

5. Action taken by the government

5. Action Taken by the Government(1/5)

March 11th, 2011

- 14:46 ●Set up of the NISA Emergency Preparedness Headquarters (Tokyo) immediately after the earthquake
- 19:03 ●Government declared the state of nuclear emergency. (Establishment of Government Nuclear Emergency Response Headquarters and Local Emergency Response Headquarters)
- 21:23 ●Directives from Prime Minister to the Governor of Fukushima Prefecture and heads of towns were issued regarding the event occurred at Fukushima Daiichi NPS, TEPCO, in accordance with the Act on Special Measures Concerning Nuclear Emergency Preparedness as follows:
 - Direction for the residents within 3km radius from Unit 1 to evacuate
 - Direction for the residents within 10km radius from Unit 1 to stay in-house
- 24:00 ●Vice Minister of Economy, Trade and Industry, Ikeda arrived at the Local Emergency Response Headquarters

5. Action Taken by the Government(2/5)

March 12nd, 2011

- 05:44 ●Residents within 10km radius from Unit 1 of Fukushima Dai-ichi NPS shall evacuate by the Prime Minister Direction
- 07:45 ●Directives from Prime Minister to the Governor of Fukushima Prefecture and heads of towns were issued regarding the event occurred at Fukushima Dai-ni NPS, TEPCO, pursuant to Act on Special Measures Concerning Nuclear Emergency Preparedness as follows:
- Direction for the residents within 3km radius from Fukushima Dai-ni NPS to evacuate
 - Direction for the residents within 10km radius from Fukushima Dai-ni NPS to stay in-house
- 17:39 ●Prime Minister directed evacuation of the residents within the 10 km radius from Fukushima-Dai-ni NPS
- 18:25 ●Prime Minister directed evacuation of the residents within the 20km radius from Fukushima Dai-ichi NPS
- 20:05 ●Considering the Directives from Prime Minister and pursuant to the Nuclear Regulation Act, the order was issued to inject seawater to Unit 1 of Fukushima Dai-ichi NPS and so on.

5. Action Taken by the Government(3/5)

March 13th, 2011

- 09:30 ● Directive was issued for the Governor of Fukushima Prefecture and heads of towns in accordance with the Act on Special Measures Concerning Nuclear Emergency Preparedness on the contents of radioactivity decontamination screening.

March 15th, 2011

- 05:30 ● Prime Minister, Kan expressed to establish The Joint Headquarters to Fukushima Dai-ichi NPS accident
- 10:30 ● According to the Nuclear Regulation Act, Minister of Economy, Trade and Industry issued the directions as follows.
- For Unit 4: To extinguish fire and to prevent the occurrence of re-criticality
 - For Unit 2: To inject water to reactor vessel promptly and to vent Drywell
- 11:00 ● Prime Minister directed the in-house stay area. -In-house stay was additionally directed to the residents in the area from 20 km to 30 km radius from Fukushima Dai-ichi NPS considering reactor situation
- 22:00 ● According to the Nuclear Regulation Act, Minister of Economy, Trade and Industry issued the following direction.
- For Unit 4: To implement the injection of water to the Spent Fuel Pool.

March 20th, 2011

- 23:30 ● Directive from Local Emergency Response Headquarters to the Prefectural Governor and the heads of cities, towns and villages was issued regarding the change of the reference value for the screening level for decontamination of radioactivity

5. Action Taken by the Government(4/5)

March 21st, 2011

- 07:45 ● Directive titled as “Administration of the stable Iodine” was issued from Local Emergency Response Headquarters to the Prefectural Governor and the heads of cities, towns and villages.
- 16:45 ● Directive titled as “Ventilation for using heating equipments within the in-house evacuation zone” was issued from the Head of Local Emergency Response Headquarters to the Prefectural Governor and the heads of cities, towns and villages.
- 17:50 ● Directive from the Head of Government Nuclear Emergency Response Headquarters to the Prefectural Governors of Fukushima, Ibaraki, Tochigi and Gunma was issued, which directs the above-mentioned governors to issue a request to relevant businesses and people to suspend shipment of spinach, Kakina (a green vegetable) and raw milk for the time being.

March 25th, 2011

- NISA directed orally to the TEPCO regarding the exposure of workers at the turbine building of Unit 3 of Fukushima Dai-ichi Nuclear Power Station occurred on March 24th, to review immediately and to improve its radiation control measures from the viewpoint of preventing a recurrence.

5. Action Taken by the Government(5/5)

March 25th, 2011

- Since there was a mistake in the evaluation regarding the concentration measurement of radioactive materials, NISA directed TEPCO orally to prevent the recurrence of such a mistake.
- 13:50 ● Receiving the suggestion by the special meeting of Nuclear Safety Commission, NISA directed TEPCO orally to add the sea water monitoring points and carry out the groundwater monitoring.
- Regarding the delay in the reporting of the water confirmed outside of the turbine buildings, NISA directed TEPCO to accomplish the communication in the company on significant information in a timely manner and to report it in a timely and appropriate manner.

March 29th, 2011

- In order to strengthen the system to assist the nuclear accident sufferers, the “Team to Assist the Lives of the Nuclear Accident Sufferer” headed by the Minister of Economy, Trade and Industry was established

March 30th, 2011

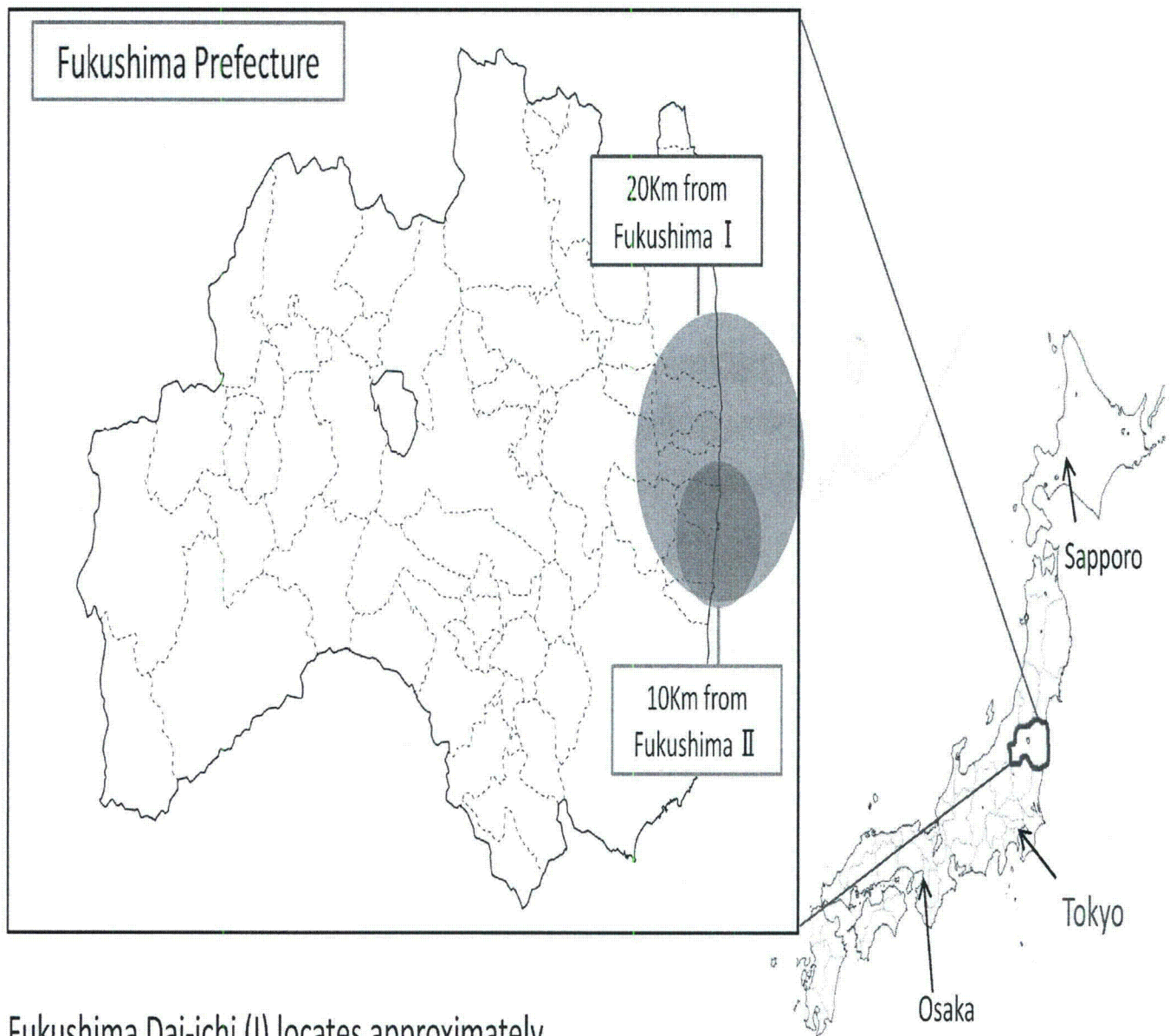
- Directions as to implement the emergency safety measures for the other power stations considering the accident of Fukushima Dai-ichi and Dai-ni NPSs in 2011 was issued and handed to each electric power company and the relevant organization.

6. Current situation on resident evacuation and radiation exposure, etc

6-1. Current Situation on Resident Evacuation(1/2)

- At 5:44 on March 12, residents within 10km radius from Unit1 of Fukushima Dai-ichi NPS shall evacuate by the Prime Minister Directive.
- At 18:25 on March 12, Prime Minister directed evacuation of the residents within the 20 km radius from Fukushima Dai-ichi NPS.
- On March 15th, the Local Emergency Response Headquarter issued “the direction to administer the stable Iodine during evacuation from the evacuation area (20 km radius)” to the Prefecture Governors and the heads of cities, towns and villages.
- Regarding the evacuation as far as 20 km from Fukushima Dai-ichi NPS and 10 km from Fukushima Dai-ni NPS, necessary measures have already been taken.
 - The sheltering stay in the area from 20km to 30km from Fukushima Dai-ichi NPS is made fully known to the residents concerned.
 - Cooperating with Fukushima Prefecture, livelihood support to the residents in the sheltering area are implemented.
- On March 25th, Chief Cabinet Secretary, Edano promoted voluntary evacuations for the residents within the area from 20 km to 30 km from Fukushima Dai-ichi NPS in a press conference.

6-1. Current Situation on Resident Evacuation(2/2)



Fukushima Dai-ichi (I) locates approximately

- 230 km from Tokyo
- 580 km from Osaka
- 600 km from Sapporo

6-2. Major Possibility on radiation exposure to residents (As of 15:30 April 1st)

- 95 patients of Futaba Welfare Hospital transferred by JSDF helicopters and commercial buses. If explosion occurred while 60 patients to be transferred by JSDF helicopters were standing by on Futaba High School playground. No exposure suspected. (19:00, March 16)
- Screening started at Off-site Center on Sat. March 12. 162 screened as of March 15. Against initially-set decontamination threshold of 6,000cpm, 110 patients registered below the threshold, 41 above it. Of 162 screened patients, 5 were given decontamination measures and transferred to hospital.
- Fukushima Prefecture conducted screening at 4 locations in the prefecture. Some 30 people registered above 13,000cpm. After measuring for the second time following decontamination they showed low values, therefore they were returned to shelters without examination.
- 3 women who lived around 10km radius of Fukushima Dai-ichi until March 14 were examined at Iwate Medical University Hospital. Simple decontamination procedure was given without surveying. They were hospitalized for follow-up.

6-3. Major exposure of workers (As of 15:30 April 1st)

- To date a total of 21 people have registered exposure dose above 100mSv. Following measures were taken.
 - 17 people had facial contamination on March 12 (9 TEPCO employees, 8 support company employees). Exposure identified upon their measurement after returning from Controlled Area. However, the level of exposure would not affect their health.
 - At the time of ventilation operation at Unit 1 on March 12, one TEPCO employee registered above 100mSv (106.30mSv/h). As the level was below acute exposure he conducted work after self-air setting. As he afterwards complained of headache and other symptoms, he was transferred to hospital and placed at rest. He now has returned home.
 - On March 24, dosage above approx. 170mSv was confirmed on 3 workers who were laying cables on 1st floor and basement of Unit 3 Turbine Bldg. Attachment of radioactive substances on the skin of both legs was confirmed on two of them. Examination showed that none of the 3 had any major systemic risk. Exposure dose on the legs of the 2 was estimated to be 2~3Sv. While the level of leg and internal exposure did not require treatment, they were hospitalized. They were discharged on March 28.
- On April 1st, a worker fell into the sea when he got into a barge of US. He was rescued by workers, and was not injured etc. However, he was confirmed surface contamination and decontaminated by the shower. He was confirmed the non-contamination by nasal smears.

6-4. Major Situation of the injured (As of 15:00 April 3rd)

<Death due to earthquake(Found on March 30)>

- Two employees found in the turbine building of Unit 4)

<Injury due to earthquake(March11)>

- Two employees (slightly)
- Two subcontract employees (one fracture in both legs)

<Injury due to the explosion of Unit 1 of Fukushima Dai-ichi NPS(March12)>

- Four employees were injured at the explosion and smoke of Unit 1 around turbine building (non-controlled area of radiation) and were examined by Kawauchi Clinic.

<Injury due to the explosion of Unit 3 of Fukushima Dai-ichi NPS(March14)>

- Four TEPCO's employees
- Three subcontractor employees
- Four members of Self-Defence Force (The member was discharged from the institute on March 17th.)

<Other injuries>

- Two subcontractor's employees were injured during working at temporary control panel of power source in the Common Spent Fuel Pool(March22,23)

6-5. Directive regarding foods and drinks

(1) Agricultural Goods

- Ministry of Health, Labor and Welfare (MHLW) set provisional regulatory standards for foods detected with radioactive substances and notified prefectures, etc. as “Handling of food contaminated by radioactivity”.
- MHLW notified prefectures, etc. regarding points to be mindful of in examining foods detected with radioactive substances.
- Prime Minister instructed local governments concerned to restrict distribution and/or consumption of foods concerned in accordance with Special Law of Nuclear Emergency Preparedness.
 - Fukushima Pref. (Distribution restricted→spinach, kakina, raw milk, etc.)
 - Ibaraki, Tochigi, Gunma Prefs. (Distribution restricted→spinach, kakina)

(2) Drinking Water

- MHLW notified water suppliers in prefectures concerned the followings regarding response to radioactive substances in tap water caused by the nuclear accident.
 - Refrain from drinking tap water exceeding index values (300Bq/kg for radioactive Iodine, 200Bq/kg for radioactive Cesium) .
 - In case radioactive Iodine exceeds 100Bq/kg, refrain from giving tap water to infants, including preparing infant formula.
 - There is no problem in using tap water for other domestic uses.
 - Lack of substitute drinking water.

7. Implementation Status of Radiation Monitoring

7-1. Implementation Status of Radiation Monitoring(1/2)

(1) On-site monitoring (1F) (conducted by TEPCO)

① Measurement of air dose rates

- On site, air dose rates were measured at 1 point using monitoring car and at 3 points using portable dosimeter.

② Analysis of soil samples

- Soils were sampled at 5 on-site points and analyzed.

③ Measurement of water in Turbine Bldg basement and Trench

- Measured concentration of radioactive substances in Turbine Bldg basement and Trench.

④ Sampling of seawater

- Measured concentration of radioactivity around South Flood Gate.

7-1. Implementation Status of Radiation Monitoring(2/2)

(2) Off-site Monitoring (conducted by MEXT and local nuclear emergency response HQ)

① Measurement of air dose rate

Measurement by monitoring car

- MEXT measured air dose rate beyond 20km from 1F using monitoring cars in cooperation with Fukushima Pref., National Police Agency, Defense Ministry, Electric Utility and others concerned.
- local nuclear emergency response HQs measured air dose rate beyond 30km from 1F.

② Measurement of cumulative dose

- MEXT measured cumulative dose rates by installing simplified dosimeters at 10 points.
- local nuclear emergency response HQs measured it by setting equipment 20~50km from 1F.

③ Measurement of radioactive substance concentration in soil, etc.

- MEXT collected dust and soils beyond 20km from 1F and analyzed radioactive substance concentrations in the air and soils.
- local nuclear emergency response HQs measured concentrations in tap water, leaf vegetables, soil and dust in Fukushima Pref.

④ Off-shore monitoring

- MEXT sampled seawater from surface water (1m from the sea surface) and sub-surface (10m above the sea bottom) around 30km off-shore Fukushima Pref. and measured radioactive substance concentrations and also measured air dose rates.

⑤ Aerial monitoring

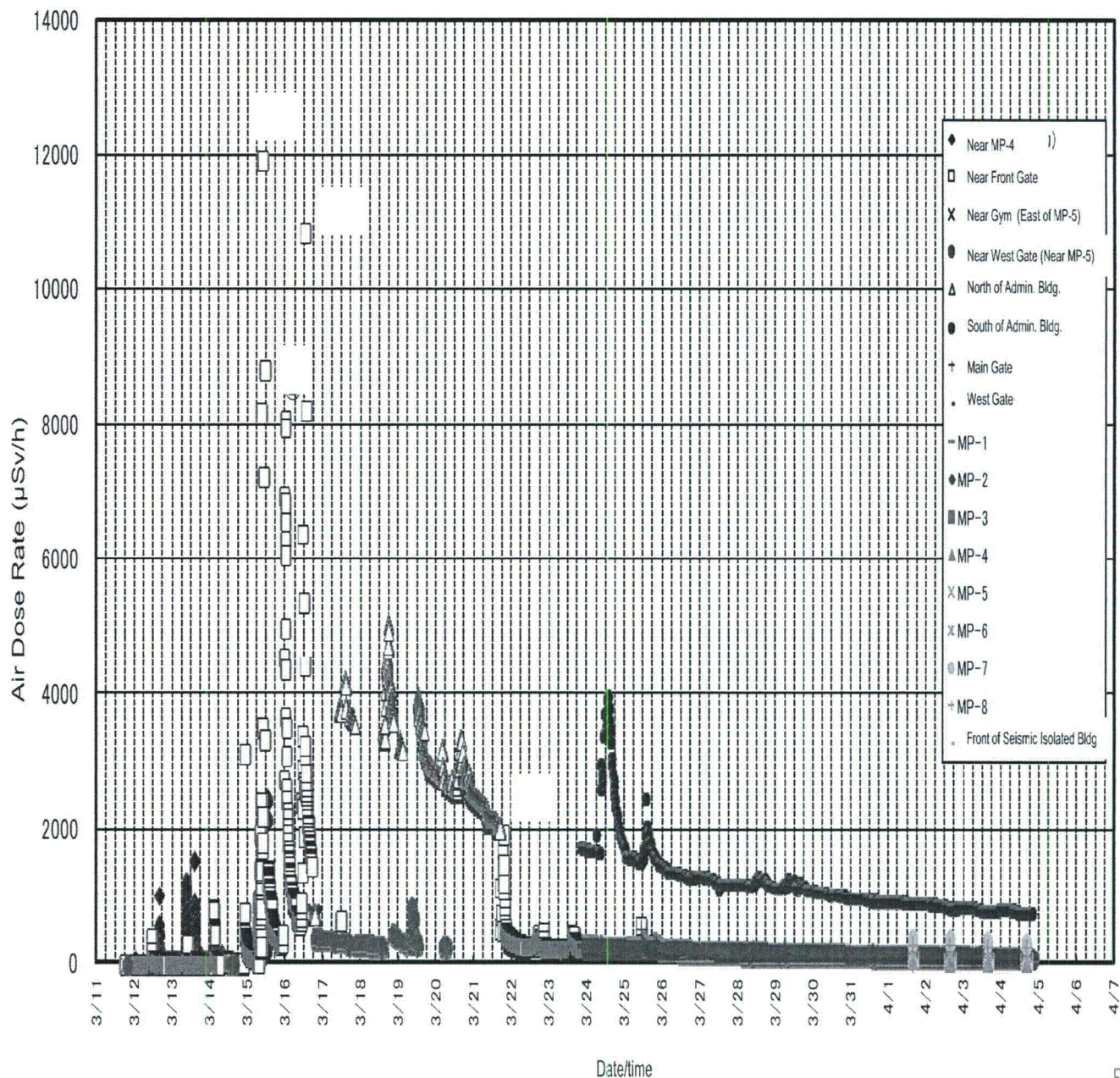
- MEXT measured radioactive substance concentrations and dose rates in the air using aircrafts.

7-2. Monitoring On-site(1F) (conducted by TEPCO)(1/7)

① Measurement of air dose rate

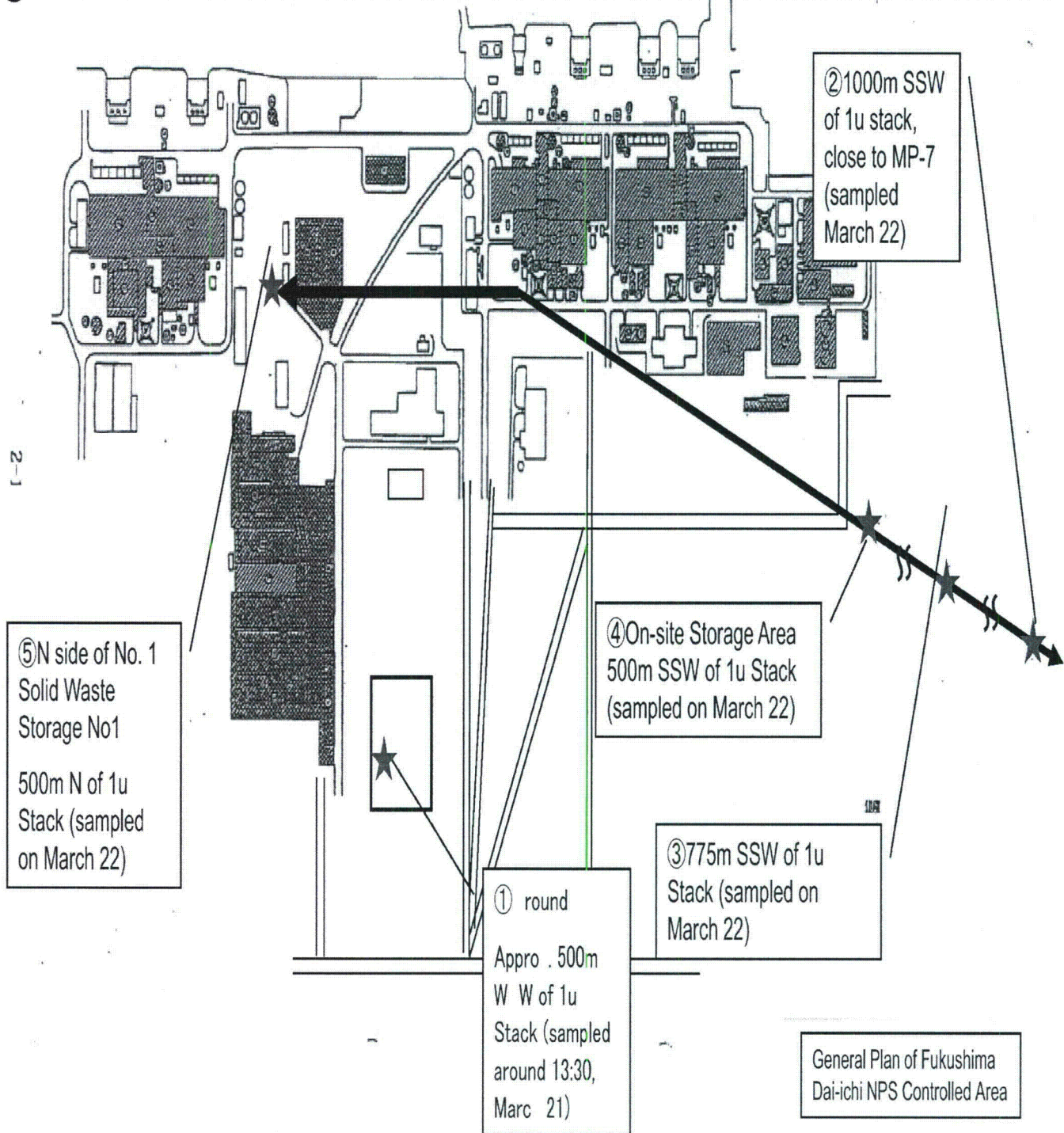
○Registered 11930 μ Sv/h around Front Gate on March 15.

1F Monitoring Trend



7-2. Monitoring On-site(1F) (conducted by TEPCO)(2/7)

② Detection of radioactive material in the soil on the site of Fukushima Dai-ichi NPS



7-2. Monitoring On-site(1F) (conducted by TEPCO)(3/7)

② Detection of radioactive materials in the soils on the site of Fukushima Dai-ichi

- Density of detected Pu-238, Pu-239 and Pu-240 are within the same level of the fallout observed in Japan after the atmospheric nuclear test in the past.
- Activity ratio of Pu-238 detected at the site field and solid waste storage against Pu-239 and Pu-240 are 2.0 and 0.94 respectively. Those Pus are considered to come from the recent incident.

(Unit: Bq/km²·dry soil)

Sampling Spot	Time of sampling	Pu-238	Pu-239, Pu-240
① Site field	13:30, March 21	$(5.4 \quad 0.62) \times 10^{-1}$	$(2.7 \quad 0.42) \times 10^{-1}$
② 1km away from Unit ½ exhaust stack	7:00, March 22	N.D	$(2.6 \quad 0.58) \times 10^{-1}$
③ 0.75km away from Unit ½ exhaust stack	7:10, March 22	N.D	1.2 0.12
④ 0.5 km away from unit ½ exhaust stack	7:18 March 22	N.D	1.2 0.11
⑤ Solid waste storage	7:45 March 11	$(1.8 \quad 0.33) \times 10^{-1}$	$(1.9 \quad 0.34) \times 10^{-1}$
Ordinary domestic soil		N.D~ 1.5×10^{-1}	N.D~4.5

7-2. Monitoring On-site(1F) (conducted by TEPCO)(4/7)

③ Water in Turbine Bldg Basement (Results of nuclide analysis in the stagnant water in turbine building basement of each Unit)

- There is pool of water with high radioactive substance concentration in turbine bldg basement of Units 1~4. Above 1,000mSv/h dose has been measured at water surface in Unit 2.
- Water with approx. 100,000 times normal radioactivity concentration in reactor water was confirmed in turbine bldg basement of Unit 2.

Nuclide (half- life time)	Concentration of Radioactivity (Bq/cm ³)			
	Unit 1 (2nd time) Sampled on March 26	Unit 2 Sampled on March 26	Unit 3 (2nd time) Sampled on March 26	Unit 4 Sampled on March 24
	Water level 195mm	Water level 1,000mm	Water level 1,500mm	Water level 940mm
	Dose rate on the surface of the water 60 mSv/h	Dose rate on the surface of the water >1,000 mSv/h	Dose rate on the surface of the water 750 mSv/h	Dose rate on the surface of the water 0.50 mSv/h
Co-56 (about 77 days)	N.D	N.D	N.D	N.D
Co-58 (about 71 days)	N.D	N.D	N.D	2.7×10^{-1}
Co-60 (about 5 years)	N.D	N.D	2.7×10^2	N.D
Mo-99 (about 66 hours)	N.D	N.D	N.D	1.0×10^0
Tc-99m (about 6 hours)	N.D	8.7×10^4	2.2×10^3	6.5×10^{-1}
Ru-106 (about 370 days)	N.D	N.D	N.D	3.3×10^0
Ag-108m (about 418 years)	N.D	N.D	N.D	N.D
Te-129 (about 70 minutes)	N.D	N.D	N.D	2.6×10^1
Te-129m (about 34 days)	N.D	N.D	N.D	1.3×10^1
Tc-132 (about 3 days)	N.D	N.D	N.D	1.4×10^1
I-131 (about 8 days)	1.5×10^5	1.3×10^7	3.2×10^5	3.6×10^2
I-132 (about 2 hours)	N.D	N.D	N.D	1.3×10^1
I-134 (about 53 minutes)	N.D	N.D	N.D	N.D
Cs-134 (about 2 years)	1.2×10^5	2.3×10^6	5.5×10^4	3.1×10^1
Cs-136 (about 13 days)	1.1×10^4	2.5×10^5	6.5×10^3	3.7×10^0
Cs-137 (about 30 years)	1.3×10^5	2.3×10^6	5.6×10^4	3.2×10^1
Ba-140 (about 13 days)	N.D	4.9×10^5	1.9×10^4	N.D
La-140 (about 2 days)	N.D	1.9×10^5	3.1×10^3	7.4×10^{-1}

7-2. Monitoring On-site(1F) (conducted by TEPCO)(5/7)

③ Stagnant Water in Trench

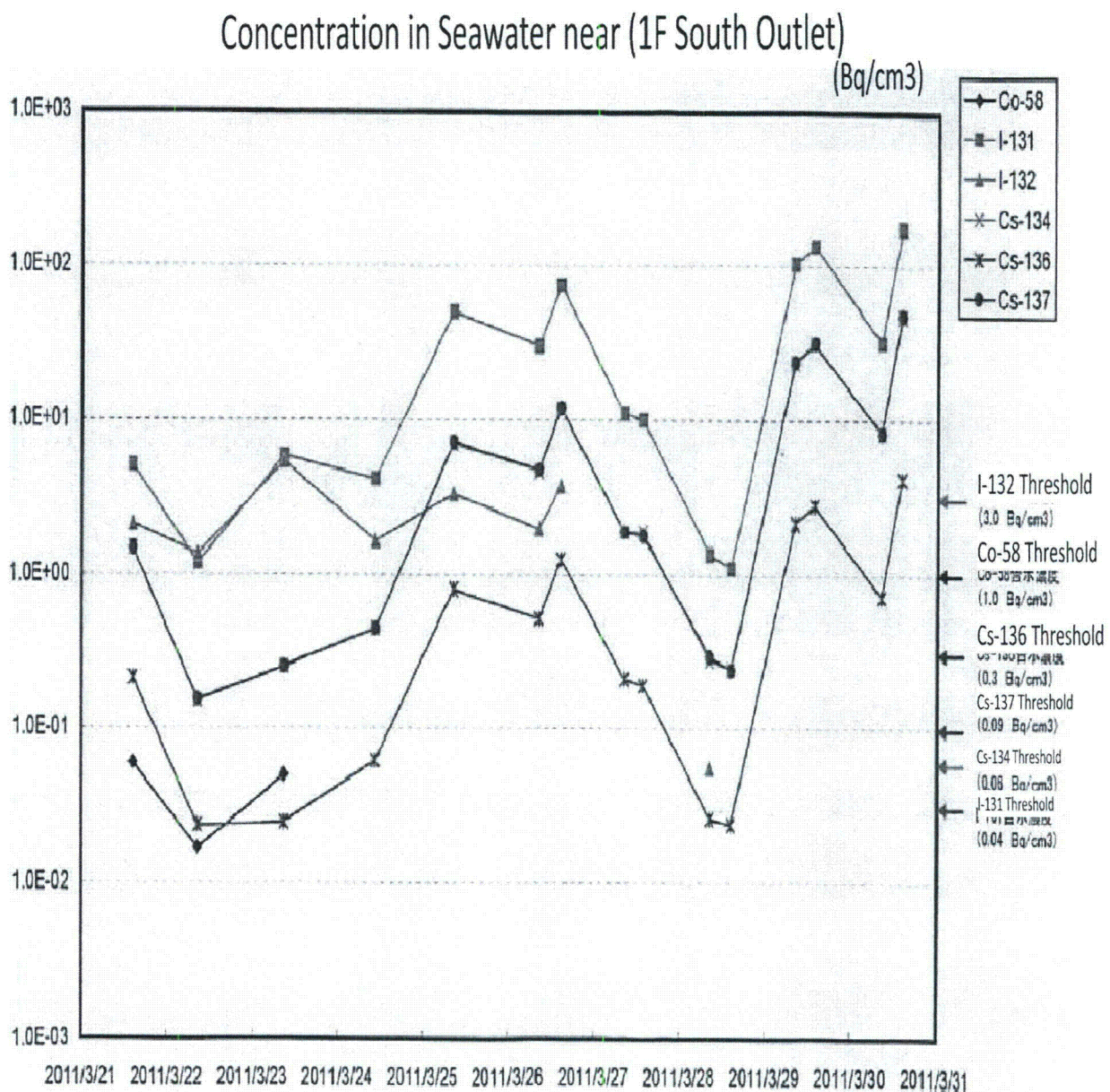
- High level of radiation dose was measured at the surface of water in the vertical pit of the tunnel called "trench" which extends from turbine bldg towards the sea.
- In particular, at Unit 2 ambient dosage around the vertical pit is 100~300mSv/h and dosage in surface water 1,000mSv/h, which are far greater than in Units 1 and 3.

	Unit 1	Unit 2	Unit 3
Location of trench	○Approx. 56m to sea ○162m from turbine bldg (length of trench)	○Approx. 55m to sea ○76m from turbine bldg (length of trench)	○Approx. 69m to sea ○74m from turbine bldg (length of trench)
Trench volume (incl. vertical pit)	3,100m ³	6,000m ³	4,200m ³
Depth of vertical pit	16.9m	16.3m	21.7m
Depth of water in vertical pit	16.8m	15.3m	20.2m
Dosage at water surface	0.4~1.9mSv/h	Above 1000mSv/h	Impossible to measure due to debris
Ambient dosage in vertical pit	0.4~1.0mSv/h	100~300mSv/h	0.8mSv/h

7-2. Monitoring On-site(1F) (conducted by TEPCO)(6/7)

④ Radioactivity Concentration of Seawater Samples Near 1F South Outlet

- Concentration of radioactive iodine 131 recorded on March 31st was approx. 4385 times the limit set for water outside the environmental monitoring area.

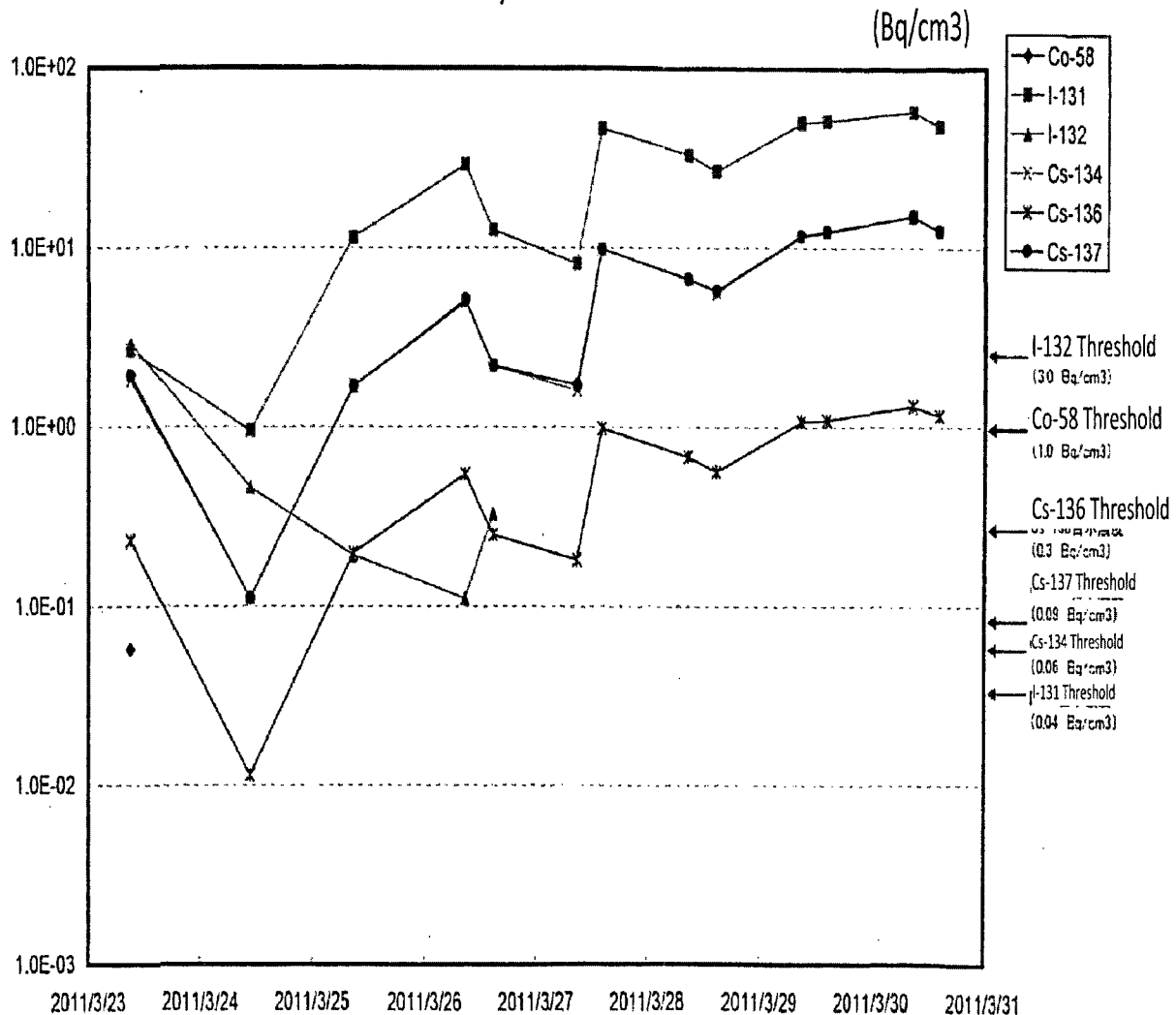


7-2. Monitoring On-site(1F) (conducted by TEPCO)(7/7)

⑤ Radioactivity Concentration of Seawater Samples Near Unit 5 and 6 of 1F in North Outlet

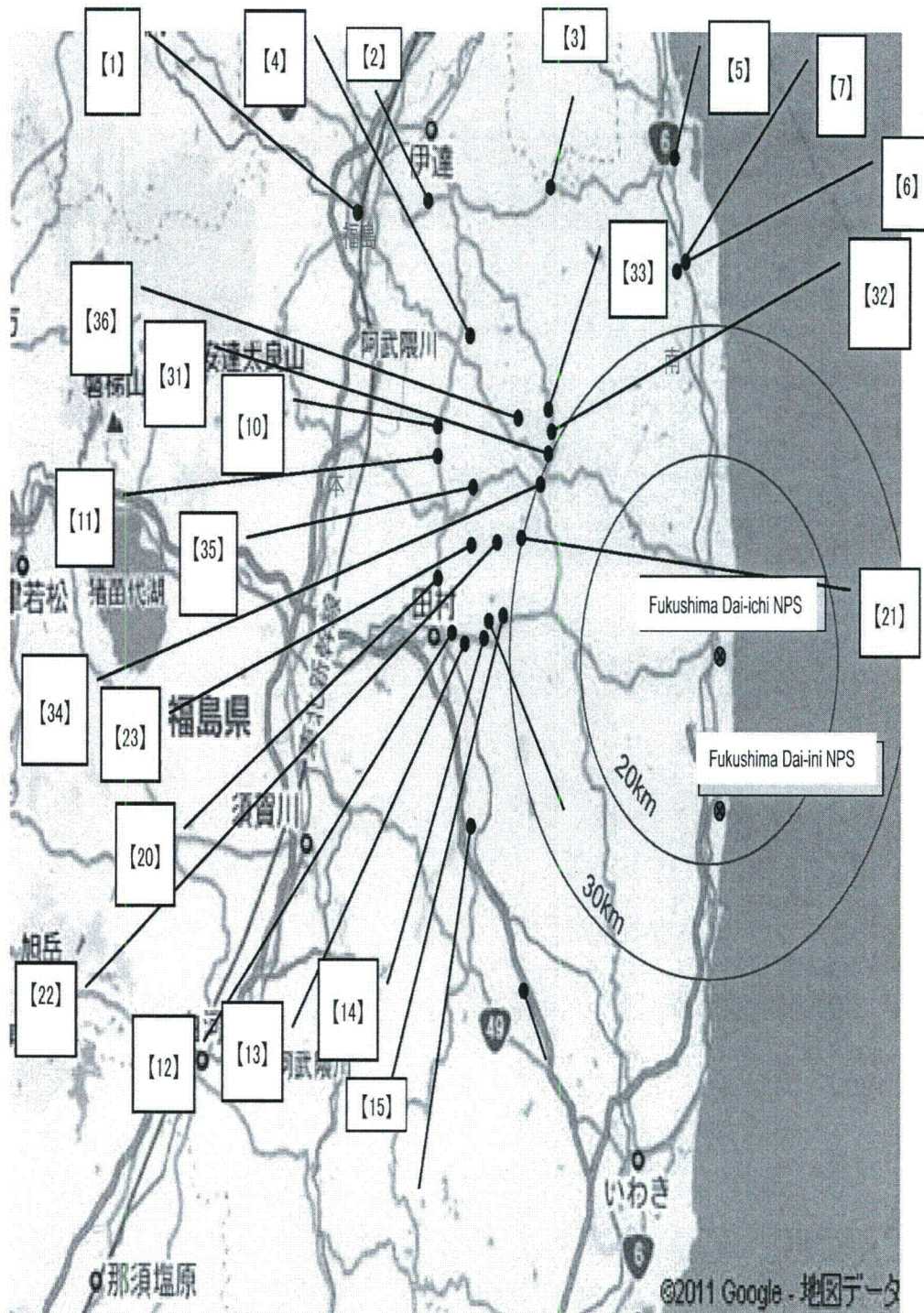
- Concentration of radioactive iodine131 recorded on March 31st was approx. 1425 times the limit set for water outside the environmental monitoring area.

1F 5-6 Northern Water Discharge Canal (Around 30 m north of The 5-6u canal) Radioactive concentration



7-3. Monitoring by MEXT and local nuclear emergency response HQ(1/6)

① Air Dose Rate Measuring Locations Using Monitoring Vehicles

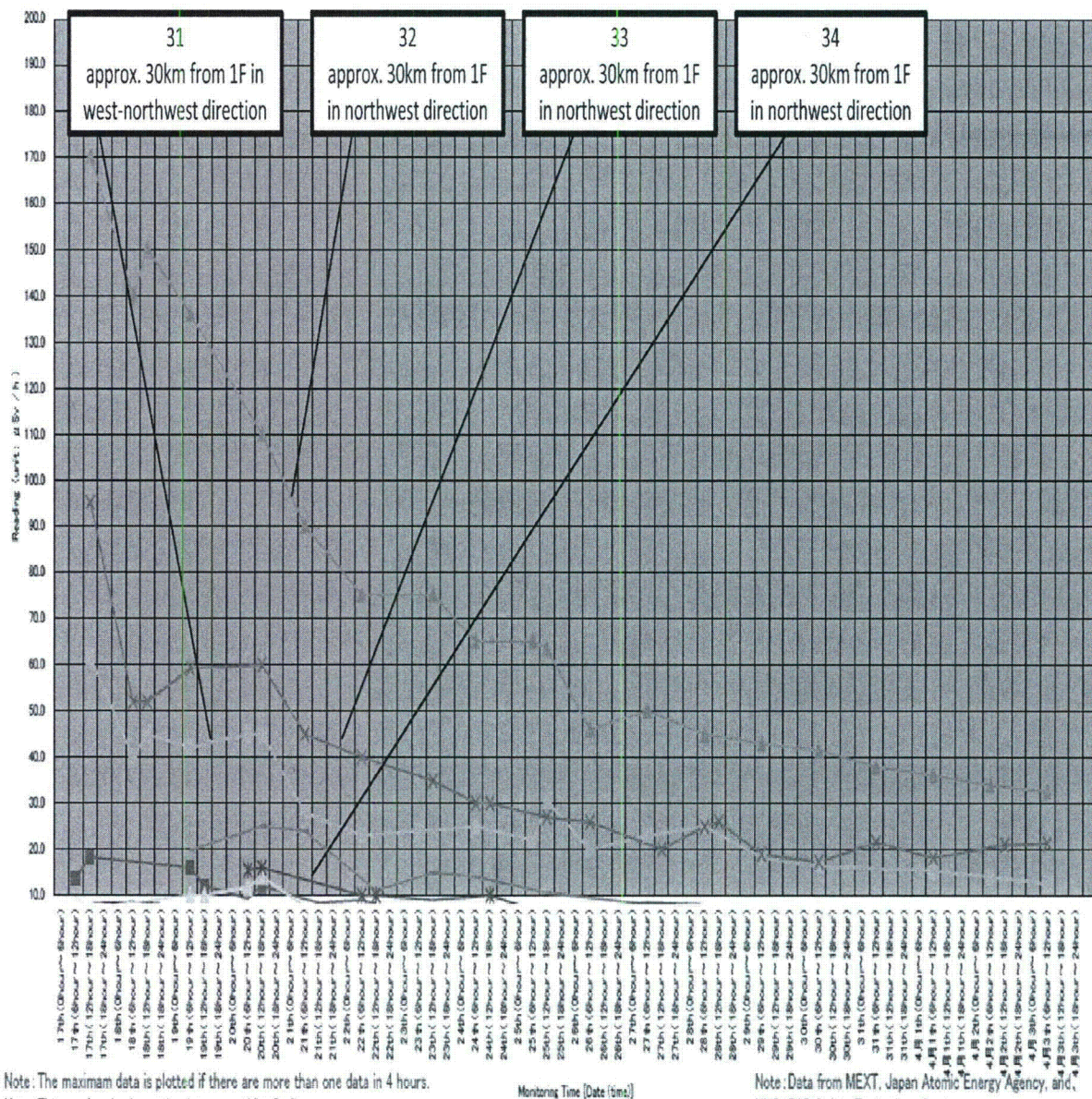


7-3. Monitoring by MEXT and local nuclear emergency response HQ(2/6)

① Air Dose Rate Measured Using Monitoring Vehicles

- Overall dose rate trending down since March 17th.
- E.g. The highest value recorded at Monitoring Point #32 has peaked out at approx. 170 μ Sv/h and has been declining since, rendering no immediate health hazard.

Readings at Monitoring Post out of 20 Km Zone of Fukushima Dai-ichi NPP

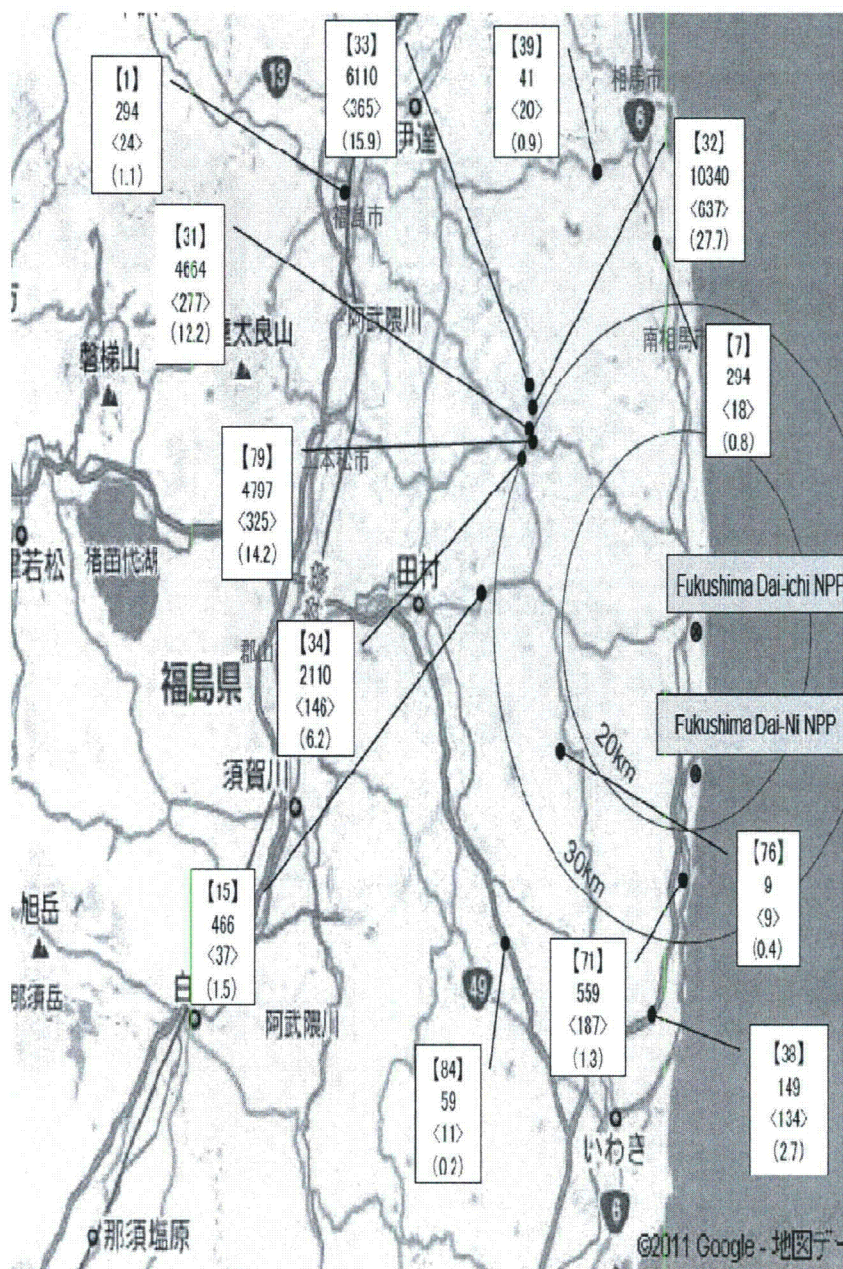


7-3. Monitoring by MEXT and local nuclear emergency response HQ(3/6)

②Cumulative Doses Measured

- Air dose rate cumulatively measured since April 3 topped 10,340 μ Sv at #32, approximately 30km North West from 1F.

Readings of Integrated Dose at Monitoring Post out of Fukushima Dai-ichi NPP



Monitoring Time

- March 23th ~ April 3rd
(Monitoring Post: 7, 31 ~ 34, 79)
- March 23 th ~ 28th, April 3rd
(Monitoring Post: 71)
- March 24 th ~ April 3rd
(Monitoring Post: 1, 15)
- March 25 th ~ April 1st, April 3rd
(Monitoring Post: 84)
- March 31 th ~ April 1 st, April 3rd
(Monitoring Post: 38)
- April 1 th ~ April 3rd
(Monitoring Post: 39)
- April 2 th ~ April 3rd
(Monitoring Post: 76)
- Monitoring Post

(explanatory note)

【 Monitoring Post number】
Readings of Integrated Dose ※
<increment from the last monitoring>
(average dose per hour)

Readings of Integrated Dose
indicate that accumulation of
dose from each starting date till
April 2nd, for 1 day to 10days.

Unit: μ Sv per hour

7-3. Monitoring by MEXT and local nuclear emergency response HQ(4/6)

③Concentration of Radioactive Materials

●Soil Samples

Sampling Point	Address of Sampling Point	Sample	Sort or Region	Sampling Time and Date	Radioactivity Concentration (Bq/kg)	
					^{131}I	^{137}Cs
[2-1] (About 40km North/West)	Itate Village	Land Soil	Soil	2011/3/19 11:40	300,000	28,100
	Itate Village	Land Soil	Soil	2011/3/20 12:40	1,170,000	163,000
	Itate Village	Land Soil	Soil	2011/3/21 12:32	207,000	39,900
	Itate Village	Land Soil	Soil	2011/3/22 12:00	256,000	57,400
	Itate Village	Land Soil	Soil	2011/3/23 12:25	135,000	32,200
	Itate Village	Land Soil	Soil	2011/3/24 13:05	45,500	1,870
	Itate Village	Land Soil	Soil	2011/3/25 13:05	265,000	27,900
	Itate Village	Land Soil	Soil	2011/3/26 12:00	564,000	227,000
	Itate Village	Land Soil	Soil	2011/3/26 15:20	82,000	28,000
	Itate Village	Land Soil	Soil	2011/3/27 11:40	169,000	29,100
	Itate Village	Land Soil	Soil	2011/3/27 12:00	69,800	20,800
	Itate Village	Land Soil	Soil	2011/3/28 11:50	14,000	2,040
	Itate Village	Land Soil	Soil	2011/3/28 12:10	23,100	860
	Itate Village	Land Soil	Soil	2011/3/29 11:50	53,700	5,650
	Itate Village	Land Soil	Soil	2011/3/29 12:10	58,400	25,100
	Itate Village	Land Soil	Soil	2011/3/30 12:25	89,000	32,300
	Itate Village	Land Soil	Soil	2011/3/30 12:45	11,900	408
	Itate Village	Land Soil	Soil	2011/3/31 11:30	149,000	27,600
	Itate Village	Land Soil	Soil	2011/3/31 11:45	60,800	26,500
	Itate Village	Land Soil	Soil	2011/4/1 11:30	146,000	43,700
	Itate Village	Land Soil	Soil	2011/4/1 12:05	21,400	1,410
	Itate Village	Land Soil	Soil	2011/4/2 11:24	55,500	8,140
	Itate Village	Land Soil	Soil	2011/4/2 11:48	61,900	30,800

7-3. Monitoring by MEXT and local nuclear emergency response HQ(4/6)

③Concentration of Radioactive Materials

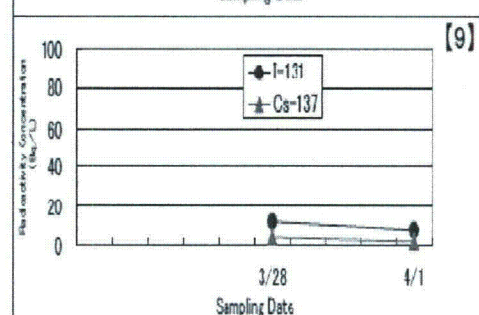
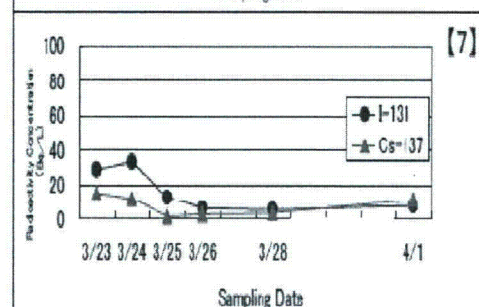
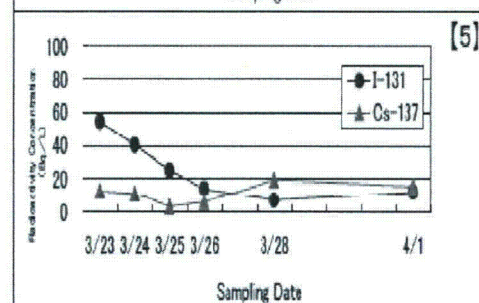
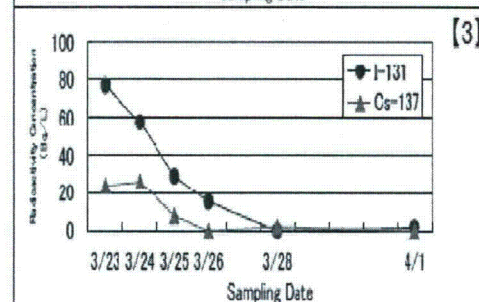
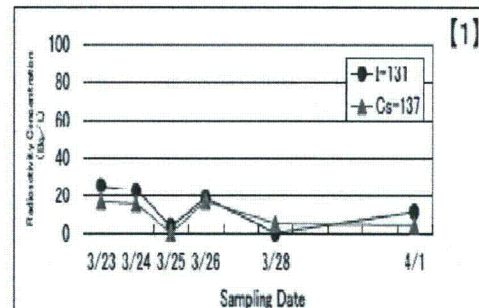
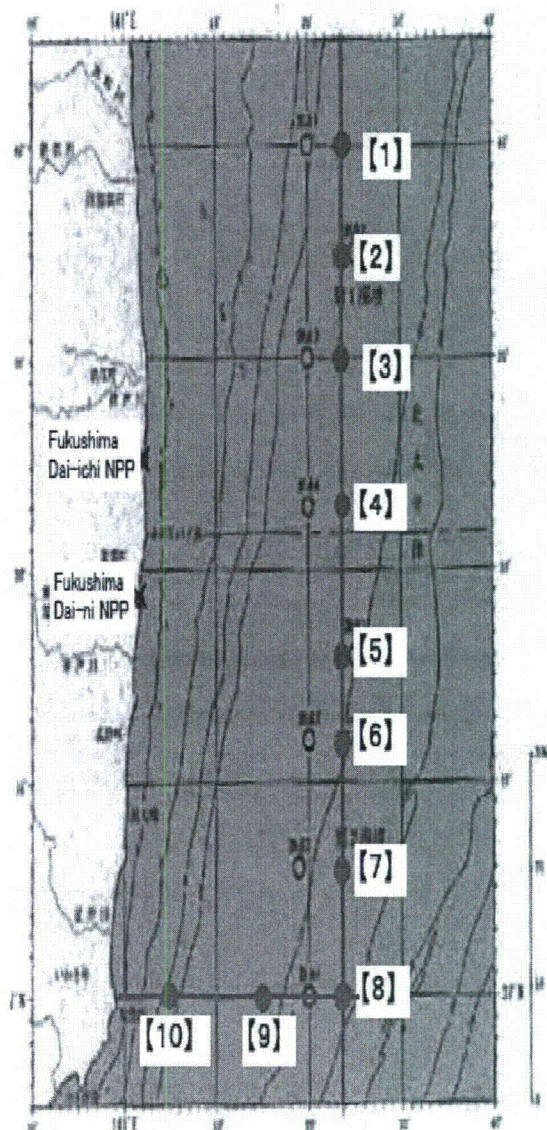
● Dust Samples

Sampling Point	Sampling Time and Date	Radioactivity Concentration(Bq/m3)		Reading (μSv/h)
		^{131}I	^{137}Cs	
【2-1】(About 40 km North West)	3/21 13:00~13:20	12.80	2.37	4.1
	3/22 12:26~12:46	5.87	ND	4.2
	3/23 12:50~13:10	2.99	ND	16.8
	3/24 13:30~13:50	5.80	1.51	10.0
	3/25 12:45~13:05	5.87	ND	12.3
	3/26 12:26~12:46	5.39	1.33	7.8
	3/27 12:06~12:26	2.22	ND	11.2
	3/28 12:05~12:25	1.66	ND	9.6
	3/29 12:07~12:27	2.42	6.79	9.2
	3/30 13:22~13:42	3.47	LTD	8.5
	3/31 11:50~12:10	1.74	LTD	8.0
	4/1 12:00~12:20	1.78	1.69	7.7
	4/2 11:46~12:06	0.84	ND	8.6

7-3. Monitoring by MEXT and local nuclear emergency response HQ(5/6)

④ Sea Water Monitoring Around Fukushima Dai-ichi NPS

● Concentration of radioactive materials at location #3 peaked at 76.8Bq/L, exceeding the limit for the environmental monitoring area.



Note: "Not Detectable" is illustrated as 0Bq/L.

7-3. Monitoring by MEXT and local nuclear emergency response HQ(6/6)

⑤Aerial Monitoring

- Flight Details : April 1st, from 11:02 to 13:45, cloudless skies with S winds
Average altitude 1070 meters above sea, average speed 220km/h

Main Reading Point	City	Latitude longitude	Altitude above sea level [above ground level] (m)	Monitoring Time	Readings(μ Sv/h)
【1】	Shirakawa (Fukushima Prefecture)	37° 03.39 ' N 140° 17.38 ' E	1193 [851]	11:45	0.0409
【2】	Iwaki (Fukushima Prefecture)	36° 32.19 ' N 140° 53.19 ' E	1209 [1203]	11:57	0.0261
【3】	Tamura (Fukushima Prefecture)	37° 27.16 ' N 140° 34.19 ' E	1267 [844]	12:13	0.0281
【4】	Shinchi-cho (Fukushima Prefecture)	37° 46.46 ' N 140° 52.50 ' E	1182 [1117]	12:23	0.0275
【5】	Fukushima (Fukushima Prefecture)	37° 47.12 ' N 140° 29.47 ' E	900 [842]	12:37	0.0234
【6】	Kooriyama (Fukushima Prefecture)	37° 26.33 ' N 140° 22.46 ' E	933 [691]	12:47	0.0402
【7】	Shirakawa (Fukushima Prefecture)	37° 09.40 ' N 140° 12.59 ' E	898 [502]	12:56	0.0402
【8】	Utsunomiya (Tochigi Prefecture)	36° 35.02 ' N 140° 00.49 ' E	888 [737]	13:14	0.0147

8. Provision of Relevant Information Overseas

8. Provision of relevant information overseas(1/2)

1. Communication to IAEA and its Member States

(1) ENAC Website

NISA has constantly been providing facility-related and other relevant information on the Emergency Notification and Assistance Convention Website, designed for member states to exchange information on nuclear accidents.

(2) IEC (IAEA)

NISA has constantly been providing the Incident and Emergency Centre of IAEA with press releases and other relevant information, as well as responses to questions on such communication.

(3) Others

-March 21st Technical Briefing

Following the special meeting of the IAEA Board of Governors, NISA officials briefed the member state representatives on the overview of the earthquake itself as well as the status of and ongoing measures to address the Fukushima NPS accident.

-IAEA Expert Missions

The Government of Japan has been receiving IAEA expert missions to Japan.

8. Provision of relevant information overseas(2/2)

2. To International Media in Japan

(1) Foreign Media Briefing

- NISA joins relevant government agencies in daily foreign media briefings at the PM's official residence on March 14, 17 and every day afterwards.
- NISA officials give account to damages suffered at Fukushima NPSs and respond to questions.
- English documents distributed include updates on earthquake-related damage, status of F1 NPSs and monitoring results in the vicinity.

(2) Briefings for Diplomatic Representatives in Tokyo

- NISA joined the Ministry of Foreign Affairs in briefing sessions for Diplomatic representatives in Tokyo.
- Distributed press releases (English), provided explanations and answered questions.

(3) English information on the Web

- Nuclear and Industrial Safety Agency: <http://www.nisa.meti.go.jp/english/index.html>
- Office of Prime Minister <http://www.kantei.go.jp/foreign/index-e.html>

9. Remarks

9. Remarks

- Continue to make every possible efforts to bring the situation under control
- Will identify the cause of the accident completely and review safety assurance measures
- Offer the information as much as possible and share the experience and knowledge of the accident with the international community

From: Bradford, Anna
Sent: Monday, April 11, 2011 8:26 AM
To: Hipschman, Thomas; Marshall, Michael
Subject: FW: Update for Go Book: 0430 EDT, April 11, 2011
Attachments: USNRC Earthquake-Tsunami Update 041111 0430EDT.pdf; TEPCO Press Release 331.pdf; Pages 1-5 ET Chronology 4.9.11_1800EDT.pdf

FYI.

Anna Bradford
Policy Advisor for Nuclear Materials
Office of Chairman Jaczko
U.S. Nuclear Regulatory Commission
301-415-1827

From: LIA07 Hoc
Sent: Monday, April 11, 2011 4:46 AM
To: Batkin, Joshua; Borchardt, Bill; Bradford, Anna; Coggins, Angela; Cohen, Shari; Collins, Elmo; Cooper, LaToya; Dyer, Jim; ET07 Hoc; Flory, Shirley; Gibbs, Catina; Haney, Catherine; Hudson, Sharon; Jaczko, Gregory; Johnson, Michael; Leeds, Eric; Loyd, Susan; Monninger, John; Pace, Patti; Schwarz, Sherry; Sheron, Brian; Speiser, Herald; Sprogeris, Patricia; Taylor, Renee; Virgilio, Martin; Walker, Dwight; Walls, Lorena; Weber, Michael
Subject: Update for Go Book: 0430 EDT, April 11, 2011

Attached please find updated information for the "Go Book."

The update includes:

- The 0430 EDT, 04/11/11 Status Update
- The latest ET Chronology
- The latest TEPCO Press Release (331)

Please let me know if you have any questions or concerns.

Yen

Yen Chen
Executive Briefing Team Coordinator
US Nuclear Regulatory Commission
LIA07.HOC@nrc.gov (Operations Center)

From: Bradford, Anna
Sent: Wednesday, April 06, 2011 10:40 AM
To: Hipschman, Thomas; Marshall, Michael; Batkin, Joshua; Coggins, Angela
Cc: Monninger, John
Subject: Summary of today's CA call

Wiggins conducted the briefing.

We think TEPCO was planning to inert Unit 1 today, but we have no confirmation that they did. We're trying to find out. There are press reports that they've sealed the leaking trench.

The RST is working on answers for questions from the site team (e.g., what is "stable"). RST also wrote a "fill and vent" paper, and are awaiting comments from other agencies. The SFP assessment paper is also out for comment.

There is an IPC call this afternoon, led by the White House national security staff. We will listen in.

The Pacific Command has a lot of technical questions. We plan to have a call with them later today.

The New York Times apparently has a copy of the first version of RST assessment (not Rev. 1). Some of the status in there is no longer up to date. The OEDO is discussing what to do.

Marty is down on the Hill at the hearing, he is getting a lot of SOARCA questions.

Cindy Jones said the document that was sent around yesterday to the TAs was guidance for permanent return of US citizens to the area, and this is not the same as the "trigger" document that the Dept of State is working on.

(b)(6) question: Just FYI, for the FOIAs, we're not providing any documents that came from the Ops Center, we figure the Ops Center will do that.

(b)(6) questions: 1) not sure which document Cindy is talking about, 2) which document does the Times have (Wiggins: not exactly sure, they haven't showed it to us), 3) have we gotten any reaction from Japan about the Times article, I don't think they'll be happy (Wiggins: no reaction as of yet, but what is in there was factual at the time), and 4) any additional info on the sitrep report info about contamination level in released water (Wiggins: no).

Wiggins ended by saying that the next call is tomorrow, that people can call with questions in the meantime but please remember that everyone is very busy with other high priority items.

Anna Bradford
Policy Advisor for Nuclear Materials
Office of Chairman Jaczko
U.S. Nuclear Regulatory Commission
301-415-1827

From: Schwartzman, Jennifer
Sent: Friday, April 01, 2011 4:39 PM
To: Marshall, Michael
Subject: RE: QUESTION: Talking Points for Japan Session

Mike,

I didn't realize Susan had put something together. This is great! I will take a look at it and provide any comments to the group. I imagine Margie and Eliot will review once they land in Vienna unless they can pull it up before they take off at 5. Thanks so much.

From: Marshall, Michael
Sent: Friday, April 01, 2011 4:25 PM
To: Schwartzman, Jennifer
Cc: Doane, Margaret; Brenner, Eliot; Loyd, Susan; Montes, David
Subject: FW: QUESTION: Talking Points for Japan Session

Hello Jenn,

Attached is the email that I sent earlier in the day to Margie. Also, attached is a set of talking points that Susan started preparing, just in case.

Please, read over the attached and send any comments or suggested changes to Susan Lloyd. I believe Susan sent an earlier draft to Margie and Eliot.

Susan and David, Jenn has volunteered to be the staff point of contact for this effort. In addition to being the OIP person responsible for IAEA, she has been working regularly in the op center to support monitoring of events in Japan.

Michael L. Marshall, Jr.
Policy Advisor for Reactors
Office of the Chairman
U.S. Nuclear Regulatory Commission

Phone: 301-415-1750
Email: michael.marshall@nrc.gov

From: Marshall, Michael
Sent: Friday, April 01, 2011 12:33 PM
To: Doane, Margaret
Cc: Loyd, Susan; Montes, David
Subject: QUESTION: Talking Points for Japan Session

Margie,

Typically, Susan and David in the Chairman's office review and edit talking points prepared for the Chairman. Do you have a estimated time that the talking point being prepared by the staff would be ready and a point of contact for us to contact, if necessary?

I would like to make sure Susan and David are tied into this effort.

Michael L. Marshall, Jr.
Policy Advisor for Reactors
Office of the Chairman
U.S. Nuclear Regulatory Commission

Phone: 301-415-1750

Email: michael.marshall@nrc.gov

From: Montes, David
Sent: Friday, April 01, 2011 4:32 PM
To: Marshall, Michael; Loyd, Susan; Pace, Patti; Warren, Roberta
Subject: CNS Documents
Attachments: CNS FINAL DRAFT Bulleted.doc; CNS Presentation 4.1.2011.pptx; CNS FINAL DRAFT.doc

Attached are the PowerPoint presentation, the bulleted notes, and regular text version of the notes.

David

Slide 1

- On behalf of the government of the United States, I am pleased to present the U.S. National Report to the 5th Review Meeting of the Contracting Parties to the Convention of Nuclear Safety.
- The U.S. National Report provides a detailed overview of the NRC's comprehensive and multifaceted efforts to ensure nuclear safety and security.
- In keeping with the principles of the Convention, the United States recognizes that the responsibility for nuclear safety ultimately rests with each individual nation and that international cooperation also plays a vital role in strengthening nuclear safety worldwide.
- This peer review process is a critical part of the international community's efforts to share experience, learn lessons, and strengthen global nuclear safety.
- Recent events in Japan have brought global attention to nuclear safety.

- People across the world who have been touched by the magnitude and scale of this disaster are closely following the events in Japan, as well as the repercussions in their own country and other nations around the world.
- At the request of the Japanese government and in conjunction with the broader U.S. government response, the NRC sent a team of its technical experts to provide on-the-ground support to aid Japan's efforts.
- Despite our role in supporting the Japanese response efforts, the NRC has and will continue to stay focused on our domestic nuclear safety and security responsibilities.
- In light of the events in Japan, the NRC has undertaken a systematic and methodical review of the agency's programs and regulations, which will include short- and long- term analysis of the lessons that can be learned from the situation in Japan.

2 - Presentation Outline

- The U.S. national presentation will proceed in three parts.
- First, on behalf of the NRC, I will provide a high-level overview of the U.S. National Report.
- This overview will focus on changes to the U.S. national regulatory program, discuss progress the NRC has made on specific issues identified during the 4th Review Meeting, and close with a brief review of certain good practices and future challenges.
- Second, Admiral James Ellis of the Institute of Nuclear Power Operations will present an overview of the U.S. industry's efforts to advance nuclear safety.
- Third, NRC Executive Director of Operations Bill Borchardt will address the key topics on which we received a number of questions from peer review participants.
- After the presentation, we look forward to answering any additional questions you may have.

3 – Information on the National Program

- The NRC is an independent agency of the U.S. Government responsible for regulating the nation's nuclear power plants and radioactive materials.
- The NRC has a number of programs and processes to protect public health and safety and the environment, as well as to meet the obligations of the Convention.

Reactor Oversight Process

- Through the Reactor Oversight Process, the NRC continuously oversees nuclear power plants to verify that they are being operated in accordance with the agency's rules and regulations.
- The NRC has full authority to take whatever action is necessary to protect public health and safety, and may demand immediate licensee actions up to and including a plant shutdown.

License Renewal

- Through the agency's license renewal program, the NRC reviews applications by licensees to extend the operation of their facilities beyond the initial 40-year license period.
- These reviews focus on whether the licensee can demonstrate that the reactor will operate safely throughout extended operation, with a particular focus on the effects of aging on important structures, systems, and components.

Power Upgrades

- Under the agency's licensing program for power upgrades, the NRC reviews requests to raise the power level at which a plant may be operated to ensure that the proposed plant modifications do not undermine safety.

New Reactors

- In addition to the licensing and oversight of the nation's 104 operating reactors, the NRC is also conducting safety and environmental reviews for a number of new reactor design and license applications.
- At this time, the NRC is conducting safety oversight of the construction of one new reactor, as well as pre-construction activities for two other reactor units.

4 - Reactor Oversight Process

- Through the ROP, the NRC evaluates plant safety performance through inspections and performance indicators and takes appropriate actions based on the safety significance of the issues identified.
- With more than a decade of experience, the NRC is confident that the ROP has focused the agency on the most safety-significant issues, while also making our oversight activities more objective, transparent, and predictable.
- Because of the ROP's central importance to the NRC's reactor safety program, the agency evaluates its effectiveness each year.
- The last annual evaluation of the ROP discussed in the National Report confirmed that the ROP has been an effective safety oversight tool, and it also made several recommendations to further strengthen the ROP.

The first recommendation called for the development of a framework for evaluating potential new performance indicators.

- Although the NRC is confident that the ROP's performance indicators have provided accurate assessments of plant safety performance, the agency examines the effectiveness of existing indicators and the possible need for new indicators to ensure that plant safety performance is consistently high, and not just being tuned more finely to the indicator itself.
- The implementation of this recommendation will help ensure that the NRC evaluates new performance indicators in a consistent, structured, and effective manner.

The second recommendation called for additional training for inspectors in assessing the safety and security significance of inspection findings.

- Drawing on past operating experience and risk insights, the significance determination process is how the agency determines the extent to which a performance deficiency affects the risk of a nuclear plant accident.

- This process requires inspectors to evaluate how an inspection finding affects the likelihood of an accident, or the ability of safety systems or personnel to respond to an accident.
- This is a crucial part of the ROP because the NRC will adjust the frequency, scope, and depth of inspections, and take other regulatory actions, on the basis of this analysis.
- That is why the agency considers it a priority to ensure that inspectors have adequate training to conduct this evaluation.

The third recommendation called for a continued emphasis on the use of operating experience in the inspection program and further integration of operating experience into inspection guidance.

- The U.S. industry's extensive operating experience has served as a basis for the agency's efforts to risk-inform the agency's reactor oversight program over the last decade.

- The NRC recognizes, however, that the ROP's continued effectiveness depends on the agency's ability to evaluate ongoing operating experience and to incorporate new risk insights and other lessons learned.

The fourth recommendation called for a revision of the program guidance, as necessary, to align with the NRC's Safety Culture Policy Statement.

- As I will discuss later, the Commission recently approved a Safety Culture Policy Statement, which will guide the activities of the NRC staff and help set the agency's expectations for both our reactor and materials licensees.

5 - License Renewal

- A second key component of the NRC's safety program is the agency's license renewal program. Over the past decade, there has been tremendous interest by nuclear power plant operators in the United States in extending the operation of their facilities beyond their initial forty-year license period.
- To date, 63 reactor units – approximately 61 percent of U.S. reactors – have received approvals for a 20-year period of extended operation.
- In reviewing license renewal applications, the NRC focuses on whether the licensee can demonstrate that the reactor will operate safely throughout extended operation, with a particular focus on the effects of aging on important structures, systems, and components.
- In conjunction with the agency's continuous oversight efforts, the NRC is confident that the agency's targeted review on aging management ensures safety through an extended period of operation.

- With some licensees now having entered the 40-60 year period of extended operation, U.S. industry representatives have informally explored the possibility of second license renewal.
- In considering the possibility that licensees may seek a subsequent license renewal the agency will ensure that the industry's focus remains on safety.
- At this point, that requires the industry to focus on conducting the necessary research to determine whether extended operation beyond 60 years can be safe and, if it can, what measures need to be taken by individual licensees to ensure safe and secure operation.
- This research will improve our understanding of materials degradation, support the development of effective aging management programs, and ultimately provide the basis for deciding whether plants can and will remain safe.
- The NRC has jointly sponsored two workshops with the U.S. Department of Energy on extended operation to ensure that we have a proactive safety approach.

6 - New Reactor Licensing

- A third key part of the NRC's safety program is the new reactor program.
- To date, the NRC has received 18 license applications for 28 new light-water reactor units.
- The NRC is actively reviewing 12 of these applications after five applicants requested that the NRC suspend review and one applicant withdrew its application.
- At this time, the NRC has approved four early site permits, indicating the NRC's approval that these sites are suitable for reactors should the applicant meet the agency's other requirements.
- Two other early site permit applications also were received in 2010.
- Through the Advanced Reactors Policy Statement, the Commission has made clear its expectation that the next generation of reactors should achieve stronger safety performance than currently operating reactors.

- Toward that end, the NRC has conducted rigorous safety reviews to ensure that new reactor designs and license applications meet the NRC's safety and security standards.
- In order to meet this growing workload, the agency significantly increased its staff and resources and also developed new technical expertise to assess the safety of first-of-a-kind technologies and systems in new reactor designs.
- Safety and environmental reviews for new reactor designs are well underway at this point, and are proceeding in a manner that the NRC is confident will protect public health and safety.
- Recognizing that safety issues often date back to construction, the NRC has developed a Construction Experience program that allows us to draw lessons learned from both domestic and international experience.
- As it's been many years since the United States completed construction of a new reactor, the program works through existing bilateral and international channels to learn from countries with more recent experience.

- These efforts reflect the agency's commitment to avoiding the types of early safety challenges that the current generation of reactors faced in their early years.
- To make all of this information available to the NRC staff, the agency has developed a Web-based database with information on over 200 construction experience events.

7 - Follow-up from 4th CNS - Knowledge Management

- As I alluded to earlier and we detail in the National Report, the 4th Review Meeting highlighted a number of important issues for the agency.
- One area concerns the challenges associated with hiring and integrating the large numbers of new staff that were needed to meet the agency's increased workload.
- The agency's 4,000 member staff is comprised of scientists, engineers and professionals representing nearly every discipline.
- Approximately 45 percent of the staff has been with the agency for less than five years.
- Although the agency's staffing levels have stabilized, strategic workforce planning remains an important priority with an emphasis on targeted hiring to fill particular skill needs and on increased training and leadership development opportunities.

- Knowledge management is a key component of the NRC's efforts to train and integrate an increasingly younger workforce and ensure our continued effectiveness as a regulator.
- With the retirement of many of the NRC's most experienced employees, the agency has worked hard to ingrain their knowledge and experience in the next generation of NRC employees.
- Through office-specific and agency-wide efforts, the NRC is expanding the use of existing learning tools, including mentoring; structured independent learning activities; and on-the-job, formal classroom, and online training.
- An online Knowledge Center has also been established to enable employees to collaborate, capture and share knowledge, and build the NRC's organizational memory.

8 - Follow-up from 4th CNS – Materials Degradation

- A second important issue identified at the 4th Review Meeting concerns materials degradation.
- This is a high priority safety issue for the agency, especially as licensees continue to seek licensee renewal extensions beyond the initial 40-year license period.
- Since the 4th Review Meeting, the NRC has made considerable progress, working with licensees, to address several specific degradation issues.
- One example concerns weld cracking, which raises the risk of a possible loss of coolant accident.
- In recognition of the potential risks involved, the NRC issued confirmatory action letters to the licensees of 40 PWR plants, requesting specific inspection and leak detection enhancements.
- All 40 plants have now completed the initial inspections and 36 have mitigated the welds, with the remaining four plants required to re-inspect unmitigated welds every 4 years.

- The NRC also issued a Regulatory Issue Summary that documents the regulatory approach for ensuring the integrity of primary coolant system dissimilar metal butt welds in PWRs and is working to establish industry inspection plans over the long term.
- In addition, the NRC has requested BWR licensees to conduct expedited inspection of the welds of concern for jet pump riser safe end cracking.
- BWR licensees are now in the process of implementing this guidance and have not discovered any other concerns of safety significance.
- With the issuance of this updated guidance, the NRC considers this issue adequately addressed.
- While addressing these types of specific issues, the NRC also has been working to develop a more proactive approach for researching and identifying materials degradation issues.
- Although a reactive approach can be effective in addressing issues after the degradation has occurred, the NRC believes that these issues often can be more easily and effectively addressed at an earlier stage.

- As part of the effort to shift towards a more proactive approach, the NRC is revising the “Expert Panel Report on Proactive Materials Degradation Assessment” to include longer time frames and passive long-lived structures and components.
- This effort will allow the staff to (1) identify knowledge gaps and any new forms of degradation that may have arisen since the original report was developed; (2) capture the current knowledge base on materials degradation; and, (3) help prioritize degradation research needs and directions.

9 - Follow-up from 4th CNS – Safety Culture

- The third significant issue identified during the 4th Review Meeting concerns safety culture.
- Underscored by significant events in the history of nuclear power, including the Three Mile Island and Chernobyl accidents, the importance of safety culture to nuclear safety has been increasingly recognized by the international community over the last two decades.
- This reflects a common understanding that operators will always have the prime responsibility for ensuring safety and should cultivate a strong safety culture that prioritizes safety above all other considerations.
- The NRC's Safety Culture Policy Statement, which was recently approved by the Commission, provides the agency's definition of a positive safety culture and the key characteristics indicative of one.
- The new Policy Statement makes clear that all NRC licensees – both in the reactor and materials areas – must focus on developing a strong safety culture, and that a strong safety culture includes a strong emphasis on security issues.

- The broad support for the Policy Statement among NRC stakeholders – from licensees to some of their strongest critics – could not have been achieved without the open, transparent, and inclusive way the agency approached this initiative.
- In addition to the development of the Safety Culture Policy Statement, the NRC also has enhanced the Reactor Oversight Process in a number of ways to more fully address safety culture.
- Changes to the ROP were geared towards developing better opportunities to consider safety culture weaknesses and to encourage licensees to take actions before significant performance problems emerge.
- The NRC also sought to develop a structured process to determine the need to evaluate a licensee's safety culture and to independently conduct a safety culture assessment.

10 - Follow-up from 4th CNS – Licensing New Reactors

- A fourth follow-up item from the last Review Meeting concerns the licensing of potential new reactors.
- The NRC is confident that the licensing process is working efficiently and effectively to ensure safety.
- The agency is actively reviewing 12 applications for 20 new reactors and, within the last year, has approved proposed design certification rules related to the AP1000, ESBWR, and ABWR reactor designs.
- In addition to designs and license applications currently under review by the NRC, reactor designers are developing a number of small light-water reactor and non-light-water reactor designs employing novel technologies.
- The small light-water reactor designs have advanced to the point that the agency anticipates receiving the first design certification application as early as next year.

- Recognizing that these technologies raise new and different safety and security issues, the NRC is working to identify and resolve important related technical, licensing, and policy issues.
- As we continue working to review new reactor technologies, the NRC believes that it's critical to have close cooperation with the international community for the exchange of information on design and construction.
- The NRC has been working closely with several countries that are currently building new nuclear power plants in order to learn from their experience.
- Furthermore, the NRC is participating in the Multinational Design Evaluation Program, an international effort to share information and experience about new reactor designs.

11 - Follow-up from 4th CNS – IRRS Mission

- In keeping with that spirit of international cooperation, the NRC has made considerable progress since the 4th Review Meeting in completing the Integrated Regulatory Review Service's peer review process.
- Throughout this process, the agency has been impressed by the expertise and experience of the entire IRRS peer review team.
- We have benefited tremendously from the opportunities for critical self-assessment, constructive dialogue, and the exchange of information and experience.
- The IRRS peer review process includes three phases: an initial self assessment that the NRC completed in 2007 and 2009, an onsite peer review that was conducted in October 2010, and a follow-up peer review mission.
- The onsite IRRS mission included work at NRC headquarters, as well a regional office visit to observe NRC inspection practices, two plant visits, and an observation of an emergency preparedness exercise.

12 - Follow-up from 4th CNS – IRRS Mission

- The NRC is pleased that the recently publicly released mission report recognizes our effective national regulatory program, our strong commitment to continuous improvement, and our contributions to sound safety practices on the international level.
- The report includes 25 good practices, 20 suggestions, and 2 recommendations.
- Among the key suggestions and recommendations were to provide a clear message to licensees about their responsibility for ensuring and enhancing safety, as well as moving forward with internal NRC efforts to develop a fully integrated Management System.
- The NRC will review these and other suggestions included in the IRRS report and then determine what actions we should take in response.
- The NRC's participation in the IRRS peer review process is a sign of our strong commitment to nuclear safety, continuous improvement, critical self-assessment, and international cooperation.

- Throughout this process, the NRC has benefited from the exchange of experience, expertise, and best practices, and we strongly encourage other countries to take advantage of this opportunity.

13 - Follow-up from 4th CNS – Emergency Preparedness

- The presentation thus far has focused on steps taken by the NRC to prevent issues or accidents from arising in the first place.
- At the same time, the NRC has been working since the 4th Review Meeting to enhance our approach for mitigating and containing potential emergencies.
- The NRC requires all operating plants to conduct an emergency planning exercise every 2 years.
- These comprehensive exercises are coordinated with other federal agencies, including the Federal Emergency Management Agency, as well as state and local authorities.
- Additionally, in 2005, the NRC initiated a top-to-bottom review of our emergency preparedness program.
- As a result of this review, we have developed a series of proposed changes that seek to enhance our approach to emergency planning and address security issues identified after the September 11, 2001 terrorist events.

- In line with our national approach to incident management, the NRC regularly participates in National Level Exercises.
- While the NRC's periodic exercises are primarily focused on licensees' capabilities, these National Level Exercises place a strong emphasis on the government's capacity to respond to a catastrophic event.
- The extent of NRC participation varies year-to-year, based on the exercise scenario, but these Exercises have provided important opportunities to test the agency's emergency plans and skills in a real-time, realistic environment.

14 - Challenges

- To this point, our presentation has primarily focused on steps taken since the 4th Review Meeting to strengthen nuclear safety and security.
- But a strong regulator must also look ahead, and I will now briefly outline a few challenges that the NRC believes will be important areas of focus in the coming years.

Materials Degradation – Buried Piping

- One important area concerns material degradation.
- As licensees continue to express interest in extended operation, the NRC must remain focused on the effects of aging on plant materials.
- Over the past several years, instances of buried piping leaks have led to inadvertent ground water contamination at some facilities.
- Although these leaks have not affected public health and safety, elected officials, stakeholders, and members of the public have been understandably concerned.
- In light of these events, the NRC established a task force to evaluate our regulatory framework for buried piping and the adequacy of past agency actions to address buried piping leaks.
- Although this task force concluded that the NRC's regulatory framework and actions have been adequate, we will continue to monitor this important issue.

Digital I&C

- The agency also must stay attuned to the potential implications of new technologies for operator reactors and new reactor designs.
- This issue has taken on added significance over the past few years, as nuclear power operators in the United States have increased their use of digital instrumentation and control systems.
- As you know, these digital systems offer a wealth of capabilities beyond analog systems and have the potential to improve safety performance.
- These new technologies, however, also raise potentially significant safety and security issues involving single failure vulnerabilities, defense-in-depth, diversity, and redundancy.
- That is why the NRC has worked in recent years to develop the necessary technical expertise, licensing processes, and safety oversight approaches for digital I&C systems.

Cyber security

- As the nuclear industry increases its use of digital systems, the NRC also must remain alert to potential cyber security vulnerabilities.
- The cyber threat has garnered greater attention worldwide with the increase in cyber security incidents, the availability of computer hacking tools, and the increased sophistication of attack technology.
- These developments have contributed to the urgency for both regulators and operators to ensure that nuclear power infrastructure is protected by effective information systems security programs.
- Since the 4th Review Meeting, the NRC has issued a new cyber security rule, which requires both operating reactors and new reactor applicants to develop cyber security plans that ensure that their facilities are protected from cyber attacks.

Safety-Security Interface

- In light of the increased focus on security, the NRC will continue to work to ensure that licensees develop a strong safety-security interface.
- Although many safety and security activities complement each other, there is also the potential for safety and security measures to come into conflict.
- To avoid those types of issues, the NRC now requires licensees to take an integrative approach to identifying safety-security conflicts and implementing measures to address those issues.
- The fact that U.S. operating plants were built decades ago, primarily with just safety in mind, adds to the challenge of developing a sound and effective safety-security interface.
- But that need not be the case for new reactors that remain at the design stage, in particular with small modular reactors and other advanced reactor designs.

- To encourage vendors to consider these issues at the design stage, the NRC will conduct outreach with vendors, industry representatives, and other stakeholders.

15 - Good Practices

- Throughout this presentation, I have discussed a number of important safety and security issues – areas where the NRC has made considerable progress and others where we still have work to do.
- In discussing the agency's best practices, I have chosen to highlight practices that are key to our effectiveness across the agency's broad range of responsibilities.

Training Programs and Knowledge Management

- First, the NRC invests in its people.
- The NRC expends considerable time and energy recruiting and hiring high quality staff, but that is only the first step towards building a high-performing staff.
- The NRC seeks to build on the talents that employees bring to the NRC through extensive training initiatives.
- One example of that commitment is the agency's leadership development program for all workforce levels, from the entry-level through our Senior Executive Service.

Safety Culture

- Second, the NRC cultivates a strong organizational safety culture.
- The most talented and well-trained workforce won't meet the agency's safety mission unless they maintain a consistent focus on safety and security.
- Both an agency internal staff task force and an independent assessment have confirmed the strength of the agency's safety culture.
- Although we appreciate those positive assessments, the agency recognizes that there is always room for improvement and will continue to explore how we might further strengthen our internal safety culture.

Operating Experience

- Third, the NRC takes advantage of the tremendous experience of the U.S. nuclear industry.

- The NRC has focused many of its regulatory programs on more safety-significant issues based on operating experience, and we have made it a priority to share operating experience within the agency, with our licensees, and with other national regulators.
- One example in these efforts is the clearinghouse we have developed for collecting, storing, screening, and communicating operating experience and lessons learned.

Regulatory Openness

- The final good practice I will highlight is the NRC's organizational commitment to openness and transparency.
- The NRC's commitment to these values helps us reach stronger, more well-informed decisions.
- Stakeholders and members of the public have many opportunities to engage the NRC, including formal opportunities in our important rulemaking and licensing activities, as well as through public meetings, workshops, and online interactive tools.

- With that, I will conclude this portion of the presentation.
- I want to thank all of you for participating in this process, and contributing to a dialogue that will help make the NRC an even more effective regulator.
- I am pleased now to introduce Admiral James O. Ellis, Jr., the President and Chief Executive Officer of the Institute of Nuclear Power Operations, or INPO.
- Sponsored by the commercial nuclear industry, INPO is an independent, nonprofit organization that strives to promote the highest levels of safety and reliability in the operation of nuclear power plants.

Slide 1

On behalf of the government of the United States, I am pleased to present the U.S. National Report to the 5th Review Meeting of the Contracting Parties to the Convention of Nuclear Safety. The U.S. National Report provides a detailed overview of the NRC's comprehensive and multifaceted efforts to ensure nuclear safety and security. In keeping with the principles of the Convention, the United States recognizes that the responsibility for nuclear safety ultimately rests with each individual nation and that international cooperation also plays a vital role in strengthening nuclear safety worldwide. This peer review process is a critical part of the international community's efforts to share experience, learn lessons, and strengthen global nuclear safety.

Recent events in Japan have brought global attention to nuclear safety. People across the world who have been touched by the magnitude and scale of this disaster are closely following the events in Japan, as well as the repercussions in their own country and other nations around the world. At the request of the Japanese government and in conjunction with the broader U.S. government response, the NRC sent a team of its technical experts to provide on-the-ground support to aid Japan's efforts. Despite our role in supporting the Japanese response efforts, the NRC has and will continue to stay focused on our domestic nuclear safety and security responsibilities. In light of the events in Japan, the NRC has undertaken a systematic and methodical review of the agency's programs and regulations, which will include short- and long-term analysis of the lessons that can be learned from the situation in Japan.

2 - Presentation Outline

The U.S. national presentation will proceed in three parts. First, on behalf of the NRC, I will provide a high-level overview of the U.S. National Report. This overview will focus on changes to the U.S. national regulatory program, discuss progress the NRC has made on specific issues identified during the 4th Review Meeting, and close with a brief review of certain good practices and future challenges. Second, Admiral James Ellis of the Institute of Nuclear Power Operations will present an overview of the U.S. industry's efforts to advance nuclear safety. Third, NRC Executive Director of Operations Bill Borchardt will address the key topics on which we received a number of questions from peer review participants. After the presentation, we look forward to answering any additional questions you may have.

3 – Information on the National Program

The NRC is an independent agency of the U.S. Government responsible for regulating the nation's nuclear power plants and radioactive materials. The NRC has a number of programs and processes to protect public health and safety and the environment, as well as to meet the obligations of the Convention.

Reactor Oversight Process: Through the Reactor Oversight Process, the NRC continuously oversees nuclear power plants to verify that they are being operated in accordance with the agency's rules and regulations. The NRC has full authority to take whatever action is necessary to protect public health and safety, and may demand immediate licensee actions up to and including a plant shutdown.

License Renewal: Through the agency's license renewal program, the NRC reviews applications by licensees to extend the operation of their facilities beyond the initial 40-year license period. These reviews focus on whether the licensee can demonstrate that the reactor will operate safely throughout extended operation, with a particular focus on the effects of aging on important structures, systems, and components.

Power Upgrades: Under the agency's licensing program for power upgrades, the NRC reviews requests to raise the power level at which a plant may be operated to ensure that the proposed plant modifications do not undermine safety.

New Reactors: In addition to the licensing and oversight of the nation's 104 operating reactors, the NRC is also conducting safety and environmental reviews for a number of new reactor design and license applications. At this time, the NRC is conducting safety oversight of the construction of one new reactor, as well as pre-construction activities for two other reactor units.

4 - Reactor Oversight Process

Through the ROP, the NRC evaluates plant safety performance through inspections and performance indicators and takes appropriate actions based on the safety significance of the issues identified. With more than a decade of experience, the NRC is confident that the ROP has focused the agency on the most safety-significant issues, while also making our oversight activities more objective, transparent, and predictable. Because of the ROP's central importance to the NRC's reactor safety program, the agency evaluates its effectiveness each year. The last annual evaluation of the ROP discussed in the National Report confirmed that the ROP has been an effective safety oversight tool, and it also made several recommendations to further strengthen the ROP.

- 1) **The first recommendation called for the development of a framework for evaluating potential new performance indicators.** Although the NRC is confident that the ROP's performance indicators have provided accurate assessments of plant safety performance, the agency examines the effectiveness of existing indicators and the possible need for new indicators to ensure that plant safety performance is consistently high, and not just being tuned more finely to the indicator itself. The implementation of this recommendation will help ensure that the NRC evaluates new performance indicators in a consistent, structured, and effective manner.
- 2) **The second recommendation called for additional training for inspectors in assessing the safety and security significance of inspection findings.** Drawing on past operating experience and risk insights, the significance determination process is how the agency determines the extent to which a performance deficiency affects the risk of a nuclear plant accident. This process requires inspectors to evaluate how an inspection finding affects the likelihood of an accident, or the ability of safety systems or personnel to respond to an accident. This is a crucial part of the ROP because the NRC will adjust the frequency, scope, and depth of inspections, and take other regulatory actions, on the basis of this analysis. That is why the agency considers it a priority to ensure that inspectors have adequate training to conduct this evaluation.
- 3) **The third recommendation called for a continued emphasis on the use of operating experience in the inspection program and further integration of operating experience into inspection guidance.** The U.S. industry's extensive operating experience has served as a basis for the agency's efforts to risk-inform the agency's reactor oversight program over the last decade. The NRC recognizes, however, that the ROP's continued effectiveness depends on the agency's ability to evaluate ongoing operating experience and to incorporate new risk insights and other lessons learned.
- 4) **The fourth recommendation called for a revision of the program guidance, as necessary, to align with the NRC's Safety Culture Policy Statement.** As I will

discuss later, the Commission recently approved a Safety Culture Policy Statement, which will guide the activities of the NRC staff and help set the agency's expectations for both our reactor and materials licensees.

5 - License Renewal

A second key component of the NRC's safety program is the agency's license renewal program. Over the past decade, there has been tremendous interest by nuclear power plant operators in the United States in extending the operation of their facilities beyond their initial forty-year license period. To date, 63 reactor units – approximately 61 percent of U.S. reactors – have received approvals for a 20-year period of extended operation. In reviewing license renewal applications, the NRC focuses on whether the licensee can demonstrate that the reactor will operate safely throughout extended operation, with a particular focus on the effects of aging on important structures, systems, and components. In conjunction with the agency's continuous oversight efforts, the NRC is confident that the agency's targeted review on aging management ensures safety through an extended period of operation.

With some licensees now having entered the 40-60 year period of extended operation, U.S. industry representatives have informally explored the possibility of second license renewal. In considering the possibility that licensees may seek a subsequent license renewal the agency will ensure that the industry's focus remains on safety. At this point, that requires the industry to focus on conducting the necessary research to determine whether extended operation beyond 60 years can be safe and, if it can, what measures need to be taken by individual licensees to ensure safe and secure operation. This research will improve our understanding of materials degradation, support the development of effective aging management programs, and ultimately provide the basis for deciding whether plants can and will remain safe. The NRC has jointly sponsored two workshops with the U.S. Department of Energy on extended operation to ensure that we have a proactive safety approach.

6 - New Reactor Licensing

A third key part of the NRC's safety program is the new reactor program. To date, the NRC has received 18 license applications for 28 new light-water reactor units. The NRC is actively reviewing 12 of these applications after five applicants requested that the NRC suspend review and one applicant withdrew its application. At this time, the NRC has approved four early site permits, indicating the NRC's approval that these sites are suitable for reactors should the applicant meet the agency's other requirements. Two other early site permit applications also were received in 2010.

Through the Advanced Reactors Policy Statement, the Commission has made clear its expectation that the next generation of reactors should achieve stronger safety performance than currently operating reactors. Toward that end, the NRC has conducted rigorous safety reviews to ensure that new reactor designs and license applications meet the NRC's safety and security standards. In order to meet this growing workload, the agency significantly increased its staff and resources and also developed new technical expertise to assess the safety of first-of-a-kind technologies and systems in new reactor designs. Safety and environmental reviews for new reactor designs are well underway at this point, and are proceeding in a manner that the NRC is confident will protect public health and safety.

Recognizing that safety issues often date back to construction, the NRC has developed a Construction Experience program that allows us to draw lessons learned from both domestic and international experience. As it's been many years since the United States completed construction of a new reactor, the program works through existing bilateral and international channels to learn from countries with more recent experience. These efforts reflect the agency's commitment to avoiding the types of early safety challenges that the current generation of reactors faced in their early years. To make all of this information available to the NRC staff, the agency has developed a Web-based database with information on over 200 construction experience events.

7 - Follow-up from 4th CNS - Knowledge Management

As I alluded to earlier and we detail in the National Report, the 4th Review Meeting highlighted a number of important issues for the agency. One area concerns the challenges associated with hiring and integrating the large numbers of new staff that were needed to meet the agency's increased workload. The agency's 4,000 member staff is comprised of scientists, engineers and professionals representing nearly every discipline. Approximately 45 percent of the staff has been with the agency for less than five years. Although the agency's staffing levels have stabilized, strategic workforce planning remains an important priority with an emphasis on targeted hiring to fill particular skill needs and on increased training and leadership development opportunities.

Knowledge management is a key component of the NRC's efforts to train and integrate an increasingly younger workforce and ensure our continued effectiveness as a regulator. With the retirement of many of the NRC's most experienced employees, the agency has worked hard to ingrain their knowledge and experience in the next generation of NRC employees. Through office-specific and agency-wide efforts, the NRC is expanding the use of existing learning tools, including mentoring; structured independent learning activities; and on-the-job, formal classroom, and online training. An online Knowledge Center has also been established to enable employees to collaborate, capture and share knowledge, and build the NRC's organizational memory.

8 - Follow-up from 4th CNS – Materials Degradation

A second important issue identified at the 4th Review Meeting concerns materials degradation. This is a high priority safety issue for the agency, especially as licensees continue to seek licensee renewal extensions beyond the initial 40-year license period. Since the 4th Review Meeting, the NRC has made considerable progress, working with licensees, to address several specific degradation issues.

One example concerns weld cracking, which raises the risk of a possible loss of coolant accident. In recognition of the potential risks involved, the NRC issued confirmatory action letters to the licensees of 40 PWR plants, requesting specific inspection and leak detection enhancements. All 40 plants have now completed the initial inspections and 36 have mitigated the welds, with the remaining four plants required to re-inspect unmitigated welds every 4 years. The NRC also issued a Regulatory Issue Summary that documents the regulatory approach for ensuring the integrity of primary coolant system dissimilar metal butt welds in PWRs and is working to establish industry inspection plans over the long term.

In addition, the NRC has requested BWR licensees to conduct expedited inspection of the welds of concern for jet pump riser safe end cracking. BWR licensees are now in the process of implementing this guidance and have not discovered any other concerns of safety significance. With the issuance of this updated guidance, the NRC considers this issue adequately addressed.

While addressing these types of specific issues, the NRC also has been working to develop a more proactive approach for researching and identifying materials degradation issues. Although a reactive approach can be effective in addressing issues after the degradation has occurred, the NRC believes that these issues often can be more easily and effectively addressed at an earlier stage. As part of the effort to shift towards a more proactive approach, the NRC is revising the "Expert Panel Report on Proactive Materials Degradation Assessment" to include longer time frames and passive long-lived structures and components. This effort will allow the staff to (1) identify knowledge gaps and any new forms of degradation that may have arisen since the original report was developed; (2) capture the current knowledge base on materials degradation; and, (3) help prioritize degradation research needs and directions.

9 - Follow-up from 4th CNS – Safety Culture

The third significant issue identified during the 4th Review Meeting concerns safety culture. Underscored by significant events in the history of nuclear power, including the Three Mile Island and Chernobyl accidents, the importance of safety culture to nuclear safety has been increasingly recognized by the international community over the last two decades. This reflects a common understanding that operators will always have the prime responsibility for ensuring safety and should cultivate a strong safety culture that prioritizes safety above all other considerations.

The NRC's Safety Culture Policy Statement, which was recently approved by the Commission, provides the agency's definition of a positive safety culture and the key characteristics indicative of one. The new Policy Statement makes clear that all NRC licensees – both in the reactor and materials areas – must focus on developing a strong safety culture, and that a strong safety culture includes a strong emphasis on security issues. The broad support for the Policy Statement among NRC stakeholders – from licensees to some of their strongest critics – could not have been achieved without the open, transparent, and inclusive way the agency approached this initiative.

In addition to the development of the Safety Culture Policy Statement, the NRC also has enhanced the Reactor Oversight Process in a number of ways to more fully address safety culture. Changes to the ROP were geared towards developing better opportunities to consider safety culture weaknesses and to encourage licensees to take actions before significant performance problems emerge. The NRC also sought to develop a structured process to determine the need to evaluate a licensee's safety culture and to independently conduct a safety culture assessment.

10 - Follow-up from 4th CNS – Licensing New Reactors

A fourth follow-up item from the last Review Meeting concerns the licensing of potential new reactors. The NRC is confident that the licensing process is working efficiently and effectively to ensure safety. The agency is actively reviewing 12 applications for 20 new reactors and, within the last year, has approved proposed design certification rules related to the AP1000, ESBWR, and ABWR reactor designs.

In addition to designs and license applications currently under review by the NRC, reactor designers are developing a number of small light-water reactor and non-light-water reactor designs employing novel technologies. The small light-water reactor designs have advanced to the point that the agency anticipates receiving the first design certification application as early as next year. Recognizing that these technologies raise new and different safety and security issues, the NRC is working to identify and resolve important related technical, licensing, and policy issues.

As we continue working to review new reactor technologies, the NRC believes that it's critical to have close cooperation with the international community for the exchange of information on design and construction. The NRC has been working closely with several countries that are currently building new nuclear power plants in order to learn from their experience. Furthermore, the NRC is participating in the Multinational Design Evaluation Program, an international effort to share information and experience about new reactor designs.

11 - Follow-up from 4th CNS – IRRS Mission

In keeping with that spirit of international cooperation, the NRC has made considerable progress since the 4th Review Meeting in completing the Integrated Regulatory Review Service's peer review process. Throughout this process, the agency has been impressed by the expertise and experience of the entire IRRS peer review team. We have benefited tremendously from the opportunities for critical self-assessment, constructive dialogue, and the exchange of information and experience.

The IRRS peer review process includes three phases: an initial self assessment that the NRC completed in 2007 and 2009, an onsite peer review that was conducted in October 2010, and a follow-up peer review mission. The onsite IRRS mission included work at NRC headquarters, as well a regional office visit to observe NRC inspection practices, two plant visits, and an observation of an emergency preparedness exercise.

12 - Follow-up from 4th CNS – IRRS Mission

The NRC is pleased that the recently publicly released mission report recognizes our effective national regulatory program, our strong commitment to continuous improvement, and our contributions to sound safety practices on the international level. The report includes 25 good practices, 20 suggestions, and 2 recommendations. Among the key suggestions and recommendations were to provide a clear message to licensees about their responsibility for ensuring and enhancing safety, as well as moving forward with internal NRC efforts to develop a fully integrated Management System. The NRC will review these and other suggestions included in the IRRS report and then determine what actions we should take in response.

The NRC's participation in the IRRS peer review process is a sign of our strong commitment to nuclear safety, continuous improvement, critical self-assessment, and international cooperation. Throughout this process, the NRC has benefited from the exchange of experience, expertise, and best practices, and we strongly encourage other countries to take advantage of this opportunity.

13 - Follow-up from 4th CNS – Emergency Preparedness

The presentation thus far has focused on steps taken by the NRC to prevent issues or accidents from arising in the first place. At the same time, the NRC has been working since the 4th Review Meeting to enhance our approach for mitigating and containing potential emergencies.

The NRC requires all operating plants to conduct an emergency planning exercise every 2 years. These comprehensive exercises are coordinated with other federal agencies, including the Federal Emergency Management Agency, as well as state and local authorities. Additionally, in 2005, the NRC initiated a top-to-bottom review of our emergency preparedness program. As a result of this review, we have developed a series of proposed changes that seek to enhance our approach to emergency planning and address security issues identified after the September 11, 2001 terrorist events.

In line with our national approach to incident management, the NRC regularly participates in National Level Exercises. While the NRC's periodic exercises are primarily focused on licensees' capabilities, these National Level Exercises place a strong emphasis on the government's capacity to respond to a catastrophic event. The extent of NRC participation varies year-to-year, based on the exercise scenario, but these Exercises have provided important opportunities to test the agency's emergency plans and skills in a real-time, realistic environment.

14 - Challenges

To this point, our presentation has primarily focused on steps taken since the 4th Review Meeting to strengthen nuclear safety and security. But a strong regulator must also look ahead, and I will now briefly outline a few challenges that the NRC believes will be important areas of focus in the coming years.

Materials Degradation – Buried Piping: One important area concerns material degradation. As licensees continue to express interest in extended operation, the NRC must remain focused on the effects of aging on plant materials. Over the past several years, instances of buried piping leaks have led to inadvertent ground water contamination at some facilities. Although these leaks have not affected public health and safety, elected officials, stakeholders, and members of the public have been understandably concerned. In light of these events, the NRC established a task force to evaluate our regulatory framework for buried piping and the adequacy of past agency actions to address buried piping leaks. Although this task force concluded that the NRC's regulatory framework and actions have been adequate, we will continue to monitor this important issue.

Digital I&C: The agency also must stay attuned to the potential implications of new technologies for operator reactors and new reactor designs. This issue has taken on added significance over the past few years, as nuclear power operators in the United States have increased their use of digital instrumentation and control systems. As you know, these digital systems offer a wealth of capabilities beyond analog systems and have the potential to improve safety performance. These new technologies, however, also raise potentially significant safety and security issues involving single failure vulnerabilities, defense-in-depth, diversity, and redundancy. That is why the NRC has worked in recent years to develop the necessary technical expertise, licensing processes, and safety oversight approaches for digital I&C systems.

Cyber security: As the nuclear industry increases its use of digital systems, the NRC also must remain alert to potential cyber security vulnerabilities. The cyber threat has garnered greater attention worldwide with the increase in cyber security incidents, the availability of computer hacking tools, and the increased sophistication of attack technology. These developments have contributed to the urgency for both regulators and operators to ensure that nuclear power infrastructure is protected by effective information systems security programs. Since the 4th Review Meeting, the NRC has issued a new cyber security rule, which requires both operating reactors and new reactor applicants to develop cyber security plans that ensure that their facilities are protected from cyber attacks.

Safety-Security Interface: In light of the increased focus on security, the NRC will continue to work to ensure that licensees develop a strong safety-security interface. Although many safety and security activities complement each other, there is also the potential for safety and security measures to come into conflict. To avoid those types of issues, the NRC now requires licensees

to take an integrative approach to identifying safety-security conflicts and implementing measures to address those issues.

The fact that U.S. operating plants were built decades ago, primarily with just safety in mind, adds to the challenge of developing a sound and effective safety-security interface. But that need not be the case for new reactors that remain at the design stage, in particular with small modular reactors and other advanced reactor designs. To encourage vendors to consider these issues at the design stage, the NRC will conduct outreach with vendors, industry representatives, and other stakeholders.

15 - Good Practices

Throughout this presentation, I have discussed a number of important safety and security issues – areas where the NRC has made considerable progress and others where we still have work to do. In discussing the agency's best practices, I have chosen to highlight practices that are key to our effectiveness across the agency's broad range of responsibilities.

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From: RST01_F Resource
Sent: Wednesday, October 26, 2011 12:57 PM
To: A Green; A Rock; Al Coons; Aleshia Duncan; alexancg; Anthony Herbold; Appleman Binkert; B Green; B Russo; Bill King; Bill King2; Bruce Howard; C Lay; C Noser; C Ops; Charles Burrows; Charles Donnell; Christopher Firman; Christopher Meadow; Conrad Burnside; D Drakeley; D May; D Murakami; Damian Peko; Dan Feighert; Danielle Moen; Darrell Hammons; Devin Bush G LTJG RIA-Midwest MPLS.N47922; DHS Ops; DOE NNSA; DOT; DTRA; DTRA; E Wright; Elmer Naples; EOP; EPA; EPA2; Eric Sinibaldi; F Lewis; G Szeto; G Whitmire; George Higdon; gregopk; Gregory Simonson; Gretchen McCoy; H; Harry Sherwood; HHS; I Clark; Intel DIA; J Barnes; J Bartlett; J Moeller; J Noonkester; J Szymanski; J Tippets; James Purvis; Jason CIA; Jason Pepin; Jeremy Demott; Jeremy Morrow; Jeremyft1; Jim Kish; Johanna Berkey; John Holdren; Joyce Connery; K Donald; K Gonzalez; K Ousley; Karyn Keller; Kyle Viayra; L Mayer; Lee Nickel; Lisa; Lisa Hammond; Lukas McMichael; M Huchla; M Kerber; M Lansley; M Thon; M Thon2; maceck; MARFORPAC CAT All Hazards Div; MARFORPAC CAT G2; Mark Shaffer; markwb2; Marshall Shull; Michelle Ralston; Nan Calhoun; Navy; NICC; NMIC; NOC; NOC Duty Director; Nulcear SSA; P Gardner; pentagon; Peter Lyons; Phillip Barks; R Roesler; R Schueneman; Rebecca Thomson; roberhh; Ron Cherry; Ron McCabe; S Buntman; S Levy; scotc1; seiden; state; Stephen Trautman; Steve Colman; Steve Horwitz; T Roberts; Thomas Conran; Thomas Zerr; Tim Greten; Trent Hughes; Troy Heytens; USDA, John; USMC; Vanessa Quinn; Victoria Kinsey; W Cluff; W Young; Will Friese; William Webb; A Brown; A Estes; A Hough; A Tribble; B goldberg; B Moffat; B Perry; B Woo; BMPC; Brinser, Andrew; C Fiore; C Good; C Kim; Carlos Islas; CPF CATN5; Craig Gaddis; Curtis Smith; D Fletcher; D Putthoff; D Scully; D Smith; D Souza; D Wade; D Williams; David Graves; David Herman; DOE DART; E kaye; E Price; E Shelland; E Train; Elder, Troy; Eric Wright; F Bantell; Guathier, Ronald; H Zito; Hickam; Hickam; Idar, Deanne J CIV OSD POLICY ; J Blankenburg; J Kreykes; J McCallister; J Rhodes; J Rivera; J Scarbrough; J Soderbeck; J Stewart; J Trussler; James Williams; Joel Pero; Joy Rempe; JTF505-MAIN-JOC-J2; JTF505-MAIN-JOC-J2-INTEL-ANAY; K Tomlinson; Koluch, SSgt Eric; L Bolling; L Elkins; L Heinrich; L Walter; Laurel Steinhurst ; Lela Doyle; M Howsare; M Kabbur; M Nguyen; M Taafe; Marina Llewellyn; Mark Russo; Michael Anderson; Michael Eberlein; Monaghan, Dylan; NCMI Ops; Office of Secretary of Defense Watch Officer ; Olson, Niels; P Almquist; P Higginbotham; P Higgins; P Lyons; P Somboonpakron; PACOM; Paul Scheinert; R Backley; R Fisher; R Garrett; R Neff; R Tashma; Reid Tanaka; Richard, Sgt William; Robert Duke; Robert P; S Aoki; S Jerabek; Scott Simonson; Shirey, Sgt Eric; Simmers, Keith; Spencer Nordgran; Spurlock, Kenneth; Stephen Bell; Stephen Greco; Steven Schlaseman; T Lowman; T Miller; T True; Thomas Vavoso; Tovar, SSgt Eric; (b)(6) ; USFJ; USFJ Intel; V Raphael; Valerie Makino; Vaughn, Sgt Jerrod; Walter Hokett; Wanda Ayuso; William Brysacz; Batkin, Joshua; Borchardt, Bill; Bradford, Anna; Castleman, Patrick; Coggins, Angela; Cohen, Shari; Collins, Elmo; Cooper, LaToya; Dyer, Jim; Flory, Shirley; Franovich, Mike; Gibbs, Catina; Gilles, Nanette; Haney, Catherine; Hudson, Sharon; Jaczko, Gregory; Johnson, Michael; Leeds, Eric; Loyd, Susan; Marshall, Jane; Marshall, Michael; Mitchell, Matthew; Monninger, John; Orders, William; Pace, Patti; Schwarz, Sherry; Sheron, Brian; Skeen, David; Speiser, Herald; Sprongeris, Patricia; Taylor, Renee; Taylor, Robert; Virgilio, Martin; Walker, Dwight; Walls, Lorena; Weber, Michael
Cc: Riley (OCA), Timothy; Droggitis, Spiros
Subject: USNRC Emergency Operations Center Status Update 102611
Attachments: USNRC Earthquake-Tsunami Update 102611 1300 EDT.pdf; Attachment - NRC Daily Assessment of Daiichi 102611.pdf

~~*****NOTE: THE ATTACHED IS FOR OFFICIAL USE ONLY*****~~

Good Afternoon,

Attached is the Status Update for Wednesday, October 26, 2011.

Based upon the level of stability that has been achieved at the site and the availability of information relative to the situation in Japan from public sources, the NRC will cease publication of this report.

~~*****NOTE: THE ATTACHED IS FOR OFFICIAL USE ONLY*****~~

NRC's Periodic Stoplight Report of Conditions at Fukushima Daiichi Nuclear Power Plant

Reactor One	<ul style="list-style-type: none"> Core damaged and uncovered Primary containment breached Injecting via feed water Reactor metal temperatures <100deg C and stable
Reactor Two	<ul style="list-style-type: none"> Core damaged and uncovered Primary containment breached Injecting via feed water and core spray Reactor metal temperatures < 100deg C and stable.
Reactor Three	<ul style="list-style-type: none"> Core damaged and uncovered Primary containment breached Injecting via feed water and via core spray Reactor metal temperatures < 100deg C and stable
SFP One	<ul style="list-style-type: none"> SFP intact, water level maintained with installed fuel pool cooling system Closed loop cooling installed and in operation
SFP Two	<ul style="list-style-type: none"> SFP intact, water level maintained with installed fuel pool cooling system Closed loop cooling installed and in operation
SFP Three	<ul style="list-style-type: none"> SFP intact, water level maintained with installed spent fuel pool system Closed loop cooling installed and in operation
SFP Four	<ul style="list-style-type: none"> SFP intact, water level maintained with installed fuel pool cooling system Closed loop cooling installed and in operation
Reactors 5 & 6	<ul style="list-style-type: none"> Cold shutdown

Japan News Headlines

- Professionals skeptical about TEPCO's definition of "cold shutdown" (10/24)
- TEPCO, in 2006, canceled project to connect power sources among Fukushima reactors (10/24)
- Water leak discovered in Kurion system (10/19)
- Nuclear crisis minister Hosono says "no entry zone" to be lifted gradually (10/18)
- Revised stabilization roadmap calls for "cold shutdown this year" (10/18)
- NISA panel to be launched to probe technical problems with nuclear plants (10/17)
- Step 2" of containment roadmap to be achieved this year (10/17)

Events

General Site

Major TEPCO Identified Site Concerns

- Maintaining cold shutdown conditions
- Control radiological releases
- Removal debris for access to reactor buildings
- Control personnel radiation exposure

NRC Focus Areas

- Roadmap Step 2 completion
 - Radiation monitoring
 - Site release rates
- Reassess travel advisory (Until US advises American citizens to follow GOJ guidance)

Definitions:

Adequate	Challenged	Active Failure
Effective means to achieve the required function or the function is no longer necessary	Limited effective means to achieve required function or limited necessity for the function	Ineffective means to achieve required function

(Assessment of reactors and SFPs is based on a "rollup" of individual assessment criteria provided on next page.)

PURPOSE: The report is prepared to provide a high level qualitative assessment of conditions at Fukushima Daiichi as the Government of Japan and TEPCO work to stabilize the site.

DISCLAIMER: The development of the daily assessment report includes a number of inputs. Some inputs are objective, such as plant data provided by TEPCO, while others are subjective, such as engineering insights from the NRC's reactor safety and protective measures staff. While data availability and quality have significantly improved in the recent months, there are still unknowns and uncertainties associated with having a complete understanding of conditions at the Daiichi reactors and spent fuel pools. As such, this tool represents the collective judgment of the NRC staff based on best available information.

NRC's Periodic Stoplight Report of Conditions at Fukushima Daiichi Nuclear Power Plant

Reactor One – Adequate	
Function	Status
RPV integrity	Adequate
Makeup capability	Adequate
Cooling capability	Adequate
Primary Containment integrity	Adequate

Reactor Two – Adequate	
Function	Status
RPV integrity	Adequate
Makeup capability	Adequate
Cooling capability	Adequate
Primary Containment integrity	Adequate

Reactor Three – Adequate	
Function	Status
RPV integrity	Adequate
Makeup capability	Adequate
Cooling capability	Adequate
Primary Containment integrity	Adequate

Reactor Five - Adequate	
Function	Status
RPV integrity	Adequate
Makeup capability	Adequate
Cooling capability	Adequate
Primary Containment integrity	Adequate

Reactor Six -Adequate	
Function	Status
RPV integrity	Adequate
Makeup capability	Adequate
Cooling capability	Adequate
Primary Containment integrity	Adequate

SFP One – Adequate	
Function	Status
Structural Soundness	Adequate
Makeup capability	Adequate
Cooling capability	Adequate

SFP Two – Adequate	
Function	Status
Structural Soundness	Adequate
Makeup capability	Adequate
Cooling capability	Adequate

SFP Three – Adequate	
Function	Status
Structural Soundness	Adequate
Makeup capability	Adequate
Cooling capability	Adequate

SFP Four – Adequate	
Function	Status
Structural Soundness	Adequate
Makeup capability	Adequate
Cooling capability	Adequate

General Site – Challenged	
Function	Status
Water management	Adequate
Off-site / emergency power	Adequate
General site radiation levels	Challenged

Definitions:

Adequate	Challenged	Active Failure
Effective means to achieve the required function or the function is no longer necessary	Limited effective means to achieve required function or limited necessity for the function	Ineffective means to achieve required function

From: Bradford, Anna
Sent: Thursday, September 22, 2011 4:40 PM
To: Marshall, Michael; Hipschman, Thomas
Subject: FW: Our Participation in NRC Commission Meeting on the Japan Task Force Report (October 11th)
Attachments: image001.png

FYI.

Anna Bradford
Policy Advisor for Nuclear Materials
Office of Chairman Jaczko
U.S. Nuclear Regulatory Commission
301-415-1827

From: Fettus, Geoffrey [mailto:gfettus@nrdc.org]
Sent: Thursday, September 22, 2011 4:38 PM
To: Bradford, Anna; Batkin, Joshua
Subject: Our Participation in NRC Commission Meeting on the Japan Task Force Report (October 11th)

Restraining comments here that would amplify what Christopher noted below. But you can imagine them.

Geoff
202 289 2371

From: Paine, Christopher
Sent: Thursday, September 22, 2011 4:28 PM
To: Laufer, Richard
Subject: RE: Participation in NRC Commission Meeting on the Japan Task Force Report (October 11th)

Richard – You may have noticed this already, but I would nonetheless like to point out that you are requesting “slides or other materials” from us for the Commissioners by Monday, October 3, which also happens to be the same day that the staff is scheduled to deliver its long-scheduled NTTF prioritization recommendations to the Commission.

Obviously, we can’t comment by October 3 on the wisdom, or lack thereof, of staff recommendations that will only become available to the public *on or after that date*. You need to review the schedule and establish a more rational relationship between these two planned actions, and allow at least 3-5 working days, from the day the comments are made available to the public, for commenters to absorb and respond to the staff’s recommendations. The more time we have to absorb and scrutinize the staff’s recommendations, the more thoughtful and hopefully useful our input will be to the Commission.

Sincerely,

Christopher Paine

Christopher E. Paine
Director, Nuclear Program

Natural Resources Defense Council (NRDC)
1152 15th Street NW, Suite 300
Washington, DC 20005
Phone: (202)-289-2370 (DC office)
Cell: (b)(6)
Fax: (202) 289-0622 (DC office)
cpaine@nrdc.org

From: Laufer, Richard [mailto:Richard.Laufer@nrc.gov]
Sent: Thursday, September 22, 2011 2:22 PM
To: Paine, Christopher
Cc: Baval, Rochelle
Subject: Participation in NRC Commission Meeting on the Japan Task Force Report (October 11th)
Importance: High

Good Afternoon Mr. Paine -

Attached is a copy of the formal welcome letter regarding your participation in an NRC Commission meeting on October 11, 2011, that will be mailed to you. A draft agenda and guidelines for slides are also attached. The Commission appreciates your willingness and availability to participate in this meeting.

Please double check the agenda and let me know if there should be any changes to your name or title. This will be the same as on your name tent on the table.

If you will need parking while you are here for the meeting, please let me know. If you do need parking, I will need the make, model, color, State, and license tag # of your vehicle (if renting a car, the rental company's name). If others are accompanying you to the meeting, please provide their names, and I will pre-register them too.

We are asking for slides or other materials by Monday, October 3rd. These will be shared with the Commission, as well as staff and other participants, and posted on our public website, along with NRC staff's slides (<http://www.nrc.gov/reading-rm/doc-collections/commission/tr/>). If you do not plan to send slides or other materials, please let me know.

Please let me know if there are any questions.

Again, thank you for participating in this meeting.

Regards,
Rich

Richard J. Laufer
Office of the Secretary
U. S. Nuclear Regulatory Commission
Phone: 301-415-1661
Email: Richard.Laufer@nrc.gov



From: Bradford, Anna
Sent: Tuesday, September 20, 2011 9:11 AM
To: Monninger, John; Batkin, Joshua; Coggins, Angela; Hipschman, Thomas; Marshall, Michael
Subject: FW: PLANS TO ISSUE TI 2600/015 to Fuel Cycle Facilities: Evaluation of Licensee Strategies for the Prevention and/or Mitigation of Emergencies

FYI, regarding the steering committee.

Anna Bradford
Policy Advisor for Nuclear Materials
Office of Chairman Jaczko
U.S. Nuclear Regulatory Commission
301-415-1827

From: Frazier, Alan
Sent: Monday, September 19, 2011 4:59 PM
To: Kock, Andrea; Baggett, Steven; Bradford, Anna; Astwood, Heather; Tadesse, Rebecca
Cc: Bowman, Gregory
Subject: RE: PLANS TO ISSUE TI 2600/015 to Fuel Cycle Facilities: Evaluation of Licensee Strategies for the Prevention and/or Mitigation of Emergencies

Andrea,

Yes. The Steering Committee is meeting tomorrow and plans to discuss the draft TI. Also Marty has made it clear that any actions resulting from the TI will be coordinated/reviewed by the Steering Committee.

Alan

From: Kock, Andrea
Sent: Monday, September 19, 2011 4:52 PM
To: Frazier, Alan; Baggett, Steven; Bradford, Anna; Astwood, Heather; Tadesse, Rebecca
Cc: Bowman, Gregory
Subject: Re: PLANS TO ISSUE TI 2600/015 to Fuel Cycle Facilities: Evaluation of Licensee Strategies for the Prevention and/or Mitigation of Emergencies

(b)(5)

Sent from NRC blackberry
Andrea Kock

(b)(6)

From: Frazier, Alan
To: Frazier, Alan; Baggett, Steven; Bradford, Anna; Astwood, Heather; Tadesse, Rebecca; Kock, Andrea
Cc: Bowman, Gregory
Sent: Mon Sep 19 15:15:53 2011
Subject: RE: PLANS TO ISSUE TI 2600/015 to Fuel Cycle Facilities: Evaluation of Licensee Strategies for the Prevention and/or Mitigation of Emergencies

Commissioner Assistants,

I have received two additional questions regarding the subject TI:

Q1: What is the staff's estimate of the resources that will be expended to complete the TI?

The estimated average time to complete the TI inspection requirements is 96 hours of direct inspection per site. However, where applicable, inspectors will credit the core inspection program. In addition, the inspectors are currently conducting in-office reviews of the licensing basis to identify the most risk-significant facilities (in terms of beyond design basis external events). These reviews will inform the priority of facilities to be inspected. Based on the findings from the highest priority facilities, the staff may not need to inspect every facility. This decision will be made after management reviews findings from initial inspections.

Q2: What does the staff plan to do with the results of the TI with regard to the "examination of the effects of events "larger" than considered in the licensing process"??

As with any TI, the staff will use the findings to determine whether additional regulatory actions are warranted. For example, it could be that the staff determines that no additional regulatory response is needed or, similar to the actions taken with regard to Operating Reactors, the staff may determine that they need to issue a generic communication (e.g., to request licensees provide information on how they are meeting the regulatory requirements (70.64(a)(2) and/or (a)(6)). We will not know which actions are appropriate until we review the findings of the TI.

Please let me know if you have any additional questions.

Alan

From: Frazier, Alan

Sent: Friday, September 16, 2011 10:25 AM

To: Baggett, Steven; Bradford, Anna; Astwood, Heather; Tadesse, Rebecca; Kock, Andrea

Cc: Monninger, John; Reddick, Darani; Sosa, Belkys; Bubar, Patrice; Nieh, Ho

Subject: RE: PLANS TO ISSUE TI 2600/015 to Fuel Cycle Facilities: Evaluation of Licensee Strategies for the Prevention and/or Mitigation of Emergencies

Steve,

This activity is not part of the "formal" Japan review activities in that it is not being conducted pursuant to that group's direction, recommendations or activities. It is a recognition that there are likely insights for the fuel cycle industry, and for us as the regulator, and is intended to assess whether and how the events in Japan indicate that we should change the way we license fuel facilities and/or whether any of the existing facilities need to make changes either in their physical plant, procedures or both. We plan to closely monitor the results obtained by the staff we have assigned to the activity and take appropriate actions if and when needed. I will add that each facility has told us that they are reviewing the events in Japan to see how they might apply to their facility and we expect that the results of those reviews will be helpful to our staff when they visit the facilities.

We can certainly provide the ML# when the TI is finalized.

Alan

From: Baggett, Steven

Sent: Friday, September 16, 2011 9:59 AM

To: Frazier, Alan; Bradford, Anna; Astwood, Heather; Tadesse, Rebecca; Kock, Andrea

Cc: Monninger, John; Reddick, Darani; Sosa, Belkys; Bubar, Patrice; Nieh, Ho

Subject: RE: PLANS TO ISSUE TI 2600/015 to Fuel Cycle Facilities: Evaluation of Licensee Strategies for the Prevention and/or Mitigation of Emergencies

Alan,

How does this fit in the Japan event review activities and the longer term review charter? I recall reading the draft charter applies to non-reactor licensees, but it was not clear how that would happen.

Can you provide the ML number once the TI is issued?

Thanks

Steve

From: Frazier, Alan

Sent: Friday, September 16, 2011 9:48 AM

To: Bradford, Anna; Astwood, Heather; Baggett, Steven; Tadesse, Rebecca; Kock, Andrea

Cc: Monninger, John; Reddick, Darani; Sosa, Belkys; Bubar, Patrice; Nieh, Ho

Subject: PLANS TO ISSUE TI 2600/015 to Fuel Cycle Facilities: Evaluation of Licensee Strategies for the Prevention and/or Mitigation of Emergencies

Commissioner Assistants,

(b)(5)

I will walk around alter today to see if any of you have any comments or concerns.

Regards,

Alan L. Frazier
Executive Technical Assistant
Office of the Executive Director for Operations
U.S. Nuclear Regulatory Commission
301-415-1763

-----Original Message-----

From: Haney, Catherine

Sent: Friday, September 16, 2011 7:52 AM
To: Weber, Michael
Cc: Frazier, Alan; McCree, Victor
Subject: FW: TI

Mike,

(b)(5)

Any concerns?

Cathy

PS This is what I called about. No need to call me back.

From: Casto, Greg
Sent: Friday, September 16, 2011 12:04 PM
To: Monninger, John; Marshall, Michael
Subject: Request you insight - comments to DOS
Attachments: Japan Travel Alert Update Sept 14 2011 DRAFT for external clearance NRC comments rev 2 .docx

Not rushing, but we feel that our clock is ticking. Any comments on our final submittal to DOS? I feel that we should send this soon, as DOS management should be considering now. This can be in parallel with decision to engage the Chairman. Comments please. Tx greg

From: Casto, Greg
Sent: Friday, September 16, 2011 11:03 AM
To: Ulises, Anthony; Skeen, David; Brock, Kathryn
Cc: Monninger, John
Subject: RE: Followup to DOS on travel alert

Let me try again. tx

From: Ulises, Anthony
Sent: Friday, September 16, 2011 11:02 AM
To: Casto, Greg; Skeen, David; Brock, Kathryn
Cc: Monninger, John
Subject: RE: Followup to DOS on travel alert

Greg,

I do not have any additional comments.

Thanks,

Tony

From: Casto, Greg
Sent: Friday, September 16, 2011 10:57 AM
To: Ulises, Anthony; Skeen, David; Brock, Kathryn
Cc: Monninger, John
Subject: Followup to DOS on travel alert
Importance: High

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DOS:

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From: Casto, Greg
Sent: Friday, September 16, 2011 9:34 AM
To: Monninger, John; Marshall, Michael
Cc: Ulses, Anthony; Brock, Kathryn; Skeen, David
Subject: Fukushima Travel Alert Update
Attachments: Japan Travel Alert Update Sept 14 2011 DRAFT for external clearance.docx

Importance: High

John,

Called again and did not catch you. If you can call me at X0565, I can update you on our status. DOS has not returned our calls to discuss the alert issues that we continue to have.

(b)(5)

tx gtag

Greg Casto
Balance of Plant Branch
Division of Safety Systems
Office of Nuclear Reactor Regulation
US Nuclear Regulatory Commission
Washington DC 20555
telephone: 301,415,0565

SUBJECT: TRAVEL ALERT - JAPAN

REF: STATE XXXX

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From: Monninger, John
Sent: Thursday, September 15, 2011 8:43 AM
To: Batkin, Joshua; Skeen, David; Marshall, Michael
Cc: Virgilio, Martin; Casto, Chuck; Pace, Patti
Subject: RE: Japan Travel Alert Update--revised 9/14 version for final clearance

I sat in on the call and listened to the Chairman's remarks, but was not privy to the remarks by Undersecretary Kennedy. The call lasted about 5 minutes and was very relaxed (no controversial issues). The following summarizes the call:

(b)(5)

Dave Skeen called me last night and I covered the above topics with him.

From: Batkin, Joshua
Sent: Wednesday, September 14, 2011 5:15 PM
To: Skeen, David; Monninger, John; Marshall, Michael
Cc: Virgilio, Martin; Casto, Chuck; Pace, Patti
Subject: Re: Japan Travel Alert Update--revised 9/14 version for final clearance

Who sat in on his call with Kennedy yesterday?

Joshua C. Batkin
Chief of Staff
Chairman Gregory B. Jaczko
(301) 415-1820

From: Skeen, David
To: Batkin, Joshua; Monninger, John; Marshall, Michael
Cc: Virgilio, Martin; Casto, Chuck
Sent: Wed Sep 14 17:13:12 2011
Subject: FW: Japan Travel Alert Update--revised 9/14 version for final clearance

Josh/John/Michael,

I want to thank the Chairman for getting the travel advisory moving again. We certainly appreciate his support.

(b)(5)

Please advise.

Thanks!

From: RST01_F Resource
Sent: Wednesday, September 14, 2011 4:37 PM
To: Skeen, David
Subject: FW: Japan Travel Alert Update--revised 9/14 version for final clearance

From: Korff, Meena F [mailto:KorffPF@state.gov]
Sent: Wednesday, September 14, 2011 4:28 PM
To: (b)(6)

(b)(6)

Cc: Pomainville, Brett G; Shoemaker, Marlene S; Kelley, Karen D (IO/Tokyo); Walcott, Naomi; MacLeod, Margaret G; Velasco, Peter P; Dresser, Heather L (EAP/J)
Subject: RE: Japan Travel Alert Update--revised 9/14 version for final clearance

Hi Greg,

(b)(5)

We

welcome additional comments. Thanks. meena

This email is UNCLASSIFIED.

From: Casto, Greg [mailto:Greg.Casto@nrc.gov]

Sent: Wednesday, September 14, 2011 3:20 PM

To: (b)(6)

(b)(6)

Cc: Pomainville, Brett G; Shoemaker, Marlene S; Kelley, Karen D (IO/Tokyo); Walcott, Naomi; MacLeod, Margaret G; Velasco, Peter P; Dresser, Heather L (EAP/J)

Subject: RE: Japan Travel Alert Update--revised 9/14 version for final clearance

Importance: High

The NRC provides the attached revision to the travel alert with the following explanation:

(b)(5)

Please do not hesitate to contact us if you have any questions regarding our comments. After hours, we can be contacted through our Headquarters Operations Officer at (301) 816-5100.

Greg Casto

From: Korff, Meena F [mailto:KorffPF@state.gov]

Sent: Wednesday, September 14, 2011 1:23 PM

To: (b)(6)

(b)(6)

Cc: Pomainville, Brett G; Shoemaker, Marlene S; Korff, Meena F; Kelley, Karen D (IO/Tokyo); Walcott, Naomi; MacLeod, Margaret G; Velasco, Peter P; Dresser, Heather L (EAP/J)

Subject: Japan Travel Alert Update--revised 9/14 version for final clearance

Dear Colleagues,

(b)(5)

Thanks,

Meena Korff
Country Officer for Japan, Singapore, Hong Kong and Macau
American Citizen Services
Department of State
Tel: 202-647-4868
Fax: 202-663-2778
<http://travel.state.gov>

This email is UNCLASSIFIED.

From: Monninger, John
Sent: Thursday, September 08, 2011 4:50 PM
To: Batkin, Joshua
Cc: Coggins, Angela; Marshall, Michael; Gibbs, Catina
Subject: Call Steve Fetter - OSTP - Friday, 9/9/11

Josh,

The Chairman would like you to call Steve Fetter (OSTP) on Friday, 9/9/11, and fill him in on the NRC's efforts in responding to the Japan Task Force report.

(b)(5)

Nevertheless, the Chairman still wants you to give him a buzz on Friday.

John M.

From: Monninger, John
Sent: Thursday, September 08, 2011 10:15 AM
To: Dhir, Neha; Marshall, Michael
Subject: RE: 8:30 mtg

(b)(5)

-----Original Message-----

From: Dhir, Neha
Sent: Thursday, September 08, 2011 9:12 AM
To: Monninger, John; Marshall, Michael
Subject: RE: 8:30 mtg

Thanks John. If this passes, would it have a significant impact on the work our Japan task force is doing?

-----Original Message-----

From: Monninger, John
Sent: Thursday, September 08, 2011 9:06 AM
To: Marshall, Michael; Dhir, Neha
Subject: FW: 8:30 mtg

FYI. All preliminary and very subject to change, but I thought you would be interested.

-----Original Message-----

From: Dyer, Jim
Sent: Thursday, September 08, 2011 9:03 AM
To: Jaczko, Gregory; Vietti-Cook, Annette; Borchardt, Bill; Schmidt, Rebecca; Burns, Stephen; Brenner, Eliot; Doane, Margaret
Cc: Coggins, Angela; Monninger, John; Brown, Milton; Golder, Jennifer
Subject: RE: 8:30 mtg

Chairman,

Very little discussion at the SAC yesterday wrt NRC budget items. We received the Senate E&W Markup. My quick read

(b)(5)

I may have missed something and will provide an update if we find anything more.

Jim

-----Original Message-----

From: Jaczko, Gregory

Sent: Wednesday, September 07, 2011 10:40 PM

To: Vietti-Cook, Annette; Borchardt, Bill; Dyer, Jim; Schmidt, Rebecca; Burns, Stephen; Brenner, Eliot; Doane, Margaret

Cc: Coggins, Angela; Monninger, John

Subject: 8:30 mtg

I have an unexpected issue I need to deal with tomorrow morning so I will cancel the 8:30. Email me if there prompt issues I need to be notified of. Thanks

From: Monninger, John
Sent: Tuesday, September 06, 2011 11:46 AM
To: Marshall, Michael; Hipschman, Thomas
Subject: FW: Attn: 3rd Version of Action Plan
Attachments: Final draft Action Plan September 5 GOV_2011_59-GC55-14.pdf; 3rd DRAFT IAEA ACTION PLAN ON NUCLEAR SAFETY.DOC

Categories: Read, Important

FYI.

-----Original Message-----

From: Warren, Roberta
Sent: Tuesday, September 06, 2011 10:57 AM
To: Batkin, Joshua; Coggins, Angela; Monninger, John
Subject: FW: Attn: 3rd Version of Action Plan

The final version of the Japan action plan being submitted to the Board of Governors. There are no changes that can be made now. Jen thought it was pretty good, not perfect, but not bad. I will read and highlight for the Chairman.

Roberta S. Warren
Policy Advisor for Security and Int'l Programs Office of the Chairman U.S. NRC
(301) 415-8044

(b)(6)

(C)

-----Original Message-----

From: Schwartzman, Jennifer
Sent: Tuesday, September 06, 2011 10:48 AM
To: Warren, Roberta
Subject: FW: Attn: 3rd Version of Action Plan

Bobbi,

Please see attached. PDF is final final. Word doc is last version of USG comments.

-----Original Message-----

From: Metz, Patricia J [mailto:MetzPJ@state.gov]
Sent: Tuesday, September 06, 2011 10:12 AM
To: Metz, Patricia J; McRae, Ben; Herr, Julie K; Scott, Michelle; Schwartzman, Jennifer; Henderson, Karen; Doane, Margaret; Tonkay, Douglas; Boudreau, Robert; Gorn, Janet M; Moore, Scott; McClelland, Vince; Heinrich, Ann; Peko, Damian; Bisconti, Giulia; Kenagy, W David; Fladeboe, Jan P; Cutler, Kirsten B; Goodman, Jac; Bentz, Julie A.; Connery, Joyce; Gergen, Jennifer A
Cc: Shaffer, Mark R; Smith, Leah A
Subject: RE: Attn: 3rd Version of Action Plan

All: Attached is the Final draft of the Action Plan. BoG is requested

to approve and General Conference is requested to endorse. Thank you for all your help in getting U.S. input into the AP.

Thanks!
Patte

202/736-4429

DRAFT IAEA ACTION PLAN ON NUCLEAR SAFETY

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From: Trocine, Leigh
Sent: Monday, July 18, 2011 12:43 PM
To: Castleman, Patrick; Snodderly, Michael; Orders, William; Franovich, Mike
Cc: Marshall, Michael; Hipschman, Thomas; Sheron, Brian; Merzke, Daniel; Brock, Kathryn
Subject: INFO from RES -- Areas for Consideration -- Post-Fukushima Follow Up
Attachments: Potential Long term Issues.docx

Hello all,

During a 07/17 periodic with Chairman Jaczko, Brian Sheron (RES) discussed the post-Fukushima follow up and provided Chairman Jaczko with a copy of the attached list of ideas/areas that RES thought warranted further evaluation. The list was developed by RES shortly after the Fukushima accident when RES was considering the issues that came out of the Fukushima event.

Would you please pass this information along to your Commissioners? Thanks in advance for your help!

Cheers,
Leigh

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From: Monninger, John
Sent: Tuesday, July 12, 2011 9:38 AM
To: Warren, Roberta
Cc: Hipschman, Thomas; Marshall, Michael; Coggins, Angela; Batkin, Joshua; Bradford, Anna
Subject: FW: 50-mile Relaxation Briefing
Attachments: Tech Basis for Reducing Fifty Mile Zone.docx; 50-mile Relaxation Summary.docx

Bobbi,

See attached for this afternoon's briefing. I will also review.

Thanks,
John M.

From: Taylor, Robert
Sent: Tuesday, July 12, 2011 9:26 AM
To: Monninger, John
Cc: Skeen, David
Subject: Fw: 50-mile Relaxation Briefing

John,

50 mile briefing materials attached.

Rob

Sent from an NRC BlackBerry
Robert Taylor

(b)(6)

From: Virgilio, Martin
To: Cianci, Sandra; Taylor, Robert
Sent: Mon Jul 11 18:28:10 2011
Subject: FW: 50-mile Relaxation Briefing

Thanks, Rob

See you tomorrow.

From: Taylor, Robert
Sent: Monday, July 11, 2011 4:25 PM
To: Virgilio, Martin
Cc: Skeen, David; Cianci, Sandra
Subject: 50-mile Relaxation Briefing

Marty,

In preparation for tomorrow's briefing, attached are two documents regarding the NRC staff's proposal to relax the 50-mile evacuation recommendation. One is the draft 12-page technical basis document that contains the

details of the assessment the staff has performed. We believe the technical basis is sound; however, we are continuing to incorporate edits and feedback of an editorial nature so we don't have a final product yet. The second is a two-page summary of the technical basis that provides the high-level overview. We will walk you through the 2-pager tomorrow.

Regards,
Rob

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From: Gibbs, Catina
Sent: Monday, June 27, 2011 4:50 PM
To: Marshall, Michael; Batkin, Joshua; Hipschman, Thomas; Monninger, John
Subject: Charter for the NRC Steering Committee to Conduct a Longer-Term Review of the Events in Japan
Attachments: Charter for the NRC Steering Committee to Conduct a Longer-term Review of the Events in Japan.pdf

Please see attached.

Thanks,

Catina M. Gibbs
Admin. Assistant to
Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1750 (office)
301-415-3504 (fax)

11/10/2011
Comments
06/27/2011

**CHARTER FOR THE NUCLEAR REGULATORY COMMISSION (NRC)
STEERING COMMITTEE TO CONDUCT A LONGER-TERM REVIEW
OF THE EVENTS IN JAPAN**

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From: Monninger, John
Sent: Monday, June 27, 2011 3:06 PM
To: Batkin, Joshua; Hipschman, Thomas; Marshall, Michael
Subject: RE: Charter

Looks good to me.

Only comment would be on the

(b)(5)

(b)(5)

From: Batkin, Joshua
Sent: Monday, June 27, 2011 1:47 PM
To: Monninger, John; Hipschman, Thomas; Marshall, Michael
Subject: FW: Charter

Last chance...

From: Virgilio, Martin
Sent: Monday, June 27, 2011 1:06 PM
To: Batkin, Joshua
Subject: Charter

Josh

The current draft of the long term charter

**CHARTER FOR THE NUCLEAR REGULATORY COMMISSION (NRC)
STEERING COMMITTEE TO CONDUCT A LONGER-TERM REVIEW
OF THE EVENTS IN JAPAN**

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From: Hipschman, Thomas
Sent: Wednesday, June 22, 2011 12:58 PM
To: Coggins, Angela; Batkin, Joshua; Monninger, John; Marshall, Michael
Subject: FW: Charter for Longer-Term Fukushima Review
Attachments: Longer Term Committee Charter.docx

FYI

Thomas Hipschman
Policy Advisor for Reactors
Office of Chairman Gregory B. Jaczko
301-415-1832

From: Bowman, Gregory
Sent: Wednesday, June 22, 2011 12:58 PM
To: Hipschman, Thomas
Subject: Charter for Longer-Term Fukushima Review

Tom,

Attached is a copy of the charter for the longer-term review of Fukushima. The charter is still technically draft, although I think it's pretty close to being final. Our goal is to send it out early next week, possibly Monday, assuming that gives your office enough time to look it over.

Greg

(b)(5)

(b)(5)

(b)(5)

(b)(5)

From: Pace, Patti
Sent: Thursday, June 09, 2011 10:13 AM
To: Batkin, Joshua; Coggins, Angela; Monninger, John; Loyd, Susan; Hipschman, Thomas; Marshall, Michael
Subject: FW: U.S. Industry Leadership in Response to the Fukushima Daiichi Nuclear Accidents
Attachments: The Way Forward 060611 (public) FinalA2.pdf; FSC Charter 060811.docx

FYI.

Patti Pace
Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1820 (office)
301-415-3504 (fax)

From: PIETRANGELO, Tony [mailto:arp@nei.org]
Sent: Thursday, June 09, 2011 10:10 AM
To: Jaczko, Gregory; CMRSVINICKI Resource; Apostolakis, George; CMRMAGWOOD Resource; CMROSTENDORFF Resource; Borchardt, Bill; Virgilio, Martin
Cc: Batkin, Joshua; Sharkey, Jeffry; Bubar, Patrice; Nieh, Ho; Pace, Patti; Lepre, Janet; Blake, Kathleen; Crawford, Carrie; Herr, Linda; Taylor, Renee; Sosa, Belkys
Subject: U.S. Industry Leadership in Response to the Fukushima Daiichi Nuclear Accidents

In the aftermath of the March nuclear accident in Japan, the leadership of the U.S. nuclear energy industry has developed a comprehensive plan to guide and coordinate industry efforts. Attached for your information is *The Way Forward: U.S. Industry Leadership in Response to the Fukushima Daiichi Nuclear Accidents*. This document provides a description of our strategic goals, guiding principles, key stakeholders, and the structure and governance for the effort, which includes the related activities of NEI, INPO, EPRI and the NSSS Owners Groups.

Also attached for your information is the charter of the industry's Fukushima Response Steering Committee, which developed *The Way Forward* document and will provide direction and oversight of industry implementation. The Steering Committee is chaired by Chip Pardee of Exelon and the membership includes senior executives and chief nuclear officers from the industry organizations and several utilities.

We look forward to interactions with the NRC as we apply the lessons learned from Fukushima to our plants. If you have any questions regarding the attached documents, please contact me.

Anthony R. Pietrangelo
Senior Vice President and Chief Nuclear Officer

Nuclear Energy Institute
1776 I Street NW, Suite 400
Washington, DC 20006
www.nei.org

P: 202-739-8081

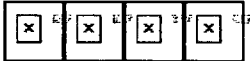
F: 202-533-0182

M: (b)(6)

E: arp@nei.org



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Sent through mail.messaging.microsoft.com

Fukushima Response Steering Committee Charter

The U.S. nuclear industry has formed a Fukushima Response Steering Committee to coordinate the industry's overall response to the accident at Japan's Fukushima Daiichi nuclear plant. The steering committee is comprised of the chairpersons of the principal advisory groups to the industry associations (EPRI, INPO and NEI), a representative cross section of chief nuclear officers and executives from EPRI, INPO and NEI.

Members

- Chip Pardee, Chief Operating Officer, Exelon Generation Company, NEI NSIAC Chair, Fukushima Response Steering Committee Chairman
- Randy Edington, Executive Vice President and Chief Nuclear Officer, Arizona Public Service Company, INPO EAG Chair
- Maria Korsnick, Chief Nuclear Officer and Chief Operating Officer, Constellation Energy Nuclear Group, EPRI NPC Chair
- John Herron, President, Chief Executive Officer and Chief Nuclear Officer, Entergy Nuclear
- Ed Halpin, President and Chief Executive Officer, STP Nuclear Operating Company
- Dave Heacock, President and Chief Nuclear Officer, Dominion Nuclear
- Dennis Koehl, Vice President and Chief Nuclear Officer, Xcel Energy
- Mike Pacilio, Chief Nuclear Officer, Exelon Corporation
- Bill Webster, Senior Vice President, Industry Evaluations, INPO
- Rick Purcell, Senior Vice President, Industry Performance Improvement, INPO
- Neil Wilmshurst, Vice President and Chief Nuclear Officer, EPRI
- Tony Pietrangelo, Senior Vice President and Chief Nuclear Officer, NEI

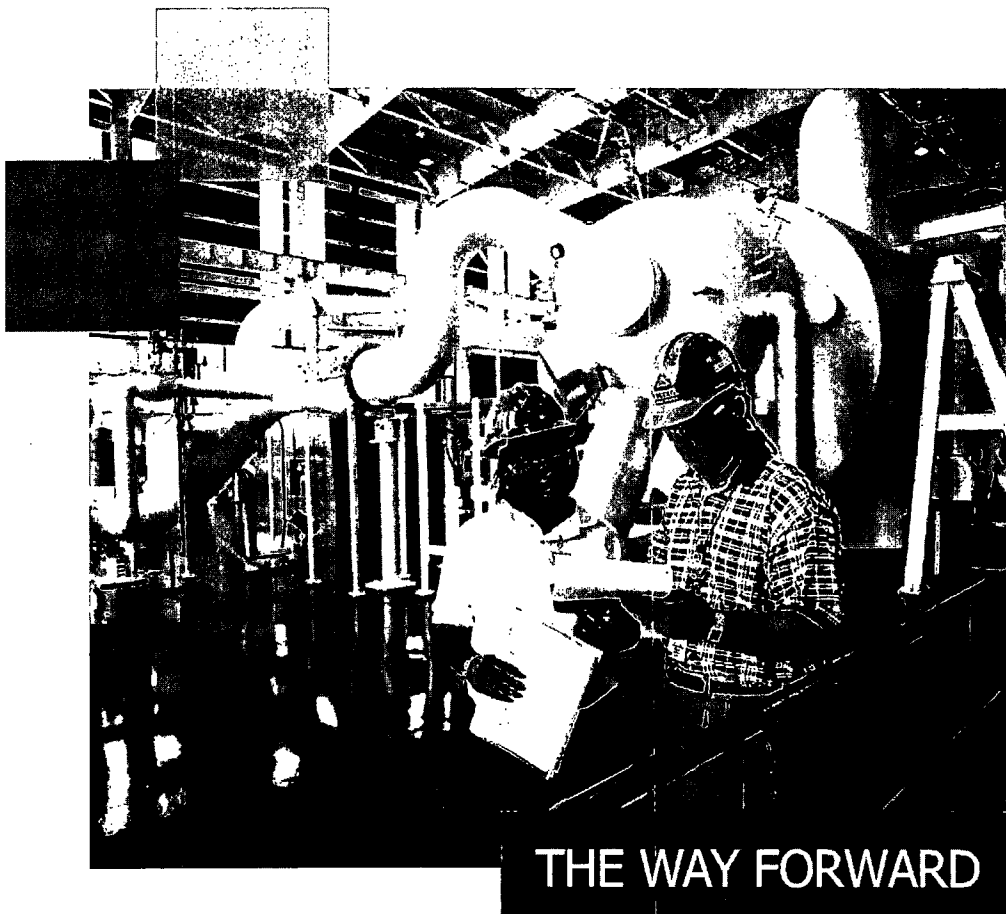
The steering committee is chartered to:

1. Develop a strategic plan that articulates the strategic goals, structure and process for defining the industry's overall response to Fukushima;
2. Ensure that identified issues are appropriately coordinated between industry organizations and that lead and supporting roles are established; and
3. Monitor the status of action plans on key issues to ensure priorities and schedules are consistent with the strategic plan and that the overall impact on operating plants is balanced and appropriate to the industry's prime focus, excellence in safe operations.

Notes:

1. The development and management of actions plans for identified issues will be implemented under the purview and governance of the lead industry organization.

2. The formation of this steering committee shall in no way diminish the independent roles of the industry support groups as they take the actions necessary to fulfill their missions.
3. The steering committee chairman will assess the continued need for the steering committee at the conclusion of 2011, and every six months thereafter. A report will be made to the leadership of INPO, EPRI and NEI.



U.S. Industry Leadership in
Response to Events at the
Fukushima Daiichi Nuclear
Power Plant



June 8, 2011

1. EXECUTIVE SUMMARY

The earthquake and tsunami in Japan on March 11, 2011 and subsequent nuclear accident at Tokyo Electric Power Co.'s Fukushima Daiichi nuclear power plant have resulted in worldwide attention toward nuclear energy safety. The leadership of the U.S. commercial nuclear industry is dedicated to gaining a deep understanding of the events at Fukushima Daiichi and to taking the necessary actions to improve safety and emergency preparedness at America's nuclear energy facilities.

The Electric Power Research Institute (EPRI), Institute of Nuclear Power Operations (INPO), and Nuclear Energy Institute (NEI), in conjunction with senior utility executives, have created a joint leadership model to integrate and coordinate the U.S. nuclear industry's response to events at the Fukushima Daiichi nuclear energy facility. This will ensure that lessons learned are identified and well understood, and that response actions are effectively coordinated and implemented throughout the industry. This must be accomplished while electric companies continue to ensure that the safe and reliable operation of commercial reactors is our highest priority. This effort will not diminish the independent roles of the industry support groups, such as the role of INPO to promote the highest levels of safety in U.S. commercial reactors, as actions are taken to fulfill their missions.

An important and integral aspect of the industry's response is the awareness and involvement of the industry's many stakeholders, including industry vendors, architect-engineering companies, industry owners' groups and national consensus nuclear standards organizations. This will ensure that the interests of each stakeholder group are considered, understood and communicated to the public and policymakers.

A comprehensive investigation of the events at Fukushima Daiichi will take considerable time. Yet, there is also a need to act in a deliberate and decisive manner. Recognizing this, America's nuclear energy industry is taking action based on a preliminary understanding of the events. The industry's response is structured to ensure that emergency response strategies are updated based on new information and insights learned during subsequent event reviews.

Separately, the U.S. Nuclear Regulatory Commission (NRC) is conducting an independent assessment and will consider actions to ensure that its regulations reflect lessons learned from the Fukushima events. The industry's response will ensure that the NRC and industry remain informed of each other's respective activities so that any new regulatory requirements are implemented in the most efficient and effective manner.

This strategic overview describes how the industry will approach this challenge and is intended to serve as a reference point for the future. It articulates strategic goals and key stakeholders for the industry's integrated response. In addition, this overview describes the respective roles and coordination of industry organizations in managing the discrete elements of a comprehensive U.S. industry response plan.

2. STRATEGIC GOALS

The primary objective is to improve nuclear safety by learning and applying the lessons from the Fukushima Daiichi nuclear accident. In response, the U.S. nuclear industry has established the following strategic goals to maintain, and where necessary, provide added defense in depth for critical safety functions, such as reactor core cooling, spent fuel storage pool cooling and containment integrity:

1. The nuclear workforce remains focused on safety and operational excellence at all plants, particularly in light of the increased work that the response to the Fukushima event will represent.
2. Timelines for emergency response capability to ensure continued core cooling, containment integrity and spent fuel storage pool cooling are synchronized to preclude fuel damage following station blackout.
3. The U.S. nuclear industry is capable of responding effectively to any significant event in the U.S. with the response being scalable to support an international event, as appropriate.
4. Severe accident management guidelines, security response strategies (B.5.b), and external event response plans are effectively integrated to ensure nuclear energy facilities are capable of a symptom-based response to events that could impact multiple reactors at a single site.
5. Margins for protection from external events are sufficient based on the latest hazards analyses and historical data.
6. Spent fuel pool cooling and makeup functions are fully protective during periods of high heat load in the spent fuel pool and during extended station blackout conditions.
7. Primary containment protective strategies can effectively manage and mitigate post-accident conditions, including elevated pressure and hydrogen concentrations.

3. GUIDING PRINCIPLES

To achieve our strategic goals, the industry has established principles to guide the development of its response actions. These principles will be used to guide the resolution of issues and plant improvements and will ensure that a consistent expectation is established for incorporating lessons into the operations at each site. The strategic response actions will be designed to:

1. Ensure equipment and guidance, enhanced as appropriate, result in improvements in response effectiveness.
2. Address guidance, equipment and training to ensure long-term viability of safety improvements.
3. Develop response strategies that are performance-based, risk-informed and account for unique site characteristics.
4. Maintain a strong interface with federal regulators to ensure regulatory actions are consistent with safety significance and that compliance can be achieved in an efficient manner.
5. Coordinate with federal, state and local government and their emergency response organizations on industry actions to improve overall emergency response effectiveness.
6. Communicate aggressively the forthright approach the U.S. industry is taking to implement the lessons from the Fukushima Daiichi accident.

4. STAKEHOLDERS AND DESIRED OUTCOMES

The industry's strategic goals will be achieved by proactively engaging a variety of stakeholders.

General Public

The industry will ensure that the general public is well-informed of the collective approach in response to the Fukushima accidents. Special attention will be paid to engaging stakeholders (residents, elected officials and other stakeholders) immediately surrounding nuclear energy facilities to maintain confidence in their plant's continued safe operations and ability to protect public health and safety.

Employees

The industry will provide information to its employees to understand the operating experience from Fukushima as part of their training to execute their jobs with excellence and be advocates for nuclear safety.

Emergency Response Organizations

The industry will continue to communicate and cooperate with federal, state and local emergency response organizations and government entities to ensure that emergency response plans reflect the lessons learned from the Fukushima Strategic Response Plan. These organizations include, but are not limited to, state and local police; fire officials; health officials/paramedics; federal, state and local governments; and transportation companies. Interactions will be focused on increasing confidence in the industry's and local government emergency preparedness programs.

Industry

Utilities, industry vendors and owners groups, architect-engineers, manufacturers and companies and organizations involved in the nuclear fuel cycle, working as a collective worldwide industry, will continue to strive for operational excellence. These actions and goals will continue the ongoing contribution to the legacy of safe, reliable, environmentally responsible production of electricity at nuclear energy facilities. The industry will work with all interested parties to ensure the benefits of nuclear energy for future generations.

Regulators

The industry will maintain relationships with federal and state regulators to ensure the industry participates in the regulatory process and can effectively implement any regulatory changes.

Technical Partners

The industry will continue to collaborate with technical associations and organizations to ensure information is disseminated and understood by all interested parties so that the benefits and positions of nuclear energy are appreciated and support the industry's long-term objectives.

Polymakers and Opinion Leaders

The industry will proactively communicate lessons learned and industry actions such that policy and opinion leaders at the local, state and national level recognize the proactive, unwavering industry response to the Fukushima accident. The industry will continue to focus on improving confidence in the safety of U.S. nuclear energy facilities and assuring support for industry legislative proposals and programs that enhance safety.

International Community

The U.S. nuclear industry will interact with international nuclear energy companies and organizations to compile and assess recommendations and actions for applicability to U.S. facilities and to make the international industry aware of U.S. improvements.

5. LEADERSHIP MODEL OVERVIEW

The nuclear industry has successfully demonstrated the ability to identify and manage the response to various issues in a coordinated manner. Under normal circumstances, the structures are in place to successfully coordinate the response to significant issues among key industry groups. For the response to the Fukushima event, however, there is a need for a greater level of coordination with the number and complexity of potential issues that are identified by each of the key industry groups. As a result, we have developed a coordinating framework for the development and execution of actions in response to the lessons of the Fukushima event.

The leadership model is based on the following elements:

- **Organization** – clear division of responsibilities among the involved parties. An industry steering committee will provide strategic direction and oversight. Ownership for analysis and execution will be organized around the industry’s seven building blocks based on the type of issue being addressed.
- **Event Response Process** – each industry organization (*see chart on page 9*) is responsible for identifying issues, plant and process improvements, and regulatory reviews of the Fukushima events. Issue descriptions, including action plans and recommendations, will be developed to implement improvements. The steering committee will approve the actions and designate an industry organization and building block to lead and implement the action to resolution.
- **Issue Action Plans** – action plans with schedules and resource management tools will be developed and executed for each issue within its assigned building block.
- **Strategic Response Plan** – all issues assigned to the seven building blocks constitute the nuclear industry’s response. The action plans will be summarized by building block to form the strategic response plan.
- **Execution Oversight and Status Tracking** – each industry organization and its building block(s) will regularly report the status of all issues to the steering committee.

Building Blocks

The leadership model is organized around seven areas called building blocks. Building blocks are temporary organizations created to develop and execute action plans for issues assigned to them by the steering committee. Building blocks led by an individual assigned by the industry organization will consist of assigned managers and designated personnel from the industry organizations, utilities, and suppliers. Building block oversight is provided by the steering committee, lead industry organization, and the assigned steering committee sponsor.

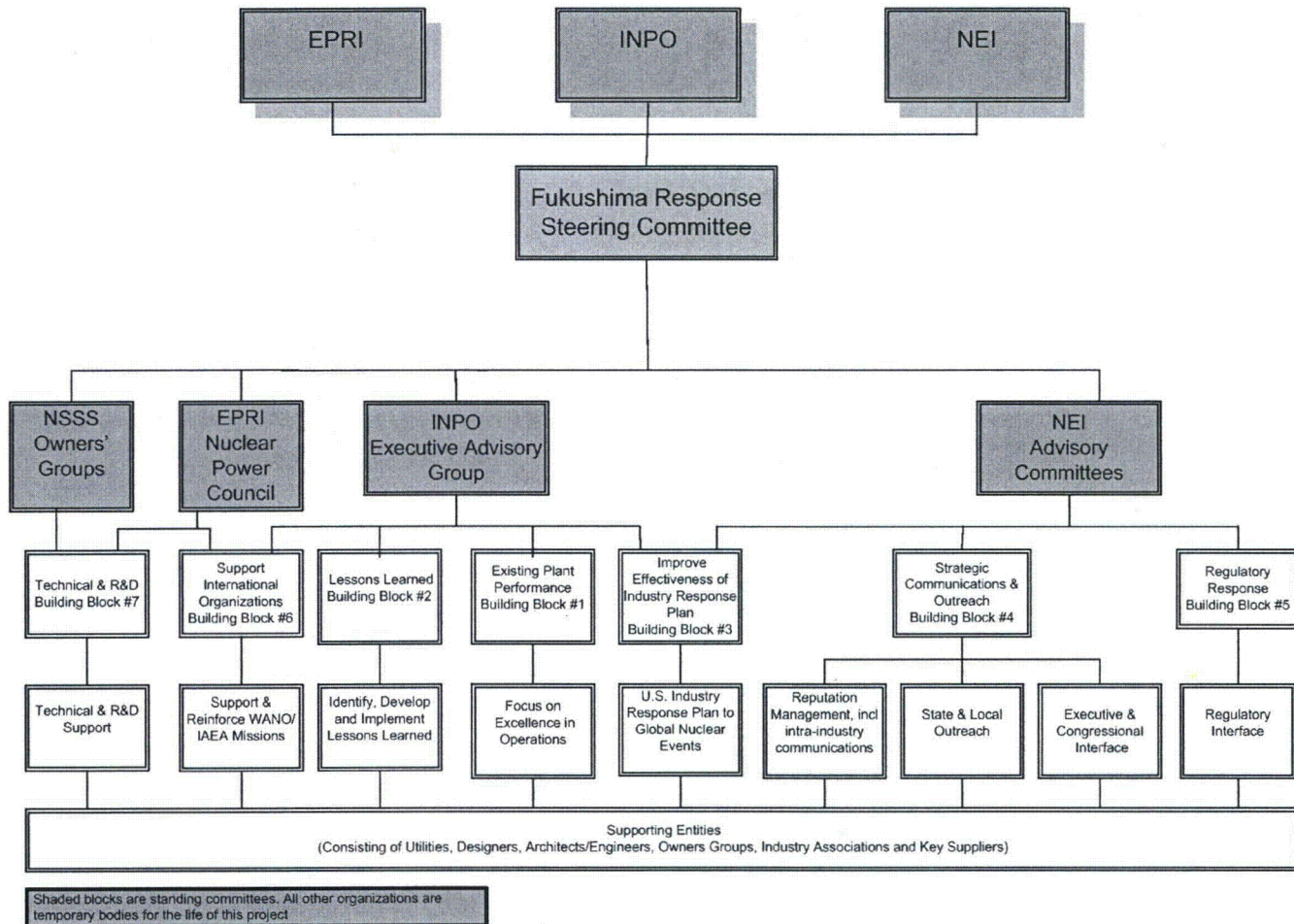
The seven building blocks along with the lead organization(s) and focus are identified below:

1. **Maintain Focus on Excellence in Existing Plant Performance (INPO):** focus on continued performance improvement of U.S. reactors.
2. **Develop and Issue Lessons Learned from the Fukushima Events (INPO):** focus on comprehensive analysis of the Fukushima event and that lessons learned are applied to the U.S. nuclear industry and shared with the World Association of Nuclear Operators (WANO).
3. **Improve the Effectiveness of U.S. Industry Response Capability to Global Nuclear Events (INPO/NEI):** focus on identified lessons learned from the U.S. industry response to the Fukushima event, allowing for more effective integrated response to future events.
4. **Develop and Implement a Strategic Communications Plan (NEI):** focus on managing the industry's strategic communications and outreach campaigns to recover policymaker and public support for nuclear energy.
5. **Develop and Implement the Industry's Regulatory Response (NEI):** focus on managing the industry's regulatory interactions and resolution of applicable industry regulatory issues from the incident.
6. **Participate and Coordinate with International Organizations (INPO/EPRI):** focus on ensuring the results from international investigations are captured and effectively used to inform actions with the other building blocks.
7. **Provide Technical Support and R&D Coordination (EPRI/NSSS Owners' Groups):** focus on existing technical solutions and research and development activities and deliverables necessary to address recommended actions of this plan.

Each building block will be supported by nuclear and, in specific instances, non-nuclear industry organizations and companies, where specific technical, operational or other expertise is required.

6. LEADERSHIP RESPONSE ORGANIZATION AND BUILDING BLOCKS

The leadership model structure involves many industry participants and is outlined below:



From: Laufer, Richard
Sent: Monday, May 23, 2011 11:27 AM
To: Baggett, Steven; Bovol, Rochelle; Castleman, Patrick; Franovich, Mike; Gilles, Nanette; Hart, Ken; Hipschman, Thomas; Batkin, Joshua; Laufer, Richard; Lisann, Elizabeth; Marshall, Michael; Orders, William; Sharkey, Jeffry; Shea, Pamela; Thoma, John; Vietti-Cook, Annette
Cc: HOO Hoc; Marshall, Jane; Skeen, David; Taylor, Robert; Hart, Ken; Brown, Eva
Subject: Bridge number for 5/24 at 10:00 a.m. Technical Assistants' Brief - Fukushima Site Team

Below is the telephone bridge information for the TA Brief on Japan tomorrow at 10:00 a.m.

Rich

From: Brown, Eva
Sent: Monday, May 23, 2011 11:23 AM
To: Hart, Ken; Laufer, Richard
Cc: HOO Hoc; Marshall, Jane; Skeen, David; Taylor, Robert
Subject: Technical Assistants' Brief - Fukushima Site Team

Ken, Richard,

Dave and Rob just wanted me to confirm the intent for a brief of the TAs on Tuesday's at 10:00am. The conference bridge is (877) 972-7614 passcode (b)(6)

Should you have any questions, please feel free to contact me.

Eva A. Brown
Senior Project Manager
Fukushima Support Team
Nuclear Regulatory Commission
(301) 415-3152

From: Kammerer, Annie
Sent: Tuesday, May 03, 2011 3:19 PM
To: Snodderly, Michael; Trocine, Leigh
Cc: Gilles, Nanette; Franovich, Mike; Castleman, Patrick; Orders, William; Marshall, Michael; Hipschman, Thomas; Sosa, Belkys; Andersen, James
Subject: RE: Response to Question on Seismic Design for Fukushima Daiichi

100 gal is about 0.1g (0.102 to be exact).

So, 0.56g and 0.31g

Dr. Annie Kammerer, P.E.
US NRC/RES/DE
(301) 251-7695 Office
(b)(6) Mobile

From: Snodderly, Michael
Sent: Tuesday, May 03, 2011 2:16 PM
To: Trocine, Leigh
Cc: Gilles, Nanette; Franovich, Mike; Castleman, Patrick; Orders, William; Marshall, Michael; Hipschman, Thomas; Kammerer, Annie; Sosa, Belkys; Andersen, James
Subject: RE: Response to Question on Seismic Design for Fukushima Daiichi

I understand. What would the TEPCO estimate of 550 gal in the horizontal direction and 302 gal in the vertical direction convert to in terms of a single g force. The Tables that have been provided by the staff give U S capacities in terms of a single g force.

Thanks,

Mike

From: Trocine, Leigh
Sent: Tuesday, May 03, 2011 11:20 AM
To: Snodderly, Michael
Cc: Gilles, Nanette; Franovich, Mike; Castleman, Patrick; Orders, William; Marshall, Michael; Hipschman, Thomas; Kammerer, Annie; Sosa, Belkys; Andersen, James
Subject: RE: Response to Question on Seismic Design for Fukushima Daiichi

Hi Mike,

(b)(5)

Cheers,
Leigh

From: Snodderly, Michael

Sent: Friday, April 22, 2011 4:29 PM

To: Bowman, Gregory

Cc: Gilles, Nanette; Franovich, Mike; Castleman, Patrick; Orders, William; Marshall, Michael; Hipschman, Thomas; Kammerer, Annie; Sosa, Belkys

Subject: Seismic Design for Fukushima Daiichi

Greg,

(b)(5)

Thanks,

Mike Snodderly

Technical Assistant for Reactors

to Commissioner Apostolakis

U. S. Nuclear Regulatory Commission

Phone: 301-415-2241

Email: michael.snodderly@nrc.gov

From: Bradford, Anna
Sent: Wednesday, April 06, 2011 1:23 PM
To: Batkin, Joshua; Coggins, Angela; Monninger, John
Cc: Hipschman, Thomas; Marshall, Michael; Warren, Roberta
Subject: FW: PLE Deputies Meeting

FYI.

Anna Bradford
Policy Advisor for Nuclear Materials
Office of Chairman Jaczko
U.S. Nuclear Regulatory Commission
301-415-1827

From: Merzke, Daniel
Sent: Wednesday, April 06, 2011 1:20 PM
To: Bradford, Anna; Thoma, John; Baggett, Steven; Tadesse, Rebecca; Kock, Andrea
Cc: Andersen, James; Milligan, Patricia; Virgilio, Martin; Weber, Michael; Frazier, Alan
Subject: FW: PLE Deputies Meeting

(b)(5)

Dan

From: Kozal, Jason
Sent: Wednesday, April 06, 2011 12:49 PM
To: Merzke, Daniel
Subject: Re: PLE Deputies Meeting

Dan,

Directly from the White House below.

We were going to have a DC next week but EPA ask for and was granted an extension to the last week in April or the first week in May.

Hope this helps

Sent from an NRC BlackBerry
Jason W Kozal

(b)(6)

NRC TRAVELER INFORMATION IN JAPAN

Name	Phone Number	Email	Flight Arrival (Japan Time)	Flight Arrival (EDT)	Departure Date to U.S.
Jim Trapp Chief,		(b)(6)	Saturday, 3/12	Arrived	3/25/11
Tony Ulses Chief, Reactor Systems Branch		Anthony.ulses@nrc.gov	Saturday, 3/12	Arrived	3/26/11
Chuck Casto Deputy Regional Administrator, Region II		Chuck.casto@nrc.gov	1:30 PM Wed., 3/16	Arrived	5/1/11 (open-ended)
John Monninger Deputy Chief-of-Staff, Office of the Chairman		John.monninger@nrc.gov	11:00 AM Wed., 3/16	Arrived	4/07/11
Tony Nakanishi Reactor Systems Engineer, Reactor Systems Branch		Tony.nakanishi@nrc.gov	11:00 AM Wed., 3/16	Arrived	3/27/11
Tim Kolb Senior Reactor Engineer, Operator Licensing and Training Branch		Timothy.kolb@nrc.gov	11:00 AM Wed., 3/16	Arrived	3/19/11
Jack Foster Chief, Licensing Branch (FSME)		Jack.foster@nrc.gov	11:00 AM Wed., 3/16	Arrived	3/27/11
Bill Cook Senior Reactor Analyst		William.cook@nrc.gov	11:00 AM Wed., 3/16	Arrived	3/30/11
Richard Devercelly Reactor Technology Instructor, Technical Training Center		Richard.devercelly@nrc.gov	4:15 PM Wed., 3/16	Arrived	3/25/11

Kirk Foggie International Relations Officer		Kirk.foggie@nrc.gov	11:00 AM Wed., 3/16	Arrived	3/29/11
Brooke Smith International Policy Analyst		Brooke.smith@nrc.gov	11:00 AM Wed., 3/16	Arrived	3/31/11

RELIEF TEAM - NRC TRAVELERS IN JAPAN

Name	Phone Number (internal BB or cell)	Email/Other	Flight Arrival (Japan Time)	Return date to U.S.
Dan Dorman Deputy Director, NMSS - leaves 3/19		Daniel.Dorman@nrc.gov	March 20 2:30pm	Arrived 3:30 PM April 3
Mike Scott (Acting) Deputy Director, Division of Systems Analysis, RES Leaves 3/22		<u>Michael.Scott@nrc.gov</u> Picked up dosimeter at OPS Center	March 23 2:30 PM,	3:30 PM, April 6 2011
Alan Blamey, RII Chief of Construction Project Branch Leaves 3/22		<u>Alan.Blamey@nrc.gov</u> Picked up KI in Region II	March 23 3:30 PM,	Open Ended
Jack Giessner, RIII Branch Chief Division of Reactor Projects Leaves 3/24		John.Giessner@nrc.gov	March 25 2:15 PM	April 7 th , 4:05 PM Chicago
Rob Taylor SG Tube Integrity and Chemical Engineering Branch, NRR Leaves 3/24		<u>Robert.Taylor@nrc.gov</u> Picked up dosimeter and KI at OPS Center	March 25 4:35 PM	April 7 th , 3:37 PM Dulles
Todd Jackson Commercial and R&D Branch, DNMS, RI Leaves 3/24		<u>Todd.Jackson@nrc.gov</u> Had dosimeter from the region.	March 25 2:15 PM	April 6, 2011
Marie Miller Chief, Material Security and Industrial Branch, RI Leaves 3/24		<u>Marie.Miller@nrc.gov</u> Had dosimeter from the region.	March 25 2:15 PM	April 7, 9:15 PM in Philly

Syed Ali Senior Level Advisor, Div of Engineering, RES Leaves 3/24		<u>Syed.Ali@nrc.gov</u> Picked up dosimeter 03/22	March 25 4:35 PM	April 7 th , 3:37 PM Dulles
Abdul Sheikh, NRR Leaves 3/24		<u>Abdul.Sheikh@nrc.gov</u> Picked up dosimeter 03/22	March 25 4:35 PM	April 7, 3:37 PM Dulles
Ralph Way , Sr Level Advisor, Division of Security Operations, NSIR Leaves 3/24		<u>Ralph.Way@nrc.gov</u> Picked up dosimeter 03/22	March 25 4:35 PM	April 7 th , 3:37 PM Dulles
Danielle Emche , International Relations Specialist, OIP Leaves 3/26		<u>Danielle.Emche@nrc.gov</u>	March 27 4:35 PM	
Eric Stahl , International Relations Specialist, OIP Leaves 3/28		<u>Eric.Stahl@nrc.gov</u>	March 29 3:10 PM	
Elmo Collins , RA, RIV Leaves 3/29		<u>Elmo.Collins@nrc.gov</u>	March 30 1:05 PM	
Vince Holahan , Sr. Level Advisor, FSME Leaves 3/28 (Honolulu, HI with Navy)		Vincent. holahan@nrc.gov	March 28 9:35PM	
Rudy Bernhard , Region II Expertise in severe accident management, B5b and accident recovery, Leaves 4/2		Rudolph.bernhard@nrc.gov	Sun, Apr 3 4:00 PM	Sat, April 16 2:55 p.m.

Michel (Mike) Call, NMSS Nuclear Engineer Fluent in Japanese and lived in Japan for two years, Leaves 4/2		Michel.call@nrc.gov	Sun, Apr 3 3:10 PM	Sat, April 16 3:37 p.m.
Elmo Collins, RIV Executive level – Assistant Team Leader. Will replace Dan Dorman, Leaves 3/29		Elmo.collins@nrc.gov	March 30 1:05 PM	
Mike Hay, RIV Extensive experience in emergency planning and event response experience. Masters in HP, Leaves 4/22		Michael.hay@nrc.gov	Sun, Apr 3 4:00 PM	Sat, April 16 9:20 a.m.
Mike Salay, RES Severe accident expertise, OECD - leaves 4/2 or 3		Michael.Salay@nrc.gov	Sun, Apr 3 10:00 PM	

Embassy Fax: 81-3-3224-5538

Team Room: 81-3-3224-5066

EVERYBODY IS STAYING AT HOTEL IN TOKYO

(b)(6)

From: Bradford, Anna
Sent: Monday, April 04, 2011 8:21 AM
To: Hipschman, Thomas; Marshall, Michael
Subject: FW: eWASH - WH0170- Supersedes TAB B of WH0169
Attachments: (b)(5)

Importance: High

Please see attached.

Anna Bradford
Policy Advisor for Nuclear Materials
Office of Chairman Jaczko
U.S. Nuclear Regulatory Commission
301-415-1827

From: Vietti-Cook, Annette
Sent: Sunday, April 03, 2011 8:56 AM
To: Jaczko, Gregory; Batkin, Joshua; Weber, Michael
Cc: Coggins, Angela; Bradford, Anna; Loyd, Susan; Borchardt, Bill; Virgilio, Martin; Doane, Margaret; Mamish, Nader; Brenner, Eliot; Hayden, Elizabeth; Burns, Stephen; Rothschild, Trip; Svinicki, Kristine; Sharkey, Jeffry; Apostolakis, George; Sosa, Belkys; Magwood, William; Bubar, Patrice; Ostendorff, William; Nieh, Ho; LIA06 Hoc; LIA08 Hoc; LIA02 Hoc; LIA03 Hoc; ET05 Hoc; Champ, Billie; Mike, Linda; McKelvin, Sheila; Bates, Andrew
Subject: FW: eWASH - WH0170- Supersedes TAB B of WH0169
Importance: High

From: NRCHQ
Sent: Saturday, April 02, 2011 6:31 PM
To: Dodmead, James; Mangefrida, Michael; Giles, Vanessa; Parsons, Darryl
Subject: FW: eWASH - WH0170- Supersedes TAB B of WH0169
Importance: High

From: eWash-WHSR[SMTP: (b)(6)]
Sent: Saturday, April 02, 2011 9:30:42 PM
To: (b)(6); ewash@state.gov; ExecSecCom@do.treas.gov; JCC@usdoj.gov; DNI-Executive-Secretariat@dni.gov; DNIwatch@dni.gov; ic4@dni.gov; opscenter@usda.gov; ewash@doc.gov; Ekaterini Malliou (HHS Executive Secretariat); HHSComSec@hhs.gov; HHSExecSec@hhs.gov; CMC-01@dot.gov; CMC-02@dot.gov; S60.policy@dot.gov; DOE.Commcenter@in.doe.gov; vaioc@va.gov; CommCenterStaff@hq.dhs.gov; martin.john@epa.gov; USAID; NRCHQ; (b)(6)
Cc: eWash-WHSR
Subject: eWASH - WH0170- Supersedes TAB B of WH0169
Importance: High
Auto forwarded by a Rule

****Supersedes Tab B of WH0169****

Attached is a cleaner version of Tab B.

V/R

Maurice Owens

White House Situation Room

Communications Technician

(b)(6)

CLASSIFICATION: UNCLASSIFIED

FROM: **NSS**

PH:

(b)(6)

ROOM: **302A**

SUBJECT: - SOC for DC on Japan

PAGES: **13**

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<u>DEFENSE</u>	<u>EXECUTIVE SECRETARY</u>		
<u>JUSTICE</u>	<u>ASSOCIATE DEPUTY ATTORNEY GENERAL</u>		
<u>DNI</u>	<u>DIRECTOR, EXECUTIVE SECRETARIAT</u>		
<u>AGRICULTURE</u>	<u>CHIEF OF STAFF</u>		
<u>COMMERCE</u>	<u>DIRECTOR, EXECUTIVE SECRETARIAT</u>		
<u>DHHS</u>	<u>Executive Secretary</u>		

TRANSPORTATION	DIRECTOR, EXECUTIVE SECRETARIAT		
ENERGY	DIRECTOR, EXECUTIVE SECRETARIAT		
VETERANS AFFAIRS	EXECUTIVE SECRETARY		
DHS	EXECUTIVE SECRETARY		
EPA	CHIEF OF STAFF		
USUN	SPECIAL ASSISTANT TO THE REPRESENTATIVE OF THE U.S.		
USAID	ACTING EXECUTIVE SECRETARY		
NRC	SECRETARY OF THE COMMISSION		

JCS	SPECIAL ASSISTANT FOR INTERAGENCY AFFAIRS (J-5)		

SPECIAL DELIVERY INSTRUCTIONS/REMARKS:

Jamia Jowers
Staff Information Specialist
National Security Council

(b)(5)

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(b)(5)

From: Coggins, Angela
Sent: Friday, April 01, 2011 5:56 PM
To: Loyd, Susan; Marshall, Michael; Warren, Roberta; Batkin, Joshua
Subject: RE: Brief Remarks re Japan for CNS

(b)(5)

(b)(5)

Angela B. Coggins
Policy Director
Office of Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1828/angela.coggins@nrc.gov

From: Loyd, Susan
Sent: Friday, April 01, 2011 2:55 PM
To: Marshall, Michael; Warren, Roberta; Batkin, Joshua; Coggins, Angela
Subject: Brief Remarks re Japan for CNS

I have now heard (thanks Michael!) that the Chairman may be expected to speak briefly on Monday night as part of the Japan presentation.

(b)(5)

Please let me know ASAP what you think so I can go ahead and have bullets made up for him to take when he leaves today. I am sure he will not have time to look at this until he is in Vienna, so I've tried to make it pretty general. Thanks.
Susan

Susan K. Loyd
Communications Director
Office of the Chairman
U.S. Nuclear Regulatory Commission
Tele: 301-415-1838
Susan.Loyd@nrc.gov

From: Doane, Margaret
Sent: Friday, April 01, 2011 5:05 PM
To: Marshall, Michael
Cc: Loyd, Susan; Brenner, Eliot
Subject: Re: QUESTION: Ambassador Davies

(b)(5)

Margie

Sent from an NRC Blackberry
Margaret Doane

From: Marshall, Michael
To: Doane, Margaret
Cc: Loyd, Susan
Sent: Fri Apr 01 12:29:44 2011
Subject: QUESTION: Ambassador Davies

Margie,

(b)(5)

Michael L. Marshall, Jr.
Policy Advisor for Reactors
Office of the Chairman
U.S. Nuclear Regulatory Commission

Phone: 301-415-1750
Email: michael.marshall@nrc.gov