on what their thoughts are.

Specifically we talked yesterday at the 4 o'clock meeting as to maybe what they're seeing is, even

though they're keeping their flow constant with the salt build-up that they had, understand they're off salt water, but it may be the point where the core's starting to see less flow. And we talked about the flow coming into the annulus area and then going out, the leakage deal.

FRED BROWN: And that would make the pressure go up because more heat.

ALAN BLAMEY: The same amount of heat.

FRED BROWN: Plus heat removal.

MALE PARTICIPANT: Plus heat removal.

FRED BROWN: But removal via --

MALE PARTICIPANT: Right.

FRED BROWN: No, removal via what? How does it get removed in Unit 1?

ALAN BLAMEY: Feed and bleed.

FRED BROWN: Feed and bleed, and it should be bleeding through the seal.

MIKE SCOTT: All right. So then it gets into the containment. And that's still going on. I mean, unless the leak passes in block, that's still going on.

ALAN BLAMEY: Right, yes.

MIKE SCOTT: So you've got the water that's going, it's actually picking up less heat, you're

hypothesizing, from the core, and getting into the containment, okay.

ALAN BLAMEY: Yes.

MIKE SCOTT: So if the core is heating up because it's, I guess you're hypothesizing, a not very coolable mass --

ALAN BLAMEY: Right.

MIKE SCOTT: -- then you're going to have a bigger delta between the temperature in the core, which of course can't be measured, and the temperature out in the drywell, which shouldn't be going up by the theory you're posing.

ALAN BLAMEY: And it doesn't appear that looking at the pressure, it looks like the drywell pressure and suppression pool pressure are going down. However, it could be within the accuracy of the instrument.

MALE PARTICIPANT: But the feedwater nozzle temperature is up ten degrees Celsius.

ALAN BLAMEY: Right.

MIKE SCOTT: But they've stopped putting water in, not water, they've stopped putting sea water in.

ALAN BLAMEY: Correct.

MIKE SCOTT: So the condition should not

have gotten any worse, with regard to salt build-up, in the past 24 to 48 hours, right.

ALAN BLAMEY: That's correct.

MIKE SCOTT: And so why would this phenomenon be occurring?

ALAN BLAMEY: The core is on the move.

MIKE SCOTT: The core is moving.

(Crosstalk)

FRED BROWN: I think we can explain it, guys, to think that --

MIKE SCOTT: Well I propose, Fred, for your awareness, when we talked to Dave Skeen last night we kicked around the idea of what does an increasing trend in the pressure mean.

And is there a point where we need to be thinking about alternate recommendations, or activities and stuff.

And we were generally of the agreement right now to keep monitoring it. And that's what the Japanese are doing as well. But, I guess, the question in our mind is if it picks up pace, and the pressure increases, or something that needs to be thought about, or done.

So from a big picture perspective, Fred, I guess what we're doing here is bringing it to your attention in case you weren't unaware of it. And asking

you to, with your resources back there, do a little bit of noodling on it and help us conclude whether it's a big deal or not.

FRED BROWN: Alan, these temperatures going from 212 to 222 on the feedwater nozzle, and the increase in reactor pressure, could that just be due to maybe variations in the flow of the water they're putting in, and not so much variations in what's going on in the vessel?

ALAN BLAMEY: It could be. But I guess the question that I'm not clear on right now, I'm not sure of the temperature of water that's going in.

Because they were getting ready, I thought, yesterday to switch. Was that yesterday or today they're going to switch pumping systems?

MALE PARTICIPANT: That was yesterday.

ALAN BLAMEY: That was yesterday.

MALE PARTICIPANT: Yes.

ALAN BLAMEY: So when they switched pumping systems, maybe the temperature of the water going into the vessel changes. The temperature of the water going into the vessel changes, then your heat transfer may change.

But at the same time, I'm not sure if it was the temperature of the water going into the vessel,

or if it was a two burden (phonetic) condition, maybe heating up the feedwater nozzle as well.

FRED BROWN: Well, maybe we should just let things stable out for awhile, since they've switched from the sea water to the fresh water. And see if this is just an increase due to the changing of the source of water, and not so much big changes in what's going on with the core.

ALAN BLAMEY: Yes. And I think that's one of the things we wanted to talk to them about, is to try and understand.

Because they've probably already seen it. They may have looked at it and came to the conclusion that, yes, it was a change in temperature of the water going in. But we don't have that information.

So when we talk with them at 11 o'clock, I think that'll be an opportunity for them to let us know what their thoughts are.

Because yesterday we saw it coming up slowly. And it seemed like it had increased in pace over the last 12 hours or so. So this will be an opportunity for them to give us an explanation.

FRED BROWN: Right. And the last data point we had was 2 o'clock local yesterday, so almost 18 hours old. We don't know what it is now.

MIKE SCOTT: Okay. Well, I think we've highlighted enough the status of that for the RFT to think about, to be sensitive to it, since we're sensitive to it, and to let us move on. Okay?

FRED BROWN: Okay, Mike, real quick, I agree with you. But just real quick to make sure we've got the numbers.

You gave us in megapascals the RCF pressure, the readings, the original reading was 0.452 on one channel and 0.481 on the second.

It's gone up in the latest data on the first channel to 0.475. But I missed the second channel.

MIKE SCOTT: 0.517 megapascals.

FRED BROWN: Okay, thank you. And you didn't give us containment pressure, but you said the drywell pressure, that had also changed, or it's steady?

MIKE SCOTT: When we look at containment pressure, which would be drywell pressure, yesterday it was at 0.275. And today it's at 0.270.

FRED BROWN: Okay.

MIKE SCOTT: And the same thing for drywell, excuse me, for suppression pool pressure. So that may just be errors in that (phonetic).

FRED BROWN: Yes, okay. Good, thanks. And you gave us the nozzle temperature went from 212

to about 224 degrees Celsius. You said the bottom head had actually gone down some, but you didn't give us the numbers.

MIKE SCOTT: That's right. The bottom head temperature was 146.9 yesterday. Today it's at 143.4 degrees.

FRED BROWN: Okay, pretty close.

MIKE SCOTT: Yes.

FRED BROWN: Okay, very good, understand. Thank you.

MIKE SCOTT: Okay, moving right along. Unit 2?

MALE PARTICIPANT: No, it's not me.

MALE PARTICIPANT: That's me, right?

MALE PARTICIPANT: (Indiscernible)

MALE PARTICIPANT: I can't even remember, whatever it says up there.

TONY NAKANISHI: Hi, this is Tony Nakanishi.

Basically, (b)(5) (b)(5)

(b)(5)

But basically the prior data corresponded to 6:00 a.m. on the 27th. And I'm just going to go down

reactor pressure, the various temperature readings, and then the containment pressures.

So Reactor Pressure A is 0.083 MPA. Reactor Pressure B is also 0.083 MPA. Now the reactor pressure vessel feedwater nozzle temperature is 123.9 centigrade.

Reactor bottom head temperature is 96.6 degrees centigrade. And primary containment vessel pressure is 0.110 MPA. So all that data corresponded to the 6:00 a.m. stage.

Now, I'm going to provide the updated values. Basically Reactor Pressure A remained the same at 0.083 MPA.

Reactor Pressure B is slightly lower, but again, I don't even want to say it changed. Because it's so small, 0.081 MPA.

Going on to the temperature, feedwater temperature nozzle temperature is 123.6 degrees centigrade. So that's a slight decrease of 0.3 degrees centigrade.

Now the RPV bottom head temperature, on the other hand, increased to 111.2 degrees centigrade. So that's interesting.

And finally, primary containment vessel pressure remained the same at 0.110 MPA. So basically

everything stayed the same except for the vessel bottom head temperature, which increased by about 15 degrees.

FRED BROWN: So is that an issue?

TONY NAKANISHI: Right, that's the question.

MALE PARTICIPANT: In eight hours?

TONY NAKANISHI: Less than eight hours.

MALE PARTICIPANT: In eight hours it went up 15 degrees. That's two degrees per hour.

FRED BROWN: Has it bounced around before that, and how much bounce? In other words, I don't want to get us spun up about indicator variability.

TONY NAKANISHI: That's right, yes. That's exactly right. But the bottom head temperature increased.

MALE PARTICIPANT: And this is --

TONY NAKANISHI: It can be interesting because it could be that more fuel is touching the vessel head.

MALE PARTICIPANT: Isn't Unit 21 that we think the lower head is submerged?

TONY NAKANISHI: I think that was the calculation the RST did some time ago. If you took the data together, it's not as clear as the Unit 3 data. But it does indicate that there is some flooding going

on.

FRED BROWN: We haven't confirmed that via flooding in the reactor building.

TONY NAKANISHI: Yes. But it does look like, going back and looking at the data, where I think it's the RPV bottom head, it looks like it has been bouncing around in about a 15 degree band.

FRED BROWN: Has it?

TONY NAKANISHI: Yes. The RST high's 115, and I see lows of probably just under 100. And the trend appears to be fairly steady. Now it looks like, I guess, the feedwater nozzle temperature has been coming up a little bit.

FRED BROWN: Okay. Well, if it's possibly within the range of variability, then let's just be sensitive to it and not --

TONY NAKANISHI: Yes, I understand.

FRED BROWN: -- not go to battle stations. All right. Do we need anything else on Unit 2?

TONY NAKANISHI: Well, let me just add something. (b)(5)

(b)(5)

FRED BROWN: We're going to check.

TONY NAKANISHI: Okay. Now, (b)(5)

(b)(5)

But in particular, for Unit 2, it looks like what they've done is they're looking at source term data and trying to piece together the known information to try to figure out what kind of hole they might have in the, let's see.

What I maybe should do, (b)(5)

(b)(5)

FRED BROWN: We do.

MIKE SCOTT: What does it say that's a concern for Unit 2?

TONY NAKANISHI: Well, they're thinking they have a five inch hole. I'm trying to see if it's, it must be a vessel, probably.

FRED BROWN: Well, I wouldn't determine that. Remember the guy said they thought there might be a hole somewhere in the reactor coolant piping.

TONY NAKANISHI: Well, this is something else.

MIKE SCOTT: And that's based on what?

TONY NAKANISHI: It's based on the fourth term evaluation on the 21st of March.

FRED BROWN: Fourth term evaluation.

TONY NAKANISHI: And they're looking at --

FRED BROWN: Well, if you have a five inch hole, your SRV tail pipes are six inches diameter. And isn't this the unit that had a rupture, and then we saw the plant come down when the SRV --

MALE PARTICIPANT: It's a fragment (indiscernible).

TONY NAKANISHI: Well, it might be the containment.

MIKE SCOTT: It's in the containment.

TONY NAKANISHI: Yes, it's the contain --

MIKE SCOTT: All right, (b)(5)

(b)(5)

TONY NAKANISHI:

MIKE SCOTT: (b)(5)

TONY NAKANISHI:

MIKE SCOTT: Can we, well, but the other question I have is can we communicate that to Nason (phonetic) at the 11 o'clock, or in some manner?

TONY NAKANISHI: No.

MIKE SCOTT: We've got to sort that out so that we have better ability to say if we got this information.

TONY NAKANISHI: Yes.

FRED BROWN: Okay, Tony and Mike, we do have a translator in the building at this time, if you fax to us.

And also for your information, the last time I was on shift and we were looking at containment integrity, the Japanese had provided a five inch opening piece of information on Unit 2 containment.

TONY NAKANISHI: Okay. Which document is that?

FRED BROWN: How it was provided, you're asking me?

TONY NAKANISHI: Yes. Do you remember?

FRED BROWN: I don't know. I hadn't seen it myself. The PMT had it.

TONY NAKANISHI: Okay, okay. So I'll just go ahead and fax this over to you guys. (b)(5)

(b)(5)

contributing to develop, that'd be great.

FRED BROWN: All right.

TONY NAKANISHI: (b)(5)

(b)(5)

Also, some of the other information in here, like they're, I guess, they're using the cans (phonetic), gamma readings, to determine how much the extent of core damage, for example. Unit 1 they're thinking 50 percent, Unit 2, 35, Unit 3, 30 percent. And that's as of very --

FRED BROWN: What were the numbers?

TONY NAKANISHI: Fifty percent for Unit 1, 35 for Unit 2, 30 percent for Unit 3.

FRED BROWN: You're probably lucky if the numbers are that low.

TONY NAKANISHI: Yes.

MALE PARTICIPANT: That's actually lower than we've seen previously for Unit 1. We understood 70 percent for a long time.

TONY NAKANISHI: That was at 97 hours after SCRAM, so we're obviously well beyond that.

MIKE SCOTT: I was trying to get at, Fred, that you may not have understood context, (b)(5)

(b)(5)

FRED BROWN:

MIKE SCOTT:

(b)(5)

FRED BROWN: Yes, I understand that. (b)(5)

(b)(5)

MIKE SCOTT: (b)(5)

(b)(5)

FRED BROWN: I understand.

MIKE SCOTT: Okay, thank you.

FRED BROWN: I'm telling you I can't guarantee that.

MIKE SCOTT: Okay, well, all right. We'll bear that in mind. So what's the next step here on Unit

2? Well, where do we go with this? So we have this information that maybe there's a five inch whole somewhere.

FRED BROWN: Which is not unexpected.

MIKE SCOTT: Well, we figured there was a hole. So does this change anything?

TONY NAKANISHI: Now it does.

MIKE SCOTT: All right. I think we have to talk strategy-wise on after they inert how they're going to fill --

TONY NAKANISHI: -- with this hole there.

MIKE SCOTT: -- with this, well, we don't know where the hole is.

TONY NAKANISHI: That's true.

FRED BROWN: Right, then that goes --

MIKE SCOTT: We think it's in the torus.

TONY NAKANISHI: All right.

MIKE SCOTT: But we have to assume that the hole's probably at the lowest point if you plan to flood, so you can overcome that.

FRED BROWN: So I guess one question would be is it leaking currently. In other words, is the level at the hole? And they indirectly could figure that out if they're able to find a way to measure how much water's coming out and getting into the secondary containment,

right.

TONY NAKANISHI: Well, if Alan and I looked at that and the problem is we're not seeing any indication that the reactor building, the secondary containment is filling up.

MIKE SCOTT: Well, so maybe it's not at the level of that hole, right.

MALE PARTICIPANT: But you have a lot of water in there.

MALE PARTICIPANT: On this (indiscernible) they're saying they have been building (indiscernible) of that.

MALE PARTICIPANT: Yes, the paper says it's not accurate.

FRED BROWN: Yes, our action in the paper, I wouldn't --

MIKE SCOTT: Well, the retraction was in the dose number. Oh, my God, it was a million times. No, it was only 100,000 times.

(b)(5)

MALE PARTICIPANT: Yes. But that is only for the radiation. The (indiscernible) is still there.

MALE PARTICIPANT: Yes, that's true.

MIKE SCOTT: Okay. So is the water level rising? And that would indicate that the leak is submerged or --

MALE PARTICIPANT: We don't know anything.

MIKE SCOTT: -- being flooded out. Well, anyhow, these are questions to ask them. Do we have anything for RST to do on that?

MALE PARTICIPANT: Be aware.

MIKE SCOTT: Okay, moving on, Unit 3?

MALE PARTICIPANT: Unit 3, no real change in parameters. We believe the reactor cooling system is depressurized.

And we think there is some filling in the suppression pool and somewhere into the drywell, although we don't have a good value. And the conditions are relatively stable.

My long term strategy question is this is one where we know there's leakage in the turbine building.

It's clear TECO will be very concerned about maximizing flow. And so I think we need to come up with some questions that figure out where is the bypass flow going.

And would we be okay if they said, hey, we

don't want to try to fill up the containment vessel now. Because --

MIKE SCOTT: Which was Monninger's point.

MALE PARTICIPANT: Right.

MIKE SCOTT: Yes, John Monninger, Fred, just for your information, has raised this question several times, because, of course, the recommendation paper pretty much says after you get done inerting, flood up. And Monninger says, well yes.

But for Unit 2, and possibly Unit 3, the practical impact of that might be that you flood up and put more water in the ocean, which is already seen a lot of this stuff.

So he's questioned several times whether flooding up is the right answer. So that's something for you to be aware of as a cross current regarding the flood up plan.

FRED BROWN: I think we're going to have to have a living document where we look at, hey, what if they flood up for a day, but nothing changes.

Do we say good enough? Are we sure we've covered the bottom of that?

So I think we have to be in a position where we say we're okay with that, or we're not. And if so, it'd be a strategic change in direction. Because right

now, as you said, the paper is inert, and attempt to fill the containment.

MIKE SCOTT: So I guess one question for the RST to ponder is given the --

MALE PARTICIPANT: Unit 2 and 3.

MIKE SCOTT: Yes, for Unit 2 and 3. Given the fact that the containments are suspect, given the fact that we're recommending they flood up, given the fact that A, may not be doable, and B, even if it is doable, might result in release of more bad water, do we want to consider that on those recommendations?

Or do we want to possibly consider or recommend some actions they might take to deal with it?

Because I guess, well, at some point we need to get the water up above the fuel to where they can start thinking in the long run about getting rid of it.

But this notion of leaks out there whose size and location we don't know continues to be a subject for discussion here.

FRED BROWN: Right. And I think we're going to brainstorm on some parameters (b)(5) (b)(5) (b)(5) o see if we can see water coming out at penetration.

But right now, there're so many unknowns

that strategically I think we have to think of. We're not going to get any better data. Is it going to be okay not doing that for Unit 2 or 3?

MIKE SCOTT: Not flooding up?

FRED BROWN: Not flooding up.

MIKE SCOTT: Okay, so this is a question for you to ponder in your spare time, all right, Fred?

FRED BROWN: Yes, we have, Mike. So let me just walk through for you guys, so we'll all have the benefit of the discussions with the industry, and the SAM-Gs, and why the recommendation is what it is.

MIKE SCOTT: Okay.

FRED BROWN: The flood up recommendation is based on protecting the reactor vessel, and protecting containment integrity to the extent that it exists. If you don't flood up, you increase the potential for an X-core (phonetic) situation.

MIKE SCOTT: But didn't we already conclude that, I'm pulling out another document you sent over here, that was a -- oh, I don't have it anymore -- a speculative evaluation.

FRED BROWN: Yes, that is partially filled now.

MIKE SCOTT: Yes.

FRED BROWN: But that was a speculation

paper that was done by Brian Holian and his group.

MIKE SCOTT: Oh, yes. So the thing to remember is as they're putting in water to the MDRIR flow rate, that's greater than they're steaming off.

So inherent in what they're doing is they're increasing the water inventory in the containment to the extent that the containment can hold it.

And so that water either is going to fill up the drywell, which is good because then you protect the vessel, or it's going to drain out.

You're going to have water coming out as long as you're putting enough water in to protect the vessel.

And so you need to make sure you're asking the right question. If the right question is, if you do what you need to do to protect the vessel and keep the core where it needs to stay, then what's the best strategy for limiting the environmental impact of that, and protecting the workers at the site?

So we can think about that, but the basic recommendation in the SAM-G has the benefit of the evaluation that says you need to put water in. You need to put water in and you need to protect the vessel. And so I think we need to be careful if we're going to ask whether we're reexamining that. The folks that put together the recommendation paper were

aware of containment integrity issues with Units 2 and 3.

FRED BROWN: Okay, okay. Well, the only thing I want to add, Mike, is that maybe true in SR position, (b)(5)

(b)(5)

So I think it's just awareness. And the sub-monitors point has some value in that if the containment already has big holes, then how much are you protecting.

I agree with you, prevent the X-core, the core going X vessel. So I think this is more of a strategy discussion that we want in front of the RST for you guys to banter about. I'm not saying changing the strategy paper, but I think it's important.

MIKE SCOTT: If there's a big hole, for example, in the suppression pool, then you're not going to get there, right.

FRED BROWN: No. Technically, I guess, if you've got enough water and you could fill the reactor building up, then back fills into --

MIKE SCOTT: Oh.

FRED BROWN: It could happen, maybe happening to some extent. I'm just saying that is

something we have to look at.

MIKE SCOTT: Well, but until that happens, and that's a long time away, we're going to be sending water out the hole.

FRED BROWN: Yes, which is what we're doing right now, I think.

MIKE SCOTT: Yes. It's getting more than that. It's gotten out of the containment into the turbine building.

FRED BROWN: We don't know if it's from that line, but it's more likely from penetration seals or something, probably.

MIKE SCOTT: Yes. And over time if we look at how much water has been put in, if we assume that the break is the same, we should be able to see an increase in, I would think, suppression pool pressure, just due to the increase in water.

But if you're only putting a couple of GCM (phonetic) in, that is going to take a real long time.

FRED BROWN: Yes, (indiscernible).

MIKE SCOTT: All right. So I would say this, Fred, that we leave this one with sort of a conclusion that we're not proposing a change in strategy.

The Japanese have some reluctance, I guess,

and they are appropriately concerned for not putting any more in the environment than they need to. But I don't think what we're talking about today changes that.

FRED BROWN: Okay. I'm okay with that.

MIKE SCOTT: All right. Okay, Fred, you got any more comments on the reactors before we go on to the pool?

FRED BROWN: No, only if the logic that they're on takes them to reducing the flow, the injection that they currently have.

We need to be very careful, we need to be sensitive to that. And the absolute critical thing is the MDRIR flow rate.

MALE PARTICIPANT: And we've suggested that.

MIKE SCOTT: Yes. And we'll make sure by talking to them that's not where they're headed.

FRED BROWN: Okay, thanks.

MIKE SCOTT: All right, Joe's spent fuel pool will now briefly go through the status of spent fuel pools, otherwise known as Rob Taylor.

ROB TAYLOR: Mike is renaming everybody over here. We got last night the PNIDs. We asked Dacene (phonetic) and GE, the RST there and GE, to get us copies of the PNIDs for the spent fuel pools.

One of the things you might have seen is that they're not indicating levels on Units 1, 2, and 4 in the spent fuel pools. And that kind of surprised us.

We realized what it really was, was they were indicating levels on the surge tanks off the spent fuel pools. So we wanted to see the PNIDs to see how relevant that data was to actually knowing the level in the spent fuel pools.

And our assessment looking at this, and it seemed to be the assessment that we got in the email, was we're not seeing any level instrumentation.

There are switches for certain level points within the design of the surge tank and the pool, but no actual level instrumentation. Are you guys reading it the same way we are?

MALE PARTICIPANT: If the level's going up in the surge tank, that means the pool filled up to the weirs in the silver flowings (phonetic) and it's starting to fil the surge tank. But there's no correlation between the level in the surge tank and the level in the pool.

ROB TAYLOR: We agree with that. I think that's one of the things we wanted to see yesterday, was the first day they actually had level data. But

we want to see whether that level data changes.

MALE PARTICIPANT: Right.

ROB TAYLOR: If it doesn't change, that means there's a disconnect, and that the pool level is probably lower than the height of the weir for the overflow into the surge tank.

So we want to see where that data goes. But we have a tough time saying that we agree that they know somehow what the level is in the pool. We just don't think that they probably have that information.

Because the amount of water they've been adding doesn't seem very substantial, with regards to Units 3 and 4, to give us a lot of confidence that they've reached the point where they're near the top of the spent fuel pool and they're overflowing the weir into the surge tank.

But we're going to see what the data says today when they give it to us at the 11 o'clock meeting. But we wanted to make sure you guys had the same read on the instrumentation.

MALE PARTICIPANT: I think what we had heard was that they were using the surge tank indication, but you can hear Chuck here maybe in the background saying he agrees with you. That system only indicates what comes over the edge.

And so the number that they were giving for Unit 4 makes no sense. Because they said it was about five feet below normal level. And you certainly wouldn't be coming over the weir in that case.

ROB TAYLOR: Agreed.

MALE PARTICIPANT: But since they're filling from the top, in that hose, which is going --

ROB TAYLOR: Everywhere?

MALE PARTICIPANT: -- everywhere, can they with that hose, I don't know the configuration here, that surge tank open such that they could be dumping water and enter (phonetic) into the closed tank.

MALE PARTICIPANT: No. Your surge tanks are open.

ROB TAYLOR: Yes. I thought they were.

MALE PARTICIPANT: But it's a very narrow opening. So they would almost have to be hitting it directly on the wall. They may end up putting some water in that surge tank.

FRED BROWN: So how about this then. If they observed this over a period of days, and it goes up, then that means probably water is spilling from the pool into that, right? Because you don't think they're likely to be able to hit it with the sprayer.

MALE PARTICIPANT: By control.

MALE PARTICIPANT: If water level's going up, that's an indication that they're full to the weirs.

ROB TAYLOR: Which is a good thing. All right. But I think we're going to do some calculations. I think we think that's hard to believe, given the amount we think they've added to the spent fuel pool, and the fact that you had to drain that, to get that hydrogen explosion, you had to reach at least halfway down the active fuel to get the hydrogen generation.

MALE PARTICIPANT: You know, I started today reading they had something 577 (phonetic) tons per hour. That's like 200 gallons per hour.

ROB TAYLOR: And the odds that they're doing now, they're only doing three hour increments adds per day.

MIKE SCOTT: Okay. So what if the instrument trends anyhow? What does that tell you?

ROB TAYLOR: Well, let's see where it trends and then try to draw the conclusion. If it shoots way up all of a sudden, we're going to say wait a minute.

MALE PARTICIPANT: Okay. If you have data that's five hours older from this G (phonetic), it's exactly the same.

MIKE SCOTT: All right. So probably there's no, well --

ROB TAYLOR: It's probably not a good thing.

MIKE SCOTT: Well --

ROB TAYLOR: But did they do an add in that time telling you it's exactly the same on all three, then more than likely it's not added value.

MALE PARTICIPANT: If 200 gallons is, you know you lose anyway evaporation.

MIKE SCOTT: So I guess the point, Fred, we're making, is that they're giving us new data. But we don't have much confidence in the data that they're giving us.

FRED BROWN: Well, how about this for a conclusion? As it is now, it doesn't mean much. But if over a period of days, let's try it another way. Maybe a good thing for them to do is to keep filling those pools, if they'll fill, until it does spill over.

ROB TAYLOR: Well, that's the question. Do we want to make a recommendation that they need to go away from these three hour adds and go to more continuous addition of water.

MIKE SCOTT: Then a question on, or the answer to that would then depend partly on their assessment of whether they got a big hole. Because if they've got a big hole, then filling until the cows come

home is just going to put more water in the ocean.

ROB TAYLOR: And that's been the major point of disagreement. They continue to believe that they have integrity of those spent fuel pools. And we continue to believe that's unlikely given the fact that they --

MALE PARTICIPANT: Is that what our paper says?

ROB TAYLOR: I don't think it's got that in there yet. But that's been the assessment. That's what the chairman says with regards to Unit 4 went dry. And the only reason you got that hydrogen, he had to uncover that fuel.

MIKE SCOTT: Well, there's no question about the uncovering part. The question is remember that Pool 4 is the one that had a big heat load in it. They could have boiled it dry.

ROB TAYLOR: No, not in 80 hours.

FRED BROWN: Eighty hours?

ROB TAYLOR: It exploded about 88, I think, three and a half days after.

MALE PARTICIPANT: You did not boil that dry?

MALE PARTICIPANT: Do you think the initial sloshing might have put a lot of water out --

ROB TAYLOR: It would have done it to all the spent fuel pools.

FRED BROWN: You have four as in a refueling outage. Do they have the fuel pool gates in? Is it separated from the cavity?

MALE PARTICIPANT: The gates were reported in.

FRED BROWN: Could the gates be leaking?

MALE PARTICIPANT: They could be. That could have helped reflect. But that's not what this, and we theorized that too. And that's actually what the Japanese INPO, their theory is that it boiled dry and re-flooded.

But the fuel at the volumes on the re-flood, the heat that was required to boil it dry, it wouldn't be covered now.

It would have continued to boil back off, unless they re-located a lot of the fuel someplace where it's not being cooled by the water.

MALE PARTICIPANT: That's seals all (phonetic) over 100 days out of the pool. It's load was down. It's load was way down, the heat duty.

MALE PARTICIPANT: But right now TEPCO's assessment is there's no structural damage to any of the pools.

MALE PARTICIPANT: Yes, right.

MALE PARTICIPANT: And that's their assessment.

MALE PARTICIPANT: And they have provided some sketches showing where the damage is in around the pool.

MALE PARTICIPANT: To the concrete.

MALE PARTICIPANT: To the concrete. And we might send that information.

FRED BROWN: Okay. So I think what we're hearing is we need to get a good level indication, or keep filling more often.

ROB TAYLOR: Well, I think we need to understand a little bit better what that level indication is. Because I think that based on the diagrams here, there's not an instrumentation. It's a switch that simply says you're at a certain point.

MIKE SCOTT: They made noise yesterday at the team meeting, that I was fortunate enough to go to yesterday afternoon, (b)(5)

(b)(5)

(b)(5) And they were talking about attaching one of those things to the --

MALE PARTICIPANT: Giraffe (phonetic)?

MIKE SCOTT: -- to the giraffe, and trying to get an indication of levels that way. Now whether that'll work with all that steam going on is another question.

But I do think it is important that all of us noodle on how they can get a handle on what the real level in those tanks is.

ROB TAYLOR: And that's one of the things I want to do, is do the back of the envelope calculation and say what do we think that is. And I think that today's date is going to be extremely telling, to see what those levels --

MALE PARTICIPANT: Well, I'm okay being optimistic. But I think that does not help it. I think we can noodle on a special borescope or something. There's got to be a technology to get something in there away from the scene, put in a little robot crawler, like the folks do.

MALE PARTICIPANT: Put the debris --

ROB TAYLOR: I don't think you can get a, no, that's another discussion, robotics. There's a meeting you may want to have on that --

MIKE SCOTT: Okay, well, we need to move on. We need to finish pretty soon. Because there's a couple things more I want to cover here. So what else

do you want to say about the pool?

ROB TAYLOR: That's it.

MALE PARTICIPANT: Okay, just real quick on the pools. On, I think it was Wednesday, coming out of the cabinet meeting there was a request for assistance on evaluating pool level.

INPO took the lead out on the team, contacted INPO directly. INPO has the lead on that and DOE has also been working on it.

We believe DOE's got some ideas, we don't know how practical any of them are, they were going to provide back to INPO in Atlanta. But if that's a current issue, you might ask Al for status.

MIKE SCOTT: Okay, we'll do that. And we definitely consider it a current issue so we will do that. Anything else on the pools?

ROB TAYLOR: No.

MIKE SCOTT: Okay, yesterday's 8 o'clock meeting, are you familiar with the 8 o'clock meetings, Fred, probably not. It's the big cheese meeting where the cabinet ministers meet with us every evening at 8 o'clock.

FRED BROWN: Right.

MIKE SCOTT: At that meeting they did pass on a couple of little nuggets.

They apologized on TEPCO's behalf for the bad numbers that got out in the press about the doses in Unit 2 turbine building.

They did agree that on March 15th for Unit 2 it was not possible to add water for several hours. For Unit 1 and Unit 3, the same situation but not as long.

So they believe that there was a period of three hours where there was no water added for Unit 2 and, "We must admit that serious damage occurred to the fuel."

Of course they didn't say anything about release from the vessel. And nothing has ever gotten out, as far as I know, in the press about that.

Then Chuck Casto responded to that and said we believe there is, of course, we agree with you there is fuel damage, and a potential containment breach in Unit 2.

We also believe that there is lesser but still significant fuel damage in Unit 1 and Unit 3, with a potential containment breach in Unit 3 as well.

So that's just to let you know what's being said at high levels over here. Let's see what else I've got here.

All right, now next question I have, for

everybody to think about, is are there criticality concerns here that we, the RST, or the Japanese need to be working on. Is that on the table or not?

MALE PARTICIPANT: We've had multiple discussions about the level of concern for criticality.

Let me start with the units. For the units it has been reported that boron was injected. In the discussions with the industry, if the fresh water injection can include boron, it's not unreasonable to add some.

But you've got to be careful how much you add because of the PH of the water in the system, with all the salt that's already in there.

In general though, criticality in the reactors is not considered to be a principle concern at this point.

MIKE SCOTT: But right now there is no plan. The injection of the fresh water, and the switch over to the electric pumps, and the way of bringing it down from the dam right now, they don't plan to use boron.

MALE PARTICIPANT: Okay. And I think that was understood by the experts here.

MIKE SCOTT: Hold on a second, we've got some talk here. So they are adding boron --

MALE PARTICIPANT: No, no, no, that's

dated. They were.

MALE PARTICIPANT: It too was borated for a little while in the switch (phonetic) water, but the switch over, it's not going to be anymore.

MALE PARTICIPANT: So we know, of course, that two and three are leaking out through the containment, and presumably from the vessel to the containment, and hence out the containment.

So with that going on indefinitely, is there any issue? Probably not. I guess I'm going to assume, well, some of that boron will probably get out that way, right?

MALE PARTICIPANT: Yes.

MALE PARTICIPANT: But some of it also is likely to have precipitated out through the fault (phonetic).

MALE PARTICIPANT: I don't have an issue with the reactors.

MIKE SCOTT: It sounds like nobody has a concern with criticality in the reactors. Is that true?

MALE PARTICIPANT: Not for me.

MALE PARTICIPANT: I don't think so.

MIKE SCOTT: Well, okay, what about the pools?

MALE PARTICIPANT: I've got a concern.

(Crosstalk)

MALE PARTICIPANT: Fred, what was the thought back there on the pools?

FRED BROWN: Yes. Well, what we understood on the pools was they used boron in the stainless steel of the spacing. They don't use boral or anything like that. And so I'm not sure why we would begin to have criticality concerns in the pools.

MALE PARTICIPANT: But for clarification, yesterday we asked that question specifically. And Units 1, 2 and 3 are generally the same in that they have racks that were aluminum only. And then they had racks that were aluminum with boron in plates.

So it sounds like there were various rack designs within the Units 1, 2 and 3 pools. Unit 4 itself was only stainless steel racks. There were no borated plates in Unit 4.

MALE PARTICIPANT: They're not borated plates?

MALE PARTICIPANT: That's what they told us yesterday.

(Crosstalk)

MALE PARTICIPANT: The guy walked out of the room to get the information and came back to us and gave it to us.

MALE PARTICIPANT: Okay. So Rob, these were unborated pools, right?

ROB TAYLOR: Yes, they're BWRs. You can't borate them.

MALE PARTICIPANT: Right. And where would the criticality concern come from then?

MALE PARTICIPANT: The geometry difference.

ROB TAYLOR: Well, they originally said that they were concerned a little bit about criticality for Unit 4, simply because of rack movement due to the earthquake. The spacing between the racks may have changed.

They didn't expect the geometry of the actual racks themselves to have changed. The only other reason to be potentially concerned is in a partial melt condition, the reshaping or geometry changes if you still have the ability to ingress water in there.

It's really a fundamental question of the ingress of the water in between the fuel. If it starts to move closer together due to the melting, and you can get enough water in there, there's a potential criticality concern.

MALE PARTICIPANT: Generally when fuel repositions itself it is less reactive.

ROB TAYLOR: Not necessarily. It can become more reactive. But let me step back one thing. I'm not overly concerned about criticality right now, simply because these are irradiated fuel assemblies that have a much lower k-effective. If they have a design and --

MALE PARTICIPANT: I think they had some fresh fuel in there too.

MALE PARTICIPANT: Did they have a few fresh fuel assemblies?

MALE PARTICIPANT: Your fresh fuel may not be a problem either. Your most reactive fuel is after the first reload.

ROB TAYLOR: Yes. And it's a first burn fuel, and a DWR.

MIKE SCOTT: Hey, Fred, have you all looked at the pool criticality issues?

FRED BROWN: I don't think it was of serious enough concern that it ever got into being looked at, actually.

There was discussion about it because of the concern that they might be using a poison that could be damaged structurally. But once we discounted that, it disappeared as a concern.

MIKE SCOTT: Well, given now that we've

gotten this recommendations paper pretty much where we want it, and we're going to put it in front of our colleagues today, given the questions being asked at least on this end, is this something that rises to the point that we ought have somebody take a look at it and tell us what questions we ought to be asking of them?

FRED BROWN: Well, I think we ought to ask questions in areas that are add value, right?

MIKE SCOTT: Of course.

FRED BROWN: So do we think asking questions in this area adds value? We can do a pulse internally, when folks come in tomorrow, to work around are there any credible scenarios that wouldn't be self limiting, or would have any significant impact on the condition.

We can ask that question. That's a good question to always ask. I think we've got a lot of priorities that are, unless we get something more than Rob and others have come up with. I'm not sure where this would be on our priorities.

MIKE SCOTT: Fred, honestly, I put this at a lower priority from this standpoint. We already know there's likely been damage to the fuel in those pools, right. And there might have been some geometry changes that occurred.

They're spraying water in there. And if they've covered up portions of the stuff, you would have already had the criticality. You would have gotten the flash.

Unless you get further relocation of the fuel, I think if you get it flooded up, and get it covered with water, it would have already gone critical.

FRED BROWN: Right.

MALE PARTICIPANT: We have to find out. We don't know enough that's (indiscernible).

FRED BROWN: Yes. I think we're speculating a little bit. And I think criticality is a secondary concern to getting the fuel covered and stopping any further progression of damage to the fuel.

MALE PARTICIPANT: Well, I'm okay priority-wise. But I'm a little disagreeable. I think criticality, a look at criticality, when they have the potential to be able to add boron, I think it's worth looking at for just the reasons. We found that not all the plates have poison in it, so it's all in geometry. And maybe it is a --

MALE PARTICIPANT: I don't object to encouraging them, if they can, to add boron. But I don't think you stop to add boron.

MALE PARTICIPANT: Well, I didn't say that.

FRED BROWN: And I don't think we make any of those recommendations without thinking more about a basis for them. I don't want to go, hey, probably a good idea to add boron unless we've thought that through and talked to the criticality people back there.

MALE PARTICIPANT: That's right, but boron doesn't do you any harm.

FRED BROWN: But I don't want to push them to do something. They've got enough --

MALE PARTICIPANT: I'm not arguing to undo it.

MIKE SCOTT: So I would think, Fred, I guess to sum this one up, and we're going to have to check out because the team meeting's about to start.

But I would think it would at least be worth a chat with some criticality guru back there, perhaps with our team, if we could set up a call on Monday.

MALE PARTICIPANT: Fred, I talked to Don Carlson, he's a great guy over in research, on criticality.

FRED BROWN: Understood Don Carlson on Monday.

MIKE SCOTT: Yes, we appreciate that. And Don maybe can give us either some warm and fuzzy and not, and maybe some questions to ask them at the 11

o'clock meeting we have everyday.

MALE PARTICIPANT: When I was in the op center Don was brought in about criticality concerns. And he and I bounced it back and forth. And we were in the same general agreement that we didn't think there was a significant concern about criticality.

MIKE SCOTT: So let's see if we can propose a time here. Now remember in the 13 hours --

FRED BROWN: Yes. Do you guys really want to have this conversation if Don confirms his discussion with Rob?

MIKE SCOTT: Say that again, Fred.

FRED BROWN: If you were talking about setting up a call with Don Carlson, I'm just asking if you really want to take your time to do that if Don confirms for us the conversations he previously had with Rob here?

MIKE SCOTT: Well, why don't I propose this. Jack has concerns too.

FRED BROWN: I understand that.

MIKE SCOTT: Why don't I propose this. Give Don my Blackberry number. We don't need to take everybody's time up. And Don can give us a call.

And we can coordinate something offline. We don't need to take everybody. And I'm (b)(6)

And we can have an offline. Jack and I'll sit down and talk to Don.

MALE PARTICIPANT: And anybody else who wants to participate.

MIKE SCOTT: And anybody else who wants to. we'll coordinate it offline.

(Crosstalk)

MIKE SCOTT: I think we're out of time, Fred. Did you get that phone number?

FRED BROWN: (b)(6)

MIKE SCOTT: Correct.

FRED BROWN: Very good, we'll --

MIKE SCOTT: Okay, so if you could just ask Don to follow-up. And probably the best time to call, let me figure this out, so he'll call Rob at 2 o'clock in the morning.

(Crosstalk)

MALE PARTICIPANT: 3:00 p.m.

MIKE SCOTT: That's right, we're all waking up at 3:00 a.m. anyhow. So no biggie, okay. You got anything else for us?

FRED BROWN: No, very good. Thank you very much.

MIKE SCOTT: Was this a helpful exercise?

FRED BROWN: Yes, I'm sure as we get into

it it'll become more efficient.

MIKE SCOTT: Yes. Calibrate us in how we can make it better as we go along, please.

MALE PARTICIPANT: One more thought, Fred. We gave the RST a question, at the 1500 our time, 0300 their time yesterday, to kick around with the industry.

And it was the question of if inerting is not going to be an imminent activity. And that's one of the questions we have, is we don't know. And we're pushing TECO to understand their timing and plan.

What do we need to be monitoring in the intermediate with regards to making sure we don't need to change strategy or direction?

Right now we're waiting on inerting before progressing was brought up (phonetic).

Is there a particular indication we need to be monitoring more closely than others, and some sort of trip point or threshold that we need to be thinking about where we say it's potentially time to shift gears. And we can't wait on inerting anymore. And so --

FRED BROWN: That would be one angle. And the other angle is can we offer anything to help them figure out how to actually do the inerting.

MALE PARTICIPANT: Yes. And then E (phonetic) and INPO took that from the call yesterday.

And we're going to look very hard at alternative methods to inerting if the normal system wasn't available due to high RAD areas, or damage, or whatever.

MIKE SCOTT: Okay, so it's something else to think about.

FRED BROWN: Very good.

MIKE SCOTT: Thank you. Have a great day.

FRED BROWN: Thanks, you guys too.

MIKE SCOTT: Bye-bye.

FRED BROWN: Bye.

(CONFERENCE CALL ENDED)

3-01 Track 01

(CONFERENCE CALL INITIATED)

JOE SEARS: INPO ERC, this is Joe Sears.

PAT HILAND: Hey, Joe, this is Pat Hiland. The NRC's Reactor Safety Team manager.

JOE SEARS: Yes. Hi, Pat.

PAT HILAND: Hi. Is Dave Garchow there today?

JOE SEARS: Dave is not. But do you want to talk to his alternate, who's here?

PAT HILAND: If you don't mind, I'd like to speak with him.

JOE SEARS: Okay, just a second.

TOM HUCKABY: Hi, this is Tom Huckaby.

PAT HILAND: Hi, Tom, how are you?

TOM HUCKABY: Good.

PAT HILAND: I'm Pat Hiland. I'm the Reactor Safety Team manager team manager here with the

NRC. And I just wanted to talk to you a little bit before our 9 o'clock call. Tom, you're with INPO?

TOM HUCKABY: Yes. Okay, and let me ask you a question.

PAT HILAND: Okay.

TOM HUCKABY: We've got to get two other entities lined up for the call.

PAT HILAND: Okay.

TOM HUCKABY: And I'd like to take a few minutes to do that. Is there a number I can call you back? And I'll get my ops guy on the line with me.

PAT HILAND: Let's see, well, I'm at the, I guess the number here is 301-816-5502. Now the 5502 is my phone. That's a recorded line. But I don't need anybody else on the line. I just want to talk to a management type. Is that you?

TOM HUCKABY: Yes.

PAT HILAND: Okay. A little hesitation.

Let me just give you a minute, okay. Please give me a minute as you're making your calls.

At 9 o'clock we're going to have a call. You know, GE Hitachi has expressed some reservations from their senior management with buying into a document that we worked on for three days.

And I understand that at 9:00 p.m. last

night we got a consensus from all the participants --

TOM HUCKABY: That's correct.

PAT HILAND: -- we call the consortium. And then this morning everyone was asked to go back and brief their senior management and make sure that there's not a significant flaw in the document.

And they wanted that over in Japan. That was what the Ambassador asked.

We've got everyone's buy-in except for GE Hitachi. And I don't have the technical expertise to be able to listen and debate the issue. But I want it to be done.

We can't change a comma to a semi-colon. This document was sent over last night after the 9:00 p.m. call. So if they have a substantive recommendation, I would endorse that.

But if we're just talking about word smithing, we're three days into this and we haven't made a damn decision. And so we've got to make a decision.

And as I understand it, they're concerned about whether we're in the SAM-G 1 precisely, or whether we're deviating, and maybe some more specific words. That's wordsmithing.

TOM HUCKABY: That would be news to me, because I was --

PAT HILAND: Okay, well I'm asking --

TOM HUCKABY: -- involved with them in detail.

PAT HILAND: What I'm asking is for you to take the lead on this call and GEH, let them express their reservation. And make sure it's substantive.

TOM HUCKABY: Okay. And they're one of the ones who I've got to line up to get on the call.

PAT HILAND: Oh well, he knows.

TOM HUCKABY: Okay.

PAT HILAND: I've talked to him. And I told him that at 9:00 a.m. we're going to get together again.

TOM HUCKABY: Who is the person you've been talking to?

PAT HILAND: I can't remember. Do you know who I talked to at GEH. I got a number.

MALE PARTICIPANT: Lou Watford.

PAT HILAND: Lou Watford,

MALE PARTICIPANT: Glen Watford.

PAT HILAND: Glen Watford.

TOM HUCKABY: Okay, so now we're way up the chain --

PAT HILAND: Yes.

TOM HUCKABY: -- from the people we've been

talking with.

PAT HILAND: Yes, let me see who I, yes, Glen Watford is who I spoke with.

TOM HUCKABY: Okay.

PAT HILAND: And he said he was briefing Kevin Walsh, who must be at the top of GEH. And that this reservation came from that level. But I'm relying on you to help me --

TOM HUCKABY: Yes, we'll do that.

PAT HILAND: -- get this damn document out.

TOM HUCKABY: Yes, that's our --

PAT HILAND: Now if it's substantive, then we'll say, okay, back off. But I don't think it is when I heard from him.

TOM HUCKABY: Okay.

PAT HILAND: All right.

TOM HUCKABY: We will do that. And so this, I wouldn't need to call you back?

PAT HILAND: At 9:00 a.m., no need to call me back personally. At 9:00 a.m. call the HOO and ask to be put on the safety team bridge.

TOM HUCKABY: All right, we'll do that.

PAT HILAND: All right. Thank you then. I'll go ahead and introduce myself. And then I'll just turn it over to you, INPO, and just let's go around and

see if there's any last second, well, the only reservation I know of is from GE Hitachi. So we'll listen to them.

TOM HUCKABY: All right. Thank you very much.

PAT HILAND: All right, bye.

(CONFERENCE CALL ENDED)

3-02 Track 02

(CONFERENCE CALL INITIATED)

PETER ALTER: Reactor Safety Team, Peter Alter, may I help you?

HEADQUARTERS OPERATIONS OFFICER: This is the Headquarters Operations Officer. I've got a representative from EPRI on the line here.

PETER ALTER: Okay.

HEADQUARTERS OPERATIONS OFFICER: Hang on.

CLAY PERRY: Hello?

HOO: Hello. Could you hold one for the RST director, please?

CLAY PERRY: Sure.

PAT HILAND: Hello, this is Pat Hiland, the Reactor Safety Team manager.

CLAY PERRY: Hi, Pat, Clay Perry at EPRI.

PAT HILAND: Hi, Clay, how are you?

CLAY PERRY: I'm well, I'm well. Hey, I routed that document to our nuclear folks.

PAT HILAND: Okay.

CLAY PERRY: And based on the information that we have available to us, that was available to the entire group, we agree with what you found there, what the document says.

PAT HILAND: Okay. And that would have been a discussion that your team, or somebody representing EPRI had at 9:00 p.m. last night, correct?

CLAY PERRY: I'm not sure who was at 9:00 p.m. That's right. Dave Modeen was involved --

PAT HILAND: Okay. Because that's the document they went through line by line and got agreement from what we're calling the consortium.

And then a follow-up question came in the middle of the night from Japan, from the Ambassador, that he wanted to know that have the senior officials in these entities been briefed. And does anyone have an objection.

So what I'm taking from this conversation is at EPRI that you have briefed your senior responsible person --

CLAY PERRY: Right.

PAT HILAND: -- and they have not taken exception to the 2,100 correspondence that went out to Japan last night.

CLAY PERRY: That is correct.

PAT HILAND: Good. Then I got answers back from everybody except for GE Hitachi. And when they briefed their senior manager he had some reservations. And so we're going to hear those at 9:00 a.m. Eastern time.

CLAY PERRY: Uh-huh.

PAT HILAND: We're going to have a consortium call, same number as yesterday. And I think the only one that we need to listen to is GE Hitachi. And we want to hear, if it's a comma to a semi-colon, it'll be a very short call.

CLAY PERRY: Okay.

PAT HILAND: Because we've already sent it over and we've got to make a decision. We've been working on this document for three days.

CLAY PERRY: Yes.

PAT HILAND: But they have a little bit of a reservation with the language we're using, following the SAM-Gs, and that we're not precisely following them because of the conditions that exist.

So we've put a lot of cautions in there. So I just want to hear, and I want the technical experts to listen. And if it's not substantive, we need to make a decision.

CLAY PERRY: Okay.

PAT HILAND: And then I need to know if it's a real substantive comment or not. Okay?

CLAY PERRY: Okay.

PAT HILAND: All right.

CLAY PERRY: Thank you very much.

PAT HILAND: We'll hear you at 9 o'clock then.

CLAY PERRY: You'll probably hear Dave Modeen.

PAT HILAND: Dave Modden at 9:00. Okay, that's good.

CLAY PERRY: All rightie.

PAT HILAND: All right, thanks. Bye.

CLAY PERRY: Bye-bye.

(CONFERENCE CALL ENDED)

3-03 Track 03

(CONFERENCE CALL INITIATED)

MALE PARTICIPANT: GE Hitachi.

PAT HILAND: Yes, this is Pat Hiland from the Nuclear Regulatory Commission Reactor Safety Team.

MALE PARTICIPANT: Yes, sir.

PAT HILAND: Are you trying to call into to our 9 o'clock call? We're expecting GE Hitachi to be on the phone.

MALE PARTICIPANT: Our managers right now are in a confab. And we should be getting back to you here shortly.

PAT HILAND: Okay. Well, we've got about 15 players on the conference call waiting.

MALE PARTICIPANT: I'll let them know.

PAT HILAND: All right, thank you.

MALE PARTICIPANT: Thanks.

(CONFERENCE CALL ENDED)

3-04 Track 04 (Contains no words to transcribe.

3-05 Track 05

(CONFERENCE CALL INITIATED)

PETER ALTER: Reactor Safety Team, Peter Alter, may I help you?

MALE PARTICIPANT: Hey, Peter, who's the director over there?

PETER ALTER: It is now Pat Hiland. It is soon to be Fred Brown.

MALE PARTICIPANT: Okay, well, I've got Bill Ruland on the line. He wants to talk to one of them.

PETER ALTER: Okay.

MALE PARTICIPANT: Want me to connect you through?

PETER ALTER: Yes, please.

MALE PARTICIPANT: All right.

PETER ALTER: Bill Ruland.

PAT HILAND: Hi, Bill.

BILL RULAND: Hey, Pat. Hey, I just wanted

to know if you got everything you needed on this, this spent fuel pool thing, this spent fuel document.

PAT HILAND: The white paper that's going to the White House?

BILL RULAND: Yes.

PAT HILAND: It's gone.

BILL RULAND: Oh, okay, great.

PAT HILAND: All done, gone.

BILL RULAND: Outstanding.

PAT HILAND: You won't believe what I've been working on all day though.

BILL RULAND: That document again?

PAT HILAND: Well, yes. I'll talk to you tomorrow about it. Goodbye.

BILL RULAND: Did we screw it up, or what?

PAT HILAND: I'll just plan on not relieving, I'm turning it over to you because you would go through the roof.

BILL RULAND: We sent it exactly like everybody told us.

PAT HILAND: So we had a, goodbye, Bill. Talk to you tomorrow.

BILL RULAND: Right.

(CONFERENCE CALL ENDED)

3-06 Track 06

(CONFERENCE CALL INITIATED)

PAT HILAND: Reactor Safety Team, Pat Hiland.

MALE PARTICIPANT: Pat, I've got Mr. Garchow of INPO, vice-president of engineering, I think.

PAT HILAND: Sure, let him come in.

MALE PARTICIPANT: Bye. I'll connect you through.

PAT HILAND: Hello, this is Pat Hiland.

DAVE GARCHOW: Pat, Dave Garchow at --

PAT HILAND: Hi, Dave.

DAVE GARCHOW: The email I sent you?

PAT HILAND: Did we get an email from INPO?

MALE PARTICIPANT: We'll check and see if we did.

PAT HILAND: They're checking to see. Did you guys give us an acceptable?

DAVE GARCHOW: I did.

PAT HILAND: Okay. We got acceptable from

GEH about five minutes ago.

MALE PARTICIPANT: Yes, we did.

DAVE GARCHOW: Okay. So what I did in the email, when I just read it, just want to make sure that we're fine. We concurred with your cover letter before. I put it in advance of the 1330 teleconference.

PAT HILAND: Okay.

DAVE GARCHOW: And we also concur with the small change we made during the call.

PAT HILAND: Okay.

DAVE GARCHOW: I forgot to update the cover letter --

PAT HILAND: Okay, we're using --

DAVE GARCHOW: -- to update our letter.

PAT HILAND: Yes. We updated the one that we had sent you --

DAVE GARCHOW: Correct.

PAT HILAND: -- with our call.

DAVE GARCHOW: And I'm fine with both.

PAT HILAND: Okay, good.

DAVE GARCHOW: So there's no problem.

PAT HILAND: Good.

DAVE GARCHOW: So what I said in my first paragraph is that we concur, or it's in reference to the additional clarification contained within a draft

assessment document cover letter --

PAT HILAND: Okay.

DAVE GARCHOW: -- provided in advance to the 1330 teleconference on 3/27.

PAT HILAND: Good.

DAVE GARCHOW: But we also agree with what we came up with during the teleconference --

PAT HILAND: Okay. Well, thank you very much. We appreciate it.

DAVE GARCHOW: So you did get it?

PAT HILAND: Yes. I got it. They just printed it out and set it in front of me.

DAVE GARCHOW: Perfect.

PAT HILAND: All right. Thanks, Dave, we're going to hit a send button in a few minutes.

DAVE GARCHOW: Will you copy me on the final cover letter, just so I can have it?

PAT HILAND: I'll certainly copy you.

DAVE GARCHOW: Thank you very much.

PAT HILAND: All right, goodbye.

DAVE GARCHOW: Bye.

(CONFERENCE CALL ENDED)

3-07 Track 07

(CONFERENCE CALL INITIATED)

RICK HASSELBERG: Reactor Safety Team, Hasselberg.

LT. CDR. SAM YOUNG: Hello, sir, this is Lieutenant Commander Sam Young, calling from U.S.S. Day.

RICK HASSELBERG: Yes, sir.

LT. CDR. SAM YOUNG: How are you?

RICK HASSELBERG: I'm good. How are you, sir?

LT. CDR. SAM YOUNG: Pretty good. I've got some technical questions about the plant. And I --

RICK HASSELBERG: Okay. Let me give you to, I've got Mr. Tom Roberts from Naval Reactor here.

LT. CDR. SAM YOUNG: Oh, geez. All right, sir.

RICK HASSELBERG: Okay?

LT. CDR. SAM YOUNG: Yes, Tom --

RICK HASSELBERG: Would you, this is Joint Forces Japan. They have some technical questions.

TOM ROBERTS: Are you on a speaker?

MALE PARTICIPANT: Yes, put on the speaker.

RICK HASSELBERG: Put you on speaker.

MALE PARTICIPANT: Okay.

RICK HASSELBERG: Sir, I'm going to put you on speaker, one second.

LT. CDR. SAM YOUNG: All right, thank you.

RICK HASSELBERG: Go ahead, sir.

LT. CDR. SAM YOUNG: All right, sir. We've been reading through the assessment that you guys sent out. And also we go to the diagrams that we have available of the plant.

And a couple of questions that I don't think we have quite full understanding of to explain to somebody else if they asked us.

The main one we've got is the production of hydrogen. Because right now we've heard it's reported that reactor plant Number 1 is reporting around 1.2 kilograms an hour of hydrogen.

And Number 2 is reporting about 1.7 kilograms an hour. So we're trying understand fully where that hydrogen is coming from.

TOM ROBERTS: First, can you say who we're talking to, who is this?

LT. CDR. SAM YOUNG: Yes, sir, this is Lieutenant Commander Samuel Young.

TOM ROBERTS: Okay. Yes, I think we've

talked before. This is Tom Roberts, of Naval Reactors. I also have Chuck Norton and --

BILL ROGANBROUGH (phonetic): Bill Roganbrough from NRC.

TOM ROBERTS: Yes, from NRC. And so the question is why is there hydrogen generated. And do you have an answer for that one, Chuck, radiolysis and --

CHUCK NORTON: Yes. Radiolysis of water. Probably there's not much reserve (phonetic) water left going on.

TOM ROBERTS: Right. Because they're not that hot anymore.

CHUCK NORTON: Yes.

TOM ROBERTS: So I believe that was calculated based on the radiolysis of the water.

LT. CDR. SAM YOUNG: Okay. And I guess we were surprised at the rate that it's being produced. It seems like quite a bit. So I guess we were surprised because we thought it was cooler because of the low level of water.

TOM ROBERTS: Is there anybody here familiar with the calculations that came up with that.

CHUCK NORTON: I'm not familiar with the calculations that came up with that. We can check on

that.

We know the hydrogen, where the hydrogen levels put us, or put them in relation to the severe accident management guidelines recommendations, that the level is high enough that puts them, we actually said it was greater than I think six percent for unknown, which puts us into certain blocks for guidance that we give them.

Beyond that amount there is in the rate of production doesn't really change our recommendation. But we'll look and see if we can find something on that for you.

LT. CDR. SAM YOUNG: Aye, sir. And --

TOM ROBERTS: And there were calculations of somewhere on the order 30 percent hydrogen concentration, by volume or by mass, I think it is.

CHUCK NORTON: Right.

TOM ROBERTS: And oxygen, it's approaching 5 percent, which is calculated as the detonable ratio. So there's concerns here, and at GE Hitachi, that they're actually approaching right now where it could be flammable. So that drives the concern about hydrogen.

LT. CDR. SAM YOUNG: And that's inside the reactor core, you're talking about, sir?

TOM ROBERTS: Inside the containment.

CHUCK NORTON: Primary containment.

LT. CDR. SAM YOUNG: (Indiscernible) then.

BILL ROGANBROUGH: If we're only two-thirds core height, any fuel that's above the water level is high, very high. So why isn't it still interacting with water that's there? Have we consumed all the zeriks (phonetic), ozidized all the zeriks?

TOM ROBERTS: Yes. It sounds like we need to get somebody here familiar with the GE Hitachi calculations that produced these values.

LT. CDR. SAM YOUNG: Okay. But when you say containment, just to make sure on this plant I understand, you're talking about inside the drywell? Or are you talking about only within the reactor vessels, RPV.

CHUCK NORTON: When you're talking containment of these plants, you're talking the drywell and the torus together. When people say containment they mean the two together.

LT. CDR. SAM YOUNG: All right. Thank you, sir. That helped. And then we were talking too about how increasing the flow rate would increase the hydrogen production. Is that mainly because the addition of water allows for more radiolysis of the hydrogen?

CHUCK NORTON: That's what they were thinking yesterday.

BILL ROGANBROUGH: There's also a concern that if you increase the water you'll condense steam. And that will change your mixtures and shift you into a more combustible zone.

The steam, as I understand it, helps to keep you out of the explosive zone. So if you just flood off, you shift those zones. And that's one of the things that GE is worried about.

TOM ROBERTS: Probably right. Plus venting is an issue because you vent out the steam.

LT. CDR. SAM YOUNG: And that's why it has more of a chance to ignite, I guess, when it leaves the vessel?

TOM ROBERTS: Do you want to the light (phonetic) the need to vent for as long as possible, which is part of the reason for the relatively low flow rate. Because the higher flow will compress the bubble and cause the pressure to go up a lot faster.

CHUCK NORTON: And we're kind of given recommendations that are modified from the actual severe accident management guidelines, in that we're just trying to keep flow just barely above the minimum debris retention flow rates, ejection rates. So we're trying

to keep the fuel in the core right now.

TOM ROBERTS: Or in the vessel.

CHUCK NORTON: For the vessel, yes, in the vessel.

LT. CDR. SAM YOUNG: Aye, sir. Okay.

TOM ROBERTS: So as long as the primary coolant flow is cooling what's left of the core, then it keeps the pressure vessel cool, which is the goal at this point.

CHUCK NORTON: And it's giving them a chance to get their nitrogen inerting system going. And we want them to be purging with nitrogen while they vent.

Once they get the nitrogen inerting service, our advice is for them to purge and vent, start flooding up the (indiscernible).

LT. CDR. SAM YOUNG: So you do expect to recommend increasing flow once they have inerted the plant?

CHUCK NORTON: Once they have inerted the plant, and are in a condition where they can purge that hydrogen out, yes.

LT. CDR. SAM YOUNG: Aye, sir.

TOM ROBERTS: And that's recommendation Number 3.

LT. CDR. SAM YOUNG: Another question that we had, sir, well it's really just some of the terminology in the assessment that the RST put out.

We didn't quite understand when you're referring to the flow. You talk about keeping the rate at a positive minimum debris retention injection rate. We're not familiar with that term.

CHUCK NORTON: Okay. That's the flow rate that's going to cool the fuel material enough to keep it from interacting with the metal, causing the metal to heat up, and other interactions that'll go on that would cause the metal or the fuel to go X-vessel.

So that's why the name of that is the minimum debris retention injection rate. And for the data to the core's right now, it's around 25 gallons a minute.

LT. CDR. SAM YOUNG: All right.

TOM ROBERTS: So think of the goal as shifting from core coolings to reactor pressure vessel coolings.

So they're in the stage of this casualty where core cooling is probably a lost cause because of the condition of the core.

So the severe accident management guidelines then shift priorities to keeping a damaged core inside the pressure vessel.

This flow rate's been calculated by the reactor vendors. They're the ones who calculate this.

CHUCK NORTON: Yes, there's a table. It's the minimum, the MDRIR, which is the short cut for saying minimum debris retention injection rate, MDRIR, decreases from the time of shutdown.

It starts out at a very high flow rate initially after the accident. And this far into it it's down to about 25 gallons a minute. And it'll be lower and lower as more time goes between the shutdown.

TOM ROBERTS: Right. If the core is intact, you'd be calculating the decay heat being made. And you'd figure out how much flow you need to put in to move that heat.

This is a different problem. You're trying to remove the heat from the pressure vessel that's deposited in the pressure vessel by this damaged core to keep the pressure vessel intact, slightly different problem, slightly different flow rates.

LT. CDR. SAM YOUNG: I see, I see. And if I understand this plant right, when it's operating properly you control that flow to control the power. Is that right, or at least adjust the power?

So in this case you're not doing that. Because it's not flowing through the, I guess, the fuel

core. And you just focus on cooling the vessel. Is that about right?

CHUCK NORTON: Well, right. When you're normally running, you're pulling steam off that's matching the heat that's coming out from your fission and everything else.

So you pull the reactor's super critical and get it hot enough to do that. Yes, we're not in that condition at all. We're not operating.

TOM ROBERTS: Yes. What you described, Lieutenant Commander Young, would apply if the plant was operating at power. There is no doubt, correct, if the plant is SCRAMed?

BILL ROGANBROUGH Oh, yes. The reactor is shut down.

TOM ROBERTS: So if the reactor's shut down, they're not controlling power based on flow at this condition.

LT. CDR. SAM YOUNG: Aye, sir, understand.

TOM ROBERTS: It would be for core cooling if the core were intact.

CHUCK NORTON: There might be little criticalities happening in the vessel. But it's so small that they're not even noticeable.

LT. CDR. SAM YOUNG: Okay, sir. And then

my final question is we do not fully understand the flow path.

When you guys talk about maintaining this level of feed, and that it will eventually bleed into the containment, is all of that bleeding happening through the re-circulation pump seals that are damaged? Or are there other paths that --

CHUCK NORTON: Any water they're putting into the vessel right now is coming from outside containment. So all that water's going to end up in containment one way or another.

If it goes in and hits the core, and turns into steam and goes through the release valves, it's going to end up in the torus.

If it gets in the annulus region through the feed header, it might leak out the reserve (phonetic) seals and go into the drywell, which is going to spill over into the toruses.

It's all, that flow rate, the 25 gallons per minute no matter how they're putting it in, where it's going, is ending up in containment.

LT. CDR. SAM YOUNG: Aye, sir. So what's the main flow rate? Do you expect that most of it is getting into the containment through the release valves?

CHUCK NORTON: That's what we'd hope.

TOM ROBERTS: Yes. We don't really know the specific answer to that question.

LT. CDR. SAM YOUNG: Okay. I guess it's just enough for us to understand the different flow paths, the possibilities for how it could get out there. Because we were a little unclear on how that would happen.

Let's see, also before it starts filling up, if we maintain this process where we're feeding and it's bleeding into containment, and we stay in this process for, I think I heard 50 or 60 days on one of the bridge calls, that it might take that long to fill up to the fuel level?

I guess it's going to fill the torus and then up through the vent pipes up into the drywell. Is that one of the paths the water will get up there into the drywell?

CHUCK NORTON: Yes. It'll go up through the downcomers and eventually start filling the drywells. They're going to have to vent the air space in the torus to allow the torus to completely fill.

Eventually they're going to want to have water everywhere. And then as it comes up into the drywell, you vent the drywell to maintain pressure as the drywell's filling.

BILL ROGANBROUGH: There's an assumption there though, a very important one, and that is if the torus is intact.

If the torus is not intact, then if you fill up above the hole in the torus it'll just come out of the torus.

And you won't be able to fill above that until you fill the room that the torus is in. And whether they can do that or not is an unknown.

LT. CDR. SAM YOUNG: Okay. I guess, is it not possible to fill the drywell if you have a hole in the torus?

BILL ROGANBROUGH: Well, it depends on how, if you can maintain a feed rate that's faster than it's flowing out, yes, you can fill it.

LT. CDR. SAM YOUNG: Okay.

CHUCK NORTON: If the break's larger than what you feed in, no, you can't. But you can get some pretty --

BILL ROGANBROUGH: There are multiple large open pipes between the drywell and the torus, except that there're check valves in there. The water could flow one way, it can flow from the drywell to the torus, but not the other way, correct?

TOM ROBERTS: Correct.

BILL ROGANBROUGH: Okay.

TOM ROBERTS: Except there's a doubt (phonetic), (indiscernible).

LT. CDR. SAM YOUNG: Yes. The drawings we have, we weren't clear on the direction of flow sometimes. So there is a check valve in the vent pipe that's supposed to prevent water from flowing from the torus up into the drywell. But there's also a downcomer pipe.

(Crosstalk)

TOM ROBERTS: I think that's for when you're flowing down and you're spraying the drywell. You want that vacuum breaker to open to take the pressure.

CHUCK NORTON: We're going to retract that last comment about a check valve between the drywell and the torus.

TOM ROBERTS: Yes, Chuck, why don't you if the vacuum break works?

CHUCK NORTON: Well, that's designed, now we're getting away from what the accident we have going on now.

If you're running the reactor at power, and you were to have a large break LOCA, the water would come out, would take the nitrogen in the drywell, and

everything else, and just shove it down into the torus, due to the downcomers, and quench it.

Then you're going to have a high pressure in the torus air space, with the non-condensable and everything that would end up there.

And if you get too high of a DP between the drywell and the torus, that's going to open up and let some of the non-condensables back into the drywell.

LT. CDR. SAM YOUNG: Okay.

TOM ROBERTS: And the vacuum break does what?

CHUCK NORTON: Yes. That's the vacuum, so you don't get a vacuum in the drywell and end up shrink fitting the containment around the reactor vessel. You spray it.

BILL ROGANBROUGH: A question of (indiscernible).

CHUCK NORTON: Yes. But that's not the situation we're in now. We're --

TOM ROBERTS: Don't have to worry about that.

CHUCK NORTON: We don't have to worry about that yet.

TOM ROBERTS: So they could think of it as a communicating volume. So that simple model then

works, except with the drywell sitting on top of the wetwell. It's a communicating volume.

LT. CDR. SAM YOUNG: Okay, yes. That was one of our questions. We were not clear on the drawings we have. And that was, I guess, as you say, communicating volume.

CHUCK NORTON: All right. We're going to do some calculations on how much water, roughly, has been put in, how much water was previously in the torus, and how much water it's going to take to flood up.

That's what we're working on now. And we'll be getting that information out. I don't know if that's something you need, if you're involved with getting the water to --

LT. CDR. SAM YOUNG: Yes, sir. There's actually quite a bit of interest here in that. And we're not very smart on this system here.

But several of the admirals and generals were asking us about how long it would take to feed it. And they were asking similar questions, like you just described, sir. And we basically had to tell them we'd have to --

CHUCK NORTON: Well, that's what we want to start working on as soon as we get off the phone here.

LT. CDR. SAM YOUNG: All right, sir. I

appreciate your time and the help. It's answered a couple of questions we had in the back of our mind when we were trying to explain this, your system, to our superiors.

CHUCK NORTON: Well, I hope that's helped you with it.

TOM ROBERTS: And I think we owe you a better explanation of where the hydrogen's coming from. So we'll go check the calculations and find out whether it's dominated by radiolysis, or by zerc (phonetic) interaction with the steam above the active, and where the water level is, and get you better information.

CHUCK NORTON: Is there anything else we can help you with at this time?

LT. CDR. SAM YOUNG: No. That's good for us right now. Thank you.

CHUCK NORTON: Okay, Commander.

LT. CDR. SAM YOUNG: All right, bye.

CHUCK NORTON: Bye.

(CONFERENCE CALL ENDED)

3-08 Track 08

(CONFERENCE CALL INITIATED)

MALE PARTICIPANT: NRC Operations, (indiscernible). May I help you.

RICK HASSELBERG: Oh, yes. Hey, Bill, Rick Hasselberg. Do you have a phone number in Japan for Mike Scott?

MALE PARTICIPANT: I probably do, hold on.

RICK HASSELBERG: Thank you, sir.

MALE PARTICIPANT: This is the number I have, which may be his personal cell phone.

RICK HASSELBERG: Okay, that would probably work. Go ahead and dial it.

MALE PARTICIPANT: All right. Do you want me to try to transfer you to him?

RICK HASSELBERG: Yes, sir, thank you.

MALE PARTICIPANT: All right. Let me try. It's on speaker if that's okay. They're dialing now.

Okay, it did not go through. I don't know if he's in a bad cell area or what. It went to Voicemail. Let me make sure that's the only number we have for him, Rick.

RICK HASSELBERG: Okay, thank you.

MALE PARTICIPANT: I think I heard you can call into the HOOs and ask them to expect you. And that's a fine way to do it.

But here are the numbers and when individuals are supposed to be over there. I don't know if you'd opt to do that. But I find that helpful.

RICK HASSELBERG: Thank you.

MALE PARTICIPANT: Hey, Rick, Mike Scott is apparently in the middle of a meeting right now. Do we have to pull him out?

RICK HASSELBERG: No.

MALE PARTICIPANT: No. We'll try him later. Or if we get word to him, he'll be calling in about something here later.

RICK HASSELBERG: Okay, thank you.

MALE PARTICIPANT: We'll try him later.

MALE PARTICIPANT: All right. We got ahold of him at one of the other Japan teams and they're in the middle of a meeting right now.

RICK HASSELBERG: Okay, thanks.

MALE PARTICIPANT: Okay, bye.

(CONFERENCE CALL ENDED)

3-09 Track 09 (Contains no words to transcribe)

3-10 Track 10

(CONFERENCE CALL INITIATED)

FRED BROWN: Reactor Safety Team, this is Fred Brown.

MALE PARTICIPANT: Hey, Fred. I have Randall Crane from INPO on the line.

FRED BROWN: Okay.

MALE PARTICIPANT: I'll connect with him.

FRED BROWN: This is Fred Brown.

RANDY CRANE: Hi, this is Randy Crane from INPO. How are you tonight?

FRED BROWN: Good.

RANDY CRANE: Hey, our shift has just come on. And we've got one go do. And I just wanted to touch base with you about it.

Al Hochevar had contacted us about status of alternate means, or the validity of level determination in the pools.

FRED BROWN: Right.

RANDY CRANE: And from last night when I was in, at the 3 o'clock call, GE took an action to dig out the PNIDs. They cc'd to us on those, and you guys, but didn't do any real analysis of it, or give any sort of answer.

And in looking at the PNIDs, we really need isometric kind of drawings. Because it's going to depend on elevations and how it's actually constructed.

And I'm just wondering. I'd heard that the DOE was also in parallel, came up with some ideas. And us at INPO believe we have a contact at Texas A & M that's done some research in disaster level determinations from remotely.

And we're going to follow that up on Monday

morning. But I'm just trying to get a feel. Was there some sort of deliverable expected from us based on just getting those PNIDs?

FRED BROWN: Well, I think there was. So there were two things, as I understood it. One was that the Japanese reported that they were now getting the level indication on Units 1, 2, and 4 spent fuel pools through the skimmer surge tank.

RANDY CRANE: Yes.

FRED BROWN: And I think the question on the PNIDs was does that indication really mean anything.

And I think the conclusion that we've come to on this shift, in Japan and here, is based on the PNIDs, no, that doesn't really tell you anything.

RANDY CRANE: Not unless you have the pumps running.

FRED BROWN: Right.

RANDY CRANE: Because there's so much losses, if the pumps aren't running there's no way to assure yourselves that you've equalized out, and that there's no air in the system between the two.

And we're obviously not filling up so full that it's spilling over into the surge tank. So, yes, I don't think we disagree with that.

FRED BROWN: yes. So I think that was that

deliverable. But there was an earlier deliverable back from Wednesday morning, Al's first day in Japan, on a more broad, esoteric, how do we determine whether there's water in the pools or not.

And that's what DOE's been working in parallel. And they developed some, I use the term esoteric but, non-plant specific kind of what technologies are there out there conceptually?

RANDY CRANE: Like some sort of laser, or radars, or --

FRED BROWN: Yes, right.

RANDY CRANE: Okay.

FRED BROWN: Yes, something that a PhD physicist with an engineering department could work on for awhile stuff.

RANDY CRANE: Okay. And that's who I think that we have a potential at Texas A & M.

FRED BROWN: Okay. And they did have a call tonight. And we did provide the INPO email and asked them to coordinate with you on what they were doing as well.

RANDY CRANE: Okay.

FRED BROWN: But that item, I think, is still open. And that sounds like your Texas connection, yes.

RANDY CRANE: Okay. So that's still in the process here. And we will continue to follow-up with that then, on day shift.

As far as the 3 o'clock phone call today, we don't have anything to add other than we won't disagree with the assessment, that it's highly unlikely that's really reading an accurate level.

FRED BROWN: Yes, okay.

RANDY CRANE: Okay?

FRED BROWN: Very good.

RANDY CRANE: All right, hey, have a good night.

FRED BROWN: Thanks, Randy, you too.

RANDY CRANE: All right.

FRED BROWN: Bye.

RANDY CRANE: Bye.

(CONFERENCE CALL ENDED)

3-11 Track 11 (Contains no words to transcribe)

3-12 Track 12 (Contains no words to transcribe)

3-13 Track 13 (Contains no words to transcribe)

3-14 Track 14 (Contains no words to transcribe)

3-15 Track 15

(CONFERENCE CALL INITIATED)

MALE PARTICIPANT: (Indiscernible)

HEADQUARTERS OPERATIONS OFFICER: Yes, this is the Headquarters Operations Officer. I've got Rob Taylor from Japan on the line.

MALE PARTICIPANT: Okay, pass him through.

HEADQUARTERS OPERATIONS OFFICER: Here he comes.

MALE PARTICIPANT: Rob Taylor.

MALE PARTICIPANT: Hey, Rob.

ROB TAYLOR: Hey, Dave. Hey, sorry, Mike ran out the door to go to the wonderful nightly briefing thing.

MALE PARTICIPANT: Yes.

ROB TAYLOR: And I don't think I got a clear turnover with regards to the status of the RST assessment paper.

DAVE: Yes.

ROB TAYLOR: And of course I'm trying to get Citrix to load here. Is the version set, what is the date and time stamp on the --

MALE PARTICIPANT: The one we have is 2100 hours on 3/26/2011.

ROB TAYLOR: That one is blessed.

MALE PARTICIPANT: It's blessed but hold on.

ROB TAYLOR: I understand.

MALE PARTICIPANT: We just had a call with Mike. And he now wants us to get the okay from all these organizations.

So we've called the op centers at GE, and all these places, to say confirm to us when you've briefed senior management on this thing, so that we can let the folks know in Japan that your senior management

is aware of this document.

ROB TAYLOR: God bless the politics.

MALE PARTICIPANT: Yes. So now we're on hold again until we get that. And they said we need it by the time the Chairman gets there in 13 hours or something.

So the good thing is it's Sunday morning here. When people wake up they'll call their senior folks and talk to them. And we'll go from there.

And the Chairman, when he gets there, I thought they, Ruland said they worked all this out last night. The Chairman talked to the Ambassador, thought they had it all done.

And then this morning we hear Chuck said he talked to the Ambassador, and he'd like to know, make sure that at least the senior management were all briefed on this before they do anything with it over there.

ROB TAYLOR: And what's the senior manager going to tell you?

MALE PARTICIPANT: They're not going to tell you anything.

ROB TAYLOR: Exactly. They shouldn't weigh in on this, to be honest with you.

MALE PARTICIPANT: That's right.

ROB TAYLOR: They don't know anything.

MALE PARTICIPANT: That's exactly right.

ROB TAYLOR: Okay, all right. (b)(5)

(b)(5)

MALE PARTICIPANT: Yes.

ROB TAYLOR: So that came from the DOE Under Secretary that Mike and I just briefed, Kelly, John Kelly.

MALE PARTICIPANT: Okay.

ROB TAYLOR: And it's the sensitivity. And we tried to impress upon him the sensitivity that it changed, right.

So different versions have gotten around. And remember there was a version that said flood, flood, flood?

MALE PARTICIPANT: Uh-huh.

ROB TAYLOR: Right? And then we backed off and changed that just a little bit to say understand, go ahead and inert.

MALE PARTICIPANT: Uh-huh.

ROB TAYLOR: And why the change in direction, and dear Gosh, because things continue to involve, hydrogen concerns were bigger than we thought, anyway.

MALE PARTICIPANT: Right.

ROB TAYLOR: So, okay.

MALE PARTICIPANT: Well, if you have the 2100 hours of 326 that's --

ROB TAYLOR: We do.

MALE PARTICIPANT: -- the latest thing we've got.

ROB TAYLOR: Okay. thank you.

MALE PARTICIPANT: Okay.

ROB TAYLOR: We'll hold for direction that you've gotten some blessings here.

MALE PARTICIPANT: Yes.

ROB TAYLOR: I don't think Chuck wants to wait forever for it.

MALE PARTICIPANT: Right.

ROB TAYLOR: For the same reason we just talked about.

MALE PARTICIPANT: Right.

ROB TAYLOR: Okay.

MALE PARTICIPANT: Well, we'll ask the questions and we'll see when somebody gets back with us on these places. But, yes, if they're nervous then we'll wait. Because they want to know.

ROB TAYLOR: Thank you, Dave.

MALE PARTICIPANT: All right, sir.

ROB TAYLOR: Take care.

MALE PARTICIPANT: Yes, bye.

ROB TAYLOR: Bye.

(CONFERENCE CALL ENDED)

3-16 Track 16

(CONFERENCE CALL INITIATED)

PETER ALTER: Reactor Safety Team, Peter Alter, may I help you?

LT. MADOFER (phonetic): Yes. This is Lieutenant Madofer with --

PETER ALTER: All right. Could you speak up, sir? I can't really hear you.

LT. MADOFER: I'm sorry. This is Lieutenant Madofer with USFJ. I had a couple of people

were asking some questions about the reviews and you'd be the best source of this.

Do you know what the current level is? Could we exchange (phonetic) some open source information, basically new (phonetic), that was saying that they were changing the classification, the nuclear accident classification, from five to six? Did that actually happen, or is that supposed to happen or --

PETER ALTER: Okay, wait one.

LT. MADOFER: Okay.

PETER ALTER: Yes. We've not heard that here yet. And that doesn't mean it isn't true.

LT. MADOFER: Okay. So, like I said, it was just on the news media. So people were asking questions about it.

PETER ALTER: Yes. Who is this calling, again?

LT. MADOFER: This is Madofer at U.S. Forces Japan.

PETER ALTER: Yes. No, we have not heard.

LT. MADOFER: Okay.

PETER ALTER: All right?

LT. MADOFER: I had a couple of other questions. We're trying to plan. Currently, right now, we've sent those fresh water barges to, or they're

en route to --

PETER ALTER: Uh-huh.

LT. MADOFER: And we're rooting through the assessment that you guys provided to us. I'm sure (indiscernible) put it. They're talking about flooding Unit 2 containment.

PETER ALTER: Yes.

LT. MADOFER: The question is I would assume you guys would prefer fresh water as a means, borated fresh water as a means to flood containment?

PETER ALTER: Everybody would.

LT. MADOFER: I guess my question is, if we need to start trying to arrange additional barges or anything --

PETER ALTER: Each of the three containments, one, two, and three, would require more than a million and a half, close to two million gallons apiece.

LT. MADOFER: All right.

PETER ALTER: Now, that is if you're putting it on top of the salt water that's already in there, and obviously you're not going to do that, so they're going to want to get rid of that salt water as they're putting in the fresh water.

LT. MADOFER: Okay.

PETER ALTER: Now, how they're going to get rid of that salt water, and where they're going to put it until they can process it, is anybody's guess.

LT. MADOFER: Okay. So you're saying that the actual capacity of the containment, and the reactor, and the torus, is a million and a half gallons?

PETER ALTER: One and a half to two, dependant upon how high they want to flood it.

LT. MADOFER: Okay.

PETER ALTER: They're talking top of active fuel. In this country, we know the containments are designed to two-thirds core height. So that's another, oh, a third of 14 is another four and a half feet.

LT. METAPHOR: Okay. Just for my own curiosity, so I've been told that the torus is like 800,000 gallons.

PETER ALTER: I don't know the volumes of each.

LT. MADOFER: Okay.

PETER ALTER: But the information that we got from more than one source is it's one and a half to two million gallons to the top of active fuel, which is a desired height.

LT. MADOFER: All right. And then there's also the concern about the integrity of the containment

itself. I'm assuming that the design capacity is that the concrete containment is designed to support filling the containment, correct? And the concern is --

PETER ALTER: In this country to two-thirds core height.

LT. MADOFER: Two-thirds core height, all right. And then basically the concern would be whether or not this was damaged due to the earthquake and whether it could still hold that, correct?

Because this is when flooding containment, consider the implications of the water weight on seismic capability of the containment. And you were saying that it's two-thirds. It's designed to flood up to two-thirds core height.

PETER ALTER: That's correct.

LT. MADOFER: Okay. All right, thank you, sir. If you hear anything on the change in the level of from five to six, if that's ever made official, could you please let us know?

PETER ALTER: Okay. Well, how we would know would come from Japan anyway. So I would expect --

LT. MADOFER: That we might actually know at the same time as you guys.

PETER ALTER: Yes, sir.

LT. MADOFER: All right.

PETER ALTER: All right.

LT. MADOFER: All right. Thank you, sir, I appreciate your help.

PETER ALTER: Yes, sir.

(CONFERENCE CALL ENDED)

3-17 Track 17 (Contains no words to transcribe)

3-18 Track 18 (Contains no words to transcribe)

3-19 Track 19 (Contains no words to transcribe)

3-20 Track 20

(CONFERENCE CALL INITIATED)

GLEN WATFORD: Hitachi Engineering Conference Room.

PAT HILAND: Yes. Hi, this is Pat Hiland. I'm with the Nuclear Regulatory Commission. And I'm the Reactor Safety Team manager.

GLEN WATFORD: Yes, sir.

PAT HILAND: And we had a conversation a few minutes ago with a representative from GE Hitachi.

GLEN WATFORD: You got that room and those representatives.

PAT HILAND: Okay. I'm trying to get this

consensus document. And a question had been asked. This document has already been sent over to the site team in Japan.

And what the Ambassador and the site team had asked was have the senior management from the entities that participated been briefed on this assessment document. And do we hear any objections from that senior level, from those organizations.

As I understood on my turnover this morning, I worked on this document yesterday during the day shift, or at least my staff did.

And Bill Ruland had a call last night at 9:00 p.m. and went through the document line by line, and reached a consensus.

And I guess I don't know if you have that as new information or not. But the question was the entities who agreed on the consensus last night, have you briefed your senior management and does your senior management have any holds.

And I'm getting a bit worried that we're trying to wordsmith this document. And nobody's making a decision. Now, who am I speaking to from GEH?

GLEN WATFORD: Yes. This is Glen Watford.

PAT HILAND: Were you on the call last night at 9:00 p.m.

GLEN WATFORD: I was not on the call at 9:00 p.m.

PAT HILAND: Do you know who was for GEH?

GLEN WATFORD: It could have been Andy Lingenfelter.

PAT HILAND: Okay. Did you understand the question? Or did you get a turnover that this consensus had been made, and that they'd gone through line by line with the Reactor Safety Team manager last night?

GLEN WATFORD: Yes. We had that turnover this morning.

PAT HILAND: Okay. So the information you're giving back, and the concerns that you want to talk about now, two hours from now, 10 o'clock, these are concerns from your senior manager, from GEH?

GLEN WATFORD: Based on a briefing with the senior manger on the turnover this morning, yes.

PAT HILAND: And who was the senior manager that you briefed?

GLEN WATFORD: Kevin Walsh. He's the senior vice-president of --

PAT HILAND: Okay. So he's the one that says hold on here for these recommendations?

GLEN WATFORD: He's the one who said, when we were requested this morning to provide that

affirmation that senior management is okay with it in those discussions, as we walked through it, and pointed out the one area of concern that we have, then that's the issue that we have right now.

Yes, we do have one concern with the recommendation. And maybe we can say it's wordsmithing. That's acceptable.

But we were walking him through the guidelines to get him to the point of being able to provide that affirmation. And that's where we were when we got the call, ten, fifteen minutes --

PAT HILAND: Okay. And the call that you anticipate participating in, is this the 9 o'clock call with INPO, 9:00 a.m. Eastern time.

GLEN WATFORD: I was not aware of a 9:00 a.m. We had talked about a 10:00 a.m. call. But it could be 9:00 a.m.

PAT HILAND: What 10:00 a.m., which time zone, 10:00 a.m. Eastern? What was our call? Because I thought INPO was 9:00 a.m. Are you in with INPO and their response center, or you have your own?

GLEN WATFORD: This is in Wilmington, North Carolina.

PAT HILAND: Okay, so you're at Wilmington?

GLEN WATFORD: Yes, sir.

PAT HILAND: Okay. We have a call scheduled at 9:00. I'll tell you what. I'm going to try to set that call up with the same organizations that we had on, I think, two or three times yesterday.

And I'd like you to present the point that you'd like to make. But we've got to make a decision. This document's been wordsmithed now for three days. And I'm just, you understand.

GLEN WATFORD: We understand, yes.

PAT HILAND: All right. Let me see if we can't get everybody to call in at 9:00 a.m. and resolve this. All right?

GLEN WATFORD: That'll work fine.

PAT HILAND: And who am I speaking with again?

GLEN WATFORD: This is Glen Watford.

PAT HILAND: Glen Watford, okay. All right. And you'll call into the HOO and ask to be put on the Reactor Safety Team bridge, correct?

GLEN WATFORD: Yes, we will.

PAT HILAND: Let's do that at 9:00 a.m.

GLEN WATFORD: All right.

PAT HILAND: Thank you.

(CONFERENCE CALL ENDED)

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JAPAN'S FUKUSHIMA DAIICHI

RST PODIUM AUDIO FILES

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MONDAY,

MARCH 28, 2011

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(CONFERENCE CALL INITIATED)

01 Track 01

MR. GARCHOW: Dave Garchow.

MR. BROWN: Hi, Dave, Fred Brown. Sorry, I must have lost you.

MR. GARCHOW: Yes. What's your email address? Can you get on your personal email from where you're at?

MR. BROWN: Yes, I can. It's Frederick, F-R-E-D-E-R-I-C-K.brown@nrc.gov.

MR. GARCHOW: I'm going to send you what I talked to Pat about today and that I've since got input from EPRI and GE Hitachi. We had a call to talk about that and a way we think we can improve helping you.

MR. BROWN: Fantastic.

MR. GARCHOW: Because that was what I told Pat, that this weekend was like making hot dogs by pushing pigs through knotholes.

MR. BROWN: We should try to avoid that as much as possible.

MR. GARCHOW: Okay. I'm going to send you, frederick.brown@nrc.gov, subject proposal, insert file, desktop. Okay, this is a file called RST/DART, Daily Communication Coordination, (indiscernible, possibly Red Zero).

We'll make sure that's what I've got in. Open up, making sure I'm sending -- yes, this is it. I'm going to send you this and then open it. Let's talk through how I think we can make this work.

And this isn't final so if you have a better way I'll update it and I got permission from GE and EPRI, based on you and I's guidance, to do whatever we need to do because they were equally as frustrated. Okay, so I just sent it to you.

MR. BROWN: Okay, I've got my BlackBerry up here and I'm watching. Oh, it just came through. Perfect.

MR. GARCHOW: Thank you, Bill Gates.

MR. BROWN: Yes. Yes, for something. Very good. Let me take a look at this and I'll get back to you.

MR. GARCHOW: Yes, hang on. Let me just talk you through it because it's a lot of text. I just want to get a line on the big picture. So what it looks like right now is at 0300 some good information comes in from Japan and you've been allowing us to listen in, which we appreciate in that 0300 DART call. We would like you to add EPRI to it. GE is already on it.

MR. BROWN: Okay.

MR. GARCHOW: And then when that call ends,

like when your Japan people hang up, your RST lead and my INPO lead and the GE and EPRI leads hang on the phone and then we try to say, okay, we just learned stuff.

Do we have new requests that we want to get working or does this change our recommendations (inaudible)? We all hang up after we understand what's changed and what we want to do new as priority tasks for the day, and then we hang up.

My guys then in EPRI and GE will go start working on those and, well, there's some more information about what this follow-on to the 0300 call is. I won't go over the details. You can read them. And then in one of them is keeping track of a very good action item list of what's open and not and who's got it.

(Indiscernible, possibly And then the 11) o'clock we status the open actions and hopefully some of the simple ones we might be able to get turned around even by 11 o'clock.

Like if someone just says, hey, anybody have any information how many thousands of gallons the drywell at Fukushima 3 holds? GE goes, hey, I think I can find that. They can probably get that by 11 o'clock. Okay, or you might ask for something more complicated.

The 11 o'clock, there's some text around what we do. That's a good time for your other folks, the

Naval Reactors and such, to listen in to what they're hearing and give us the have you thought about this, have you thought about that and add value because they really did add value this weekend I thought. It was painful to sometimes give it.

And what I'd like to do is this 11 o'clock meeting last weekend when I helped set it up with the RST, that was going to be sort of facilitated by INPO. I'm willing to do that again if you would like. It seemed to be working at one point in time.

We just go over the action items and then leave it with the last thing. It's your call. Hey, is there anything else we should be doing as the industry support team to help you?

MR. BROWN: Right, good.

MR. GARCHOW: So you'll see the details of that. What I'd ask you to do is review it and then I'm going to take off. I've been here 13 hours. You can give me another call at this number while I'm driving and send back any changes and maybe we could get this ready. You have the EPRI Emergency Center email number because you've been sending these RST documents to them.

The only action, if you agree to do this, would be, one, would be to whatever the calendar note this is that tells you where to call in for this 0300 call,

if you would provide that to the EPRI Emergency Response Center, then they can start calling in and listening.

And then all of us have the same information and can then really very quickly right after that meeting boil that down into what you need us to be doing to help you and we'll get started on it when our people come in at 5 o'clock.

MR. BROWN: Right. Okay, it sounds good. We should certainly give that a shot. Part of what the frustration I think is is that the 3 o'clock call is not the only call.

And the 3 o'clock call's happening with more of the staff level on the team but there are regular calls going on at the executive level that can be out of sync.

So just off the top of my head what you described, I think we ought to give that a shot but it won't be a panacea I don't think but it can certainly improve things and we need to do that.

So let me take a quick look at it and then we'll go ahead and get that email out to EPRI and if I have any other thoughts or comments I'll email them back to you.

MR. GARCHOW: Right. And then if you would email, if you agree with this, make, if they're not substantive changes but I've got something wrong, I don't

need to approve it, it would be nice if you just sort of would endorse this with the changes and send it out to all the folks at the 11 o'clock meeting.

MR. BROWN: Got you.

MR. GARCHOW: We were going to try to do something different tomorrow at 11 o'clock and then tomorrow morning we can try this first, you know, after the 3 o'clock coordination call.

And I think we can actually make at least some of this work better. I, too, don't believe this is going to be the magic bullet but it will advance us some. I'm sure of it.

MR. BROWN: Good. Outstanding. Very good, thank you, Dave.

MR. GARCHOW: Yes, no problem. Bye, Fred.

MR. BROWN: Yes, have a good evening.

MR. GARCHOW: Yes.

(CONFERENCE CALL INITIATED)

02 Track 02

MR. BROWN: RST, this is Fred Brown.

LCDR YOUNG: Hello. This is Lieutenant Commander Sam Young (phonetic) calling from U.S. Forces Japan.

MR. BROWN: Good morning, Commander Young. Yes, good morning there I guess.

LCDR YOUNG: Yes, yes, you got it right, sir. Yes, I'm trying to follow up. (Indiscernible, possibly I know you guys will have another) report coming out soon but I'm getting asked here.

So, you know, last report showed that increase of concerns on Reactor 1 on the feedwater nozzle up to 299 degrees Celsius. Do you guys have a different temperature in your latest report or do you have any more current data?

MR. BROWN: I'm looking up on the board. Unit 1 we're showing 274 degrees Celsius.

LCDR YOUNG: 274?

MR. BROWN: Yes, as reported from the IAEA March 28th report which will be March 27th data.

LCDR YOUNG: Oh, so even that data is more than a day old?

MR. BROWN: So it's the 29th there now?

LCDR YOUNG: Yes.

MR. BROWN: Yes, yes.

LCDR YOUNG: So how old is your guys' data when you guys get it? Are you guys getting like regular updates from TEPCO?

MR. BROWN: No, not from TEPCO, but we are getting daily updates from NISA and actually I've got a call here in five minutes with our team in Japan and they should be able to update me with the data from yesterday afternoon from NISA.

LCDR YOUNG: Okay. All right, so you guys have a morning call and you guys get the data from the previous afternoon?

MR. BROWN: Correct.

LCDR YOUNG: Okay. All right, so the 274, is that before they reported the 299?

MR. BROWN: Is the 299 in the SITREP from yesterday?

LCDR YOUNG: Yes, it came from your guys's SITREP actually dated March 28th, 0430 Eastern.

MR. BROWN: Okay. Yes, that actually should have been based on data on my shift last night but I don't remember a 299 value so it must have come in after I left. So in all honesty I'm not sure about the 299 but here in a few minutes I should get a new value and then

I can ask how it corresponds.

LCDR YOUNG: Okay. So you guys are going to be putting out another report here in the next hour or two, hour, right?

MR. BROWN: Yes, there's a morning and an afternoon SITREP. Ours has been marked up already. It may actually contain that 274.

LCDR YOUNG: Okay, all right. I guess we're trying to get a handle on like how old some of this data is because we don't know.

MR. BROWN: Yes. It's a regular problem for all of us actually because we get data from about four or five sources and it's very difficult to keep track of what came from where.

The last I had heard was that the feedwater nozzle temperature we thought continued to track upwards so I would go with that information at this point.

And we're not sure of why and it's a question that we've asked of our industry as well. There was an answer floating around but it's not clear that it makes sense.

LCDR YOUNG: Yes. On that last report it also showed the reactor pressure vessel pressure dropping also. So, you know, temperature went up, pressure dropped and so we thought maybe flow had been

reduced but --

MR. BROWN: That was one theory.

LCDR YOUNG: Yes. All right, sir, well we'll wait. Maybe call you in a little, you know, another hour or two and see if there's any new updates.

MR. BROWN: Okay. That would be fine.

LCDR YOUNG: All right, thank you.

MR. BROWN: Yes, no problem. Bye.

LCDR YOUNG: Bye.

(CONFERENCE CALL INITIATED)

03 Track 03

MR. HILAND: Reactor Safety Team, Pat Hiland. This is a recorded line.

MALE PARTICIPANT: Hey, Pat. I've got Mr. Garchow from INPO on the line for you.

MR. HILAND: That's fine.

MALE PARTICIPANT: Please hold.

MR. HILAND: Yes, this is Pat Hiland.

MR. GARCHOW: Hey, Pat, Dave Garchow.

MR. HILAND: Hi, Dave. How are you?

MR. GARCHOW: All right. Hey, we were brainstorming this morning and we're working on maybe a little way we could get a little more structure around how we're coordinating EPRI and GE's input into your effort.

There's some frustration brewing, especially around not having like standard phone call times anymore and not having standard agendas and I don't think we're providing the kind of support that is minute to minute. I think that. I mean, I know we're probably not influencing things on the ground every minute.

So I got a call set up for this afternoon with my counterparts at EPRI and GE and then what I'd like to do is maybe give you a call back and I want to hear

what they think would work.

We like the 11 o'clock phone call. If we could maybe put a little structure around that so it doesn't turn into just long treatises on technical issues. Those sometimes become circular.

MR. HILAND: Yes, I agree.

MR. GARCHOW: That happened several times this weekend.

MR. HILAND: Right.

MR. GARCHOW: But I think we have a way that we could help you be successful and we still want this to be your meeting. We can help facilitate the meeting if you'd like, you know, at least when we get to the technical issues.

But I think there is a real strong need for it to be your meeting because we really don't have the access to the other good thinkers you have from the DOE and Naval Reactors and Bettis Labs. They're actually providing some really good things. I think they are anyway. So if you're open to that. I just want to make sure you're open to --

MR. HILAND: Yes, we would be and, you know, in general I'm in agreement that an 11:00 a.m. structured call would be desirable by all parties. The weekend was a bit different because we had a tasking that we were

assigned that we had to get out and you were involved in all of that (inaudible) and so, you know, we had I think sense of urgency.

MR. GARCHOW: Right. Now, some of the GE folks and even some of my folks felt we were like putting some time pressure, which isn't really one of our safety culture (indiscernible, possibly tech conscious) principles. And they were mindful of that and I think as long as -- so, okay, so I got that.

And the other thing that we appreciate that I think -- when you see this little simple flow chart I want to send you before we talk this afternoon. This 0300 is an important call and we're glad you're allowing us to listen in and we don't want to do anything more than listen in.

And so you're going to see me propose right after that call ends getting right immediately with your guy on the RST, with our INPO lead and say, okay, out of that call, you know, what did we learn and what does that mean? Learned, we want to go look at Recommendation 2 because plant condition changed. That means we got two good questions that they wanted answers to and we'll all agree and say okay.

I can then take that and through my contacts with at least EPRI and GEH get people thinking about all

of that before the 11 o'clock call and we may be able to even have it answered on the 11 o'clock call or tell you when. You know, the question is easier to formulate sometimes than the answer.

MR. HILAND: Correct.

MR. GARCHOW: So we will tell you, hey, that's such a good question we need to get some other people involved so we're not going to have it at 11:00 but we'll have a white paper to you by 2000 and do something like that and then if you --

MR. HILAND: Yes, that sounds like a very good approach.

MR. GARCHOW: Correct. So we'll bring that in with a (indiscernible, possibly simple loop) and a little process diagram maybe, and what we're hoping is the end result is you could get that out. Put it in your words because it's your meeting.

You know, say, hey, we just take the high road. We recognize that. You know, I told my boss that your document we put out this weekend, very good but it was like making hot dogs by pushing a pig through a knothole.

MR. HILAND: It was.

MR. GARCHOW: So I got that and it was what it was but I think we can do this much better now that

we see what it is.

MR. HILAND: Okay, when would you anticipate calling this afternoon?

MR. GARCHOW: 4 o'clock because I'm talking with GE --

MR. HILAND: Okay, so on the 4 o'clock call?

MR. GARCHOW: Is there a 4 o'clock technical call?

MR. HILAND: There is a 4 o'clock, 1600, call that was organized this morning and I think the people, they were going to go back and look at the potential leakage path in the turbine building. I think we sent out just around noontime Eastern some of our thoughts on that and we asked folks to kick it around and see if they could add some value to it and --

MR. GARCHOW: Okay. So let's not hijack that call. Let's let that call go.

MR. HILAND: Right.

MR. GARCHOW: Are you going to be on it or will you have (inaudible)?

MR. HILAND: It'll be Fred Brown. He's relieving me this afternoon.

MR. GARCHOW: Could you share with him this call?

MR. HILAND: Oh, certainly, yes.

MR. GARCHOW: And then what I'll do is I'll call Fred after this call. I don't want to hijack it because it sounds like it's actually going to be worthwhile technically.

MR. HILAND: Okay. Yes, call Fred Brown right after the 4 o'clock call maybe and I'll make sure he's prepped for that discussion.

MR. GARCHOW: Right. And I can send him an email then with our little proposal and maybe over the night we could put a little -- see, there isn't even one calendar notice that has everybody on it.

So that's even a place to start if you have clerical help in your ERC, is get the standard 11 o'clock call and call-in number on the DOE and (indiscernible, possibly NAVDA) and everybody's calendar so we don't miss it. And then if there's reason for these other ad hoc calls we can agree to those during the meeting.

MR. HILAND: Okay, I agree.

MR. GARCHOW: So I just wanted to make sure you were open to this before I started doing the work on it.

MR. HILAND: No, we certainly are, Dave. Thank you very much for the call and the help.

MR. GARCHOW: Okay.

MR. HILAND: All right, bye.

MR. GARCHOW: Good bye.

(CONFERENCE CALL INITIATED)

04 Track 04

MR. HILAND: Reactor Safety Team, Pat Hiland.

MALE PARTICIPANT: Mr. Masse for you, sir.

MR. HILAND: Who?

MALE PARTICIPANT: Masse.

MR. MASSE: Hello.

MR. HILAND: Yes, this is Pat Hiland, Reactor Safety Team.

MR. MASSE: Hi, Pat. How you doing? Todd Masse calling from (indiscernible, possibly INSER), Intelligence Liaison Branch.

MR. HILAND: Okay.

MR. MASSE: Have a question for you. As you know, we're putting out the daily EOC update. The intelligence community is now putting out an accumulated or an (indiscernible, possibly abrogated), I guess, situation report on technical intelligence related to our reactor safety in country. There are five sources for this and the NRC is one of them. They're going to be putting this out on a daily basis and I wanted to come over and show you the first one.

MR. HILAND: Yes, why don't you do it right now?

MR. MASSE: Okay. You got time now?

MR. HILAND: Well, my relief is here but it would be a good idea to show both of us.

MR. MASSE: Excellent. I'll be over momentarily.

MR. HILAND: All right, thanks.

MR. MASSE: Thanks, Pat.

05 Track 05 (Contains no words to transcribe.)

06 Track 06 (Contains no words to transcribe.)

07 Track 07

MR. HARPER: Engineering.

MR. HILAND: Yes, Kevin Harper, this is Pat Hiland. This is a recorded line.

MR. HARPER: Hey.

MR. HILAND: Would you give me Paul Klein?

MR. HARPER: Paul Klein?

MR. HILAND: He's the guy that sits right behind you.

MR. HARPER: Yes. I don't think he's in his office though.

MR. HILAND: Well, just look around the corner and see if he's there.

MR. HARPER: All right. Hold on one sec.

(Off microphone discussion)

MR. HARPER: Pat?

MR. HILAND: Yes.

MR. HARPER: They said he might be in 9B2 so hold on a sec. I'll go check in there.

MR. HILAND: All right.

(Off microphone discussion)

MR. HARPER: Hey, Pat.

MR. HILAND: Yes.

MR. HARPER: I'm going to transfer you to him.

MR. HILAND: All right.

(Off microphone discussion)

MR. KLEIN: Hello.

MR. HILAND: Yes, is this Paul Klein?

MR. KLEIN: Yes. Hi, Pat.

MR. HILAND: Hi, Paul. This is Pat Hiland. You're on a recorded line.

MR. KLEIN: Okay.

MR. HILAND: I'm calling from the Incident Response Center and I'm just following up in that I don't know if you had the tasking assigned to you or not regarding the potential for the bottom head corrosion to be more significant than what we had been calculating and this had to do with an email that was received from the U.C. Berkeley Professor.

MR. KLEIN: Yes.

MR. HILAND: Are you familiar with that topic?

MR. KLEIN: Yes, I received that email this morning.

MR. HILAND: Okay.

MR. KLEIN: So we are working it. It had two questions that the RST wanted a response to.

MR. HILAND: Okay, I just had a follow up. I'm the Reactor Safety Team Manager right now and I had you and Bob Hardies down as the contact people on this.

MR. KLEIN: That's correct.

MR. HILAND: Okay. And you're pursuing it then?

MR. KLEIN: We are and the Question 2 actually went to Maintenance Group because they're asking what the maximum design pressure per the code is for containment.

MR. HILAND: Okay, for the containment itself?

MR. KLEIN: Yes.

MR. HILAND: Yes, okay.

MR. KLEIN: And so we've passed that to her and she said she'll get an answer to us shortly on that.

MR. HILAND: Okay, yes, that should be a simple one to answer. Okay, good. Thanks. And then you'll call back to the Response Center by -- my shift turnover's at 3:00 p.m. You think you'll have an answer by then?

MR. KLEIN: 3:00 p.m. So you want a call back and not a written response?

MR. HILAND: You can respond in writing via email. What's our email address? Is it RSTO1?

MALE PARTICIPANT: .hoc.

MR. HILAND: Okay. It's RSTO1. --

MALE PARTICIPANT: Zero.

MR. HILAND: It's 01. RST01.hoc. Then it's @nrc.gov. So it's Reactor Safety Team dot Headquarters Operations Center, HOC, @nrc.gov. And before 3 o'clock would certainly be appreciated.

MR. KLEIN: Okay, that'll be our target.

MR. HILAND: And you could include the response from (indiscernible, possibly MENA's) branch in that if you could.

MR. KLEIN: Okay. If we wanted to call you, Pat, what would be the best number?

MR. HILAND: Just call the HOO and just say you'd like to speak with the Reactor Safety Team and they'll ring it in here and somebody will pick up.

MR. KLEIN: Okay, we'll send something written and we may follow that up with a call just to make sure you received it.

MR. HILAND: Good, that's fine. All right, bye.

MR. KLEIN: Thank you.

(CONFERENCE CALL ENDED)

08 Track 08 (Contains no words to transcribe.)

09 Track 09 (Contains no words to transcribe.)

10 Track 10

(CONFERENCE CALL INITIATED)

MR. HILAND: Reactor Safety Team, Pat Hiland.

LCDR YOUNG: This is Lieutenant Commander Young calling from USFJ. Got some questions we wanted to ask you about.

MR. HILAND: Okay. Do you want to ask me directly or you want to go through your embedded Naval Reactors guy?

LCDR YOUNG: You guys are fine.

MR. HILAND: Okay.

LCDR YOUNG: (Inaudible) Captain Capria. You're saying embedded. You think we got a NR guy here at the joint support --

MR. HILAND: Yes, I've got a Naval Reactors guy here in the Reactor Safety Team.

LCDR YOUNG: Okay, got it, got it. I thought you were saying he's here. It's more of a status of the plant question than a technical question.

MR. HILAND: Okay.

LCDR YOUNG: We're just looking at the NR command bridge. They had reported that increase on Unit 1 feedwater, feed header temperature.

MR. HILAND: Feedwater nozzle

temperature's gone up, high 290s, right?

LCDR YOUNG: Yes, we were trying to look at -- we wanted to find out have you guys looked back to see how long that trend has been going on?

MR. HILAND: Well, I think what our quick assessment of it is that the feedwater flow has been reduced on Unit 1. They were injecting I think maybe 55 gpm yesterday.

And then I came in this morning. The injection flow is down to 30 gpm and the correspondence to that is the feedwater nozzle temperatures have gone up. The bottom head temperature's gone up a little bit but the nozzles seem to have been affected.

And all I know on why they did that is what you hear on the news. They did that to reduce the steaming that they see coming from the plants. Why they believe that that's effective I have no idea.

Okay, now, we have indications that the containment is still intact on Unit 1. We have indications the reactor vessel is intact. They may have some leakage out the seals but I'm not absolutely convinced that the source of the steaming on Unit 1 is coming from the containment. There could be some minor bypass but the containment's still holding pressure.

LCDR YOUNG: Okay. Is that the metric

you're looking at for containment integrity, is the pressure being held?

MR. HILAND: Yes.

LCDR YOUNG: So you see the trend only being about one day and that seems to correlate with when they reduced the feedwater flow from 55 gallons per minute to around 30 gallons per minute?

MR. HILAND: That's our consensus in my first hour on shift.

LCDR YOUNG: Hey, it's better than what we got out here so (inaudible).

MR. HILAND: Tom, what's your last name again?

MR. VAVOSO: Vavoso.

MR. HILAND: Vavoso. Hey, the guy that we got here from Naval Reactors is Tom Vavoso.

LCDR YOUNG: Yes, we've --

MR. HILAND: And what was your name again?

LCDR YOUNG: This is Lieutenant Commander Sam Young but I've also got Captain Capria and Lieutenant Commander Mercer listening in.

MR. HILAND: Okay. And I'm Pat Hiland. I'm the current Reactor Safety Team Manager in the NRC Response Center.

LCDR YOUNG: Hi, Mr. Hiland.

CPT CAPRIA: Hi, this is Captain Capria. Do you have what the trend of the two numbers over the last two days?

MR. HILAND: I don't have that. I could get it and forward it to you. I don't have it ready at my fingertips.

CPT CAPRIA: Thank you. We're just --

MR. HILAND: I have to go back and have my staff look it up.

CPT CAPRIA: Yes. You know, I'm trying to make a decision. Do we start calling our flag officers and give them a heads up on this as a possible change in (inaudible).

MR. HILAND: Well, it's certainly a change in the parameters of Unit 1's reactor vessel. You know, our initial reaction is that it has a source as the reduction in the freshwater flow into the vessel.

We don't have any confirmation of that. We're just speculating, you know, until we get better information from the Site Team. I think a week ago those temperatures were even much higher than they are today.

LCDR YOUNG: Yes, I think they were in the 400 --

MR. HILAND: Yes, I think 400 centigrade if I'm not mistaken. And, I'm sorry, you're calling me from

-- you said that acronym. I didn't catch it real fast.

LCDR YOUNG: Well, we're calling from the U.S. Forces Japan headquarters building. We're, you know, part of the Joint Support Force, the JSF that's formed out here. And now Unit 2 and 3, you're still seeing steady temperatures, is that right?

MR. HILAND: Well, for Unit 2 and 3, yes, we're still seeing steady temperatures but of course the instrumentation is questionable on both units. We believe that there is a loss of containment integrity for both units although we're not sure the significance of it.

It could just be some minor leakage through seals, penetration seals, that type, through the containments. But, you know, the instrumentation says they're not holding any pressure but of course the instrumentation is very unreliable.

LCDR YOUNG: And You didn't see any reduction in feedwater flow to Units 2 and 3?

MR. HILAND: I thought someone told me that Unit 2 there was a reduction in the -- well, let me look at that. I won't give you an answer because one of my staff people came up and they thought there was a reduction in feedwater flow to Unit 2, but we haven't pulled the numbers up to trend yet.

LCDR YOUNG: Okay. Just a question, the feedwater flow rate, is that reported by the Japanese?

MR. HILAND: Yes.

LCDR YOUNG: Okay, and did they report a decrease in the feedwater flow to number 1 reactor?

MR. HILAND: Well, they reported the flow rate and the decrease in it was to reduce the steaming. That was their cause for why they reduced the flow rate. Now, according to the Severe Accident Mitigation Strategies, they need to maintain a minimum of 25 gallons per minute through a debris field.

LCDR YOUNG: Okay, sir. Actually as long as you're talking about, when you're saying through the debris field, is that at least down to the inlet plenum, at least down the side of the reactor vessel?

MR. HILAND: Yes. What our expectation is is the, you know, the feedwater's going in through the feedwater nozzles. It's the outside of the shroud. It's filling up that area and it's flowing down through the jet pumps onto the lower plenum plate.

And then, you know, whatever goes up through the plenum to cool what we're terming the debris field, we're assuming there's a swamp in the core and the minimum flow to assure reactor vessel integrity is 25 gallons per minute.

LCDR YOUNG: Where do you think the other water's going? Is that --

MR. HILAND: What other water?

LCDR YOUNG: Say again.

MR. HILAND: What other water?

LCDR YOUNG: Well, do we think all that water is actually making itself up into the core and turning the steam so that's what's going through the field?

MR. HILAND: Whatever is not lost out the seals, yes.

LCDR YOUNG: Does NR have any position on the temperature rise?

MR. HILAND: NR, Naval Reactors?

LCDR YOUNG: Reactors.

MR. HILAND: Tom, do you have any position on the temperature rise that we've seen on the feedwater nozzles? This is the U.S. Forces of Japan, the Joint Task Force.

MR. VAVOSO: Is there a line I can pick up to --

MR. HILAND: We can put it on the speaker. Let me put you on a speaker. The Naval Reactors rep is standing right next to me.

(Off microphone discussion)

MR. HILAND: Okay, this is a recorded line. Go ahead and ask that question again.

CPT CAPRIA: This is Captain Capria. What I'm looking at is we saw the temperatures rising early today and said they went from approximately 200 to, I don't have the --

(Off microphone discussion)

CPT CAPRIA: I guess what I'm looking at is I understand the decrease in feedwater rate. Is that, if the (inaudible) Japanese did do that and it's reasonable is that why we think the temperature went up, that sensor point for the feedwater?

MR. VAVOSO: All right, well, this is Vavoso. My opinion at this point, not knowing all that has gone on in the last 12 hours or so, is that it's an indicator that they're not cooling the core as well as they were earlier, which would suggest to me the need to increase the flow rate.

That's just common sense speaking. I don't have any inside knowledge that would lead me to that conclusion other than knowing that the temperature has risen. It's our only indicator of the effectiveness of the cooling and it suggests we're not cooling enough.

CPT CAPRIA: Okay, Mr. Vavoso. Thank you very much. Again, what I heard on the, you know, as we

were comparing notes that, you know, there's no explanation for the increase in temperature on the command bridge earlier as we're reviewing notes.

MR. VAVOSO: Well, the one thing that I guess I would want to check right now is what has been the recent history with throttling the flow? And if they've throttled the flow back and the temperature went up, then that would be an apparent cause and I would reach the conclusion I just stated, that the flow is insufficient to keep it cool.

LCDR YOUNG: Sir, how much of a lag time do you think there is between, I mean, throttling the flow and us actually seeing changes in temperature?

MR. HILAND: We don't have any idea. Those are details that we can't address. Got to be at the site for those.

LCDR YOUNG: All right. Appreciate it. That's all we got here.

MALE PARTICIPANT: Thank you, Mr. Vavoso. Thank you.

MR. HILAND: All right, thanks. Have a good day. Have any more questions, you know, feel free to call us or go through Naval Reactors.

LCDR YOUNG: All right. Thank you, Mr. Hiland.

MR. HILAND: All right.

(CONFERENCE CALL INITIATED)

11 Track 11

MALE PARTICIPANT: RST, this is a recorded line. May I help you?

MALE PARTICIPANT: I've got Mr. Larson (phonetic) for Fred Brown.

MALE PARTICIPANT: Just a moment.

MALE PARTICIPANT: Please hold. Here he comes.

MALE PARTICIPANT: Mr. Larson.

MR. BROWN: This is Fred.

MR. LARSON: Hey, Fred. Apparently I can't call that number from outside. Carl (phonetic) Larson.

MR. BROWN: Oh, I'm sorry, Carl. That's what it says on the phone. So you had to call through the switchboard?

MR. LARSON: I guess so.

MR. BROWN: Yes, okay. I apologize.

MR. LARSON: The only message was to give Dave Garchow a call. Let me give you his cell number.

MR. BROWN: Okay.

MR. LARSON: It's (b)(6)

MR. BROWN: Understand, (b)(6)

MR. LARSON: That is correct.

MR. BROWN: Okay. I'll give him a call.

MR. LARSON: Okay. Thank you so much.

MR. BROWN: Yes, thank you. And just while I've got you, real quick.

MR. LARSON: Sure.

MR. BROWN: When we email you our question, we're going to attempt to be real clear about units and flow rates and containment integrity implications because I think it was pretty clear in that call we were covering a lot of territory and it was hard to keep it all straight.

So if there's confusion about what we send you, if we didn't get it very clear, please just give me a call back through the HOO or however and we'll talk through the question.

MR. LARSON: Okay, I appreciate that, Fred. That's great.

MR. BROWN: Good, very good. Thank you very much.

MR. LARSON: All right, we'll see you.

MR. BROWN: Yes, bye.

MR. LARSON: Bye-bye.

(CONFERENCE CALL INITIATED)

12 Track 12

MR. GARCHOW: This is Dave Garchow.

MR. BROWN: Hey, Dave. Fred Brown with the Reactor Safety Team. I'm the on-shift Director.

MR. GARCHOW: Yes. I assume you got a bit of a turnover from Pat on what we were trying to do here today.

MR. BROWN: I think so. I did have a brief --

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TUESDAY

MARCH 29, 2011

+ + + + +

(CONFERENCE CALL INITIATED)

(01 Track 01)

FRED BROWN: Reactor Safety Team, this is Fred Brown.

HEADQUARTERS OPERATIONS OFFICER: Yes, Mr. Brown, I got a call for you on the line. Please hold.

FRED BROWN: Okay. This is Fred Brown.

JACK EISNER: Fred, Jack Eisner (phonetic).

FRED BROWN: Hey, Jack.

JACK EISNER: Hey, I got this feedback for alternate methods for sampling hydrogen when you can't dehumidify. And Brett Rini created it. And it's this good document. But it says the methods described in this NEDC document 33 something, Appendix D --

FRED BROWN: Right.

JACK EISNER: -- the pages are attached. And they're not.

FRED BROWN: Right. Yes, actually GE Hitachi created that answer.

JACK EISNER: Okay.

FRED BROWN: And so we're going back to GE Hitachi --

JACK EISNER: Okay.

FRED BROWN: -- and asking them if they can provide us that.

JACK EISNER: Okay. Any possibility -- And if you can't, you can't. We leave in two hours to go to the TEPCO NISA meeting.

FRED BROWN: Okay.

JACK EISNER: If you could get it that would be great. Because this is -- I mean, you know, we are interested in getting hydrogen samples. But if you can't, you can't. So if you don't get it now, then the next time to really do it would be, you know, 12 hours later.

FRED BROWN: Understand.

JACK EISNER: My time line. Okay, good. So you're working on it then?

FRED BROWN: Yes. We're actually going to call them and see if they can send it. And we'll get it to you as soon as we get it.

JACK EISNER: Okay. There was one other data point that Chuck Casto mentioned, is that he had gotten a call from Mike Webber on this issue with the DoE change to guidance on not to fill.

FRED BROWN: Yes.

JACK EISNER: He mentioned that the White House was providing -- This is what he said, the White

House is providing some mark up. And that the RST document would be changed this morning. And I'm sure you probably haven't heard that, because we didn't.

FRED BROWN: No.

JACK EISNER: Okay. Well just some data points. I know you guys are working on it. We're going to stay out of that until you want us to come in.

FRED BROWN: Chuck said -- Can you repeat that? I didn't know you were going --

JACK EISNER: Yes. Chuck said that when he got called by Mike Webber the saw process was that it had been decided by the group. And that the White House is going to provide the feedback. And that the change to the document -- And he didn't say this.

But they assume that the RST document will be done this morning. Like it was the high priority. And we told them, hey we hadn't heard that. And I just told him I would tell you that there's some other discussion. I think that came from Mike Webber.

FRED BROWN: Huh. Okay.

JACK EISNER: That's all I know.

FRED BROWN: Okay.

JACK EISNER: Thanks, Fred.

FRED BROWN: Yes. Appreciate it. Thanks, Jack.

JACK EISNER: Okay.

FRED BROWN: Bye.

(CONFERENCE CALL ENDED)

(CONFERENCE CALL INITIATED)

(02 Track 02)

(Contains no words to transcribe)

(CONFERENCE CALL INITIATED)

(03 Track 03)

(Contains no words to Transcribe)

(CONFERENCE CALL INITIATED)

(04 Track 04)

DAVE SKEEN: Reactor Safety Team, this is Dave Skeen.

JOE O'HARA: Hi Dave, Joe O'Hara, Ops Officer. I've got INPO on the line for Fred. Stand by.

DAVE SKEEN: Okay.

RANDY CRANE: Hello.

DAVE SKEEN: This is Dave Skeen with the Reactor Safety Team.

RANDY CRANE: Hey, Dave. Randy Crane, how are you?

DAVE SKEEN: Good. How are you doing, Randy?

RANDY CRANE: Pretty good. Hey, I just wanted to have the pre-meeting with you, just to make sure we're all on the same page.

DAVE SKEEN: Okay.

RANDY CRANE: Last night I thought we were in complete understanding of everything. But I guess the day shift had a little bit, had a couple of twists.

DAVE SKEEN: Yes, apparently some consternation from day shift. That's what I was, got

turned over to me.

RANDY CRANE: Yes, I thought we were good. So there's this new email on, that we're going to have the DART call at three o'clock. That's really between, internal to the NRC. But we're invited to listen in.

DAVE SKEEN: Right.

RANDY CRANE: And then when that ends we'll stay on the line --

DAVE SKEEN: Right.

RANDY CRANE: -- and kind of go through the agenda of what do we have on our plate, what do we have to owe you, is there anything new?

DAVE SKEEN: Right. That's what I saw was this --

RANDY CRANE: Okay.

DAVE SKEEN: -- daily tasking, daily task alignment meeting --

RANDY CRANE: Yes.

DAVE SKEEN: -- is what they're calling it.

RANDY CRANE: Yes. Okay. I'm good with that. And I, you know, we don't have anything to provide you as far as answers. But I have that email that has the three questions on it. And the top two are for INPO. And the third one is for GE.

DAVE SKEEN: Okay. Hang on. Let me look

through my stuff and make sure we're aligned there. I remember Fred turning something over to me about that. And I remember seeing something about three questions here.

RANDY CRANE: Yes. It was a email at 10:21 from --

DAVE SKEEN: I got it. Here it is.

RANDY CRANE: So pretty much on those two, I'm going to be sitting here for a good part of the night just kind of giving my input. But really setting the stakes for our team that we're going to have come in at 6:00 a.m. in the morning, that were primarily the INPO authors of that assessment paper.

And they'll look at whether that assessment paper needs revision or not, and attempt to provide an answer to these questions. And we'll provide you a markup prior to the eleven o'clock call, so that they can talk about it on the eleven o'clock call. Is that kind of what you expect?

DAVE SKEEN: Yes. That's kind of what I was thinking. Because the way Fred turned it over, he said, that would be, they'd discuss this at the eleven o'clock, so that they would have something, they hoped to have some answers by then.

RANDY CRANE: Okay, yes. So we have the

technical team will in at six to start going through that. And do you have any new questions that you anticipate are going to be generated between now and three? Or anything that we don't have?

DAVE SKEEN: The only thing, and I'm not sure if you guys were privy to this. Rod Taylor, our guy on the ground over in Japan, had sent in a note for us to be looking at it.

And so we'll talk about this I'm sure. Let's see who he sent this to. I think this is just internal to us. But they still have concerns about the spent fuel pools in Unit 3 and 4.

RANDY CRANE: Okay.

DAVE SKEEN: They're not sure that there's not leaks in those pools. And the fact that the Japanese are spraying them like -- I think they said the other day, at a 150 tons for, you know, about three hours a day they're spraying the spent fuel pools.

But the team is concerned that they're not filling those up above top of active fuel. And they've kind of asked us, you know, what do you guys think about the likelihood of these things having leaks?

And, you know, could we look at it, and have an assessment of what we might think the right thing to do? If we do think they're leaking, should we be

recommending that they just fill these things until they fill over the weir wall? If they do have level indication in the surge tank, the skimmer tank there --

RANDY CRANE: Right.

DAVE SKEEN: -- and they don't have actual level for the spent fuel pool. If you fill it up above the weir and it spilled over, then you at least know you got it that high. And at least one time you could do that --

RANDY CRANE: Right.

DAVE SKEEN: -- and figure out that the water came over. So that was, they'd like us to think about that, and --

RANDY CRANE: And how you'd even tell if it was spilling over, you know.

DAVE SKEEN: Well I don't know how you would, other than -- The understanding we had was they are reading some kind of level indications.

RANDY CRANE: Right.

DAVE SKEEN: But the level indications we think they're getting are on the --

RANDY CRANE: Yes, the skimmer tank.

DAVE SKEEN: The skimmer tank, right. And if that's the case, and they're not changing, well I

don't know if the water's having an impact or not, right? But if I saw --

RANDY CRANE: Right.

DAVE SKEEN: -- that the level started increasing in that area, then you would say, well okay, water's spilling over the weir, so they've filled the pool back up at least, at least once, you would know that.

RANDY CRANE: Okay, yes.

DAVE SKEEN: Now if you can't empty the water out of the weir tank you won't know if it's happening again, if you fill the weir tank up and you're kind of done, right?

RANDY CRANE: Right.

DAVE SKEEN: And you won't know what's happening there. And I think that goes kind of in hand with, you know, we had talked the other day about are there other ways we could discern what the level is in these fuel pools?

RANDY CRANE: Right.

DAVE SKEEN: And I'm not sure if we ever came up with any --

RANDY CRANE: I don't think we did. Althoguh there's still maybe an ongoing effort to talk about potential robotics, the kind of things going in

and looking.

DAVE SKEEN: Right.

RANDY CRANE: But I don't think there's any --

DAVE SKEEN: Okay.

RANDY CRANE: -- conclusive --

DAVE SKEEN: And I don't know if industry had been looking at that to try to figure out what are ways they could figure this out. But, you know, and then that goes into should we change our recommendation? And I thought early on when we suspected there was damage to 3 or 4, the fuel pools, we said, we ought to just be putting water in until you overflow it.

RANDY CRANE: Right.

DAVE SKEEN: We didn't see a down side to that. Other than, I guess, if it's spilling over and going down into the lower levels of the reactor building. If you're trying to get access back into some of the rooms to try to restore equipment, that might be of issue, or something. But --

RANDY CRANE: Right. And this, the overall amount of water clean up that's going to have to happen, of highly contaminated water.

DAVE SKEEN: Right.

RANDY CRANE: I'm presuming that the fuel

in there is damaged.

DAVE SKEEN: Well that's what we think, right? I mean, Unit 4 they had the hydrogen explosion. And there wasn't any fuel in the reactor. So it had to come from the fuel pools, only place you're going to have an explosion like that.

RANDY CRANE: Right. And so where did it come from, except for from damaged fuel.

DAVE SKEEN: Yes. But anyway that's a question they had floated to us earlier this evening, before I got on shift. And so our guys are kind of thinking about that. But what our assessment might be.

And they asked if we had any thoughts about where the leaks might be, and how bad it is. But we have no information on that, that we could even guess as to, you know, you had an explosion on Unit 4. Looked like part of the wall blew out. But they told us no, the spent fuel pool is intact, is what TEPCO and NISA were saying. But our guys just --

RANDY CRANE: Right.

DAVE SKEEN: -- they're not happy with that answer they're getting from them. And they're asking us do we have any thoughts on it.

RANDY CRANE: In my experience with fuel pools -- I was at, went through RO class at Brown's

Ferry. There was leaks just due to, you know, some sort of welds. And it was all manageable and, you know, a couple of day kind of thing.

DAVE SKEEN: Right.

RANDY CRANE: But that was without an earthquake and tons of equipment falling in there.

DAVE SKEEN: Right, right.

RANDY CRANE: So there may be seams in the pool all over the place.

DAVE SKEEN: Sure. And I just want to say we have no way of knowing. And unless they get some reliable form of looking at level, I don't know how we can tell you. You surely could be damage and there could be leaks, but --

RANDY CRANE: And there likely is.

DAVE SKEEN: Yes.

RANDY CRANE: You know, how bad is truly speculative.

DAVE SKEEN: Right.

RANDY CRANE: Yes.

DAVE SKEEN: But we know that this practice of spraying for three hours seems to have steam still coming out of 3 and 4. I think that -- I haven't seen the latest videos. But that's what they've been reporting --

RANDY CRANE: Right.

DAVE SKEEN: -- is that steam still seems to be coming out of 3 and 4, Units 3 and 4. so that tells you there must be somewhat in there that's at least steaming.

RANDY CRANE: That's true.

DAVE SKEEN: Allowing it to steam. But of course, their concern is if you could cover the pool and stop the steaming, then that would stop some of the release. It would help you with shielding in front of the shine and that kind of stuff.

RANDY CRANE: Right.

DAVE SKEEN: But anyway, they'd asked us that question, to think about it. So our guys are looking at it right now. But I don't really know what the final answer is here, other than --

RANDY CRANE: We have discussed it here too. And the same thing, I think, inconclusively. But that's not a new question to us.

DAVE SKEEN: But I think the answer is, yes you should probably be trying to fill them up. If they're just spraying three hours a day, and that doesn't seem to be overcoming the steaming that's going on, maybe you should think about putting more water in to see if you can overcome, you know. If you can get it up to

the top maybe that would stop some of the steaming issues.

RANDY CRANE: Yes. And almost like, you spill until steaming stops. And then, you know, 12 to 24 hours later when steam starts being generated, you fill it again --

DAVE SKEEN: Yes.

RANDY CRANE: -- until it stops.

DAVE SKEEN: Right. I mean, that seemed to be something that would make sense.

RANDY CRANE: Yes.

DAVE SKEEN: All the other things I deal with, I don't know, for some reason TEPCO and NISA both seem to be saying, well, you know, we think we're okay with the spent fuel pools, as long as we just spray them with so much, spray them three hours a day to keep some water in there.

That seems to be sufficient. So I think our guys are just nervous. They want to know should that be a higher priority for them to put some water in there.

RANDY CRANE: Sure. Now what about the plutonium stuff? Any burning questions on that?

DAVE SKEEN: What I heard on TV, and I'll ask our protective measures folks here, was that yes,

they did find some plutonium. But they weren't sure it was from the reactor, or just, you know, left over, you know. This wasn't new stuff that (inaudible) still tilting way back when.

RANDY CRANE: Yes, yes. We have some input from our guy in Tokyo. And I presume that it came from TEPCO, that has the raw data for what amounts were found where. And the amounts, it says, are comparable to the background amount from the fallout throughout the country.

However, the ratio of the various plutonium isotopes would indicate, are different. And therefore, that would indicate that this is probably from fuel. And the only fuel that has, you know, a reasonable amount of plutonium is the MOX fuel in Unit 3.

DAVE SKEEN: Right.

RANDY CRANE: So that's just a data point. Certainly doesn't prove anything.

DAVE SKEEN: Right.

RANDY CRANE: But --

DAVE SKEEN: I think our PMT suspected some of it may be from joul. But, you know, again sketcy, we're not really sure, we don't get all the information, so --

RANDY CRANE: Right.

DAVE SKEEN: Yes.

RANDY CRANE: Okay.

DAVE SKEEN: I think you probably know as much as we do, or maybe a little more there.

RANDY CRANE: Okay. We're not going to get issued an official new question though at three or anything?

DAVE SKEEN: Not that I know of on that, no. I haven't heard anything on that.

RANDY CRANE: Okay. Okay. and then I guess the other thing is, I guess from the turnover I got was the throttle flow issue that INPO's looking at that with industry.

And that will be on the eleven o'clock call tomorrow. That's what I was going to feed to him at three. And then also, that's the whole balance, the environmental impact of discharging more water in there, versus the need to flush and cool at --

DAVE SKEEN: Right.

RANDY CRANE: -- maximum amount.

DAVE SKEEN: Right.

RANDY CRANE: Because we got that, I got a forward from you guys on the crack growth rate stuff. And it is worse than I thought.

DAVE SKEEN: Yes.

RANDY CRANE: Maybe not an immediate, like in the next day concern, but certainly an immediate in the next month concern.

DAVE SKEEN: Right. And so that was another one that we wanted the guys to look at and maybe talk about at the eleven o'clock call too. To, you know, can we talk about it at that point. So that was the two issues I think --

RANDY CRANE: Okay.

DAVE SKEEN: -- for industry folks for them. Other than that we'll hear whatever new things are going on.

RANDY CRANE: Sure.

DAVE SKEEN: And we'll go from there.

RANDY CRANE: Okay. Hey, thanks a lot.

DAVE SKEEN: No problem, Randy.

RANDY CRANE: Talk to you in a couple of hours.

DAVE SKEEN: All right, sir.

RANDY CRANE: Right. Bye.

(CONFERENCE CALL ENDED)

Official Transcript of Proceedings

NUCLEAR REGULATORY COMMISSION

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JAPAN'S FUKUSHIMA DAIICHI

RST PODIUM AUDIO FILES

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WEDNESDAY

MARCH 30, 2011

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(CONFERENCE CALL INITIATED)

(01 Track 01)

GREG: Reactor Safety Team, this is Greg.

HEADQUARTERS OPERATIONS OFFICER: Yes, this is -- Mr. Carl Larson with INPO is on the other line. He was looking for Mr. Mike Brown. But I think Mike might be off shift.

GREG: Mike has gone off shift.

HEADQUARTERS OPERATIONS OFFICER: Would you like to talk to one of our other -- Well I'm just going to connect you, and you can direct him as you see fit.

GREG: Okay, sure. I've got a Larson from INPO going to be coming on the phone, so you might want to stand by. He's looking for Mike Brown, but actually I'll let (inaudible) Larson coming on. Transferring over.

CARL LARSON: Good afternoon.

CHUCK NORTON: This is Chuck Norton.

CARL LARSON: Chuck, we've been dealing with Mike Brown during the day. My name's Carl Larson, I'm at INPO. I'm the technical coordinator for the ERC here. And I don't know if Mike's gone off shift --

CHUCK NORTON: I'm Mike's relief.

CARL LARSON: Okay. Excellent. So Chuck, we owed the NRC our document. And our document is proposed changes to, that would be incorporated into room zero of the --

CHUCK NORTON: Which will become --

CARL LARSON: The start of Rev-1 (phonetic), that's correct.

CHUCK NORTON: And your name is who again?

CARL LARSON: Carl Larson.

CHUCK NORTON: Larson.

CARL LARSON: Yes.

CHUCK NORTON: Okay.

CARL LARSON: So we owed you that at 1600. However, we've been getting comments in as recently as 20 minutes ago.

CHUCK NORTON: Did you get the DoE comments?

CARL LARSON: Yes.

CHUCK NORTON: Okay. I was looking over their comments. They're making some -- You know the comment about hydrogen coming out of salt water quicker and stuff, you know. Take a careful look at some of those comments that they've had. So you're saying that you're going to be later than 4:00 p.m. getting that out?

CARL LARSON: Yes. So what we were wondering is if we could put off our -- We think we can make a 1700 deadline, and forward that to you to be distributed.

CHUCK NORTON: Okay.

CARL LARSON: And then we were going to propose an 1800 phone call.

CHUCK NORTON: Okay. Now --

CARL LARSON: And, but that's at your pleasure. We can --

CHUCK NORTON: Yes. Can we like, I'd like to -- You see we're supposed to have an 1800 phone call with the site team to discuss the document. And if we put that off -- Now I'm just, I'm the BWR analyst. Our director for the RST is in an executive team briefing right now. So I --

CARL LARSON: Yes.

CHUCK NORTON: I understand what you want to do. You want to prpose getting the document out by 1700.

CARL LARSON: Right.

CHUCK NORTON: And then having an 1800 call.

CARL LARSON: Right.

CHUCK NORTON: Okay. I'm going to say yes

to the 1700. But we might have to step the call up, you know. We want it right.

CARL LARSON: Yes.

CHUCK NORTON: But we don't want to put out a flawed document from the United States going out. And you've got the comments from everybody coming in, from DoE, from Mike Brown sent some comments in.

CARL LARSON: Right.

CHUCK NORTON: I'm sure you're getting some from Naval Reactors and (inaudible) and everybody. And that's a lot of work reviewing all of that and get it incorporated.

CARL LARSON: Oh certainly, yes.

CHUCK NORTON: And you want to -- And just because they're making comments doesn't necessarily mean they're right. So you need to be checking on that too.

CARL LARSON: Right. And we are making this kind of INPO's product, based on our best advice. So some of the comments are not being incorporated.

CHUCK NORTON: And then we'll, can discuss that in the 1700 call.

CARL LARSON: Right. And we'll be just, we'll kind of put those in different bins. And talk about --

CHUCK NORTON: Okay.

CARL LARSON: -- and here's why we didn't incorporate them.

CHUCK NORTON: Okay. It could get to be a little bit of a contentious call.

CARL LARSON: Yes.

CHUCK NORTON: But we're all professionals and can take it.

CARL LARSON: Right, right.

CHUCK NORTON: Okay. So I'm looking for the document that was supposed to come at 1600. It's going to come at 1700.

CARL LARSON: Right.

CHUCK NORTON: And you're proposing an 1800 phone call.

CARL LARSON: Yes. But I'm sure you'll probably want to get back to me and --

CHUCK NORTON: Yes. We'll get back to you on that. I'm going to say yes to the 1700, because we don't want to rush things just to -- I'm going to say yes to the 1700. If you want to get the document to us at 1700, I'm going to say that's okay.

CARL LARSON: Yes.

CHUCK NORTON: Because I'd rather have a good document. The 1800 phone call does conflict with

our other call. I can't say that I can put the site team off for our call.

CARL LARSON: Right.

CHUCK NORTON: So we might have to, that might get a little bumpy there. But I need to put that to my lead. What's your number if I need to call you back?

CARL LARSON: Yes. It is (b)(6)

CHUCK NORTON: All right, Carl, I'll get back to you.

CARL LARSON: Okay. And, you know, if it works best that we put it off another day, that's the way it will go.

CHUCK NORTON: Well we've got director level people over there that are putting demands on us to get something.

CARL LARSON: Okay.

CHUCK NORTON: But we don't want to give them a bad product.

CARL LARSON: Right.

CHUCK NORTON: So anyway, I've told you 1700 is okay.

CARL LARSON: Yes.

CHUCK NORTON: And we'll work for seeing the document at 1700.

CARL LARSON: Okay.

CHUCK NORTON: Thank you very much.

CARL LARSON: Very fine. Thank you, Chuck.

CHUCK NORTON: Bye.

CARL LARSON: Bye.

(CONFERENCE CALL ENDED)

(CONFERENCE CALL INITIATED)

(02 Track 02)

FRED BROWN: Reactor Safety Team, this is Fred Brown. May I help you?

HEADQUARTERS OPERATIONS OFFICER: Yes. I have Carl Larson on the other line, with INPO. I'm going to connect you.

FRED BROWN: Great. Thanks.

CARL LARSON: Hello, is this Fred?

FRED BROWN: Hi, Carl, it is. Say, the file just came through. Thank you.

CARL LARSON: Okay. That's all I wanted to let you know. And any last words? I'm ready to head home I think.

FRED BROWN: Have a great night's sleep. And, you know, it's unfortunate because we do so much business at the eleven o'clock call. And it's night time in Japan.

CARL LARSON: Yes.

FRED BROWN: And I, you know, I don't know how to fix that particular problem. But I appreciate your patience. And I think you handled that well. And we're in a good spot. So we're going to turn this around here shortly. And you'll get a copy when it goes out.

CARL LARSON: We denfinily needed to

explain what was happeneing for the person on the ground there.

FRED BROWN: Yes.

CARL LARSON: And we didn't recognize who that was at the beginning. So that was good we finally got the conk on our head, and realized that.

FRED BROWN: Yes.

CARL LARSON: Yes. So that's good. All right.

FRED BROWN: Hey, thanks again. And get a good night's sleep. Drive safe going home.

CARL LARSON: And it sounds like he really understood the issue. So that's even more important.

FRED BROWN: Oh yes, oh yes, yes.

CARL LARSON: Okay. Very good. Thanks a lot, Fred.

FRED BROWN: Thank you.

CARL LARSON: Yes.

FRED BROWN: Bye.

CARL LARSON: Bye.

(CONFERENCE CALL ENDED)

(CONFERENCE CALL INITIATED)

(03 Track 03)

FRED BROWN: RST, this is Fred Brown.

HEADQUARTERS OPERATIONS OFFICER: Yes, I have Patrick McCabe (phonetic) on the line, I want to connect you.

FRED BROWN: Okay. This is Fred Brown, the Reactor Safety Team.

PATRICK MCCABE: Mr. Brown, my name is Patrick McCabe. I don't know if Dr. Holahan had spoken with you or --

FRED BROWN: Yes, he did.

PATRICK MCCABE: He did? Outstanding. I'm calling to kind of grease the skids for what we're proposing to be a conference call with your office tomorrow. It would take place ideally on our schedule at 1700 your time, or eleven o'clock our time.

FRED BROWN: Okay.

PATRICK MCCABE: We'll probably have, well ideally we'll have representatives of the radiological working group here, folks from our nuclear planning section, collection managers, intelligence analysts.

And I know that DIA has expressed an interest in dialing in as well. I'm not sure how the mechanics of that are going to work. I think they're

probably going to be more listening than talking. But if it's not to unwieldy we'd like to have them on the line as well. And maybe dial in from Washington, rather than from here.

FRED BROWN: Okay.

PATRICK MCCABE: The two issues that we're mostly going to, in addition to kind of talking about the art of the possible and the things that you guys are working on and aware of, and sharing as much information as we can.

But I'd say there's probably two major components of what we're interested in talking about. The first is your characterization of the Fukushima reactor stability. The trends in the reactor stability, indicators of changes to those trends, as well as the likelihood of any sort of catastrophic releases of radioactivity.

FRED BROWN: Okay.

PATRICK MCCABE: Not much, it's a pretty mall menu, you know.

FRED BROWN: Right.

PATRICK MCCABE: Not much to that.

FRED BROWN: Right.

PATRICK MCCABE: But those are the looming questions. And we don't expect you to answer any or

all of these questions. Or to answer any or all of them tomorrow.

And ideally we would have, this would be the first call in a series of recurring calls at our mutual convenience. You know, something like somewhere between once a week and every other day or so. Something less than that.

FRED BROWN: Okay.

PATRICK MCCABE: To talk about those sorts of issues. And your, we're really looking for your kind of expert take. The way that I've characterized your office, having just found out about it today, is that you've got a lot of visibility on U.S. reactor operations, and a lot of experience in those operations and in reactor safety.

And as a consequence, although you've got a lot less of the information you would normally have in a U.S. reactor situation, you're nonetheless I think uniquely qualified to comment, given even the limited information that we have, on what's going on in Japan.

And if we can provide you more information, then we'd like to be the people who can do that. So the first thing is to look for the source of stability, stability trend indicators, that sort of thing.

The second major issue we wanted to examine,

or have you guys think about is key reactor status information gaps. In other words, what information are you not getting.

And potentially, you know, we would look to what assets we have that would be available to get that information for you. Or at least to advertise those gaps to the larger audience.

So that as equipment and sensors start arriving in theater from, whether from Government, whether from military, or whether from private sector, that if you've identified the key gaps that are necessary to find out the things we need to know, then we can point those organizations and those sensors at that things you want to know the most about.

But those are kind of the two major focus areas that we would want to chat with you tomorrow during this PTC tomorrow. And like I said, we're not going to scratch all these tomorrow. This is as much of an introduction of (inaudible) as anything else. But establishing a relationship is probably the first priority.

FRED BROWN: Okay. And that's good. And we'll, we're on shift here.

PATRICK MCCABE: Yes.

FRED BROWN: So it will someone else

tomorrow --

PATRICK MCCABE: Sure.

FRED BROWN: -- on days. I'll pass on through our mid shift to our day shift this. The only thing that I would ask you to remember, if you're on the call, or to pass on to folks for tomorrow is that we would in fact have a lot more information if it was a U.S. plant.

And so the information flow we get is from the utility in Japan through the regulator in Japan, through the U.S. NRC folks in the embassy, back to us. And then all the open source stuff tht we try to compare and contrast with.

And so we're flying, well we're flying blind in both eyes. And a lot of the instrumentation that would be really helpful doesn't even work at the plant.

PATRICK MCCABE: Sure.

FRED BROWN: So it's, you know, what's the hydrogen concentration inside the containment.

PATRICK MCCABE: Right.

FRED BROWN: Well I'm sure the Japanese really wish they knew too. But we can, I mean, you know, it certainly doesn't hurt to kind of have a dialogue through that.

PATRICK MCCABE: Right.

FRED BROWN: And then you'll get a sense of what ability we actually do have to add any value. And maybe there are some techniques that can give us, insights that we're struggling with, where you don't have to penetrate through three feet of concrete and two inches of steel to see what's going on.

PATRICK MCCABE: Right.

FRED BROWN: So that will be a potentially fruitful dialogue.

PATRICK MCCABE: Great. Yes, we've got, we're putting -- (b)(5)

(b)(5)

FRED BROWN: Yes, yes. (b)(5)

(b)(5)

PATRICK MCCABE: Wow. That's even worse. I'm thinking they had limited utility. But the truth is useful. So I'm glad to hear somebody saying, you

know, what they really think about this.

FRED BROWN: Yes, you know, (b)(5)

(b)(5)

PATRICK MCCABE: Got it.

FRED BROWN: -- don't seem to jive with the steam rising, you know. Okay, if the steam's rising something's at saturation temperature. And the indicated temperatures are lower than that.

PATRICK MCCABE: Roger. All right, and some practical -- I'm sorry, your first name was again?

FRED BROWN: This is Fred Brown.

PATRICK MCCABE: Fred, all right. My name's Patrick McCabe. Let's see, is this -- I dialed

in on the, I think it's probably the big board, 301-816-5100, and they patched me through to your office after I asked for you.

FRED BROWN: Correct.

PATRICK MCCABE: Is that probably the best way to do this tomorrow on the conference call?

FRED BROWN: Yes, it is.

PATRICK MCCABE: Okay. And we'll be calling on a (b)(5)

(b)(5)

It might make life a little bit easier, and we might be a little less constrained. But it's certainly not a critical factor as far as our conversations are concerned, unless you would feel that that was the case.

FRED BROWN: No, no. (b)(5) find.

PATRICK MCCABE: Okay. And then we'll stick to that. In the dream sequence we'd figure out a way to have a video teleconference with you. But I may not be smart enough to work that out.

So if that's the case, then we'll plan on a video, excuse me, a teleconference with your office at 1700 eastern daylight time tomorrow. And that will

be eleven o'clock our time.

FRED BROWN: Yes.

PATRICK MCCABE: And unless you got any other questions for me I'm going to let you go, and I'm going to go back to work.

FRED BROWN: Very good. Thank you, Patrick, appreciate the call.

PATRICK MCCABE: All right. Thank you. We'll talk to you tomorrow then.

FRED BROWN: Yes.

PATRICK MCCABE: Okay, bye, bye.

(CONFERENCE CALL ENDED)

(CONFERENCE CALL INITIATED)

(04 Track 04)

(Contains no words to transcribe)

(CONFERENCE CALL INITIATED)

(05 Track 05)

(Contains no words to transcribe)

(CONFERENCE CALL INITIATED)

(06 Track 06)

DAVE SKEEN: Reactor Safety Team, this is Dave Skeen.

KIRK WEIR: Hey, Dave, this is Kirk Weir. We're at INPO with the technical coordinator. How are you doing tonight?

DAVE SKEEN: All right. How are you guys doing?

KIRK WEIR: Good. I had gotten, I've taken over for Randy Crane.

DAVE SKEEN: Okay.

KIRK WEIR: A couple of nights. And I think he was just doing a kind of a pre phone call ahead of the 0300 meeting.

DAVE SKEEN: Right.

KIRK WEIR: Kind of a heads up for anything that may be coming out.

DAVE SKEEN: Okay. I don't know if you guys have seen the email. I asked the guys to send out an email to you. On the evening shift here they put together a, kind of our explanation of why we think that Unit 2 reactor cooling system may have been breached. (b)(5)

(b)(5) And so we put together our thoughts on, based on this information. That's why we're thinking that there may have been a breach.

KIRK WEIR: Okay.

DAVE SKEEN: And the midnight shift now,

our crew that's on now, is working on Unit 3 the same way, to try to put together a story on that. And so I asked them to forward it to our NRC Japan team, as well as INPO and GE, just to let them know. So that, you know, this is our thoughts on why we think that it is.

And if nothing else, we're trying to give ammunition for our team to (b)(5)

(b)(5)

KIRK WEIR: Okay. And you've put something together for Unit 2 on that already?

DAVE SKEEN: Unit 2, yes. And I think they got that sent out. I'll make sure. But --

KIRK WEIR: Because I haven't seen anything on that yet. And you're working on Unit 3?

DAVE SKEEN: We're working on Unit 3. And they're working through that now. If they get that done before the three o'clock call we'll forward that out to everybody, just so everybody's aware of what our thoughts are. And if anybody's got anything to add to it, or some other thoughts, they can throw it in there as well then.

KIRK WEIR: Okay. And we did get the information on the reactor building structural report for the additional load with the water, after we flood primary containment reactor vessel.

DAVE SKEEN: You've got that?

KIRK WEIR: I do have that.

DAVE SKEEN: And have you sent that to us? Or that's something you want to discuss at the three o'clock, or --

KIRK WEIR: I believe (inaudible) they came from RST01 HOC. So I don't have anything to discuss on it yet.

DAVE SKEEN: Oh, okay. You just had the request to do it, but you haven't worked on it yet?

KIRK WEIR: That's correct.

DAVE SKEEN: Okay, got it.

KIRK WEIR: Yes.

DAVE SKEEN: Okay, yes. Okay, I understand. So that was an assignment you guys are working on. But you don't have anything to report back yet?

KIRK WEIR: That's correct.

DAVE SKEEN: Okay. That sounds good. Well that's the big things that I know of for the three o'clock call.

KIRK WEIR: All right.

DAVE SKEEN: So we'll talk about that then. Oh, I guess the other thing I would mention. Some of our folks over there still seem to be concerned about the Unit 4 spent fuel pool. And why they're not filling that up.

However, we have structural guys on the ground there that are saying, yes, but if you're not sure of the integrity, and if it's cracked, you know, it may not be the best thing to try to fill that up. So I'm not sure our guys on the ground over there exactly know the score either on this.

KIRK WEIR: Okay.

DAVE SKEEN: So, you know, if truly we are worried about if it's cracked, and I'm putting more contaminated out than if I fill the thing up. Or if I'm concerned about the overall structural capacity at this point, maybe I don't want to fill it all the way up with water.

So we'll talk about that on the call as well with them, just to, you know, there's more than just a simple story here I think. We don't know why you're not just filling the pool up and letting it run over the weir and seeing it in the skimmer tank.

KIRK WEIR: Okay.

DAVE SKEEN: So we'll probably discuss that as well.

KIRK WEIR: All right. Sounds good.

DAVE SKEEN: Okay?

KIRK WEIR: All right.

DAVE SKEEN: I'm sorry, I didn't catch your name.

KIRK WEIR: It's Kirk, K-I-R-K.

DAVE SKEEN: Yes.

KIRK WEIR: And the last name is Weir, W-E-I-R.

DAVE SKEEN: Okay, Kirk Weir. Got you. All right, Kirk, appreciate it.

KIRK WEIR: All right, thank you.

DAVE SKEEN: All right, bye.

(CONFERENCE CALL ENDED)

(CONFERENCE CALL INITIATED)

(07 Track 07)

FRED BROWN: Reactor Safety Team, this is Fred Brown.

HEADQUARTERS OPERATIONS OFFICER: Yes, Mike Scott with the Japan team. I'm going to connect you.

FRED BROWN: Hey, Mike. Hey, Mike. Hey, Mike.

MIKE SCOTT: Hey, Fred. Is it all right to talk now?

FRED BROWN: Yes.

MIKE SCOTT: Fred, you there?

FRED BROWN: Yes, I am. Can you hear me?

MIKE SCOTT: I can hear you. Can you hear me?

FRED BROWN: I can hear you. And let me start by saying I've got a Naval Reactors person here who wants to kiss you. Because you've made all the points that they tried to make at two o'clock in their edit, that wasn't incorporated.

MIKE SCOTT: Well I appreciate that. But I'm real choosy about who I kiss. So thanks anyhow.

MALE PARTICIPANT: Hey, appreciate that Mike. I had all my comments queued up. And I checked them off as you said them.

MIKE SCOTT: That's great.

FRED BROWN: Okay. Well those came from the group here. Those weren't Mike Scott's, those were

the groups. But we've all been noodled on this. So thanks for that. So all right. So I'm not going to have a new document by eleven. What's the recommendation here as to what I say to them.

MIKE SCOTT: Yes. I think that given that DoE went on record as approving, I think you will have a new document by 10:30. Because I will break whatever fingers I need to break that are preventing me from hitting send at 10:30 your time.

FRED BROWN: Okay. Well that's good. That will be helpful.

MALE PARTICIPANT: Fred, Mike's going to give you a kiss for that.

FRED BROWN: No, no, no, no, no. Don't over promise here. All right. So you're pretty comfortable, or pretty sure I'm going to actually going to have something to hand off to them at eleven o'clock.

MIKE SCOTT: If I have to do the cut and paste myself, and arm wrestle Tom for NRR's approval, I think we'll be successful.

FRED BROWN: Okay. I appreciate that.

ROB: Hey, Fred, this is Rob. What's the message though on Unit 4? Is there a message that we're continuing to evaluate Unit 4? And there may be a future update with revisions, recommendations to Unit 4? Or

is it going to stay the same?

FRED BROWN: I think you're former to say, you know, we're continuously evaluating everything. One thing you need to be aware of is the chairman was convinced when he left Japan, that Unit 4 was full of water.

So the next sitrep that you see will start to back track, or clarification of that. But we do need to spend the time before we know what our new recommendation is, before we lean too far forward.

But I think it's factual, and it's fine to say, you know, on Unit 4 there's a lot of conflicting data. And we're turning our focus to that. And that might be the next thing that you, that might be the first real change that you see, or the next thing you'd see a change in.

MIKE SCOTT: The one thing that gives me a little pucker about Unit 4 is, I've got a structural guy here who's telling me that because the floor slabs are missing, that that pool may not be structurally up to being completely full.

And so, but if it already is full, I guess by definition it's structurally up to it. And then we hear that the Japanese are thinking about just turning the hose on and keeping it on until that pool is filled.

So it would be important if a structural analysis is going to be done, if it could be done pretty soon.

FRED BROWN: Well, Mike, yes. So here's my view personally. I understand Rob's interest in getting as much water into the pool as necessary. But I also understand the structural issue. (b)(5)

(b)(5)

I would not recommend pushing them to open the spigot on Unit 4's spent fuel pool until we've had an opportunity to do more work on a change in recommendation. And so I think I'm in exactly the same place you are. But it's okay to say that we're going to look next at 4.

MIKE SCOTT: Yes, that's fine. I think they may already be filling it up. That's the thing about it. So, I mean, do we tell them, wait, wait, wait, don't fill it until you get a structural evaluation? Is that the message?

FRED BROWN: How confident are we that they've got a spigot and they're flooding it now?

MIKE SCOTT: They told us yesterday that their plan was to use the (inaudible), the spray, and fill it to an overflow condition yesterday.

FRED BROWN: So they may or may not have started doing it. And of course it's going to take the a long time to fill it up, if it's not already. But still, some of my best end recommendations, just kind of repeating back in a recommendation form what you said is, when you talk to them you can tell them, you know, that we don't change anything on Unit 4.

We are aware of the structural challenges to the building. And we are starting to look at that. And while we think you'd benefit from having this full from the standpoint of shielding and safety for offsite release.

We also understand that, you now, there may be leak. And there may be structural issues. And we're not in a position to give you a recommendation to fill it to the top, if you're not comfortable doing that.

MIKE SCOTT: Okay. I might just leave off the very last part of that.

FRED BROWN: I understand.

MIKE SCOTT: But the rest of it I'm okay with. One other point. We had, is there any progress on this proprietary hydrogen sampling in a wet environment document?

FRED BROWN: I will ask --

MIKE SCOTT: You know what I'm talking

about?

FRED BROWN: Yes. I'll ask Greg to go back and look at all the incoming emails since he left last night. I didn't get anything on turnover. Okay. We'll go ahead and call them again, or shoot them an email and ask them to please attempt to hurry up on that. They had to try to get a hold of the owner's group to get a release.

MIKE SCOTT: Fred, you might want to have somebody, I know you all are really busy. But you might want to have somebody not otherwise involved to try to lean on them about that.

This thing about a couple or three days we found to be pretty, you know, in a crisis to be pretty unsat. So if you can spare somebody to, or maybe get the ET to do the ET thing or something, that might be helpful.

FRED BROWN: Okay. And the importance of this, just so I can help communicate that to GEH, this particular issue? I don't even remember what the issue is.

MIKE SCOTT: Companies are saying that with the moisture they can't sample for hydrogen, even if they get their sampling rig back in service. And clearly it would be nice to know what the hydrogen is

in these containments. So evidently the answer is yes, you can still sample. But you got to correct for the moisture, as my wife would say. So we just want them to get that information.

FRED BROWN: Okay. Understood.

MIKE SCOTT: Okay?

FRED BROWN: We'll put --

MIKE SCOTT: Anything else guys? Okay. So I'll be sitting by my computer at 10:30, looking for good news.

FRED BROWN: Yes. And I will expect a call at 10:30 if you don't have it.

MIKE SCOTT: No problem. That we can do.

FRED BROWN: Very good.

MIKE SCOTT: All right. Thanks again, Fred, appreciate your help.

FRED BROWN: Yes, no problem, Mike, thank you.

MIKE SCOTT: Yes. Bye.

(CONFERENCE CALL ENDED)

(CONFERENCE CALL INITIATED)

(08 Track 08)

DAVE GARCHOW: Hello.

BRIAN: Dave Garchow.

DAVE GARCHOW: Hey, Brian.

BRIAN: Hey, good hearing you. I had heard your name on the weekend there.

DAVE GARCHOW: Hopefully not in vain.

BRIAN: No, no, no, it was good. I said, I wonder if that's the Dave I know?

DAVE GARCHOW: So there was a bit of frustration this weekend, which I think we've actually got to a better place now. And so I wanted to give you that feedback.

BRIAN: Yes.

DAVE GARCHOW: So I helped Mike Brown, who he probably admitted to you. Or maybe he didn't. I know him very well as well.

BRIAN: Yes, good.

DAVE GARCHOW: So that may --

BRIAN: I was just catching up. I was off the last two days. So I was in on Saturday, and I was late. It had happened on swings too. And they were sending out, you know, changes without a red line, strikeout. That was --

DAVE GARCHOW: Well --

BRIAN: That was, that's too much for people to read.

DAVE GARCHOW: We got I think in a good spot. That's the feedback. So what I would ask your help to do --

BRIAN: Yes.

DAVE GARCHOW: -- is that this team that I've been stood up for some of the high level discussions that were held between Jim Ellis (phonetic) and the chairman, and those kind of things. Because, you know, we really wanted to bring to bear our operational knowledge to help you guys. And so we have a team 24/7 of EPRI folks hanging around, a team of INPO folks hanging around. Not at INPO, these are off site.

BRIAN: Yes.

DAVE GARCHOW: You know, we're staffed 24 hours a day. And part of our mission is to do this. It's really helped me with this, what's now turned out to be -- We didn't know the vehicle at the beginning, but it's turned out to be this RST document.

BRIAN: Yes. That's good.

DAVE GARCHOW: That gives us access--

BRIAN: To give access to the Japanese. That's good. And we've been struggling with it a little bit. Because to tell you the truth, Dave, we get teams on swings and mids that sometimes aren't as strong as my day team.

So I'm glad you guys are marshaling to help there. Because I've been frustrated kind of reading documents. And almost doing editorial changes, instead of stepping back and thinking on it, yes.

DAVE GARCHOW: So one thing that you could help us with, and I'm taking and telling my team to take a little bit of a, you know, be a little bit, you know, politely assertive.

BRIAN: Yes.

DAVE GARCHOW: What we don't want to do is get this to be where we're just turning GE and EPRI and INPO resources on to go, you know, research interesting questions.

BRIAN: Yes.

DAVE GARCHOW: And that was happening this weekend. And it cost us, actually delayed getting that RST document out.

BRIAN: Yes.

DAVE GARCHOW: So when we get the naval reactors, they all gave good input. But they have to run, if you could just help us focus this eleven o'clock call on that RST recommendation document? And have we learned anything more about the plant status?

BRIAN: Yes.

DAVE GARCHOW: It would change what we're saying.

BRIAN: That's right.

DAVE GARCHOW: That's the --

BRIAN: That's the key.

DAVE GARCHOW: -- comments that we need to have.

BRIAN: That's right. That's the key.

DAVE GARCHOW: If we rabbit trail --

BRIAN: Even today, you mean?

DAVE GARCHOW: Yes. You know the one that comes in. Yesterday we took an action to go research flooding events for LE. Well that turned out because the Secretary of Energy was with Dave Christian (phonetic), at Millstone (phonetic) yesterday.

BRIAN: Yes.

DAVE GARCHOW: He just made a comment. And so it get all the way down.

BRIAN: Okay.

DAVE GARCHOW: And it turns out the information Secretary Chu wanted is in your nureg.

BRIAN: Yes, yes.

DAVE GARCHOW: INPO didn't even exist in that event.

BRIAN: Yes, I know.

DAVE GARCHOW: Isn't that something?

BRIAN: All right.

DAVE GARCHOW: But I remember that nureg you guys wrote on the (inaudible) and that.

BRIAN: Yes.

DAVE GARCHOW: It's actually a very good nureg. So that was actually what Secretary Chu probably more than you wanted.

BRIAN: Okay, good. Well I got the message. Stay at the high level. And use this document for the best versions to get to the Japanese. Because it's something they're looking at. All right.

DAVE GARCHOW: Because all the motivation of the people here in GE and EPRI, they really want to help.

BRIAN: Good, good.

DAVE GARCHOW: They're working their weekends.

BRIAN: Yes.

DAVE GARCHOW: And they're not complaining. And keeping this affiliation together --

BRIAN: All right.

DAVE GARCHOW: -- is good.

BRIAN: All right, good.

DAVE GARCHOW: (Inaudible) full value if they could help the Japanese.

BRIAN: Right. Good. Well give us a heads up. And, all right, I'll make sure I pass it on to the directors here.

DAVE GARCHOW: I had one other --

BRIAN: Yes, go ahead.

DAVE GARCHOW: -- another (inaudible) for the NRC and Mike Brown knows who it is. The name escapes me. Because actually we have another group that Bill Webster stood up last weekend, working with Pete Lyons (phonetic) of the DoE.

BRIAN: Yes.

DAVE GARCHOW: About how to get these high level vendors that have a lot of expertise in how to do really tricky things, like build sarcophagus's and --

BRIAN: Yes.

DAVE GARCHOW: -- those kind of things. They're all stood up now with representatives that TEPCO's building with Al Hochevar, who's on your DART team.

BRIAN: Good.

DAVE GARCHOW: So these questions about, you know, what are the next --

BRIAN: Yes, long term cooling, right.

DAVE GARCHOW: That group is working on that. Because I don't have any of those kind of experts.

BRIAN: Good. Okay.

DAVE GARCHOW: And conversations get into that. We're just speculating --

BRIAN: Good. And I heard you're end up pulling on back from that. And let's just stay on today and tomorrow's recommendations, right.

DAVE GARCHOW: Perfect.

BRIAN: We're with you.

DAVE GARCHOW: Great.

BRIAN: All right, thanks, Dave.

DAVE GARCHOW: Hey have a great night.

BRIAN: All right. Take care. Bye.

(CONFERENCE CALL ENDED)

(CONFERENCE CALL INITIATED)

(09 Track 09)

PETER ALTER: Reactor Safety Team, Peter Alter. May I help you?

HEADQUARTERS OPERATIONS OFFICER: Yes, sir. I have Riley with Congressional Affairs on line. I'm going to connect you.

PETER ALTER: Okay. Hello?

TIM RILEY: Good afternoon, this is Tim

Riley from Congressional Affairs.

PETER ALTER: Yes.

TIM RILEY: Is this the RST?

PETER ALTER: Yes.

TIM RILEY: Hi. I received, well a message from the liaison team, that the RST was hoping to speak with me.

PETER ALTER: I was trying to find who was in the --

TIM RILEY: The liaison team?

PETER ALTER: Yes, talk to the liaisaon team. And then nobody's in there.

TIM RILEY: Right. We're, yes, we're not staffing. But I'm the one receiveing the Congressional requests?

PETER ALTER: Okay.

TIM RILEY: I've been the one that's sending them over. Is there, I mean --

PETER ALTER: Well there, you have what does it mean about the -- No, it's the Congressional Affairs Team. It is not a new liaison team.

MALE PARTICIPANT: Tell him you'll call him back.

PETER ALTER: Okay. I'm going to have to call you back. I have your number on the phone.

TIM RILEY: Okay, great.

PETER ALTER: And your email.

TIM RILEY: Okay, great. Thanks.

(CONFERENCE CALL ENDED)