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2 NUCLEAR REGULATORY COMMISSION

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4 JAPAN'S FUKUSHIMA DAIICHI ET AUDIO FILE

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6 MARCH 21, 2011

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(CONFERENCE CALL INITIATED)

(b)(5)

Reactors. We have your NRC folks in Tokyo.

We have Steve Aoki from DOE NNSA. We are talking about doses that the Navy has measured, dose rate concentrations, actually, that the Navy has measured. We're on the USS George Washington in Atsugi.

(b)(5)

conference. Could you please mute.

MALE PARTICIPANT: Okay, sorry. Thank you.

(b)(5) So I was just explaining to the new arrivals that on the George Washington you've gotten particulate levels of one to two time 10 to the 9th microcuries per milliliter. At another location north of Tokyo you had a sample that showed 10 to the -7th microcuries per milliliter of presumably iodine.

MALE PARTICIPANT: Right. That sample north of Tokyo that was specifically for radioiodine.

1 (b)(5)

2 Admiral Donald, we're waiting to get some

3 more of your technical folks on. Is that correct?

4 ADMIRAL DONALD: That's correct.

5 MR. BURROWS: Admiral Donald, this is

6 Chuck Burrows. I have joined the conference call.

7 ADMIRAL DONALD: Okay.

8 (b)(5) Admiral Donald, I believe

9 your folks are in the conference at this time.

10 ADMIRAL DONALD: Okay. Mr. Burrows, why

11 don't you go ahead and (b)(5) and the rest

12 of the conference at least what we know right now as

13 far as the sampling is concerned both on the George

14 Washington and what we had north of Tokyo and anything

15 else you can add based on discussions with Mr. Muir

16 (phonetic)?

17 MR. BURROWS: Yes, sir. First, the data

18 in a distance 90 miles from the plant, which is north

19 of Tokyo, beginning at 2035 our local time here,

20 eastern daylight time, readings in excess of 1 x 10 to

21 the -9th microcuries per milliliter of particulate

22 radioactivity were identified.

23 The first reading was 7 x 10 to the

24 -9th and there have been repetitive readings roughly

25 at 15-minute intervals in 1 x 10 to the -9th to 3.5 x

1 10 to the -9th range.

2 That first reading was the highest and the
3 reading stabilized out at 15-minute intervals in the
4 1.5, 1.0, 3.5 x 10 to the -9th range. They are
5 continuing to this point at 15 minutes after midnight.
6 That is a very consistent set of particulate
7 radioactivity results.

8 We have two radioiodine results. These
9 results were obtained by a radioiodine sampling kit
10 that is based on a silver gel cartridge. The minimum
11 detectable level --

12 FEMALE PARTICIPANT: Mr. Smith, are you
13 there still?

14 MR. SMITH: Affirmative.

15 MR. BURROWS: The minimum detectable level
16 of this technology is on the order of 1 x 10 to the -
17 9th microcuries per milliliter for radioiodine. It's
18 got a minimum detectable level that is much higher
19 than the minimum detectable level for particulate
20 readings.

21 One reading was obtained at a level of 1.6
22 x 10 to the -7th microcuries per milliliter for
23 radioiodine. That reading is barely detectable
24 meaning that the limit of deductibility is about 1 x
25 10 to the -9th and this reading was 1.6 x 10 to the -

1 7th. We're talking --

2 MALE PARTICIPANT: That should be way

3 above detectable.

4 MR. BURROWS: Not for this technology.

5 For radioiodine sampling the limit of deductibility is

6 1 x 10 to the -7th.

7 MALE PARTICIPANT: One x 10 to the -7th.

8 You had said 1 x 10 to the -9th.

9 MR. BURROWS: Yes, I mispoke for the

10 radioiodine measurement. The particulate

11 measurements, not the radioiodine measurements, that

12 minimum detectable level is in the 10 to the -10th, 10

13 to the -9th microcuries per milliliter range. Easily

14 detectable particulate. Not easily detectable by

15 radioiodine.

16 So the radioiodine reading here was in raw

17 measurements was 50 counts on a frisker, 50 counts per

18 minute on a frisker. You get the idea how low it was

19 in the detection range. That equates to 1.6 x 10 to

20 the -7th. A backup sample was taken some number of

21 minutes later at 2245 and it was not distinguishable

22 from background. So that's the data we have.

23 Now, we also have surface contamination

24 and gamma radiation measurements at 15-minute

25 intervals from the same location. The gamma radiation

1 measurements have been fluctuating from .01 millirem
2 per hour to .06 millirem per hour.
3 MALE PARTICIPANT: Could you run that by
4 us once again?
5 MR. BURROWS: Yes. There is gamma
6 radiation measurements being taken at this location
7 and they are fluctuating from .01 millirem per hour to
8 .06 millirem per hour.
9 MALE PARTICIPANT: That's pretty low.
10 MR. BURROWS: Right. We also have surface
11 contamination measurements that were detected at that
12 location and they are all roughly around 5,000
13 picocuries per 100 centimeter squared.
14 So what is unusual about this data is the
15 ratio of the radioiodine measurement, the detected
16 result, and the particulate results. The ratio seems
17 out of balance. We would expect radioiodine results
18 and particulate results to be more similar in
19 magnitude.
20 MALE PARTICIPANT: Right.
21 MR. BURROWS: So we are trying to
22 reconfirm and understand the radioiodine reading.
23 DR. JACZKO: This is Greg Jaczko. Could
24 you just identify yourself? I just got on the bridge.
25 MR. BURROWS: This is Chuck Burrows from

1 Naval Reactors.

2 DR. JACZKO: Okay. Thank you.

3 [redacted]

4 (b)(5)

5 from DOE NNSA. We've got your folks in Tokyo on the

6 line.

7 DR. JACZKO: Is there a specific concern

8 right now? I'm just trying to get up to speed.

9 [redacted]

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14 (b)(5)

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20 got on the phone was the most surprising reading was a

21 detection actually of radioiodine 90 miles from the

22 Fukushima reactor in the direction of Tokyo at 1.6 x

23 10 to the -7th microcuries --

24 MR. BURROWS: 10 to the -7th.

25 DR. HOLDREN: Yes, 1.6 x 10 to the

1 -7th microcuries per milliliter which is about eight
2 times the occupational derived air concentration.
3 That means that it would be in the range of 20
4 millirem per hour associated with that concentration.
5 It's still not a concentration that would very
6 quickly trigger a Protective Action Guideline but it's
7 a pretty high level.
8 MALE PARTICIPANT: Chuck, are you on the
9 line?
10 MR. BURROWS: Yes, I am.
11 MALE PARTICIPANT: Chuck Casto?
12 MR. BURROWS: Oh, no. This is Chuck
13 Burrows.
14 DR. DORMAN: This is Dan Dorman, sir.
15 MALE PARTICIPANT: Yeah, Dan. Do we have
16 any reliable data coming from the Japanese about those
17 measurements?
18 MR. DORMAN: We don't have anything
19 current from the Japanese that would compare to this.
20 We are getting a sample here at the embassy and we've
21 asked the PMT to work that back and give us a
22 correlation if the data point from Naval Reactors fit
23 what we've seen here.
24 Right now we have the one data point from
25 Naval Reactors which I understand was followed up

1 shortly after with a second sample that did not have
2 detectable radioiodine on the second sample. We are
3 looking to validate from here what we're seeing and
4 see if we can make the correlation.
5 MR. REMICK: This is Alan Remick from
6 Department of Energy. We've got a team in the field
7 out there. We've taken some samples up near the
8 plant. We haven't got the analysis from them. I'm a
9 little bit concerned that we are going off of one
10 nonrepeatable sample.
11 Fifty counts above background detectable
12 is just not a significant sample in my book. I'm
13 wondering if maybe we could get the sample and maybe
14 the rest of our team and HPGe to actually count the
15 radioiodine on that sample.
16 MALE PARTICIPANT: I think that is
17 probably a good --
18 MALE PARTICIPANT: This is (inaudible) and
19 I just joined the bridge from Japan regarding those
20 samples.
21 MALE PARTICIPANT: Have we done any
22 analysis on those samples other than with the frisker?
23 MALE PARTICIPANT: The sample is still in
24 the fields. Let me catch up to the data here. That
25 sample has decayed away to just slightly above

1 background using field instruments at this point.
2 Therefore, the radioiodine sample we believe was less
3 than 10 to the -7th microcuries per milliliter at the
4 time that the sample was taken.
5 MALE PARTICIPANT: Okay.
6 MALE PARTICIPANT: You don't have a
7 positive reading on the sample?
8 MALE PARTICIPANT: Right. I believe it
9 got cross-contaminated or something when the data set
10 was provided.
11 MALE PARTICIPANT: That, too, is
12 reassuring because the most plausible hypothesis with
13 just one data point like that is whether it was
14 suspect. It sounds like that was the case.
15 MALE PARTICIPANT: But the data that is
16 coming in here in Yukoska which is 173 miles away we
17 are getting up -- particulate radioactivity we are
18 getting up to 7 x 10 to the -9 microcuries per
19 milliliter for this plume. That is even while it's
20 raining so we're getting fairly high numbers even
21 while it's raining. Lose surface contamination levels
22 from this plume are in the range of 5,000 microcuries
23 per probe.
24 MALE PARTICIPANT: Can you convert that to
25 dose numbers for me? I apologize. We've just woken

1 up and I'm trying to get up to speed. Can you convert
2 that to dose rate?
3 MALE PARTICIPANT: Here is the
4 conversation. If we're talking about iodine and,
5 therefore, we're talking about a thyroid dose, then
6 the derived air concentration of 2 x 10 to the -8th
7 microcuries per milliliter corresponds to 50 rem in
8 2,000 hours. That would be a 25 millirem per hour to
9 the thyroid.
10 That is the level, 25 millirem per hour to
11 the thyroid that would be associated with 2 x 10 to
12 the -8th. What they've just been talking about is
13 numbers getting close to 1 x 10 to the -8th on the
14 ship. That would correspond to something in the range
15 of 12 millirem per hour to the thyroid.
16 MALE PARTICIPANT: Dan, are you on there?
17 MR. DORMAN: Yes, sir.
18 MALE PARTICIPANT: Can we take these
19 numbers? Do we have someone in there in either NISA
20 or other contacts that we can get some validation or
21 confirmation of these numbers from?
22 MR. DORMAN: We'll try and get them.
23 Probably MEXT I think is the one that is doing most of
24 the local sampling. We'll see if we can get some
25 numbers to compare.

1 [redacted] (b)(5)

2

3 FEMALE PARTICIPANT: This is the

4 [redacted] (b)(5)

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6

7 [redacted] (b)(5)

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10 on this? What are you seeing -- Dr. Ariz (phonetic).

11 I'm sorry. What are you seeing out at UCODA as a

12 standard background for radioiodine?

13 DR. ARIZ: What we're seeing right now,

14 the most recent sample we pulled off was 4.8 E to the

15 -10th microcuries per milliliter for iodine. It's

16 been elevated the last day. This morning we are

17 getting some elevated measurements but, in general,

18 that's fairly consistent with what we've been seeing

19 for the past three, four, five days that we've been

20 taking measurements.

21 One thing that we have been seeing today

22 is because it's raining we are seeing elevated

23 readings on the ground. We are slightly elevated on

24 air samples as well. The exposure rates are

25 increasing. We do have two teams that are up towards

1 the reactor area roughly at the 13 mile line that the
2 Japanese had put in place. It's really 20
3 kilometers or 13 miles. We're taking some
4 measurements there as well. We are taking air
5 samples. We are taking high (inaudible) detectors for
6 the soil. We're also taking exposure rate
7 measurements. The air samples it will be some time
8 until we get them back for analysis.
9 It will be the end of the day until we get
10 those back for analysis but the exposure rates we have
11 noticed that the same -- we were at the same location
12 yesterday as we are today. We had a five-fold
13 increase in our exposure rate. Now, we
14 suspect that is primarily due to the washout of the
15 materials today. However, it could also -- the winds
16 are on shore today. There could be additional
17 release. It's just difficult for us to quantify that.
18
19 So far we have had a sampler at the
20 embassy. We've been doing routine analysis on those
21 on a daily basis. What we get at Yukoska is similar
22 to what we are getting at the embassy. We haven't
23 detected iodine since we've been here. We are
24 detecting it above background but it is a fairly low
25 level.

1 It's on the order of the 10 to the -10th,
2 10 to the minus -- somewhere in the 10 to the -10th
3 microcuries per milliliter. I believe someone
4 mentioned before the whole body DAC for dry air
5 concentration for iodine is 2 x 10 to the -8th so
6 we've been seeing a fraction of that consistently.
7 MALE PARTICIPANT: I would recommend that
8 we try and get confirmation from the Japanese on this.
9 If you could just reiterate for me, if we reach the
10 10 to the -8th, the DAC level, how long would it take
11 before you received an exposure that would trigger a
12 pack?
13 MALE PARTICIPANT: About 100 hours.
14 MALE PARTICIPANT: Two x 10 to the -8th
15 but 2 x 10 to the -8th is based upon occupational
16 limits. That means you are exposed to that amount for
17 2,000 hours which is the work year. That is
18 equivalent to 5 rem. The PAG level depends upon which
19 PAG you're using but if you use the PAG levels 1 to 5
20 rem, you would be looking at essentially the same type
21 of limit. If you're at that DAC level, it will take
22 you a year to get to the 5 rem PAG level.
23 MALE PARTICIPANT: Okay.
24 MALE PARTICIPANT: Given that we have --
25 we're not at 10 to the -8th level and that if we did

1 reach the 10 to the -8th level, we would be talking
2 about near accumulated exposure before we would reach
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5 (b)(5)
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8 MALE PARTICIPANT: (Inaudible) from DOE
9 again. Would it be possible for us to get the
10 anomalous air samples for a reading so that we can
11 take an accurate measurement with HPGe and move on
12 from there also for the morning call?
13 MR. MILLER: This is Miller. We'll bring
14 it down to Yukoska. We can put it on the high purity
15 germanium and look at it and see what's in there and
16 report.
17 (b)(5)
18 sorry to interrupt. I have Admiral Willard on the
19 phone.
20 Admiral, I think you should tell the group
21 the action you intend to take immediately because that
22 puts us in a different position here that we need to
23 talk through.
24 ADMIRAL WILLARD: This is Admiral Willard
25 from U.S. PACOM. As a minimum step forward what I

1 [redacted]
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12 MR. REMICK: Admiral Willard, this is Alan
13 Remick from DOE. I don't know if you were on the line
14 when we were discussing the validity of this air
15 sample. Did you give that analysis?
16 ADMIRAL WILLARD: I did not. I was the
17 one that took the initial call from the NRO
18 representative in Yukoska that explained it. I talked
19 to Kirk Donald briefly about the fact that it's a
20 single sample of several and anomalous as compared to
21 the air and surface samples that were getting at our
22 bases and I think as well inconsistent with the air
23 sampling that was done in some of the testing near the
24 site and in the plume.
25 The issue at hand is that there is

1 activity at each of our bases to the south and some

2 [redacted]

3 (b)(5)

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5

6 really appreciate your thoughts on that if you have

7 one.

8 DR. JACZKO: Admiral, this is Greg Jaczko

9 with the NRC.

10 ADMIRAL WILLARD: Yes.

11 [redacted]

12 (b)(5)

13

14 correct me if I'm incorrect in my understanding.

15 We're a factor of at least 10 below what would be an

16 airborne concentration limit which would be applied to

17 workers.

18 If you were to receive that exposure over

19 your work year, namely over a 2,000 hour period, then

20 [redacted]

21

22 (b)(5)

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24 However, we do operate on the principle of

25 what we call ALARA which is as low as reasonably

1 achievable which would in my mind lead us to what I

2 [redacted]

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6 (b)(5)

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11 concentration of 2 x 10 to the -8th microcuries of

12 iodine 131 per milliliter corresponds, I believe, not

13 to 5 rem to the whole body in 2,000 hours but to 50

14 rem at the thyroid to factor in.

15 [redacted]

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20 (b)(5)

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1 Being dependent on the wind and the
2 weather to minimize our exposure certainly it's
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7 (b)(5)
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12 online still?
13 MR. VIRGILIO: Yes, Chairman, we're here.
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17 (b)(5)
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21 Intermittent based on the weather, and we
22 only have a few samples that we're going on, but the
23 samples we have are all showing very little. I mean,
24 you made the point. It's factors of 10 less than
25 where I think we should be making those

recommendations.

MR. BURROWS: This is Chuck Burrows from Naval Reactors. The other thing to consider here is that these particulate air sample results are indicative as well as radioiodine. Also cesium and strontium.

The surface contamination on the ground is also eligible to resuspend as persons walk and as they perhaps pick up things and get it on their hands and clothing. This is actually a similar release that occurred earlier in the week that the Navy detected in Yukoska.

(b)(5)

Wednesday of last week.

MALE PARTICIPANT: If this is consistent

(b)(5)

point we still believe the doses are low. Maybe it

1 [redacted]
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5 better indication of the origin and the source and the
6 reasons for the spike that we're seeing right now.
7 MR. CASTO: Mr. Burrows, this is Greg
8 Casto also in the NRC Operations Center. Is there a
9 contact number we could get for you or you could
10 contact us?
11 [redacted]
12
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14 MR. BURROWS: Correct.
15 MR. CASTO: Thank you.
16 [redacted]
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24 d
25 know, we picked up X, Y, Z it's premature. While we

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(b)(5)

10 heard that the stabilized measurement for particulate
11 radioactivity at the location 90 miles from the
12 relief, as I understand it, is in the range of 2 x 10
13 to the -9th microcuries per milliliter.
14 That is 10 times below the level that
15 would be giving 25 millirem per hour to the adult
16 thyroid so we would be talking about 2.5 millirem per
17 hour to the adult thyroid. Maybe 5 millirem per hour
18 to a child's thyroid.
19 That means that at 100 hours the standard
20 four-day calculation that's used for the Protective
21 Action Guidelines you would still be at about a 10th
22 of the dose to a child's thyroid that would cause you
23 to administrator potassium iodide or take other action
24 such as evacuation.
25 We're not actually, as far as I understand

1 the measurements we've heard about, we are not -- we
2 are still at about 10 times below the level that would
3 trigger action under our EPA guidelines. Now, I say
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11 (b)(5)
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19 our friends in the Navy.
20 ADMIRAL DONALD: (b)(6) this is Kirk
21 Donald. Just one correction on what you said there.
22 The particulate levels that are being measured, the
23 ones reported in the two to 7 x 10 to the -9th region,
24 those are being taken on the USS George Washington
25 that is currently located in Yukoska, Japan, which is

about 175 miles from the site.

[redacted] (b)(5)

MR. BURROWS: Actually, Admiral -- this is Chuck Burrows. What we saw was the plume on its way. We are still measuring 2 x 10 to the -9th at this location 90 miles from the reactor plant, as well as now measuring 10 to the -9th down in the Yukoska area.

The plume is an extensive plume. I mean, I have readings at both locations that are above 10 to the -9th microcuries per milliliter as far out as Yukoska and as far in as this 90-mile point.

ADMIRAL DONALD: Okay. So I was half right. There are readings at 90 miles at 2 x 10 to the -9th but there are also readings at 170 miles at 2 x 10 to the -9th.

MR. BURROWS: Correct.

MALE PARTICIPANT: Is the weather phenomenon localized to near the bay surge or the weather phenomenon consistent along the entire area of the plume?

ADMIRAL WILLARD: This is Admiral Willard from PACOM. If I may input, we've been looking at the wind forecast and the wind data. The plume right now as we have seen in the forecast graphics have

1 previously extended almost due south along the
2 coastline to impact Yukoska and they are swinging
3 further to the west further inland and over
4 metropolitan Tokyo and to the bases that are further
5 inland and further north and west from Yukoska.
6 We are basically seeing the plume
7 concentration swing. It's already swung down to the
8 coastline and it's already begun to swing inland. We
9 expect it to remain roughly in that area for the next
10 24 hours.
11 MALE PARTICIPANT: Okay.
12 DR. JACZKO: Again, this is Greg Jaczko.
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19 (b)(5)
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1 ADMIRAL WILLARD: Mr. Miller, do you have

2 [redacted]

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5 (b)(5)

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7

8 Yukoska this is not a one sample phenomenon. We have

9 approximately 35 samples of airborne radioactivity

10 that confirms that it's here.

11 One other comment is we had three other

12 plumes go over us Tuesday and Wednesday. The total

13 dose that we added up for those three plumes over 17

14 hours was 190 millirem committed dose to the thyroid

15 and 10 millirem effective dose.

16 [redacted]

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21 (b)(5)

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1 [redacted]
2 (b)(5)
3 [redacted]
4 Certainly in Yukoska where we are seeing
5 the concentration of the plume that we have over the
6 [redacted]
7 (b)(5)
8 [redacted]
9 MALE PARTICIPANT: We have monitoring at
10 Yukoska. Do we have possible monitoring at any other
11 population areas where we have large populations of
12 American citizens?
13 [redacted]
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19 (b)(5)
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6 (b)(5)
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11 MALE PARTICIPANT: Can I -- I'm sorry.

12 ADMIRAL WILLARD: Go ahead, sir.

13 MALE PARTICIPANT: Please go ahead,

14 Admiral.

15 (Phone ringing.)

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21 (b)(5)
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1 [redacted] (b)(5)
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5 so --

6 (Phone ringing.)

7 MALE PARTICIPANT: Hello.

8 [redacted] (b)(5) es.

9 MALE PARTICIPANT: Hello.

10 [redacted] (b)(5)

11 MALE PARTICIPANT: I'm sorry. I keep
12 getting disconnected. I'm not sure why. I apologize.

13 [redacted] (b)(5)
14 still on the line?

15 MR. VIRGILIO: Yes, Chairman. We're still
16 here.

17 [redacted] (b)(6) What are your thoughts on
18 [redacted] (b)(5)
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1 what is being proposed.

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8 ADMIRAL WILLARD: Bob Willard from PACOM.

9 [redacted] Go ahead, Bob.

10 ADMIRAL WILLARD: Just a thought. Recall

11 that this is a repeated event that we've had now. This

12 is, I think, our third plume exposure as the winds

13 [redacted]
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where the plume will tend to lay down when it's not blowing out to sea.

(b)(5)

MR. BURROWS: Admiral Willard, this is Chuck Burrows from Naval Reactors. As far as the

(b)(5)

1 type of actions, it was described in the following
2 way.
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11 (b)(5)
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20 From the basis of the measurements that we have
21 so far, we are at least 10 times below the level that
22 would actually trigger formally Protective Action
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24 (b)(5)
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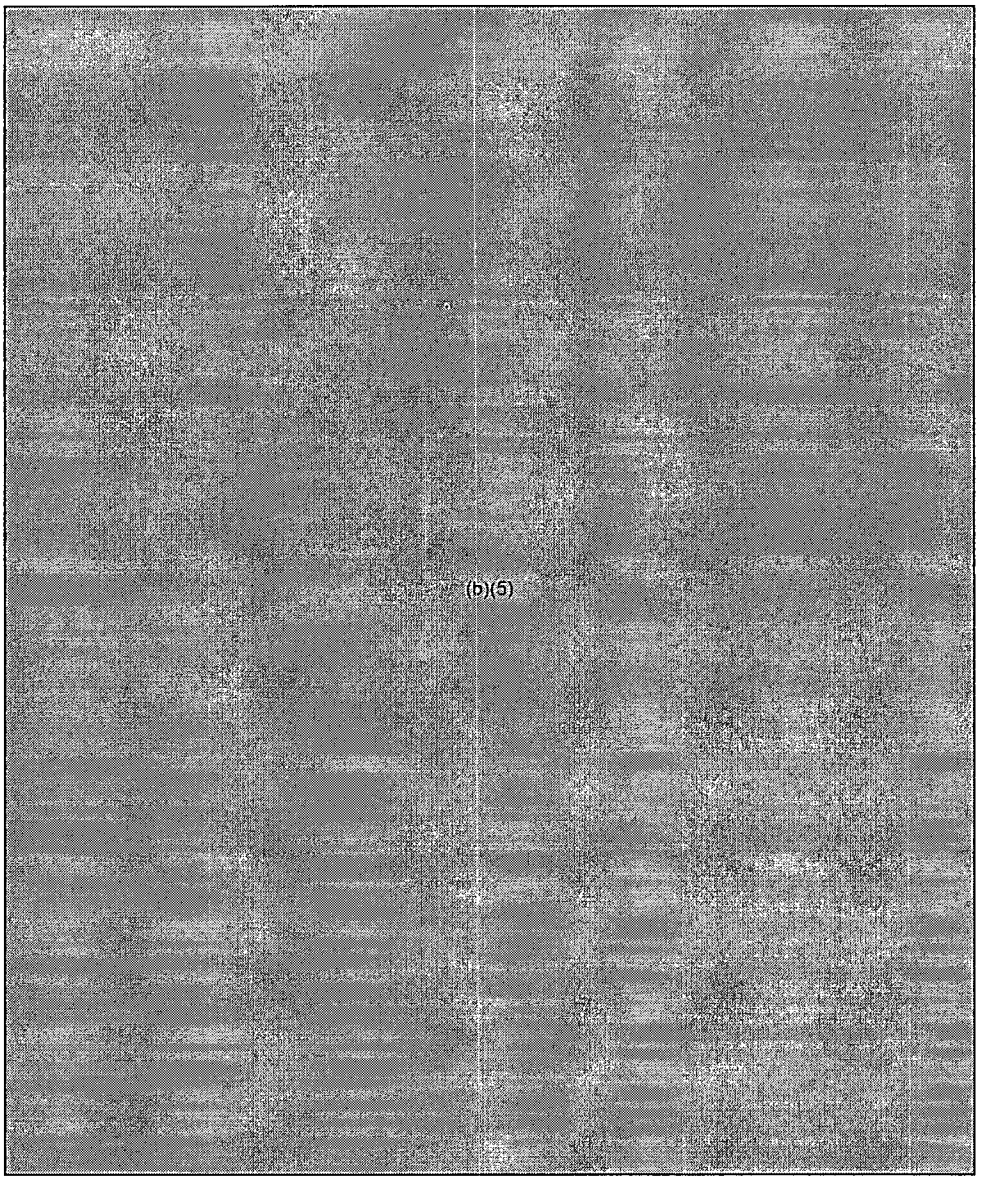
would be well below the guidelines.



MALE PARTICIPANT: Do we anticipate those dose rates anywhere else like Tokyo?

MR. BURROWS: I'm sorry. I didn't hear that.

MALE PARTICIPANT: Do we anticipate those dose rates occurring in Tokyo as well?

MR. BURROWS: Well, from the reports that

1 [redacted]
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4 (b)(5)
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7
8 the line?

9 MR. DORMAN: Yes, and Chuck has joined us
10 as well, John.

11 [redacted]
12 (b)(5)
13

14 MR. DORMAN: We understand we are taking
15 measurements. I don't have results at this point but
16 I would expect that if we've got these 10 to the -9

17 [redacted]
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21 (b)(5)
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1 [redacted]
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4 (b)(5)
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8 base commander level. If my nomenclature here is off
9 I apologize. I'm not familiar with the hierarchy for
10 you all and that we do at that level.
11 [redacted]
12
13
14 (b)(5)
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17 ADMIRAL WILLARD: I would defer to
18 [redacted]
19
20
21 (b)(5)
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21 (b)(5)
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24 (b)(6) Maybe in an effort to try
25 another stab at a platform where we might be able to

1 [redacted]
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6 [redacted]
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10 (b)(5)
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15 MALE PARTICIPANT: [redacted] (b)(5)
16 [redacted] (b)(5) [redacted]
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18 (b)(5) (b)(5)
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20 me --
21 [redacted]
22 (b)(5)
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24 MALE PARTICIPANT: Of course, but --
25 [redacted] (b)(5)

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9 (b)(5)
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17 ADMIRAL DONALD: This is Admiral Donald.
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22 (b)(5)
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1 [redacted]
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5 (b)(5)
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9 that we are not officially hitting a tripwire of a PAG
10 or anything of that sort.
11 The fact is this is a chronic situation.
12 It's going to last over a period of time. There is
13 uncertainty associated with what the levels will be
14 [redacted]
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19 (b)(5)
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1 me make a suggestion and see if, Admiral Willard, this

2 [redacted]

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5 (b)(5)

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9 outside exposed right now is not great. Most people

10 are probably inside anyway.

11 [redacted]

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14 (b)(5)

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18 ADMIRAL WILLARD: First of all, I

19 [redacted]

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21 (b)(5)

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25 fact that we are guided to remain indoors when the air

1 quality is poor. Here we are dealing with a
2 radioactive plume. While the measurements are very
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10 (b)(5)
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17 ADMIRAL WILLARD: This Admiral Willard.
18 Does that work for everyone on the line?
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22 (b)(5)
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1 [redacted]
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4 (b)(5)
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7 DR. JACZKO: This is Greg Jaczko. I just
8 want to make one clarification. Admiral Willard, I
9 appreciate your comment that I think there is an
10 important issue to tell from. I also think we also
11 have a responsibility to tell individuals if there are
12 levels that are not at this point viewed to be
13 harmful.
14 [redacted]
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18 (b)(5)
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23 [redacted]
24 (b)(5)
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10 MALE PARTICIPANT: I would ask Jeff Bader
11 and Kurt Campbell to get on just so we can tell them
12 what we're doing. But a question that I have while we
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19 (b)(5)
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1 [redacted]
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3 (b)(5)
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5 I think we are going around and around
6 here. I think probably the most important thing I
7 [redacted]
8 (b)(5)
9 [redacted]
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14 (b)(5)
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20 OPERATOR: Producing Mr. Bader.
21 MR. CAMPBELL: This is Kurt Campbell and
22 Jeff Bader. I wonder if someone could before we go
23 into the conclusions just quickly go over what the
24 analysis that was reached between the various groups
25 after they went through the data that was picked up

1 from the helicopter, please.

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15 suggestion? I think a valuable voice in this would be
16 I know we've not generally included them but would be
17 FEMA since they would more likely be involved in
18 dealing with a situation like this if we got to a
19 situation in which NRC wasn't necessarily recommending
20 any kind of PAG. FEMA may have a thought on this as
21 well. I don't mean to delay this conversation.
22
23
24 (b)(5)
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basis for this was coming from the Naval Reactors side and that were the basis upon which it was being

(b)(5)

MR. VIRGILIO: Chairman, this is Marty Virgilio. If I can add, if we were going to loop in another organization, I would loop in EPA.

DR. JACZKO: Okay.

MR. VIRGILIO: The other thing that we

(b)(5)

MALE PARTICIPANT: Jeff and Kurt, if I can just summarize. Admiral Willard, I don't want to put

(b)(5)

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14 Admiral Willard, is that a fair --
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1 next several hours to craft the language that would
2 constitute that advisory [redacted]
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4 (b)(5)
5 Nonetheless,
6 [redacted]
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8 (b)(5)
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11 MR. BADER: This is Jeff Bader. The next
12 [redacted]
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14 (b)(5)
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17 MALE PARTICIPANT: Okay. I agree with
18 that. Can I just ask one question just for
19 clarification? It sounds to me like there had already
20 been a statement or some sort of thing issued in Japan
21 by a base commander. Is that already out?
22 MALE PARTICIPANT: Sir, yes. It was
23 issued for the instance where the plume came over
24 Yukoska on the 14th and it was issued on behalf of
25 Fleet Activity Yukoska and Naval Air Facility Atsugi.

1 It was issued and then rescinded.

2 MALE PARTICIPANT: But not for this event.

3 It was for --

4 MALE PARTICIPANT: An earlier plume.

5 MALE PARTICIPANT: Yes, I understand now.

6 Thank you.

7 [redacted]

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11 (b)(5)

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16 MALE PARTICIPANT: I'm going to take the

17 lead in describing what we know. I don't think I

18 [redacted]

19 (b)(5)

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21 MALE PARTICIPANT: Who will then take the

22 [redacted] (b)(5) hat will happen in

23 Washington?

24 MALE PARTICIPANT: (Inaudible) and then

25 they are going to have to quickly ratchet something

1 [redacted] (b)(5)
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5 MR. BADER: I assume that Denis will call
6 me as soon as he speaks to [redacted] (b)(6) Then we will
7 see how we proceed. That was what was established
8 before.
9 [redacted] (b)(6) Okay. All right. Thank
10 you, everyone. I apologize. It's 2:00 a.m. in
11 Washington. Thank you for everything you're doing
12 here.
13 MALE PARTICIPANT: We are going to
14 continue to do everything we can. Thank you,
15 [redacted] (b)(6)
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17 (Whereupon, the call was concluded.)
18

1 Elapsed time on FTR 1:30:21-1:32:21

2 (CONFERENCE CALL INITIATED)

3 MR. CASTO: To you see that org chart?

4 MALE PARTICIPANT: Yes.

5 MR. CASTO: Okay. I'll read you the email

6 [redacted]

7 [redacted]

8 [redacted]

9 [redacted]

10 [redacted]

11 [redacted]

12 We'll start this evening and the first

13 meeting will be at 5:30. Under the coordination

14 meeting we will set three subcommittees between the

15 [redacted] We hope to see

16 you soon."

17 [redacted]

18 [redacted]

19 [redacted]

20 [redacted]

21 [redacted]

22 What it would be would be we would see all

23 those acronyms at the top with the circle that says

24 [redacted] That would be a coordinating

25 committee.

1 MR. VIRGILIO: Chuck, in that coordinating
2 committee what is the MOF role?
3 MR. CASTO: They control a lot of the
4 ministries. I really don't know. I think they are a
5 trust ministry by the government that they
6 -- I'm don't know, Marty. We're going to find out at
7 this first meeting.
8 MR. VIRGILIO: I think from our
9 discussions I've got a sense from you as to what the
10 Ministry of Defense will do.
11 MR. CASTO: Yeah.
12 MR. VIRGILIO: And know their role.
13 MR. CASTO: Right.
14 MR. VIRGILIO: Go ahead. I'm sorry.
15 MR. CASTO: We'll find out at this first
16 meeting exactly what the purpose is of MOF.
17 MR. VIRGILIO: Okay.
18 MR. CASTO: That's MOFA, you know. MOF is
19 MOFA.
20 MR. VIRGILIO: What is MOF?
21 MR. CASTO: Ministry of Foreign Affairs.
22 We know what their role is. Basically you have three
23 subcommittees, one on radiation, one on analysis, and
24 one on solutions. You can see down there that all of
25 their -- you know, it's all Japanese agencies and

ministries on there. Of course, we would play no role in that. NRC is not in any of that. The coordinating committee would just be that, not a directing committee. That is not a steering committee. It's not a directing committee. It's a coordinating committee from what I understand from our d

(b)(5)

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MR. VIRGILIO: Okay.

MR. CASTO: He basically said this is a coordinating committee. There are a couple of subtleties that I can talk to you about offline there. They are important but basically you can see all of the different people they have in each of the subcommittees. According to him, the EDO, this has been approved by the Cabinet. As I said, it will be 5:30 tonight for the first meeting. Dan and Jim are going over to that.

MR. VIRGILIO: In about an hour. Okay.

MR. CASTO: Yeah.

MR. VIRGILIO: This meeting will include all of these people in all of the three groups?

MR. CASTO: Yes.

MIKE: Chuck, can you help me? I'm a little slow. So the implication of this being you are

concerned about this because this is -- let me just stop. What do you see --

MR. CASTO: I'm not concerned about it at all. I think it's probably a positive.

MIKE: Okay, okay, okay.

MR. CASTO: We don't want to be embedded in those subcommittees.

MIKE: Right.

MR. CASTO: We don't want anything to do with that but we are -- I think it's an appropriate role for us to be in that coordinating committee so that, you know, everybody can be coordinated and not -- I mean, it's not going to be ideal. You know that, Mike. It's never clean but it's certainly cleaner than what we have right now. We're trying to work with TEPCO. We're trying to work with MOD. We're trying to work with SDF. We're trying to work with NISA, you know, and it's just not well organized if you do it that way. They decided to restructure, reorganize. This is their concept, or actually approved structure.

(b)(5)

work with them. I'm just saying we're all spread out into a lot of different -- embedded in a lot of their

1 different organizations.

2 This is, I think, improved coordination

3 rather than being in each of those

4 -- they see it, too. That's why they want to

5 consolidate all this and put everybody together. I

6 think they see it as well.

7 MALE PARTICIPANT: There is no

8 significance to the fact that the NRC is at the top of

9 that coordinating committee, is there?

10 MR. CASTO: No. I think just because I

11 was sitting there, you know, I was talking with him.

12 MALE PARTICIPANT: Okay.

13 MR. CASTO: I told Marty my purpose of the

14 visit over there this morning, or whenever that

15 meeting was -- it was today sometime. I think it was

16 this morning -- you know, was to kind of go over and

17 soothe the relationship a little bit and make sure,

18 you know, it's a healthy relationship.

19 MALE PARTICIPANT: Right.

20 MR. CASTO: I think we came out of there

21 very productive out of that meeting. I regret if

22 anything -- you know, how working relationship wasn't

23 as smooth as we wanted it to be. He did, too. I told

24 him, "Let's make sure we're strong today and have a

25 good working relationship."

1 We talked about Dallas Cowboy football and
2 some other things. He spent time in Texas and I just
3 got out of Texas so we had something to discuss so we
4 talked Cowboy football a little bit. I think we
5 walked out of there with a good work relationship.
6 He took us on a tour of the op center and
7 was very cordial and did a great job and seemed very
8 interested in asking for our help. Then he mapped
9 this org chart out and said that he had it up to the
10 Cabinet to get it approved. Just a few minutes ago he
11 emailed us and said, "Hey, it's been approved. We are
12 going to start tonight."
13 MALE PARTICIPANT: Okay.
14 MR. CASTO: So we are gathering an
15 interpreter and going to get Dan and Jim over there.
16 I'm sure this will just be an organizational meeting.
17 In fact, I don't know if we ought to grab Kurt or Rob
18 or somebody because this is new.
19 I'll go upstairs and see if I need to grab
20 Kurt or Rob or somebody. Ken Spurlock would probably
21 be a real good one to go over there. I just now
22 thought of that. I'll go up and see if they are
23 interested in going.
24 MALE PARTICIPANT: Okay.
25 MR. CASTO: Any reaction or anything I

should do or not do?

MALE PARTICIPANT: Looks good. I think going to the meeting is the right thing to do.

FEMALE PARTICIPANT: (Inaudible.)

MR. CASTO: Yeah, I think there probably

[redacted] (b)(5)

going to run upstairs and see if I can get somebody from the Ambassador's shop to go with us.

MALE PARTICIPANT: Nothing else from us.

MR. CASTO: Okay. Thank you, sirs and everybody back there, ladies.

(Whereupon, the call was concluded.)

Elapsed time on FTR 1:41:36-1:42:03

(CONFERENCE CALL INITIATED)

MR. VIRGILIO: Mr. Chairman?

DR. JACZKO: Hey, Marty. What are your thoughts?

(b)(5)

DR. JACZKO: Yeah.

(b)(5)

we've spent a lot of time developing the Protective Action Guidelines. There's a lot of science that goes

(b)(5)

DR. JACZKO: Yeah. Okay.

MIKE: This is Mike. It is clear that -- I don't think there are going to be additional

analyses or any additional results. I think now that we are on pathway they are going to come up with precautionary language.

MR. VIRGILIO: It would be if Naval Reactors or somebody else takes the lead on it. In

(b)(5)

MALE PARTICIPANT: If I could just

(b)(5)

action. Make sure that I have some documents so I can reference in the email if I get called again. In the meantime, I'm going to try to get some sleep.

1 MR. VIRGILIO: We'll do that now. We'll
2 have something documented for you before you wake up.
3 I hope it's not us that wakes you up again.
4 DR. JACZKO: Yeah. Thanks everybody.
5 MR. VIRGILIO: All right. Thanks,
6 Chairman.
7 (Whereupon, the call was concluded.)
8

1 Elapsed time on FTR 1:44:41-1:45:20

2 MR. CASTO: How are things going? Do you

3 guys need anything?

4 MALE PARTICIPANT: A case of beer would be

5 good to start.

6 MR. CASTO: I understand.

7 MALE PARTICIPANT: How are you doing?

8 MR. CASTO: Great.

9 (b)(5)

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18 MALE PARTICIPANT: We are preparing a

19 (b)(5)

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(b)(5)

5 Hey, Marty, is there any way that you
6 could follow me on my cell phone?
7 MR. VIRGILIO: Sure.
8 MALE PARTICIPANT: If you get a chance.
9 MR. VIRGILIO: Yeah.
10 MALE PARTICIPANT: Okay. Talk to you
11 soon.
12 MR. CASTO: Thanks.
13 (Whereupon, the call was concluded.)
14

1 Time elapsed on FTR 1:46:40-2:06:06

2 (CONFERENCE CALL INITIATED)

3 MR. CASTO: Hello.

4 MR. VIRGILIO: Hello, Chuck.

5 MR. CASTO: Hey, Marty. How are you

6 doing, sir?

7 MR. VIRGILIO: Not bad.

8 MR. CASTO: Good.

9 MR. VIRGILIO: Everyone is fine for

10 breakfast. How are you guys doing?

11 MR. CASTO: How, we're doing wonderful.

12 MR. VIRGILIO: It's almost time for

13 dinner.

14 MR. CASTO: We have Great Grain, Raisins,

15 Dates, and Pecan cereal and Banana Crunchy. That's

16 dinner.

17 MR. VIRGILIO: I'll be right over.

18 MR. CASTO: Yeah. We'll save some for

19 you.

20 MR. VIRGILIO: I'll bring the milk.

21 MR. CASTO: Yeah, because we haven't had

22 any. We've had coffee but we haven't had any cream.

23 I forget to pick it up the store every day.

24 MR. VIRGILIO: Chuck, we just emailed you

25 the position that we provided for the chairman to take

[redacted] (b)(5)

MR. VIRGILIO: No. This is just our thoughts. This is just NRC staff thoughts on the matter.

MR. CASTO: Okay.

[redacted] (b)(5)

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MR. VIRGILIO: It's just FYI at this point because we've already sent it off to the chairman, unless you see a fatal flaw. I think we're okay.

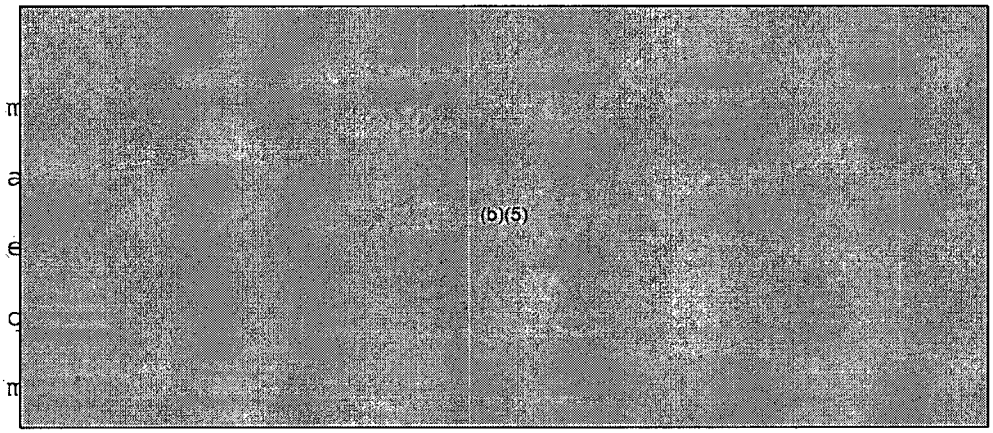
MR. CASTO: Okay. Good.

MR. VIRGILIO: Anything else we can do for you all?

MR. CASTO: Let me debrief you on a couple of things before you leave.

MR. VIRGILIO: Okay.

MR. CASTO: I just got out of a staff meeting. As far as KI in the country, they just got a shipment in. There's plenty of KI. I don't know, I think they had like 2.5 million doses or something like that. They have enough for 380,000 people. They are looking at two distribution centers at the embassy and in the New Santa Hotel. They would staff up for that. Let me gather my thoughts here.



the Reactor Safety Team, or our analysis people, are plugged into that.

MR. VIRGILIO: Okay.

MR. CASTO: I shared -- I don't know if you were in there or not but I shared the new organization structure for NISA and the NRC and MOFA. Dan is here. He just literally just walked back in from that meeting. Let's let him debrief what happened there. None of us have heard this so this will be the first time for us.

MR. DORMAN: The meeting actually started

1 late because we were waiting for people who we thought
2 were coming from the MOD and it turned out that they
3 didn't come but we ended up cooling our heels for
4 about 15 or 20 minutes before we started.
5 The Cabinet Secretary was doing all the
6 talking. They wanted to make it clear that they were
7 going to serve as our contact point going forward.
8 Mr. Nei, the EDO of NISA, provided the structure that
9 Chuck had laid out. I think they are interested in us
10 sitting in and providing the input that we have on the
11 subcommittees.
12 MR. CASTO: On the subcommittees, yeah.
13 MR. DORMAN: Not just on the oversight
14 committees. We talked a little bit broadly about the
15 importance of this oversight making sure that it's
16 integrating periodically to make sure that everything
17 is moving toward the same objective.
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25 MR. CASTO: If they are laying on another

1 layer of meetings, you know, we don't have the
2 staffing to do that.
3 MR. DORMAN: Right, and they acknowledge
4 that. I acknowledge that we don't need to be at every
5 meeting that they're doing.
6 MR. CASTO: Right.
7 MR. DORMAN: We just need to be working
8 with them to most efficiently and effectively give
9 them the best that we've got in terms of the system.
10 I think those are the high points.
11 MR. CASTO: Okay. We'll have to flush
12 that out just a little bit more and clarify just a
13 little bit more.
14 There are only two more issues, Marty.
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18 (b)(5)
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22 I don't think there's -- I don't know that
23 there's anything. They haven't asked us for anything.
24 I think they asked somebody for an opinion on that
25 but, other than that, they haven't asked us for any

1 (b)(5)

2 The second issue -- maybe there's a third
3 issue. The second issue is the small fire on the Unit
4 3 -- let me back up. The gray smoke from the Unit 3
5 spent fuel pool that caused a site evacuation late
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8 (b)(5)
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11 gray smoke coming from Unit 3.
12 MALE PARTICIPANT: Black.
13 MR. CASTO: Black or gray. I heard gray.
14 Black or gray, whichever. It was a temporary thing.
15 They evacuated. We really don't know the outcome of
16 that whether they air sampled and then went back to
17
18 (b)(5)
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20 MALE PARTICIPANT: I talked to some people
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22 (b)(5)
23 MR. CASTO: We knew that part.
24 MALE PARTICIPANT: From my discussions
25 with Mark Sally (phonetic) in researching the fire he

would expect that to be a white smoke.

MR. CASTO: Okay. That's what I was more looking for would it be white or gray.

MALE PARTICIPANT: He said if you get a hydrocarbon fire you're going to get more black smoke.

MR. CASTO: Magnesium.

MALE PARTICIPANT: For normal class A, class B fires you might get some kind of brownish

(b)(5)

MALE PARTICIPANT: Chuck, we found that there was no increase in temperature and no increase in radio activity. That's the report that was being carried on the news.

MR. CASTO: Okay.

MALE PARTICIPANT: We agree that's probably the report --

MR. CASTO: That's probably the report that came from them, yes.

MALE PARTICIPANT: We'll be interested in the next round of AMF downwind of that.

MR. CASTO: Okay. And then, finally, I'm

1 sure you've seen in the reports that while electrical
2 is back, damaged equipment they will, like we
3 predicted, component by component assess damage and go
4 through it.
5 They say they estimate two to three days
6 [redacted]
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8 (b)(5)
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11 I think that's the situation as we stand
12 tonight.
13 MALE PARTICIPANT: One more thing. I'm
14 going to be setting up a meeting with (b)(6) probably
15 tomorrow morning. NEIC will come down.
16 MR. VIRGILIO: Chuck, this is Marty.
17 MR. CASTO: Yeah, sir.
18 MR. VIRGILIO: At one time we were talking
19 about working with them to identify the critical
20 equipment that they might want to power up in order to
21 ensure that they had adequate level and cooling in the
22 reactor vessel and the spent fuel pool.
23 MR. CASTO: Right.
24 MR. VIRGILIO: Then we were going to work
25 with them based on the dose map test and maybe define

1 what are the real viable strategies.

2 MR. CASTO: I suspect we are a long way

3 off from that, Marty.

4 MR. VIRGILIO: Okay.

5 MALE PARTICIPANT: They haven't engaged us

6 yet on that.

7 MR. CASTO: When they got in there today

8 and realized the electrical equipment was severely

9 damaged, which we predicted, they are a long way from

10 that.

11 MALE PARTICIPANT: Okay. So they've come

12 in and looked at the switch gear?

13 MR. CASTO: Yes.

14 MALE PARTICIPANT: They see significant

15 problems?

16 MR. CASTO: At least -- I think what

17 they're trying to do is get spent fuel cooling running

18 on Unit 2 but that is going to be a very -- I mean,

19 you've got to get --

20 Stand by. We have a building page. That

21 happens every night.

22 Where was I at? I wasn't listening to

23 myself. Oh, the spent fuel pool cooling. You know,

24 you would have to get CCW reactor building. The RVCC

25 has got to be running. Then you have to get spent

1 fuel pool cooling running, service water running.

2 I mean, you've got three loops of cooling

3 that you've got to get running to get spent fuel pool

4 cooling to that pool. With the radiation levels we're

5 seeing in there, you know, it's highly improbable.

6

7 (b)(5)

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9 MR. CASTO: We talked about that. They

10 are worried about hydrogen and No. 2. They want to

11 get -- that's all part of it. They want to open a

12 bigger hole in that building because of hydrogen.

13 That's why they are prioritizing Unit 2.

14 MALE PARTICIPANT: There is probably more

15 equipment in Unit 2.

16 MR. CASTO: Right. Their view is they

17 also want to try to power up some instruments in the

18 control, get the IT buses up and running so they can

19 get some instrumentation and see what the condition of

20 Unit 2 is once they get the IT buses up.

21 Marty, that's the evening debrief.

22 MR. VIRGILIO: Okay. That pleases us very

23 nicely. I'm surprised we haven't gotten a call from

24 the chairman.

25 JOHN: Actually, Marty, can I throw one

1 thing in?

2 MR. VIRGILIO: Sure, John. Go ahead.

3 JOHN: I was in a meeting with the

4 Ministry of Defense and they brought up the commission

5 meeting yesterday. They were very, very, very

6 interested in what the concept of that commission

7 meeting would include.

8 I had seen the scheduling note so I

9 basically just mentioned the outline and said in

10 general terms discuss the event over here and the

11 NRC's response such as on U.S. plants back home but

12 not go into detail regarding any NRC efforts over here

13 or energy information over here. Is that correct?

14 MR. VIRGILIO: How about I send you the

15 slides of (inaudible). Okay?

16 JOHN: Yeah, I saw Bill's slides.

17 MR. VIRGILIO: Oh, you did? Okay.

18 JOHN: I guess those marry to what I

19 already told them.

20 MR. VIRGILIO: Okay. If you've seen the

21 slides, then they are good.

22 JOHN: They had a heightened sense of

23 interest.

24 MR. VIRGILIO: Now, are they going to

25 watch -- we'll webstream it. Are they going to watch

it on webstream?

JOHN: We would say without a doubt. Without a doubt.

MALE PARTICIPANT: Okay. I think the first half of the presentation, or the first quarter maybe, is devoted to what we think about the situation

(b)(5)

(b)(5)

MALE PARTICIPANT: Okay.

MR. CASTO: Anything we can do for you, Marty?

MR. VIRGILIO: I think we're set for now. I'm looking around the table. Sounds like we're good for the moment.

MR. CASTO: Okay. Have a good day.

MR. VIRGILIO: All right. You too.

MR. CASTO: Hey, Marty, anything on that information we sent you?

MR. VIRGILIO: I still haven't gotten it.

MR. CASTO: Ah.

BROOKE: It's being walked over now. I just got an email.

MR. CASTO: Come on Brooke. It's not my fault.

BROOKE: Don't get me started.

MR. McDERMOTT: Marty and Chuck, Brian McDermott.

MR. VIRGILIO: Yes.

MR. McDERMOTT: Just a question since I'm just coming onto shift. Have we seen the headquarter's understanding of the status with the team and gotten that cross-checked just so we're all on the same page?

MALE PARTICIPANT: We're not sure what you're asking, Brian.

MR. McDERMOTT: The status of each of these units and the spent fuel pools to make sure that

(b)(5)

MR. CASTO: We sent you the matrix. I don't know how you would like to go through that. I mean, we are prepared to talk about it, whatever you'd like, either one. Do you want me to go through the spent fuel pools?

1 MR. VIRGILIO: Why don't I tell you what
2 we're -- go ahead.
3 MALE PARTICIPANT: We could email the one-
4 pager.
5 MIKE: Basically what we're hearing with
6 respect to the capacity of Units 1 through 3 they are
7 [redacted] (b)(5)
8 MR. CASTO: Mike, one thing I would say
9 [redacted]
10 (b)(5)
11
12 MIKE: Okay.
13 [redacted]
14 (b)(5)
15
16 There were reports of, I guess, fresh water being
17 used on the 20th. Payment --
18 MR. CASTO: What was that about fresh
19 water, Mike?
20 MIKE: There were reports of fresh water
21 being used on the 20th. I'm not sure of the source of
22 that.
23 MR. CASTO: We never heard anything about
24 fresh water.
25 FEMALE PARTICIPANT: Earlier this morning

one of the briefings mentioned fresh water in at least one of the units.

MIKE: All right. Very good. Containment pressure in Unit 3 is stabilized. Venting is not expected.

MR. CASTO: I don't know if I -- well, I don't know. What are we thinking, what not expected or not needed right now or something rather than projected it won't be.

MIKE: I mean, they continuously will have to periodically (inaudible) so whether they are doing it today or midnight tomorrow night or whatever. I mean, that's the heat sink and it's going to be steaming away.

(b)(5)

MIKE: Then we picked up the discussion on gray smoke emanating from Unit 3. We're saying now that the source of that smoke is out for now.

We've indicated with respect to respiration of power that TEPCO installed high-voltage HV cables from nearby transmission lines in 1 and 2 and it's been working cooling the equipment. We are mindful of the discussion what we just had about how

1 difficult that would be.

2 Power to Units 3 and 4 as planned. We

3 were saying that it was planned perhaps by today but

4 we don't have any confirmation about whether that

5 happened for Units 3 and 4. I guess the two diesel

6 generators are running for Units 5 and 6.

7 Unit 5 has pumped it power by one but the Unit 6

8 diesel generators are providing cooling to the Unit 5

9 spent fuel pools. The external AC power cables have

10 reached Units 5 and 6 but power has not yet been

11 connected.

12 JOHN: Mike, hey. This is John. One

13 (b)(5)

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17

18 (b)(5)

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21

22 MIKE: Yep, I understand.

23 MALE PARTICIPANT: Don't know how to

24 reconcile it, though. I mean, we've got to go with

25 what we think we know based on all the information.

(b)(5)

It was a big earthquake, major damage, we're working on recovery and this is what we think about the U.S.

MIKE: I think, John, what you're saying is that we've gotten increasingly detailed questions as things have been reported. I don't mind the caveat, actually, that says this is based on available information at the time and it could change or whatever.

We are primarily -- I guess that's what I

(b)(5)

of what we were getting from the varies reports we were getting. Is that okay?

MR. CASTO: Go ahead, Mike.

MIKE: Okay. And then dose rates haven't changed significantly at the site, although some reductions were reported following efforts to add water to Unit 3. DOE aerial monitoring assessments; system assessments; the recommendation for evacuation within 50 miles of the plant; concentration of iodine 131 within 20 kilometers; have reached levels 10 times

1 maximum acceptable levels; and distribution of
2 (inaudible) have been suspended. That's not
3 (inaudible), is it?
4 MR. CASTO: What's that, Mike? We missed
5 it.
6 MALE PARTICIPANT: Distribution of spinach
7 and milk have been suspended.
8 MR. CASTO: Okay.
9 MIKE: That's primarily it with the second
10 status.
11
12
13
14
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16 (b)(5)
17
18
19
20
21 MALE PARTICIPANT: Not at all.
22 MIKE: No, I don't think so.
23 MALE PARTICIPANT: Our view is all this
24 information is already out there.
25 MALE PARTICIPANT: All this information is

1 already in the public domain.

2 MALE PARTICIPANT: How about the four

3 spent fuel pools? What are you guys thinking?

4 MIKE: I guess the previous status update

5 on the spent fuel pools is that -- well, just looking

6 at the status update of the operation centers, in the

7 status update we say that the temperature of the pool

8 for Unit 1, for example, is less than 100 degrees

9 centigrade, that they have been spraying water into

10 spent fuel pool No. 2.

11 I'm sorry. Unit 1 spent fuel pool is 100

12 degrees centigrade. Unit 2 spent fuel pool is 100

13 degrees centigrade. Unit 2 spent fuel pool they have

14 been spraying water into it. Unit 4 spent fuel pool

15 is less than 100 degrees centigrade. That's

16 information that we've carried for a couple of days

17 now in the status updates.

18 FEMALE PARTICIPANT: But aren't we clear

19 that Unit 3 is also less than 100 degrees centigrade?

20

21 MIKE: Yeah. For some reason we haven't

22 gotten that into the update. What is in the update is

23 the note that we mentioned, all the gray smoke that

24 was observed, again, with no additional information to

25 validate the source of that smoke.

1 MALE PARTICIPANT: Pick one of them, for

2 [redacted]

3 [redacted]

4 [redacted]

5 [redacted]

6 [redacted] (b)(5)

7 [redacted]

8 [redacted]

9 [redacted]

10 [redacted]

11 MALE PARTICIPANT: (Inaudible).

12 MALE PARTICIPANT: The information the

13 Japanese have -- that we have from the Japanese that

14 it's less than 100 degrees C is based on their

15 [redacted]

16 [redacted] (b)(5)

17 [redacted]

18 [redacted]

19 [redacted] (b)(5)

20 [redacted]

21 MR. McDERMOTT: This is Brian McDermott

22 again. Perhaps it would be good if we sent the

23 electronic copy of the status to the team and let them

24 look at it because the discussion is helpful for

25 understanding but if we're going to be very specific

about words and descriptions, it would be nice to have the team's fingerprint on that rather than us just for laying it.

MALE PARTICIPANT: Which one are you referring to, the sit rep or the one-pager, or both?

MR. McDERMOTT: Well, if we had the sit rep I think we can get the plume down and pager contents from them if we have them look at the more detailed one.

(b)(5)

MR. McDERMOTT: Hey, Chuck, Don, if you guys could take a look at that sit rep and give us feedback on things that you're not comfortable with, that would be good calibration for us. We can do that routinely. Is that okay?

MR. CASTO: Yes.

MR. McDERMOTT: Anything else, guys? Thank you.

MR. CASTO: All right. Talk to you soon.

MR. McDERMOTT: Okay. Have a good night.

(Whereupon, the call was concluded.)

1 Elapsed time on the FTR 2:35:57-2:47:51

2 (CONFERENCE CALL INITIATED)

3 MALE PARTICIPANT: Good morning, everyone.

4 Thanks for joining us on the commissioner's distance

5 brief. It's going to be a busy day today with the

6 preparations for the commission meeting.

7 You may be hearing some new reporting with

8 respect to smoke being observed coming out of one of

9 the reactor units, reactor Unit 3. Our team on the

10 ground has not been able to confirm the source of that

11 smoke.

12 We do understand that they pulled back the

13 operators from the immediate vicinity but we don't

14 know the origin of that smoke or its safety

15 significance so we will continue to run that down to

16 better understand what's going on with respect to the

17 plant.

18 Current information that we have here in

19 the operations center is that Units 1, 2, and 3 remain

20 in a static condition with seawater injection

21 continuing. There are reports that fresh water was

22 used on March 20th for the cooling pool -- the cooling

23 of the spent fuel pools but we don't believe that's

24 the case based on the insights that we have from our

25 team in Japan.

1 Containment integrity is believed to be
2 intact for Units 1, 2, and 3. Containment pressure of
3 Unit 3 has stabilized. Venting is not imminent. The
4 Japanese government indicated that there were no
5 increases in temperatures for radioactivity
6 measurements in the vicinity of the site. There are
7 indications that both Units 3 and 4 spent fuel pools
8 now have water in them so the fuel is being cooled to
9 some extent.
10 With respect to the installation of high
11 voltage AC power cables to nearby transmission lines,
12 Units 1 and 2 have temporary power available. TEPCO
13 is working to run the temporary cables that would be
14 necessary to support the cooling equipment.
15 Power to Units 3 and 4 is planned for
16 installation today. It says as early as March 21st.
17 Since there is about three-and-a-half hours left to
18 March 21st in Japan, we'll watch that carefully to
19 verify when that power is restored.
20 There are two diesel generators that are
21 up and running and they are supplying AC power to
22 Units 5 and 6. At Unit 5 there is an RHR pump powered
23 by one of the diesel generators that is providing
24 cooling for the Unit 5 spent fuel pool. We understand
25 external AC power cables have been extended to Units 5

1 and 6 but the power has not yet been connected.

2 In terms of the radiation dose rates in

3 the vicinity of the site, we understand that they have

4 not changed significantly, although there were some

5 reductions that were reported after water was added to

6 the spent fuel pool for Unit 3. At least they were

7 reported.

8 The DOE aerial monitoring system supports

9 the recommendation -- continues to support the

10 recommendation that we made mid-week last week with

11 respect to protective actions out to 50 miles for the

12 evacuation.

13 You have probably heard by now that we've

14 got confirmation of the elevated levels of

15 radioactivity in spinach and milk from Japanese

16 agricultural products.

17

18

19 (b)(5)

20

21

22 Our understanding is once that agreement

23 is forged, then we will expect from NARAC to do those

24

(b)(5)

25

1 it out with respect to what kind of contamination
2 levels we may see.
3 We have, of course, over the weekend
4 convened the industry government consortium. The call
5 for that consortium today will be held at 2:00 p.m. to
6 avoid any potential conflict with the scheduling of
7 the commission meeting in the morning.
8 The priority is to establish the methods
9 for U.S. industry to interact directly with TEPCO.
10 We're also working with our other agency counterparts
11 to coordinate the lead for the consortium including
12 arranging for logistics funding, etc.
13 Finally, over the last 12 hours or so
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18 (b)(5)
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22 I think that's the highlights for this
23 morning and we're prepared to answer questions. I
24 would say I'm going to be stepping out momentarily to
25 participate in another call but we're here to provide

support if needed.

With that, let me close off and open it up for questions.

MR. CASTLEMAN: This is Pat Castleman

(b)(5)

MALE PARTICIPANT: As I look around the room I don't see any answers but we can go back to the RSP.

MR. CASTLEMAN: Just out of curiosity so we get an idea of how much margin there is.

The next question is have we detected any radiation here other than the trace amounts at San Onofre?

MALE PARTICIPANT: The information that I have from turnover is that we have detected very low levels of radionuclides in the United States not surprisingly. As of March 18th, you may recall, there was confirmation of monitoring safety in Sacramento detecting minuscule quantities of iodine. They are at levels that are consistent with what we expect and at very low levels.

MR. CASTLEMAN: Okay.

MALE PARTICIPANT: They don't pose any kind of health concerns here in the U.S.

1 MR. SNIDERLY: This is Mike Sniderly
2 (phonetic). I wanted to build on Pat's question.
3 Commissioner Popolski is leaving today for a visit to
4 San Onofre and if he could get exact readings, it
5 would be very helpful to us to support his visit with
6 Senator Boxer and Senator Feinstein.
7 Right now I'll go with what you gave me
8 which is very low but he was asking if he could get
9 the latest readings at San Onofre and Diablo. The
10 Sacramento number would be great.
11 MR. CAMPER: Hey, Mike, Larry Camper
12 (phonetic). Let me help out with that. A couple
13 things. The PMT does have the exact values that came
14 from songs. Very low numbers at MDA levels. There's
15 also if you go to the UC Berkeley Engineering they
16 have a website. They did an extensive analysis of
17 rain water evaluations. Again, the numbers were very
18 low.
19 Also, I understand from the PMT last
20 evening that Palo Verde had detected some iodine but
21 it was also, again, very low. That data is available.
22 MR. SNIDERLY: Thank you, Larry. If
23 someone could from the PMT maybe could send me an
24 email, I would greatly appreciate it. Thanks.
25 MR. McDERMOTT: Hey, Mike. Brian

1 McDermott. We'll work with the PMT to get you the
2 latest readings available from California coast and
3 area and get that in an email to you.
4 MR. SNIDERLY: Thank you very much.
5 MR. ORRS: This is Bill Orrs (phonetic).
6 The water being in No. 4 spent fuel pool is good news.
7 Do we have any idea how we got it in there?
8 FEMALE PARTICIPANT: No. Not at this time
9 we don't.
10 MR. ORRS: Or how much?
11 FEMALE PARTICIPANT: No.
12 MR. CASTLEMAN: This is Pat Castleman
13
14
15 (b)(5)
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18 FEMALE PARTICIPANT: That's what the
19
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22 (b)(5)
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1 MR. CASTLEMAN: Okay. Good. Thank you.

2 MALE PARTICIPANT: The staff position was

3 (b)(5)

4

5 FEMALE PARTICIPANT: Exactly. We had

6 (b)(5)

7

8

9 MALE PARTICIPANT: Thank you.

10 MALE PARTICIPANT: Any other questions?

11 MALE PARTICIPANT: Just one more. On Unit

12 3, the white smoke, did we detect any additional or

13 higher readings of radiation when the smoke was

14 emitted?

15 FEMALE PARTICIPANT: Not that we know of

16 at this time. Any other questions?

17 MALE PARTICIPANT: One more. I understand

18 (b)(5)

19

20 of parallel ours?

21 FEMALE PARTICIPANT: I don't have any

22 information on that.

23 MALE PARTICIPANT: Okay.

24 MALE PARTICIPANT: Can you clarify that

25 question for us again?

1 MALE PARTICIPANT: The question is I

2 [redacted]
3 (b)(5)
4
5

6 [redacted]
7 (b)(5)
8

9 looked at some of that probably three days ago. That
10 was numbers they had three days ago.

11 [redacted]
12
13 (b)(5)
14
15
16

17 MALE PARTICIPANT: All right. Thank you.
18 MR. CRANRICH: This is Mike Cranrich.
19 I've got one question for you. Yesterday Secretary
20 Chu had noted that the Unit 2 remains a concern to the
21 U.S. because of the length of the damage to the taurus
22 (phonetic) and venting coming off of the reactor

23 [redacted]
24 (b)(5)

25 MR. McDERMOTT: We haven't seen anything -

1 - what's interesting to me -- this is Brian McDermott
2 again. What we did on turnover this morning is the
3 concerns about the Unit 2 taurus integrity which we
4 had heard earlier. Things have changed and I'm
5 not sure why that reporting is changing. We're going
6 to try to verify that with the team to see what drove
7 that change in perspective. The word now is that the
8 three containments are all thought to be intact.
9 FEMALE PARTICIPANT: Right.
10 MR. McDERMOTT: So something must have
11 changed there, Mike. We're not quite sure what drove
12 that. In terms of concerns, I mean, the spent fuel
13 pool, not having containment and various reports on
14 water levels and rad levels have me still concerned
15 about the spent fuel pool.
16 MR. CRANRICH: Absolutely. I agree with
17 that. Thank you. I just want to mention one comment,
18 too, just for the benefit of the folks on the line.
19 If you got to one of the ministry's departments, I
20 forget exactly the full title, but it's MEXT, you can
21 get a reading that is periodically updated as surveys
22 are done around the evacuation area and the sheltering
23 area and beyond. That's for the other TAs. They
24 might find that beneficial. In fact, I can send you
25 the latest report if you're curious.

1 FEMALE PARTICIPANT: Thank you.

2 MR. CRANRICH: Sure.

3 FEMALE PARTICIPANT: Any other questions?

4 MALE PARTICIPANT: There was a question.
5 I've got one follow-up item that was turned over in
6 terms of a desire from the commission to get a copy of
7 a reactor safety team. This is one that, I guess, was
8 developed early on in the event. We have a piece of
9 paper here that looks like a list. We're trying to
10 verify where it was sent and when but it was very
11 early on.

12 It looks like it was a brainstorming of
13 ways to get water to the pool or do the reactors,
14 other equipment. It's non-specific. In other words,
15 you know, air compressors but no size or capacity.
16 That kind of stuff. I understood there was a great
17 interest in the list. We're just trying to give you
18 the best we can in terms of where it was sent and when
19 it was sent. Is that still of interest to you all?

20 MR. CASTLEMAN: This is Pat Castleman.
21 I've been sort of pursuing this. That list that you
22 just mentioned sounds like what we were briefed on at
23 1430 last Monday. We understood it was a list that
24 was provided to USAID and for them to run by the
25 Japanese to just say, "Hey, we can get some of this

1 equipment for you," and so forth.

2 The reason the list was of interest is it

3 was characterized as having been developed as a

4 conglomeration of what all the different sites have

5 done or what we've seen at the different sites in

6 terms of actions they took for B5B.

7 It was interesting primarily because we

8 had a commission meeting this morning and that kind of

9 background of hardware and so forth we thought would

10 be helpful for our commissioners to have just in the

11 back of their mind because B5B is one of the topics

12 that they are going to talk about. That was the

13 genesis, the nature of the request.

14 MALE PARTICIPANT: So to be useful to you,

15 you need it now.

16 MR. CASTLEMAN: Ah, yeah.

17 MALE PARTICIPANT: We can provide it to

18 you, Pat. We'll send it around to the commissioner

19 assistants. There's no time stamp on it. There's no

20 email in front of it to tell me where it was sent but,

21 for the purpose of this understanding, what kind of

22 temporary equipment you might use to implement the

23 kind of action that was first identified under B5B.

24 Kind of like that. We can get that to you. We'll put

25 it in PDF and email it to you.

1 MR. CASTLEMAN: Okay. That would be
2 great.
3 MALE PARTICIPANT: Just recognize I can't
4 tell you at this point where it was sent and so forth.
5 MR. CASTLEMAN: Understood. That's
6 perfectly fine. The information is really more
7 important for background.
8 MALE PARTICIPANT: Okay.
9 MR. CASTLEMAN: Okay. Great. Thank you.
10 MALE PARTICIPANT: Sure. All right. Are
11 there any other questions?
12 MR. ORRS: Just one. This is Bill Orrs
13 again. The answer is probably obvious but in the U.S.
14 we installed a hard vent on that type of reactor. Did
15 they do that and it just didn't work or they don't
16 have it?
17 MALE PARTICIPANT: We don't know, Bill.
18 We haven't gotten that information. We wondered the
19 same thing.
20 MR. ORRS: All right. Thank you.
21 MR. ROGGY: This is John Roggy (phonetic).
22 Is there any update on the Bechtel spray system?
23 MALE PARTICIPANT: Yes. Chuck might have
24 mentioned that this morning but, yeah. We got a
25 report that the transfer and C17 was wheels up at 1835

1 local time in Perth. Perth is about an hour off of
2 Japan time so that looks like about an hour-and-a-half
3 ago.
4 MR. ROGGY: Thank you.
5 MR. McDERMOTT: All right. Thanks
6 everybody.
7 MALE PARTICIPANT: Thank you, Brian.
8 (Whereupon, the call was concluded.)
9

1 Elapsed time on FTR 3:04:41-3:04:57

2 DR. JACZKO: Hey, Mike.

3 MIKE: Good morning, Chairman. How are

4 you today?

5 DR. JACZKO: Good. How are you?

6 MIKE: Good. You want a rundown?

7 DR. JACZKO: Sure.

8 MIKE: Just briefly there's been press

9 reporting about smoke being seen from at least one of

10 the units and reports of pulling back the operators

11 from the plant.

12 DR. JACZKO: Okay.

13 MIKE: We are trying to understand what

14 the cause of that smoke is and what its safety

15 significance is. At this point we do not know.

16 That's a little bit out there right now. We're

17 cranking it down.

18 Units 1, 2, and 3 remain in a static

19 condition. The Japanese government indicated that

20 there were no increases in temperatures or

21 radioactivity in the last 12 hours or so.

22 DR. JACZKO: Okay.

23 MIKE: At least they are maintaining

24 current conditions.

25 DR. JACZKO: Okay.

1

2 MIKE: And there are indications now that
3 both Units 3 and 4 spent fuel pools have some level of
4 water in them.
5 DR. JACZKO: Okay.
6 MIKE: That's a positive development.
7 With respect to restoring AC power, they are making
8 various improvements in that area. TEPCO has
9 installed high-voltage AC power lines from the nearby
10 transmission line for Units 1 and 2. Units 1
11 and 2 have temporary power available. They are also
12 working to run the lines to Units 3 and 4. The word
13 from Japan was that power may be restored as soon as
14 today in Japanese time but that is now they have three
15 hours left to accomplish that feat.
16 DR. JACZKO: Okay.
17 MIKE: There are two diesels running and
18 supplying AC power in Units 5 and 6.
19 DR. JACZKO: I'm sorry. On 1 and 2 I've
20 heard lots of reports of the AC power. The last I
21 understood they had a high-voltage line, high-voltage
22 transmission line, into essentially some substation
23 near the plant.
24 MIKE: Right.
25 DR. JACZKO: Do they now have some line

1 from that substation to Units 1 and 2 or it's still a
2 low-voltage line into 1 and 2?
3 MIKE: My understanding is that they have
4 it into the plans but that they don't have emergency
5 equipment running off of that power.
6 DR. JACZKO: Okay. Okay.
7 MIKE: They are still working to restore
8 functionality of those components.
9 DR. JACZKO: Okay.
10 MIKE: If something changes in that
11 regard, we will certainly provide that update.
12 DR. JACZKO: Okay. Good.
13 MIKE: Dose rates have not changed
14 significantly at the site like I previously reported
15 but they do indicate that with their return of water
16 in Unit 3 spent fuel pool that, of course, that
17 lowered the rad level.
18 Measurements on site and around the site
19 continue to support the productive action
20 recommendation for the 50-mile evacuation. You are
21 aware of the reporting over the weekend that they did
22 find elevated levels of radioiodine in spinach and in
23 milk. You are certainly aware of that.
24 DR. JACZKO: Yes.
25 MIKE: Charlie Miller is down on his way

1 to the White House to support that meeting to agree on
2 the "worse case" so that we can come to resolution on
3 that and actually have NARAC make the runs that we
4 were pushing to make some time ago.
5 DR. JACZKO: Okay.
6 MIKE: You are aware the industry
7 consortium call is on for today at 2:00.
8 DR. JACZKO: Good.
9 MIKE: So that does not conflict with the
10 commission meeting in any way.
11 DR. JACZKO: Good.
12 MIKE: Are you aware, I think you are, of
13 [redacted]
14 (b)(5)
15 [redacted]
16 DR. JACZKO: Yes.
17 MIKE: So you are fully up to speed on
18 that?
19 DR. JACZKO: Well, I was suppose to do an
20 8:00 call, I believe, in regard to that and that call
21 got canceled so many you can -- I'm hopeful that is a
22 [redacted]
23 (b)(5)
24 [redacted]
25 MIKE: Yes. We don't have that

1 confirmation here, sir.

2 DR. JACZKO: Okay.

3 MIKE: There was some discussion about a
4 10 to the -7th microcurie per mL reading. We think
5 that's a spurious reading. It's outside the range.
6 The bulk of the readings were in the 10 to the -9th,
7 10 to the -10th range but we're still working that
8 through the PNC.

9 DR. JACZKO: And, again, I asked Cindy
10 this earlier, but just to confirm my understanding is
11 that those 10 to the -9 and 10 to the -10 are not at
12 this point to our knowledge 100 percent iodine. Is
13 that correct?

14 FEMALE PARTICIPANT: We don't know but
15 we'll get you an answer to that, sir.

16 DR. JACZKO: Okay. I mean, my
17 understanding is that a lot of this is based on the
18 assumption that there was discussion that the DAC is 2
19 x 10 to the -8 for radioiodine which would correspond
20 to 25 rem dose in 200 hours -- 2,000 hours as I recall
21 which if you scale that down to reducing by a factor
22 of 5 to get the thyroid dose for a one-year-old, that
23 would occur obviously in a fifth of that time which is
24 closer to, say, 400 hours.

25 MIKE: This is I131?

1 DR. JACZKO: Yes. Again, this is what the

2 [redacted]

3 (b)(5)

4 [redacted]

5 [redacted]

6 [redacted]

7 (b)(5)

8 [redacted]

9 [redacted]

10 MIKE: Yes.

11 DR. JACZKO: Okay.

12 MIKE: We'll continue to work that. The 1

13 x 10 to the -7th reading was iodine.

14 DR. JACZKO: Was iodine. Okay.

15 MIKE: But the 10 to the -9 to 10 to the -

16 10 reading, the piece of paper that I have suggest

17 that is total activity, not isotope specific.

18 DR. JACZKO: Yes. Okay. I think that

19 distinction is getting lost a little bit. People took

20 the 10 to the -7 and said it was radioiodine and,

21 therefore, the 10 to the -9 must also be radioiodine.

22 I think we need to confirm and verify that fact.

23 MIKE: Right. You have this write-up on

24 the issue?

25 DR. JACZKO: Yes, I do.

1 MIKE: Okay.

2 DR. JACZKO: Thank you. So my
3 understanding is there will be a call like 9:30, I
4 guess, to further discuss this issue at a lower level
5 than the deputies.

6 MIKE: Okay. Is anybody from NRC
7 participating in that call?

8 DR. JACZKO: I would assume so. All I got
9 was the call that the 8:00 was canceled and that it
10 would be 9:30 instead at the lower level.

11 MIKE: Okay. We'll work at that from here
12 and make sure we're on it.

13 DR. JACZKO: Okay. Good. Now, in terms
14 of priorities going forward, what are our top
15 priorities?

16 MIKE: Well, continued stabilization of
17 the reactors and the pools and understanding what the
18 cause of the smoke is from Unit 3 whether that has new
19 safety ramifications.

20
21
22 (b)(5)
23
24

25 want to get the consortium off and rolling.

DR. JACZKO: Okay.

MIKE: I'm not clear on what we need to do on that. I think you were going to be on that call at 2:00. Is that our understanding?

DR. JACZKO: I'm either doing it at 2:00 or I'm doing one before with the principals. It's not clear to me how that's going to work but I'm sure somebody has my schedule and is going to tell me.

MIKE: Okay. All right. Those are our priorities.

DR. JACZKO: Okay. Good. Thank you.

MIKE: Anything else that we need to be working on to support you?

DR. JACZKO: No. I think that's good. We'll continue to do what we can to help Chuck and the folks there and, again, provide good recommendations to the Japanese where we see them.

We are perhaps in a better space right now in that we are at least being able to make decisions based on actual data which is much better. (b)(5) (b)(5)

Well, the likelihood is a reactor release

1 because we would not anticipate a large inventory of
2 radioiodine in the spent fuel pools at this point. I
3 don't think we see anything at the site, although
4 perhaps something from the smoke that may be of
5 interest.
6 MIKE: Okay.
7 DR. JACZKO: Keep up the good work, folks.
8 Obviously if something changes, let me know.
9 MIKE: Okay.
10 DR. JACZKO: Okay. Thanks.
11 MIKE: Thank you.
12 (Whereupon, the call was concluded.)
13