
From: Hochevar, Albert R. (INPO) <HochevarAR@INPO.org>
Sent: Friday, April 29, 2011 10:08 PM
To: Huffert, Anthony; Wittick, Brian; Moore, Carl; Chuck Casto; Norwood, Donald; Gepford, Heather; Mitman, Jeffrey; Salay, Michael; Hay, Michael; Meighan, Sean; Garchow, Steve; Reynolds, Steven; CAPT Dirk L Foster; Reid Tanaka
Subject: 1F Plant DATA (4/30/2011)
Attachments: 福島第一プラントパラメータ0430_06時00分.pdf; 作業予定・現状0430_800 F i x .pdf

All,
Plant data as of today.
Al

Al Hochevar
Institute of Nuclear Power Operations
Cell (b)(6)

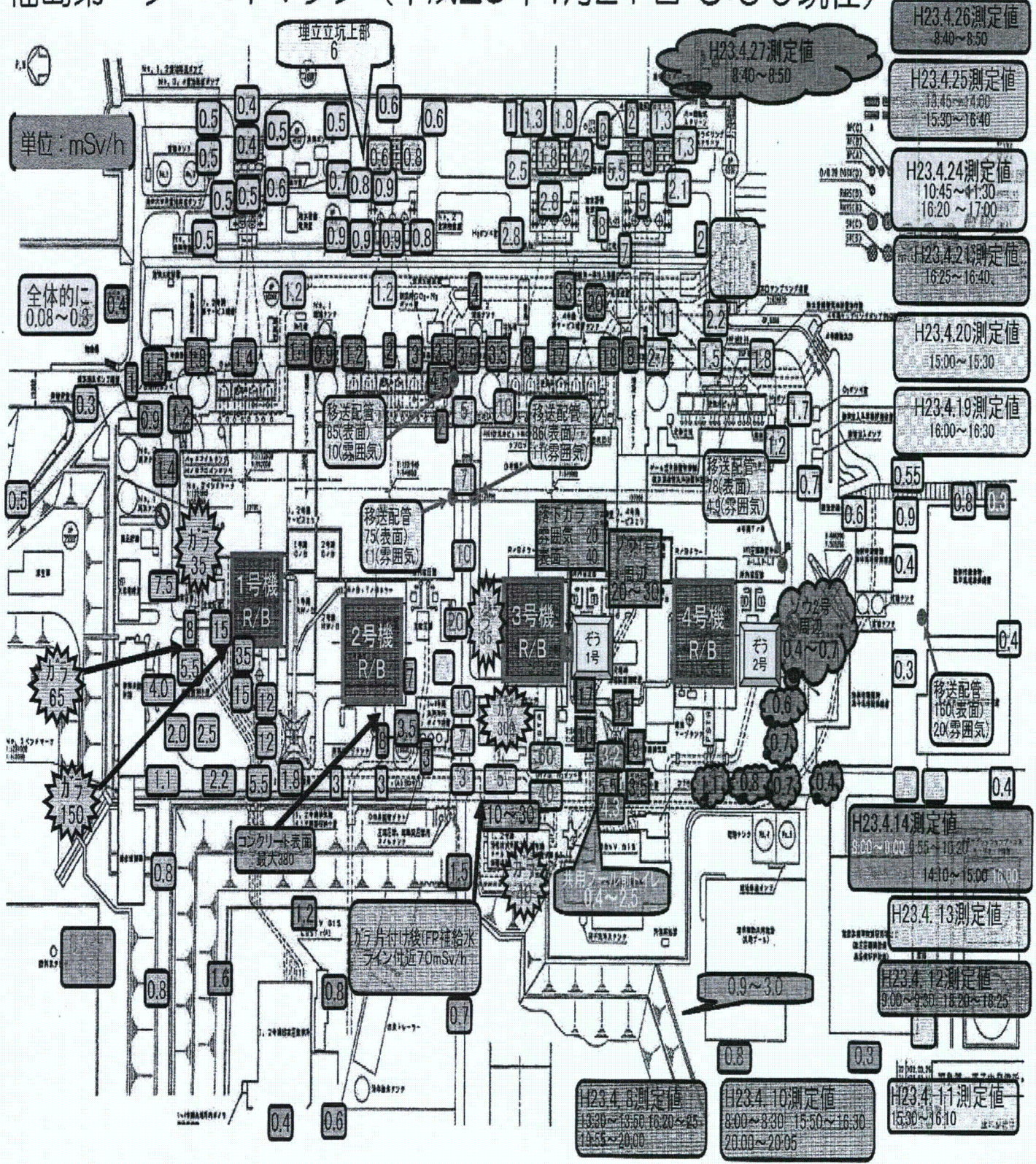
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Thank you.

福島第一サーバイマップ (平成23年4月27日 8:50現在)



1. Major evolutions

Unit 1 trial flooding operation is continuing. RPV injection flow was increased from 6m³/h to 10m³/h yesterday 10:00AM. RPV water level increased by 10cm but stabilized after 10 hours. The reason of level stabilization is not identified. RPV pressure and D/W pressure decreased gradually. Various temperature parameters decreased. Estimation of D/W water level is not available. Injection flow rate was maintained at 10m³/h and will be returned to 6m³/h when D/W pressure drops below 0.11MPa abs to avoid negative pressure. There is no change observed in the water level in Unit 1 trench or turbine building.

Tepeco corrected yeasterday's communication concerning possible leakage from Unit 4 SFP. Recent data didn't show any indication of leakage.

Tepeco press released their plan of radioactive water treatment. The treatment system is composed of Cs Absorber, Decontamination System, Desalination System and reservoirs, as outlined in the "Roadmap for Restoration". Some principal parameters are;

Treatment Capacity: 1,200m³/day
 D/F: 10E+4-10E+6 on Cs (from 10E+5 -10E+6 Bq/cm³ to 10E+1-10E+2 Bq/cm³)
 Reservoir Capacity: 31,400 m³ will be installed before early June. Addition is considered, including HLW reservoir)
 Accumulated water: 87,500 m³ currently plus 210-500 m³/day of injected water

2. Unit status

Unit 1:

RPV injection flow was increased from 6m³/h to 10m³/h. Reactor pressure and D/W pressure decreased gradually. FW nozzle temperature and RPV bottom temperature decreased.

	4/28 5:00	4/27 5:00	4/25 23:00
Reactor Pressure (MPa g)	0.415/1.168*	0.450/1.205*	0.450/1.173*
FW Nozzle Temperature (°C)	107.3*	132.0*	133.3*
	*under examination		
RPV Bottom Temperature (°C)	98.5	110.5	111.3
Injection flow rate (m ³ /h)	10.0	5.9	6.1
D/W pressure (MPa abs)	0.125	0.155	0.150

No SFP spray scheduled today.

Unit 2:

FW Nozzle Temperature continues to decrease;

	4/28 5:00	4/27 5:00	4/25 23:00
Reactor Pressure (MPa g)	-0.016*/-0.020*	-0.018*/-0.023*	-0.020*/-0.025*
FW Nozzle Temperature (C)	119.9	120.4	121.9
RPV Bottom Temperature (C)	→	→	indication incorrect
Injection flow rate (m ³ /h)	7.0	6.9	7.0
D/W pressure (MPa abs)	0.075	0.080	0.080
SFP temperature (C)	50.0	57.0	71.0

SFP water supply is scheduled today 10:00-11:30, 60 t.

Unit 3:

No big changes within a limited band;

	4/28 5:00	4/27 5:00	4/25 23:00
Reactor Pressure (MPa g)	-0.055*/-0.089*	-0.053*/-0.089*	-0.055*/-0.091*
FW Nozzle Temperature (°C)	86.0*	72.0*	84.9*
	*under examination		
RPV Bottom Temperature (°C)	109.6	110.7	109.8
Injection flow rate (m3/h)	6.8	6.9	6.8
D/W pressure (MPa abs)	0.1017	0.1031	0.1041

SFP water supply is not scheduled today.

Unit 4:

SFP water spray was conducted on 4/27 12:18-15:15, 85 t. No schedule for today.

Common pool:

32C (4/27 6:50)

3. T/B and Trench drainage

Unit 1 T/B and Trench level unchanged. Unit 2 trench level decreased. Unit 3 Trench level and Unit 4 T/B level are increasing;

	T/B (above floor level)	Trench (below grating)	as of 4/28 7:00
Unit 1	3.15 m (no change since 4/27 7:00)	1.53 m (no change since 4/27 7:00)	
Unit 2	1.20 m (no change since 4/27 7:00)	0.90 m (-1cm since 4/27 7:00)*	
		*water transfer continued.	
Unit 3	1.10 m (no change since 4/27 7:00)	0.95 m (+ 2cm since 4/27 7:00)	
Unit 4	1.20 m (+5cm since 4/27 7:00)		

4. Site Environmental Data

Site environmental dose is gradually decreasing;

	4/28 9:00	4/27 9:00	4/26 9:00
Main Gate (μSv/h):	48.0	51.0	52.0
West Gate (μSv/h):	21.8	22.7	23.3
Adm. Bldg. (μSv/h):	430	440	450

[Environmental Data]

a. Radiation Level during on Apr. 27-Apr. 28

Time and Date	Dose rate (μ Sv/h)	Location
16:00 2011/04/27	22.7	Monitoring Car in West gate of Fukushima Daiichi NPS
00:00 2011/04/28	22.4	Monitoring Car in West gate of Fukushima Daiichi NPS
08:00 2011/04/28	21.9	Monitoring Car in West gate of Fukushima Daiichi NPS

Monitoring post data (μ Sv/h)

	MP-1	M-2	MP-3	MP-4	MP-5	MP-6	MP-7	MP-8
16:00 2011 04/27	7	29	23	21	32	58	155	149
00:00 2011 04/28	7	29	23	21	31	58	154	148
08:00 2011 04/28	7	28	22	20	30	56	150	144

b. Iodine and Cesium are detected by the isotopic analysis;

● Site Dust Sampling Data, 4/26, at west gate

4/26			
11:25-11:45			
	① Measured (Bq/cm ³)	Ratio ①/②	②limitation of breathing air for radiation worker
Volatile			
I-131	5.0E-05	0.05	1E-03
Cs-134	1.2E-05	0.01	2E-03
Cs-137	1.4E-05	0.00	3E-03
Particulate			
I-131	4.0E-05	0.04	1E-03
Cs-134	9.7E-06	0.00	2E-03
Cs-137	1.0E-05	0.00	3E-03

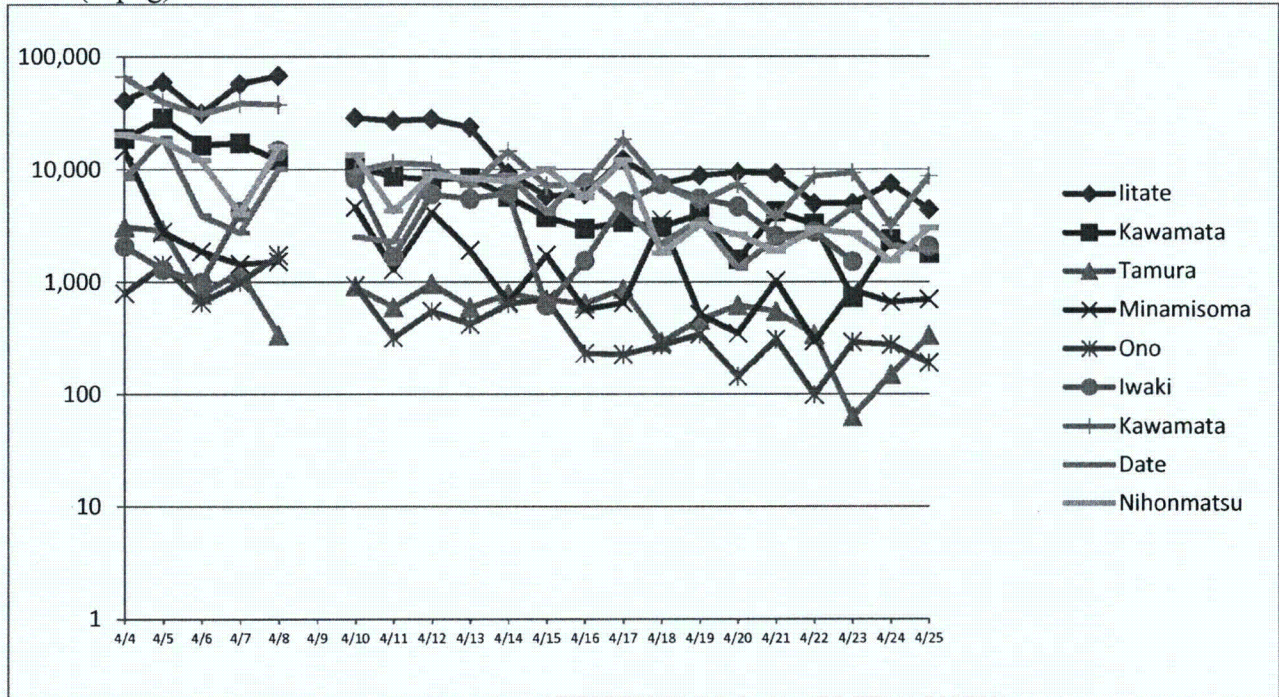
- Dust Sampling Data, 4/25 beyond 20 km from station

Time and Date	I-131 (Bq/m ³)	Cs-137 (Bq/m ³)	Location
10:01-10:21 4/25	ND	ND	(Point1) 60 km northwest of station
12:36-12:56 4/25	ND	ND	(Point2-1) 40 km northwest of station
11:32-11:52 4/25	ND	ND	(Point2-6) 45 km south of station

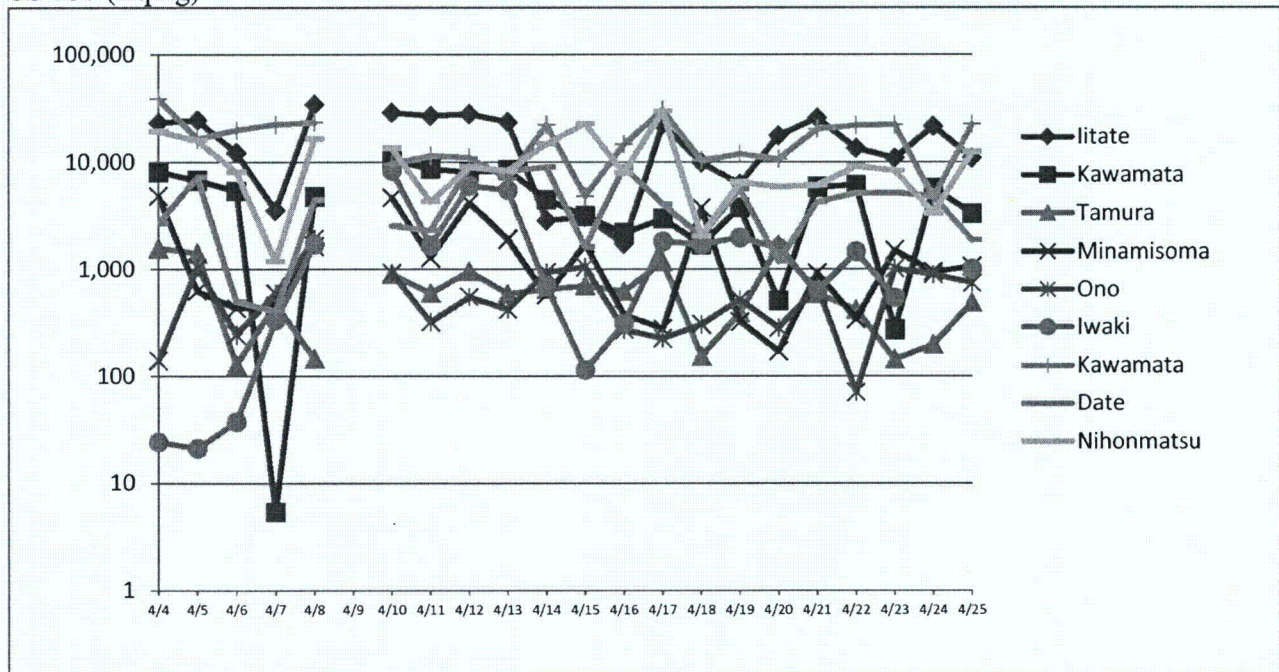
- Pond Water and Soil Sampling Data, 4/25 beyond 20 km from station

Place	Distance from the plant	Sample	Nuclide	Radioactive level(Bq/kg)
				4/25
Iitate	40km northwest Point2-1	Pond water	I-131	43.0
			Cs-137	32.1
		Soil	I-131	4,390
			Cs-137	10,800
Kawamata	45km northwest Point2-2	Soil	I-131	1,780
			Cs-137	3,720
Tamura	40km west Point2-3	Soil	I-131	333
			Cs-137	484
Minamisoma	25km north Point2-4	Soil	I-131	698
			Cs-137	1,060
Ono	40km southwest Point2-5	Soil	I-131	189
			Cs-137	744
Iwaki	45km south Point2-6	Soil	I-131	2,080
			Cs-137	1,010
Kawamata	35km northwest Point2-7	Soil	I-131	8,690
			Cs-137	22,400
Date	50km northwest Point2-8	Soil	I-131	1,870
			Cs-137	1,850
Nihonmatsu	45km west-northwest Point2-9	Soil	I-131	3,010
			Cs-137	12,400

I-131 (Bq/kg)



CS-137 (Bq/kg)



- Measured from potable water samples at several prefectures.

		4/26
Tochigi (Utsunomiya)	I-131(Bq/kg)	ND
	Cs-137(Bq/kg)	ND
Ibaraki (Hitachinaka)	I-131(Bq/kg)	0.45
	Cs-137(Bq/kg)	ND
Tokyo (Shinjuku)	I-131(Bq/kg)	ND
	Cs-137(Bq/kg)	ND

- I-131 was detected in water reservoir in Fukushima prefecture.

	4/18	4/19	4/20	4/21	4/22	4/23	4/24	4/25	4/26	Location
I-131 (Bq/kg)	11.1	ND	ND	ND	ND	ND	ND	14.1	ND	Iitate(Tajiri) in Fukushima

- Nuclide analysis result for sea water samples at 330 m south from the discharge point of units 1-4

	4/26 14:10		
Nuclide	①Sample concentration (Bq/cm3)	Ratio ①/②	②National Safety guideline limitation (Bq/cm3)
I-131	2.7E-02	0.68	4.0E-02
Cs-134	1.3E-01	2.2	6.0E-02
Cs-137	1.3E-01	1.4	9.0E-02

Nuclide analysis result for sea water samples at 30 m north from the discharge point of units 5&6

	4/26 14:30		
Nuclide	①Sample concentration (Bq/cm3)	Ratio ①/②	②National Safety guideline limitation (Bq/cm3)
I-131	8.6E-02	2.2	4.0E-02
Cs-134	2.1E-01	3.5	6.0E-02
Cs-137	2.3E-01	2.6	9.0E-02

Nuclide analysis result for sea water samples at unit 2 screen

		4/26		
	Nuclide	①Sample concentration (Bq/cm3)	Ratio ①/②	②National Safety guideline limitation (Bq/cm3)
Inside the silt fence	I-131	1.3E+02	3,300	4.0E-02
	Cs-134	2.4E+01	400	6.0E-02
	Cs-137	2.5E+01	280	9.0E-02
Outside the silt fence	I-131	7.7E+01	1,900	4.0E-02
	Cs-134	1.7E+01	280	6.0E-02
	Cs-137	1.7E+01	190	9.0E-02

Nuclide analysis result for sea water samples at 15 km offshore points (4/26)

		4/26		
	Nuclide	①Sample concentration (Bq/cm3)	Ratio ①/②	②National Safety guideline limitation (Bq/cm3)
15 km off the coast of Fukushima-Daiichi site	I-131			4.0E-02
	Cs-134			6.0E-02
	Cs-137			9.0E-02
15 km off the coast of Fukushima - Daini site	I-131	2.8E-02	0.70	4.0E-02
	Cs-134	8.4E-02	1.4	6.0E-02
	Cs-137	8.8E-02	0.98	9.0E-02
15 km off the coast of Iwasawa	I-131	ND	-	4.0E-02
	Cs-134	2.8E-02	0.47	6.0E-02
	Cs-137	2.7E-02	0.30	9.0E-02

- Measurement result for sub drain on 1st floor of turbine building(Bq/cm³) (4/25) (No new data available)

Unit	Unit1	Unit2	Unit3	Unit4	Unit5	Unit6	Unit1
	Sub drain	Sub drain	Sub drain	Sub drain	Sub drain	Sub drain	Deep well
I-131	1.3E+02	6.1E+02	2.0E+01	9.3E-02	1.3E-01	3.8E-01	ND
Cs-134	5.5E+01	3.3E+01	3.9E+00	1.2E-01	2.5E-01	3.3E-01	ND
Cs-137	6.4E+01	3.7E+01	4.2E+00	1.3E-01	3.1E-01	3.9E-01	ND

Plant parameters of Fukushima-Daiichi NPS						* 1: Gauge out of order * 2: Not monitored * 3: Under examination
28 April at 06:00						
Unit number	1	2	3	4	5	6
Water Injection to RPV	Continuous fresh water injection by using feed water system line Flow rate: 10.0m ³ /Hr (167L/min) Measured by temporary instrumentation (28 April at 05:00)	Continuous fresh water injection by using FP system line Flow rate: 7.0m ³ /Hr (117L/min) Measured by temporary instrumentation (28 April at 05:00)	Continuous fresh water injection by using FP system line Flow rate: 6.8m ³ /Hr (113L/min) Measurement by temporary instrumentation (28 April at 05:00)		* 2	
Reactor water level	Fuel range A: -1650 mm Fuel range B: -1600 mm (28 April at 05:00)	Fuel range A: -1500 mm Fuel range B: -2100 mm (28 April at 05:00)	Fuel range A: -1850 mm Fuel range B: -2250 mm (28 April at 05:00)		Shutdown range 2081 mm (28 April at 06:00)	Shutdown range 2138 mm (28 April at 06:00)
Reactor pressure	0.415 MPa(g) (A) 1.168 MPa(g) (B)* ³ (28 April at 05:00)	-0.016 MPa(g) (A)* ³ -0.020 MPa(g) (D)* ³ (28 April at 05:00)	-0.055MPa(g) (A)* ³ -0.089MPa(g) (C)* ³ (28 April at 05:00)		0.007 MPa(g) (28 April at 06:00)	0.013 MPa(g) (28 April at 06:00)
Reactor water temperature	Could not be monitored without PLR flow				38.7°C (28 April at 06:00)	47.5°C (28 April at 06:00)
Reactor pressure vessel temperature	Feed water nozzle: 107.3°C* ³ RV lower part: 98.5°C (28 April at 05:00)	Feed water nozzle: 119.9°C RV lower part: * 1 (28 April at 05:00)	Feed water nozzle: 86.0°C* ³ RV lower part: 109.6°C (28 April at 05:00)	* 2	* 2 Monitored by coolant temperature for units 5 & 6	
D/W/S/C pressure	D/W: 0.125MPa (abs) S/C: 0.125MPa (abs) (28 April at 05:00)	D/W: 0.075MPa (abs) S/C: * 1 (28 April at 05:00)	D/W: 0.1017MPa (abs) S/C: 0.1783MPa (abs) (28 April at 05:00)			
D/W temperature	RPV bellow seal: 100.5°C HVH return: 88.3°C (28 April at 05:00)	RPV bellow seal: *1 HVH return: 111°C (28 April at 05:00)	RPV bellow seal: 124.7°C* ³ HVH return: 102.1°C (28 April at 05:00)			
CAMS	D/W (A): * 1 D/W (B): * 1 S/C (A): 1.16 × 10 ⁹ Sv/h* ³ S/C (B): 1.67 × 10 ⁹ Sv/h* ³ (28 April at 05:00)	D/W (A): 2.24 × 10 ¹ Sv/h D/W (B): 2.52 × 10 ¹ Sv/h S/C (A): 4.63 × 10 ⁻¹ Sv/h* ³ S/C (B): 4.08 × 10 ¹ Sv/h* ³ (28 April at 05:00)	D/W (A): 1.42 × 10 ¹ Sv/h D/W (B): 1.08 × 10 ¹ Sv/h S/C (A): 5.33 × 10 ⁻¹ Sv/h* ³ S/C (B): 5.02 × 10 ⁻¹ Sv/h* ³ (28 April at 05:00)		* 2	
S/C temperature	A: 50.7°C B: 50.6°C (28 April at 05:00)	A: 70.4°C B: 70.7°C (28 April at 05:00)	A: 41.0°C B: 41.0°C (28 April at 05:00)			
D/W design pressure	384 kPa(g)	384 kPa(g)	384 kPa(g)			
D/W maximum operating pressure	427 kPa(g)	427 kPa(g)	427 kPa(g)			
SFP water temperature	* 1	50.0 °C (28 April at 05:00)	* 1	* 1	40.4°C (28 April at 06:00)	27.0°C (28 April at 06:00)
FPC surge tank level	3700 mm (28 April at 05:00)	5400 mm (28 April at 05:00)	* 1	6550 mm (28 April at 05:00)	* 2	
Power source	Off site power delivered (P/C 2C)		Off site power delivered (P/C 4D)		Off site power delivered (as ordinary condition)	
Other information				Common SFP: around 32(°C) (27 April at 06:50)	5u: Shutdown cooling mode (from 27 April 19:13)	6u: SFP cooling mode (from 27 April 20:08)

Pressure conversion
Gauge pressure(MPa(g))=Absolute pressure(MPa abs) - Atmospheric pressure (standard atmospheric pressure 0.1013MPa)

TEPCO monitoring No.1 reactor

Tokyo Electric Power Company is monitoring one of the reactors at the Fukushima Daiichi nuclear plant to determine whether more water could be pumped inside to cool the fuel rods.

Tokyo Electric plans to submerge the fuel rods at 2 reactors in water by July this year.

On Wednesday morning, the utility increased the amount of water injected into the No.1 reactor from 6 tons per hour to 10 tons per hour on an experimental basis.

As a result, the temperature at the top of the reactor was 107.3 degrees Celsius Thursday morning, down 24.7 degrees from before the water increase. The temperature at the bottom of the reactor had dropped 12 degrees to 98.5 degrees Celsius.

Pressure inside the reactor containment vessel was also down.

Tokyo Electric says it's not yet known how deep the water inside the reactor container is, but that no leakage outside the reactor building has been confirmed.

The utility had initially planned to increase the amount of water injected to 14 tons per hour on Wednesday, but it says it will continue to monitor temperatures and pressure through Thursday evening.

Thursday, April 28, 2011 12:48 +0900 (JST)

福島第一 1～4号 作業状況 (4月30日 8:00 現在)

本店情報班

項目	1号	2号	3号	4号
原子炉注水	[4/30 予定] 給水系による淡水注入継続	[4/30 予定] 消火系による淡水注入継続	[4/30 予定] 消火系による淡水注入継続	-
	[実績] 6.0m ³ /h (4/30 5:00) で注入中 (4/29 10:08~10:14 10→6m ³ /h)	[実績] 6.9m ³ /h (4/30 5:00) で注入中 (4/25 18:25 外部電源へ切替)	[実績] 6.5m ³ /h (4/30 5:00) で注入中 (4/25 18:25 外部電源へ切替)	-
SFP注水	[4/30 予定] なし	[4/30 予定] なし	[4/30 予定] なし	[4/30 予定] 10:00~11:00 ゾウ2号による水位計測、温度測定
	[実績] なし	[実績] ・4/28 10:15~11:28 FPC注水 (約43t)	[実績] ・4/26 12:00~12:02 ゾウ1号による水面確認 ・4/26 12:25~14:02 FPC注水(47.5t)	[実績] ・4/29 ゾウ2号による水位計測(10:29)、温度測定(10:35)実施。
	[スチマーヅタンクレベル] 2600mm (4/30 5:00)	[スチマーヅタンクレベル] 5700mm (4/30 5:00)	[スチマーヅタンクレベル] 計器不良	[スチマーヅタンクレベル] 5850mm (4/30 5:00)
T/B水抜き	[4/30 予定] なし	[4/30 予定] なし	[4/30 予定] なし	[4/30 予定] なし
	[実績] なし	[実績] なし	[実績] なし	[実績] なし
	[T/B水位] OP+5050mm (4/30 7:00) (4/17 11:00 より変化なし) (参考:復水器底面はOP+1900mm)	[T/B水位] OP+3100mm (4/30 7:00) (4/16 7:00 より変化なし) (参考:復水器底面はOP+300mm)	[T/B水位] OP+3000mm (4/30 7:00) (4/23 11:00 より変化なし) (参考:復水器底面はOP+300mm)	[T/B水位] OP+3100mm(4/30 7:00) (4/27 11:00 より変化なし) (参考:復水器底面はOP+1250mm)
トレンチ状況	[トレンチレベル] グレーチング上面～水面まで 1940mm (4/30 7:00) (4/29 18:00より変化なし)	[トレンチレベル] グレーチング上面～水面まで 850mm (4/30 7:00) (4/29 18:00より30mm上昇)	[トレンチレベル] グレーチング上面～水面まで 920mm(4/30 7:00) (4/29 18:00より10mm上昇)	[トレンチレベル] -
集中RW排水受入	[予定] 4/19 10:00~2号立坑→集中Rw/Bへの移送(250t/day)。 [実績] 4/19 10:08~4/29 9:16 2号立坑→集中Rw/Bへの移送。(4/30 7:00現在 初期値からの増加量:1184mm、4/29 18:00から変化なし)			

その他:【1号機N₂封入】4/7 1:31~ N₂封入継続中(4/9 4:10~ 高純度N₂装置インサービス)、4/11 11:19 コンプレッサ2台化。4/14 19:05 N₂封入再開。
4/25 14:10 電源切替による一時停止。4/25 19:10 N₂封入再開。

【飛散防止対策】4/29 10:30~14:00 5号機R/B山側・旧事務本館前道路、体育館付近(5800m²)、4号機タービン建屋海側(7000 m²)。
4/30 物揚場西側、旧事務本館前道路、体育館付近(4000m²)、4号機タービン建屋南側(3000 m²)。

【ガレキ撤去】4/29 9:00~16:00 3号機R/B西側、南側ヤード 4個(計67個)。4/30 9:00~16:00 3号機R/B西側、南側ヤード。

【R/B内現場ロボット調査】4/29 11:36~14:05 1号機R/B1F漏えい状況の調査実施。

福島第一 1～4号 作業状況 (4月30日 8:00 現在)

本店情報班

【5/6号機T/B水位】5号機:溜水若干量(移送予定なし)、6号機:3080mm(4/29)(4/28より20mm上昇。参考:復水器底面はOP+1000mm)

【留意事項】

各計測器については、地震やその後の事象進展の影響を受けて、通常の使用環境条件を超えているものもあり、正しく測定されていない可能性のある計測器も存在している。プラントの状況を把握するために、このような計測器の不確かさも考慮したうえで、複数の計測器から得られる情報を使用して変化の傾向にも着目して総合的に判断している。

福島第一原子力発電所 プラント関連パラメータ (水位・圧力・温度などのデータ)

4月30日 6:00 現在

号機	1号機	2号機	3号機	4号機	5号機	6号機	
原子炉注水状況	給水ポンプを用いた淡水注入中。 流量 6.0m ³ /h (4/30 5:00 現在)	消火系ポンプを用いた淡水注入中。 流量 6.9m ³ /h (4/30 5:00 現在)	消火系ポンプを用いた淡水注入中。 流量 6.5m ³ /h (4/30 5:00 現在)	※2 (全燃料取出 中につき監視 対象外)	※2 (原子炉の除熱機能が維持されており、注水不要)		
原子炉水位	燃料域A: -1650mm 燃料域B: -1700mm (4/30 5:00 現在)	燃料域A: -1500mm 燃料域B: -2100mm (4/30 5:00 現在)	燃料域A: -1850mm 燃料域B: -2250mm (4/30 5:00 現在)		停止域 1772mm (4/30 6:00 現在)	停止域 2035mm (4/30 6:00 現在)	
原子炉圧力	A系 0.435MPa g (A) B系 1.205MPa g (B) ※3 (4/30 5:00 現在)	A系 -0.025MPa g (A) ※3 B系 -0.025MPa g (D) ※3 (4/30 5:00 現在)	A系 -0.066MPa g (A) ※3 B系 -0.091MPa g (C) ※3 (4/30 5:00 現在)		0.002MPa g (4/30 6:00 現在)	0.010MPa g (4/30 6:00 現在)	
原子炉水温度	(系統流量がないため採取不可)				40.7℃ (4/30 6:00 現在)	47.7℃ (4/30 6:00 現在)	
原子炉压力容器 まわり温度	給水/戻り温度: 131.2℃ ※3 压力容器下部温度: 101.6℃ (4/30 5:00 現在)	給水/戻り温度: 119.1℃ 压力容器下部温度: ※1 (4/30 5:00 現在)	給水/戻り温度: 83.6℃ ※3 压力容器下部温度: 113.1℃ (4/30 5:00 現在)		※2 (原子炉水温度にて監視中)		
D/W・S/C圧力	D/W 0.120MPa abs S/C 0.115MPa abs (4/30 5:00 現在)	D/W 0.075MPa abs S/C ※1 (4/30 5:00 現在)	D/W 0.1043MPa abs S/C 0.1803MPa abs (4/30 5:00 現在)		※2 (原子炉の除熱機能が維持されているため監視対象外)		
D/W 秀曲気温度	RPVベロ-シール: 102.2℃ HVH戻り: 91.4℃ (4/30 5:00 現在)	RPVベロ-シール: ※1 HVH戻り: 109℃ (4/30 5:00 現在)	RPVベロ-シール: 125.3℃ ※3 HVH戻り: 101.2℃ (4/30 5:00 現在)				
CAMS放射線 モニタ	D/W (A) ※1 (B) ※1 S/C (A) 1.16×10 ⁹ Sv/h ※3 (B) 1.57×10 ⁹ Sv/h ※3 (4/30 5:00 現在)	D/W (A) 2.19×10 ¹⁰ Sv/h (B) 2.46×10 ¹⁰ Sv/h S/C (A) 4.44×10 ¹⁰ Sv/h ※3 (B) 4.52×10 ¹⁰ Sv/h ※3 (4/30 5:00 現在)	D/W (A) 1.39×10 ¹⁰ Sv/h (B) 1.05×10 ¹⁰ Sv/h S/C (A) 5.24×10 ¹⁰ Sv/h ※3 (B) 4.91×10 ¹⁰ Sv/h ※3 (4/30 5:00 現在)				
S/C温度	A系: 50.4℃ B系: 50.3℃ (4/30 5:00 現在)	A系: 68.8℃ B系: 69.1℃ (4/30 5:00 現在)	A系: 40.7℃ B系: 40.7℃ (4/30 5:00 現在)				
D/W設計使用圧力	0.384MPa g (0.485MPa abs)	0.384MPa g (0.485MPa abs)	0.384MPa g (0.485MPa abs)				
D/W最高使用圧力	0.427MPa g (0.528MPa abs)	0.427MPa g (0.528MPa abs)	0.427MPa g (0.528MPa abs)				
使用済燃料プール 温度	※1	56℃ (4/30 5:00 現在)	※1	※1	39.6℃ (4/30 6:00 現在)	29.0℃ (4/30 6:00 現在)	
FPC入射管の バルブ	2600mm (4/30 5:00 現在)	5700mm (4/30 5:00 現在)	※1	5850mm (4/30 5:00 現在)	※2		
電源	外部電源受電中 (P/C2C)		外部電源受電中 (P/C4D)		外部電源受電中		
その他情報	4月30日 1:00 現在のプラント関連パラメータのうち、5号機について以下の通り訂正する。 (誤) 非盤モード (4/29 21:16~) → (正) SHCモード (4/29 21:16~)			共用プール: 31℃ (4/29 8:00)	5u: SHCモード (4/29 21:16~)	6u: 非盤モード (4/29 18:12~)	

圧力換算 ゲージ圧(MPa g) = 絶対圧(MPa abs) - 大気圧(標準大気圧 0.1013 MPa)
絶対圧(MPa abs) = ゲージ圧(MPa g) + 大気圧(標準大気圧 0.1013 MPa)

※1: 計器不良
※2: データ採取対象外
※3: 状況推移を継続確認中

福島第一原子力発電所 プラント関連パラメータ（水位・圧力・温度などのデータ）に関する補足説明

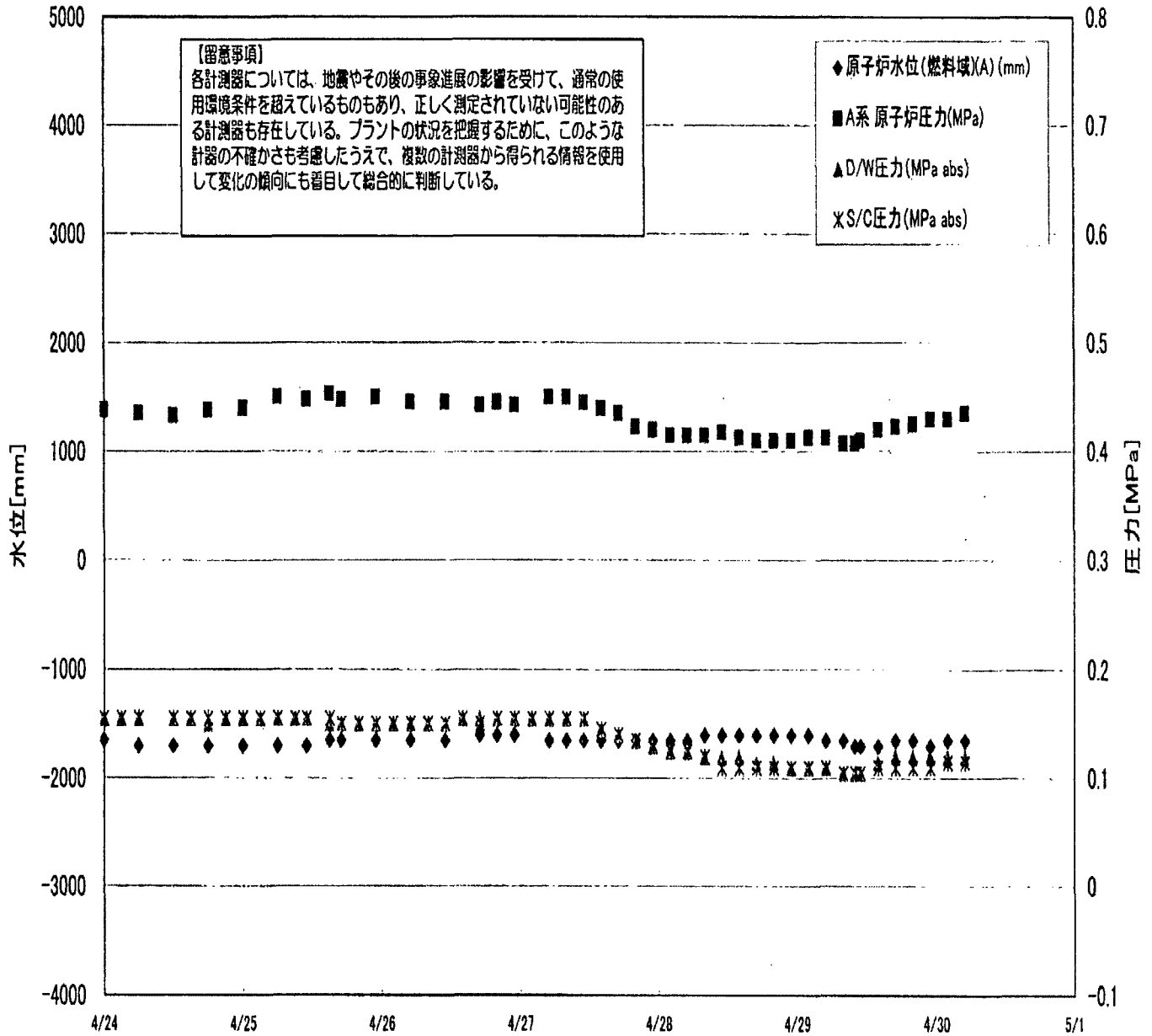
■各パラメータに関する補足説明

項目	記載方法	測定方法	記載点数/Ch 数 or 系統数
原子炉注水状況	注水流量/変更時間を記載（注水流量を変更した場合のみ更新）。	仮設計器	1/1系統
原子炉水位	燃料域を監視する水位計にて測定したデータを記載。	本設指示計	A系 1/1Ch B系 1/1Ch
原子炉圧力	計器盤より圧力計器から伝送される電圧値を測定し、電圧値を圧力に換算したものを記載。A系/B系それぞれ複数点データがあるが、1点を代表として採取し記載。	本設計器盤より電圧値を測定し圧力に換算	A系 1/2Ch B系 1/2Ch
原子炉水温度	温度計設置箇所には系統流量がないためデータ未採取	—	—
原子炉圧力容器まわり温度	原子炉圧力容器まわり温度は複数箇所から採取しているが、全体把握の観点から代表部位として「給水ノズル位置」、「圧力容器下部」のデータを記載	本設記録計	給水ノズル位置 1/4Ch 圧力容器下部 1/2Ch (1号) 1/1Ch (2~3号)
D/W・S/C圧力	本設指示計の指示値を記載。本設指示計にて採取できない場合には、計器盤より測定した電圧値を圧力に換算したものを記載。 (D/W:ドライウェル、S/C:圧力抑制室)	本設指示計:1号、2号 本設計器盤(電圧測定):3号	本設指示計 1/1系統 本設記録計 常用1/1Ch 広域1/1Ch
D/W 雰囲気温度	D/W 内の雰囲気温度は複数箇所から採取しているが、全体把握の観点から代表部位として「D/W上部(RPVベロースील温度)、中央部(D/WHVH戻り空気温度)」のデータを記載。(RPV:原子炉圧力容器、HVH:空調ユニット)	本設記録計	RPVベロースील 1/5Ch D/WHVH戻り 1/5Ch
CAMS放射線モニタ	本設指示計の指示値を記載。 (CAMS:格納容器雰囲気モニタ系)	本設指示計	D/W A系 1/1Ch B系 1/1Ch S/C A系 1/1Ch B系 1/1Ch
S/C温度	本設記録計の指示値を記載。A系/B系それぞれ複数点データがあるが、1点を代表として採取し記載。	本設記録計	A系1/4Ch(1号)、8Ch(2~3号) B系1/4Ch(1号)、8Ch(2~3号)
使用済燃料プール温度	本設記録計の指示値を記載。 (非熱モード:非常時熱負荷モード、SHCモード:原子炉停止時冷却系モード)	本設記録計	1/2Ch(1号)、1Ch(2~4号)
FPCスチーマータンクレベル	本設指示計の指示値を記載。 (FPC:燃料プール冷却浄化系)	本設指示計	1/1系統

■注記に関する補足説明

項目	内容	4月30日6時時点の状況
計器不良	計器不良:指示値ダウン(オーバー)スケール/検出器の不良	1号機 使用済燃料プール温度、CAMS D/W放射線モニタ 2号機 圧力容器下部温度、S/C圧力、RPVベロースील温度 3号機 使用済燃料プール温度、スキーマーサーシタンクレベル 4号機 使用済燃料プール温度
データ採取対象外	4号機:炉心に燃料がないため、原子炉及びD/W関連のデータは採取せず。 5~6号機:現在冷温停止中のため、D/W関連データは採取せず。	—
状況推移を継続確認中	指示は出ているものの、指示値ハンチング・マイナス表示など他パラメータと明らかに異なる推移を示したものを。	1号機 原子炉圧力、給水ノズル温度、CAMS S/C放射線モニタ 2号機 原子炉圧力、CAMS S/C放射線モニタ 3号機 原子炉圧力、RPVベロースील温度、給水ノズル温度、CAMS S/C放射線モニタ

1F1 水位・圧力に関するパラメータ



1F1 水位・圧力に関するパラメータ

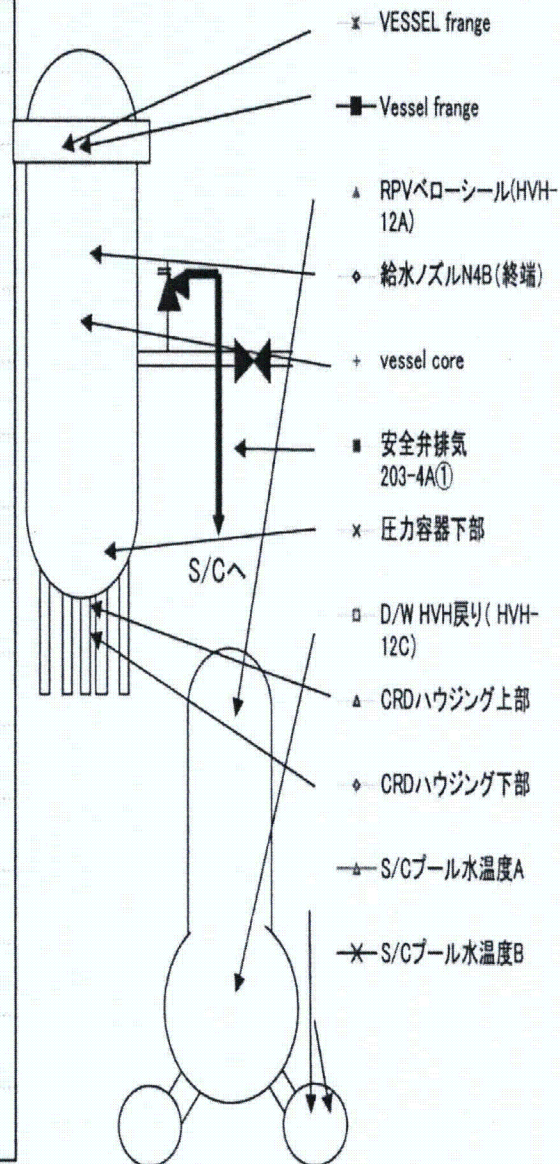
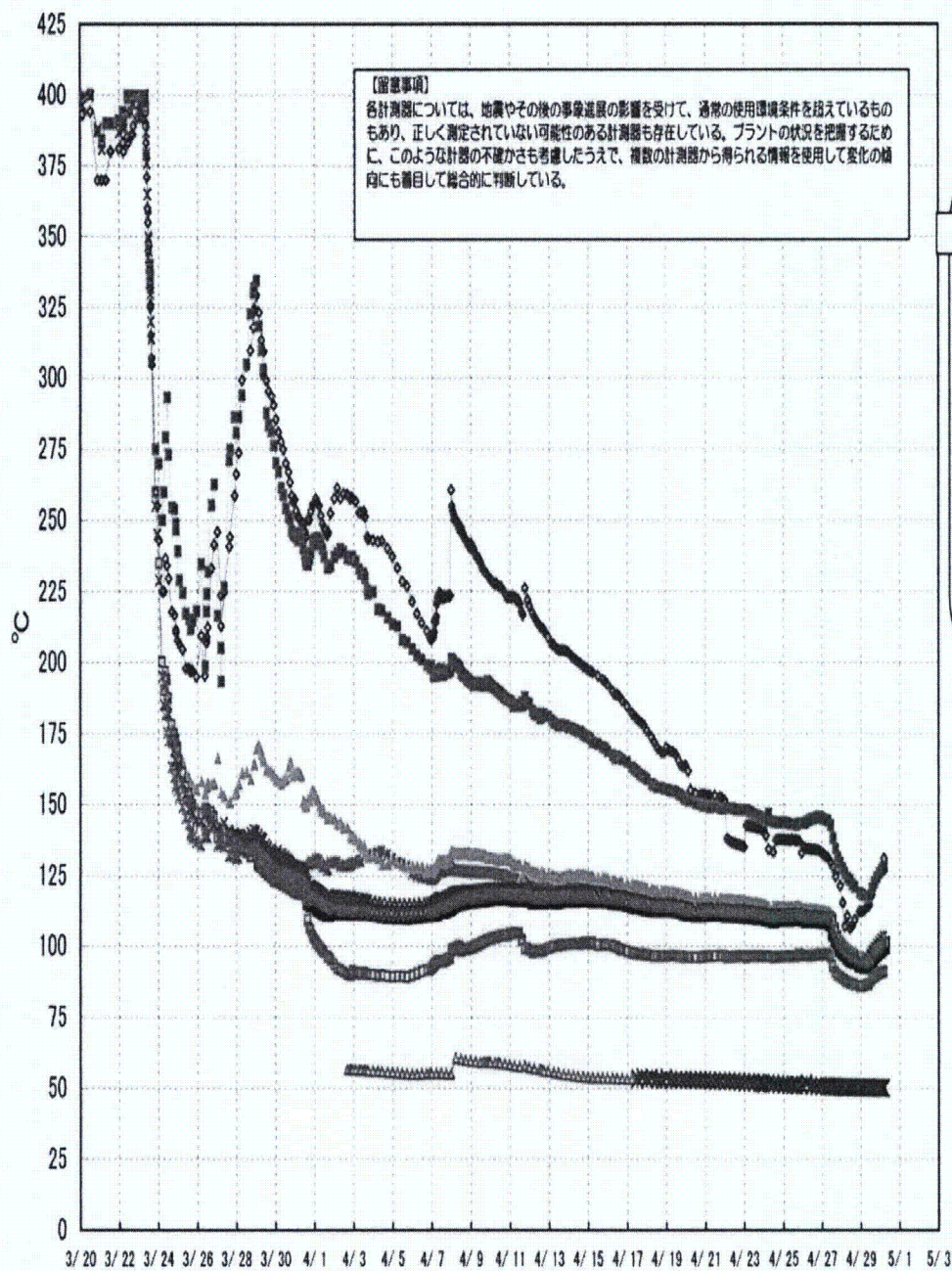
【留意事項】

各計測器については、地震やその他の事象差風の影響を受けて、通常の使用環境条件を超えているものもあり、正しく測定されていない可能性のある計測器も存在している。プラントの状況を把握するために、このような計器の不確かさも考慮したうえで、複数の計測器から得られる情報を使用して変化の傾向にも着目して総合的に判断している。

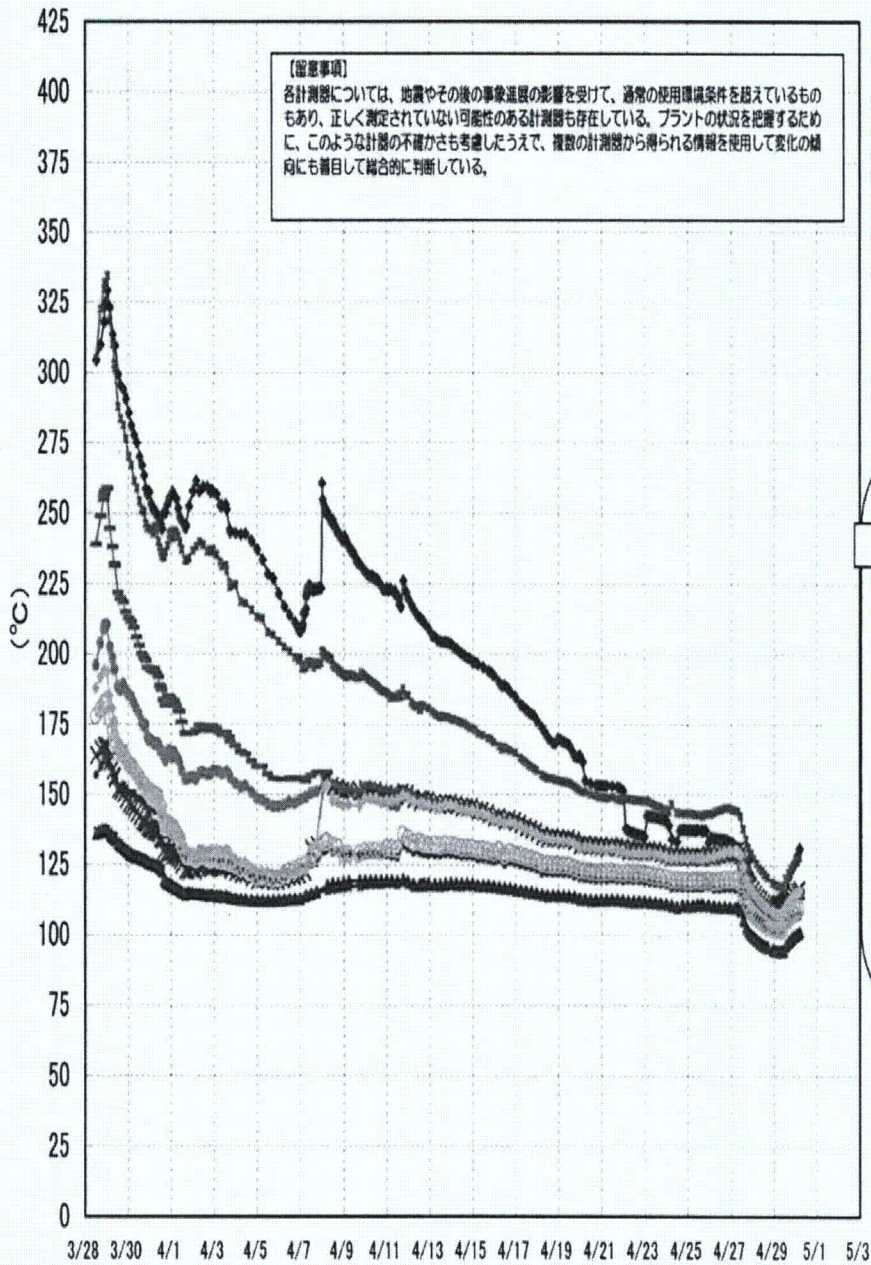
日時	原子炉水位 (燃料域)(A) (mm)	原子炉水位 (燃料域)(B) (mm)	A系 原子炉圧 力(MPa)	B系 原子炉 圧力(MPa)	D/W圧力 (MPa abs)	S/C圧力 (MPa abs)	CAMS D/W(A) (Sv/h)	CAMS D/W(B) (Sv/h)	CAMS S/C(A) (Sv/h)	CAMS S/C(B) (Sv/h)	備考
4/26 5:00	-1650	-1650	0.445	1.185	0.150	0.150			1.11	1.74	
4/26 8:00					0.150	0.150			1.12	1.74	
4/26 11:00	-1650	-1650	0.445	1.180	0.150	0.150			1.12	1.74	
4/26 14:00					0.155	0.155			1.12	1.74	
4/26 17:00	-1600	-1650	0.443	1.183	0.155	0.150			1.13	1.74	
4/26 20:00	-1600	-1650	0.445	1.190	0.155	0.155			1.13	1.74	
4/26 23:00	-1600	-1650	0.443	1.203	0.155	0.155			1.13	1.73	
4/27 2:00					0.155	0.155			1.13	1.73	
4/27 5:00	-1650	-1600	0.450	1.205	0.155	0.155			1.14	1.73	
4/27 8:00	-1650	-1650	0.450	1.205	0.155	0.155			1.14	1.72	
4/27 11:00	-1650	-1650	0.445	1.203	0.155	0.155			1.14	1.72	
4/27 14:00	-1650	-1650	0.440	1.198	0.145	0.145			1.15	1.71	
4/27 17:00	-1650	-1650	0.435	1.188	0.140	0.140			1.15	1.71	
4/27 20:00	-1650	-1650	0.423	1.175	0.135	0.135			1.16	1.70	
4/27 23:00	-1650	-1550	0.420	1.173	0.130	0.130			1.16	1.69	
4/28 2:00	-1650	-1600	0.415	1.170	0.125	0.125			1.16	1.68	
4/28 5:00	-1650	-1600	0.415	1.168	0.125	0.125			1.16	1.67	
4/28 8:00	-1600	-1600	0.415	1.170	0.120	0.120			1.16	1.65	
4/28 11:00	-1600	-1600	0.418	1.170	0.120	0.110			1.16	1.64	
4/28 14:00	-1600	-1600	0.413	1.163	0.120	0.110			1.17	1.62	
4/28 17:00	-1600	-1600	0.410	1.168	0.115	0.110			1.17	1.60	
4/28 20:00	-1600	-1600	0.410	1.165	0.115	0.110			1.17	1.58	
4/28 23:00	-1600	-1600	0.410	1.168	0.110	0.110			1.17	1.56	
4/29 2:00	-1600	-1650	0.413	1.170	0.110	0.110			1.17	1.53	
4/29 5:00	-1650	-1650	0.413	1.175	0.110	0.110			1.17	1.50	
4/29 8:00	-1650	-1650	0.408	1.180	0.105	0.105			1.17	1.48	
4/29 10:00	-1700	-1700	0.408	1.173	0.105	0.105			1.16	1.46	
4/29 11:00	-1700	-1700	0.410	1.175	0.105	0.105			1.17	1.49	
4/29 14:00	-1700	-1700	0.420	1.185	0.115	0.110			1.16	1.57	
4/29 17:00	-1650	-1650	0.423	1.188	0.120	0.110			1.16	1.59	
4/29 20:00	-1650	-1700	0.425	1.190	0.120	0.110			1.16	1.60	
4/29 23:00	-1700	-1700	0.430	1.200	0.120	0.110			1.16	1.60	
4/30 2:00	-1650	-1700	0.430	1.198	0.120	0.115			1.16	1.59	
4/30 5:00	-1650	-1700	0.435	1.205	0.120	0.115			1.16	1.57	

計器不良 計器不良

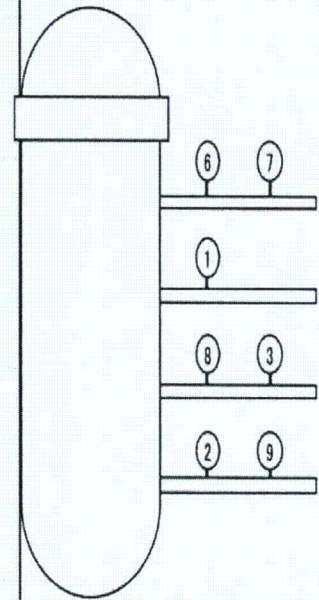
1F-1 温度に関するパラメータ(代表点)



1F-1 温度に関するパラメータ(給水ノズル及び安全弁排気温度)



3/27以降、これまで継続監視してきた給水ノズルN4Bと安全弁排気203-4Aの温度が上昇してきたことから、同様の位置を計測している他の計測点と比較するために計測点を3/28 12:30より増やして採取する。



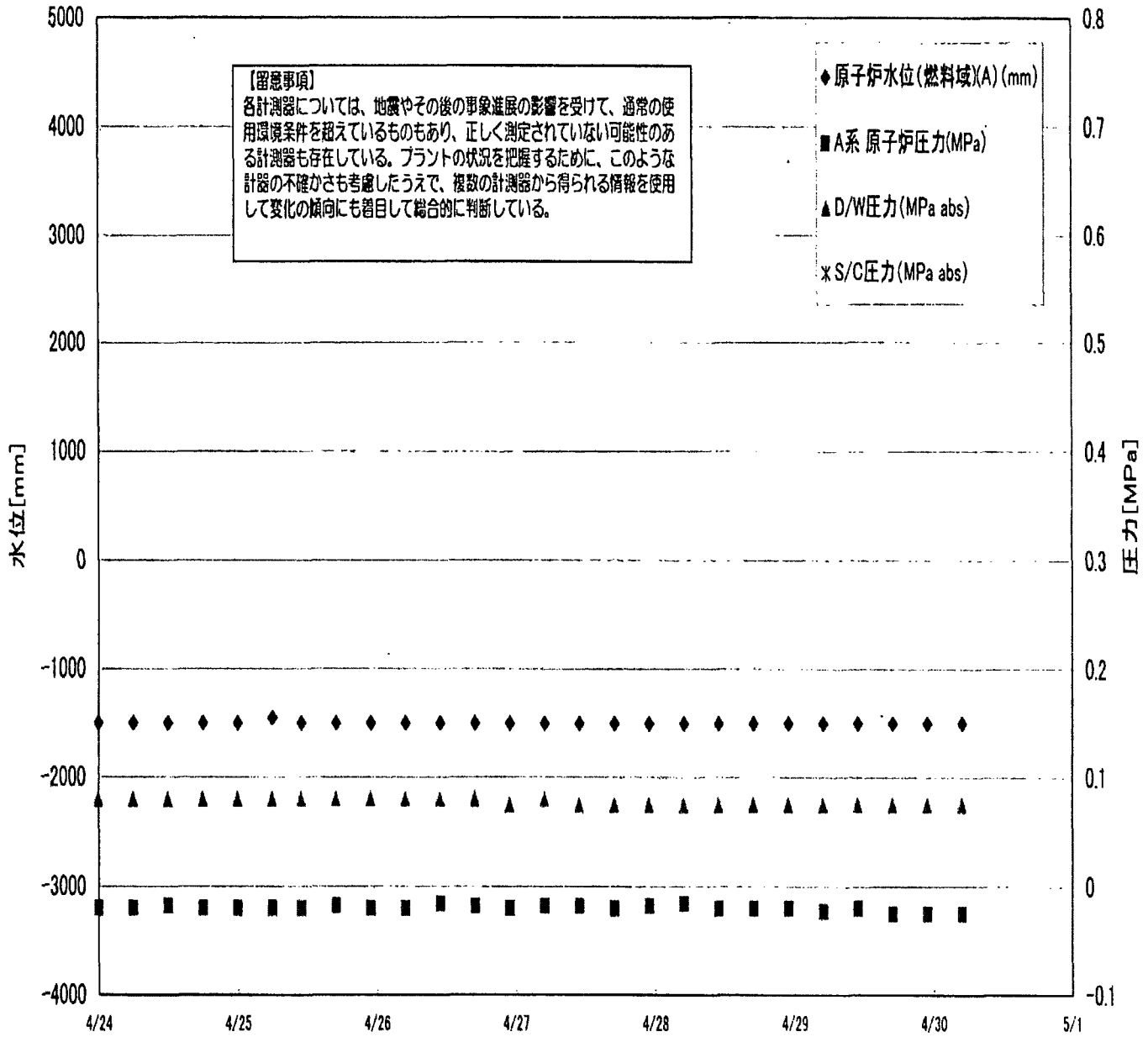
- ◆ 給水ノズル N4B(終端) OP.26922
 - ◆ 給水ノズル N4B(内)
 - ◆ 給水ノズル N4C(終端)
 - ◆ 給水ノズル N4C(内)
 - ◆ 安全弁排気 203-4A① OP.16524
 - ◆ 安全弁排気 203-4C③
 - ◆ 安全弁排気 203-4B②
 - ◆ SR弁排気 203-3A⑥
 - ◆ SR弁排気 203-3B⑦
 - ◆ SR弁排気 203-3C⑧
 - ◆ SR弁排気 203-3D⑨
- D/Wへ排気
- S/Cへ排気

1F-1 温度に関するパラメータ

【留意事項】
 片引測定については、片引その後の巻巻測定の影響を受けて、巻巻の空用温度値を修正しているものもあり、正しく測定されていない可能性のある計測値も存在している。フラットの欠けを考慮するため、このような計測値の記載は省略し、巻巻の計測値から用いる値補正を使用した値の補正にのみ記載している。

	VESSEL 桁番号	Vessel 桁番号	給水/ズルN4B(巻巻)	給水/ズルN4B(内)	給水/ズルN4C(巻巻)	給水/ズルN4C(内)	vessel core	圧力巻巻下部	CRDハウジング上部	CRDハウジング下部	安全弁排気 203-A4(1)	安全弁排気 203-A4(2)	安全弁排気 203-A5(1)	安全弁排気 203-A5(2)	安全弁排気 203-A6(1)	安全弁排気 203-A6(2)	安全弁排気 203-A6(3)	安全弁排気 203-A6(4)	O/W HVH 120)	RPVベローズシール (HVH-12A)	S/Cプール 水温度A	S/Cプール 水温度B
4/21 3.00	114.4	111.7	153.4					112.9	113.5	112.4	112.5	149.4							98.8	117.2		
4/21 8.00	114.3	111.7	153.4	112.5	112.7	111.7	112.8	113.5	112.4	112.5	149.9	131.8	119.8	131.8	129.7	130.5	122.7	96.7	112.1	53	52.8	
4/21 12.00	114.5	111.8	153.3	112.7	112.8	111.8	113	113.8	112.6	112.6	149.3	132.4	120.2	132	129.9	130.9	123	98.9	117.3	53	52.8	
4/21 18.00	114.4	111.7	152.8	112.5	112.7	111.8	112.9	113.5	112.4	112.6	148.8	132	119.8	131.7	129.6	130.8	122.6	98.9	117	52.9	52.8	
4/21 21.00	114.3	111.7	152.4				112.8	113.4	112.3	112.4	148.4							98.8	118.9			
4/22 0.00	114.2	111.5	151.8	112.3	112.5	111.5	112.7	113.3	112.3	112.3	148.8	131.8	119.8	131.4	129.2	130.2	122.3	98.9	118.8	52.9	52.8	
4/22 3.00	114	111.4	151.1				112.8	113.1	112.1	112.2	148.8							98.3	118.8			
4/22 8.00	114	111.4	151.4	112.1	112.3	111.3	112.5	113	112.1	112.2	148.6	132.2	119.8	130.3	128.4	129.1	122.6	96.4	118.8	52.8	52.7	
4/22 9.00	113.8	111.5	151.8				112.4	112.9	112	112.1	148.7							96.4	118.6			
4/22 12.00	113.9	111.3	151.5	112	112.1	111.1	112.4	112.8	112	112	148.5	131.9	119.7	130.3	128.1	129.2	122.4	98.5	118.4	52.7	52.8	
4/22 15.00	113.8	111.2	151.2				112.4	112.8	112	112	148.2							98.8	118.4			
4/22 18.00	113.9	111.3	151	112	112.2	111.2	112.4	112.8	112	112.1	148.3	131.8	119.7	130.4	128.1	128.4	122.4	98.7	118.4	52.8	52.5	
4/22 21.00	113.9	111.2	151.7				112.4	112.9	112	112	148.1							98.8	118.3			
4/23 0.00	113.7	111.1	151.3	111.9	112.1	111.1	112.2	112.7	111.9	112	148	131.5	119.5	130.2	127.9	129.2	122.2	98.8	118.2	52.4	52.4	
4/23 3.00	113.7	111	142.7				112.2	112.7	111.8	111.8	148.2							98.2	118			
4/23 8.00	113.8	111	142.8	111.7	111.9	111	112.1	112.6	111.8	111.8	147.8	130.8	119	130.5	128.7	129.4	121.7	98.7	118.9	52.4	52.3	
4/23 9.00	113.5	109.9	142.3				112	112.5	111.7	111.7	147.1							98.8	118.7			
4/23 12.00	113.4	110.8	142.3	111.5	111.7	110.8	111.9	112.4	111.8	111.8	148.6	130.3	118.7	130.2	128.1	129.1	121.3	98.8	115.4	52.3	52.2	
4/23 15.00	113.4	110.7	142.1				111.8	112.3	111.5	111.8	148.2							98.8	115.4			
4/23 18.00	113.1	110.8	141.8	111.3	111.5	110.8	111.7	112.1	111.4	111.4	145.9	129.8	118.4	129.7	127.7	128.7	121	98.7	115.2	52.1	52.1	
4/23 21.00	113.1	110.5	141.4				111.6	112	111.3	111.4	145.3							98.8	115.1	52.1	52	
4/24 0.00	113	110.5	141.2	111.1	111.3	110.4	111.5	111.9	111.2	111.3	145.1	129.3	118.2	129.3	127	128.3	120.7	98.8	114.9	52.1	52	
4/24 3.00	112.8	110.2	139.2				111.2	111.8	110.9	111	144.4							98.7	114.8			
4/24 8.00	112.4	109.9	134.4	110.6	110.7	109.8	110.9	111.2	110.7	110.9	149.9	128.4	117	128.8	128.3	127.7	120	98.8	114	51.9	51.9	
4/24 12.00	111.7	109.4	133.5	109.2	110.2	109.4	110.5	110.8	110.3	110.4	144	128.5	117.2	128.4	128.4	127.7	119.8	98.3	114	51.8	51.8	
4/24 15.00	112.3	109.8	137.8				110.8	111.2	110.8	110.7	143.8							98.4	114			
4/24 18.00	112.3	109.8	137.8	110.6	110.7	109.8	110.8	111.3	110.7	110.7	143.7	128.2	117.1	128.4	128.2	127.7	119.7	98.5	114	51.7	51.7	
4/24 21.00	112.3	109.8	137.8				110.9	111.3	110.7	110.7	143.8							98.5	114			
4/25 0.00	112.3	109.8	137.7	110.6	110.7	109.8	110.9	111.3	110.7	110.7	143.8	128.2	117	128.4	128.6	127.9	119.7	98.5	114	51.8	51.5	
4/25 3.00	112.3	109.8	137.7				110.9	111.3	110.7	110.7	143.7							98.8	114			
4/25 8.00	112.3	109.9	137.7	110.7	110.8	109.8	110.9	111.4	110.7	110.7	143.4	128.2	117	128.3	128.4	127.8	119.7	98.8	114	51.5	51.4	
4/25 9.00	112.3	110	137.8				111	111.4	110.8	110.8	143.1							98.7	114			
4/25 11.00	112.5	110.1	137.8	110.9	111	110.1	111.1	111.6	110.9	110.9	143.2	128.3	117.2	128.4	128.5	127.9	119.8	98.8	114.2	51.5	51.4	
4/25 15.00	112.5	110.1	137.8	110.8	111	110	111.1	111.6	110.9	110.9	143	128.1	117.1	128.2	128.3	127.7	119.7	98.7	114.1	51.5	51.4	
4/25 17.00	112.5	110.2	137.4	110.8	111	110.1	111.2	111.8	110.9	110.9	142.8	128.2	117.3	128.3	128.2	127.4	119.7	98.8	114.3	51.4	51.3	
4/25 20.00	112.8	110.8	137.5				111.5	111.9	111.3	111.3	143.4							97.3	114.5			
4/25 23.00	112.3	110.1	133.3	110.6	110.9	109.9	111	111.3	110.9	110.9	143.6	128.5	117.8	128.8	128.8	128	119.9	98.7	113.7	51.3	51.2	
4/26 2.00	112.1	109.9	135				111.1	111.3	110.4	110.8	143.5							97	113.2			
4/26 5.00	111.8	109.5	134.7	110.3	110.4	109.8	110.5	110.9	110.4	110.3	144	127.8	118.7	128.7	128.9	128.3	119.5	98.9	113.4	51.3	51.9	
4/26 8.00	111.7	109.4	134.6				110.4	110.8	110.3	110.3	144.5							98.8	113.2			
4/26 11.00	111.7	109.4	134.5	110.2	110.3	109.4	110.5	110.8	110.2	110.3	144.9	127.9	118.7	129.3	127.9	129.1	119.7	97	113.2	51.2	51.1	
4/26 14.00	111.7	109.4	134.5				110.5	110.8	110.2	110.3	145							97	113.2			
4/26 17.00	111.7	109.4	134.3	110.2	110.3	109.4	110.4	110.8	110.2	110.3	145.5	128.2	118.9	130.1	128.9	130	120.2	97.1	113.1	51.1	51	
4/26 20.00	111.7	109.4	134.2				110.4	110.8	110.2	110.2	145.7							97.2	113.1			
4/26 23.00	111.8	109.3	133.5	110.1	110.2	109.3	110.3	110.7	110.1	110.2	145.5	128.2	118.9	130.5	128.4	130.4	120.2	97.3	112.9	51.1	51	
4/27 2.00	111.5	109.2	133				110.2	110.6	110	110.1	144.9							97.3	112.8			
4/27 5.00	111.4	109.1	132	109.9	110	109.1	110.1	110.5	109.9	110	144.7	127.9	118.7	130.3	129.3	130.3	120.1	97.2	112.8	51	50.9	
4/27 8.00	111.4	109.1	131.4	109.8	110	109.1	110.1	110.4	109.9	110	144.4	127.8	118.8	130.3	129.3	130.3	120.1	97.3	112.8	51	50.9	
4/27 11.00	110.5	108.3	130	108.8	109.1	108.2	109.1	109.4	109.1	109.1	142.8	128.5	115.8	129.1	127.8	128.9	118.8	98.5	111.8	51	50.9	
4/27 14.00	107.1	104.9	128.3	108.3	108.8	104.7	105.5	105.9	105.5	105.4	138.3	122.6	112.2	125.4	124.1	124.6	115.2	92.2	108	50.9	50.8	
4/27 17.00	104.4	102.3	125	102.8	103.2	102.2	102.8	103.3	103	102.9	134.4	119.3	109.8	121.5	120.5	120.4	112	91.2	105.3	50.8	50.8	
4/27 20.00	102.7	100.5	127.4	101.1	101.5	100.5	101.2	101.5	101.4	101.3	131.5	117	107.7	119.3	118.4	118.2	110.1	90.1	103.5	50.9	50.7	
4/27 23.00	101.5	99.4	121.3	100	100.4	99.4	100	100.3	100.2	100	129.6	115.5	108.5	117.8	117	118.7	108.8	89.4	102.4	50.8	50.7	
4/28 2.00	100.8	98.5	115.4	99.1	99.6	98.5	99	99.4	99.4	99.1	127.6	114.2	105.6	116.4	115.6	115.4	107.7	88.9	101.5	50.8	50.8	
4/28 5.00	99.8	97.7	107.3	98.3	98.7	97.5	98.2	98.5	98.5	98.3	125.9	112.8	104.6	114.9	114.1	113.9	106.5	88.3	100.5	50.7	50.8	
4/28 8.00	98.7	96.7	110.8	97.3	97.7	96.6	97.2	97.5	97.8	97.3	124.7	111.8	102.9	113.7	113	112.7	105.8	87.7	99.5	50.7	50.8	
4/28 11.00	97.9	96	106.8	96.8	97	95.9	96.5	96.8	96.9	96.7	123.4	111	103.3	112.8	112	111.7	104.9	87.3	99.8	50.7	50.8	
4/28 14.00	97.5	95.4	107.4	98.1	98.5	95.4	95.9	96.3	96.4	96.1	122	109.9	102.5	111.7	111	110.7	104.2	87	98.1	50.7	50.8	
4/28 17.00	97.1	95.1	109.5	95.7	96.1	95	95.5	95.9	96	95.7	121	109.2	101.9	110.8	110.2	109.9	103.6	87.7	97.5	50.7	50.8	
4/28 20.00	96.3	94.1	112.5																			

1F2 水位・圧力に関するパラメータ



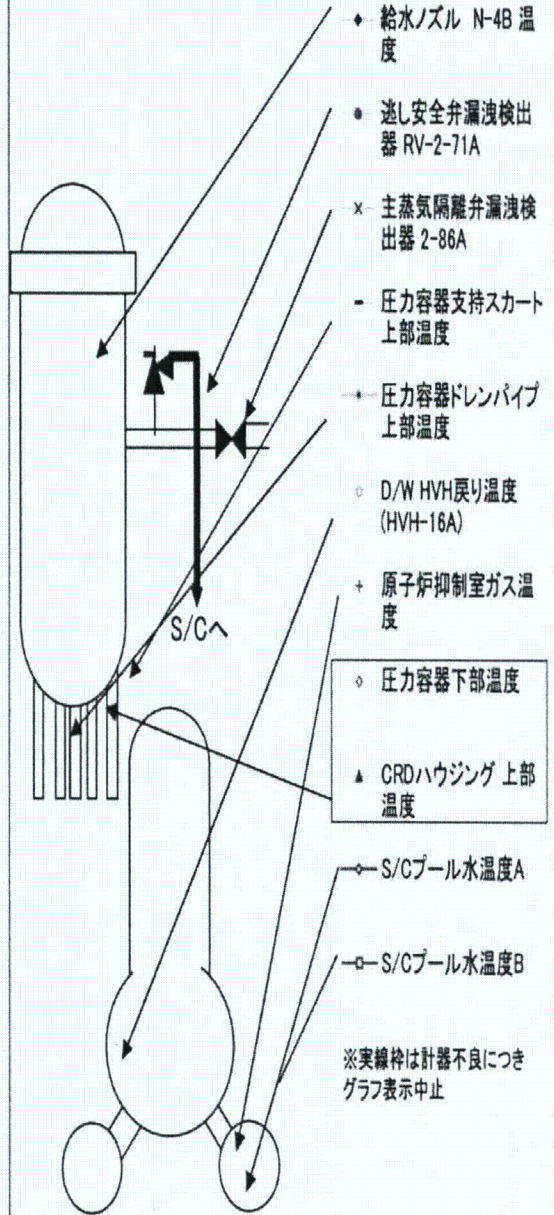
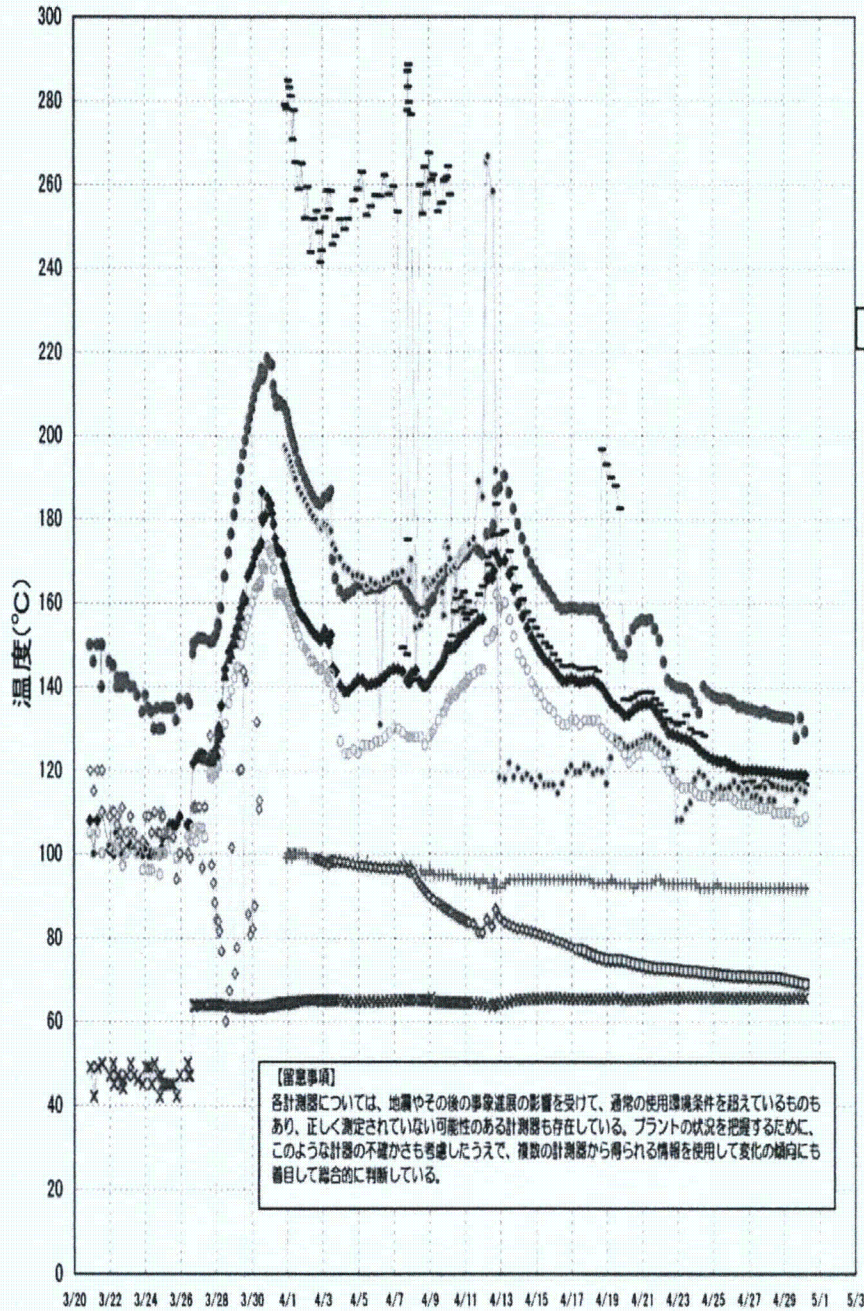
1F2 水位・圧力に関するパラメータ

【留意事項】
各計測器については、地震やその他の事象進展の影響を受けて、通常の使用環境条件を超えているものもあり、正しく測定されていない可能性のある計測器も存在している。プラントの状況を把握するために、このような計測器の不確かさも考慮し、複数の計測器から得られる情報を活用して変化の傾向にも注目して総合的に判断している。

日時	原子炉水位 (燃料域)(A) (mm)	原子炉水位 (燃料域)(B) (mm)	A系 原子炉圧 力(MPa)	B系 原子炉 圧力(MPa)	D/W圧力 (MPa abs)	S/C圧力 (MPa abs)	CAMS D/W(A) (Sv/h)	CAMS D/W(B) (Sv/h)	CAMS S/C(A) (Sv/h)	CAMS S/C(B) (Sv/h)	中操線量 (mSv/h)	備考
4/21 12:00	-1500	-2050	-0.023	-0.025	0.085		24.6	27.9	0.534	114.0	0.05	
4/21 18:00	-1500	-2050	-0.020	-0.025	0.090		24.5	27.8	0.530	120.0	0.07	
4/22 0:00	-1500	-2050	-0.018	-0.023	0.085		24.4	27.7	0.526	132.0	0.07	
4/22 6:00	-1500	-2100	-0.023	-0.027	0.085		24.3	27.6	0.522	137.0	0.07	
4/22 12:00	-1500	-2050	-0.023	-0.027	0.085		24.2	27.5	0.519	136.0	0.08	
4/22 18:00	-1500	-2050	-0.027	-0.034	0.085		24.1	27.4	0.517	135.0	0.06	
4/23 0:00	-1500	-2100	-0.023	-0.027	0.085		24.1	27.3	0.516	132.0	0.08	
4/23 6:00	-1500	-2100	-0.023	-0.027	0.080		24.0	27.0	0.512	135.0	0.07	
4/23 12:00	-1500	-2100	-0.023	-0.025	0.080		23.9	26.8	0.509	136.0	0.07	
4/23 18:00	-1500	-2050	-0.020	-0.023	0.080		23.8	26.7	0.506	128.0	0.10	
4/24 0:00	-1500	-2050	-0.020	-0.020	0.080		23.7	26.6	0.503	126.0	0.10	
4/24 6:00	-1500	-2050	-0.020	-0.025	0.080		23.6	26.5	0.500	110.0	0.10	
4/24 12:00	-1500	-2050	-0.018	-0.025	0.080		23.6	26.5	0.497	115.0	0.08	
4/24 18:00	-1500	-2050	-0.020	-0.025	0.080		23.5	26.4	0.496	107.0	0.07	
4/25 0:00	-1500	-2100	-0.020	-0.027	0.080		23.4	26.3	0.493	119.0	0.06	
4/25 6:00	-1450	-2100	-0.020	-0.027	0.080		23.3	26.2	0.490	103.0	0.06	
4/25 11:00	-1500	-2100	-0.020	-0.025	0.080		23.2	26.1	0.489	94.1	0.05	
4/25 17:00	-1500	-2100	-0.018	-0.025	0.080		23.2	26.0	0.486	98.6	0.07	
4/25 23:00	-1500	-2100	-0.020	-0.025	0.080		23.1	26.0	0.483	105.0	0.05	
4/26 5:00	-1500	-2100	-0.020	-0.025	0.080		23.0	25.9	0.480	104.0	0.06	
4/26 11:00	-1500	-2050	-0.016	-0.025	0.080		22.9	25.8	0.477	76.4	0.07	
4/26 17:00	-1500	-2100	-0.018	-0.025	0.080		22.8	25.7	0.476	106.0	0.08	
4/26 23:00	-1500	-2100	-0.020	-0.027	0.075		22.7	25.6	0.474	57.7	0.08	
4/27 5:00	-1500	-2100	-0.018	-0.023	0.080		22.7	25.6	0.472	43.3	0.08	
4/27 11:00	-1500	-2100	-0.018	-0.025	0.075		22.6	25.5	0.470	45.9	0.06	
4/27 17:00	-1500	-2100	-0.020	-0.023	0.075		22.5	25.4	0.467	43.3	0.05	
4/27 23:00	-1500	-2100	-0.018	-0.020	0.075		22.5	25.3	0.465	41.9	0.08	
4/28 5:00	-1500	-2100	-0.016	-0.020	0.075		22.4	25.2	0.463	40.8	0.08	
4/28 11:00	-1500	-2100	-0.020	-0.023	0.075		22.3	25.2	0.461	39.7	0.04	
4/28 17:00	-1500	-2100	-0.020	-0.020	0.075		22.3	25.1	0.460	38.3	0.07	
4/28 23:00	-1500	-2100	-0.020	-0.023	0.075		22.2	25.0	0.456	37.4	0.06	
4/29 5:00	-1500	-2100	-0.023	-0.023	0.075		22.1	24.9	0.454	35.9	0.08	
4/29 11:00	-1500	-2100	-0.020	-0.023	0.075		22.1	24.8	0.452	37.1	0.08	
4/29 17:00	-1500	-2100	-0.025	-0.025	0.075		22.0	24.8	0.449	36.1	0.07	
4/29 23:00	-1500	-2100	-0.025	-0.023	0.075		22.0	24.7	0.447	38.5	0.07	
4/30 5:00	-1500	-2100	-0.025	-0.025	0.075		21.9	24.6	0.444	45.2	0.07	

計器不良

1F-2 温度に関するパラメータ(代表点)



1F-2 温度に関するパラメータ

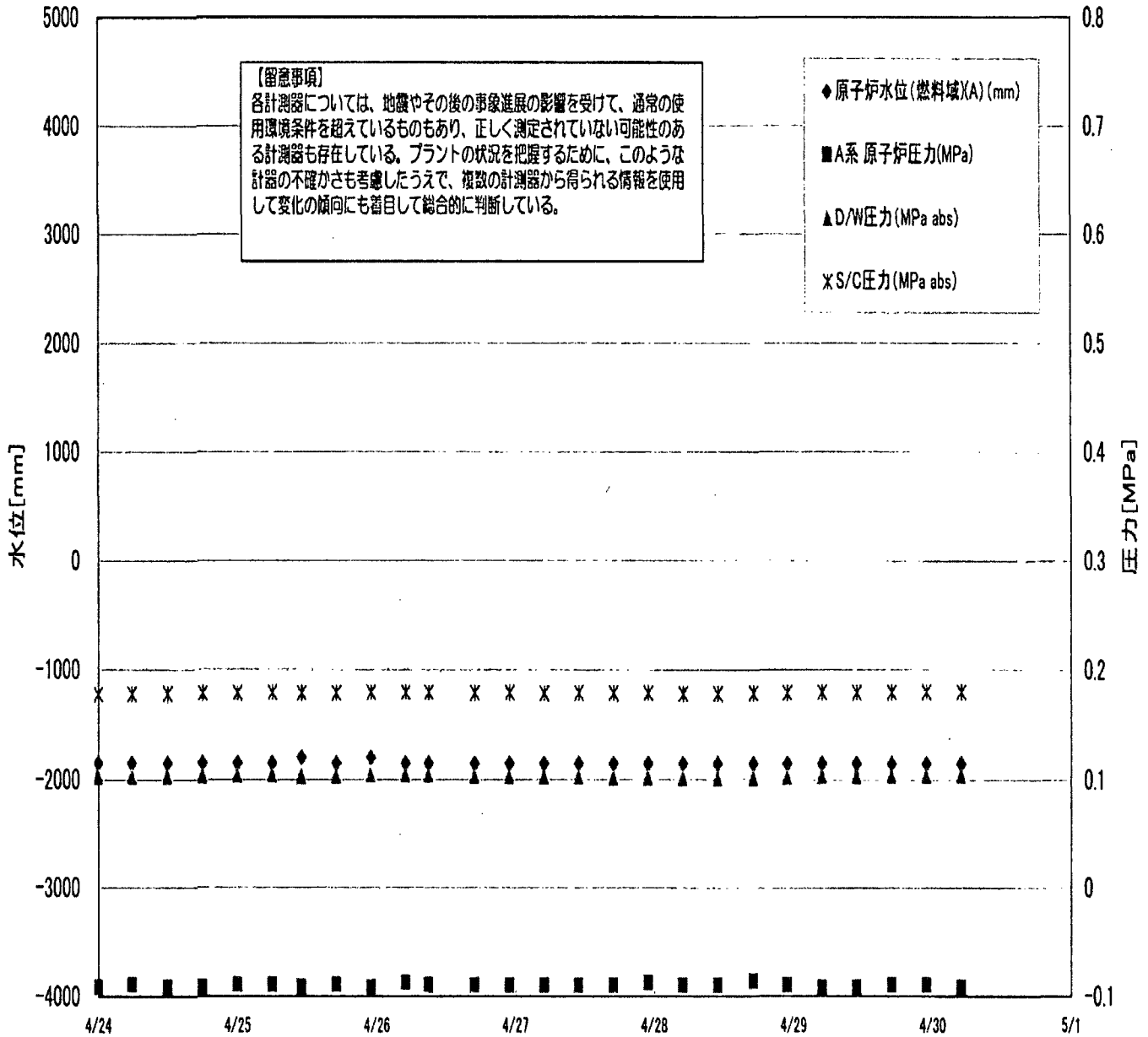
(留意事項)

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	逃し安全弁漏洩検出器 RV-2-71A	主蒸気隔離弁漏洩 検出器 2-86A	給水ノズル N-4B 温度	GRDハウジング 上部温度	圧力容器下部 温度	圧力容器支持 スカート上部温	圧力容器ドレンバ イブ上部温度	D/W HVH戻り温 度(HVH-16A)	RPVベロー シール	原子炉抑制室 ガス温度	S/Cプール 水温度A	S/Cプール 水温度B
4/20 0:00	147.5	65.1	133.4			137.1	126.2	124	O.S	93	74.3	74.6
4/20 6:00	151	65.2	133.6			136.9	125.8	122	O.S	93	74	74.3
4/20 12:00	153.9	65.2	134.7			137.6	126.2	123	O.S	92	73.7	74
4/20 18:00	155.3	65.4	135.5			138.5	126.9	124	O.S	93	73.4	73.7
4/21 0:00	156.2	65.3	136			138.7	127.2	126	O.S	93	73.2	73.5
4/21 6:00	155.9	65.2	136.1			138.8	128.4	128	O.S	93	72.9	73.2
4/21 12:00	156.2	65.3	136			138.7	128.4	126	O.S	93	72.8	73
4/21 18:00	153.8	65.5	134.8			137.2	127.6	125	O.S	94	72.6	72.9
4/22 0:00	151.2	65.5	133.1			135.9	126.7	124	O.S	94	72.6	72.9
4/22 6:00	146.1	65.7	131.2			134.4	125.5	122	O.S	93	72.5	72.8
4/22 12:00	141.8	65.7	129.2			132.4	124.4	120	O.S	93	72.4	72.7
4/22 18:00	140.7	65.7	128.8			131.7	120.4	118	O.S	93	72.3	72.6
4/23 0:00	140.1	65.7	128.4			131	108.4	117	O.S	93	72.2	72.5
4/23 6:00	140	65.8	128			131.6	108.5	116	O.S	93	72.1	72.3
4/23 12:00	139.8	65.8	127.7			133.4	111	116	O.S	93	72	72.2
4/23 18:00	138.7	65.8	127.2			130.1	112.5	116	O.S	93	71.9	72.1
4/24 0:00	136.6	65.8	126.3			129.1	118.1	115	O.S	93	71.8	72.1
4/24 6:00	134	65.8	125.2			129.1	119.8	114	O.S	92	71.7	71.9
4/24 12:00	140.2	65.8	124.2			128.5	118.9	114	O.S	92	71.5	71.8
4/24 18:00	138.9	65.8	123.4			123.3	117.2	114	O.S	92	71.4	71.6
4/25 0:00	138.1	65.8	122.9			123.2	114.4	113	O.S	92	71.3	71.6
4/25 6:00	137.6	65.7	122.5			122	115.5	114	O.S	93	71.2	71.4
4/25 11:00	137.2	65.7	122.3			122.9	116.3	114	O.S	92	71.1	71.3
4/25 17:00	137.4	65.7	122.5			122.2	115.6	114	O.S	92	71	71.3
4/25 23:00	137.1	65.7	121.9			120.5	116.4	114	O.S	92	70.9	71.1
4/26 5:00	136.4	65.8	121.2			120	117.5	113	O.S	92	70.8	70.9
4/26 11:00	135.4	65.7	120.5			120.1	116.2	112	O.S	92	70.7	71
4/26 17:00	135.4	65.8	120.2			117.3	115	112	O.S	92	70.7	70.9
4/26 23:00	135	65.7	120.4			117	115.7	112	O.S	92	70.6	70.9
4/27 5:00	134.9	65.7	120.4			117.6	114	112	O.S	92	70.5	70.8
4/27 11:00	134.4	65.7	120.3			116	114.2	111	O.S	92	70.5	70.8
4/27 17:00	134	65.8	120.1			116.5	113.4	111	O.S	92	70.5	70.7
4/27 23:00	134.4	65.8	120.1			117.8	116.1	111	O.S	92	70.4	70.7
4/28 5:00	133.8	65.7	119.9			117.1	113.3	111	O.S	92	70.4	70.7
4/28 11:00	133.4	65.7	119.8			116.2	113.1	110	O.S	92	70.3	70.6
4/28 17:00	133.2	65.6	119.6			117	116.3	110	O.S	92	70.3	70.5
4/28 23:00	133	65.6	119.4			116.2	116.1	110	O.S	92	70	70.3
4/29 5:00	132.9	65.6	119.2			116.5	115.9	110	O.S	92	69.7	70
4/29 11:00	132.6	65.7	119.2			118.3	115.8	110	O.S	92	69.6	69.8
4/29 17:00	128	65.8	119.3			116.7	113	108	O.S	92	69.3	69.6
4/29 23:00	132.9	65.7	119.3			117.5	115.8	108	O.S	92	69.1	69.3
4/30 5:00	129.6	65.6	119.1			116.8	115.3	109	O.S	92	68.8	69.1

計器不良 計器不良

1F3 水位・圧力に関するパラメータ



1F3 水位・圧力に関するパラメータ

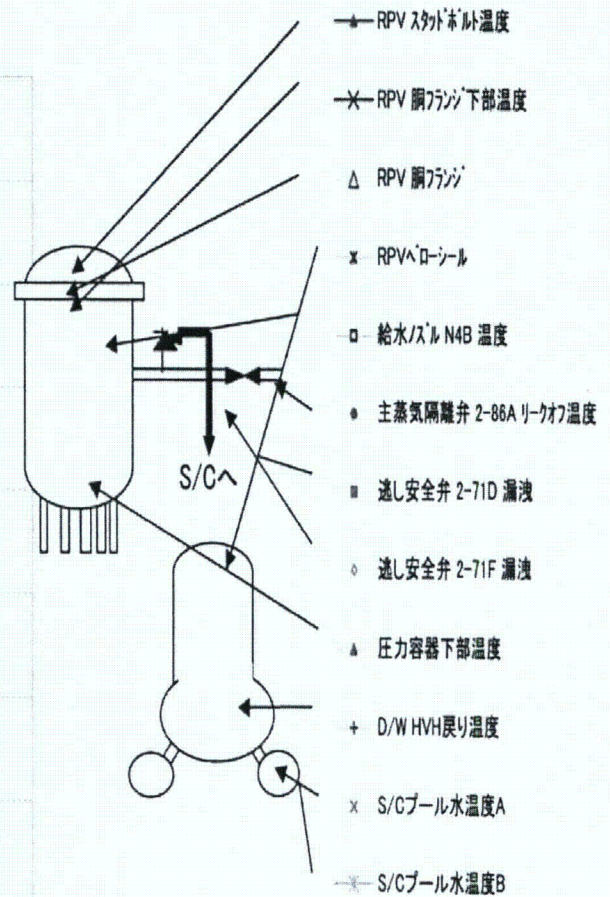
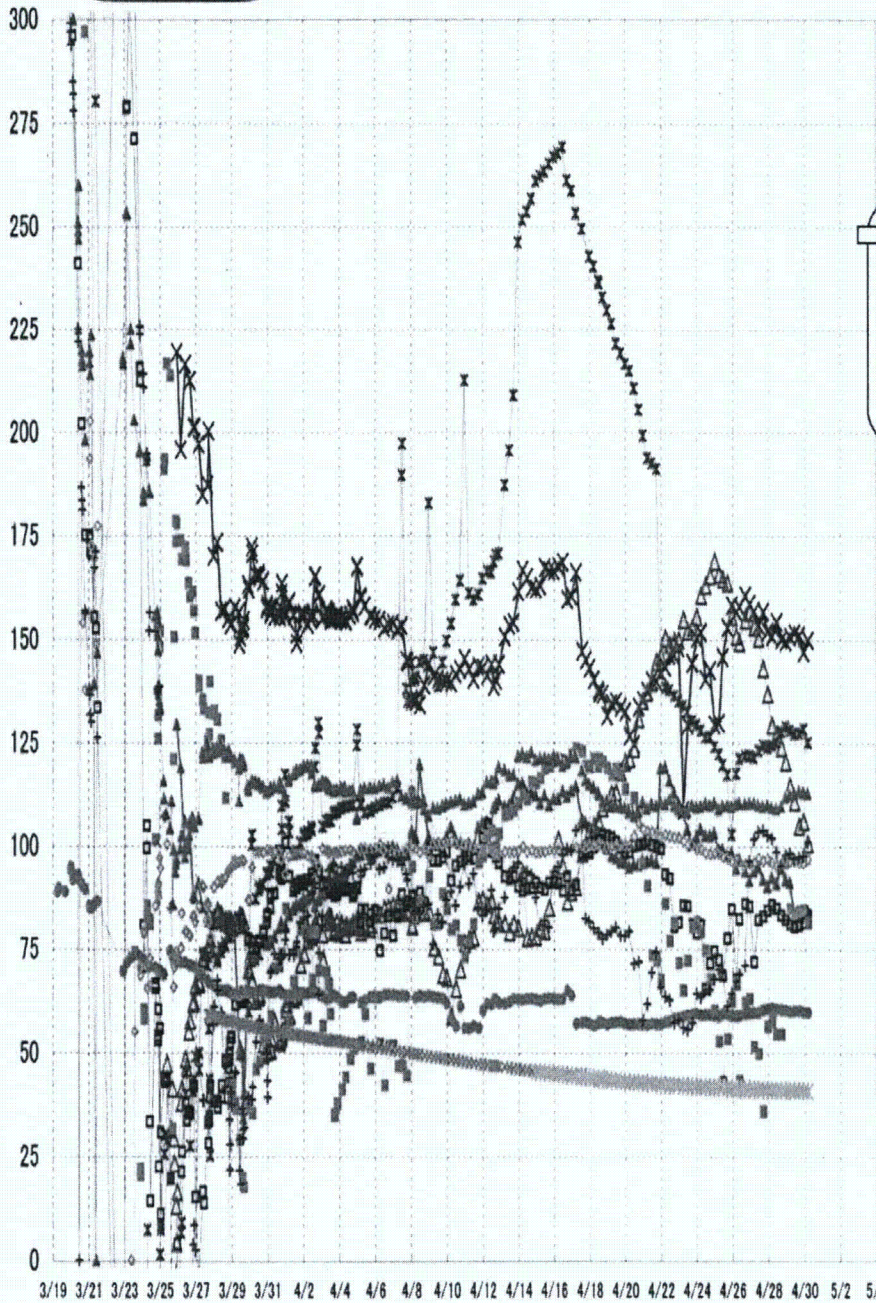
【留意事項】

各計測器については、地震やその後の事故進展の影響を受けて、通常の使用環境条件を超えているものもあり、正しく測定されていない可能性のある計測器も存在している。プラントの状況を把握するために、このような計測器の不確かさも考慮したうえで、複数の計測器から得られる情報を使用して変化の傾向にも注目して総合的に判断している。

日時	原子炉水位 (燃料域A) (mm)	原子炉水位 (燃料域B) (mm)	A系 原子炉圧力 (MPa)	B系 原子炉圧 力(MPa)	D/W圧力(MPa abs)	S/C圧力(MPa abs)	CAMS D/W(A) (Sv/h)	CAMS D/W(B) (Sv/h)	CAMS S/C(A) (Sv/h)	CAMS S/C(B) (Sv/h)	中操線量 (mSv/h)	備考
4/20 12:00	-1850	-2250	-0.089	-0.043	0.1045	0.1748	15.5	11.6	0.585	0.541	0.065	
4/20 18:10	-1850	-2250	-0.087	-0.043	0.1047	0.1754	15.5	11.6	0.582	0.540	0.065	
4/20 23:50	-1850	-2250	-0.087	-0.045	0.1054	0.1761	15.4	11.5	0.580	0.539	0.065	
4/21 6:00	-1850	-2250	-0.085	-0.043	0.1061	0.1768	15.4	11.5	0.579	0.538	0.065	
4/21 12:00	-1850	-2250	-0.087	-0.043	0.1050	0.1769	15.4	11.5	0.577	0.537	0.065	
4/21 18:00	-1850	-2250	-0.085	-0.043	0.1052	0.1775	15.3	11.4	0.575	0.535	0.065	
4/22 0:00	-1850	-2250	-0.089	-0.047	0.1055	0.1776	15.1	11.4	0.573	0.534	0.065	
4/22 6:00	-1850	-2250	-0.087	-0.047	0.1055	0.1780	15.2	11.4	0.570	0.532	0.070	
4/22 11:50	-1850	-2250	-0.089	-0.049	0.1048	0.1780	15.2	11.4	0.569	0.531	0.070	
4/22 17:50	-1850	-2250	-0.089	-0.049	0.1047	0.1783	15.2	11.3	0.568	0.530	0.080	
4/23 0:00	-1850	-2250	-0.087	-0.053	0.1047	0.1785	15.2	11.3	0.566	0.528	0.060	
4/23 6:15	-1850	-2250	-0.087	-0.049	0.1045	0.1782	15.1	11.3	0.564	0.527	0.070	
4/23 11:55	-1850	-2250	-0.087	-0.049	0.1038	0.1778	15.1	11.3	0.563	0.526	0.060	
4/23 18:00	-1850	-2250	-0.089	-0.051	0.1033	0.1776	15.0	11.2	0.562	0.525	0.060	
4/24 0:00	-1850	-2250	-0.091	-0.055	0.1027	0.1776	15.0	11.2	0.561	0.523	0.070	
4/24 5:50	-1850	-2250	-0.089	-0.053	0.1031	0.1778	15.0	11.2	0.560	0.522	0.060	
4/24 12:00	-1850	-2250	-0.091	-0.051	0.1031	0.1780	14.9	11.1	0.558	0.521	0.070	
4/24 18:00	-1850	-2250	-0.091	-0.051	0.1034	0.1785	14.9	11.1	0.557	0.520	0.070	
4/25 0:00	-1850	-2250	-0.089	-0.055	0.1038	0.1787	14.8	11.1	0.556	0.519	0.070	
4/25 6:00	-1850	-2250	-0.089	-0.053	0.1041	0.1789	14.8	11.1	0.554	0.518	0.070	
4/25 11:00	-1800	-2250	-0.091	-0.055	0.1029	0.1787	14.7	11.0	0.553	0.517	0.050	
4/25 17:00	-1850	-2250	-0.089	-0.055	0.1034	0.1787	14.7	11.0	0.552	0.516	0.050	
4/25 23:00	-1800	-2250	-0.091	-0.055	0.1041	0.1792	14.6	11.0	0.551	0.515	0.050	
4/26 5:00	-1850	-2250	-0.087	-0.055	0.1043	0.1794	14.6	11.0	0.550	0.514	0.040	
4/26 9:00	-1850	-2250	-0.089	-0.055	0.1041	0.1794	14.5	10.9	0.549	0.513	0.040	
4/26 17:00	-1850	-2250	-0.089	-0.051	0.1033	0.1790	13.9	10.9	0.517	0.511	0.050	
4/26 23:00	-1850	-2250	-0.089	-0.049	0.1034	0.1792	14.2	10.9	0.530	0.510	0.050	
4/27 5:00	-1850	-2250	-0.089	-0.053	0.1031	0.1787	14.3	10.9	0.532	0.508	0.050	
4/27 11:00	-1850	-2250	-0.089	-0.053	0.1029	0.1792	14.3	10.8	0.534	0.507	0.040	
4/27 17:00	-1850	-2250	-0.089	-0.053	0.1022	0.1789	14.3	10.8	0.534	0.505	0.050	
4/27 23:00	-1850	-2250	-0.087	-0.055	0.1022	0.1789	14.3	10.8	0.534	0.504	0.045	
4/28 5:00	-1850	-2250	-0.089	-0.055	0.1017	0.1783	14.2	10.8	0.533	0.502	0.050	
4/28 11:00	-1850	-2250	-0.089	-0.055	0.1017	0.1785	14.2	10.7	0.532	0.501	0.050	
4/28 17:10	-1850	-2250	-0.085	-0.055	0.1017	0.1790	14.2	10.7	0.532	0.500	0.050	
4/28 23:00	-1850	-2250	-0.089	-0.060	0.1027	0.1792	14.1	10.7	0.530	0.498	0.040	
4/29 5:00	-1850	-2250	-0.091	-0.062	0.1036	0.1799	14.1	10.6	0.529	0.496	0.050	
4/29 11:00	-1850	-2250	-0.091	-0.060	0.1033	0.1796	17.0	10.6	0.527	0.495	0.050	
4/29 17:00	-1850	-2250	-0.089	-0.060	0.1038	0.1799	14.0	10.6	0.526	0.494	0.050	
4/29 23:00	-1850	-2250	-0.089	-0.064	0.1040	0.1804	14.0	10.5	0.525	0.492	0.050	
4/30 5:00	-1850	-2250	-0.091	-0.066	0.1043	0.1803	13.9	10.5	0.524	0.491	0.040	

3/22 22:36
計装用電源仮復旧

1F-3 温度に関するパラメータ(代表点)



【留意事項】
各計測器については、地震やその後の事象進展の影響を受けて、通常の使用環境条件を超えているものもあり、正しく測定されていない可能性のある計測器も存在している。プラントの状況を把握するために、このような計測器の不確かさも考慮したうえで、複数の計測器から得られる情報を使用して変化の傾向にも着目して総合的に判断している。

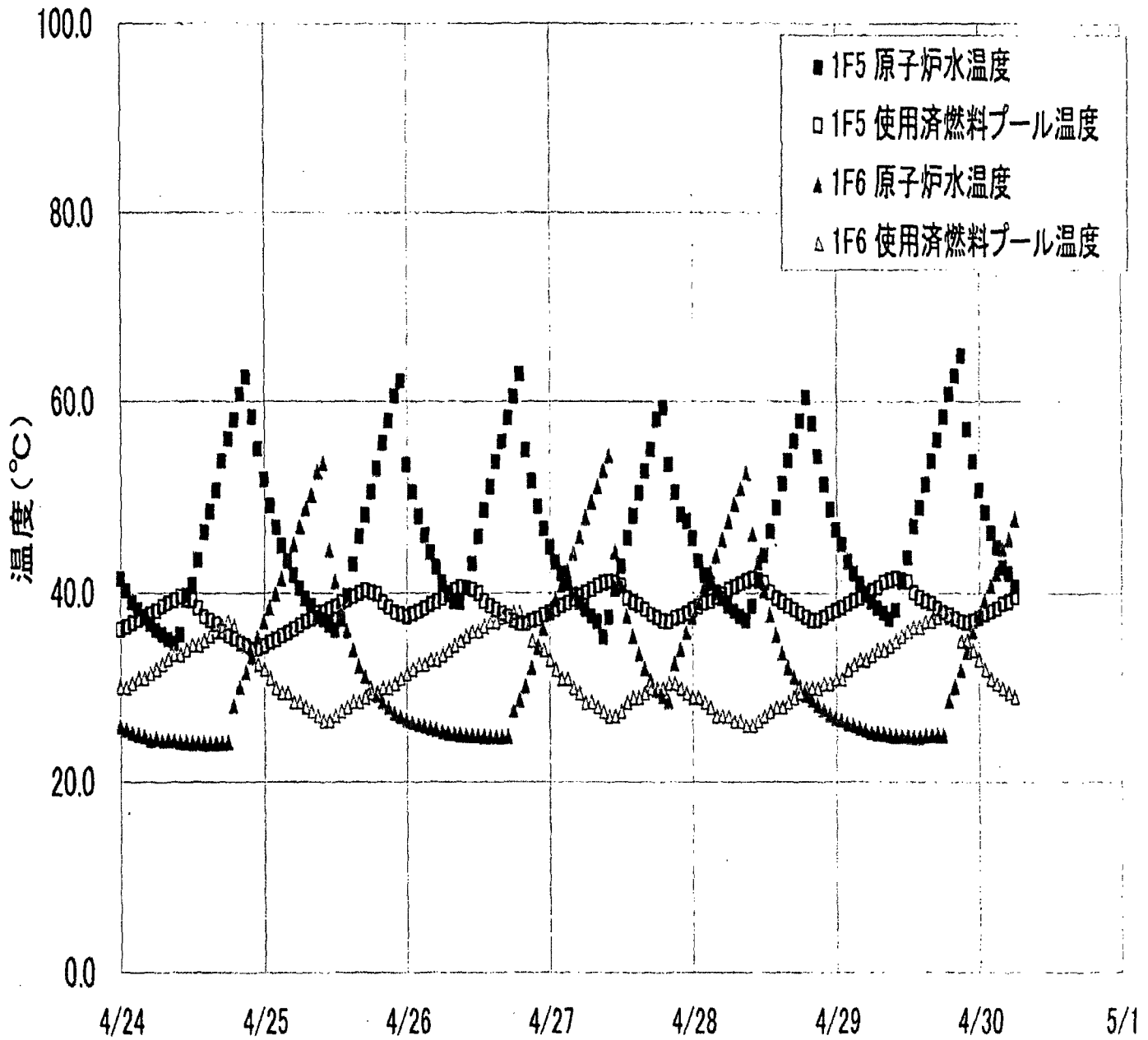
1F-3 温度に関するパラメータ

【留意事項】

各計測器については、地震やその後の事象進展の影響を受けて、通常の使用環境条件を超えているものもあり、正しく測定されていない可能性のある計測器も存在している。プラントの状況を把握するために、このような計測器の不確かさも考慮したうえで、複数の計測器から得られる情報を使用して変化の傾向にも着目して総合的に判断している。

	給水ノズル N4B 温度	RPV 胴フランジ	圧力容器下部温度	RPV スタッドボルト温度	RPV 胴フランジ 下部温度	送し安全弁 2-71D 湧液	送し安全弁 2-71F 湧液	主蒸気隔離弁 2-86A リークオフ	D/W MVH 戻り温度	RPV ベンチマーク	S/C プール 水温度 A	S/C プール水 温度 B
4/22 11:50	92.4	148.8	111.6	116.1	146.3	77.2	102.6	57.8	62.8	137.9	42.2	42.2
4/22 17:50	80.6	149.9	110.1	113.3	146.2	81.7	102.3	58.5	57.3	136.8	42.1	42.1
4/23 0:00	81.7	150	109.2	110.8	148.1	71.8	102.2	58.6	58.1	135.2	42.1	42.1
4/23 6:15	85.9	154.9	109.4	108.5	108.9	65.2	101.4	58.9	56.2	134.2	42	42
4/23 11:55	85.7	152.1	108.6	104.3	129.5	72.4	100.6	59.2	55.7	132.9	41.9	41.9
4/23 18:00	81.1	153	110.1	100.6	144.4	80.5	100.6	59.4	57.3	130.6	41.9	41.9
4/24 0:00	79.1	155.7	109.6	102.7	150.4	81.9	99.5	59.6	64.4	129.6	41.8	41.8
4/24 5:50	81.1	160.7	109.9	104.3	151.9	79.4	99.5	59.3	63.5	128.3	41.8	41.8
4/24 12:00	65.5	163.2	110.6	102.9	140.5	74.9	98.6	59.4	65.2	126.6	41.7	41.7
4/24 18:00	71.6	165.5	110.2	102.8	142.7	68	98.3	59.4	65.3	126.6	41.7	41.7
4/25 0:00	74.6	169	110.8	103.4	129.6	60.4	98.4	59.2	67.8	124.3	41.6	41.6
4/25 6:00	72.5	165.9	109.3	99.3	130	53	98.5	58.9	70.2	122.5	41.6	41.6
4/25 11:00	68.8	164.8	110	99.5	145.8	43.2	97.8	59.6	69.5	120	41.6	41.5
4/25 17:00	77.7	163.8	110	98	153	53.6	97.3	59.5	61.4	117.6	41.5	41.5
4/25 23:00	84.9	155.7	109.8	98.8	158.4	62.6	96.7	59.2	64.5	103.1	41.4	41.4
4/26 5:00	67.9	151	110.4	94.9	156.8	66.7	97	59	67.3	117.9	41.4	41.4
4/26 9:00	82.5	149.4	110.7	97	158	43.4	96.7	59.1	69	121.5	41.4	41.4
4/26 17:00	86.2	154.8	110.5	94.3	160.7	62.4	96	59.6	71.2	122.2	41.3	41.3
4/26 23:00	85.6	156.6	110.7	92	158.7	63.2	96.1	59.7	96.7	122.2	41.2	41.2
4/27 5:00	72	153.1	110.7	94.3	157	51.7	96.3	59.9	101.9	121.7	41.2	41.2
4/27 11:00	82.3	150.4	110.3	95.3	153.7	50	97.3	59.9	103.8	123.4	41.1	41.1
4/27 17:00	83.2	143.2	109.9	92.4	156.8	36	96.7	60.6	104	124.6	41.1	41.1
4/27 23:00	84.6	137.1	110.2	90.5	152.1	56.6	97.2	60.7	102.9	124.1	41.1	41.1
4/28 5:00	86	129.5	109.6	92.7	150.9	57.8	96.2	60.9	102.1	124.7	41	41
4/28 11:00	85.1	127.2	109.4	91.3	154.4	54.7	95.6	60.7	98.9	125.4	41	41
4/28 17:10	83.5	124.1	110	94.9	150.1	54.7	96	60.6	95.5	128	41	41
4/28 23:00	82.4	120.6	112.1	92.2	149.7	96.3	96.8	60.5	98.1	129.1	40.9	40.9
4/29 5:00	81.3	114.7	112.7	91.6	150.8	85.1	96.7	60.2	98.6	128.3	40.9	40.9
4/29 11:00	80.6	111	112.9	84	151.7	84	96.7	60.3	97.2	127.4	40.9	40.9
4/29 17:00	80.9	105.1	113.7	83.7	151.2	84.5	96.3	60.4	97.6	127.6	40.8	40.8
4/29 23:00	81.6	108.2	113.3	83.2	147.1	84.8	96.1	60.1	97.9	128.6	40.8	40.8
4/30 5:00	83.6	100.9	113.1	84.6	150	81.6	97	60	101.2	125.3	40.7	40.7

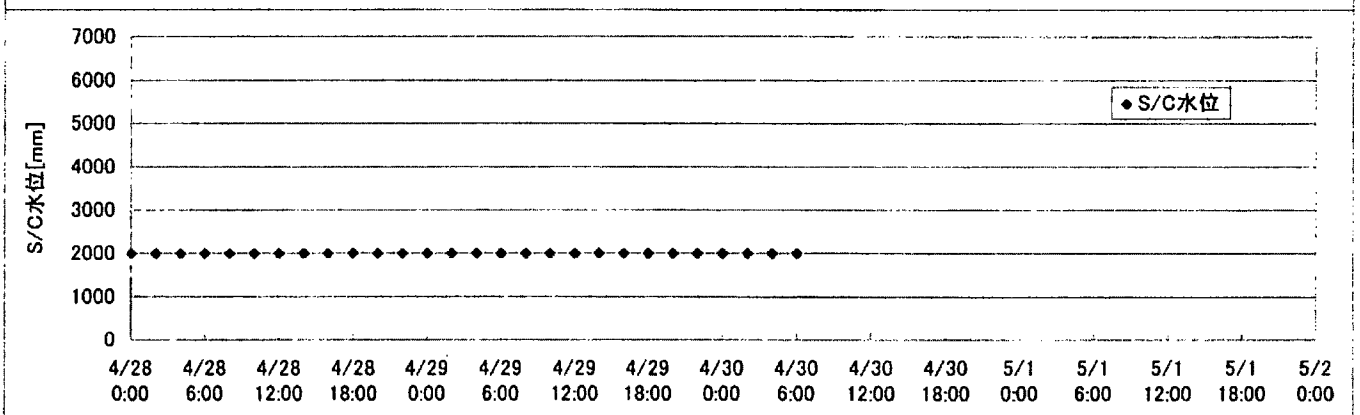
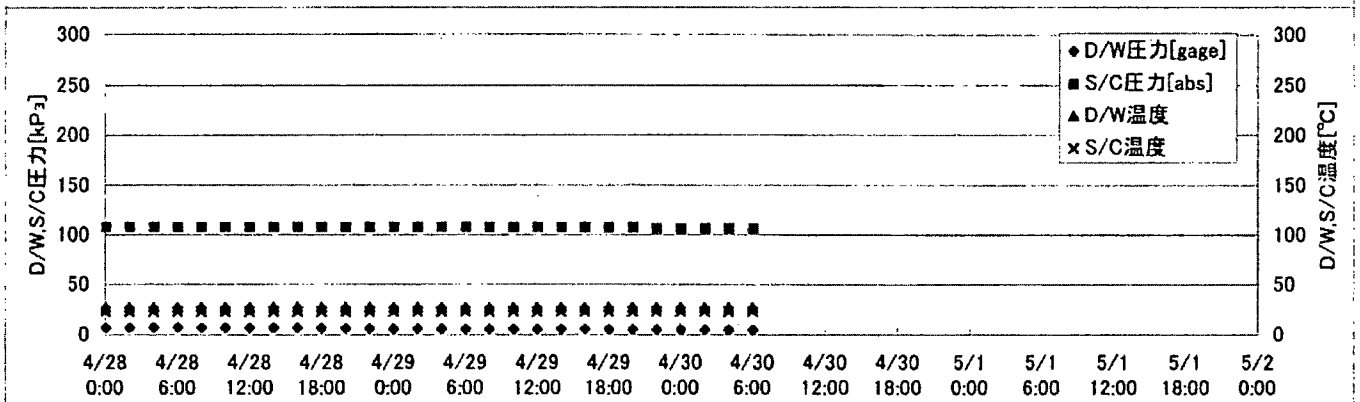
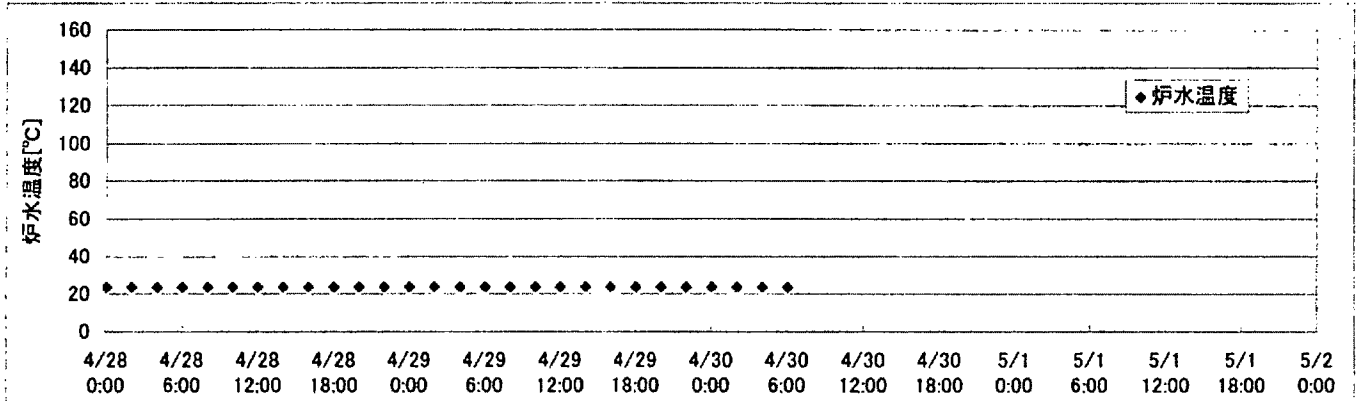
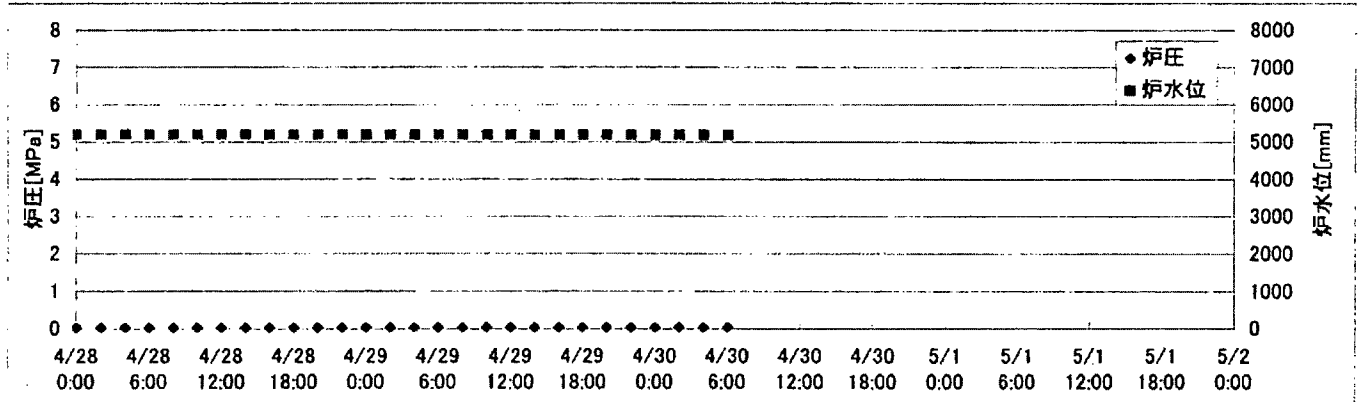
1F5/6 原子炉水温度、使用済燃料プール温度推移



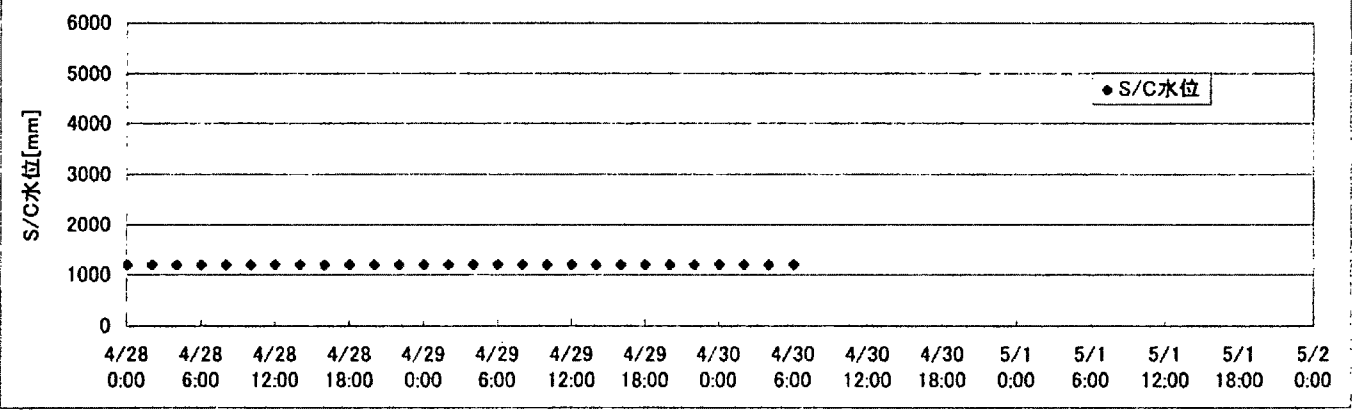
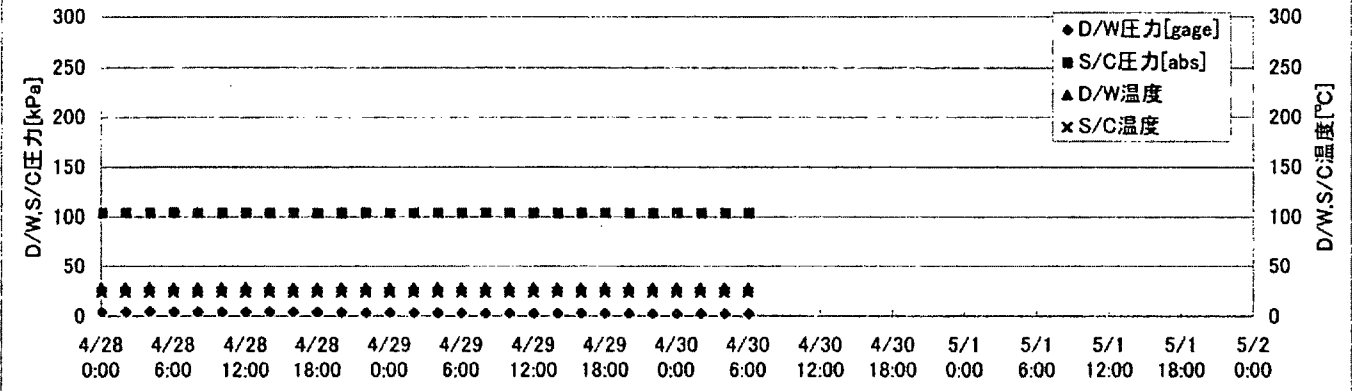
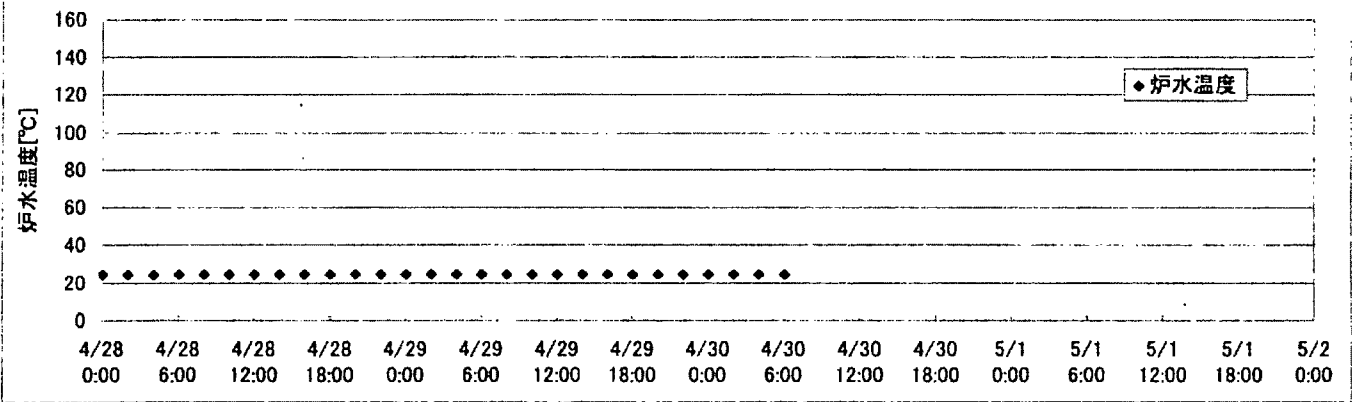
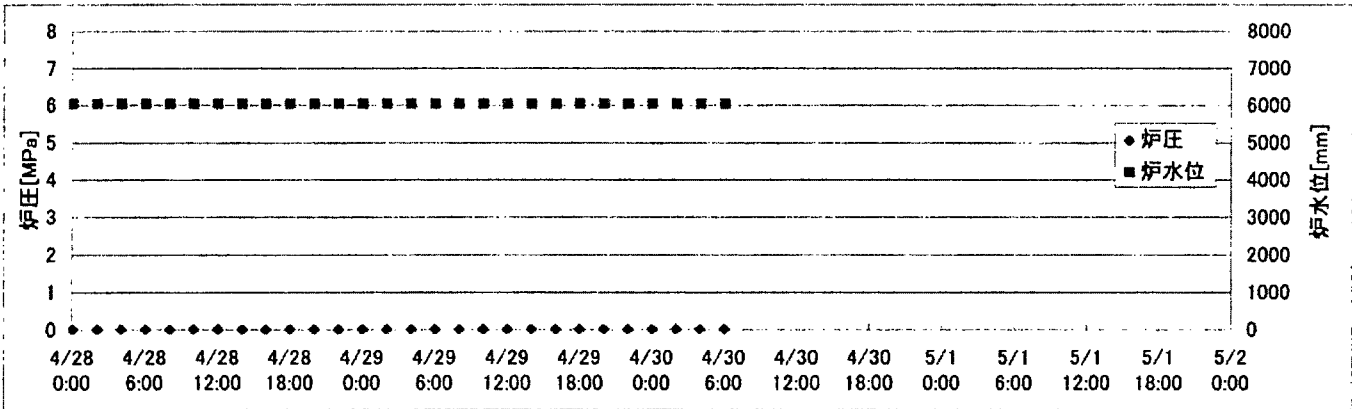
1F5/6 原子炉水温度・使用済燃料プール温度

	1F5 原子炉水温度	1F5 使用済燃料プール温度	1F6 原子炉水温度	1F6 使用済燃料プール温度
4/27 10:00	37.5	41.3	54.3	27.0
4/27 11:00	40.4	41.1	44.3	27.0
4/27 12:00	42.8	40.8	40.9	27.5
4/27 13:00	45.8	39.5	37.6	28.5
4/27 14:00	48.1	39.1	35.5	29.0
4/27 15:00	50.4	38.8	33.6	29.0
4/27 16:00	52.7	38.3	32.1	29.5
4/27 17:00	55.0	37.8	30.9	30.0
4/27 18:00	58.2	37.5	29.8	30.0
4/27 19:00	59.4	37.1	29.2	30.0
4/27 20:00	53.4	37.0	28.6	30.5
4/27 21:00	50.5	37.4	32.6	30.5
4/27 22:00	48.2	37.6	34.1	30.0
4/27 23:00	47.5	37.9	35.9	29.5
4/28 0:00	45.7	38.3	37.5	29.0
4/28 1:00	43.3	38.6	39.0	29.0
4/28 2:00	41.9	39.0	40.7	28.5
4/28 3:00	41.0	39.2	42.1	28.0
4/28 4:00	40.1	39.6	43.9	27.0
4/28 5:00	39.4	39.9	45.6	27.0
4/28 6:00	38.7	40.4	47.5	27.0
4/28 7:00	38.1	40.7	49.3	26.5
4/28 8:00	37.6	41.0	50.9	26.5
4/28 9:00	37.1	41.3	52.5	26.0
4/28 10:00	38.7	41.6	46.2	26.0
4/28 11:00	41.3	41.4	43.2	26.5
4/28 12:00	43.9	41.1	40.3	27.0
4/28 13:00	46.4	40.1	37.7	27.5
4/28 14:00	48.9	39.5	35.6	28.0
4/28 15:00	51.4	39.1	33.7	28.0
4/28 16:00	53.8	38.7	32.2	28.5
4/28 17:00	55.8	38.3	31.2	29.0
4/28 18:00	58.0	37.9	30.2	29.5
4/28 19:00	60.5	37.5	29.3	30.0
4/28 20:00	57.7	37.1	28.7	30.0
4/28 21:00	54.2	37.2	28.2	30.0
4/28 22:00	51.3	37.5	27.7	30.5
4/28 23:00	48.7	37.9	27.2	30.5
4/29 0:00	46.6	38.2	26.8	31.0
4/29 1:00	45.1	38.5	26.6	31.0
4/29 2:00	43.3	38.9	26.2	32.0
4/29 3:00	42.0	39.2	26.0	32.5
4/29 4:00	41.0	39.5	25.7	33.0
4/29 5:00	40.0	39.9	25.5	33.0
4/29 6:00	39.1	40.3	25.3	33.5
4/29 7:00	38.4	40.6	25.2	34.0
4/29 8:00	37.9	41.1	25.1	34.0
4/29 9:00	37.3	41.4	25.0	34.5
4/29 10:00	38.2	41.6	24.9	35.0
4/29 11:00	41.2	41.4	24.9	35.5
4/29 12:00	43.7	41.2	24.8	36.0
4/29 13:00	47.0	40.1	24.8	36.5
4/29 14:00	48.9	39.6	24.8	36.5
4/29 15:00	51.3	39.2	24.9	37.0
4/29 16:00	53.7	38.9	24.9	37.0
4/29 17:00	55.9	38.4	24.9	37.5
4/29 18:00	58.4	38.0	24.9	38.0
4/29 19:00	60.8	37.7	28.6	37.5
4/29 20:00	62.7	37.3	30.1	37.5
4/29 21:00	64.9	37.0	31.9	35.0
4/29 22:00	57.1	36.9	33.8	35.0
4/29 23:00	53.7	37.1	36.0	34.0
4/30 0:00	50.7	37.4	37.6	33.0
4/30 1:00	48.4	37.8	39.2	32.0
4/30 2:00	46.3	38.1	40.8	31.0
4/30 3:00	44.8	38.4	42.1	30.5
4/30 4:00	42.7	38.9	44.6	30.0
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4/30 6:00	40.7	39.6	47.7	29.0

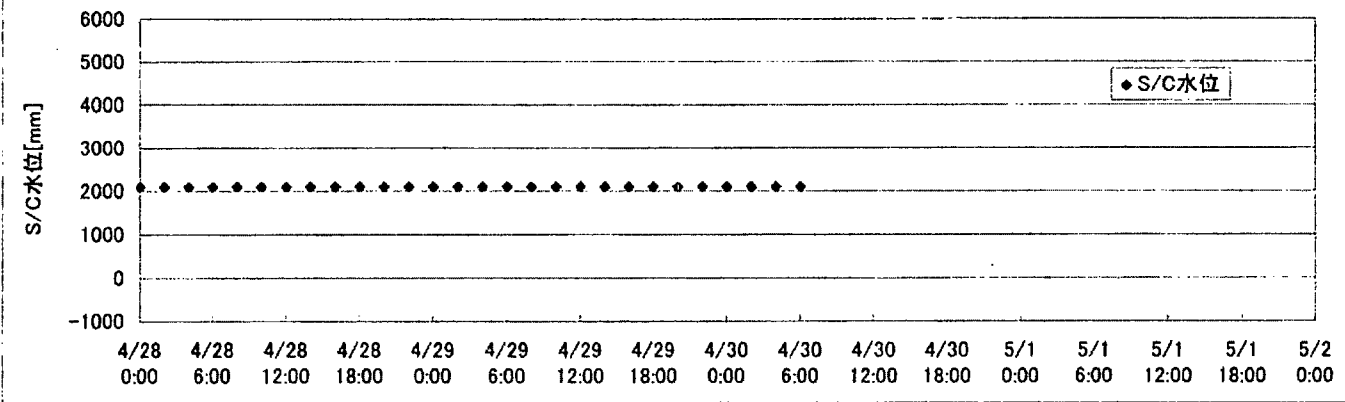
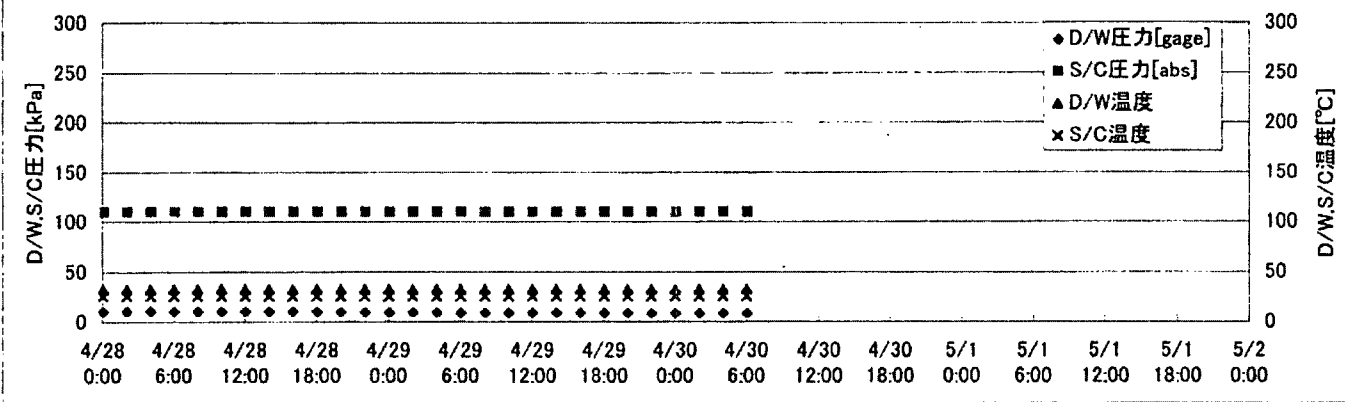
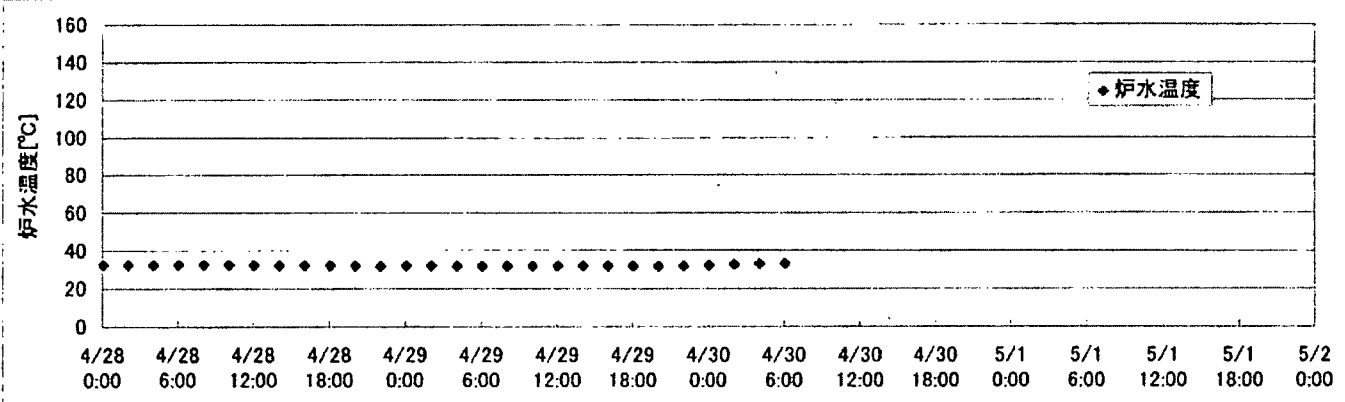
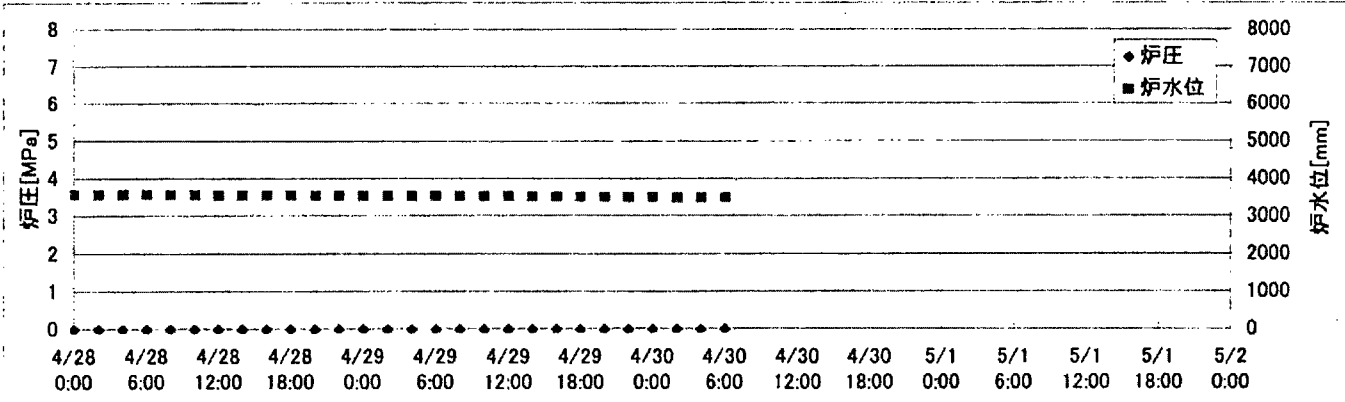
2F-1号機



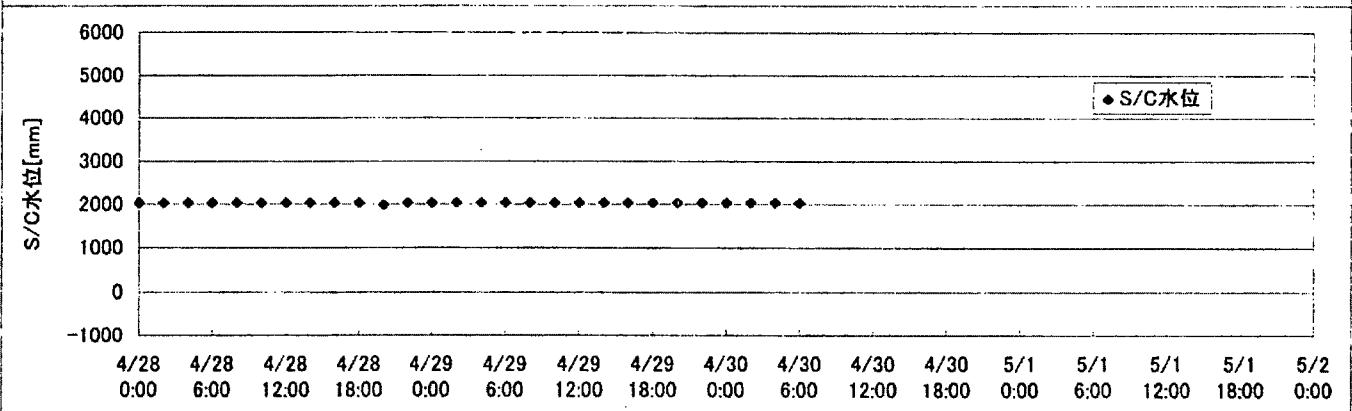
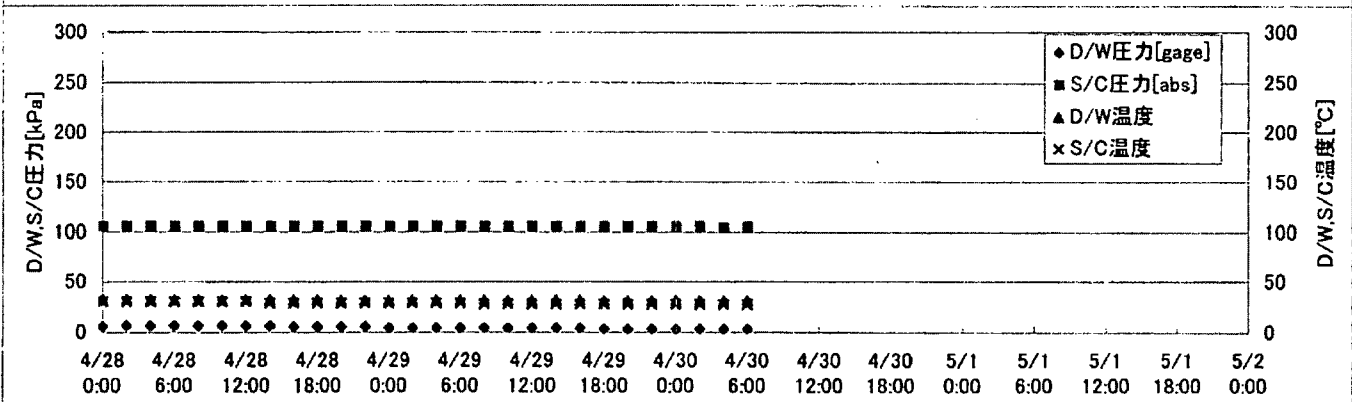
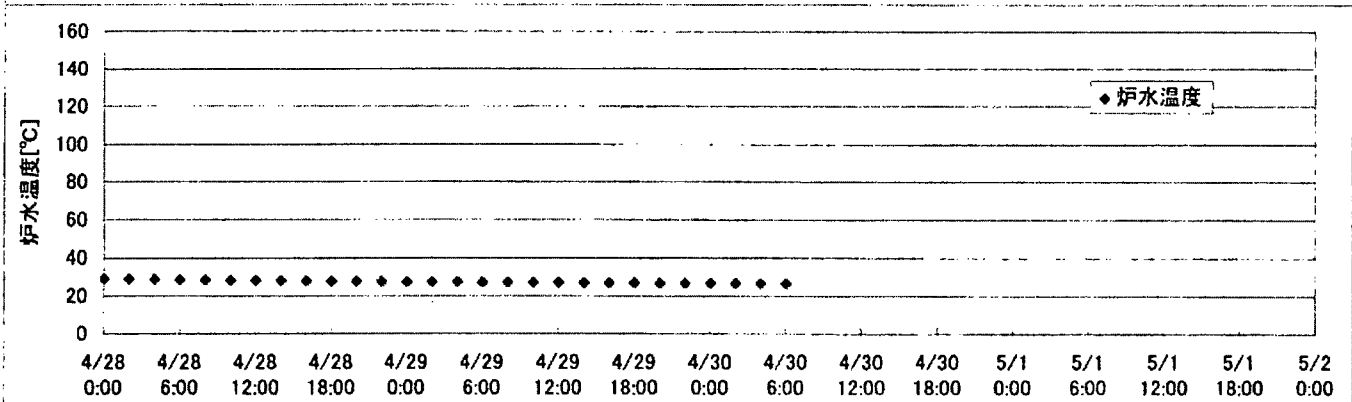
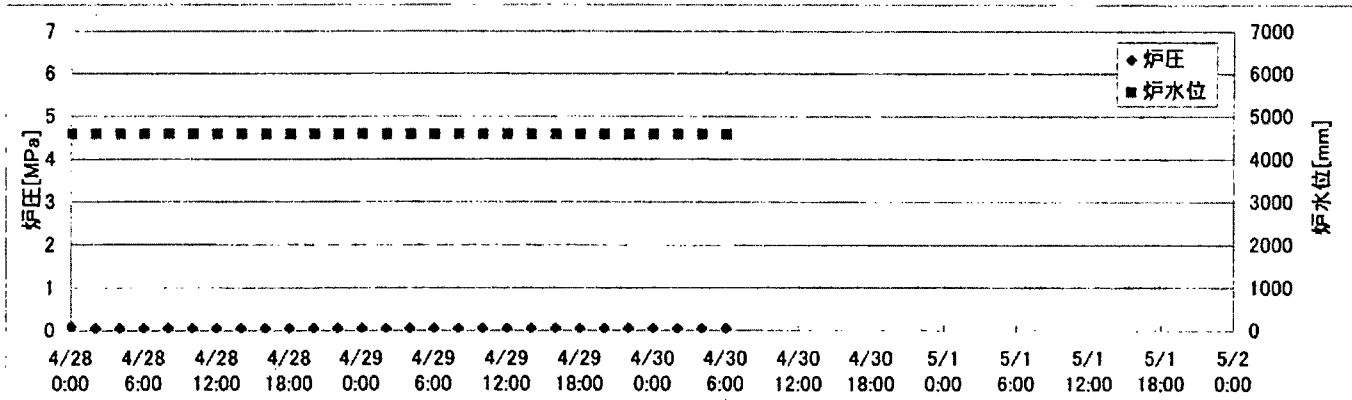
2F-2号機



2F-3号機



2F-4号機



2F-1号機 ※燃料頂部(TAF)からの水位=炉水位+4200[mm]

時間	炉圧 [MPa (gage)]	炉水位 [mm] 停止時	炉水温度[°C] 給水/スル温度	D/W圧力 [kPa(gage)]	D/W温度 [°C]	S/C圧力 [kPa(abs)]	S/C水位 [mm]	S/C温度 [°C]
2011/4/28 0:00	0.05	5200	23.9	7	27.5	108	2003	23
2011/4/28 2:00	0.05	5200	23.9	8	27.5	108	2002	23
2011/4/28 4:00	0.05	5200	23.9	8	27.5	108	2003	23
2011/4/28 6:00	0.05	5200	23.9	8	27.5	108	2003	23
2011/4/28 8:00	0.05	5200	23.9	7	27.5	108	2003	23
2011/4/28 10:00	0.05	5200	23.9	7	27.5	108	2002	23
2011/4/28 12:00	0.05	5200	23.9	7	27.5	108	2002	23
2011/4/28 14:00	0.05	5200	23.9	7	27.5	108	2002	23
2011/4/28 16:00	0.05	5200	23.9	7	27.5	108	2002	23
2011/4/28 18:00	0.05	5200	24.0	7	27.5	108	2002	23
2011/4/28 20:00	0.05	5200	24.0	7	27.4	108	2002	23
2011/4/28 22:00	0.05	5200	24.0	6	27.4	108	2003	23
2011/4/29 0:00	0.05	5200	24.0	6	27.5	108	2003	23
2011/4/29 2:00	0.05	5200	24.0	6	27.5	108	2004	23
2011/4/29 4:00	0.05	5200	24.0	6	27.4	108	2004	23
2011/4/29 6:00	0.05	5200	24.0	6	27.4	108	2004	23
2011/4/29 8:00	0.05	5200	23.9	6	27.5	108	2004	23
2011/4/29 10:00	0.05	5200	23.9	6	27.4	108	2004	23
2011/4/29 12:00	0.05	5200	23.9	6	27.4	108	2006	23
2011/4/29 14:00	0.05	5200	23.9	6	27.4	108	2005	23
2011/4/29 16:00	0.05	5200	23.9	6	27.4	108	2005	23
2011/4/29 18:00	0.05	5200	23.9	6	27.4	108	2004	23
2011/4/29 20:00	0.05	5200	23.9	5	27.4	108	2006	23
2011/4/29 22:00	0.05	5200	23.9	5	27.4	107	2006	23
2011/4/30 0:00	0.05	5200	23.9	5	27.4	107	2004	23
2011/4/30 2:00	0.05	5200	23.9	5	27.4	107	2004	23
2011/4/30 4:00	0.05	5200	23.9	5	27.4	107	2004	23
2011/4/30 6:00	0.05	5200	23.8	5	27.5	107	2004	23
2011/4/30 8:00								
2011/4/30 10:00								
2011/4/30 12:00								
2011/4/30 14:00								
2011/4/30 16:00								
2011/4/30 18:00								
2011/4/30 20:00								
2011/4/30 22:00								
2011/5/1 0:00								

2F-2号機

※燃料頂部(TAF)からの水位=炉水位+4200[mm]

時間	炉圧 [MPa (gage)]	炉水位 [mm] 停止時	炉水温度[°C] 給水/スル温度	D/W圧力 [kPa(gage)]	D/W温度 [°C]	S/C圧力 [kPa(abs)]	S/C水位 [mm]	S/C温度 [°C]
2011/4/28 0:00	0.04	6050	24.8	4.6	28.6	104	1200	24
2011/4/28 2:00	0.03	6050	24.8	4.9	28.5	104	1200	24
2011/4/28 4:00	0.03	6050	24.8	5.1	28.5	104	1200	24
2011/4/28 6:00	0.03	6050	24.9	5.0	28.4	104	1200	24
2011/4/28 8:00	0.03	6050	24.9	5.0	28.4	104	1200	24
2011/4/28 10:00	0.03	6050	24.9	5.0	28.5	104	1200	24
2011/4/28 12:00	0.04	6050	24.9	5.0	28.5	104	1200	24
2011/4/28 14:00	0.03	6050	24.9	5.0	28.4	104	1200	24
2011/4/28 16:00	0.03	6050	24.9	4.9	28.4	104	1200	24
2011/4/28 18:00	0.03	6050	24.9	4.7	28.4	104	1200	24
2011/4/28 20:00	0.03	6050	24.9	4.2	28.5	104	1200	24
2011/4/28 22:00	0.03	6050	24.9	4.1	28.4	104	1200	24
2011/4/29 0:00	0.03	6050	24.9	3.9	28.4	104	1200	24
2011/4/29 2:00	0.03	6050	24.9	3.9	28.4	104	1200	24
2011/4/29 4:00	0.03	6050	24.9	3.7	28.5	104	1200	24
2011/4/29 6:00	0.03	6050	24.9	3.5	28.4	104	1200	24
2011/4/29 8:00	0.03	6050	24.8	3.5	28.4	104	1200	24
2011/4/29 10:00	0.03	6050	24.8	3.4	28.4	104	1200	24
2011/4/29 12:00	0.03	6050	24.8	3.4	28.5	104	1200	24
2011/4/29 14:00	0.03	6050	24.8	3.4	28.4	104	1200	24
2011/4/29 16:00	0.03	6050	24.8	3.4	28.4	104	1200	24
2011/4/29 18:00	0.03	6050	24.8	3.2	28.4	104	1200	24
2011/4/29 20:00	0.03	6050	24.8	3.0	28.3	104	1200	24
2011/4/29 22:00	0.03	6050	24.8	2.9	28.3	104	1200	24
2011/4/30 0:00	0.03	6050	24.7	2.8	28.4	104	1200	24
2011/4/30 2:00	0.04	6050	24.7	2.8	28.3	104	1200	24
2011/4/30 4:00	0.03	6050	24.8	2.7	28.3	104	1200	24
2011/4/30 6:00	0.03	6050	24.7	2.7	28.4	104	1200	24
2011/4/30 8:00								
2011/4/30 10:00								
2011/4/30 12:00								
2011/4/30 14:00								
2011/4/30 16:00								
2011/4/30 18:00								
2011/4/30 20:00								
2011/4/30 22:00								
2011/5/1 0:00								

2F-3号機 ※燃料頂部(TAF)からの水位=炉水位+4200[mm]

時間	炉圧 [MPa (gage)]	炉水位 [mm] アブセット	炉水温度[°C] 給水/スル温度	D/W圧力 [kPa(gage)]	D/W温度 [°C]	S/C圧力 [kPa(abs)]	S/C水位 [mm]	S/C温度 [°C]
2011/4/28 0:00	0.00	3576	32.9	11	33.0	110	2100	26
2011/4/28 2:00	0.00	3575	32.8	11	33.0	110	2100	26
2011/4/28 4:00	0.00	3570	32.7	11	33.0	110	2100	26
2011/4/28 6:00	0.00	3570	32.9	11	33.0	110	2100	26
2011/4/28 8:00	0.00	3568	32.9	11	32.9	110	2100	26
2011/4/28 10:00	0.00	3565	32.8	11	33.1	110	2100	26
2011/4/28 12:00	0.00	3561	32.7	11	32.9	110	2100	26
2011/4/28 14:00	0.00	3558	32.6	11	33.0	110	2100	26
2011/4/28 16:00	0.00	3555	32.5	11	33.0	110	2100	26
2011/4/28 18:00	0.00	3555	32.5	11	33.1	110	2100	26
2011/4/28 20:00	0.00	3549	32.4	10	32.9	110	2100	26
2011/4/28 22:00	0.00	3549	32.3	10	32.8	110	2100	26
2011/4/29 0:00	0.00	3545	32.4	10	32.8	110	2100	26
2011/4/29 2:00	0.00	3545	32.4	10	32.8	110	2100	26
2011/4/29 4:00	0.00	3542	32.3	10	32.8	110	2100	26
2011/4/29 6:00	0.00	3538	32.3	10	32.8	110	2100	26
2011/4/29 8:00	0.00	3535	32.3	10	32.8	110	2100	26
2011/4/29 10:00	0.00	3532	32.3	10	32.8	110	2100	26
2011/4/29 12:00	0.00	3532	32.2	10	32.8	110	2100	26
2011/4/29 14:00	0.00	3524	32.2	10	32.8	110	2100	26
2011/4/29 16:00	0.00	3521	32.2	10	32.9	110	2100	26
2011/4/29 18:00	0.00	3520	32.1	9	32.8	110	2100	26
2011/4/29 20:00	0.00	3511	32.1	9	32.7	110	2100	26
2011/4/29 22:00	0.00	3506	32.1	9	32.6	110	2100	26
2011/4/30 0:00	0.00	3506	32.5	9	32.6	110	2100	26
2011/4/30 2:00	0.00	3502	33.1	9	32.7	110	2100	26
2011/4/30 4:00	0.00	3500	33.4	9	32.7	110	2100	26
2011/4/30 6:00	0.00	3497	33.5	9	32.8	110	2100	26
2011/4/30 8:00								
2011/4/30 10:00								
2011/4/30 12:00								
2011/4/30 14:00								
2011/4/30 16:00								
2011/4/30 18:00								
2011/4/30 20:00								
2011/4/30 22:00								
2011/5/1 0:00								

2F-4号機 ※燃料頂部(TAF)からの水位=炉水位+4200[mm]

時間	炉圧 [MPa (gage)]	炉水位 [mm] アッパセット	炉水温度[°C] 給水ノズル温度	D/W圧力 [kPa(gage)]	D/W温度 [°C]	S/C圧力 [kPa(abs)]	S/C水位 [mm]	S/C温度 [°C]
2011/4/28 0:00	0.10	4589	29.4	6	32.3	106	2050	30
2011/4/28 2:00	0.07	4589	29.3	7	32.5	106	2050	30
2011/4/28 4:00	0.07	4589	29.1	7	32.1	106	2050	30
2011/4/28 6:00	0.07	4589	29.0	7	31.7	106	2050	30
2011/4/28 8:00	0.07	4589	28.9	7	32.0	106	2050	30
2011/4/28 10:00	0.07	4589	28.7	7	31.8	106	2050	30
2011/4/28 12:00	0.07	4589	28.6	7	32.4	106	2050	30
2011/4/28 14:00	0.07	4589	28.5	7	31.9	106	2050	29
2011/4/28 16:00	0.07	4589	28.3	6	32.1	106	2050	29
2011/4/28 18:00	0.07	4589	28.2	6	32.1	106	2050	29
2011/4/28 20:00	0.07	4589	28.1	6	31.4	106	2000	29
2011/4/28 22:00	0.07	4589	28.0	6	31.2	106	2050	29
2011/4/29 0:00	0.07	4589	27.9	5	31.3	106	2050	29
2011/4/29 2:00	0.07	4589	27.9	5	31.6	106	2050	29
2011/4/29 4:00	0.07	4589	27.8	5	31.7	106	2050	29
2011/4/29 6:00	0.07	4589	27.7	5	31.6	106	2050	29
2011/4/29 8:00	0.07	4589	27.7	5	31.7	106	2050	28
2011/4/29 10:00	0.07	4589	27.6	5	31.6	106	2050	28
2011/4/29 12:00	0.07	4589	27.5	5	31.6	106	2050	28
2011/4/29 14:00	0.07	4589	27.4	5	31.7	106	2050	28
2011/4/29 16:00	0.07	4589	27.4	5	31.6	106	2050	28
2011/4/29 18:00	0.07	4589	27.3	4	31.4	106	2050	28
2011/4/29 20:00	0.07	4589	27.2	4	31.5	106	2050	28
2011/4/29 22:00	0.07	4589	27.2	4	31.5	106	2050	28
2011/4/30 0:00	0.07	4589	27.2	4	31.7	106	2050	28
2011/4/30 2:00	0.07	4589	27.1	4	31.5	106	2050	28
2011/4/30 4:00	0.07	4589	27.1	4	31.4	105	2050	28
2011/4/30 6:00	0.07	4589	27.0	4	31.6	106	2050	28
2011/4/30 8:00								
2011/4/30 10:00								
2011/4/30 12:00								
2011/4/30 14:00								
2011/4/30 16:00								
2011/4/30 18:00								
2011/4/30 20:00								
2011/4/30 22:00								
2011/5/1 0:00								

From: McDermott, Brian
Sent: Friday, April 29, 2011 5:35 PM
To: Morris, Scott
Subject: RE: RESPONSE - Slides for today's 05:30 briefing

NSIR was not tasked as far as I know

From: Morris, Scott
Sent: Friday, April 29, 2011 2:54 PM
To: Wiggins, Jim; Evans, Michele; McDermott, Brian
Cc: Sheron, Brian; Leeds, Eric; Virgilio, Martin
Subject: RE: RESPONSE - Slides for today's 05:30 briefing

All:

To my knowledge the ET Directors had not been informed ... not certain how NSIR missed this tasking.

The HQ response team is just wrapping up day shift here ... they are going to be in an "on call" status over the weekend and will resume normal staffing on Monday morning. My folks will address this issue then (i.e., we'll have the response team ET Director cover these routing 5:30 briefings).

Scott

From: Wiggins, Jim
Sent: Friday, April 29, 2011 2:42 PM
To: Evans, Michele; McDermott, Brian; Morris, Scott
Cc: Sheron, Brian; Leeds, Eric; Virgilio, Martin
Subject: Fw: RESPONSE - Slides for today's 05:30 briefing

We'll need a way to get the decision communicated to the ET Directors to get this transferred. Maybe the LT can organize the call.

From: Weber, Michael
To: Wiggins, Jim
Sent: Fri Apr 29 10:08:59 2011
Subject: RESPONSE - Slides for today's 05:30 briefing

Check with Brian Sheron. I thought that it had already been transferred after Monday's call. ET Directors should have been informed. If not, please follow through.

From: Wiggins, Jim
Sent: Friday, April 29, 2011 7:57 AM
To: Weber, Michael
Cc: Virgilio, Martin; Sheron, Brian; McDermott, Brian; Leeds, Eric; Evans, Michele
Subject: RE: RESPONSE - Slides for today's 05:30 briefing

Don't think NSIR got the word on the decision – at least I didn't. Earlier in the dialogue, I had come to the same conclusion....the ET Director could do it since the position is currently manned 24/7 so 5:50pm (or am) discussions aren't as much an impact as they would be if the line drew the task.

I think the continuity issue is not really a big deal....more symbolic than actual.

Who has the action to instruct the ET Directors? Presume it's NSIR.

From: Weber, Michael
Sent: Friday, April 29, 2011 7:35 AM
To: Wiggins, Jim
Cc: Virgilio, Martin; Sheron, Brian; Ruland, William; Merzke, Daniel
Subject: RESPONSE - Slides for today's 05:30 briefing

(b)(5)

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

From: Wiggins, Jim
Sent: Friday, April 29, 2011 6:17 AM
To: Sheron, Brian; Leeds, Eric
Cc: Virgilio, Martin; Weber, Michael; Evans, Michele; McDermott, Brian; Salus, Amy
Subject: FW: Slides for today's 05:30 briefing

(b)(5)

I'll have my Admin Asst set up a teleconference for Mon-Tues next week so we can develop a plan and communicate it up to the 17th and then to DOE.

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

From: McDermott, Brian
Sent: Friday, April 29, 2011 6:04 AM
To: Wiggins, Jim
Cc: Morris, Scott
Subject: Fw: Slides for today's 05:30 briefing

(b)(5)

Brian

Brian J. McDermott, Director
Division of Preparedness and Response

(b)(6) (mobile)

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

From: Lee, Richard
To: McDermott, Brian
Sent: Thu Apr 28 16:45:01 2011
Subject: FW: Slides for today's 05:30 briefing

Brian:

Forwarded to you in case you do not have it.

Richard

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

From: Peko, Damian [mailto:Damian.Peko@Nuclear.Energy.gov]
Sent: Thursday, April 28, 2011 4:23 PM
To: DL-NITsolutions
Cc: Garwin, Dick (IBM)
Subject: Slides for today's 05:30 briefing

This time with a subject line

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

From: Peko, Damian
Sent: Thursday, April 28, 2011 4:17 PM
To: DL-NITsolutions
Subject:

All

Attached are the slides for today's 05:30 briefing. The slides are PDFed as I believe it is easier for some to work with PDF files. Please let me know if you have any difficulty the files.

Thanks

Damian Peko

From: Sheron, Brian
Sent: Thursday, April 28, 2011 3:15 PM
To: HOO Hoc; ET01 Hoc
Subject: FW: Japan

Last one.....

From: Vicki Chandler [mailto:Vicki.Chandler@moore.org]
Sent: Thursday, April 28, 2011 11:54 AM
To: SCHU
Cc: Tji (tijcal@berkeley.edu); Adams, Ian; Aoki, Steven; Binkley, Steve; Budnitz, Bob; Sheron, Brian; Brinkman, Bill; DAGostino, Thomas; Garwin, Dick (EOP); Garwin, Dick (IBM); Finck, Phillip; Grossenbacher, John (INL); Hurlbut, Brandon; John Holdren; Kelly, John E (NE); Koonin, Steven; Lyons, Peter; McFarlane, Harold; Owens, Missy; Peterson, Per; Poneman, Daniel; Steve Fetter; Szilard, Ronaldo
Subject: RE: Japan

Yes, there are some measures in the nearby oceans, prior to the incident. It is my understanding some of this data are in a manuscript that is currently in press (Japanese and US scientists contributed to this manuscript). Many thanks! Any advice or pubs you all can point me to would be much appreciated.

Vicki

From: SCHU [mailto:SCHU@hq.doe.gov]
Sent: Thursday, April 28, 2011 8:51 AM
To: Vicki Chandler
Cc: Tji (tijcal@berkeley.edu); Adams, Ian; Aoki, Steven; Binkley, Steve; Budnitz, Bob; Sheron, Brian; Brinkman, Bill; DAGostino, Thomas; Garwin, Dick (EOP); Garwin, Dick (IBM); Finck, Phillip; Grossenbacher, John (INL); Hurlbut, Brandon; John Holdren; Kelly, John E (NE); Koonin, Steven; Lyons, Peter; McFarlane, Harold; Owens, Missy; Peterson, Per; Poneman, Daniel; Steve Fetter; Szilard, Ronaldo
Subject: RE: Japan

Vicki,

A baseline of data suggests to me that one would want to know what was the radioactivity before the accident at various distances and depths away from the reactor site and how the levels have changed after the accident.

My guess is there may/should be some data of radiation levels in the water before the accident that TEPCO of a regulatory agency may have. Accidental radioactive releases is a possibility, and one would want to monitor it.

The DOE is not willing to fund comprehensive data collection now.

It *would* be useful to know how quickly a given discharge into the ocean are diluted to levels that no longer pose a risk. There may already be studies on this question. I have copied the people on my science team, and they can contact you directly.

Steve

Steven Chu
Department of Energy

From: Vicki Chandler [mailto:Vicki.Chandler@moore.org]

Sent: Thursday, April 28, 2011 11:35 AM

To: SCHU; Holdren, John P.; Hurlbut, Brandon; Adams, Ian; Donald, Kirkl

Cc: Tji (tijcal@berkeley.edu); Adams, Ian; Aoki, Steven; Binkley, Steve; Budnitz, Bob; Sheron, Brian; Brinkman, Bill; DAgostino, Thomas; Garwin, Dick (EOP); Garwin, Dick (IBM); Finck, Phillip; Grossenbacher, John (INL); Hurlbut, Brandon; John Holdren; Kelly, John E (NE); Koonin, Steven; Lyons, Peter; McFarlane, Harold; Owens, Missy; Peterson, Per; Poneman, Daniel; Steve Fetter; Szilard, Ronaldo

Subject: RE: Japan

Thanks so much for responding to me so quickly. What our Foundation is trying to figure out is whether the requested investment of ~\$4M for a research cruise and analyses of samples collected on that cruise is needed in a time sensitive way to establish a baseline of data that can be compared with future studies. We can theoretically move quickly, but my Board wants to understand that this is in fact time critical, no US agency is willing or able to fund the proposed more comprehensive data collection NOW, compared to what has been done so far by the Japanese, and that in the future others will fund follow up experiments.

Regards,

Vicki

From: SCHU [mailto:SCHU@hq.doe.gov]

Sent: Thursday, April 28, 2011 8:28 AM

To: Vicki Chandler; Holdren, John P.; Hurlbut, Brandon; Adams, Ian; Donald, Kirkl

Cc: Tji (tijcal@berkeley.edu); Adams, Ian; Aoki, Steven; Binkley, Steve; Budnitz, Bob; Sheron, Brian; Brinkman, Bill; DAgostino, Thomas; Garwin, Dick (EOP); Garwin, Dick (IBM); Finck, Phillip; Grossenbacher, John (INL); Hurlbut, Brandon; John Holdren; Kelly, John E (NE); Koonin, Steven; Lyons, Peter; McFarlane, Harold; Owens, Missy; Peterson, Per; Poneman, Daniel; Steve Fetter; Szilard, Ronaldo

Subject: FW: Japan

Vicki,

The Japanese have been taking ocean samples off the coast. Our nuclear group can give you access to the data we. You should ask relevant Japanese officials for their data, which may be more extensive.

I have copied John Holdren, Head of OSTP, and Admiral Donald, who is a 4-start in nuclear navy (and part of the DOE) as well/

I will look around in other parts of the DOE as well. NOAA has most of the govt. research surface ships, so I am not hopeful. Finally. There is the matter of who will pay for this.

Steve Chu

Steven Chu
Department of Energy

From: Steven Chu [mailto:(b)(6)]

Sent: Thursday, April 28, 2011 8:55 AM

To: SCHU

Subject: Fwd: Japan

----- Forwarded message -----

From: **Vicki Chandler** <Vicki.Chandler@moore.org>

Date: Thu, Apr 28, 2011 at 7:35 AM

Subject: Re: Japan

To: "(b)(6)"

Dear Dr. Chu,

I'm following up on Tj's email. Our foundation has been approached by Ken Buessler at WHOI regarding a time sensitive need to obtain early estimates of the radiochemistry and radioecology within a 200 km area in the oceans near the Fukushima Daiichi nuclear power plant. (b)(5)

(b)(5)

I am appreciative of any advice you can provide me.

Regards,

Vicki Chandler
Chief Program Officer Science
Gordon and Betty Moore Foundation

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

From: Tjian PhD, Robert T [mailto:tjianr@hhmi.org]

Sent: Wednesday, April 27, 2011 05:56 PM

To: Steven Chu <(b)(6)>

Cc: Vicki Chandler

Subject: Japan

Hi Steve, I am giving your contact to Vicki Chandler, the Science Program Officer at the Moore Foundation because she, Gordon and Steve McCormack are thinking about sending a team to collect real time data at the nuclear spill site as a first critical step to monitor the long term consequences to ocean eco-systems etc. (b)(5)

(b)(5)

--
Steven Chu
Department of Energy

From: Sheron, Brian
Sent: Thursday, April 28, 2011 3:14 PM
To: HOO Hoc; ET01 Hoc
Subject: FW: sieze the opportunity
Attachments: Consequence Management Asset Briefing.pptx

FYI.

From: SCHU [mailto:SCHU@hq.doe.gov]
Sent: Thursday, April 28, 2011 8:28 AM
To: Aoki, Steven; Kelly, John E (NE); Binkley, Steve; Mueller, Stephanie; Leistikow, Dan; DAgostino, Thomas
Cc: Adams, Ian; Budnitz, Bob; Sheron, Brian; Brinkman, Bill; DAgostino, Thomas; Garwin, Dick (EOP); Garwin, Dick (IBM); Finck, Phillip; Grossenbacher, John (INL); Hurlbut, Brandon; John Holdren; Koonin, Steven; Lyons, Peter; McFarlane, Harold; Owens, Missy; Peterson, Per; Poneman, Daniel; Steve Fetter; Szilard, Ronaldo
Subject: sieze the opportunity

Steve Aoki, et al.

I put down on paper what I was saying on Tuesday.

I believe we can take the opportunity to use what happen in the Fukushima reactors to improve the predictive capability of the NARAC calculations. The purpose of NARAC modeling capability is outlined in slides 2 and 3.

Slide 2:

"Uses include:

- Assess dose and surface contamination downwind
- Provide guidance for the deployment of field teams
- Plan for AMS surveys

Develop PARs and make Protective Action Decisions"

Slide 3:

Event Information

- Weather data
- Nuclear, radiological, chemical, and biological source information
- Global terrain, land use, and population databases

Measurement data and observation"

As pointed out on slide 4, the AMS system is to be used "to confirm NARAC predictive computer models."

It is fair to say that the NARAC were not helpful in "providing protective guidance actions", in part because they did not take into account terrain and other relevant informaion.

We now know the time and wind direction history of the radiation releases at Fukushima. The local terrain is known. We also know where the contamination lies - in a narrow slice projecting northwest from the reactor. Still unknown, but could be estimated, are the details of how high the radioactive materials were thrown into the air. The time and local weather at the time of the largest radiation releases can be used to work backwards to get an idea of the mix of parameters: the amount and height of the aerosolized radioactive materials to understand the impact of the explosions and potential smoldering fires.

In short, the NARAC calculations can be upgraded so that they accurately predict the past events. WE will need better capabilities to provide

“Actionable Information for Preparedness & Response

- Hazard areas, health effects levels and exposed populations
- Casualty, fatality, and damage estimates
- Protective action guidance”

In the event a release of radiation, dangerous chemical contaminants, etc. occur in the US.

Steven Chu
Department of Energy



The Office of Emergency Response

NA-42

Consequence Management (CM) Assets





NARAC

Mission: Predictive Modeling
Activation: Immediate

Uses include:

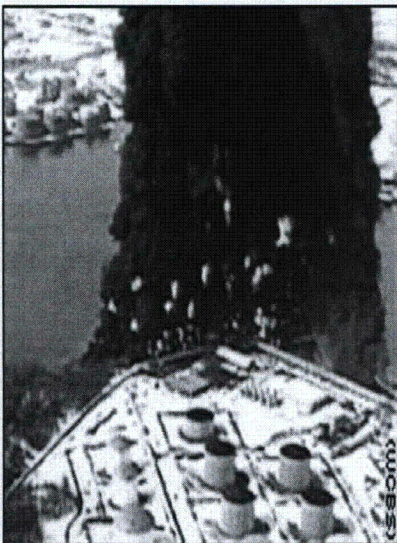
- Assess dose and surface contamination downwind
- Provide guidance for the deployment of field teams
- Plan for AMS surveys
- Develop PARs and make Protective Action Decisions



NARAC

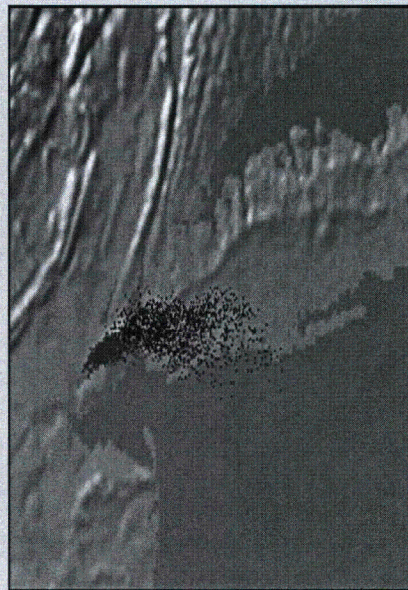
Event Information

- Weather data
- Nuclear, radiological, chemical, and biological source information
- Global terrain, land use, and population databases



Operational Modeling Tools and Services

- Advanced modeling tools
- 24/7/365 expert scientific staff (< 5 min reach-back)
- Detailed analysis, expert interpretation, quality assurance, and training
- Model-data fusion and source reconstruction



Actionable Information for Preparedness & Response

- Hazard areas, health effects levels and exposed populations
- Casualty, fatality, and damage estimates
- Protective action guidance





Aerial Measuring System (AMS) Mission

AMS provides responsive aerial measurements to detect, analyze, and map radioactive material on the ground before and during emergencies.

This includes Mission Planning, Acquisition, Post-Analysis, and Reporting.

- Provide initial data to RAP Teams and FRMAC
- Confirm NARAC predictive computer models
- Give initial assessment of ground deposition
- Detailed mapping of large areas
- Search for lost radioactive sources or scattered fragments





On-Call Response (OCR) Overview

Goal: Get data from large area quickly

Method: Fly high and fast

Beech King Air B-200

- Twin-engine turbo prop
- IFR (all weather) rated
- 260 knots (300 mph)
- Range 1,130 nm (1,300 sm)
- Max Endurance 5 hrs (without refueling)
- Avg. post-flight data processing time: 1 hour
- Data Products: Breadcrumb overlay plot
- Real-time data telemetry

Two, 4-person on-call response teams (RSL-Nellis and RSL-Andrews)

- 24 / 7 duty
- 2-hour recall, 4-hours wheels up



Four person crew:

- Pilot
- Co-pilot
- Scientist/Health Physicist
- Technician/Technologist





Aerial OCR Standby Locations

- **RSL-N** **Western Region (2 – B200s)**
- **RSL-A** **Eastern Region (1 – B200)**
National Capital Region (1 – Bell-412)
- **SRS** **Southeast (CBP P-3 or SRS Security helo)**



AMS Radiological Mapping Overview

Goal: Get more detailed data

Method: Fly low and slow

Bell-412

- Twin-Pac turboshaft engine
- IFR (all weather) rated
- 120 knots (140 mph)
- Range 360 nm (410 m)
- Max Endurance 3 hrs (without refueling)

Eight person crew:

- Flight Crew
 - Pilot (2)
 - Electronics Tech (1)
- Ground Crew
 - Mission Scientist
 - Data Scientist
 - Data Technician
 - Electronics Tech (1)
 - Helicopter Mechanic





Altitude Tradeoffs

**High Altitude / High Airspeed
(B-200)**

1000 ft



- Quick Answer
- Poor Spatial Detail
- Estimate of amount of radioactive material deposited

**Low Altitude / Low Airspeed
(Bell 412)**

200 ft



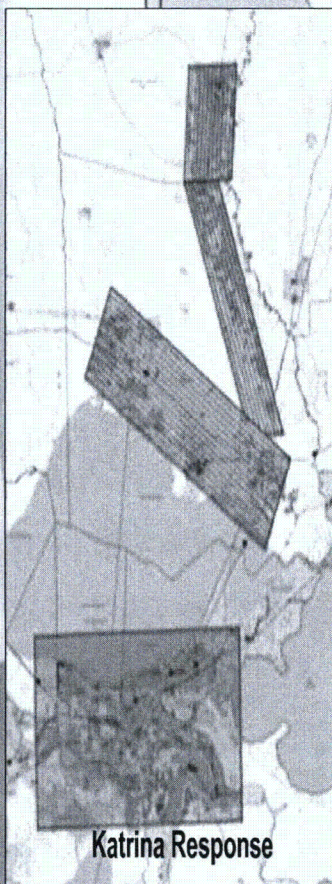
- Less Timely Answer
- Good Spatial Detail
- Characterization of radioactive material deposited



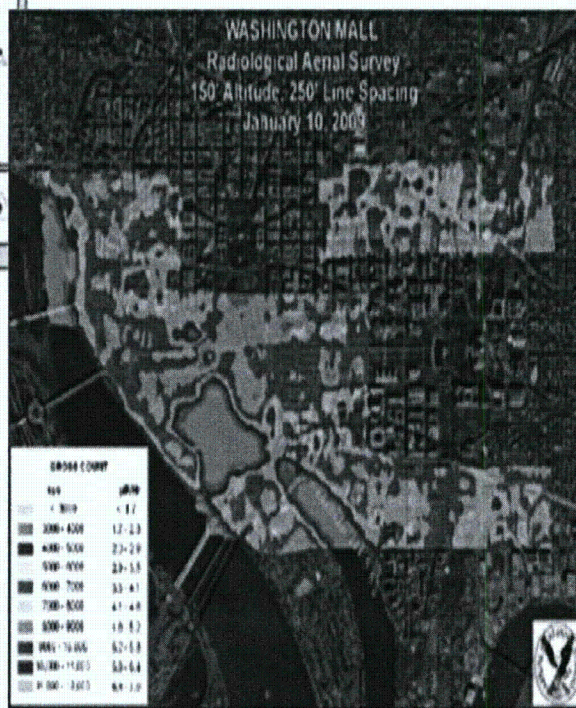
AMS Products



Helicopter
 Contour overlay plots

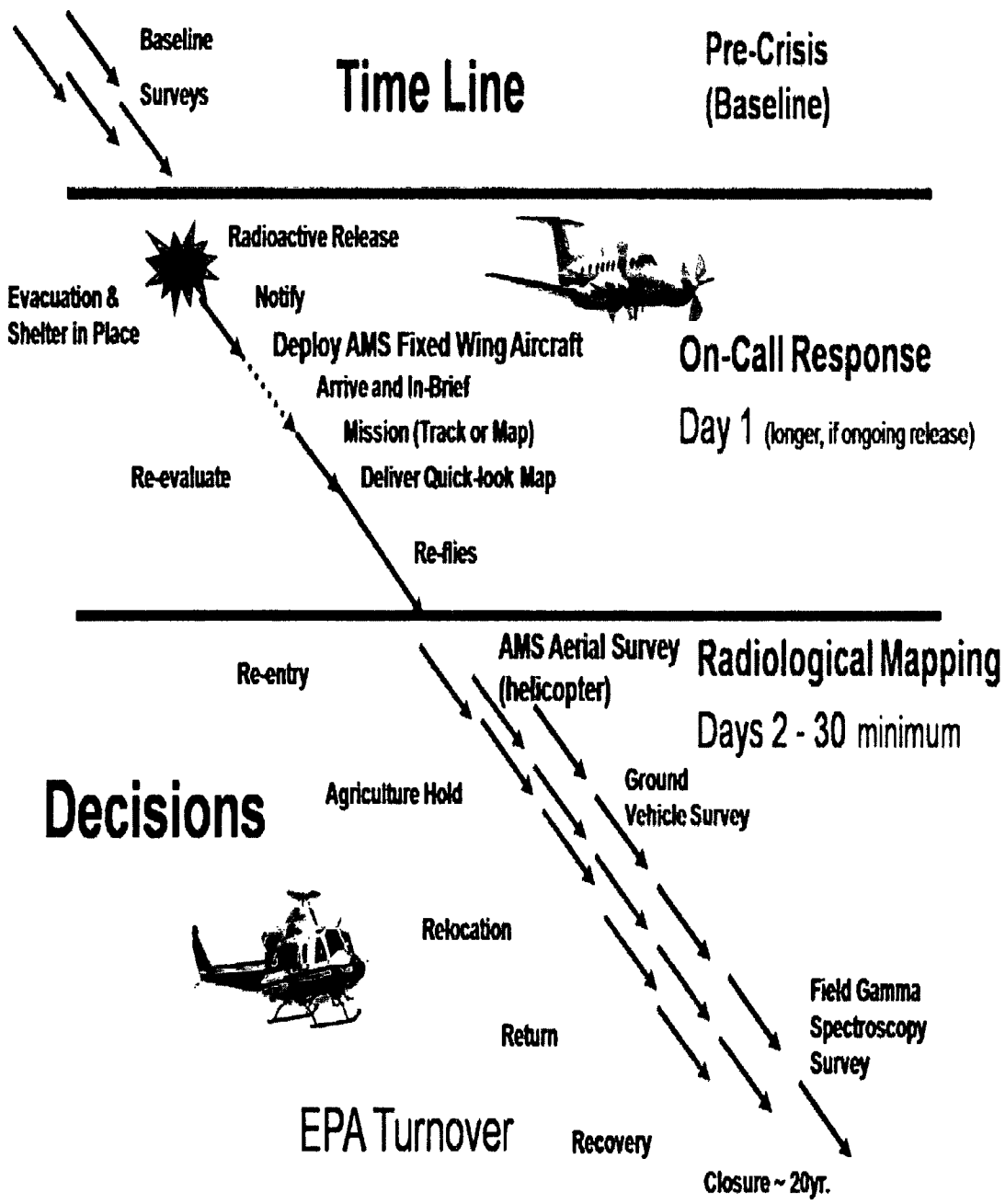


Fixed Wing
 Gross count and
 exposure rate
 breadcrumb plots





AMS Support Timeline



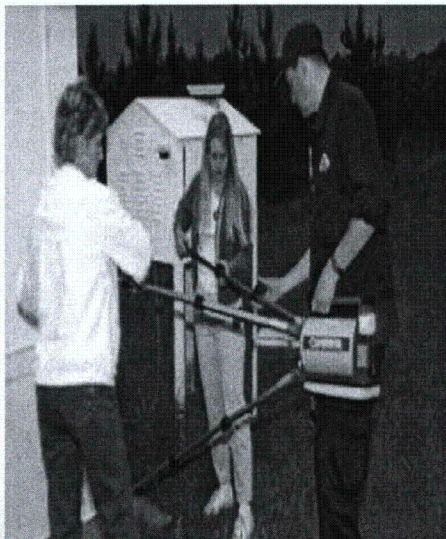
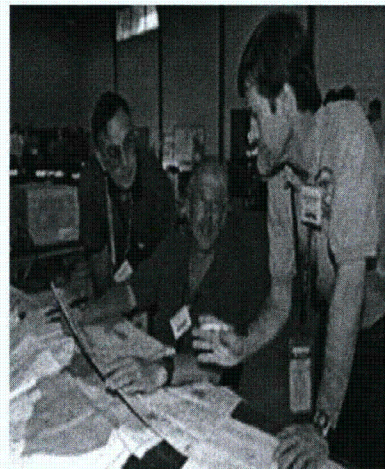


CM Response Team I (CMRT I)

Mission: Initial field element of FRMAC

Activation: 4 hours following notification

- Trained responders - 25
- Equipment – 3,500 pounds
- Operations – 24 hours (for limited time)



- Initial capabilities
 - Assessment
 - Geographical Information Systems
 - Health & Safety
 - Monitoring & Sampling
 - Five field teams
 - Logistics





CMRT I Capabilities

- Conduct "Advance Party" meeting
- 24-hour per day operations for up to 72 hours
- Limited monitoring, sampling, and in situ
- Assessment
- Health and Safety
- Geographic Information System (GIS)
- Secure communications
- Logistics planning
- Data collection infrastructure



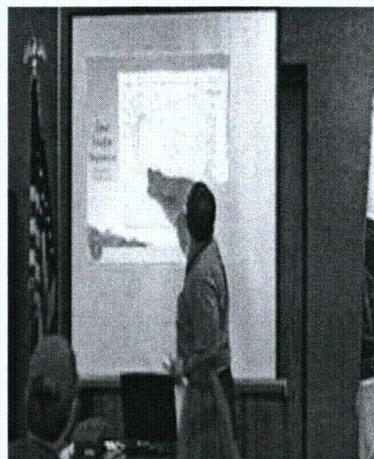


CM Response Team II (CMRT II)

Mission: Complete CMRT staffing for full 24-hour operations

Activation: 12 hours following notification

- **Additional responders – 38**
 - 24-hour/day operation for several weeks
 - Augmented monitoring, sampling and assessment
- **Additional equipment – 25,000 lbs.**
 - 20 field teams
- **Laboratory Analysis**
 - Sample receipt
 - Prepare samples for transport to labs
- **Training for additional responders**





CMRT II Capabilities

- Additional response personnel
- 24-hour per day operation for several weeks
- Augmented monitoring and assessment
- Augmented communication and logistics
- GIS support to state(s) and LFA
- Monitoring training for additional responders
- Coordination for a FRMAC response



Radiation Emergency Assistance Center/Training Site (REAC/TS)

Mission: Provide expertise in medical management of radiation injuries both domestically and internationally.

Activation: CONUS – 4 hours wheels up
OCONUS – 6 hours wheels up



A program of the DOE's
Institute for Science and
Education operated by
Oak Ridge Associated
Universities (ORAU)





REAC/TS Missions – 24/7

Support for the National Nuclear Security Administration (NA-42) with

- Radiation Medicine advice and consultation
- Health Physics radiation dose assessments
- Deployable Emergency Response Teams (ERT 1 & 2) for on-scene assistance:
 - ✓ Physician
 - ✓ Health Physicist
 - ✓ Nurse/Paramedic





REAC/TS Missions – 24/7

**Support for the U.S. DOE Office of Health, Safety
and Security (HS-13)**

- Maintain a Radiation Accident Registry for Radiation Medicine research
- Maintain registry of DTPA (diethylene-triamine-pentaacetate or pentatate) and Prussian Blue therapies
- Manage DTPA and Prussian Blue New Drug Application (NDA) status for the U.S. Food and Drug Administration (FDA)





International Emergency Response Capability

- Coordinates United States participation as a Collaborating Center in the World Health Organization's (WHO) Radiation Emergency Medical Preparedness and Assistance Network (REMPAN), Geneva, Switzerland

- Member of the Response Assistance Network (RANet) of the International Atomic Energy Agency (IAEA), Vienna, Austria

- ✓ Operates an IAEA Radiation Medicine fellowship program
 - 4 fellows in FY05-09 – MD's from the Philippines, Qatar, Egypt and Argentina



From: McDermott, Brian
Sent: Tuesday, April 26, 2011 1:41 PM
To: Holahan, Patricia; Sheron, Brian
Subject: RE: RESPONSE - DOE Science Experts Briefing Slides 25 April 2011

Understand. I did leave a message for John Kelly last night....if he calls back, I will refer him to Fred.

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

From: Holahan, Patricia
Sent: Tuesday, April 26, 2011 7:24 AM
To: Sheron, Brian
Cc: McDermott, Brian
Subject: RE: RESPONSE - DOE Science Experts Briefing Slides 25 April 2011

I had already talked to Brian McDermott about it and he was going to call John Kelly so I'll let him know that he doesn't have to.

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

From: Sheron, Brian
Sent: Tuesday, April 26, 2011 7:16 AM
To: Holahan, Patricia
Subject: FW: RESPONSE - DOE Science Experts Briefing Slides 25 April 2011

Trish, see below. Per Mike Weber, NRR has the lead so you don't need to call John Kelly.

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

From: Weber, Michael
Sent: Monday, April 25, 2011 6:49 PM
To: Sheron, Brian
Subject: RESPONSE - DOE Science Experts Briefing Slides 25 April 2011

Thanks, Brian. Remind me to tell you about the Chairman's call with Assistant Secretary Lyons this morning, which was a follow-up to our conversation last week. NRR will take the lead on the detailed accident summary. You may need to introduce John Kelly to Fred Brown.

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

From: Sheron, Brian
Sent: Monday, April 25, 2011 4:39 PM
To: HOO Hoc; ET01 Hoc; RST01 Hoc
Cc: Weber, Michael; Virgilio, Martin
Subject: FW: DOE Science Experts Briefing Slides 25 April 2011



FYI.

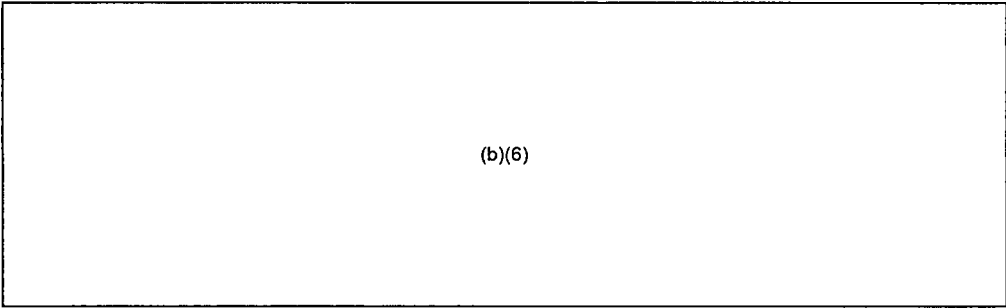
-----Original Message-----

From: Peko, Damian [mailto:Damian.Peko@Nuclear.Energy.gov]
Sent: Monday, April 25, 2011 4:29 PM
To: Kelly, John E (NE); Larzelere, Alex; DL-NITsolutions; Shields, Martha; Schneider, Steve

Subject: DOE Science Experts Briefing Slides 25 April 2011

Attached are the slides for today's 05:00 Science briefing.

From: RST01 Hoc
Sent: Thursday, April 21, 2011 5:06 PM
To:



Subject: FW: High concentration of Cs-137 found in Unit 2 pool
Attachments: F2-pool.txt; 1F2 Pool Cooling Years.pdf

FYI

From: Garchow, Steve
Sent: Thursday, April 21, 2011 4:07 AM
To: RST01 Hoc
Subject: FW: High concentration of Cs-137 found in Unit 2 pool

From: Gauntt, Randall O [mailto:rogaunt@sandia.gov]
Sent: Thursday, April 21, 2011 1:52 AM
To: Garchow, Steve
Subject: FW: High concentration of Cs-137 found in Unit 2 pool

From: Gauntt, Randall O
Sent: Wednesday, April 20, 2011 8:33 PM
To: (b)(6)
Subject: FW: High concentration of Cs-137 found in Unit 2 pool

Excellent analysis Steve.

I am sending you a diagram of the 1F2 Pool Loading that shows the location of fuel assemblies of various ages in the pool. The last offload is indicated by "0" years, meaning 1-365 days old. There appear to be 112 of them, all gathered on the West end of the pool, clustered together. By the way, in the U.S. following from analytical and experimental studies of spent fuel pool vulnerability to loss of water accidents done at Sandia, there is significant reduction in Zr-fire risk by spreading the fuel out in a salt/pepper manner. This is now offloading practice in U.S. spent fuel pools across the fleet. The memo on that apparently did not reach Fukushima.

Based on isotopics I got from GE on the 105-day offload fuel in SFP-4, the proportions of iodine-131, Cs-134 and Cs-137 should be:

I-131 - 1.4E1
Cs-134 - 3.4E4
Cs-137 - 2.8E4

or, normalized to iodine

I131/Cs134/Cs137 - 1 / 2430 / 2000

The older fuel in the pool would have vanishingly small amounts of iodine I think.

The measured 1F2 isotopics are apparently: 1 / 40 / 36 - too much iodine to be solely from spent fuel I'm pretty sure, and too much cesium to be solely from reactor release.

For comparison, the isotopics for recent reactor accident releases, accounting for iodine decay, should be in the neighborhood of: 1 / 4.8 / 3.2

Could be a mix of contamination from reactor fallout and damaged fuel in the pool ?

The total activity as you calculated come out at ~200 TBq or about 6000 Curies. As I recall, the Unit 4 pool had water content of about 6 Curies in the whole pool in comparison. This is 1000 times more than found in the unit 4 pool. That difference can't be explained by different amounts of contaminated sea water as surely there was not 1000 times more sea water put into pool 2. (I don't recall if sea water was ever put into the Unit 2 pool).

If I did the numbers right, each assembly of 105-day offload fuel has about 63,000 Curies and with 112 assemblies indicated at 0 years, would come to a potential of 7E6 Curies.

The way the fuel was offloaded, clustered together like they are, our MELCOR code would predict release of ~80% of that inventory in a Zr-fire. Once initiated, the fire generally goes to completion until Zr metal is converted to oxide. So a fire would likely result in orders of magnitude large cesium content that measured.

Perhaps the observations are representative of some mechanical damage and leaching out of Cs content in any of the fuel assemblies, old or new, and some additional fallout of recent reactor releases to get the iodine ratio up.

best regards

Randall Gauntt
Sandia National Laboratories

From: Lee, Richard [Richard.Lee@nrc.gov]
Sent: Wednesday, April 20, 2011 4:27 PM
To: Esmaili, Hossein; Gauntt, Randall O; Gauntt, Randy (home); Salay, Michael
Subject: FW: High concentration of Cs-137 found in Unit 2 pool

From: Fetter, Steve [mailto:(b)(6)]
Sent: Wednesday, April 20, 2011 6:03 PM
To: DL-NITsolutions
Subject: High concentration of Cs-137 found in Unit 2 pool

Analysis of the water in the Unit 4 spent fuel pool released Friday showed low levels of radioactivity consistent with little or no significant fuel damage (~90 Bq/cm³ Cs137). The relatively high I-131:Cs-137 activity ratio (2.5:1) in the water is consistent with a release from the reactor cores of units 1-3 (perhaps from early injection of contaminated seawater into the pool and/or condensation of vented steam).

But an analysis of the water in the Unit 2 spent fuel pool released today indicates fuel damage: 150,000 Bq/cm³ Cs-137. The low I-131:Cs-137 ratio (1:40) precludes the possibility that the Cs in the pool water could have come from the reactor core. I was unaware the spent fuel in the unit 2 pool might have been damaged.

The water capacity of the unit 2 pool is 1425 m³. A concentration of 150,000 Bq/cm³ is therefore equal to a total of about 200 TBq dissolved in the pool water.

The core inventory of Cs-137 for an average discharge burnup of 50 MWd/kg_U is about 6 TBq/kg_U.^{*} The unit 2 pool has 587 assemblies, each of which contain 183 kg_U, for a total of about 100,000 kg_U, so the inventory is about 600,000 TBq of Cs-137. The amount of Cs-137 in the water therefore represents about 200/600,000 ~ 0.03% of the amount in the fuel.

RASCAL table 2.1 assumes that spent fuel that is mechanically damaged while under water will release 0.3% of the Cs (a “cold gap” release). RASCAL assumes a 3% release of Cs if the cladding is damaged due to overheating, but there is no cladding fire (a “hot gap” release). So the concentration of Cs-137 in the pool is consistent with mechanical damage to about 10 percent of the fuel, or thermal damage to 1 percent.

This is another puzzle. Unit 2 is the only unit not to have experienced an explosion that destroyed the service floor area. Thus, it seems unlikely that spent fuel could have experienced extensive mechanical damage (e.g., due to falling debris). Unit 2 also is the only unit to have a functioning cooling system for the spent fuel pools. Does the fuel damage indicate that this system did not work for an extended period of time?

^{*}(50 MWd/kg_U)(fission/190 MeV)(MeV/1.6E-13 J)(1E6 J/MW-s)(24*3600 s/d)(0.061 Cs137/fission)(Bq-s/dis)(ln(2) dis/30.17 y)(y/3.15E7 s) = 6 TBq/kg_U

6	7	8	9

24	4	4	4	4	4	4	4	4	4	
	0	1	2	3	4	5	6	7	8	9
23	4	4	4	4	4	4				

24	C	C	C	C					DF	
	0	1	2	3	4	5	6	7	8	9
23	SBG	SBG	SBG	SBG					DF	

6	7	8	9

22	4	4	4	4	4	4	4	4	2	
	0	1	2	3	4	5	6	7	8	9
21	4	4	4	4						

22	0	1	2	3	4	5	6	7	8	9
21										

6	7	8	9

20	4	4								
	0	1	2	3	4	5	6	7	8	9
19	4			7						

20	0	1	2	3	4	5	6	7	8	9
19										

6	7	8	9

18	4	4	7	7	7	7	7	7	7	7
	0	1	2	3	4	5	6	7	8	9
17	7	7	7	5	5	9	9	9	9	7

18	0	1	2	3	4	5	6	7	8	9
17										

6	7	8	9

16	9	9	5	5	9	9	9	9	5	5
	0	1	2	3	4	5	6	7	8	9
15										

16	0	1	2	3	4	5	6	7	8	9
15	FF	FF	FF							

6	7	8	9

14	0	1	2	3	4	5	6	7	8	9
13										

14	0	1	2	3	4	5	6	7	8	9
13										

6	7	8	9

				5						
12	0	1	2	3	4	5	6	7	8	9
11										

12	7									
11	0	1	2	3	4	5	6	7	8	9

6	7	8	9
4	4	4	

		7	7	7						
10	0	1	2	3	4	5	6	7	8	9
9										

10	0	1	2	3	4	5	6	7	8	9
9	FF	FF	FF							

7	4	4	4
4	4	4	4

						7	7			
8	0	1	2	3	4	5	6	7	8	9
7										

8	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
7	FF	7	FF	7	FF	FF	FF	FF	FF	FF

7	4	4	4
4	4	4	4

						7	7	7		
6	0	1	2	3	4	5	6	7	8	9
5										

6	0	1	2	3	4	5	6	7	8	9
5						FF	FF	FF	FF	

7	4	4	4
4	4	4	4

4	0	1	2	3	4	5	6	7	8	9
3						5				

4	0	1	2	3	4	5	6	7	8	9
3										

D

31			2	2	2	2	2	2	2	
30			2	2	2	1	5	5	5	1
29	29							7	7	7

31	2	2	2
30	2	2	2
29	2	2	2

28	2	2	2	2	2	2			1	1
27	2	2	2	2	2	2				5
26	2	2	2	2	2	1	1	1	1	1

28	0	0	0
27	0	0	0
26	0	0	0

25	0	0	0	0						
24	7	7	7	7	7	7	1	1	1	1
23							1	1	1	1

25	0	0	0
24	0	0	0
23	0	0	0

22	5	5	5	5	5	5	5	5	5	5
21	5	5	5	5	5	5	5	5	5	5
20										

22	7	7	7
21	7	7	2
20	2	2	2

19	2	2	2	5	5	5	5	5	5	1
18	9	7	7	7	7	7	7	9	1	1
17	2	2	9	9	9	9	9	9	9	9

19	0	0	0
18	0	0	0
17	0	0	0

16	2	2	2	2	2	2	7	7	7	7
15	2	2								
14										

16	0	0	0
15	0	0	0
14	0	0	

13	2	2	2	2	2	2	7	7	7	7
12	2	2	2	2	2	2	9	9	1	
11	7	7	9	9	9	1	1	1	1	1

13			
12	1	1	1
11	1	1	1

10	1	1	1	1	1	1	1	1	1	1
9	2	2	2	2	2	2	2	2	2	1

10	1	1	1
9	1	1	1

8	2	2	2	2	1	2	1	1	1	1
7	2	2	1	1	1	1	1	1	1	5

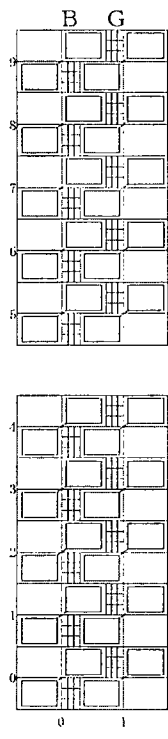
8			
7			

6	2	2	1	1	1	1	5	1	1	
5	2	2	1	1	1	1	1	1	5	5

6			
5			

4	1	1	5	5	5	1	5	5	5	1
3	5	5	1	1	9	5	9	9	1	1

4			
3			



CD-71 of 2457

Fukushima unit 2 pool
actinides page 1

concentrations, grams

	initial	0.0 d
he	9.059E+01	9.059E+01
u	9.558E+07	9.558E+07
np	4.727E+04	4.727E+04
pu	8.782E+05	8.782E+05
am	2.737E+04	2.737E+04
cm	4.255E+03	4.255E+03
totals	9.653E+07	9.653E+07

element

basis =587 assemblies

radioactivity, curies

assemblies

	initial	0.0 d
th231	1.438E+00	1.438E+00
th234	3.175E+01	3.175E+01
pa233	3.333E+01	3.333E+01
pa234m	3.175E+01	3.175E+01
u232	1.521E+00	1.521E+00
u234	1.129E+02	1.129E+02
u235	1.438E+00	1.438E+00
u236	3.207E+01	3.207E+01
u237	2.602E+02	2.602E+02
u238	3.175E+01	3.175E+01
np237	3.333E+01	3.333E+01
np238	4.073E+00	4.073E+00
np239	2.710E+03	2.710E+03
pu236	2.057E+01	2.057E+01
pu237	6.393E+00	6.393E+00
pu238	3.217E+05	3.217E+05
pu239	2.745E+04	2.745E+04
pu240	5.652E+04	5.652E+04
pu241	1.087E+07	1.087E+07
pu242	2.503E+02	2.503E+02
am241	4.705E+04	4.705E+04
am242m	9.050E+02	9.050E+02
am242	9.010E+02	9.010E+02
am243	2.710E+03	2.710E+03
cm242	9.258E+05	9.258E+05
cm243	2.060E+03	2.060E+03
cm244	3.070E+05	3.070E+05
cm245	2.182E+01	2.182E+01
cm246	5.126E+00	5.126E+00
total	1.256E+07	1.256E+07

nuclide

basis =587

power, watts

assemblies

	initial	0.0 d
tl	6.690E-03	6.690E-03
bi	1.333E-02	1.333E-02
po	5.964E-02	5.964E-02
rn	3.022E-02	3.022E-02
ra	2.732E-02	2.732E-02
th	4.089E-02	4.089E-02
pa	2.410E-01	2.410E-01
u	5.515E+00	5.515E+00
np	7.825E+00	7.825E+00
pu	1.363E+04	1.363E+04
am	1.659E+03	1.659E+03
cm	4.459E+04	4.459E+04
totals	5.989E+04	5.989E+04

element thermal

basis =587

concentrations, grams

element

basis =587 assemblies

	initial	0.0 d
h	7.410E+00	7.410E+00
he	1.407E+02	1.407E+02
li	1.166E+00	1.166E+00
be	1.223E+00	1.223E+00
ne	5.177E-01	5.177E-01
ge	4.539E+01	4.539E+01
as	1.376E+01	1.376E+01
se	6.477E+03	6.477E+03
br	2.530E+03	2.530E+03
kr	4.388E+04	4.388E+04
rb	4.225E+04	4.225E+04
sr	1.029E+05	1.029E+05
y	5.533E+04	5.533E+04
zr	4.341E+05	4.341E+05
nb	2.531E+02	2.531E+02
mo	4.060E+05	4.060E+05
tc	9.524E+04	9.524E+04
ru	2.730E+05	2.730E+05
rh	5.436E+04	5.436E+04
pd	1.596E+05	1.596E+05
ag	8.908E+03	8.908E+03
cd	9.593E+03	9.593E+03
in	1.833E+02	1.833E+02
sn	5.821E+03	5.821E+03
sb	1.495E+03	1.495E+03
te	5.624E+04	5.624E+04
i	2.342E+04	2.342E+04
xe	6.413E+05	6.413E+05
cs	3.337E+05	3.337E+05
ba	1.859E+05	1.859E+05
la	1.476E+05	1.476E+05
ce	2.974E+05	2.974E+05
pr	1.354E+05	1.354E+05
nd	4.819E+05	4.819E+05
pm	1.231E+04	1.231E+04
sm	9.069E+04	9.069E+04
eu	1.645E+04	1.645E+04
gd	1.329E+04	1.329E+04
tb	2.574E+02	2.574E+02
dy	1.221E+02	1.221E+02
ho	8.217E+00	8.217E+00
er	2.743E+00	2.743E+00
totals	4.138E+06	4.138E+06

radioactivity, curies

assemblies

nuclide

basis =587

	initial	0.0 d
h 3	6.240E+04	6.240E+04
kr 85	1.014E+06	1.014E+06
rb 86	6.321E+01	6.321E+01
sr 89	1.565E+06	1.565E+06
y 89m	1.456E+02	1.456E+02
sr 90	8.681E+06	8.681E+06
y 90	8.686E+06	8.686E+06
y 91	2.942E+06	2.942E+06
zr 93	2.158E+02	2.158E+02
nb 93m	3.470E+01	3.470E+01
zr 95	5.062E+06	5.062E+06
nb 95	9.937E+06	9.937E+06
nb 95m	5.954E+04	5.954E+04
tc 99	1.630E+03	1.630E+03
rh102	7.110E+01	7.110E+01
ru103	1.571E+06	1.571E+06
rh103m	1.569E+06	1.569E+06
ru106	1.861E+07	1.861E+07
rh106	1.861E+07	1.861E+07
ag110	1.028E+03	1.028E+03
ag110m	7.556E+04	7.556E+04
cd113m	3.916E+01	3.916E+01
cd115m	5.929E+02	5.929E+02
sn119m	1.945E+03	1.945E+03
sn121	1.152E+03	1.152E+03
sn121m	1.485E+03	1.485E+03
sn123	1.560E+04	1.560E+04
te123m	4.888E+01	4.888E+01
sb124	2.490E+03	2.490E+03
sb125	5.579E+05	5.579E+05
te125m	1.355E+05	1.355E+05
sn126	6.200E+01	6.200E+01
sb126m	6.200E+01	6.200E+01
te127	1.242E+05	1.242E+05
te127m	1.268E+05	1.268E+05
te129	1.909E+04	1.909E+04
te129m	2.979E+04	2.979E+04
xe131m	2.632E+01	2.632E+01
cs134	9.282E+06	9.282E+06
cs135	5.762E+01	5.762E+01
cs136	1.271E+02	1.271E+02
cs137	1.209E+07	1.209E+07
ba137m	1.142E+07	1.142E+07

ba140	2.407E+03	2.407E+03
la140	2.772E+03	2.772E+03
ce141	7.918E+05	7.918E+05
pr143	4.037E+03	4.037E+03
ce144	2.823E+07	2.823E+07
pr144	2.824E+07	2.824E+07
pr144m	3.953E+05	3.953E+05
pm146	2.053E+01	2.053E+01
nd147	1.942E+02	1.942E+02

radioactivity, curies

nuclide

basis =587

assemblies

	initial	0.0 d
pm147	1.142E+07	1.142E+07
pm148	2.184E+03	2.184E+03
pm148m	4.130E+04	4.130E+04
sm151	3.397E+04	3.397E+04
eu152	6.865E+02	6.865E+02
gd153	5.718E+01	5.718E+01
eu154	5.618E+05	5.618E+05
eu155	2.579E+05	2.579E+05
eu156	1.987E+03	1.987E+03
tb160	4.334E+03	4.334E+03
total	1.822E+08	1.822E+08

power, watts

element thermal

basis =587

assemblies

	initial	0.0 d
h	2.105E+00	2.105E+00
kr	1.521E+03	1.521E+03
rb	2.889E-01	2.889E-01
sr	1.549E+04	1.549E+04
y	5.868E+04	5.868E+04
zr	2.552E+04	2.552E+04
nb	4.773E+04	4.773E+04
tc	8.174E-01	8.174E-01
ru	6.337E+03	6.337E+03
rh	1.787E+05	1.787E+05
ag	1.267E+03	1.267E+03
cd	2.278E+00	2.278E+00
sn	5.098E+01	5.098E+01
sb	1.798E+03	1.798E+03
te	4.729E+02	4.729E+02
cs	1.081E+05	1.081E+05
ba	4.486E+04	4.486E+04
la	4.654E+01	4.654E+01
ce	1.964E+04	1.964E+04
pr	2.074E+05	2.074E+05
nd	4.701E-01	4.701E-01
pm	4.737E+03	4.737E+03
sm	3.995E+00	3.995E+00
eu	5.328E+03	5.328E+03
tb	3.803E+01	3.803E+01
totals	7.277E+05	7.277E+05

From: RST01 Hoc
Sent: Friday, April 15, 2011 7:14 AM
To: INPO ERC
Cc: ET01 Hoc; RST07 Hoc; Mitman, Jeffrey; Blamey, Alan; Garchow, David F.(INPO); Garchow, Steve
Subject: FW: EPRI Documents on TMI Cleanup - resend without attachment

Please see email below. My original email was bounced back – probably because the attachment was too large.

Please go to the www.EPRI.com and search for NP-6931 and NP-7156. These documents should be useful to the Japanese as they plan the clean up phase.

If you release these documents to the Japanese, please follow through with the NRC Japan team and let them know which organizations/individuals have been provided the information.

Reply to this email if you have any questions.

Thank you,

Larry Criscione
Accident Analyst
NRC Reactor Safety Team

From: RST01 Hoc
Sent: Friday, April 15, 2011 4:50 AM
To: 'INPO ERC'
Cc: ET01 Hoc; RST07 Hoc; Mitman, Jeffrey; Blamey, Alan; Garchow, Steve
Subject: EPRI Documents on TMI Cleanup

INPO team member:

On the April 15th 0300 EST/1600 Japan Time phone call, the NRC Japan Team requested that we provide you a document on lessons learned from the TMI cleanup so that you could pass that document along to TEPCo/NISA.

We (Reactor Safety Team) believe that document is NP-6931. We are unable to send you a copy of this document because it is above our email size threshold (size is 45.6 MB). The link below should take you to the document so that it can be downloaded. If the link does not work, the document can be found at www.EPRI.com by entering NP-6931 in the search field.

<http://my.epri.com/portal/server.pt?space=CommunityPage&cached=true&parentname=ObjMgr&parentid=2&control=SetCommunity&CommunityID=221&PageIDqueryComId=0>

Attached to this email is NP-7156. It is a different topic than NP-6931 but looks like it too contains relevant information.

If you release these documents to the Japanese, please follow through with the NRC Japan team and let them know which organizations/individuals have been provided the information.

Reply to this email if you have any questions.

Thank you,

Larry Criscione
Accident Analyst
NRC Reactor Safety Team

Attachment NP-7156[1].pdf(19757987 bytes) cannot be converted to PDF format.



IAEA
International Atomic Energy Agency

INCIDENT AND EMERGENCY CENTRE

EMERCON

EMERCON

EMERCON

FAX: +43 1 26007 29309

email: iec3@iaea.org

**Date: 2011-4-12
04:30 UTC**

Pages incl. cover sheet: 2

(b)(4)

(b)(4)



Pat Kenny
Emergency Response Manager
IAEA Incident and Emergency Centre

From: RST01 Hoc
Sent: Wednesday, April 13, 2011 9:54 PM
To: Blamey, Alan
Cc: Mitman, Jeffrey; Bernhard, Rudolph; ET01 Hoc
Subject: FW: White House Question on [REDACTED] (b)(5)
Attachments: White House Question on [REDACTED] (b)(5)

Alan,

Attached is a summary of the correspondence from Steve Fetter and Per Peterson. I tried to summarize what I thought were Mr. Fetter's questions. Please provide us any information that can help clarify Mr. Fetter's concerns.

Antonios Zoulis
RST Severe Accident Analyst

From: RST09 Hoc
Sent: Wednesday, April 13, 2011 9:49 PM
To: RST01 Hoc
Subject: White House Question on [REDACTED] (b)(5)

(b)(5)

Comments from Per F. Peterson University of Berkeley (peterson@nuc.berkeley.edu):

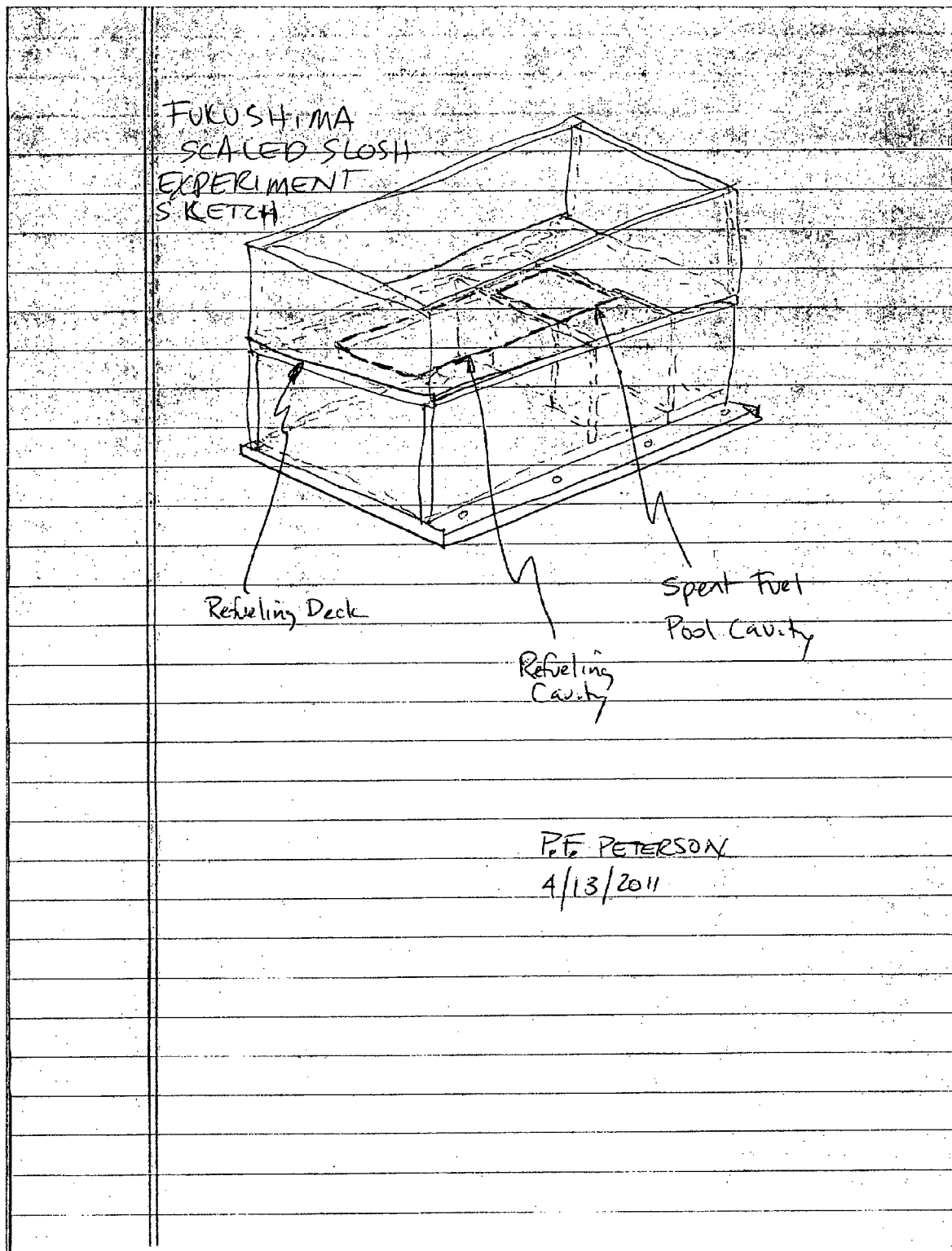
High dose rates above the surface of the water pool, with this much water inventory, would be consistent with cesium aerosols being deposited on surfaces above the pool that would have been released when fuel uncovered, overheated, and oxidized to release hydrogen. A more unambiguous assessment could be obtained if the remote equipment could be used to take some swipes from the surfaces of debris above the pool to check for cesium contamination.

The temperature instrumentation in the Unit 4 pool is at a high elevation and would read the air temperature if a significant fraction of the pool water inventory had been lost. Since there was steam coming from the pool on March 16, the 82°C temperature measurement on March 16 was clearly the air temperature, not the water temperature.

The evidence is beginning to accumulate that the water level on March 12 was already low, and thus the 32°C measurement could have been an air temperature measurement then. If the temperature sensor was covered on March 12, then there should have been a slow heating up to around 100°C before the evaporation rate would have become rapid enough to uncover the sensor. I'm not sure how frequently they were taking temperature measurements between March 12 and 16, but it would be helpful to see the data if its available.

We're working on the design of a scaled sloshing experiment to put on our shake table in our Civil Engineering department (see attached sketch). It would be very helpful to get a plan-view drawing of the refueling deck. Also, if anyone has a digital record of the ground motion observed at Fukushima, that would be very helpful; otherwise we'll work with some records from near-by locations.

Figure 1



From: RST03 Hoc
Sent: Wednesday, April 13, 2011 7:21 PM
To: Roberts, Thomas E CIV SEA 08 NR
Subject: FW: Unit 4 pool--why is the water level so low?
Attachments: slosh_sketch.png

info

From: RST01 Hoc
Sent: Wednesday, April 13, 2011 7:10 PM
To: RST03 Hoc
Subject: FW: Unit 4 pool--why is the water level so low?

From: Sheron, Brian
Sent: Wednesday, April 13, 2011 5:46 PM
To: ET01 Hoc; RST01 Hoc
Subject: FW: Unit 4 pool--why is the water level so low?

More.....

From: Per F. Peterson [mailto:peterson@nuc.berkeley.edu]
Sent: Wednesday, April 13, 2011 5:11 PM
To: Fetter, Steve
Cc: DL-NITsolutions
Subject: Re: Unit 4 pool--why is the water level so low?

Steve,

High dose rates above the surface of the water pool, with this much water inventory, would be consistent with cesium aerosols being deposited on surfaces above the pool that would have been released when fuel uncovered, overheated, and oxidized to release hydrogen. A more unambiguous assessment could be obtained if the remote equipment could be used to take some swipes from the surfaces of debris above the pool to check for cesium contamination.

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We're working on the design of a scaled sloshing experiment to put on our shake table in our Civil Engineering department (see attached sketch). It would be very helpful to get a plan-view drawing of the refueling deck. Also, if anyone has a digital record of the ground motion observed at Fukushima, that would be very helpful; otherwise we'll work with some records from near-by locations.

-Per

According to the news report:

The Tokyo Electric Power Company, or TEPCO, says the water temperature in the spent fuel storage pool at the No. 4 reactor in the crippled Fukushima nuclear plant has risen to about 90 degrees Celsius. TEPCO took the temperature on Tuesday using an extending arm on a special vehicle. To cool the fuel, TEPCO sprayed 195 tons of water for 6 hours on Wednesday morning. The company thinks the pool's water level was about 5 meters lower than normal, but 2 meters above the fuel rods. TEPCO believes the water level is likely to rise by about one meter after the water spraying on Wednesday. TEPCO says high levels of radiation at 84 millisieverts per hour were detected above the water surface, where radiation is rarely detected.

First, a dose rate of 84 mSv/h (8.4 rem/h) does not appear to be consistent with a water level of 2 m above the top of the fuel rods. The calculations that were presented two days ago indicated dose rates of 0.02 rem/h for a water level of 6 m, which is less than 2 m above the top of the fuel. Based on the slides, a dose rate of 8.4 rem/h is more consistent with a water level of 5.1 m, which is only 0.5 m above the top of the fuel. How is TEPCO estimating the water level? Is it using dose rate as an indicator? If TEPCO is correct about the water level, could the higher dose rate be due to radioactive material (even pieces of spent fuel dispersed by the explosion) on the service floor? If so, that could make it difficult to use dose rate as a measure of water level.

Second, temperature measurements as of 12 April indicated a temperature of 37 C. The rate of temperature increase can indicate water level. I estimate a maximum rate of 33 C/day for a full pool (12 m), so a rise of 53 C in one day would indicate a water level of about 7.5 m.

Third, I do not understand why the water level is so low in the unit 4 pool. There are daily reports of TEPCO adding water to the pool. Is TEPCO unable to get the water in the pool? Is the pool leaking? The concrete truck reportedly pumps 50 t/h, so it should take 18 hours to fill the pool starting from the top of the fuel and less than 2 hr/d to keep it full. (Assuming a heat rate of 2.3 MW, about 88 tons/day of water must be added to compensate for evaporation; it would take about 10 days for the top of the fuel to become exposed, starting with a full pool.)

From: Kelly, John E (NE) [mailto:JohnE.Kelly@Nuclear.Energy.Gov]

Sent: Wednesday, April 13, 2011 11:18 AM

To: Lyons, Peter; Holdren, John P.; Fetter, Steve; Trautman, Stephen J SES CIV NAVSEA 08 NR; Aoki, Steven; Sheron, Brian

Cc: Russel, Daniel R.; Zerr, Thomas J.; Reed, Richard A.; Bader, Jeffrey A.

Subject: RE: Consensus view on risks to people living in the Tokyo area

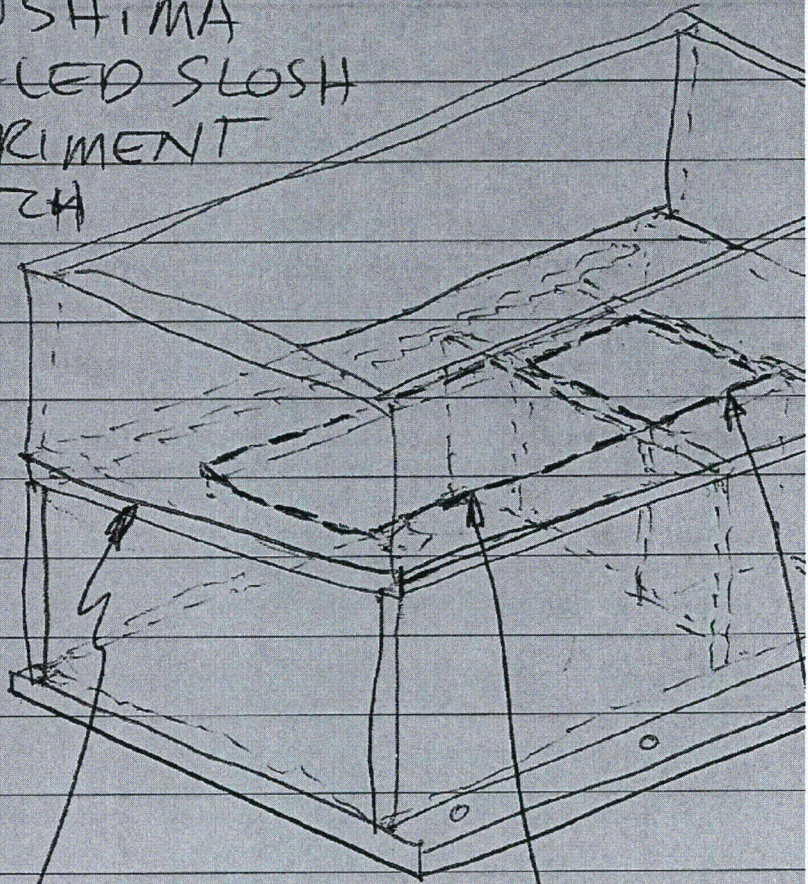
btw - reports from TEPCO indicate that pool # 4 temperature has increased to 90C and high radiation levels were detected above the pool

http://www3.nhk.or.jp/daily/english/13_35.html

--

Per F. Peterson
Professor and Chair
Department of Nuclear Engineering
University of California
4153 Etcheverry Hall
Berkeley, California 94720-1730
peterston@nuc.berkeley.edu
Office: (510) 643-7749 Fax: (510) 643-9685
http://www.nuc.berkeley.edu/People/Per_Peterson

FUKUSHIMA
SCALED SLOSH
EXPERIMENT
SKETCH



Refueling Deck

Refueling
Cavity

PF PE

From: Sheron, Brian
Sent: Wednesday, April 13, 2011 4:36 PM
To: ET01 Hoc; RST01 Hoc
Subject: FW: Unit 4 pool--why is the water level so low?

FYI.

From: Fetter, Steve [mailto:(b)(6)]
Sent: Wednesday, April 13, 2011 4:23 PM
To: DL-NITSolutions
Subject: Unit 4 pool--why is the water level so low?

According to the news report:

The Tokyo Electric Power Company, or TEPCO, says the water temperature in the spent fuel storage pool at the No. 4 reactor in the crippled Fukushima nuclear plant has risen to about 90 degrees Celsius....TEPCO took the temperature on Tuesday using an extending arm on a special vehicle...To cool the fuel, TEPCO sprayed 195 tons of water for 6 hours on Wednesday morning...The company thinks the pool's water level was about 5 meters lower than normal, but 2 meters above the fuel rods...TEPCO believes the water level is likely to rise by about one meter after the water spraying on Wednesday...TEPCO says high levels of radiation at 84 millisieverts per hour were detected above the water surface, where radiation is rarely detected.

(b)(5)

(b)(5)

From: Kelly, John E (NE) [mailto:JohnE.Kelly@Nuclear.Energy.Gov]

Sent: Wednesday, April 13, 2011 11:18 AM

To: Lyons, Peter; Holdren, John P.; Fetter, Steve; Trautman, Stephen J SES CIV NAVSEA 08 NR; Aoki, Steven; Sheron, Brian

Cc: Russel, Daniel R.; Zerr, Thomas J.; Reed, Richard A.; Bader, Jeffrey A.

Subject: RE: Consensus view on risks to people living in the Tokyo area

btw – reports from TEPCO indicate that pool # 4 temperature has increased to 90C and high radiation levels were detected above the pool

http://www3.nhk.or.jp/daily/english/13_35.html

From: LIA08 Hoc
Sent: Wednesday, April 13, 2011 2:09 PM
To: McDermott, Brian
Subject: IPC paper???

Importance: High

It's past 2pm but perhaps this is what you were asking about???

LisaG
Lisa Gibney Wright
Liaison Team Coordinator
US Nuclear Regulatory Commission
email: lia08.hoc@nrc.gov
Desk Ph: 301-816-5185

From: ET01 Hoc
Sent: Wednesday, April 13, 2011 7:20 AM
To: ET02 Hoc
Subject: FW: Consensus view on risks to people living in the Tokyo area
Importance: High

From: Sheron, Brian
Sent: Wednesday, April 13, 2011 7:20:46 AM
To: Weber, Michael; Virgilio, Martin; ET01 Hoc; PMT01 Hoc; Wiggins, Jim
Subject: FW: Consensus view on risks to people living in the Tokyo area
Importance: High
Auto forwarded by a Rule

See below. Is the consortium still in effect? Shouldn't this come through the consortium? I don't believe I should be the agency point person for stuff like this.

From: Fetter, Steve [mailto:Steven_A._Fetter@ostp.eop.gov]
Sent: Tuesday, April 12, 2011 7:58 PM
To: Trautman, Stephen J SES CIV NAVSEA 08 NR; Aoki, Steven; Lyons, Peter; Kelly, John E (NE); Sheron, Brian
Cc: Russel, Daniel R.; Zerr, Thomas J.; Reed, Richard A.; Bader, Jeffrey A.; Holdren, John P.
Subject: Consensus view on risks to people living in the Tokyo area
Importance: High

Gentleman,

(b)(5)

(b)(5). Below is my attempt to summarize what I have learned from you and your organizations about this. Please let me know if you disagree with the overall judgment expressed here, and please provide line-in-line-out edits **no later than 2 pm tomorrow**. Please forward this email to anyone I may have forgotten who should be involved in this judgment.

--Steve

(b)(5)

(b)(5)

From: Wiggins, Jim
Sent: Wednesday, April 13, 2011 9:08 AM
To: Dyer, Jim
Cc: ET01 Hoc
Subject: FW:
Attachments: RE: Consensus view on risks to people living in the Tokyo area; RE: Consensus view on risks to people living in the Tokyo area

Brian got this. Apparently, after the IPC, (b)(5)

From: Sheron, Brian
Sent: Wednesday, April 13, 2011 7:24 AM
To: Weber, Michael; Virgilio, Martin; ET01 Hoc; PMT01 Hoc; Wiggins, Jim
Subject:

More.

~~Official Use Only~~

Fukushima Daiichi Information as of 0700 EDT 04/12/2011

	Reactor Vessel Pressure		Containment Status	Drywell Pressure (TEPCO 04/12/2011)	Drywell Radiation (TEPCO 04/12/2011)	Torus Pressure (TEPCO 04/12/2011)	Torus Radiation (TEPCO 04/12/2011)
	Channel A (TEPCO 04/12/2011)	Channel B (TEPCO 04/12/2011)					
Unit 1	60.3 psig	131.7 psig	Damage suspected, slow leakage, N ₂ injection	12.9 psig	Uncertain	9.2 psig	1080 rem/hr
Unit 2	-3.3 psig	-3.6 psig	Damage suspected	-1.6 psig	2810 rem/hr	Uncertain	68.1 rem/hr
Unit 3	-2.8 psig	-11.5 psig	Damage suspected, N ₂ injection planned	0.6 psig	1740 rem/hr	9.8 psig	67.1 rem/hr

~~Official Use Only~~

From: Weber, Michael
Sent: Tuesday, April 12, 2011 4:18 PM
To: Carpenter, Cynthia
Cc: ET05 Hoc; ET01 Hoc; OST02 HOC; FOIA Response.hoc Resource; PMT01 Hoc
Subject: FYI - Request for Telephone Call

Still working to enhance coordination with Naval Reactors

From: Virgilio, Martin
Sent: Tuesday, April 12, 2011 11:30 AM
To: Cianci, Sandra
Cc: Vavoso, Thomas G CIV NAVSEA, 08; Herman, David R CIV NAVSEA, 08; Bell, Stephen T CIV SEA 08 NR; Kepple, Alan C CIV NAVSEA, 08; Roberts, Thomas E CIV SEA 08 NR; Trautman, Stephen J SES CIV NAVSEA 08 NR; Mueller, Troy J SES CIV NAVSEA 08 NR; Weber, Michael
Subject: RE: Request for Telephone Call

Sandy

Please work with Tom to establish a time when we can talk.

Tom

(b)(5)

Marty

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

From: Roberts, Thomas E CIV SEA 08 NR [mailto:[\[redacted\]](mailto:) (b)(6)]
Sent: Tuesday, April 12, 2011 10:28 AM
To: Virgilio, Martin; Weber, Michael
Cc: Vavoso, Thomas G CIV NAVSEA, 08; Herman, David R CIV NAVSEA, 08; Bell, Stephen T CIV SEA 08 NR; Kepple, Alan C CIV NAVSEA, 08; Trautman, Stephen J SES CIV NAVSEA 08 NR; Mueller, Troy J SES CIV NAVSEA 08 NR
Subject: Request for Telephone Call

Marty - When you get a chance, I'd like to discuss a couple things with you; what is a good time for me to call you?

(b)(5)

(b)(5)

(b)(5)

(b)(5)

Thanks,
Tom Roberts

From: Weber, Michael
Sent: Tuesday, April 12, 2011 2:13 PM
To: Dyer, Jim; Carpenter, Cynthia; Casto, Chuck; Collins, Elmo; Doane, Margaret; Mamish, Nader
Cc: LIA06 Hoc; LIA08 Hoc; RST01 Hoc; PMT01 Hoc; Hoc, PMT12; ET05 Hoc; ET01 Hoc; OST02 HOC; Batkin, Joshua; Coggins, Angela; Virgilio, Martin
Subject: FYI - BULLETIN FROM LAST NIGHT'S PRAYER SERVICE AT THE NATIONAL CATHEDRAL
Attachments: A Prayer for Japan.pdf

Please find attached the bulletin from the prayer service held last evening at the National Cathedral in Washington DC in solemn remembrance of the lives lost from the March 11th Tohoku Regional Pacific Ocean Offshore Earthquake and the ensuing tsunami. Overall, I found the service quite moving and inspirational and was glad to participate on behalf of the agency. The Japanese Ambassador to the United States referred to the event as "our 3-11," which I had not previously heard, but plays off of the "9-11" event that the U.S. suffered in 2001. His Excellency also emphasized how grateful Japan is to the United States for the cooperation and assistance following 3-11, how the U.S. has worked night and day to provide assistance, and praised the "experts" for responding to the disaster as if it had occurred in their own country. Please pass along this high praise to our staff working in Japan and here in Rockville.

Thanks

Mike

Michael Weber
Deputy Executive Director for Materials, Waste, Research,
State, Tribal, and Compliance Programs
U.S. Nuclear Regulatory Commission

301-415-1705
Mail Stop O16E15

A Prayer for Japan

NIPPON NOTAMENO INORI

ORGAN PRELUDE

Mr. Scott Dettra, Washington National Cathedral
Prière · Joseph Jongen (1873-1953)
Nimrod · Edward Elgar (1857-1934)

KOTO PRELUDE

Ms. Miyuki Yoshikami
Rokudan · Yatsushashi Kengyo (1614-1685)
Haru no Sugata (Signs of Spring) · Eto Kimio (b. 1926)

SAN BU JO

Reverend Kaz Nakata
Ekoji Buddhist Temple

WELCOME AND INVOCATION

The Very Reverend Samuel T. Lloyd III
Washington National Cathedral

REMARKS

AMENIMO MAKEZU · UNBEATEN BY RAIN
Kenji Miyazawa (1896-1933)

PSALM 121

H. Walford Davies (1869-1941)

HAKKOTSU NO GOBUNSHO · THE WHITE ASHES
Ren-nyo (1414-1499)

SAKURA SAKURA

Kimiko Shimada, soprano
Maiko Chiba, pianist

REMARKS

His Excellency Ichiro Fujisaki
Ambassador of Japan to the United States of America

EONIA · THE JASMIN

John Tavener (b. 1944)

LAMENTATIONS 3:22-26, 31-33

The Reverend Canon Mary Sulerud
Episcopal Diocese of Washington

REFLECTION

The Reverend Dr. Francis H. Wade
Episcopal Diocese of Washington

A TIME FOR GIVING

Omoide no Uta-goe (Reminiscences) · E. Kimio

An offering is received on behalf of Japan in her plight.
Your gifts will be distributed through the Japan Earthquake Response Fund
of Episcopal Relief and Development. Thank you in advance for your bountiful giving.

PRAYER OFFERINGS

Dr. D. C. Rao
Hindu, Board of Directors of the Inter Faith Conference

The Reverend Jan Naylor Cope
Washington National Cathedral

Rabbi Bruce Lustig
Washington Hebrew Congregation

Mr. Shiro Shintaku
Tsurugaoka Hachimangu Shrine, Kamakura, Japan

Dr. Sayyid M. Syeed
Islamic Society of North America

A BLESSING

POSTLUDE

Fuga a 5 con pedale pro organo pleno, BWV 552/2 · J.S. Bach (1685-1750)



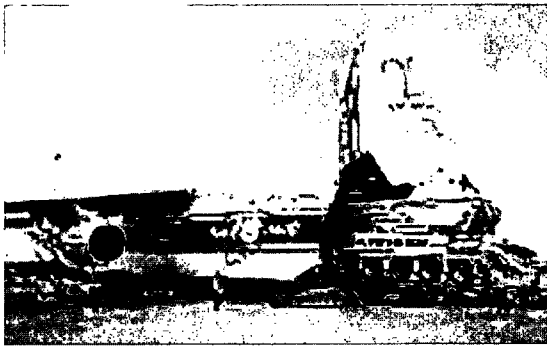
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From: Weber, Michael
Sent: Monday, April 11, 2011 5:31 PM
To: Carpenter, Cynthia
Cc: Dyer, Jim; ET05 Hoc; ET01 Hoc; OST02 HOC; Brenner, Eliot; Virgilio, Martin
Subject: FYI - GLOBAL SECURITY NEWSWIRE ARTICLE ON FUKUSHIMA NUCLEAR EMERGENCY
Attachments: image001.jpg

Japan Enlarges Nuclear Evacuation Zone as Another Earthquake Hits

Monday, April 11, 2011

Japan on Monday urged residents to flee certain areas that are outside an evacuation area extending roughly 12 miles from the Fukushima Daiichi nuclear power plant, Reuters reported (see [GSN](#), April 8).



(Apr. 11) - A 95-ton concrete pumper is loaded onto a Russian Antonov An-124 cargo jet in Atlanta on Friday for use in cooling efforts at Japan's Fukushima Daiichi nuclear power plant. A new earthquake on Monday briefly halted water transfers intended to help prevent additional radioactive material releases from the severely damaged facility (Erik Lesser/Getty Images).

Japanese Chief Cabinet Secretary Yukio Edano pressed hospital patients, pregnant women and the very young to remain beyond certain zones extending between 12.4 and 18.6 miles from the plant. "These new evacuation plans are meant to ensure safety against risks of living there for half a year or one year," he said (Kubota/Nishikawa, [Reuters I](#), April 11).

The evacuation order was not compulsory, the Associated Press reported (Eric Talmadge, Associated Press [I/Miami Herald](#), April 11). Residents might soon be legally barred from the existing 20-kilometer exclusion zone, Kyodo News quoted high-level officials as saying on Sunday (Kyodo News [I/Japan Times](#), April 11).

The six-reactor plant was crippled by the 9.0-magnitude earthquake and devastating tsunami that hit Japan on March 11; the confirmed death toll from the events now exceeds 12,000 people. On Monday, a 6.6-magnitude earthquake and 25 additional tremors hit a point 90 miles east of the Fukushima plant, killing two people (Kubota/Nishikawa, [Reuters I](#)).

The latest earthquake halted water transfers into the plant's No. 1, No. 2, and No. 3 reactors, but pumping of coolant resumed after less than an hour once the sites were again connected to outside electricity sources,

Kyodo News quoted the Japanese Nuclear and Industrial Safety Agency as saying (Kyodo News II, April 11). The event also forced personnel to halt the insertion of nitrogen gas into one plant reactor, an effort aimed at preventing new hydrogen explosions.

Plant operator Tokyo Electric Power indicated it had finished dumping low-level contaminated water into the ocean to open containment space for more highly radioactive water collecting in the facility (Kubota/Nishikawa, Reuters I). Contaminated water has hindered efforts to restore cooling mechanisms needed to help prevent additional radioactive material from escaping the site.

"Now we are in a dilemma because we are seeing water which is pumped in to cool down the reactors showing up as pools of (contaminated) water in other places of the plant," atomic safety agency Deputy Director General Hidehiko Nishiyama said (Kyodo News II).

"The risk that the situation will worsen and that there would be new massive emissions of radioactive materials is becoming considerably lower," Edano said on Monday. (Kyodo News III, April 11).

The plant operator on Saturday started deploying a steel barricade intended to block the flow of contaminated water into the ocean, the *Wall Street Journal* reported on Saturday. Tokyo Electric Power also intends to deploy a "silt fence" around a pipeline for receiving ocean water as an additional containment measure (Kana Inagaki, *Wall Street Journal I*, April 9).

Workers on Sunday deployed more material at the plant intended to reduce the spread of radioactive material, the International Atomic Energy Agency said.

"Deposition of both iodine 131 and cesium 137 was detected in seven and six prefectures respectively" on Sunday, the U.N. nuclear watchdog said in a statement. "Only in a few prefectures, iodine 131 or cesium 137 is detectable in drinking water at very low levels. As of 10 April, a restriction for infants related to iodine 131 [100 becquerels per liter] is in place as a precautionary measure in only one village of the Fukushima prefecture," it added (International Atomic Energy Agency release, April 11).

Decreases in radiation levels have prompted Obama administration officials to consider altering the recommendation for U.S. nationals to remain 50 miles from the plant, Kyodo News reported (Kyodo News IV/Japan Times, April 11).

The U.S. Marine Corps Chemical Biological Incident Response Force on Sunday conducted exercises with Japanese personnel, AP reported.

"We're here to assist and advise the Japanese military and to be a quick reaction force if something really, really bad does happen. All indicators say it's not going to, but it's better to have us and not need us than to need us and not have us," said Master Sgt. Mark Dumdie, the ranking enlisted member of the 145-person unit (Associated Press II/Washington Post, April 9).

A U.S.-built T-Hawk unmanned aerial vehicle on Sunday collected overhead images of the plant, CNN reported. Separately, two massive concrete pumps were being shipped to Japan from the United States on Sunday for transferring water into the plant (Matt Smith, CNN, April 10).

Toshiba issued a plan calling for four of the plant's reactors to be decommissioned within one decade, Kyodo News reported on Friday (Kyodo News V, April 8).

U.N. Secretary General Ban Ki-moon on Friday said "nuclear energy will continue to serve as an important energy resource — particularly given the problem of climate change -- [but] the situation in Japan demonstrates that there are still lessons that need to be learned."

Ban urged governments to independently "revisit" their own atomic regulations.

"There should be an enhanced mechanism for providing the assistance of international experts to national authorities," he wrote.

"The international community has had 25 years to reflect on the tragedy at Chernobyl, but the tragic events at the Fukushima Daiichi nuclear plant demonstrate that there are still lessons that need to be learned," Ban added (Kyodo News VI/Japan Times, April 10).

South Korea and Japan are set to convene tomorrow a two-day meeting of specialists to address "nuclear safety, monitoring radiation and food safety" in light of the disaster (Kyodo News VII, April 8).

Mike

Michael Weber
Deputy Executive Director for Materials, Waste, Research,
State, Tribal, and Compliance Programs
U.S. Nuclear Regulatory Commission

301-415-1705
Mail Stop O16E15

From: Weber, Michael
Sent: Monday, April 11, 2011 1:51 PM
To: Dyer, Jim; Collins, Elmo; Casto, Chuck
Cc: ET05 Hoc; ET01 Hoc; LIA06 Hoc; LIA08 Hoc; OST02 HOC
Subject: FYI - HOMELAND SECURITY NEWSWIRE ARTICLE ON QINETICQ ROBOT (TALON) ON ITS WAY TO JAPAN

U.S. military robot to help detect radiation at Fukushima

Published 11 April 2011

The modified a military robot to navigate around Fukushima plant and produce a color-coded map of radiation levels; the robot includes a chemical, biological, radiological, nuclear, and explosive detection kit that can identify more than 7,500 environmental hazards, including toxic industrial chemicals and volatile gases; it also has temperature and air quality indicators and night vision, and it can sense sounds up to 1,000 meters away; the robot joins other pieces of specialized equipment, donated by QinetiQ to help Japan deal with the crisis

A modified military robot, equipped with radiation-hardened cameras, GPS, and sensors, arrived in Japan on Thursday to help out at the stricken nuclear power plant.

The Talon robot, built by QinetiQ North America and modified by the Department of Energy's Idaho National Lab, has done field work before, including supporting military operations in Iraq and Afghanistan and assisting at the site of the World Trade Center in New York after the 2001 terrorist attacks.

Discover News reports that the Fukushima nuclear power plant in Japan will be Talon's first tour of duty in a highly radioactive environment.

The Talon robot reaches the plant, it will help the Japanese visualize radiation in the environment, Nicole Stricker, spokeswoman with the DOE's Idaho National Laboratory, told *Discovery News*.

The robot can take radiation readings and stamp them geospatially with a GPS device. "From the radiation and GPS data, a Google Earth map is generated and the radiation levels are superimposed on the map and color-coded according to intensity. As the robot navigates in the environment, a breadcrumb-like trail is generated and displayed on the operator control unit. The system is self-contained and has the ability to work with a variety of radiation sensors," Stricker said

The robot includes a chemical, biological, radiological, nuclear, and explosive detection kit that can identify more than 7,500 environmental hazards, including toxic industrial chemicals and volatile gases. It also has temperature and air quality indicators and night vision, and it can sense sounds up to 1,000 meters away.

The Department of Energy robot joins two other Talons, two smaller Dragon Runner robots, and equipment that turns Bobcat loaders into unmanned vehicles that can shovel, grapple, and perform other tasks without an operator. The equipment, worth about \$1 million, was donated by QinetiQ, said company spokeswoman Jennifer Pickett.

Mike

Michael Weber
Deputy Executive Director for Materials, Waste, Research,
State, Tribal, and Compliance Programs
U.S. Nuclear Regulatory Commission

301-415-1705
Mail Stop O16E15

From: LIA06 Hoc
Sent: Monday, April 11, 2011 11:20 AM
To: LIA08 Hoc
Subject: FW: RESPONSE - DOE watchstander at RST

Liaison Team Director
U.S. Nuclear Regulatory Commission
Operations Center

From: Weber, Michael
Sent: Monday, April 11, 2011 11:20 AM
To: Sheron, Brian
Cc: Dyer, Jim; Hasselberg, Rick; ET05 Hoc; ET01 Hoc; OST02 HOC; LIA06 Hoc; LIA08 Hoc
Subject: RESPONSE - DOE watchstander at RST

Thanks, Brian

From: Versluis, Rob [mailto:ROB.VERSLUIS@nuclear.energy.gov]
Sent: Monday, April 11, 2011 10:47 AM
To: RST01 Hoc; RST07 Hoc; RST08 Hoc; Sheron, Brian
Cc: Larzelere, Alex; Golub, Sal; Kelly, John E (NE); Caponiti, Alice; Versluis, Rob
Subject: DOE watchstander at RST

I have returned to my day job at DOE but want to assure you that I will be available to resume DOE watchstander duty if the situation so requires. I will be monitoring emails from my office and endeavor to keep up the flow of information to the benefit of both organizations for the time being.

I have enjoyed my stay as embedded DOE rep, sitting at RST01B, and working with the RST in the Incident Response Center. I want to thank you all for being cooperative and gracious, and hope that my presence helped in establishing better coordination with DOE.

Robert Versluis, PhD - tel: 301-903-1890 mob: (b)(6)

From: OST02 HOC
Sent: Monday, April 11, 2011 5:54 AM
To: PMT11 Hoc; Hoc, PMT12; PMT02 Hoc; FOIA Response.hoc Resource
Subject: FW: Tokyo Area Water Contamination Results 4/10 and 4/11

From: Weber, Michael
Sent: Monday, April 11, 2011 5:10 AM
To: PMT01 Hoc
Cc: ET01 Hoc; ET05 Hoc; OST02 HOC
Subject: FYI - Tokyo Area Water Contamination Results 4/10 and 4/11

From: Howard, E. Bruce <HowardEB@state.gov>
To: Walcott, Naomi <WalcottN@state.gov>; ccoleman@mail.nih.gov <ccoleman@mail.nih.gov>; Petrie, Ronald C <PetrieRC@state.gov>; Weber, Michael
Cc: Davis, Dylan S (TDY/PAS) <TDYDavisDS@state.gov>; Whitney, Thomas C <WhitneyTC@state.gov>; Hefner, Timothy B <HefnerTB@state.gov>; Stahl, Eric
Sent: Mon Apr 11 03:51:10 2011
Subject: Tokyo Area Water Contamination Results 4/10 and 4/11

This email is UNCLASSIFIED.

Analysis of water from Kanamachi Purification Plant, Katsushika, Tokyo, at 0600 on 4/11/11:

I-131: Not Detected
*Not Detected ≤ 20 Bq/kg

Analysis of tap water from Shinjuku Ward, Tokyo, on 4/10/11:

I-131: 0.70 Bq/kg
Cs-134: Not Detected
Cs-137: Not Detected

Note: GOJ Warning limits for consumption:
Iodine: 300 Bq/kg (100 Bq/kg for infants 12 mos and under)
Cesium: 200 Bq/kg

From: Weber, Michael
Sent: Sunday, April 10, 2011 9:44 PM
To: PMT01 Hoc
Cc: Zimmerman, Roy; ET01 Hoc; ET05 Hoc; OST02 HOC
Subject: FYI - Tokyo area water contamination analysis results, April 8-10

Info on trace levels of detection in Japanese drinking water.

From: Howard, E. Bruce <HowardEB@state.gov>
To: Walcott, Naomi <WalcottN@state.gov>; ccoleman@mail.nih.gov <ccoleman@mail.nih.gov>; Petrie, Ronald C <PetrieRC@state.gov>; Weber, Michael
Cc: Davis, Dylan S (TDY/PAS) <TDYDavisDS@state.gov>; Whitney, Thomas C <WhitneyTC@state.gov>; Hefner, Timothy B <HefnerTB@state.gov>; Stahl, Eric
Sent: Sun Apr 10 21:04:12 2011
Subject: Tokyo area water contamination analysis results, April 8-10

Analysis of Water from Kanamachi Purification Plant, Katsushika, Tokyo at 0600 on 4/9/11 - 4/10/11

4/9/11

I-131: Not Detected

4/10/11

I-131: Not Detected

*Not Detected \leq 20 Bq/kg

Analysis of Tap Water from Shinjuku, Tokyo on 4/8/11 - 4/9/11:

4/8/11

I-131: 0.89 Bq/kg

Cs-134: 0.23 Bq/kg

Cs-137: 0.22 Bq/kg

4/9/11

I-131: 1.0 Bq/kg

Cs-134: Not Detected

Cs-137: 0.25 Bq/kg

Note: GOJ Warning limits for consumption:

Iodine: 300 Bq/kg (100 Bq/kg for infants 12 mos and under)

Cesium: 200 Bq/kg

This email is UNCLASSIFIED.

From: Zimmerman, Roy
Sent: Sunday, April 10, 2011 6:45 PM
To: LIA06 Hoc
Cc: Weber, Michael; Virgilio, Martin; ET01 Hoc; LIA08 Hoc
Subject: RE: Briefing Sheet for NY Times Document Leak.doc

personally, i think this should suffice, unless others have addtl thoughts.....nicely done Mark, thx

From: LIA06 Hoc
Sent: Sunday, April 10, 2011 12:04 PM
To: Zimmerman, Roy
Cc: Weber, Michael; Virgilio, Martin; ET01 Hoc; LIA08 Hoc
Subject: Briefing Sheet for NY Times Document Leak.doc

Roy,

I put together the attached draft talking points for the next CIVITS (sp?) call based on my limited knowledge of the outcome of the meeting at 0900 on 4/7/11 regarding the OUO leak that led to the NY Times article. Please let me know if you have any comments so I can close out the associated task tracker.

Thank you,

Mark Lombard
Liaison Team Director
U.S. Nuclear Regulatory Commission
Operations Center

DRAFT - Briefing Sheet for NY Times Document Leak

(b)(5)

From: Weber, Michael
Sent: Friday, April 08, 2011 4:55 PM
To: Muessle, Mary
Cc: Wiggins, Jim; LIA06 Hoc; LIA08 Hoc; ET01 Hoc; ET05 Hoc; OST02 HOC
Subject: Response - AID

Thanks

From: Muessle, Mary
To: Virgilio, Martin; Ash, Darren; Weber, Michael
Sent: Fri Apr 08 16:14:09 2011
Subject: FW: AID

FYI. AID will continue to support Japan travel during a shutdown,

Mary Muessle
Assistant for Operations - Acting
Office of the Executive Director for Operations
U.S. Nuclear Regulatory Commission
301-415-1703 office
301-415-2700 fax

From: Evans, Michele
Sent: Friday, April 08, 2011 3:21 PM
To: Muessle, Mary; Andersen, James
Subject: FW: AID

Please share if needed.

From: Matheson, Mary
Sent: Friday, April 08, 2011 3:06 PM
To: Dyer, Jim; Evans, Michele
Cc: Mitchell, Reggie
Subject: AID

Jim,

I just spoke with the AID contact and they confirmed that AID support would continue if there was a Government shutdown. NRC has indicated that the DART team is essential.

Mary

From: j3temp6 <j3temp6@jso.mod.go.jp>
Sent: Friday, April 08, 2011 5:41 AM
To: RST06 Hoc; Casto, Chuck; Collins, Elmo
Cc: Holahan, Vincent; [REDACTED] (b)(6) ET07 Hoc;
ET01 Hoc; RST01 Hoc; LIA08 Hoc; =?iso-2022-jp?B?
JxskQiEoGyhCajN0ZW1wNkBqc28ubW9kLmdvLmpwJw=?
=@oaoml001c.coa.jso.mod.go.jp; j3temp5@jso.mod.go.jp; [REDACTED] (b)(6)
[REDACTED] (b)(6)
Subject: RE: TEPCO Daily Update Thursday 7 April

Mr. Brown,


Thank you for your reply and for copying Messers Castro and Collins on your response.

Contrary to common perception, my role as part of the Joint Support Force is to report the TEPCO meeting proceedings to Admirals Rowden and Haley. Regarding the communication of what the US side considers to be a stable plant, I will defer to the NRC team to vet this information and to pass this along to their respective Japanese counterparts.

Thank you for all your hard work.

Best regards,
CDR Rich Kondo

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

From: RST06 Hoc [mailto:RST06.Hoc@nrc.gov] 
Sent: Friday, April 08, 2011 3:30 PM
To: j3temp6@jso.mod.go.jp
Cc: Holahan, Vincent; [REDACTED] (b)(6) Casto, Chuck; Collins, Elmo; ET07 Hoc; ET01 Hoc; RST01 Hoc; LIA08 Hoc
Subject: FW: TEPCO Daily Update Thursday 7 April
Importance: High

CDR Kondo,

I am replying to the request that you received from Mr. Nason. The information below is draft.

We understand that a copy of your request has also been forwarded to the NRC Japan site team via the Tokyo Embassy. Communication between NISA and the NRC site team located at the Embassy is the normal path for communication on matters such as this, and we would suggest that you mention this to Mr. Nason. Notwithstanding that, we are providing you this draft information because of the significance that you have placed in the multiple requests that you have received.

Conceptual information on early (phase 1) stability for plants that have experienced severe accidents [I would caution that early stability may have different meanings for different applications. Reasonable Confidence of stability may be different for those on plant-site, or in the immediate surroundings than for those located at a considerable distance from the plant]:

Principle; Plant conditions provide reasonable confidence that time is available to implement contingency actions or re-evaluate protective actions before an unanticipated condition could cause a major radioactive release.

Goals:

Establish a reliable means to:

- Remove decay heat
- Preclude detonation in primary containment atmosphere
- Maintain reactors and spent fuel pools subcritical with fuel adequately cooled and shielded
- Minimize radioactive releases
- Ensure structural integrity for all units (e.g. containment and spent fuel pools)

Approach:

Establish:

1. Containment water level to cover the reactor pressure vessel (RPV) lower head (if possible)
2. Inert containment atmosphere (if possible)
3. Functional and reliable power source equipment and controls for each reactor
4. Functional and reliable pumping equipment in-service to ensure adequate cooling
5. Functional and clean water source of sufficient capacity to ensure continuous core cooling
6. Reliable means to determine key parameters (e.g., RPV/DW level, RPV/DW pressure, etc.)
7. The means for identification and containment of significant external leakage (e.g. primary containment leakage)
8. The ability to routinely fill and measure level and temperature in SFP
9. Reasonable expectation of SFP structural integrity
10. A functional sample system for primary containment atmosphere
11. Measures to minimize further spread of contamination (e.g., covers or resin spray)

Fred Brown

On-shift Reactor Safety Team Director

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

From: Holahan, Vincent

Sent: Thursday, April 07, 2011 10:03 PM

To: RST01 Hoc

Cc: (b)(6)

Subject: FW: TEPCO Daily Update Thursday 7 April

Importance: High

Per our conversation this afternoon, I am forwarding to you the email that I received from RADM Haley from US Forces Japan (USFJ). His liaison/representative to the daily TEPCO meeting, CDR Kondo, has been approached each of the last two days by the senior NISA representative (Mr. Nason) inquiring about our (US) definition of what conditions are required before we would consider the Fukushima reactors stable. Mr. Nason understands that NRC, other federal agencies, and industry are working to develop a working definition. However, USFJ would like to provide CDR Kondo some information that he can share with NISA as soon as possible.

After speaking with the RST team, I provided an update on the stability paper to the PACOM staff. Admirals Rowden and Haley are participants in this daily Update Briefing as well. I explained what was on-going, the drafting of another paper on reactor stability by Naval Reactors, and the Principals meeting that is scheduled for next Monday.

Although the document you are working to complete, to include the incorporation of comments from Naval Reactors, might be sufficient to satisfy the NISA request, USFJ suggested that an email from NRC to CDR Kondo might be sufficient. This email might include a brief description of what issues and end states we are considering (e.g., stable and reliable off site power was a good example). It should be a 50,000 foot overview with the understanding that the final version would be shared with the US Embassy and others early next week.

It is USFJ view that NISA may be trying to develop and articulate their own definition of what needs to be accomplished before near term and long term stability can be achieved. Hence, they are looking to see what the NRC and industry views and opinions might be. If this could be provided to CDR Kondo before his next meeting with TEPCO and NISA, I believe it would be greatly appreciated.

I will call the RST in a couple of minutes to discuss this further and answer any questions or provide clarification if needed.

CDR Kondo's email address and phone number is included in the message below. You might also appreciate the comments he provided regarding his TEPCO meeting today.

cheers,

Vince
NRC Liaison to PACOM
808-477-9536

From: Greco, Stephen B. GS-15 CIV (b)(6)
Sent: Thursday, April 07, 2011 7:58 PM
To: Holahan, Vincent
Cc: Price, Erik N LTC PACOM, J91
Subject: FW: TEPCO Daily Update Thursday 7 April

Sir:

Relay from our J3.

V/R

Steve Greco

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

From: Swift, Scott H RADM PACOM, J3
Sent: Thursday, April 07, 2011 3:43
To: (b)(6); Greco, Stephen B. GS-15 CIV
Cc: 'tdywhitejr@state.gov'; 'TDYKnollWS@state.gov'; 'Richard.Kondo@crbard.com'; (b)(6);
'Eric.Corbett@usfj.mil'; Alles, Randolph D MajGen PACOM, J5; Hooper, Charles W BG PACOM J50; Osserman, Stanley J
Jr. Brig Gen PACOM, J5; Sohaney, Mark D LCDR PACOM, J5 EA; 'tmo23@hoyamail.georgetown.edu'
Subject: Re: TEPCO Daily Update Thursday 7 April

Steve,

Please pass to Dr. Holohan. Thanks.

V/R,

SHS

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

From: Haley, John R RDML USN <(b)(6)>
To: Rowden, Thomas RDML USN USFJ J2 <(b)(6)>; Crowe, Blake BGen USMC USFJ J01 <(b)(6)>
Cc: tdywhitejr@state.gov <tdywhitejr@state.gov>; Knoll, William S (TDYKnollWS) <TDYKnollWS@state.gov>; Kondo, Richard <Richard.Kondo@crbard.com>; Bell, Charles F LT USN <(b)(6)>; Corbett, Eric M Capt USMC USFJ J01A <(b)(6)>; TDYWhiteJR@state.gov <TDYWhiteJR@state.gov>; Swift, Scott H RADM PACOM, J3
Sent: Wed Apr 06 22:09:21 2011
Subject: RE: TEPCO Daily Update Thursday 7 April

RADM Swift; please pass to Dr. Holohan (NRC Rep at PACOM) CAPT White, please pass to NRC/DOE team at embassy

All,

In our discussions today, CDR Kondo told me of encounters he had with the senior NISA representative (Nason-san). After the meeting yesterday Nason asked CDR Kondo what our (US) definitions for / requirements for having the reactors considered "stable." Nason approached CDR Kondo again today to ask the same question. For that to happen in Japanese culture (repeat request the next day) is very exceptional. I submit that we need to consider providing an answer beyond the correct answer that CDR Kondo provided (We are developing that).

Understand fully that NRC and DOE are working quickly to define this and get the definition approved. In the interim we may consider providing non-quantitative (qualitative) considerations that we are looking at as we determine stability. Allowing our reps (Kondo in this case) to answer the question "a little bit" will make a difference in the long run. I'm sure that someone from the embassy could help with understanding the significance of what CDR Kondo explained if there are questions.

Sincerely, JR

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

From: j3temp6 [mailto:j3temp6@jso.mod.go.jp]
Sent: Thursday, April 07, 2011 3:32 PM
To: Rowden, Thomas RDML USN USFJ J2; Crowe, Blake BGen USMC USFJ J01; Haley, John R RDML USN
Cc: tdywhitejr@state.gov; 'Knoll, William S (TDYKnollWS)'; j3temp5@jso.mod.go.jp; 'Kondo, Richard'; Bell, Charles F LT USN; Corbett, Eric M Capt USMC USFJ J01A; 'j3temp6'; =?iso-2022-jp?B?JxskQiEoGyhCVERZRG9vZHIKRkBzdGF0ZS5nb3Yn?=@oaoml001c.coa.jso.mod.go.jp
Subject: TEPCO Daily Update Thursday 7 April
Importance: High

Admirals Rowden, Haley, and General Crowe:

In follow up to my verbal report, here are the top discussion items from today's TEPCO meeting :

1) Nitrogen inerting operations commenced at 01:31 hours on 4/7/2011.

Although initial plans were to inject using three pumps at 14 cu meters each, TEPCO decided to pressurize using only 2 pumps due to Dry Well pressure rise from 22 to 23 PSIG. TEPCO originally planned to keep the N2 float for 6 days but is now planning for 4 days at a Dry Well pressure of 15 PSIG. TEPCO also intends to do N2 inerting of plants #2 and #3 but did not disclose whether this will be in series or parallel. TEPCO confirmed that there was no vent line set up during the N2 operations.

2) TEPCO provided an overview on the automated giraffe concept to permit long-term spray and visual observation capabilities using remote cameras mounted on the giraffe arm. NRC inquired if NISA/TEPCO had accounted for redundancy in the event of a subsequent explosion or a secondary earthquake.

TEPCO responded that they will have a backup giraffe in the event the 1st one is out of commission.

3) Mr. Nason (NISA Lead) asked for the 2nd day in a row about NRC's/Nuclear Consortium's definition of a stable plant. It appears that there is great interest in this definition as the Japanese side is interested in creating their own tripwire for a relaxation of the evacuation order.

4) Except for the increase in #1 Dry Well pressure, there were no other significant changes in plant parameters across plants #1 through #6.

Should you have any further questions, I can be reached at 224-9720 or 090 6548-5981.

v/r,
CDR Rich Kondo

From: Schmidt, Rebecca
Sent: Wednesday, April 06, 2011 7:05 PM
To: Weber, Michael; LIA06 Hoc; LIA08 Hoc
Cc: Zimmerman, Roy; Muessle, Mary; Andersen, James; Rihm, Roger; Powell, Amy; ET05 Hoc; ET01 Hoc; Nelson, Robert; Miller, Charles; Sanfilippo, Nathan
Subject: Re: HEADS UP - ANOTHER CONGRESSIONAL HEARING

FYI....The chr is testifying next week. The testimony is being drafted now

From: Weber, Michael
To: LIA06 Hoc; LIA08 Hoc
Cc: Zimmerman, Roy; Muessle, Mary; Andersen, James; Rihm, Roger; Powell, Amy; Schmidt, Rebecca; ET05 Hoc; ET01 Hoc; Nelson, Robert; Miller, Charles; Sanfilippo, Nathan
Sent: Wed Apr 06 18:39:28 2011
Subject: HEADS UP - ANOTHER CONGRESSIONAL HEARING

04/05/11 -- Letter from Congress, invites Commission testimony at the April 12, 2011 hearing entitled "Review of the Nuclear Emergency in Japan and Implications for the U.S."

MAX BAILEY, MONTANA
THOMAS CARPER, DELAWARE
FRANK L. LUTTRELL, NEW JERSEY
ROBERT C. BYRD, WEST VIRGINIA
CHRISTOPHER DODD, CONNECTICUT
CHRISTOPHER MURPHY, CONNECTICUT
MIGUEL A. RODRIGUEZ, TEXAS
JIM RHOLES, MISSOURI
KIRSTEN GILLIBRAND, NEW YORK

JAMES M. INHOFE, OKLAHOMA
DAN VOITTE, ILLINOIS
JOHN BARRASSO, WYOMING
JIM SHAYS, NEW HAMPSHIRE
MARC STABER, MISSOURI
MARK E. SOBEL, TEXAS
MIGUEL A. RODRIGUEZ, TEXAS
JIM RHOLES, MISSOURI
JIM BROWN, ARIZONA

United States Senate

COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
WASHINGTON, DC 20510-6175

April 5, 2011

The Honorable Gregory B. Jaczko
Chairman
Nuclear Regulatory Commission
Washington, DC 20555-0001

Dear Chairman Jaczko:

On behalf of the Senate Committee on Environment and Public Works and its Subcommittee on Clean Air and Nuclear Safety, we invite you to testify before the Committee at a joint hearing entitled, "Review of the Nuclear Emergency in Japan and Implications for the U.S." The hearing will be held on Tuesday, April 12, 2011, beginning at 2:45 p.m. in Room 406 of the Dirksen Senate Office Building. The purpose of this hearing is to discuss the ongoing emergency associated with the Fukushima Daiichi nuclear power plant in Japan, as well as the potential ramifications for the United States.

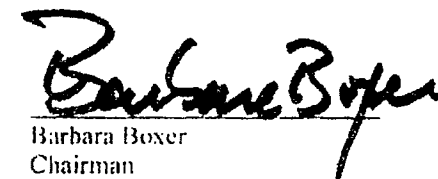
In order to maximize the opportunity to discuss this matter with you and the other witnesses, we ask that your oral testimony be limited to five minutes. Your written testimony can be comprehensive and will be included in the printed record of the hearing in its entirety, together with any other materials you would like to submit.

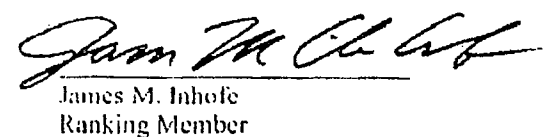
To comply with Committee rules, please provide 100 double-sided copies of your testimony at least 48 hours in advance of the hearing to the Committee at the following address: 410 Dirksen Senate Office Building, Washington, D.C. 20510-6175. To ensure timely delivery, the copies of testimony must be hand delivered to 410 Dirksen. Packages sent through FedEx, U.S. Mail, or overnight delivery services will be subject to offsite security measures that will delay delivery. Please also email a copy of your testimony (in both MS Word and as a PDF file) to the attention of Katie Lee, Katie.Lee@epw.senate.gov, at least 48 hours in advance. This email address will be used later to quickly finalize hearing transcripts.

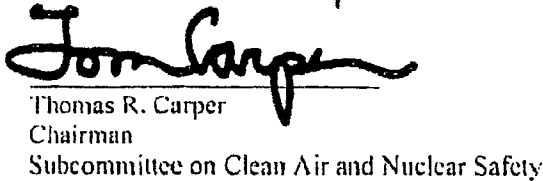
If you plan to use or refer to any charts, graphs, diagrams, photos, maps, or other exhibits in your testimony, please deliver or send one identical copy of such material(s), as well as 100 reduced (8.5" x 11") copies to the Committee, attention of Katie Lee, Katie.Lee@epw.senate.gov, at the above address at least 48 hours in advance of the hearing. Exhibits or other materials that are not provided to the Committee by this time cannot be used for the purpose of presenting testimony.

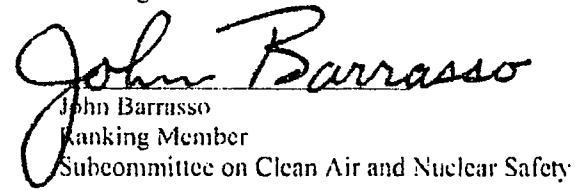
If you have any questions or comments, please feel free to contact Kathy Dedrick or Grant Cope of the Committee's Majority staff at 202-224-8832, Annie Caputo of the Committee's Minority staff at 202-224-6176, Laura Haynes of Senator Carper's staff at 202-224-2441, or Brian Clifford of Senator Barrasso's staff at 202-224-6441.

Sincerely,


Barbara Boxer
Chairman


James M. Inhofe
Ranking Member


Thomas R. Carper
Chairman
Subcommittee on Clean Air and Nuclear Safety


John Barrasso
Ranking Member
Subcommittee on Clean Air and Nuclear Safety

From: PMT01 Hoc
Sent: Thursday, April 07, 2011 8:15 AM
To: PMT11 Hoc
Subject: FW: FYI - ENVIRONMENTAL PROTECTION ARTICLE ON TRACE LEVELS OF CONTAMINATION IN THE U.S. FROM FUKUSHIMA-DAIICHI

From: Weber, Michael
Sent: Wednesday, April 06, 2011 6:47 PM
To: PMT01 Hoc; Hoc, PMT12
Cc: Zimmerman, Roy; ET05 Hoc; ET01 Hoc; OST02 HOC; LIA06 Hoc; LIA08 Hoc; Burnell, Scott
Subject: FYI - ENVIRONMENTAL PROTECTION ARTICLE ON TRACE LEVELS OF CONTAMINATION IN THE U.S. FROM FUKUSHIMA-DAIICHI

Environmental Protection issued the article below in its daily online newsletter today...

Iodine-131 Levels Still Below Levels of Concern

EPA and USDA are monitoring food, rain, and potable water for levels of radioactivity that may have drifted to the United States from Japan.

- **Mar 31, 2011**

On April 4, the U.S. Environmental Protection Agency updated its report on monitoring for radioactive material.

The latest RadNet results include the first results for drinking water: Samples from two locations, Boise, Idaho and Richland, Wash., showed trace amounts of Iodine-131 – about 0.2 picocuries per liter in each case. According to EPA, an infant would have to drink almost 7,000 liters of this water to receive a radiation dose equivalent to a day's worth of the natural background radiation exposure people experience continuously from natural sources of radioactivity in our environment.

Earlier precipitation samples collected by EPA have shown trace amounts of radioactivity, so the agency has expected to find results such as these in some drinking water samples. Similar findings are to be expected in the coming weeks.

Results of EPA's precipitation sampling and air filter analyses continue to detect very low levels of radioactive material consistent with estimated releases from the damaged nuclear reactors. These detections were expected and the levels detected are far below levels of public-health concern.

For the latest air monitoring filter data, click [here](#).

For the latest milk sampling data, click [here](#).

For the latest precipitation sampling data, click [here](#).

EPA conducts radiological monitoring of milk under its RADNET program, while the U.S. Food and Drug Administration (FDA) has jurisdiction over the safety, labeling, and identity of milk and milk products in interstate commerce. States have jurisdiction over those facilities located within their territory.

Results from a screening sample taken March 25 from Spokane, Wash. detected 0.8 pCi/L of iodine-131, which is more than 5,000 times lower than FDA's Derived Intervention Level. These types of findings are to be expected in the coming days and are far below levels of public health concern, including for infants and children. Iodine-131 has a half-life of approximately eight days, and the level detected in milk and milk products is therefore expected to drop relatively quickly.

“Radiation is all around us in our daily lives, and these findings are a minuscule amount compared to what people experience every day. For example, a person would be exposed to low levels of radiation on a round-trip cross country flight, watching television, and even from construction materials,” said Patricia Hansen, an FDA senior scientist.

EPA’s recommendation to state and local governments is to continue to coordinate closely with EPA, FDA, and the Centers for Disease Control. The environmental agency will continue to communicate nationwide sampling results as they come in.

Source:EPA

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Mike

Michael Weber
Deputy Executive Director for Materials, Waste, Research,
State, Tribal, and Compliance Programs
U.S. Nuclear Regulatory Commission

301-415-1705
Mail Stop O16E15

From: Weber, Michael
Sent: Wednesday, April 06, 2011 6:32 PM
To: LIA06 Hoc; LIA08 Hoc
Cc: Zimmerman, Roy; OST02 HOC; ET05 Hoc; ET01 Hoc
Subject: FYI - Report

Feedback from the Japanese Embassy here in Washington. I shared with them a brief email with our standard response to questions from reporters about the New York Times article this morning regarding the RST Assessment of 26 March.

From: INUTSUKA TAKASHI [mailto:takashi.inutsuka@mofa.go.jp]
Sent: Wednesday, April 06, 2011 2:47 PM
To: Weber, Michael
Cc: Borchardt, Bill; SHIMASAKI SEIICHI
Subject: RE: RESPONSE - Report

Dear Mike,

Thank you for sending your answer, when the press asks about the assessment. Embassy of Japan also understood the sensitivity of the information contained in the document and protected it accordingly. And I fully understand that the NRC has shared this response with your team in Tokyo, who is assisting Ambassador Roos and cooperating with counterparts in Japan.

Again, I greatly appreciate your cooperation:

Sincerely yours,

Takashi

Takashi Inutsuka
Chief of Science Section
Science Counselor
Embassy of Japan
Tel: 202-238-6920
Fax: 202-462-1118

From: Weber, Michael [mailto:Michael.Weber@nrc.gov]
Sent: Wednesday, April 06, 2011 1:34 PM
To: INUTSUKA TAKASHI
Cc: Borchardt, Bill; SHIMASAKI SEIICHI
Subject: RESPONSE - Report

From: LIA06 Hoc
Sent: Wednesday, April 06, 2011 3:32 PM
To: OIGHOTLINE Resource; McMillan, Joseph; Dingbaum, Stephen
Subject: FW: FYI - Nyt article RESPONSE

FYI-may also be pertinent info.

Mark Lombard
Liaison Team Director
U.S. Nuclear Regulatory Commission
Operations Center


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

From: Weber, Michael
Sent: Wednesday, April 06, 2011 11:17 AM
To: Wiggins, Jim
Cc: Casto, Chuck; Collins, Elmo; Virgilio, Martin; Muessle, Mary; Andersen, James; Merzke, Daniel; LIA06 Hoc; LIA08 Hoc; ET05 Hoc; ET01 Hoc; OST02 HOC
Subject: FYI - Nyt article RESPONSE

Jim - in response to Linda Howell's comments this morning, it would be useful to share the statement below with the Regional offices and HQs briefers to encourage a consistent response to questions related to the New York Times article.

Thanks

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

From: Shapiro, Nicholas S. [mailto:(b)(6)] 
Sent: Wednesday, April 06, 2011 11:06 AM
To: Burnell, Scott; Brenner, Eliot; 'Dan.Leistikow@hq.doe.gov'; Bentz, Julie A.; Hayden, Caitlin
Cc: Hayden, Elizabeth; Harrington, Holly; Doane, Margaret; Batkin, Joshua; Weber, Michael
Subject: RE: Nyt article

Plus hayden

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

From: Burnell, Scott [mailto:Scott.Burnell@nrc.gov]
Sent: Wednesday, April 06, 2011 11:04 AM
To: Shapiro, Nicholas S.; Brenner, Eliot; 'Dan.Leistikow@hq.doe.gov'; Bentz, Julie A.
Cc: Hayden, Elizabeth; Harrington, Holly; Doane, Margaret; Batkin, Joshua; Weber, Michael
Subject: RE: Nyt article

All;

The agency continues to develop a path towards releasing the assessment documents. In the meantime, here is the current NRC response to the NY Times article:

The March 26 document represented an interim snapshot of what NRC staff and other experts considered as possible conditions inside the damaged units at Fukushima-Daiichi; the document does not reflect our understanding of the current situation. Based on those possible conditions, the NRC staff's recommendations should be considered prudent measures; they are not offered as the only possible solutions. We shared those recommendations with the Japanese operator and regulator of the plants. We understand they are pursuing an alternative set of strategies to control the plants and ensure the safety of the people working at the plants and living nearby. We are working with our counterparts to consider these strategies and explore additional steps that could enhance safety.

Thank you.

Scott Burnell

From: Sheron, Brian
Sent: Tuesday, April 05, 2011 5:41 PM
To: RST01 Hoc
Cc: ET01 Hoc; Weber, Michael; Virgilio, Martin; Miller, Charles
Subject: FW: No really new issues
Attachments: IN 88-92.suppl1.pdf; IN 88-92..pdf

See below and attached. I believe Fukushima unit 4 was in refueling at the time of the earthquake/tsunami. Would the loss of power cause a loss of instrument air? If they had these boot seals inflated at the time, would they have deflated and caused the unit 4 pool to drain down quicker?

Charlie, is this a generic issue to be looked at?

From: Salley, MarkHenry
Sent: Tuesday, April 05, 2011 5:24 PM
To: Tinkler, Charles; Stutzke, Martin; Marksberry, Don
Cc: Correia, Richard; Sheron, Brian
Subject: FW: No really new issues



FYI ~ looks like we (NRC) looked at issues with boot seals around the SFP gate before.

From: Qualls, Phil
Sent: Tuesday, April 05, 2011 4:56 PM
To: Brown, Eva; Salley, MarkHenry
Subject: FW: No really new issues

The precursors for the Japanese U4 SFP draindown IMO. All it take is loss of instrument air which will fairly quickly depressurize the air header thus the inflatable boot seal and not all that much time until the pool is drained to about a foot above the fuel. Wait about a day to heat up the remaining water and the U4 event occurs.

Sometimes the simple stuff that we did not pay enough attention to really bites us.

From: Melfi, Jim
Sent: Tuesday, April 05, 2011 3:25 PM
To: Qualls, Phil
Subject: No really new issues

There are no really new issues, just old issues in a different form.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION
WASHINGTON, D.C. 20555

November 22, 1988

NRC INFORMATION NOTICE NO. 88-92: POTENTIAL FOR SPENT FUEL POOL DRAINDOWN

Addressees:

All holders of operating licenses or construction permits for nuclear power reactors.

Purpose:

This information notice is being provided to alert addressees to potential problems resulting from the failure of the fuel transfer canal door seal. It is expected that recipients will review the information for applicability to their facilities and consider actions, as appropriate, to avoid similar problems. However, suggestions contained in this information notice do not constitute NRC requirements; therefore, no specific action or written response is required.

Description of Circumstances:

On October 2, 1988, with Surry Unit 1 in cold shutdown, the licensee was preparing to test the fuel transfer system (see attached figure) before fuel off-load. The transfer canal door was in place and the single door seal was inflated. The fuel transfer canal was dry. The fuel transfer tube was open, the blind flange was removed on the containment side, and the gate valve was open on the spent fuel pool side. The refueling cavity seal was not in place. An accidental pinhole puncture of the single air supply line to the transfer canal door pneumatic seal was promptly detected and the air leak quickly stopped before it could lead to a loss of seal integrity.

Discussion:

A review of this event by the licensee showed that, given the configuration of the transfer canal, the transfer tube, and the refueling cavity existing at the time of the event, an inadvertent draindown of the spent fuel pool could occur to a height of only 13" above the top of the fuel assemblies (see attached figure). This postulated draindown assumes no operator action and a loss of instrument air or pneumatic seal failure. Increased radiation levels in the spent fuel pool building would have limited stay time in the building and impeded recovery. The licensee estimated that the dose rate, based on the spent fuel inventory at the time of the event, could have reached 50 R/hour on the operating deck. The licensee also calculated that with the refueling cavity seal assembly in place, the spent fuel pool could only draindown to 14 feet above the top of the fuel assemblies.

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If newly discharged fuel had been placed in the spent fuel pool, a postulated draindown of the spent fuel pool could have led to even higher radiation levels in the spent fuel pool building than the radiation levels postulated by the licensee. If a seal failed and spent fuel pool water were lost while a fuel assembly was lifted, fuel could be uncovered and fuel cladding could fail.

The licensee is considering several actions based on the review of this event. The short-term actions include: (1) revising procedures to require that the refueling cavity seal assembly be installed before opening the transfer tube gate valve for dry testing the fuel transfer system, (2) reviewing and upgrading a procedure for the loss of spent fuel pool inventory, (3) upgrading the material of the plastic air hose in which the pinhole occurred, and (4) providing an emergency escape system for personnel in the transfer canal. The long-term actions include: (1) evaluating the canal door and seal design including the need for a backup air supply, a low air pressure alarm, and a backup seal, (2) evaluating other pneumatic seals used at Surry, (3) developing a procedure for installing, inspecting, and testing the seals in accordance with the manufacturer's recommendations, (4) revising procedures to ensure the transfer tube blind flange is installed whenever the transfer canal is drained for maintenance on the transfer tube gate valve, and (5) reviewing further the procedures for loss of spent fuel pool and refueling cavity water level, after the short-term modifications to these procedures.


In 1981, a related event occurred at Arkansas Nuclear One, Unit 2. At the end of a refueling outage with the transfer canal door closed and the door seal inflated, the transfer canal was drained in preparation for performing maintenance on the fuel upender. Concurrent maintenance on the air system resulted in a loss of air pressure to the seal, and water leaked from the spent fuel pool into the fuel upender pit. The transfer gate valve was closed and acted as a barrier to the flow. The leakage stopped when the water levels equalized. The spent fuel pool level had decreased by 7 feet. If the seal had leaked while the maintenance on the upender was in progress with the fuel transfer tube gate valve open and the fuel transfer tube blind flange removed, the spent fuel pool could have drained down to a level just above the top of the fuel assemblies.

Pneumatic seals are also used in the refueling cavity seal assembly. In many cases, the failure modes of the refueling cavity seals (IE Bulletin 84-03, "Refueling Cavity Water Seal" and Information Notice 84-93, "Potential for Loss of Water From the Refueling Cavity") apply to the spent fuel pool gate seals.

These events show that a door equipped with a single seal and/or a single air supply is subject to complete loss of function from a single failure. Therefore, the seal must be properly installed, and the seal and air supply system must be carefully maintained. The scenarios discussed also point out the need for carefully coordinating such activities as maintenance and testing to avoid undesirable interactions between systems which could result in fuel uncover, personnel injury, and personnel contamination.

IN 88-92
November 22, 1988
Page 3 of 3

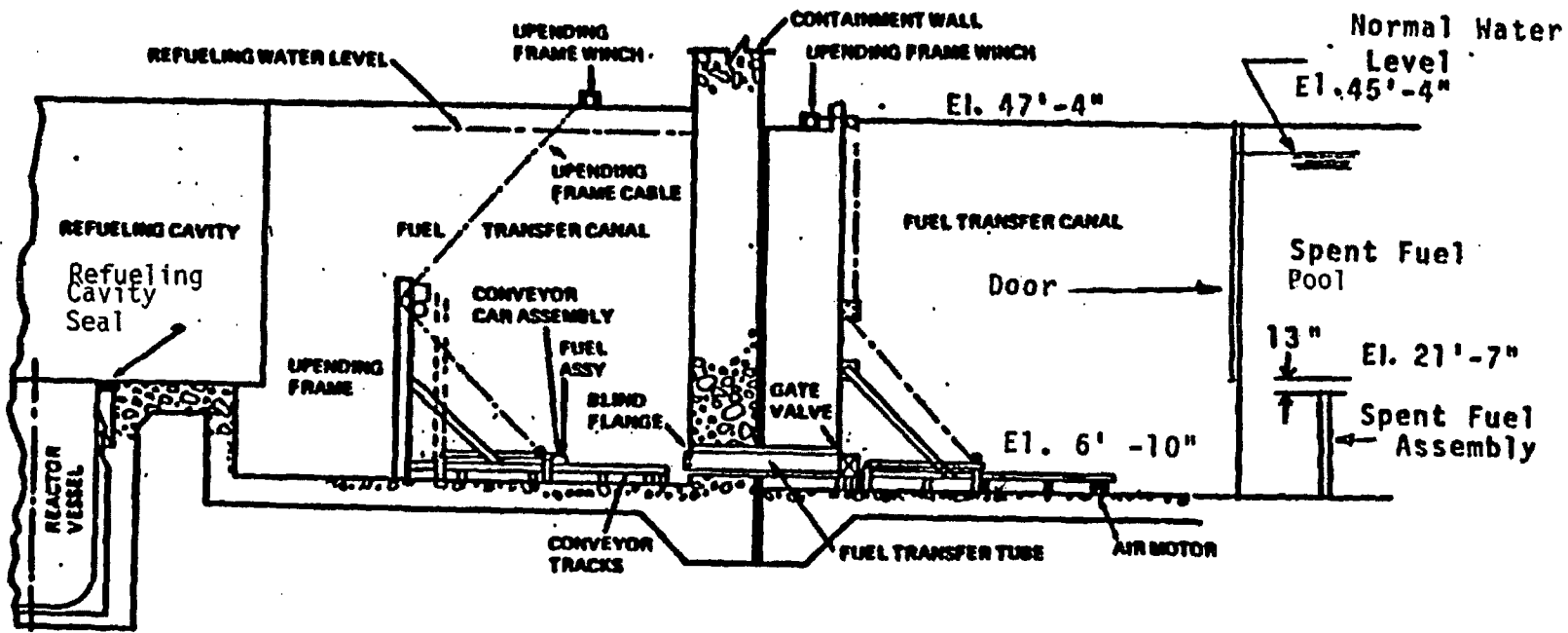
No specific action or written response is required by this information notice. If you have any questions about this matter, please contact the technical contact listed below or the Regional Administrator of the appropriate regional office.


Charles E. Rossi, Director
Division of Operational Events Assessment
Office of Nuclear Reactor Regulation

Technical Contact: Daniele Oudinot, NRR
(301) 492-1174

Attachments:

1. Figure of Fuel Transfer System
2. List of Recently Issued NRC Information Notices



FUEL TRANSFER SYSTEM

Attachment 1
 IN 88-92
 November 22, 1988
 Page 1 of 1

LIST OF RECENTLY ISSUED
NRC INFORMATION NOTICES

Information Notice No.	Subject	Date of Issuance	Issued to
88-91	Improper Administration and Control of Psychological Tests	11/22/88	All holders of OLs or CPs for nuclear power reactors and all fuel cycle facility licensees who possess, use, import, export, or transport formula quantities of strategic special nuclear material.
88-90	Unauthorized Removal of Industrial Nuclear Gauges	11/22/88	All NRC licensees authorized to possess, use, manufacture, or distribute industrial nuclear gauges.
88-89	Degradation of Kapton Electrical Insulation	11/21/88	All holders of OLs or CPs for nuclear power reactors.
88-88	Degradation of Westinghouse ARD Relays	11/16/88	All holders of OLs or CPs for nuclear power reactors.
88-87	Pump Wear and Foreign Objects in Plant Piping Systems	11/16/88	All holders of OLs or CPs for nuclear power reactors.
86-106, Supp. 3	Feedwater Line Break	11/10/88	All holders of OLs or CPs for nuclear power reactors.
88-86	Operating with Multiple Grounds in Direct Current Distribution Systems	10/21/88	All holders of OLs or CPs for nuclear power reactors.
88-85	Broken Retaining Block Studs on Anchor Darling Check Valves	10/14/88	All holders of OLs or CPs for nuclear power reactors.

OL = Operating License
CP = Construction Permit

No specific action or written response is required by this information notice. If you have any questions about this matter, please contact the technical contact listed below or the Regional Administrator of the appropriate regional office.

Charles E. Rossi, Director
Division of Operational Events Assessment
Office of Nuclear Reactor Regulation

Technical Contact: Daniele Oudinot, NRR
(301) 492-1174

Attachments:

1. Figure of Fuel Transfer System
2. List of Recently Issued NRC Information Notices

*SEE PREVIOUS PAGE FOR CONCURRENCE

*Tech Ed
11/7/88

Final draft
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11/17/88

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*C:EAB:NRR
WLanning
11/10/88

*C:OGCB:NRR
CHBerlinger
11/10/88

D. DOEA:NRR
CERossi
11/17/88

No specific action or written response is required by this information notice. If you have any questions about this matter, please contact the technical contact listed below or the Regional Administrator of the appropriate regional office.

Charles E. Rossi, Director
Division of Operational Events Assessment
Office of Nuclear Reactor Regulation

Technical Contact: Daniele Oudinot, NRR
(301) 492-1174

Attachments:

1. Figure of Fuel Transfer System
2. List of Recently Issued NRC Information Notices

*SEE PREVIOUS PAGE FOR CONCURRENCE

*Tech Ed
11/7/88

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No specific action or written response is required by this information notice. If you have any questions about this matter, please contact the technical contact listed below or the Regional Administrator of the appropriate regional office.

Charles E. Rossi, Director
Division of Operational Events Assessment
Office of Nuclear Reactor Regulation

Technical Contact: Daniele Oudinot
(301) 492-1174

Attachments:
Figure of Fuel Transfer System
List of Recently Issued NRC Information Notices

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C:OGCB:NRR
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UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION
WASHINGTON, D.C. 20555

November 29, 1991

NRC INFORMATION NOTICE 88-92, SUPPLEMENT 1: POTENTIAL FOR SPENT FUEL POOL
DRAINDOWN

Addressees

All holders of operating licenses or construction permits for nuclear power reactors.

Purpose

The U.S. Nuclear Regulatory Commission (NRC) is issuing this supplement to Information Notice (IN) 88-92 to inform addressees of additional information regarding the potential for spent fuel pool draindown. It is expected that recipients will review the information for applicability to their facilities and consider actions, as appropriate, to avoid similar problems. However, suggestions contained in this information notice supplement are not NRC requirements; therefore, no specific action or written response is required.

Background

The NRC issued IN 88-92 to alert addressees to problems that could result from the failure of pneumatic-type boot seals used to separate the spent fuel pool (SFP) from other cavities such as the fuel transfer canal and the refueling cavity. IN 88-92 described events involving the loss or potential loss of this type of seal that occurred at Surry Power Station, Unit 1, and Arkansas Nuclear One (ANO), Unit 2. A description of a recent event and two potential scenarios with safety significance follows.

Description of Circumstances

On September 23, 1991, Wolf Creek Generating Station (WCGS) was in cold shut-down in preparation for refueling when it experienced a SFP draindown. The gate between the SFP and the fuel transfer canal was in place with the dual boot seals inflated (Figure 1). The fuel transfer canal was partially filled (about half full) with borated water and the fuel transfer tube which connects to the refueling cavity was closed. The air supply for the SFP gate seals comes from the nonsafety-related service air system. The event was initiated by the loss of a nonsafety-related electrical bus which caused the service air to isolate from its source. The loss of this bus also caused a loss of the instrumentation that provided SFP level indication. The SFP gate seals subsequently depressurized through leaks in the service air system (Figure 2). The leaks occurred at isolation valve packings, check valves, and at "Chicago" quick-connect fittings that were not in accordance with design drawings.

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PDR I&E Notice 88-092 911129

The SFP level decreased as water passed through the seals and into the fuel transfer canal. Finally, cooling to the SFP was lost when the SFP circulating pump tripped on low level. The operators were not alerted to the loss of SFP water in the early part of the event, because the SFP low-level alarm had previously annunciated three days earlier indicating that the SFP level was lower than normal. However, it was still above technical specification (TS) requirements. At that time, the operators did not refill the SFP because of the need for adding makeup water to the reactor coolant system as cooldown progressed. By the time the operators recognized that the SFP gate seals had failed and they had completed actions to repressurize the seals, the SFP level had dropped about 44 inches. This was about 16 inches below the TS required level of 23 feet above the top of the spent fuel. An NRC Augmented Inspection Team (AIT) was dispatched to WCGS to evaluate the event. The results of the inspection and further details of the event may be found in AIT Inspection Report 50-482/91-28.

Discussion

During the AIT site visit, the NRC identified two additional scenarios of safety significance that applied to WCGS.

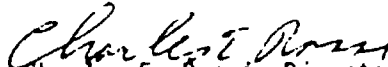
The first scenario involved possible failure of the SFP gate seals while performing preventive maintenance on the fuel transfer system with the fuel transfer tube open. The licensee did not have established administrative controls over the refueling cavity drains or over the reactor vessel-to-cavity seal for this activity. Under the above conditions, the licensee estimated that, without operator intervention, the failure of the SFP gate seals could have allowed the level in the SFP to drop to about 1 foot above the top of the spent fuel assemblies. The level in the SFP would have dropped to about 9 feet above the spent fuel assemblies with the reactor vessel-to-cavity seal installed and the refueling cavity drains closed.

The second scenario involved possible failure of the SFP gate seals during the periodic inspection or reconstitution of fuel assemblies performed in the SFP or the cask loading pool with the fuel transfer canal drained. At WCGS, the SFP is connected to both the fuel transfer canal and the cask loading pool through removable gates with pneumatic-type seals. The licensee indicated to the AIT that the gate between the SFP pool and the cask loading pool was seldom used. The licensee estimated that without operator intervention, the failure of the SFP gate seals could have allowed the level in the SFP and the cask loading pool to drop enough to uncover a fuel assembly held by the fuel handling bridge crane or in the fuel inspection stand.

To mitigate the risk of the first scenario, the licensee committed to perform the following whenever the fuel transfer tube is open and the refueling cavity and the fuel transfer canal are drained: (1) have a backup gas supply in place to repressurize the boot seals if service air is lost, (2) have a dedicated operator in place to install the backup gas supply and close the fuel transfer tube gate valve, and (3) have the reactor vessel-to-cavity seal in place and the refueling cavity drains blanked or sealed.

To mitigate the risk of the second scenario, the licensee committed to either have all three fuel building cavities i.e. the SFP, the cask loading pool, and the fuel transfer canal, full or to notify management and establish other compensatory measures when performing fuel inspections or reconstitutions.

This information notice supplement requires no specific action or written response. If you have any questions about the information in this supplement, please contact the technical contact listed below or the appropriate Office of Nuclear Reactor Regulation (NRR) project manager.


Charles E. Rossi, Director
Division of Operational Events Assessment
Office of Nuclear Reactor Regulation

Technical contact: Dr. Dale A. Powers, RIV
(817) 860-8195

Attachments:

1. Figure 1. Fuel Transfer System
2. Figure 2. Spent Fuel Pool Gate Seal Air Supply Lines
3. List of Recently Issued NRC Information Notices

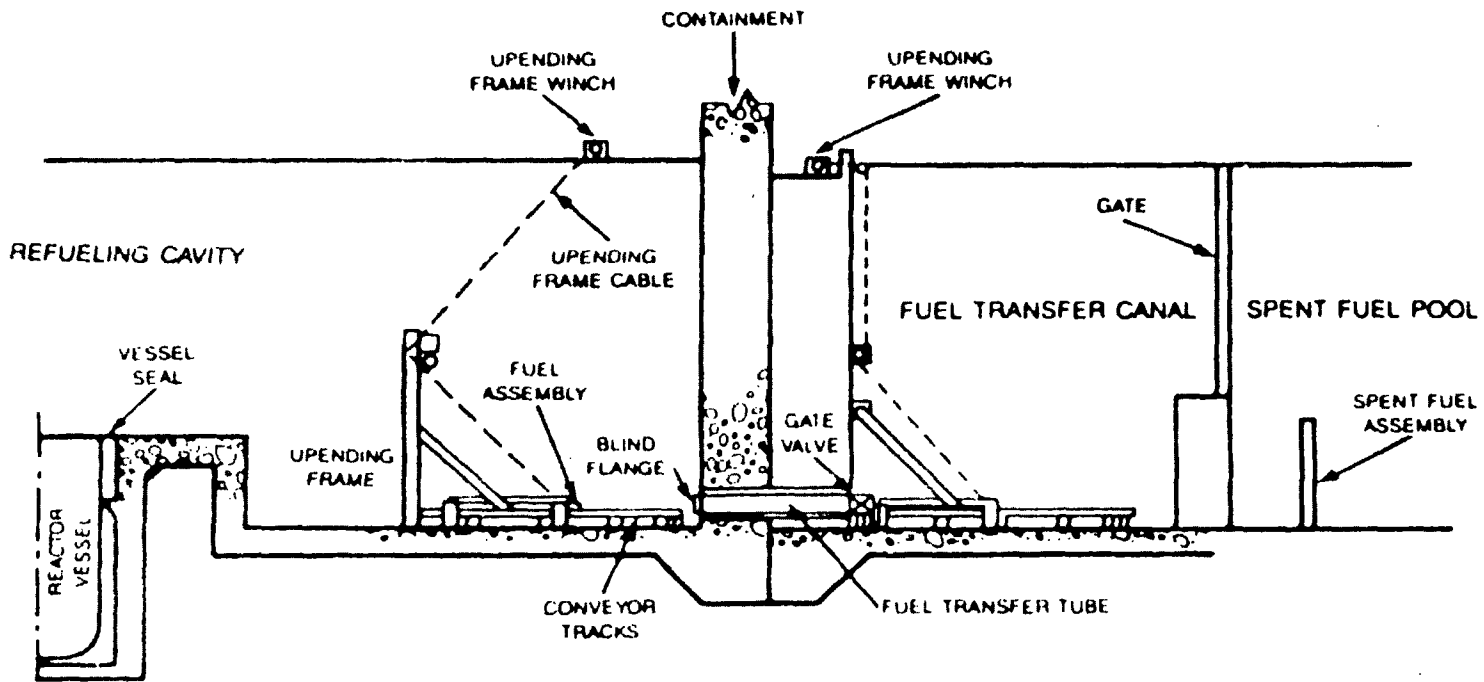


Figure 11 FUEL TRANSFER SYSTEM

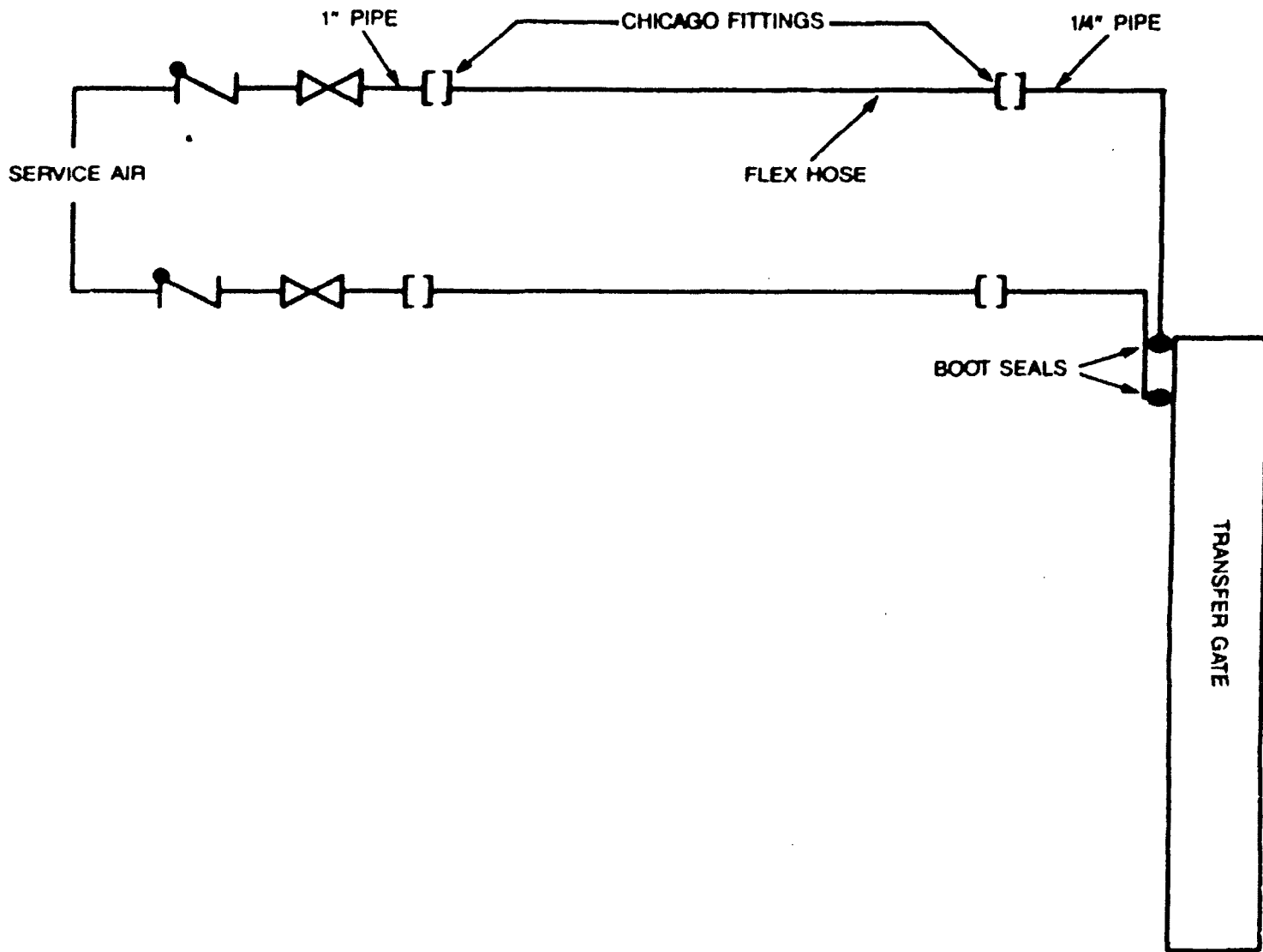


Figure 2: SPENT FUEL POOL GATE SEAL AIR SUPPLY LINES

LIST OF RECENTLY ISSUED
 NRC INFORMATION NOTICES

Information Notice No.	Subject	Date of Issuance	Issued to
91-78	Status Indication of Control Power for Circuit Breakers Used in Safety-Related Applications	11/28/91	All holders of OLs or CPs for nuclear power reactors.
90-57, Supp. 1	Substandard, Refurbished Potter & Brumfield Relays Represented as New	11/27/91	All holders of OLs or CPs for nuclear power reactors.
91-77	Shift Staffing at Nuclear Power Plants	11/26/91	All holders of OLs or CPs for nuclear power reactors.
91-76	10 CFR Parts 21 and 50.55(e) Final Rules	11/26/91	All holders of OLs or CPs and vendors for nuclear power reactors.
91-75	Static Head Corrections Mistakenly not Included in Pressure Transmitter Calibration Procedures	11/25/91	All holders of OLs or CPs for nuclear power reactors.
91-74	Changes in Pressurizer Safety Valve Setpoints Before Installation	11/25/91	All holders of OLs or CPs for nuclear power reactors.
91-73	Loss of Shutdown Cooling During Disassembly of High Pressure Safety Injection System Check Valve	11/21/91	All holders of OLs or CPs for nuclear power reactors.
91-72	Issuance of a Revision to the EPA Manual of Protective Action Guides and Protective Actions for Nuclear Incidents	11/19/91	All holders of OLs or CPs for nuclear power reactors.
91-71	Training and Supervision of Individuals Supervised by an Authorized User	11/12/91	All NRC medical licensees.

OL = Operating License
 CP = Construction Permit

**UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555**

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From: Virgilio, Rosetta
Sent: Tuesday, April 05, 2011 11:42 AM
To: Flanders, Scott; LaVie, Steve
Cc: Turtill, Richard; LIA04 Hoc; OST05 Hoc; LIA08 Hoc; LIA06 Hoc; Hoc, PMT12
Subject: FW: IMPORTANT: 2011 Japan Response State Coordination Conference Call (formerly ASTHO call) Changes

FYI

From: LIA04 Hoc
Sent: Tuesday, April 05, 2011 9:32 AM
To: Turtill, Richard; LIA06 Hoc
Cc: Cool, Donald; Piccone, Josephine; Jackson, Deborah; Virgilio, Rosetta; Ryan, Michelle; Arribas-Colon, Maria; Cuadrado, Leira; Flannery, Cindy; Easson, Stuart; Rivera, Alison; Noonan, Amanda; LIA08 Hoc; LIA01 Hoc; LIA11 Hoc; Hoc, PMT12; ET05 Hoc; ET01 Hoc; ET07 Hoc
Subject: RE: IMPORTANT: 2011 Japan Response State Coordination Conference Call (formerly ASTHO call) Changes

I spoke to PMT and was informed that Scott Flanders, the PMT Director, and/or Steve LaVie, PMT RAAD, will participate.

From: Turtill, Richard
Sent: Tuesday, April 05, 2011 9:18 AM
To: LIA06 Hoc
Cc: LIA04 Hoc; Cool, Donald; Piccone, Josephine; Jackson, Deborah; Virgilio, Rosetta; Ryan, Michelle; Arribas-Colon, Maria; Cuadrado, Leira; Flannery, Cindy; Easson, Stuart; Rivera, Alison; Noonan, Amanda; LIA08 Hoc; LIA01 Hoc; LIA11 Hoc; Hoc, PMT12; ET05 Hoc; ET01 Hoc; ET07 Hoc
Subject: RE: IMPORTANT: 2011 Japan Response State Coordination Conference Call (formerly ASTHO call) Changes

Liaison Team Director:

Do we have an NRC name for tonight's call. Note, too, that DOE is not on tonight's agenda.

Rich

From: LIA06 Hoc
Sent: Monday, April 04, 2011 9:43 PM
To: Turtill, Richard
Cc: LIA04 Hoc; Cool, Donald; Piccone, Josephine; Jackson, Deborah; Virgilio, Rosetta; Ryan, Michelle; Arribas-Colon, Maria; Cuadrado, Leira; Flannery, Cindy; Easson, Stuart; Rivera, Alison; Noonan, Amanda; LIA08 Hoc; LIA01 Hoc; LIA11 Hoc; Hoc, PMT12; ET05 Hoc; ET01 Hoc; ET07 Hoc
Subject: RE: IMPORTANT: 2011 Japan Response State Coordination Conference Call (formerly ASTHO call) Changes

Rich,

I spoke to the ET Director and we agreed that the PMT Director should sit in on these calls to give any status and priority information which is in the NRC's purview. As such, the PMT Director may not be able to fill 2 minutes but maybe 15-30 seconds after others have spoken, such as DOE since they have the lead to communicate information to the states regarding monitoring radiation heading toward or over the US. I have discussed this with the PMT and they are adding it to their list of calls to support. PMT has been listening in to these calls.

Liaison Team Director

From: Turtill, Richard

Sent: Monday, April 04, 2011 6:27 PM

To: LIA06 Hoc; LIA08 Hoc; LIA01 Hoc; LIA11 Hoc

Cc: LIA04 Hoc; Cool, Donald; Piccone, Josephine; Jackson, Deborah; Virgilio, Rosetta; Ryan, Michelle; Arribas-Colon, Maria; Cuadrado, Leira; Flannery, Cindy; Easson, Stuart; Rivera, Alison; Noonan, Amanda

Subject: FW: IMPORTANT: 2011 Japan Response State Coordination Conference Call (formerly ASTHO call) Changes
Importance: High

Liaison Directors:

I received this this afternoon. I had earlier called CDC/HHS and identified myself as the briefer for NRC for Tuesday based on another, separate scheduling invitation. Now, I see guidance below for tomorrow night's call (and for Thursday's call, too), specifically: "**Tuesday: Strategic Call for Health Officials**

Federal agencies should **designate a senior policy official to provide a brief TWO minute update during this call**. The senior federal official should list current agency priorities; priorities on the horizon, and topics for which State/local input is being sought. The purpose of the Tuesday call is to provide a high level update to state and local partners and encourage **policy-level strategic** information sharing and discussion.

Thursday: Tactical/operational Call for Health Officials

The purpose of the Thursday call is to update state and local partners while encouraging **operational/technical discussion** and information sharing. The primary audience for this call includes representatives from ASTHO, Directors of Public Health Preparedness, Radiation Officers, Environmental Directors, Laboratory Directors, and Public Information Officers. **Please designate a Subject Matter Expert from your agency to provide a brief update during this call.**

This being said, **I believe someone else should be assigned to speak for NRC at the Tuesday and Thursday calls this week as I'm neither a Senior Policy Official nor a Subject Matter Expert at the NRC.**

Rich Turtill

From: CDC IMS State Coordination Task Force [mailto:eocstatecoord@cdc.gov]

Sent: Monday, April 04, 2011 2:38 PM

To: donna.weise@dhs.gov; Turtill, Richard; Ryan, Michelle; LIA04 Hoc; OST05 Hoc; Browder, Rachel; Tupin.Edward@epamail.epa.gov; Bowles.Jack@epamail.epa.gov; KEVIN.Mcaleenan@dhs.gov; Blumenstock, Jim (CDC astho.org); Herrmann, Jack (CDC naccho.org); Lurie, Nicole (OS); Yeskey, Kevin (OS); Kaplowitz, Lisa (OS); Natarajan, Nitin (OS); Vineyard, Michael (OS); Michael, Gretchen (OS); Marinissen, Maria Julia (OS); Sanders, Melissa (OS); Fowler, Erin (OS); Sizemore, Tom (OS); Ball, Harvey J. (OS); Forsha, Joseph D. (OS); Bratcher Bowman, Nikki (OS); Russell, Elizabeth B. (ACF); White, Jonathan D. (ACF); Sadovich, Juliana (ACF); Jones, Robin (ACF); Allred, Phillip M. (Mike) (CDC/ONDIEH/NCEH); Talbert, Todd (CDC/OPHPR/DSLRL); Bryant, Jeffrey (Jeff) (CDC/OPHPR/DSLRL); Stevens, Sheila (ATSDR/OPPE); 2011 Japan Earthquake (CDC); CDC IMS Current Ops Lead -2; Boedigheimer, Steven F. (CDC/OPHPR/DSLRL); Bushong, Erica L. (CDC/OPHPR/DSLRL); Rogers, Barbara A. (CDC/OD/OADP); Doan, Stephanie (CDC/ONDIEH/NCEH); Marrone, Ashley A. (CDC/OID/NCEZID); Davis, Mark A. (CDC/ONDIEH/NCIPC); Jackson, Leeanne (FDA/CFSAN/OCD); Russo, Mark R. (FDA/OC/OCTC); Verbeten, John E. (FDA/ORO/ORO); El Hinnaway, Patricia (OS/OPEO); Howard King, Vinetta M. (FDA/OC/OCTC); Leblanc, Pamela (FDA/CFSAN/OCD); Delancey, Siobhan M. (FDA/OC/OEXA); Muldoon, Molly V. (FDA/OC); Mcdermott, Catherine M. (FDA/ORO/ORO); Karol, Susan (IHS/HQ); Mahon, John (IHS/HQ); Spear, Terri (SAMHSA); Carolyn Hanson

Cc: CDC IMS State Coordination -2

Subject: IMPORTANT: 2011 Japan Response State Coordination Conference Call (formerly ASTHO call) Changes
Importance: High

Dear Federal Partner:

Important Change: The structure for the 2011 Japan Earthquake **Tuesday/Thursday State Coordination Conference Calls** (formerly the “ASTHO” calls) has changed. The new call structure will allow for approximately 30 minutes for brief updates from federal agencies and 30 minutes for questions and answers from participants. Please see below for specific information about each call and a request for the name of the point of contact for your agency who will participate and be responsible for assuring participation by your agency.

Tuesday: Strategic Call for Health Officials

Federal agencies should **designate a senior policy official to provide a brief TWO minute update during this call.** The senior federal official should list current agency priorities; priorities on the horizon, and topics for which State/local input is being sought. The purpose of the Tuesday call is to provide a high level update to state and local partners and encourage **policy-level strategic** information sharing and discussion. The primary audience for this call includes State Health Officials (ASTHO members), National Alliance for Radiation Readiness (NARR), officials from the Environmental Council of States (ECOS), and the National Public Health Information Coalition (NPHIC).

Each Federal agency representative will have approximately 2 minutes to provide an initial update during the Tuesday call. State/local questions will enable more discussion of the points shared by the federal agencies.

The purpose of the Tuesday call is to share strategic direction and flag issues needing follow up. Questions that arise during the call will receive follow up by the respective federal agencies as appropriate and be closed on the next call and/or followed up through other forums. .

Thursday: Tactical/operational Call for Health Officials

The purpose of the Thursday call is to update state and local partners while encouraging **operational/technical discussion** and information sharing. The primary audience for this call includes representatives from ASTHO, Directors of Public Health Preparedness, Radiation Officers, Environmental Directors, Laboratory Directors, and Public Information Officers. **Please designate a Subject Matter Expert from your agency to provide a brief update during this call.** Thursday tactical calls may function similar to the Tuesday call (approximately 2 minutes for each Federal agency to provide an update) or in advance of the call, a specific topic (e.g., passenger/cargo screening, laboratory testing, etc.) may be selected and a specific federal agency or agencies, asked to provide a 5 minute overview. As in the Tuesday call, most of the call will be devoted to Q & A after initial opening statements.

Please provide the name and contact information (including telephone number) for each individual that will be representing a Federal Agency as soon as possible so we can reach out to them directly as necessary.

An email invitation will be sent promptly with specific calling instructions.

Thanks for your assistance.

From: Johnson, Michael
Sent: Tuesday, April 05, 2011 5:09 AM
To: McDermott, Brian
Subject: FW: quick look notes

Fyi.

From: Weber, Michael
Sent: Tuesday, April 05, 2011 5:07 AM
To: Johnson, Michael; Wiggins, Jim
Cc: ET01 Hoc; ET05 Hoc; LIA06 Hoc; LIA08 Hoc; Virgilio, Martin
Subject: FYI - quick look notes

You should already have these highlights...

From: Casto, Chuck
To: Weber, Michael; Virgilio, Martin
Sent: Tue Apr 05 01:04:44 2011
Subject: quick look notes

Here's a "quick look" from the meeting tonight:
(complete minutes should be available tomorrow)

Notes from GOJ-USG Cabinet meeting April 4, 2011

GOJ –

Welcome & grateful for U.S. support. USG is our biggest supporter.

Plant conditions –

Continued spraying spent fuel pools as needed. Some water level indications restored on skimmer surge tanks.

Had to release some contaminated water from radwaste and a pit at the intake to the sea in order to make room for highly contaminated water.

NISA – thanks to U.S. side for information on technical issues. Still some remaining issues that we seek information on.

Working Group Briefings:

Remote Control Group – hardened camera and robot will be shipped to GOJ soon.

UAV will be used to determine parameters for the spent fuel pools. April 8

April 5, samples of Unit 4 spent fuel pool (no sure what this meant)

Unmanned helicopter will be used soon.

GOJ is spraying "fixative" on plant surfaces to control spread of contamination.

Shielding structures for buildings (tents over buildings) - thought 1 year lifetime was necessary, now realize it will be several years of lifetime required. Must reconsider structure and materials.

Adding three new working groups: 1. Construction of long term cooling (GE will work on this); 2. Collection and recovery of radioactive contamination (water)...DOE will work on this; still need stainless steel tanks and trailer; 3. Environmental impact group..... assess activities prior to implementation..

Both Mr. Ney and Mr. Hosono mentioned "new stage" in project. Mr. Hosono reported that they will create a long-term plan – a strategy with timeframes to stop exposure and provide stabilize cooling; they will reach out to the international community for support.

We shared the information on the equipment process. We asked some questions on the plant status; suggested the use of a portable air sampler; thanked them for the dialogue on technical issues; and welcomed continued working relationships.

Afterwards Mr. Hosono approached Casto to ask for a private meeting between Hosono and Casto to get ideas on the structure on the strategic plan. He asked Casto to share thoughts at the meeting.

chuck

From: James, Lois
Sent: Tuesday, April 05, 2011 6:52 AM
To: RST01 Hoc
Cc: LIA06 Hoc
Subject: RE: Japan's New Emergency Safety Counter Measures for PWR BWR.pptx

We are looking at this under the allegation program. The comment "you may be the 1st in the NRC to know..." made me want to make sure that the Ops center has the information.

Thank you

From: RST01 Hoc
Sent: Monday, April 04, 2011 9:31 PM
To: James, Lois
Cc: LIA06 Hoc
Subject: FW: Japan's New Emergency Safety Counter Measures for PWR BWR.pptx

Lois,

Based on RST discussions, we think this is something for NRR to review, not the Ops Center. The allegor seems to be discussing the type of actions or capabilities that we would consider part of B.5.b requirements.

Please respond to RST01 if you think the Reactor Safety Team should take additional action.

Thanks,

Brett

RST Coordinator

From: LIA06 Hoc
Sent: Monday, April 04, 2011 5:10 PM
To: James, Lois
Cc: Nelson, Robert; Crutchley, Julie; Hoc, PMT12; RST01 Hoc; ET01 Hoc; ET05 Hoc; ET07 Hoc; ET02 Hoc
Subject: RE: Japan's New Emergency Safety Counter Measures for PWR BWR.pptx

OK, I am cc'ing the RST and PMT on this email so they can review the information and take appropriate action.

Mark Lombard
Liaison Team Director
U.S. Nuclear Regulatory Commission
Operations Center

From: James, Lois
Sent: Monday, April 04, 2011 4:46 PM
To: LIA06 Hoc
Cc: Nelson, Robert; Crutchley, Julie
Subject: FW: Japan's New Emergency Safety Counter Measures for PWR BWR.pptx

To Whom It May Concern:

I am forwarding an email from an alleger who indicates that we may not be aware of some information. Please do what you see fit with the information below.

Lois M. James, Sr Office Allegation Coordinator
U.S. Nuclear Regulatory Commission

301-415-3306
lois.james@nrc.gov

From:
Sent: Friday, April 01, 2011 8:12 AM
To: [REDACTED]
Subject: Japan's New Emergency Safety Counter Measures for PWR BWR.pptx

Dear [REDACTED]:

.... I want you to know (perhaps, very first in NRC) that:
As of March 30, 2011, Japanese government

- Conceded, for the first time, that Nuclear Power Plant's simultaneous loss of both "off-site" and "on-site" AC Power Sources is reality and
- Announced the countermeasures for the reality.
 - The countermeasure should be implemented by middle of April 2011 for all Nuclear Power Plants in Japan

The countermeasures include both Equipment and Regulatory Procedures

- 3 Equipment
 - A Vehicle with Electric Power Generator
 - To provide Emergency Power for Pumps to Cool Reactor and Spent Fuel Pool
 - A Vehicle with Fire-Engine Capability
 - To provide Emergency Cooling Water
 - A Hose System

- To secure the availability of both tanked- and sea-water
- Regulatory Procedures
 - All necessary Emergency Implementation Procedures for the Equipment
 - All necessary Emergency Training for Personnel for the Equipment

The countermeasures for BWR and PWR Plants are specifically noted in the Regulatory Procedures.

I am attaching four graphs (in Japanese) which depict the countermeasures.

I strongly recommend we review the countermeasures ASAP and incorporate them in NRC's Programs to protect our Nuclear Power Plant from the Terrorists Attack.

Sincerely,

....

From: Weber, Michael
Sent: Thursday, March 31, 2011 6:32 PM
To: LIA06 Hoc; LIA08 Hoc
Cc: Thaggard, Mark; Sheron, Brian; ET05 Hoc; ET01 Hoc; OST02 HOC; FOIA Response.hoc Resource; RST01 Hoc; PMT01 Hoc; Hoc, PMT12; Brenner, Eliot; Hayden, Elizabeth; Dean, Bill; McCree, Victor; Satorius, Mark; Howell, Art; Pederson, Cynthia; Wert, Leonard; Lew, David; Haney, Catherine; Moore, Scott; Zimmerman, Roy; McCrary, Cheryl; Johnson, Michael; Leeds, Eric; Wiggins, Jim; Evans, Michele; Powell, Amy; Schmidt, Rebecca; Rihm, Roger; Andersen, James; Landau, Mindy
Subject: FYI - NRR Q&A Database
Importance: High

Wow! This is quite a useful trove of information. Thanks, NRR and others who contributed!

From: Leeds, Eric
Sent: Thursday, March 31, 2011 5:37 PM
To: Weber, Michael; Virgilio, Martin
Cc: Landau, Mindy; Andersen, James; Muessele, Mary
Subject: FYI: NRR Q&A Database
Importance: High

Try it, you'll like it! We've shared with the regions and other offices.

Eric J. Leeds, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
301-415-1270

From: Nelson, Robert
Sent: Thursday, March 31, 2011 12:46 PM
To: Leeds, Eric; Grobe, Jack; Boger, Bruce; Bahadur, Sher; Blount, Tom; Brown, Frederick; Cheok, Michael; Evans, Michele; Ferrell, Kimberly; Galloway, Melanie; Giitter, Joseph; Givvines, Mary; Hiland, Patrick; Holian, Brian; Howe, Allen; Lee, Samson; Lubinski, John; McGinty, Tim; Quay, Theodore; Ruland, William; Skeen, David; Thomas, Brian; Westreich, Barry
Subject: FYI: NRR Q&A Database
Importance: High

Up and running & populated with OPA approved Qs & As. EDO may announce in an EDO Update. Content control maintained by DORL. Link below.

<http://portal.nrc.gov/edo/nrr/dorl/japan/Shared%20Documents/Questions%20and%20Answers.aspx>

From: Weber, Michael
Sent: Thursday, March 31, 2011 8:51 AM
To: Boger, Bruce; Giitter, Joseph
Cc: LIA06 Hoc; LIA08 Hoc; RST01 Hoc; PMT01 Hoc; Hoc, PMT12; ET01 Hoc; ET05 Hoc; OST02 HOC; FOIA Response.hoc Resource
Subject: FYI - ADDITIONAL INFORMATION ON THE CONDITIONS AT FUKUSHIMA-DAIICHI
Attachments: 110330_Update to Information Sheet-16 (2).doc; 0330_1900_Radiation_Monitoring.pdf; 0330_News_No 37_by_JAIF.PDF

Received these from an NRC Commissioner this morning.

Attachment 0330_1900_Radiation_Monitoring.pdf(170786 bytes)
cannot be converted to PDF format.

Earthquake Report - JAIF

We have been reporting a status of Fukushima Daiichi nuclear power station by summarizing news aired by NHK, which is Japanese national broadcasting company. We regard it as most credible news among many news sources and I am happy to say that NHK's English website has gotten enriched and now you can see movies and English scripts at <http://www3.nhk.or.jp/daily/english/society.html>. Given this situation, we decide to simply place these scripts as it is for the record in case that it will be deleted from the website later, rather than summarizing news as we did.

No. 37

Today's NHK news regarding status of Fukushima Daiichi nuclear power station as of 21:00 on March 30

●Kaieda urges safety steps at other nuclear plants

Japan's industry minister has urged power companies across the country to secure emergency energy sources for their nuclear power stations.

Banri Kaieda told reporters on Wednesday that the accident at the Fukushima Daiichi plant was due to a failure to secure emergency electricity and a loss of cooling systems at the reactors.

Kaieda urged utility companies to secure mobile generators as a source of emergency power that can safely cool nuclear reactors, and to ensure water-supply routes for fire engines.

He demanded that the companies confirm emergency steps and conduct drills within a month, or stop operating their nuclear power plants.

Kaieda added that putting an immediate end to operations at nuclear power plants is out of the question, because Japan relies on them for about 30 percent of its electricity.

NHK has learned that 90 percent of the 15 nuclear power stations nationwide, excluding the 2 quake-hit plants in Fukushima, have decided to introduce new emergency power generators, including mobile generators.

Some utilities have already conducted simulations for cooling procedures based on a scenario in which emergency generators have failed to work at their nuclear reactors.

Wednesday, March 30, 2011 16:57 +0900 (JST)

●TEPCO halts work to remove radioactive water

The operator of the troubled Fukushima Daiichi nuclear power plant has suspended work to move highly radioactive water from the basement of the turbine building into the turbine condenser at the No. 1 reactor.

Tokyo Electric Power Company suspended the operation on Tuesday morning after the condenser became full of water.

The work began on Thursday after water in the basement of the turbine building was found to contain radiation about 10,000 times higher than would normally be found inside an operating nuclear reactor.

The Nuclear and Industrial Safety Agency says the water is now about 20 centimeters deep, half the initial level.

TEPCO is studying a plan to move water from a tunnel outside the turbine building into an on-site waste disposal facility with a capacity of more than CP 155 of 2457

Earthquake Report - JAIF

25,000 tons.

The water contains radioactive substances, and its level is only 10 centimeters below the top of the tunnel.

TEPCO also planned to move highly radioactive water from the basements of the turbine buildings of the No. 2 and No. 3 reactors into turbine condensers with a capacity of 3,000 tons each. But both condensers turned out to be full.

Plant workers are now using pumps that can draw 10 to 25 tons of water per hour to move water from the condensers' storage tanks into other tanks. They then hope to move water inside the condensers into the storage tanks and fill the condensers with the highly radioactive water from the basements.

Wednesday, March 30, 2011 16:37 +0900 (JST)

●Air may be leaking from reactors No. 2 and 3

Japan's Nuclear and Industrial Safety Agency says air may be leaking from the No 2 and No 3 reactors at the Fukushima Daiichi power plant.

The agency was responding at a news conference on Wednesday to speculation that low pressure inside the 2 reactors was due to possible damage to the reactors' pressure vessels.

It said some of their data show pressure is low, but there is no indication of large cracks or holes in the reactor vessels.

The agency said fluctuations in temperature and pressure are highly likely to have weakened valves, pipes and openings under the reactors where the control rods are inserted.

Wednesday, March 30, 2011 15:15 +0900 (JST)

●Radioactive elements in No.1 reactor tunnel

Japanese nuclear safety officials say radioactive iodine and cesium have been found in water at the Fukushima Daiichi power plant coming from a tunnel outside the turbine building of the No.1 reactor.

The Nuclear and Industrial Safety Agency says the levels of radioactive substances detected are low, at one-to-ten percent of those occurring in an operating nuclear reactor.

The agency says the type of radioactive substances found in the water in the tunnel indicates some relation to the contaminated water in the basement of the No.1 reactor turbine building. It says the water in the tunnel will not be released into the sea.

Wednesday, March 30, 2011 12:57 +0900 (JST)

●High radiation levels in waters off Fukushima

The Nuclear and Industrial Safety Agency says radioactive iodine in excess of 3,300 times the national limit was found in seawater near the troubled Fukushima Daiichi nuclear plant on Tuesday afternoon. This was the highest measured in waters off the plant.

The level of radioactive iodine-131 found 330 meters south of a water outlet of the plant was 3,355 times regulated standards at 1:55 PM on Tuesday.

The outlet is used to drain water from the plant's No. 1 to No. 4 reactors.

Radioactive iodine-131 measured 50 meters north of the water outlet of the No. 5 and No. 6 reactors was 1,262 times the regulated standards at 2:10 PM on Tuesday.

Earthquake Report - JAIF

This was also the highest reading at this location.

An agency official told reporters on Wednesday morning that people in a 20-kilometer radius area from the troubled plant have been ordered to evacuate and the radioactive substance will be significantly diluted in the ocean by the time people consume marine products. The official added that efforts need to be made to prevent the contaminated water from flowing into the sea.

Airborne radiation levels continue to decline in most prefectures, including Fukushima and nearby Ibaraki.

Municipalities measured the radiation levels between 00:00 AM and 9:00 AM on Wednesday.

Wednesday, March 30, 2011 12:23 +0900 (JST)

●Aerial photos reveal Fukushima plant damage

Aerial photographs of the Fukushima Daiichi nuclear plant show the scope of the devastation caused by tsunami and hydrogen explosions.

NHK obtained the high resolution photos taken from an unmanned plane on March 20th and 24th. An aerial survey firm in Niigata Prefecture, Air Photo Service, took them at the request of the plant's operator, Tokyo Electric Power Company.

One photo shows a large hole on the roof of the turbine building of the No.3 reactor. It was apparently created when debris hit the roof in a hydrogen explosion.

Part of a pipe is missing between the reactor building and an exhaust stack.

Heavy oil tanks were swept away from the pier by the tsunami and drifted 150 meters westward, blocking a road for vehicles needed for restoration work.

Containers and passenger cars are piled up at the foot of a hill to the west of the No.4 reactor.

Another photo shows pump trucks connected by hoses in a line that stretches from the pier to the first four reactors.

Wednesday, March 30, 2011 08:48 +0900 (JST)

●Radiation levels falling in waters off Fukushima

The science ministry says levels of radiation in seawater near the crippled Fukushima Daiichi Nuclear Power Plant are on the decline.

The ministry has been collecting seawater samples at 4 locations 30 kilometers off the coast of Fukushima Prefecture since March 23rd. The locations were at intervals of 20 kilometers from north to south.

The ministry started the research after waters near the plant's drain outlets were found to be contaminated with a high density of radioactive substances.

The ministry said 1.5 to 3.9 becquerels of radioactive cesium-137 per liter were found in seawater samples taken on Sunday. The amounts represent 1,000 to 2,600 times the levels measured in the same area 2 years ago.

But the current levels are only one-fifth to one-tenth of those detected on March 23rd.

The density of radioactive iodine-131 is also decreasing. It now stands at 5.4 to 15 becquerels per liter.

The ministry said radiation density in the seawater is higher than normal, but it is declining.

Earthquake Report - JAIF

Cesium-137 is said to remain in the environment for a longer time than other substances as it takes roughly 30 years to lose half of its radioactive intensity.

The Marine Ecology Research Institute says cesium-137 will not be directly absorbed into fish through gills but some species can accumulate the element by eating plankton and smaller fish.

It's believed that through this process, the density of cesium in fish can increase 10 to 100 times the level in the seawater.

It usually takes some time for radioactive material to be detected in fish after it flows into the sea. In many cases, such substances are found in flatfish and Japanese seaperch 2 to 3 months after a confirmed leak into the sea.

However, unlike mercury, such elements are eliminated from fish in several weeks.

Wednesday, March 30, 2011 06:25 +0900 (JST)

End

Update to Information Sheet Regarding the Tohoku Earthquake

The Federation of Electric Power Companies of Japan (FEPC) Washington DC Office

As of 10:00AM (EST), March 30, 2011

- Radiation Levels
 - On March 30, it was announced that radioactive nuclide I-131 was detected from the seawater sampled near the seawater discharge point of Fukushima Daiichi Nuclear Station at 1:55PM on March 29. The level of concentration was approximately 3,355 times higher than the maximum permissible water concentration set by the government.
 - At 6:30PM on March 30, radiation level at main gate (approximately 3,281 feet from Unit 2 reactor building) of Fukushima Daiichi Nuclear Power Station: 159 micro Sv/hour.
 - At 6:30PM on March 30, radiation level at west gate (approximately 3,609 feet from Unit 2 reactor building) of Fukushima Daiichi Nuclear Power Station: 106.3 micro Sv/hour.
 - Measurement results of environmental radioactivity level around Fukushima Nuclear Power Station announced at 7:00PM on March 30 are shown in the attached PDF file. English version is available at:
http://www.mext.go.jp/english/radioactivity_level/detail/1304082.htm
 - For comparison, a human receives 2,400 micro Sv per year from natural radiation in the form of sunlight, radon, and other sources. One chest CT scan generates 6,900 micro Sv per scan.
- Fukushima Daiichi Unit 1 reactor
 - At 7:30AM on March 29, transferring the water found at the turbine building to the condenser was suspended because the water level of the condenser became almost full. (Correction of the previous day's report that stated as of 3:00PM on March 29, transferring the water found at the turbine building to the condenser continues.)
 - At 1:00PM on March 30, pressure inside the reactor core: 0.34MPa.
 - At 1:00PM on March 30, water level inside the reactor core: 1.6 meters below the top of the fuel rods.
 - At 1:00PM on March 30, pressure inside the primary containment vessel: 0.23MPaabs.
 - At 1:00PM on March 30, the temperature of the reactor vessel measured at the water supply nozzle: 518.2 degrees Fahrenheit
 - As of 4:00PM on March 30, the injection of freshwater into the reactor core continues.
- Fukushima Daiichi Unit 2 reactor
 - At 4:45PM on March 29, preparation work to recover and transfer the water found at the turbine commenced.
 - At 1:00PM on March 30, the temperature of the spent fuel pool: 118.4 degrees Fahrenheit.
 - At 1:00PM on March 30, pressure inside the reactor core: -0.023MPa.

- At 1:00PM on March 30, water level inside the reactor core: 1.5 meters below the top of the fuel rods.
- At 1:00PM on March 30, pressure inside the primary containment vessel: 0.1MPaabs.
- As of 4:00PM on March 30, the injection of freshwater into the reactor core continues.
- As of 7:00PM on March 30, approximately 96 tons of water in total has been injected into the spent fuel storage pool.
- Fukushima Daiichi Unit 3 reactor
 - At 1:30PM on March 30, pressure inside the reactor core: 0.018MPa.
 - At 1:30PM on March 30, water level inside the reactor core: 1.85 meters below the top of the fuel rods.
 - At 1:30PM on March 30, pressure inside the primary containment vessel: 0.1064MPaabs.
 - As of 4:00PM on March 30, the injection of freshwater into the reactor core continues.
 - As of 7:00PM on March 30, approximately 4,697 tons of water in total has been shot to the spent fuel storage pool.
- Fukushima Daiichi Unit 4 reactor
 - At 2:04PM on March 30, TEPCO began to shoot water aimed at the spent fuel pool, with a specialized vehicle normally used for pumping concrete.
 - As of 7:00PM on March 30, approximately 960 tons of water in total has been shot to the spent fuel storage pool.
- Fukushima Daiichi Unit 5 reactor
 - At 2:00PM on March 30, the temperature of the spent fuel pool: 99.0 degrees Fahrenheit.
- Fukushima Daiichi Unit 6 reactor
 - At 2:00PM on March 30, the temperature of the spent fuel pool: 79.7 degrees Fahrenheit.
- Fukushima Daiichi Common Spent Fuel Pool
 - At 8:30AM on March 29, the temperature of the spent fuel pool: 89.6 degrees Fahrenheit.
 - As of 7:00PM on March 30, approximately 130 tons of water in total has been injected to the spent fuel storage pool.

Our official sources are:

- Office of The Prime Minister of Japan
- Nuclear and Industrial Safety Agency (NISA)
- Tokyo Electric Power Company (TEPCO) Press Releases
- Ministry of Education, Culture, Sports, Science and Technology (MEXT)

From: Weber, Michael
Sent: Wednesday, March 30, 2011 11:45 AM
To: LIA06 Hoc; LIA08 Hoc; Boger, Bruce; Blount, Tom
Cc: ET01 Hoc; ET05 Hoc; OST02 HOC
Subject: Response - potential impact on projects due to Japan!

Importance: High

From: Sheron, Brian
To: Weber, Michael; Virgilio, Martin
Sent: Wed Mar 30 10:32:38 2011
Subject: FW: potential impact on projects due to Japan!

See below. Looks like the two Sandia people already left for Japan.

From: Correia, Richard
Sent: Wednesday, March 30, 2011 10:18 AM
To: Sheron, Brian; Uhle, Jennifer
Cc: Coyne, Kevin
Subject: FW: potential impact on projects due to Japan!
Importance: High

Brain, Jennifer,

FYI...SNL sent 2 people to Japan that are involved with our projects. We'll keep you informed of any impacts.

Richard Correia, PE
Director, Division of Risk Analysis
Office of Nuclear Regulatory Research
US NRC

richard.correia@nrc.gov

From: Drouin, Mary
Sent: Wednesday, March 30, 2011 10:12 AM
To: Correia, Richard; Coe, Doug; Demoss, Gary; Coyne, Kevin; Peters, Sean
Subject: potential impact on projects due to Japan!
Importance: High



FYI

I just received a phone call from Sandia and Jeff LaChance and Randy Gantt were, at the very last minute, put on planes last night to Japan. Jeff is a major contributor to a couple of my programs and I believe he supports others. Sandia is letting me know how they plan to address my programs. I will be taking a look ASAP to see if milestones may be impacted.

I have not been informed on this via Sandia management, but one of the staffers who has been asked to pick up Jeff's work on one of my programs (reviewing the fire portion of the IPEEE for Watts Bar Unit 2).

Tks, mary

From: LIA04 Hoc
Sent: Tuesday, March 29, 2011 8:21 AM
To: LIA06 Hoc; LIA08 Hoc
Subject: FW: RESPONSE - GOVERNOR OF PENNSYLVANIA's PRESS RELEASE ON 131I IN RAINWATER AND PROTECTION OF DRINKING WATER
Attachments: PARadRainwater.3-28-2011.pdf

fyi

From: LIA04 Hoc
Sent: Monday, March 28, 2011 8:05 PM
To: Easson, Stuart; Flannery, Cindy; LIA04 Hoc; Lukes, Kim; Maupin, Cardelia; Noonan, Amanda; OST05 Hoc; Rautzen, William; Rivera, Alison; Ryan, Michelle; Turtill, Richard; Virgilio, Rosetta
Cc: McNamara, Nancy; Tifft, Doug
Subject: FW: RESPONSE - GOVERNOR OF PENNSYLVANIA's PRESS RELEASE ON 131I IN RAINWATER AND PROTECTION OF DRINKING WATER

FYI

The LT director received the attached announcement from PA regarding elevated I- 131 in rain water. The issue has been sent to the PMT to create a dosing model for an individual consuming 8oz of contaminated rain water in case the NRC receives any questions. The Federal liaison will be sending this press release to the EPA to insure they have received the notice and can craft a response (if necessary).

Stuart Easson
State Liaison – Liaison Team
Incident Response Center
301-816-5193
LIA04.HOC@nrc.gov

From: LIA06 Hoc
Sent: Monday, March 28, 2011 7:36 PM
To: LIA04 Hoc
Subject: FW: RESPONSE - GOVERNOR OF PENNSYLVANIA's PRESS RELEASE ON 131I IN RAINWATER AND PROTECTION OF DRINKING WATER

Liaison Team Director
U.S. Nuclear Regulatory Commission
Operations Center

From: Weber, Michael
Sent: Monday, March 28, 2011 6:39 PM
To: PMT01 Hoc; Hoc, PMT12; LIA06 Hoc; LIA08 Hoc
Cc: ET01 Hoc; ET05 Hoc; OST02 HOC; Zimmerman, Roy; McDermott, Brian; FOIA Response.hoc Resource; Brenner,

Eliot; Dean, Bill; Lew, David; Moore, Scott; Lewis, Robert

Subject: RESPONSE - GOVERNOR OF PENNSYLVANIA'S PRESS RELEASE ON 131I IN RAINWATER AND PROTECTION OF DRINKING WATER

OPA shared this press release with us tonight. I found the release confusing, at best, and alarming, at worst. It reports concentrations of ¹³¹I detected in rainwater in the Commonwealth at concentrations that are 10s of times greater than the drinking water standards. Seems like this would be a good release to share with our Federal partners to whom the NPP data are being reported and to coordinate outreach to State agencies to help place the trace measurements in context.



News for Immediate Release

March 28, 2011

Governor Corbett says Public Water Supply Testing Finds No Risk to Public from Radioactivity Found in Rainwater

Experts monitoring water and air supplies after Japanese nuclear event

Harrisburg – Governor Tom Corbett today said weekend testing of public drinking water found no elevated levels of radioactivity.

On Friday, concentrations of Iodine-131, likely originating from the events at Japan's damaged nuclear plants, were found in rainwater samples collected from Pennsylvania's nuclear power plant facilities.

The numbers reported in the rainwater samples in Pennsylvania range from 40-100 picocuries per liter (pCi/L). Although these are levels above the background levels historically reported in these areas, they are still about 25 times below the level that would be of concern. The federal drinking water standard for Iodine-131 is three pCi/L.

As a result of the findings, Corbett immediately ordered the Department of Environmental Protection's Bureau of Water Quality, Radiation Protection and Laboratories to test the drinking water from six regions in the state.

Samples were taken from facilities in Norristown, East Stroudsburg, Harrisburg, Williamsport, Greenville and Pittsburgh. After repeated testing throughout the weekend, results showed normal levels of radioactivity and no Iodine-131 above the federal limit. In fact, no Iodine-131 was detected in the drinking water samples.

"We have been proactive and conducted immediate drinking water tests to provide hard facts, assuring the public that the water they drink is safe," Corbett said.

On Friday, rainwater samples were taken in Harrisburg, where levels were 41 pCi/L and at nuclear power plants at TMI and Limerick, where levels were 90 to 100 pCi/L.

Corbett emphasized that the drinking water is safe and there is no cause for health concerns. State officials will continue to carefully monitor the situation, Corbett said, and will keep the public informed.

"Rainwater is not typically directly consumed," Corbett said. "However, people might get alarmed by making what would be an inappropriate connection from rainwater to drinking water. By testing the drinking water, we can assure people that the water is safe."

Rainwater is diluted by water in reservoirs and rivers or filters through the ground - and it is treated before reaching consumers as drinking water - it would not be expected to be a concern in public water systems.

While the radioactive element is believed to have originated from Japan's damaged Fukushima Daiichi nuclear power plant, it is not considered to be a health risk in Pennsylvania or anywhere else in the country. Similar testing in other states, including California, Massachusetts and Washington, has shown comparable levels of Iodine-131 in rainwater samples.

"We do not expect the levels to increase and, in fact, the levels we see now should go down rather quickly over the next three months," Corbett said.

"DEP has an extensive network of radiation monitoring points at the nuclear plants and elsewhere, and we will continue to monitor water supplies to ensure there is no risk of contamination to the public," Corbett added.

Any Iodine-131 concentrations detected in rainwater samples are significantly higher than might be detected in a surface body of water, such as a lake or a pond.

Air quality is also being examined and test results are expected later this week. As soon as results are available, Corbett said, they will be made public.

DEP will continue to work with Pennsylvania's public water suppliers to enhance their monitoring and treatment operations as necessary. Residents whose drinking water originates from groundwater, and obtained from wells or springs, should not be affected.

DEP's Bureau of Radiation Protection is in regular contact with the Nuclear Regulatory Commission and Environmental Protection Agency, while the Department of Health is in contact with Centers for Disease Control and Prevention, and other states tracking Japan-related issues.

Pennsylvania residents should not take potassium iodide (KI) pills, Corbett advised. The pills are to be taken only during a specific emergency and only at the recommendation of public health officials or the governor.

"Taking KI now is unnecessary under the circumstances and could cause harmful side effects," said Corbett. "Although usually harmless, it can present a danger to people with allergies to iodine or shellfish, or those who have thyroid problems."

Additionally, the elevated levels of radioactivity found in the rainwater on Friday were still well below levels that could pose any harm to pets or livestock.

"Ironically, today marks the 32nd anniversary of the accident at Three Mile Island nuclear power plant," Corbett said. "The lessons we learned from that incident and the safeguards that were installed, including constant monitoring, have made us better prepared for situations like this."

Media contacts: Kevin Harley, 717-783-1116

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From: Sheron, Brian
Sent: Saturday, March 26, 2011 7:32 PM
To: Weber, Michael
Cc: LIA08 Hoc; LIA06 Hoc; OST02 HOC; ET01 Hoc; Haney, Catherine
Subject: RE: Query - Spent Fuel Storage Safety Summary

I was told by Bill Ruland that it was being worked on and should see it tonight.

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

From: Weber, Michael
Sent: Saturday, March 26, 2011 7:31 PM
To: Sheron, Brian
Cc: LIA08 Hoc; LIA06 Hoc; OST02 HOC; ET01 Hoc; Haney, Catherine
Subject: Query - Spent Fuel Storage Safety Summary

How's the paper coming along?

From: LIA08 Hoc
Sent: Saturday, March 26, 2011 7:12 PM
To: Ordaz, Vonna
Cc: LIA06 Hoc
Subject: RE: (b)(5) request for SF information

Hi Vonna,
I just hand-delivered your note to Bill... he should be calling you soon.
Rani

From: Ordaz, Vonna
Sent: Saturday, March 26, 2011 7:07 PM
To: LIA06 Hoc
Cc: LIA08 Hoc
Subject: Re: (b)(5) request for SF information

Hi Rich,

Our input on dry storage is complete. It needs to be integrated with Bill Ruland's wet storage. If you see Bill in the ops center, please have him call me at (b)(6).

Thanks,
Vonna

From: LIA06 Hoc
To: Ordaz, Vonna
Cc: LIA08 Hoc
Sent: Sat Mar 26 16:40:53 2011
Subject: (b)(5) request for SF information

Vonna,

Good Saturday afternoon. Can you give me a sense of when the Exec Team here at the Ops center will see your team's input (b)(5) on spent fuel? I'm asking because the Chairman wants to see it (b)(5)

(b)(5)

(b)(5)

We are targeting completion tomorrow afternoon.

Many thanks

Rich Correia

Liaison Team Director
U.S. Nuclear Regulatory Commission
Operations Center

From: LIA06 Hoc
Sent: Saturday, March 26, 2011 4:23 PM
To: Weber, Michael

Cc: LIA08 Hoc

Subject: (b)(5) request for SF information

Mike,

As you know, NRR & NMSS are working on a tasking (b)(5) on spent fuel requirements and why SF storage in the US is safe. (b)(5). The Task Tracker for this item shows the request came in (b)(5) to you. Is there an email or some other message you received for this request? We want to be certain we are "answering the mail".

Thanks

Rich Correia

Liaison Team Director
U.S. Nuclear Regulatory Commission
Operations Center

From: McGinty, Tim
Sent: Saturday, March 26, 2011 2:22 AM
To: Ross-Lee, MaryJane
Cc: LIA06 Hoc
Subject: FW: FYI: WH Deputies Committees Meeting

fyi

From: LIA06 Hoc
Sent: Saturday, March 26, 2011 2:16 AM
To: McGinty, Tim; Virgilio, Martin; ET01 Hoc
Cc: LIA08 Hoc; LIA11 Hoc
Subject: FYI: WH Deputies Committees Meeting

LT is compiling summaries from White House Deputies Committees Meetings that have occurred since the earthquake in Japan. These summaries will then be printed out and reviewed to understand decisions made with regard to agency lead responsibilities.

(b)(5)

(b)(5)

Jake Z.

Liaison Team Director
U.S. Nuclear Regulatory Commission
Operations Center

From: Ross-Lee, MaryJane
Sent: Friday, March 25, 2011 2:51 PM
To: Giitter, Joseph; McGinty, Tim; Morris, Scott; McDermott, Brian
Subject: FW: Response - Japanese Earthquake 24 March 2011 1800 EDT Situation Report

Not sure of any action....

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

From: Dyer, Jim
Sent: Friday, March 25, 2011 9:42 AM
To: Ross-Lee, MaryJane
Subject: FW: Response - Japanese Earthquake 24 March 2011 1800 EDT Situation Report

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

From: Sheron, Brian
Sent: Friday, March 25, 2011 8:09 AM
To: Weber, Michael
Cc: Dyer, Jim; LIA06 Hoc; LIA08 Hoc
Subject: RE: Response - Japanese Earthquake 24 March 2011 1800 EDT Situation Report

Mike, the DOE Science Council that I participate on is not the group that puts out the DOE Situation Report. On the last page of the DOE Sitrep, it says it is put out by their Nuclear Incident team in the DOE's Emergency Operations Center. The e-mail is NITOPS@NNSA.DOE.GOV and the phone is 202-586, 8100. I would suggest that the NRC's IRC contact the DOE IRC and come up with a way to put out a combined Sitrep.

Do you want to direct the appropriate folks in the IRC to initiate a contact with the DOE IRC for the purpose of coordinating the Sitreps, or I can call Jim W. or Michele E. and ask.

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

From: Weber, Michael
Sent: Friday, March 25, 2011 8:00 AM
To: Sheron, Brian
Cc: Dyer, Jim; LIA06 Hoc; LIA08 Hoc
Subject: Response - Japanese Earthquake 24 March 2011 1800 EDT Situation Report

Thanks, Brian. On the next call, can you suggest that we and DOE collaborate on issuing a combined situation report with consistent information? I see that their distribution is broader and includes local government contacts (e.g., Montgomery County, Maryland).

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

From: Sheron, Brian
To: HOO Hoc
Cc: Weber, Michael; Virgilio, Martin
Sent: Fri Mar 25 07:12:29 2011
Subject: FW: UPDATED: Japanese Earthquake 24 March 2011 1800 EDT Situation Report

Please forward to ET, RST, & PMT Directors. Thx.

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

From: Adams, Ian [mailto:ian.Adams@Hq.Doe.Gov]

Sent: Thursday, March 24, 2011 7:23 PM

To: Adams, Ian; Aoki, Steven; Binkley, Steve; Brinkman, Bill; Budnitz, Bob; Finck, Phillip; Garwin, Dick (EOP); Garwin, Dick (IBM); Grossenbacher, John (INL); Hurlbut, Brandon; John Holdren; Kelly, John E (NE); Koonin, Steven; Lyons, Peter; McFarlane, Harold; Miller, Neile; Mustin, Tracy; Owens, Missy; Peterson, Per; Sheron, Brian; Steve Fetter; Szilard, Ronalo
Subject: FW: UPDATED: Japanese Earthquake 24 March 2011 1800 EDT Situation Report

Good evening,

Attached is the latest Japan Sit Rep.

This information should not be shared or further distributed.

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

From: NITOPS

Sent: Thursday, March 24, 2011 7:17 PM

To: [REDACTED] (b)(6)

[REDACTED]

(b)(6)

Cc: Adams, Ian; Adamson, Paul; Alldridge, David; Allen, George; Aragon, Antonio; Black, Steven K. (IN) (IN); Calbos, Philip; Ciganer, Patrick; Connery, Joyce; Deeney, Chris; Durbin, Karyn; Elkind, Jonathan; FBI; Fremont, Douglas; Freshwater, David; Golub, Sal; Goodrum, Steve; Hanrahan, Robert; Heinrich, Ann; Higgins, Paul (LAB) (IN); Huizenga, David; Johnson, Shane; Kelly, John E (NE); Kreykes, Jon (IN); LaVera, Damien; LeChien, Keith; Looney, Heather; Lyons, Peter; Miller, Neile; Miotla, Dennis; Mueller, Stephanie; Mustin, Tracy; NACCC; Niedzielski-Eichner, Phillip; O'Connor, Tom (NE-HQ); Owens, Missy; PRLH Navy; PWG; Rasar, Kimberly; Reynolds, Tom; 'sandra.willis@in.doe.gov'; Shrum, Scott; Smith-Kevern, Rebecca; Sunshine, Alexander; Thompson, Michael; Underwood, Jefferson; USFJ; Visosky, Mark; White, William; Whitney, Mark; Wright, Rasheem

Subject: UPDATED: Japanese Earthquake 24 March 2011 1800 EDT Situation Report

Attached is an updated 24 March 1800 SITREP file. The original 1800 SITREP incorrectly reported that the radiation level at the main gate at Fukushima Dai-ichi (approximately 3281 feet from the Unit 2 building) was 204.5 mSv/hr vice the correct level of 204.5 micro Sv/hr.

Nuclear Incident Team (NIT)

Office of Emergency Response (NA-42)

National Nuclear Security Administration U.S. Department of Energy nitops@nnsa.doe.gov nit@doe.gov 202-586-8100

DEPARTMENT OF ENERGY SITUATION REPORT

Earthquake & Tsunami in Japan

24 March 2011

1800 (EDT) UPDATE

POWER PLANT UPDATE AND OTHER NUCLEAR ISSUES

Summary of information received as of 1800 (EDT) 24 March from the NRC, Embassy-Tokyo, IAEA Incident and Emergency Center, TEPCO, METI, NISA, Japan Atomic Industrial Forum, Nuclear Energy Institute, and media outlets. (NOTE: JST = EDT + 13 hours; EDT = GMT/UTC - 4 hours).

Updates on Electrical Power Restoration Efforts:

TEPCO continues work to restore electrical power to all six reactors. External power is available to plant distribution panels for Units 1, 2, 3, and 4. Unit 1 electrical power line has been connected through Unit 2. Unit 2 power has been restored and electric water pump systems are being tested. Unit 1 and 2 cooling pumps were covered with seawater and maintenance is necessary. Unit 1 and 3 Control Room lights have been restored. Electricity to Unit 4 control room was restored on March 23. Reestablishment of power to the existing receiving equipment in Unit 5 and 6 buildings has been completed and the central control center and Residual Heat Removal system are being energized.

Radiation Detection Update:

The Japan Agency for Marine-Earth Science and Technology (JAMSTEC) plans to measure radioactivity around the plant from 22-23 March at 8 locations, with results to be provided on 24 March (per the IAEA). The analysis will include radionuclide concentrations found in sea water and dose rate.

Per IAEA 1700 UTC March 24, Radiation exposure on 3 TEPCO related workers was confirmed. They were working in the basement Unit 3 turbine building where contaminated water was on the floor. The radiation exposures of the 3 workers were 180 mSv, 179 mSv, and 173 mSv. Two of the workers had severely contaminated their feet and were transferred to the Fukushima Prefecture Medical University.

Per FEPC (0630 JST) on March 24, radiation level at the main gate (approximately 3281 feet from the Unit 2 building) was 204.5 micro Sv/hr.

Updates by Reactor Unit

Fukushima Dai-ichi Unit 1 reactor (NRC priority 4):

TEPCO reported that Unit 1 was receiving power from Unit 2 and that inspections on electrical equipment were being conducted. Increased the

amount of water injection (2m³/h→18m³/h) to the Reactor Core by using water supply system in addition to water extraction system. Seawater is being injected into the reactor pressure vessel. Also per METI, 0800 JST, March 23, there is no risk of a hydrogen explosion in the containment vessel because there is no oxygen in it. There is a low likelihood of leaking a large amount of radioactive material from Unit 1.

Per NISA, 0500 JST on March 24, reactor parameters appear stable: pressure - 0.499 MPaG (depressurized); water level - 1.7 meters below the top of the fuel rods; containment vessel – 0.385MPa, spent fuel temperature remains relatively stable at 51° as of 1800 Mar 23. Reactor temperatures for Unit 1 have come down and are 243° C at the feedwater nozzle and 229° C at the bottom head.

Per the IAEA, the does rate in the containment vessel (D/W) is 48 Sv/h and in the suppression chamber (S/C) is 29.9 Sv/h.

Seawater continues to be injected to the nuclear reactor through the feed water system.

Fukushima Dai-ichi Unit 2 reactor (NRC priority 3):

TEPCO reported that off-site power recovery work has been completed and inspections on electrical equipment are being conducted. Seawater is being injected into the reactor pressure vessel as of 8:00 am March 23.

Per conference call with an NRC representative in Japan at 2200 on 22 March, the Unit 2 SFP has been filled. Injection of 18 tons of seawater to the SFP was carried out. Power has been provided to the Unit 2 control room. Lights were turned on in that control room Tuesday night. (NHK World news). Per NRC EOC status of Mar 23, condition of pump motors and instrumentation is being evaluated.

Per NISA, 0500 JST on March 24, Reactor parameters appear stable: pressure - 0.076 MPaG (depressurized); water level - 1.2 meters below the top of the fuel rods; containment vessel – 0.10 MPa. Seawater injection to the Reactor Pressure Vessel (RPV) continues. The dose rate of the containment vessel is 50.7 Sv/h and in the suppression chamber is 1.67 Sv/h. Per NISA, 0500, March 24, reactor temperature readings were 102° C at the feedwater nozzle and 109° C at the bottom head.

Fukushima Dai-ichi Unit 3 reactor (NRC priority 1):

Lighting was recovered in the Central Operation Room. (22:43 March 22nd); and seawater is being injected into the reactor pressure vessel as of 8:00am March 23rd. Per METI, technicians are working to attach fire hoses to the spent fuel pool's built-in coolant pipes and to fix a separate pump to circulate fresh water inside the reactor core.

Per NISA, 0500 JST on March 24, reactor parameters appear stable: avg. pressure - 0.142 MPaG (depressurized); water level – 1.80 -2.30 meters below the top of the fuel rods; containment vessel – 0.10 MPa. Reactor temperature readings are 80.7 ° C for the

feedwater nozzle, and 185.4 ° C for the bottom head. Seawater injection to the SFP was started (around 0535 JST, March 24).

On March 24th, it was confirmed by TEPCO that three workers from non-TEPCO companies who were in charge of cable laying work in the basement and 1st floor of the turbine building were exposed to a radiation dose of more than 170 mSv. Two out of three workers were hospitalized as it was confirmed that their legs (skin) were contaminated.

Fukushima Dai-ichi Unit 4 reactor (NRC priority 2):
Situation of Water Injection and Water Spray

TEPCO reported that off-site power recovery work was completed and that inspections on electrical equipment are being conducted. NISA, 1800 JST on March 23, water spray of around 150t of water using Concrete Pump Truck (50t/h) to the Unit 4 was started. Per METI, Technicians are aiming to attach fire hoses to the pool's built-in coolant pipes by Friday, March 25.

Fukushima Dai-ichi Unit 5 reactor (NRC priority 5):

The NISA as of March 24 at 0500 (JST): The reactor is in cold shutdown with a pressure in the Reactor vessel of 0.108 MPa. Water level in the reactor is 1.846 meters above the top of the fuel. As a result of restarting the Residual Heat Removal (RHR) pump (C), the Spent Fuel Pool is being maintained at 45.1.0°C, and reactor water temperature 71.4°C. The temperature of the reactor vessel is 71.4°C. Power was switched to off-site power.

Fukushima Dai-ichi Unit 6 reactor (NRC priority 6):

The NISA as of March 24 at 0500 (JST): The reactor is in cold shutdown with a pressure in the Reactor vessel of 0.109 MPa. Water level in the reactor is 2.397 meters above the top of the fuel. The SFP temperature is currently 23.5.0°C. The RPV temperature is 24.1C. Power was switched from the diesel generator to off-site power.

Aerial Measurements Update:

DOE Team

- Helo and fixed wing survey operations took place on 24 March (JST).
- Reported in TFJP01, DOE's March 23 aerial monitoring found low levels of radiation beyond a 25-mile ring to the north, west and south of the plant.
- DOE's Nuclear Incident Team produced a composite map of field monitoring data that shows radiation levels as they relate to U.S. guidelines for relocation/evacuation.
- Products have been developed and data has been analyzed for previous operational period through 24 March.

- Goal of the helicopter missions is to provide where plume deposition on the land and to support GOJ concerns with area agriculture.
- Goal of fixed wing missions is to provide information on the plume deposition on the land
- AMS and field monitoring operations will be determined by results of 24 March activities and any changes in priorities.

Updates from the IAEA website:

Joint FAO-IAEA-WHO Statement on Food Safety Issues following the Fukushima Daiichi Nuclear Emergency:

Food safety issues are an additional dimension of the emergency. Some food products sampled at sites both within the Fukushima Prefecture and in adjacent areas have been contaminated by radioactive materials.

Japan has regulations in place relating to provisional regulatory limits of radioactivity in food. Food monitoring is being implemented, measurements of radionuclide concentrations in food are taking place, and the results are being communicated publicly. Japanese authorities are also giving advice to consumers and producers regarding safety measures.

<http://www.who.int/hac/crises/jpn/faqs/en/index7.html>

Radioactivity in food, milk and drinking water

Per JECS 23, based on provided readings, health experts now at Embassy Tokyo concur with DOJ recommendation regarding water for infants. They are working with health physicists on modeling of radiation contamination and potential does to individuals. Radiological contamination of fresh produce from Fukushima, Ibaraki, Chiba, Tochigi and Gumma prefectures has dominated the food and agriculture dialogue today.

Maritime Monitoring

The US Coast Guard has implemented additional protocols for vessels transiting within 50 miles of the Fukushima Daiichi reactors in Japan. For vessels only, USCG will perform additional screening prior to entry into a US port in accordance with current protocols and captain of the Port authority. USCG will follow longstanding resolution protocols for any radiation detection readings.

REQUESTS FOR US ASSISTANCE

METI was especially interested in the radiation hardened camera, which they said is urgently needed. In general, METI identified remote monitoring and debris removal as priority areas of need. The GOJ will review the report and develop a formal request which will be handled through the Crisis Management Team.

We are looking to OSD to provide a small cell to the DART -- which would have a DOE technical advisor--to help facilitate with any logistics of items that would need to go into Japan or be moved around Japan to deal with the Japanese reactor crisis. Logistical support may be just to facilitate private companies donating/providing items or, in some cases, it may mean USFJ transport assistance or liaison. AID (DART) feels they lack the capacity and technical skills to perform this function and it is clearly not in the comfort zone of NRC.

NRC will continue to follow up with NISA on these requests.

CONTACTS WITH JAPANESE OFFICIALS

Per JECS 23, MOD reported Prime Minister Hosno expressed strong interest in accepting all offers of robotic technology that could be put to use, as well as protective gear that had been offered. While Japan has iodine stockpiles Hosno noted that more could be needed. He thanked DOE for its report on robotic and remote systems that could be made available and said Japan would provide a list of specific needs. METI noted the value of the reports timeline and the importance of equipment for remote monitoring, debris removal, and of radiation-hardened camera.

Per JECS 23, the NRC urged Japan not to delay the change from seawater to freshwater at the plant, emphasizing the importance of addressing salt water accumulation in reactor cooling systems. NRC noted the agreement of the NRC, DOE, NR, GE, and INPO that salt water accumulation should be addressed as a priority. In light of TEPCOs report of damage to the power supply to pumps that could bring fresh water from nearby dam to the plant, the US reiterated its offer to procure a barge to deliver fresh water to the Fukushima site and to provide water pumping system (now at Yokota AB).

QUESTIONS BEING WORKED:

DOE had a meeting with METI and industry representatives on potential DOE robotic and remote systems assistance. The Japanese stated their immediate priority was site mapping and surveillance to characterize the site for remediation. DOE is processing the data request.

The President of MLB Corporation in California sent an email to the DOE NIT offering to donate several small, low cost aircraft that could be outfitted with low cost radiation sensors. The sensor data can be correlated to the aircraft's GPS location to provide a radiation survey map. The aircraft operates autonomously and can cover a distance of 300 linear miles in a single flight.

A concise timeline of events at Fukushima reactors 1-6 is being developed.

CONTACT INFORMATION:

**Nuclear Incident Team in the Emergency Operations Center
(NITOPS@NNSA.DOE.GOV) - 202-586-8100**

Office of the Deputy Secretary 202-586-5500

Watch Schedule:

Doug Fremont 1600/24 Mar – 2000/24 Mar
Ted Wyka
Craig Welling

Keith LeChein 0400/25 Mar – 0800/25 Mar
Karyn Durbin
Sal Golub

From: PMT09 Hoc
Sent: Saturday, March 26, 2011 5:11 PM
To: Hoc, PMT12
Subject: FW: Response - Request by USEPA for Nuclear Power Plant Environmental Monitoring Data

Pls put in a folder called NPP Monitoring Data

From: McGinty, Tim
Sent: Saturday, March 26, 2011 4:57 AM
To: PMT09 Hoc; PMT01 Hoc; LIA06 Hoc; LIA08 Hoc
Cc: Uhle, Jennifer; Ross-Lee, MaryJane; Gitter, Joseph; Meighan, Sean; RST01 Hoc
Subject: FW: Response - Request by USEPA for Nuclear Power Plant Environmental Monitoring Data

PMT Director (Randy S.) – here is the answer to your earlier question,.... this was apparently worked out on day shift. When NEI sends the plant information into the NRC, it will come to PMT01. The PMT in the Ops Center will dispatch the information to EPA. Tim McGinty

From: Brown, Frederick
Sent: Friday, March 25, 2011 11:56 AM
To: Shoop, Undine
Cc: Cheok, Michael; Christensen, Harold; Croteau, Rick; Roberts, Darrell; Clifford, James; Jones, William; Kennedy, Kriss; Miller, Chris; Moorman, James; Munday, Joel; OBrien, Kenneth; Reynolds, Steven; Shear, Gary; Pruett, Troy; Vogel, Anton; West, Steven; Wilson, Peter; Westreich, Barry; Nelson, Robert; McGinty, Tim; Quay, Theodore
Subject: FW: Response - Request by USEPA for Nuclear Power Plant Environmental Monitoring Data

FYI – looks like current direction is:

plants to NEI,
NEI to NRC/OpsCenter/PMT,
PMT (or Liaison Team) to EPA.

From: Weber, Michael
Sent: Friday, March 25, 2011 11:52 AM
To: Leeds, Eric; Holahan, Patricia; Evans, Michele
Cc: Meighan, Sean; Quay, Theodore; Virgilio, Martin; Wiggins, Jim; Ruland, William; Brown, Frederick; Dyer, Jim; PMT01 Hoc; LIA06 Hoc; LIA08 Hoc; ET01 Hoc; ET05 Hoc; OST02 HOC; Zimmerman, Roy
Subject: Response - Request by USEPA for Nuclear Power Plant Environmental Monitoring Data

Send it to PMT01 HOC.

Thanks, Eric. Looks like we ended up at the right place!

From: Leeds, Eric
To: Holahan, Patricia; Evans, Michele
Cc: Meighan, Sean; Quay, Theodore; Virgilio, Martin; Weber, Michael; Wiggins, Jim; Ruland, William; Brown, Frederick
Sent: Fri Mar 25 10:51:17 2011
Subject: Heads up!: Request by USEPA for Nuclear Power Plant Environmental Monitoring Data

Please see below. I've discussed with Borchardt and NEI. We plan to be the broker of information from the industry through NEI to the federal family. We do NOT want folks from EPA or DOE or anywhere else going directly to NEI. We have an established relationship and it's in our best interest to broker the info. NEI does NOT want to deal with all the other feds – they are happy to leave it to us. We are not planning on issuing a generic communication on the subject.

Please let my TA – Sean Meighan, know who NEI should interface with to feed the info into the Ops Center and please help coordinate that info to our colleagues in EPA and DOE.

Thank you!

Eric J. Leeds, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
301-415-1270

From: MARION, Alex [mailto:axm@nei.org]
Sent: Friday, March 25, 2011 9:55 AM
To: Leeds, Eric
Subject: FW: Request by USEPA for Nuclear Power Plant Environmental Monitoring Data

From: ANDERSEN, Ralph
Sent: Friday, March 25, 2011 9:53 AM
To: MARION, Alex
Subject: RE: Request by USEPA for Nuclear Power Plant Environmental Monitoring Data

Ray Clark.

From: MARION, Alex
Sent: Friday, March 25, 2011 9:52 AM
To: ANDERSEN, Ralph
Subject: RE: Request by USEPA for Nuclear Power Plant Environmental Monitoring Data

Who was the EPA contact?

From: ANDERSEN, Ralph
Sent: Friday, March 25, 2011 9:34 AM
To: MARION, Alex
Cc: PIETRANGELO, Tony; ANDERSON, Ellen
Subject: Request by USEPA for Nuclear Power Plant Environmental Monitoring Data

We were contacted yesterday afternoon by the USEPA Emergency Operations Center Environmental Unit to see if we would be able to provide environmental monitoring data from the U.S. nuclear power plants reflecting possible releases from the Fukushima plant.

In our follow up discussion with the EPA staff this morning, they indicated that they had been tasked by the Office of Science and Technology Policy (OSTP) to compile and trend available U.S. environmental monitoring information and provide the results to the OSTP.

We will proceed with implementing a process for collecting the information on a standardized and routine basis for to the NRC, USEPA or others.

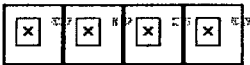
Ralph L. Andersen, CHP
Senior Director, Radiation Safety & Environmental Protection

Nuclear Energy Institute
1776 I St. N.W., Suite 400
Washington, DC 20006
www.nei.org

Phone: 202-739-8111
Fax: 202-533-0101
Mobile: (b)(6)
Email: rla@nei.org



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Sent through mail.messaging.microsoft.com

From: Holahan, Patricia
Sent: Friday, March 25, 2011 10:43 PM
To: Hoc, PMT12
Subject: FW: Revised Report: Triage Report -- TE-11-0721-A, Addendum D for 23 March
Attachments: Triage Report - TE-11-0721-Addendum D --- 23 March 2011 Revision 1.docx

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

From: Virgilio, Martin
Sent: Friday, March 25, 2011 10:30 PM
To: Holahan, Patricia
Subject: FW: Revised Report: Triage Report -- TE-11-0721-A, Addendum D for 23 March

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

From: Sheron, Brian
Sent: Friday, March 25, 2011 7:16 AM
To: HOO Hoc
Cc: Weber, Michael; Virgilio, Martin
Subject: FW: Revised Report: Triage Report -- TE-11-0721-A, Addendum D for 23 March

Please forward to PMT Director. Thx.

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

From: NITOPS [mailto:NITOPS@nnsa.doe.gov]
Sent: Thursday, March 24, 2011 8:09 PM
To: Aoki, Steven; Aragon, Antonio; Aragon, Antonio; Binkley, Steve; Budnitz, Bob; Casson, William (Bill); Dudder, Gordon B; Garwin, Dick (EOP); Garwin, Dick (IBM); Myers, Steven; NITOPS; NITSolutions; Peterson, Per; Peterson, Steven J; Pitts, William Karl; Poneman, Daniel; Sheron, Brian; Spanard, Richard J.; Swanson, Joel (LLNL); Szilard, Ronalo; Wimer, Nathan; Wimer, Nathan; Woessner, William S.
Cc: NITOPS
Subject: Revised Report: Triage Report -- TE-11-0721-A, Addendum D for 23 March

Please find attached the Triage report for measurements taken approximately 8km from the NPP.

Nuclear Incident Team (NIT)

Office of Emergency Response (NA-42)

National Nuclear Security Administration U.S. Department of Energy nitops@nnsa.doe.gov nit@doe.gov 202-586-

(b)(6)

Triage Event: TE-11-0721-A Addendum D - Revision 1 (Correction to Ratio Filenames)

Date(s): 23 Mar 2011
Callout(s): Callout 21 Mar 2011, 9:49 EDT; Bridgeline 10:15 EDT
Event Type: DOE SEAR Event, Level 1
Location: Japan
Submitted by: Field Collections through NITOPS
Email(s): N/A
Triage Web: TE-11-0721 Addendum D, Continuing Event
Contact(s): A. Aragon (Triage FTL); R. Spanard (Triage FTL)
Responder(s): J. Bounds (LANL), W. Casson (LANL), N. Wimer (LLNL)
Report Date: 23 Mar 2011, edited by N. Wimer

List of data files used in the analysis.

UNK	2011_03_23_16_33_020.spc	Lat/Long 37.35288683, 140.97889316
UNK	2011_03_23_15_00_130.spc	Lat/Long 36.8681086, 140.14207716
CAL	2011_03_22_22_36_200 Cs137.spc	(Per web submission)
BKG	2011_03_23_07_04_370_FIS8_Bkgd.spc	

Summary:

These two spectrum files were transmitted to Triage as part of a continuing high-priority analysis of field spectra collected in Japan at highway locations on approaches to the Fukushima Plant. Triage analysts were asked to provide nuclide identification, determine activity ratios for radionuclides evident in the spectra, and append to the Compilation XLS file.

As with the compilation being appended to, these spectrum files indicate coolant release nuclides, present as air activity concentrations and ground deposition in the field of view of an HPGe detector held 1 meter above the ground. They are well-enough developed that a detailed screening for non-volatile species was performed, with none observed. Definitive determination of whether fuel releases have occurred is expected to require HPGe assays from grounds of the plant itself.

Triage Assessment:

These spectrum files were collected with an HPGe ORTEC Detective-EX, with data acquisition on 23 March 11. Triage observed the spectrum was more developed compared with other sample spectra analyzed to date, with durations of approximately 20 minutes and deadtimes approaching 80%.

Nuclides observed were consistent with other Japan HPGe spectra taken at a distance, reflecting coolant-release compositions. There are no unidentified nuclides. Given unknown source-detector detail, absolute activities cannot be estimated; rough activity ratios relative to I-131 are shown in Table 1 below.

Radionuclide	Activity relative to I-131 for "2011_03_23_16_33_020.Chn"	Activity relative to I-131 for "2011_03_23_15_00_130.chn"
I-131	1.0 (Defined)	1.0 (Defined)
I-132	0.245	0.290
I-133	0.006	0.003
Te-129	0.185	0.119
Te-129m	0.168	0.077
Te-132	0.262	0.108
Cs-134	0.176	0.043
Cs-136	0.029	0.005
Cs-137	0.155	0.049
La-140	0.002	Not detectable

Table 1. Relative nuclide activity ratios for TE-11-0721-A Addendum D spectrum files (23 Mar 11).

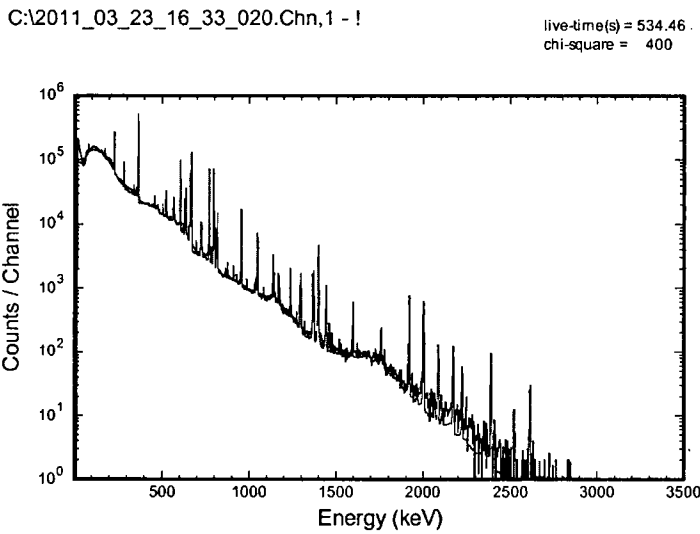


Figure 1. Gamma spectrum fitting of "2011_03_23_15_00_130.chn" field gamma assay. Lines corresponding to I-131, I-132, Te-132, I-133, Cs-134, Cs-136, Cs-137, Te-129, Te-129m, and La-140 are evident; non-volatile nuclide reflecting potential fuel release were searched for in detail and not observed.

Recommendations for follow on activities:

These two high-priority field gamma-assay compositions represent coolant-only release, and discerning potential reactor fuel release will almost certainly require HPGe assay on the grounds of the Fukushima plant.

From: LIA06 Hoc
Sent: Thursday, March 24, 2011 7:07 PM
To: ET01 Hoc; ET05 Hoc; ET02 Hoc
Subject: FW: NRC Incident Response Center Contacts
Attachments: FPA Dan Piccuta.doc

Mr. Piccuta (Foreign Policy Advisor to the Commander) will call in at 9 PM to the ET to discuss Admiral Willard's request.

Rich Correia

Liaison Team Director
U.S. Nuclear Regulatory Commission
Operations Center

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

From: LIA01 Hoc
Sent: Thursday, March 24, 2011 6:14 PM
To: LIA06 Hoc
Subject: FW: NRC Incident Response Center Contacts

fyi

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

From: Price, Erik N LTC PACOM, J91 [mailto:(b)(6)]
Sent: Thursday, March 24, 2011 5:57 PM
To: LIA01 Hoc
Cc: PACOM.J91.ALL
Subject: RE: NRC Incident Response Center Contacts

Thanks,

Do you know if Mr. Borchardt will be available to take a phone call from Mr. Piccuta today (bio attached)? Mr. Piccuta is our Foreign Policy Advisor to the Commander, he is from the Department of State and holds the rank of Minster Counselor (2-Star equivalent).

Mr. Piccuta will ask for a senior NSC Advisor to support the Commander, US Pacific Command.

thanks

LTC Erik N. Price
Chief JIACG
USPACOM J91

O: (808) 477-8088

NIPR: (b)(6)
AKO:
SIPR:

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

From: LIA01 Hoc [mailto:LIA01.Hoc@nrc.gov]
Sent: Thursday, March 24, 2011 11:31 AM
To: Price, Erik N LTC PACOM, J91
Cc: PACOM.J91.ALL
Subject: NRC Incident Response Center Contacts

LTC Price,

Per your request for appropriate level contact for ADM Willard, the following is provided:

During Off-Hours (1700 – 0700 hrs EDT), 301-816-5100, ask to be connected to the Executive Team Director (this will be the senior person on duty at that time)

During Normal Duty Hours (0700 – 1700 hrs EDT), 301-816-5100, ask to be connected to the Executive Team Director (depending on the circumstances and nature of the call, the ET Director may push the call up to either the Office of the Executive Director (EDO) or to the NRC Chairman.

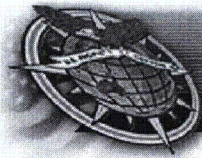
Your email addresses have been added to the distribution list for Incident Response Center updates.

Stay Safe

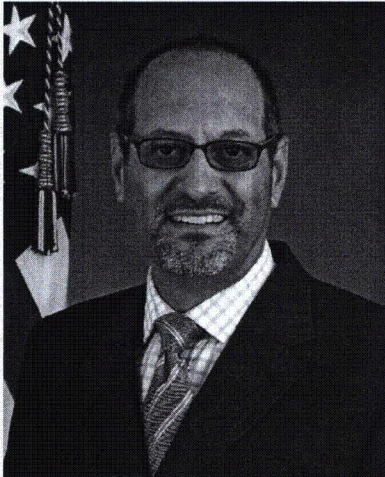
J. Hale

NRC Incident Response Center

Federal Liaison



Daniel W. Piccuta
Foreign Policy Advisor
United States Pacific Command



Mr. Daniel W. Piccuta is the Foreign Policy Advisor to the Commander, U.S. Pacific Command in Honolulu, Hawaii. Previously, he served as Chargé d'Affaires and Deputy Chief of Mission at the U.S. Embassy in Beijing, China from May 2007 to July 2009.

A member of the State Department's Senior Foreign Service, Dan has served on the Foreign Service Board of Examiners, selecting candidates for entry into the Foreign Service. He was Deputy Chief of Mission at the U.S. Embassy in Luxembourg. Earlier he served as Deputy Executive Director of the Executive Secretariat, providing logistical and management support to Secretaries of State and other Principals of the State Department. He was twice assigned to State's 24-hour crisis management office (the "Operations Center"). He held executive management positions at the U.S. Embassies in Belgrade and Beijing and at the Consulate General in Milan, Italy. Dan also served as Consul for American Citizen Services in Beijing and as Political and Science Officer in Guangzhou.

In private law practice in Los Angeles prior to entering the Foreign Service in 1986, Dan handled corporate, investment and commercial matters for foreign and domestic clients and was Vice President and Assistant Counsel at Standard Chartered Bank's California subsidiary, Union Bank.

A member of the California Bar, Dan received his JD in 1980 from the University of Southern California and a B.A. in History from St. Vincent College in Latrobe, Pennsylvania. He completed further studies in Chinese language and law at East China College of Law in Shanghai, and at Fu Jen and Soochow Universities in Taiwan. His foreign languages are Chinese and Italian and he is proficient in French, Spanish and Serbian.

(b)(6)

From: PMT01 Hoc
Sent: Thursday, March 24, 2011 7:05 PM
To: Hoc, PMT12; PMT07 Hoc
Subject: FW: CRCPD: Message to Membership re Japanese Events and US and State Activities
Attachments: 031711_KeyMessages_States.pdf

From: Lewis, Robert
Sent: Thursday, March 24, 2011 7:03 PM
To: PMT01 Hoc; ET01 Hoc; Piccone, Josephine; McDermott, Brian
Subject: Fw: CRCPD: Message to Membership re Japanese Events and US and State Activities

Please make sure the ET/PMT/Liason teams are aware of this crcpd/cdc effort

-RL

From: Sue Smith <ssmith@crcpd.org>
To: Cuadrado, Leira; Lewis, Robert
Cc: Ruth McBurney <rmcburney@crcpd.org>
Sent: Thu Mar 24 18:10:59 2011
Subject: FW: CRCPD: Message to Membership re Japanese Events and US and State Activities

Leira,

Here is the message sent to the CRCPD Director and Associate Members.

Sue

From: Sue Smith
Sent: Friday, March 18, 2011 9:57 AM
Subject: CRCPD: Message to Membership re Japanese Events and US and State Activities

This is being sent on behalf of Ruth E. McBurney, CRCPD Executive Director.

Dear CRCPD members,

As the dynamic events at the Fukushima reactors in Japan continue to unfold, following the devastating earthquake and tsunami that occurred late last week, radiation protection professionals and federal and state agencies in this country are being asked to address health and safety concerns of Americans regarding the events.

We have been coordinating the public health response and messages to the public with CDC and the National Alliance for Radiation Readiness, which includes:

- American Medical Association
- American Public Health Association
- Association of Public Health Laboratories
- Association of State and Territorial Health Officials

- Conference of Radiation Control Program Directors
- Council of State and Territorial Health Officials
- Health Physics Society
- National Association of County and City Health Officials
- National Disaster Life Support Foundation
- National Emergency Management Association

CDC has developed a set of key messages for states for use when answering questions and radiation concerns from the public. These are attached to this e-mail.

Several of the Pacific coast states have placed useful information on their websites as shown in the links below. Several of those also have links to information from national and international radiation agencies and organization websites for additional information.

Japan event statements from the States of Alaska, Washington, Oregon, California and Hawaii

Alaska

http://www.hss.state.ak.us/press/2011/Reactor_pr_031511.pdf

<http://www.hss.state.ak.us/prepared/radiological.htm>

"The State of Alaska, along with our Federal counterparts, is continually monitoring the situation in Japan regarding their nuclear reactors. According to officials, at this time there is no immediate or anticipated threat of nuclear radiation reaching Alaska. We will continue to monitor the situation and notify the public through regular media channels and this website should the situation change."

Washington

<http://www.doh.wa.gov/Topics/japan-faq.htm>

"We don't expect significant levels of radioactivity in our state, and there's no health risk. Japan is thousands of miles from our state, and if radioactivity from the reactors there is released to the upper atmosphere it would be thinned-out by the winds before it could reach us. We could see a very small increase in radiation levels — well below levels that would be a health concern. We're working with federal, state, and local agencies in a coordinated effort to monitor radiation levels in the air and rain water."

Oregon

<http://public.health.oregon.gov/Preparedness/CurrentHazards/Pages/index.aspx>

<http://public.health.oregon.gov/Preparedness/CurrentHazards/Documents/Factsheets/factsheet-japan-event.pdf>

<http://public.health.oregon.gov/Preparedness/CurrentHazards/Documents/Factsheets/qa-japan-event.pdf>

"No Health Risk to Oregon from Japanese Radiation Events"

California

<http://www.cdph.ca.gov/Pages/CDPHCalEMASTatementMarch152011.aspx>

<http://www.calema.ca.gov/WebPage/oeswebsite.nsf/Content/1E69ED3C8DE165DB882576D70062B6FE?OpenDocument>

<http://calemanews.wordpress.com/2011/03/16/statement-from-california's-department-of-public-health-and-emergency-management-agency-on-risk-of-radiation-exposure/>

"We urge Californians to not take potassium iodide as a precautionary measure. It is not necessary given the current circumstances in Japan, it can present a danger to people with allergies to iodine, shellfish or who have thyroid problems, and taken inappropriately it can have serious side effects including abnormal heart rhythms, nausea, vomiting, electrolyte abnormalities and bleeding."

Hawaii

<http://hawaii.gov/health/about/pr/pressdate.html>

"The DOH Indoor and Radiological Health Branch (IRHB) is closely monitoring information on the radiation release, and with the current size of the release and the distance from Hawaii, no public health risk to the state is expected."

We plan to place most of this information on our web site in the very near future.

Thank you for all you do in radiation protection.

Ruth E. McBurney
Executive Director
CRCPD
502-227-4543, ext. 0

CDC Key Messages for States

Public Health Questions on the Radiation Emergency in Japan

About KI

- The experts say no public health risks are expected in the U.S. At this time, CDC recommends that people in the United States do not take Potassium Iodide (KI) supplements in response to the nuclear power plant explosions in Japan.
- Use of non-FDA approved iodine supplements cannot be guaranteed for safety or efficacy.
 - These products do not have an FDA-approved dosing schedule.
 - The supplements are not necessarily manufactured using FDA-approved quality control methods.
 - Saturated Solution of Potassium Iodide (SSKI or Lugol's Solution) is not an FDA-approved drug.

Radioactive Iodine in the US

- No radioactive iodine has been detected in the United States.
- The EPA monitors for radioactivity through a national network of monitoring stations called RADNET.
- Experts say no harmful doses of radiation will reach territories, Alaska, Hawaii or the west coast.
- Speaking hypothetically, if an accident were to happen in the U.S, there are protective measures you can take to protect yourself from contamination.
 - Evacuation or sheltering in place can help people avoid contamination.
 - Pay attention to any state or local public health advisories.
 - Another precaution is to avoid any contaminated food supplies. Should radioactive material reach the U.S., the appropriate federal and local agencies will let people know about non-contaminated sources of food.
- KI is used to treat contamination from a certain form of radioactive material (radioactive iodine), and is only useful in specific circumstances and for a short time window.
- Scientists are tracking the location of radioactive iodine released from the power plant.
- There are systems in place to monitor during a nuclear emergency response.

From: PMT07 Hoc
Sent: Thursday, March 24, 2011 8:47 PM
To: Hoc, PMT12
Subject: FW: request from national security staff

From: PMT01 Hoc
Sent: Thursday, March 24, 2011 7:00 PM
To: PMT07 Hoc
Subject: FW: request from national security staff

From: LIA08 Hoc
Sent: Thursday, March 24, 2011 6:52 PM
To: PMT01 Hoc; Hoc, PMT12; RST01 Hoc; ET01 Hoc; LIA06 Hoc
Subject: request from national security staff

(b)(5)

Please contact her at (b)(6)

Thanks

Jeff Temple

From: LIA11 Hoc
Sent: Thursday, March 24, 2011 9:49 AM
To: Blount, Tom; Boger, Bruce; Casto, Chuck; Dorman, Dan; ET01 Hoc; ET05 Hoc; FOIA Response.hoc Resource; Gütter, Joseph; Hoc, PMT12; HOO Hoc; LIA01 Hoc; LIA06 Hoc; LIA08 Hoc; LIA11 Hoc; McDermott, Brian; McGinty, Tim; Miller, Chris; Monninger, John; Morris, Scott; OST02 HOC; Pentagon Japan Crisis Team J-4 Desk; Ross-Lee, MaryJane; RST01 Hoc; Sal Golub; Tom Vavoso; Virgilio, Martin; Weber, Michael; Webster, William ; Wiggins, Jim; Zimmerman, Roy
Subject: 10:00 Call Agenda
Attachments: Meeting Agenda for Industry Support Team 20110324.docx

Agenda for Daily Industry Support Team Teleconference Meeting
March 24, 2011

Purpose of the Meeting: Alignment of US Government and US Nuclear Industry support for Japan in responding to the Fukushima Nuclear Event.

Expected Outcome: Reinforce roles and responsibilities; identify problems and open issues surrounding our support

Meeting Chair: US NRC

- Roll Call
- Continued discussion of organizational Issues / Roles and Responsibilities
 - US Agency Roles and Leads
 - US Industry Support Structure and Roles
- INPO report on status of material requests
- INPO team report status of on-going work on requests for technical support
 - DOE Technical point of contact for INPO
- Review Current Action Items
 - Feedback on INPO Industry Support Team Executive Summary
- New Actions

From: LIA06 Hoc
Sent: Thursday, March 24, 2011 6:40 AM
To: Weber, Michael
Cc: LIA08 Hoc; ET01 Hoc
Subject: Query: (b)(5)
Attachments: Chairman's Tasking Memo 03 23.pdf

Mike

(b)(5)

Please advise.

Liaison Team Director
U.S. Nuclear Regulatory Commission
Operations Center

From: LIA08 Hoc
Sent: Wednesday, March 23, 2011 10:40 PM
To: ET01 Hoc; RST01 Hoc; PMT01 Hoc; Hoc, PMT12
Subject: FW: Summary from 9:30 call

2130 conference call with DOS and other federal agencies, and our site team in Japan. Jeff Temple

From: LIA02 Hoc
Sent: Wednesday, March 23, 2011 10:36 PM
To: LIA06 Hoc; LIA08 Hoc
Subject: Summary from 9:30 call

I put this in the log.

21:30 Interagency Call. Contact the DOS Task Force to find out when next call is. Thursday's (3/24) call has been cancelled. NRC Japan updated on Fukushima. The temp in units 1 and 3 spent fuel pools is still elevated. Japan is still trying to convert from using sea water to fresh water. Japan has asked the US to help in this effort. #2 is in the best shape. #3 and 4 are still being sprayed with water. The US pumping system is on its way to Fukushima. The KMax aircraft is on its way to Japan. KI is being distributed to Americans only if they call or email the embassy asking for it. USDA briefed on food safety and specifically, US efforts to make sure no unsafe food is coming into the US from Japan. USFJ has been working with Japan to distribute lots of humanitarian aid – this is an ongoing effort.

From: Weber, Michael
Sent: Wednesday, March 23, 2011 9:54 PM
To: LIA08 Hoc
Cc: Zimmerman, Roy; Giitter, Joseph; ET01 Hoc; ET05 Hoc; OST02 HOC
Subject: Response - Industry Working Group

Liaison Team support would be welcome. Brian McDermott prepared the summary for today. He sent it out internal to the teams at about 1500. At that time, he spoke with someone on the Liaison Team to request that it be distributed to a standard distro list. So today's summary has been prepared; the Liaison Team just needs to distribute today's summary and staff future calls. Next one is at 1000 tomorrow morning.

From: LIA08 Hoc
To: Weber, Michael
Sent: Wed Mar 23 20:59:43 2011
Subject: RE: Response - Industry Working Group

Mike. When you have a minute, I need to talk to you. Is it your expectation that the liaison team will (1) take meeting minutes of this daily call; (2) publish those minutes (3) distribute minutes to the developed list (chuck casto, sal, etc. and call participants? I found a rough copy of the meeting summary in the Exec Team chronologists computer, which I am now importing to my computer. This was not turned over to me well, and I apologize. Please let me know your expectations of the Liaison Team. Sorry to bother you so late at night. Jeff Temple 301-816-5185

From: Weber, Michael
Sent: Wednesday, March 23, 2011 8:26 PM
To: LIA08 Hoc
Subject: Response - Industry Working Group

Thanks, Jeff

From: LIA08 Hoc
To: Weber, Michael; ET01 Hoc; ET05 Hoc
Cc: RST01 Hoc; OST02 HOC; LIA06 Hoc; FOIA Response.hoc Resource
Sent: Wed Mar 23 19:55:59 2011
Subject: RE: FYI - Industry Working Group

We will make sure he is on the distribution list, and get him a copy of the summary of today's call. Jeff Temple

From: Weber, Michael
Sent: Wednesday, March 23, 2011 7:07 PM
To: ET01 Hoc; ET05 Hoc
Cc: RST01 Hoc; OST02 HOC; LIA06 Hoc; LIA08 Hoc; FOIA Response.hoc Resource
Subject: FYI - Industry Working Group

Looks like Sal has not received our summary of today's consortium call. Liaison Team has the action to distribute to him and other Federal agency/industry contacts.

From: Golub, Sal [mailto:sal.golub@nuclear.energy.gov]
Sent: Wednesday, March 23, 2011 5:08 PM

To: Connery, Joyce
Cc: Mustin, Tracy; Kelly, John E (NE); Lyons, Peter; Johnson, Shane; Weber, Michael
Subject: RE: Industry Working Group

Joyce,

Here are my notes from today's IWG call. Let me know if I should modify the distribution. I will forward NRC's notes when I get them.

Sal

From: Golub, Sal
Sent: Tuesday, March 22, 2011 6:42 PM
To: Connery, Joyce
Cc: Mustin, Tracy; Kelly, John E (NE); Lyons, Peter; Johnson, Shane
Subject: Industry Working Group

Joyce

John Kelly mentioned that S-2 was interested in getting feedback from the industry group that has been assembled to support Japan. NRC did the early USG coordination and INPO is facilitating the IWG support. I have participated in the daily calls that began on Sunday and will be the NE-poc.

Attached are the notes that I took and the notes that I subsequently received from the NRC. They are similar, but may include some different perspectives. I intend to produce notes on a daily basis for each call.

Please let me know the most practical way to share this information with the right set of stakeholders. Should I use Policy Working Group Distribution List? Thanks!

Sal

Sal Golub, PMP
Associate Deputy Assistant Secretary
for Nuclear Reactor Technologies (NE-7)
U.S. Dept of Energy
(tel.) 301.903.1636
(mob.) (b)(6)
sal.golub@hq.doe.gov

Industry Working Group Report 3/23/11¹

Background

An Industry Working Group (IWG) has been mobilized to coordinate US industry efforts in support of the earthquake and tsunami in Japan. The Institute for Nuclear Power Operations (INPO) is coordinating operations out of its headquarters in Atlanta. The IWG participants include: reactor vendors (e.g. Areva, Babcock & Wilcox, GE Hitachi, Westinghouse), nuclear utilities (e.g. Entergy, Southern Company), industry groups (INPO, EPRI) and others such as Bechtel. The IWG holds daily telcons at 10:00am EDT that includes government reps from NRC, DoD, DOE and DOS.

New items

- INPOs primary IWG rep has arrived in Tokyo (Al Hochevar). He is hoping to link up with Casto's (NRC) team today.
- The decision on Federal Agency Lead is still pending. NRC Chairman was discussing with agent deputies this morning. A decision is hoped for today.
- It was decided that all formal requests for assistance by the GOJ would come from the Minister Level meeting/Crisis Management Team that occurs daily.
- A preliminary assessment of DOE and private sector capabilities was distributed to the IWG
 - It had been provided earlier thru the Embassy to GOJ reps. METI has identified specific areas of interest including hardened cameras, remote sensing and wide area monitoring capabilities.
- INPO continues to gear up the operation in Atlanta. Additional personnel are expected this weekend.

Key points:

- The need to coordinate technical analysis and options/recommendations was discussed. Additional rigor is required to ensure that the USG elements have coordinated and consistent messages.
- Several options for improving communication and coordination were briefly discussed.

Open Actions by USG

- Establishing the Lead Federal agency. {NRC Chairman is working with other USG agencies}
- Provide contact information to Hochevar so he can link up with Casto. {NRC}

¹ Prepared by Sal Golub, DOE (NE-7)

From: ET05 Hoc
Sent: Wednesday, March 23, 2011 7:43 PM
To: ET01 Hoc
Subject: hi

From: Holahan, Patricia
Sent: Wednesday, March 23, 2011 8:38 PM
To: Evans, Michele
Subject: RE: coordination

(b)(5)

Thanks, Trish

From: Evans, Michele
Sent: Wednesday, March 23, 2011 8:33 PM
To: Holahan, Patricia
Subject: Fw: coordination

FYI

Sent from an NRC Blackberry
Michele Evans

From: Leeds, Eric
To: Virgilio, Martin
Cc: Weber, Michael; Evans, Michele; Wiggins, Jim
Sent: Wed Mar 23 17:14:11 2011
Subject: RE: coordination

I just spoke with Tony and let him know that we will provide contact info for him tomorrow. He is very receptive to providing the info. I discussed with Mike and we may have him provide it to us and then we can provide to whoever in the Federal Family is most appropriate. I like the idea of the NRC being the gate-keeper so we can control what kind of discussions/requests occur with NEI. We are coordinating this work with NSIR.

Eric J. Leeds, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
301-415-1270

From: Virgilio, Martin
Sent: Wednesday, March 23, 2011 3:21 PM
To: Leeds, Eric
Subject: Fw: coordination

Eric

Please have someone close the loop with Tony

Marty

From: PIETRANGELO, Tony <arp@nei.org>
To: Virgilio, Martin
Cc: Borchardt, Bill
Sent: Wed Mar 23 07:01:23 2011
Subject: RE: coordination

Marty,

We will make this happen. Need the contact person in OSTP and NRC so that we can communicate to the plants.

Tony

From: Virgilio, Martin [mailto:Martin.Virgilio@nrc.gov]
Sent: Wednesday, March 23, 2011 5:33 AM
To: PIETRANGELO, Tony
Cc: Borchardt, Bill
Subject: coordination

Tony

Indications of trace but detectable amounts of I-131 are being reported at some nuclear plants in the U.S. (Ginna and Nine Mile). I expect we will be receiving more of these reports.

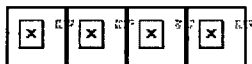
We have an interagency understanding that this type of information will be collected and assessed by OSTP (John Holdren).

Our preference would be to have NRC licenses who believe they have detected the effects of the releases in Japan report this information directly to OSTP and copy us. Would NEI be willing to take the lead on making this happen?

Marty



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Radiological Assessment

March 22, 2011



AMS Summary

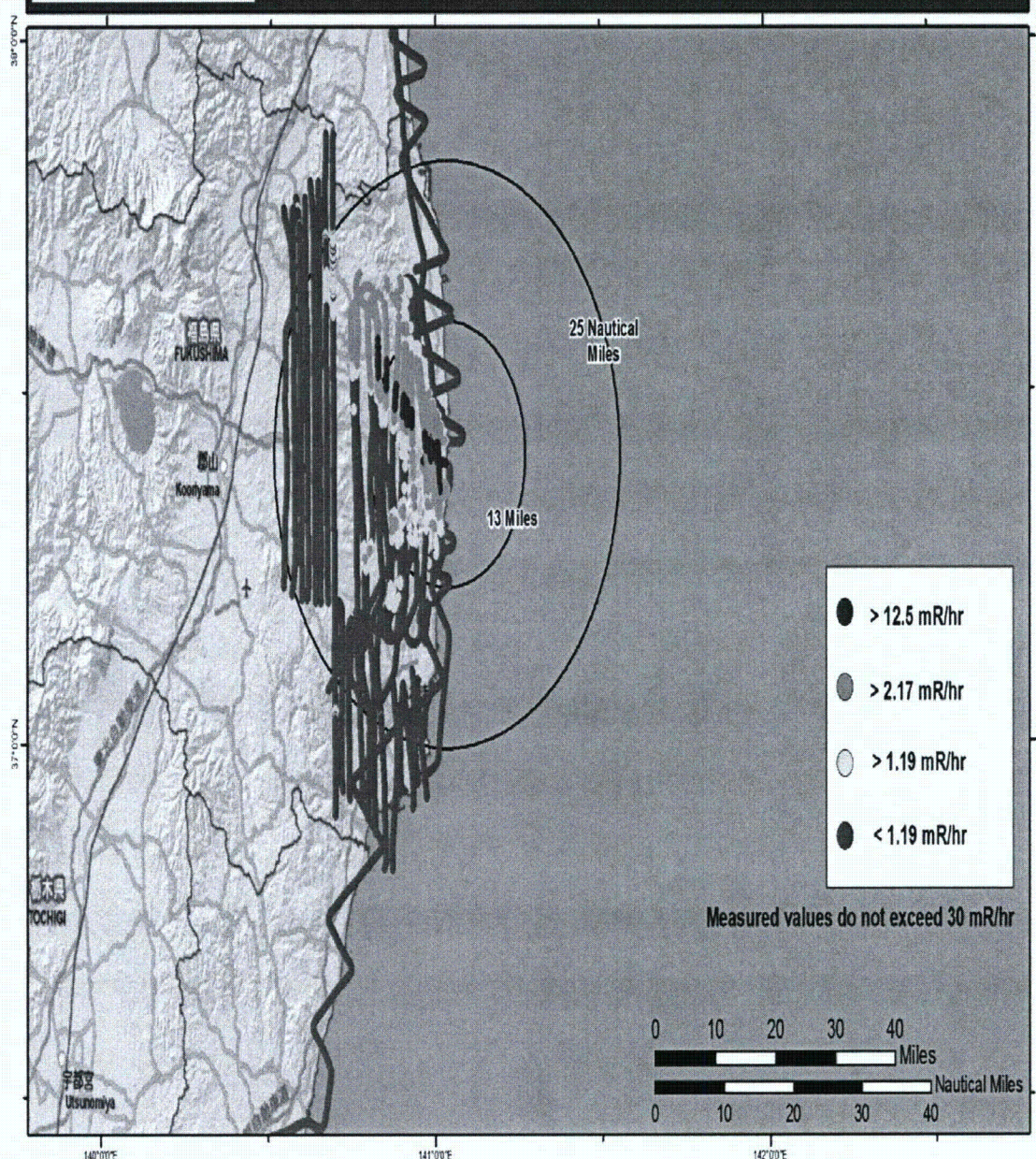
- Ops Summary
 - Aerial Measurement Systems totaled more than 40 hours of flying
- Plot interpretation
 - AMS data is presented as exposure rate 1 meter from the ground at the time the measurements occurred.



Guide to Interpretation

- US radiological assessments are composed of aerial and ground measurements and indicate the amounts of radiological material that has settled on the ground.
- Each measurement corresponds to the radiation a person receives in one hour at that location.
- These calculations account for multiple variables. For instance, radiation is most intense in the first days following its release. Therefore, dose reduction may be achieved by evacuating early in the response.
- All measurements in this plot are below 0.03 Rem per hour – a low level. And nearly all elevated readings are within 25 miles of Fukushima Daiichi.
- Measurements also show an area of greater radiation extending northwest from the accident. This area may be of interest to public safety officials and responders.

NNSA National Nuclear Security Administration
Aerial Monitoring Results - C-12
 Survey Date - 17, 18, 19 March 2011
FUKUSHIMA DAIICHI
JAPAN



Map created on 03232011 0210 JST

Name: NIT_C-12 23Mar2011 v4

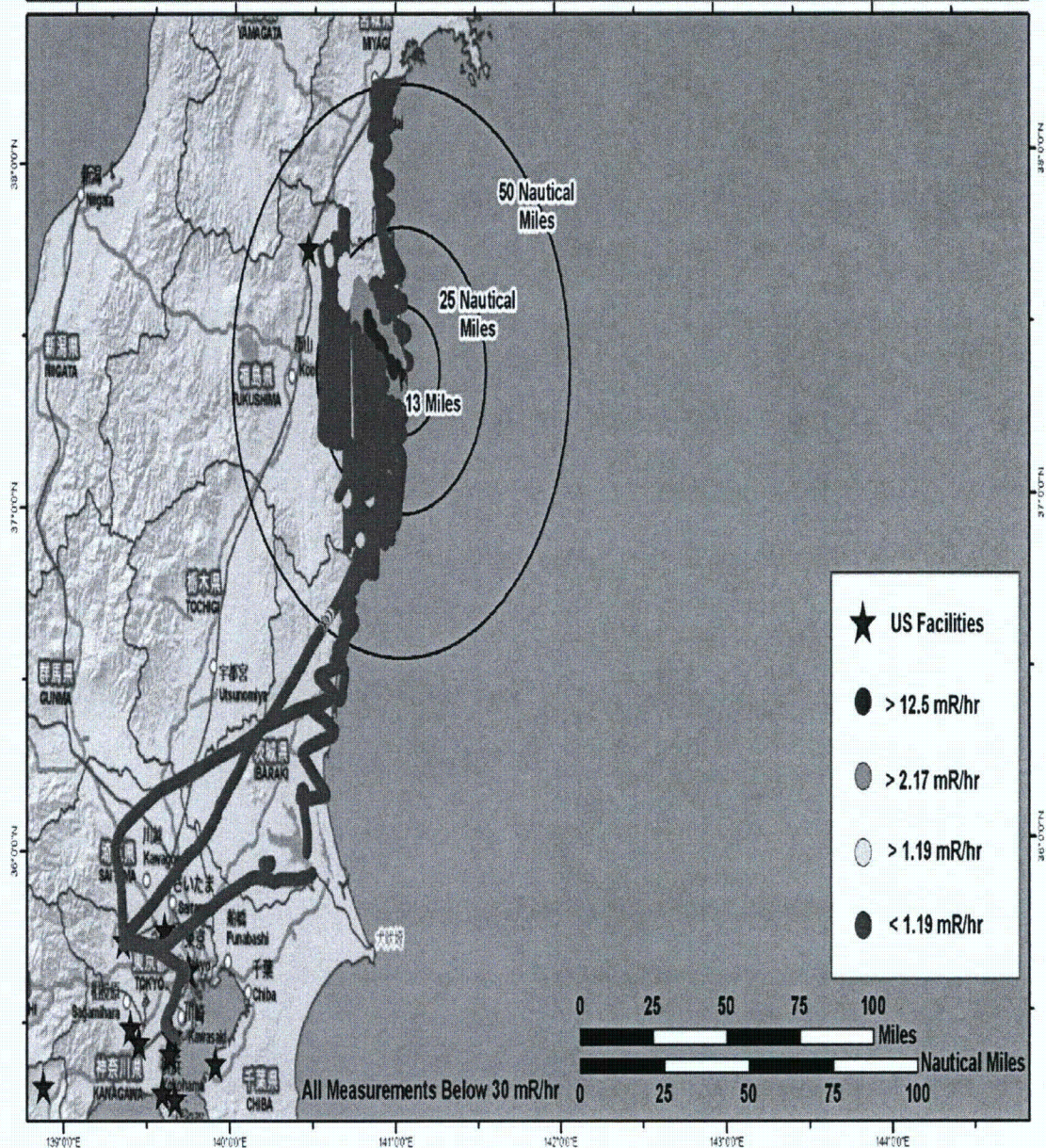
Nuclear Incident Team DOE NIT
 Contact (202) 586 - 8100



U.S. DEPARTMENT OF
ENERGY



NNSA National Nuclear Security Administration
Aerial Monitoring Results
Cumulative
FUKUSHIMA DAIICHI
JAPAN



Map created on 03222011 0245 JST
mod: NIT-D CumuAMS 21Mar2011 v1

Nuclear Incident Team DOE NIT
Contact (202) 586 - 8100

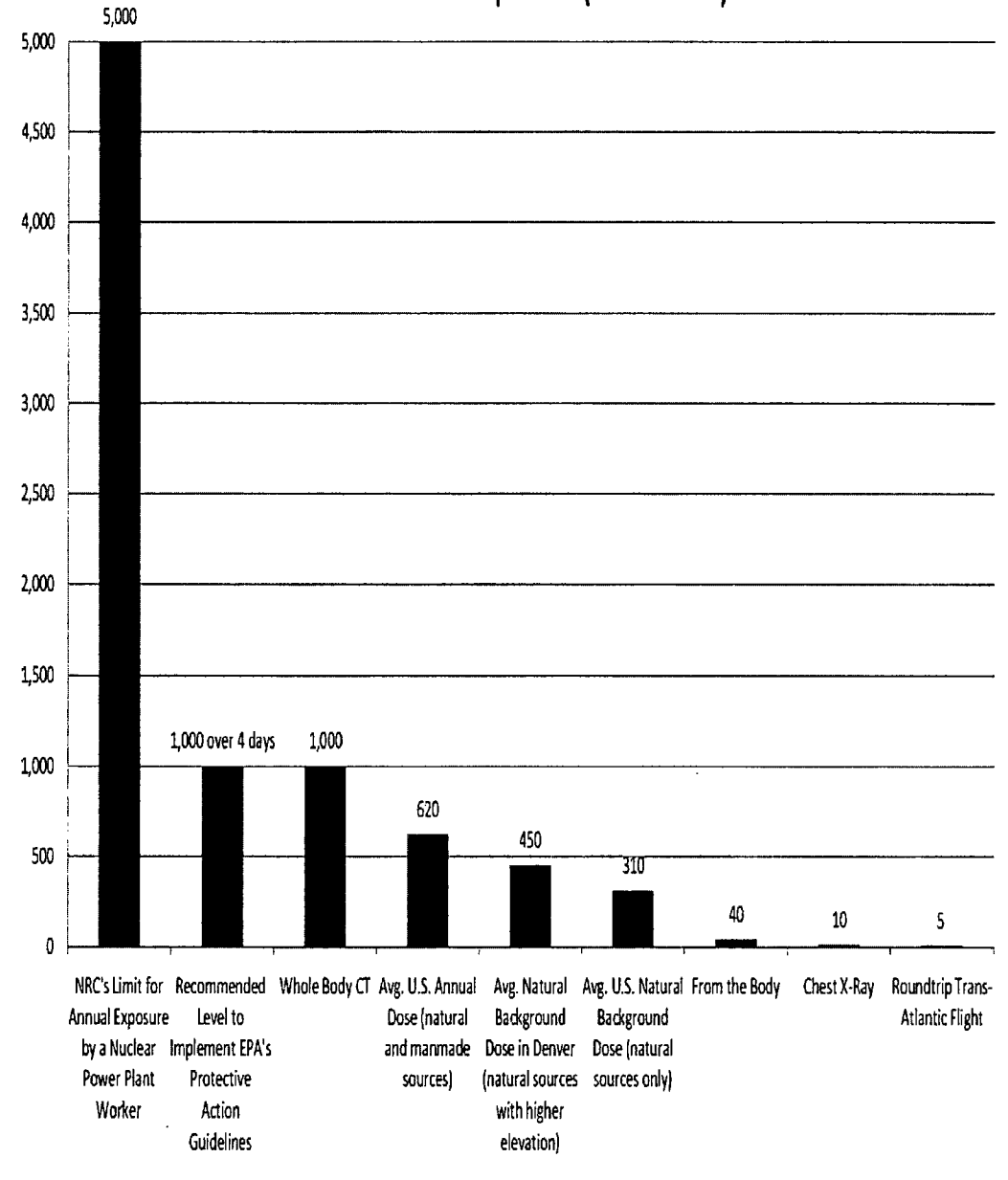
Context

- The Nuclear Regulatory Commission estimates that the average American absorbs 620 mRem a year* (or 0.071 mRem/hour)
- An average transatlantic flight produces an exposure of 2.5 mRem*
- A typical chest x-ray produces 10 mRem per image
- EPA guidelines call for public health actions if exposure exceed 1000 mRem over 4 days

* Source: NRC: <http://nrc.gov/images/about-nrc/radiation/factoid2-lrg.gif>



Radiation Doses Explained (in millirems)



From: Walls, Craig
Sent: Wednesday, March 23, 2011 9:03 AM
To: ET01 Hoc
Cc: Walls, Craig
Subject: TEST Of Forward To ET02

TEST Of Forward To ET02 !!!!!!!!!!!!!!!!!!!!!!!!!!!!!

From: ET01 Hoc
Sent: Wednesday, March 23, 2011 8:57 AM
To: ET02 Hoc
Attachments: Network Bulletin: Space and Property Management System Maintenance; RE: Response - RESULTS OF IPC SVTC CALL; Daily: 3 New Items from Tuesday, March 22, 2011; Response - RESULTS OF IPC SVTC CALL; Action - Assumptions for Trans Pacific Dose Modeling; RE: Media Contact; Action - Media Contact; RE: RESPONSE - SUMMARY OF TODAY'S CONSORTIUM CALL; FYI - Request from MA for RI to Meet w/Governor; RE: RESPONSE - SUMMARY OF TODAY'S CONSORTIUM CALL; RESPONSE - SUMMARY OF TODAY'S CONSORTIUM CALL; RESPONSE - Richland Safe Haven; Facilities Bulletin - Security/Safety: X-Ray (Radiography) Imaging of the TWFN Garage; Daily: 1 New Item from Monday, March 21, 2011; FW: ; online posted theory board; meti monitoring information website; Daily: 9 New Items from Friday, March 18, 2011; General Interest: Media Interest on Monday's Commission Meeting; Event: NRC Viewing of the Commission Meeting on the Japan Event; Event: Supplemental Information on Today's All-Employees Meeting; Employee News: NRC Viewing of the NRC All-Hands Meeting to Address the Nuclear Crisis in Japan; Daily: 4 New Items from Thursday, March 17, 2011; HEADS UP - Requests from Commission Offices for Ops Center/Japan Nuclear Information; EDO Update; Employee Resources: When Times Get Tough, Remember Your EAP; Clarification for use of the Tac ZG0061; Daily: 2 New Items from Wednesday, March 16, 2011; FYI - Rokkasho Status (03/16/2011); Re: FYI - READY TO DEPLOY; RESPONSE - 1900 EDT (March 16, 2011) USNRC Earthquake/Tsunami SitRep; FYI - READY TO DEPLOY; FYI - **Update 1:15pm March 16** Information on the Japanese Earthquake and Reactors in that Region; FYI - Recommendation for high prioritization of Aerial Measurement System; Network Bulletin: High Volume of NRC Internet Activity; RE: salient points from the USAID briefing this morning - action for PMT and PST highlighted and bolded below!; salient points from the USAID briefing this morning - action for PMT and PST highlighted and bolded below!; General Interest: Latest NRC Reporter Now On Line; UPDATE: NRC IS RESPONDING TO JAPANESE EVENTS; UPDATE: NRC IS RESPONDING TO JAPANESE EVENTS; General Interest: U.S. House of Representatives Energy and Commerce Committee hearing today, March 16 @ 9:30 AM; New Agency Wide TAC Number; Network Bulletin: Space and Property Management System Maintenance; Daily: 3 New Items from Tuesday, March 15, 2011; Re: FYI - Assistant Secretary Level SVTC on Japan Earthquake - March 16, 2011 - 8:00-9:00am; Request: ET Direction to Capture Routine Meetings - Please review the attached ; FYI - Assistant Secretary Level SVTC on Japan Earthquake - March 16, 2011 - 8:00-9:00am; Employee News: Death of Former NRC Employee, Erastace "Nick" Fields; EDO Update; From the Chairman: Events in Japan; Daily: 5 New Items from Monday, March 14, 2011; Response - UPDATE re: interagency briefing tomorrow at 1pm; FW: NRC IS RESPONDING TO AN EMERGENCY OUTSIDE of the United States; NRC IS RESPONDING TO AN EMERGENCY OUTSIDE of the United States; FW: Latest Ministry of Econ Trade and Industry update on Japan earthquake from IAEA ; Daily: 4 New Items from Friday, March 11, 2011; ***NRC IS RESPONDING TO AN EMERGENCY OUTSIDE OF THE UNITED STATES**; Fw: Quake/tsunami talking points

From: Karas, Rebecca
Sent: Monday, March 21, 2011 12:11 PM
To: ET01 Hoc
Subject: online posted theory board

<http://www.physicsforums.com/showthread.php?t=480200&page=42>

Rebecca Karas, Chief
Geosciences and Geotechnical Engineering Branch 1
Division of Site and Environmental Reviews
Office of New Reactors
U.S. Nuclear Regulatory Commission
Phone: 301-415-7533
Fax: 301-415-5397

From: Karas, Rebecca
Sent: Sunday, March 20, 2011 9:53 AM
To: ET01 Hoc
Subject: meti monitoring information website

http://www.mext.go.jp/english/radioactivity_level/detail/1303962.htm

<http://www.nisa.meti.go.jp/english/index.html>

<http://www.pref.miyagi.jp/gentai/Press/PressH230315.html>

http://notice.yahoo.co.jp/emg/en/archives/np_jp.html

(the above one shows as yahoo, but has an official link from meti, I believe due to their site overloading they started hosting on yahoo).

From: Weber, Michael
Sent: Thursday, March 17, 2011 7:06 PM
To: OST02 HOC
Cc: ET01 Hoc; LIA05 Hoc; PMT01 Hoc; RST01 Hoc; HOO Hoc
Subject: HEADS UP - Requests from Commission Offices for Ops Center/Japan Nuclear Information

From: Frazier, Alan
Sent: Thursday, March 17, 2011 6:26 PM
To: EDO_TBPM Distribution
Cc: Weber, Michael; Virgilio, Martin; Ash, Darren; Muessle, Mary; Andersen, James
Subject: Requests from Commission Offices for Ops Center/Japan Nuclear Information



ETAs,

Today the Chairman asked his fellow Commissioners to please not distract the Ops Center staff with requests for information. After consulting this afternoon with Bill, the current Executive Team in the Ops Center, and the Chairman's staff, we have decided to institute the following temporary procedure, which pertains to requests for Ops Center/Japan Nuclear Information from Commission offices.

If requests come to you from Commission offices for information that can only be obtained from the Ops Center staff, send an email with that request to "OST02 HOC" (see example below). This will put the request into the Ops Center action tracking list where it will be assigned to a team and given a priority. If a response was requested within a certain timeframe, please provide that information as well.

IMPORTANT NOTE: If the Ops Center informs you that they cannot meet the timeframe specified (or won't be able to respond at all) and if the Commission office has a problem with that, please work with OEDO Management starting with Jim Anderson escalating up to Bill if necessary to resolve the situation.

Please let Jim or I know if you have any questions.

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

From: Frazier, Alan
Sent: Thursday, March 17, 2011 5:58 PM
To: OST02 HOC
Cc: Andersen, James; Bowman, Gregory; Muessle, Mary
Subject: ACTION ITEM: Commission Office Request for list Provided to USAID

Ops Center,

This is a Commission Office request. Please provide the requested list back to me (alan.frazier@nrc.gov) and I will make sure it gets to the Commission Offices. If a response will not be provide please let me know and I will inform the requesting office.

ACTION ITEM: Provide the "list of additional equipment that could be brought in to help with mitigation" as provided to USAID, to the OEDO for the Commission (more details in the email below).

REQUEST REPLY BY: No timeframe given. Please reply at your earliest convenience.

REQUESTED BY: A Commission Office.

Please let me know if you have any questions.

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

From: Castleman, Patrick
Sent: Thursday, March 17, 2011 4:08 PM
To: Frazier, Alan
Cc: Wittick, Brian; Andersen, James; Brock, Kathryn; Merzke, Daniel; Bowman, Gregory
Subject: Another Request

Alan, et al,

At the 1530 Monday conference call, it was reported that we had provided USAID with a list of additional equipment that could be brought in to help with mitigation. This list was largely developed from B5b. I have heard that the reactor safety team is maintaining this list. Could you please provide it to the Commission offices? Thanks! Pat

From: LIA08 Hoc
Sent: Thursday, April 21, 2011 3:13 PM
To: Aaron Leong; Al Hochevar; Aleshia Duncan; Alice Caponiti; Armando Aviles; Blake Crowe; Blamey, Alan; Boger, Bruce; Bruce Howard; CAPT Kenneth Spurlock, USN; Casto, Chuck; Christensen, Harold; Christopher Green; Claire Berger; Craig Gaddis; Daniel Piccuta; Daniel Piccuta; Daniel Russel; Daryn Moorman; DORLCAL Resource; Dorman, Dan; DprNrrCal Resource; Emche, Danielle; ET05 Hoc; ET07 Hoc; FOIA Response.hoc Resource; Geoffrey Wiggin; Giitter, Joseph; Glenn Southern; Heather Dresser; Holahan, Vincent; HOO Hoc; INPO; INPO; INPO; INPO; INPO; INPO; INPO; James McKenna; James White; James Zumwalt; Jay Tilden; Jeffrey Bader; Jeffrey Miller; Jeremy Mears; John Peters; Joseph Donovan; Joseph Young; Julie Spencer; Justin Cooper; Kenneth R. Spurlock; Kenneth Worthy; Lee Gard; LIA08 Hoc; Marc M Wall; McDermott, Brian; McGinty, Tim; Michael Schiffer; Miller, Chris; Monninger, John; Morris, Scott; NRC Liaison at USAID; OST02 HOC; PACOM Watch Officer; Pentagon Japan Crisis Team J-4 Desk; Peter Lyons; Hoc, PMT12; Raymond Greene; Richard Webb; Rick Nielsen; Robert Gambone; Robert Luke; Robert Mercer; Ron Cherry; Ross-Lee, MaryJane; RST01 Hoc; RST01B Hoc; Russell Morales; Rust Deming; Sal Golub; Sal Golub; Samuel Young; Simon Schuchat; Stahl, Eric; Stephen Town; Steve Aoki; Suzanne Basalla; Tim Cipullo; Tom Vavoso; Trevor Conger; US Forces Japan J4; Virgilio, Martin; Weber, Michael; Wiggins, Jim; William Berger; William Webster; Wittick, Brian; Zimmerman, Roy
Subject: FW: latest update to the Nuclear Assistance Tracker matrix - 4/21
Attachments: Nuclear Team Asks and Offers Tracker 04-21-2011.xlsx
Importance: High

For tonight's 8PM EDT call.

Clyde Ragland

Liaison Team Coordinator
US Nuclear Regulatory Commission
email: lia08.hoc@nrc.gov
Desk Ph: 301-816-5185

From: Cipullo, Timothy L [mailto:CipulloTL@state.gov]
Sent: Thursday, April 21, 2011 5:49 AM
To: Aaron Leong; Abbot, Charles Spencer (TDY/DAO); Awan, Riaz X (Sofia - DOE); Basalla, Suzanne I; Berger, William (RDMA/OFDA); Boger, Bruce; Cherry, Ronald C; Damian Peko; DART DOE Liaison; Norwood, Donald; Duncan, Aleshia D; Gabor, Robert R; Tracy, Glenn; Helen Peterson; Howard, E. Bruce; James McKenna; Jay Tilden; Joint Support Force; LIA08 Hoc; Rick Nielsen; Garchow, Steve; Tokyo, BACC; Wall, Marc M
Cc: Wall, Marc M; Howard, E. Bruce; Gabor, Robert R; Abbot, Charles Spencer (TDY/DAO); Alapp
Subject: latest update to the Nuclear Assistance Tracker matrix - 4/21
Importance: High

Attached is the latest version of the Nuclear Assistance Tracker matrix. It includes feedback from the GOJ from the 4/20 Working Group meeting, plus updates from DOE. We will use this for the Thursday/Friday Consortium call.

Regards,

Tim

Timothy L. Cipullo
Environment/Energy Officer
Environment, Science and Technology Unit
U.S. Embassy Tokyo

+81 3-3224-5495
CipulloTL@state.gov

This email is UNCLASSIFIED.

US-Japan Nuclear-Related Assistance Tracker

Last update: April 21 - 1800 hrs JST											
Equipment/Supplies/Services Requested by GOJ											
Emb No.	Equipment/Service Being Requested	Priority (Hi Med Lo)	Date of request	Requesting GOJ Office	GOJ Action Office & POC	USG Action Office & POC	Training Needed?	Cost / Reimbursement	Status of Response	Open/ Closed	Comments (for USG use)
	High Priority Requests - Equipment & Supplies										Consortium Call info: Tuesday & Friday 0800 JST/1900 EDT (301) 816-5120, passcode (b)(6), alternate number (b)(6), passcode (b)(6)
4a	HPGe for MHLW	Hi		MHLW Food Safety Dept.	T. Tokiwa tokiwa-takeshi@mhlw.go.jp 03-3595-2368	DOE Cherry	Yes	none to GOJ	MHLW has requested up to 4 HPGe's detectors for drinking water analysis. DOE has identified 4 HPGe detectors that should satisfy the MHLW request. Is the National Institute of Public Health (NIHP) request for 1 HPGe to test drinking water still active?	0	DOE is performing testing on detectors, with expected completion on 4/18. If no problems are identified, delivery of the first HPGe may be as soon as 4/20. DOE has completed testing of 4HPGe detectors. One requires additional work before it is ready for delivery. Training is being completed for these HPGe detectors. DOE expects to deliver detectors to Wako City the week of 4/25.
4b	High Purity Germanium Detectors (HPGe) for MAFF	Hi		MAFF	Yukiko YAMADA yukiko_yamada@nm.maff.go.jp 03-3502-8095	DOE Cherry	Yes	none to GOJ	MAFF has requested 2 HPGe's to test agricultural samples from potentially affected areas. DOE has provided "loan documentation" on the policy, including liability for the loaned HPGe's. DOE has provided MAFF with training materials for the detectors. MAFF and DOE agreed to schedule delivery of two detectors the week of 4/18.	0	DOE finalizing translation of training materials. DOE has completed translation of training materials. Once loan paperwork is updated and completed by DOE, delivery will be scheduled with MAFF, estimated 4/22.
4c	HPGe for TEPCO	Hi		TEPCO	Takenaka takenaka.keisuke@tepcoco.jp 03-6373-4958	DOE Cherry	Yes		TEPCO has requested 2 HPGe's for use at the Fukushima Dai-ni NPS. TEPCO is requesting that the HPGe's be donated with no expectation of returning the devices due to expected contamination. On 4/12 TEPCO asked whether DOE is prioritizing HPGe's to agencies that offered to return them (MHLW, MAFF, NISA) DOE has confirmed that no HPGe detectors have yet been found to meet the TEPCO request.	0	DOE is looking for surplus detectors for donation to GOJ. As of 4/20, DOE has not identified any surplus HPGe detectors within DOE.

US-Japan Nuclear-Related Assistance Tracker

4d	HPGe for NISA	Hi	NISA	NISA: Y. SAKUMA sakuma-yasuhiro@meti.go.jp 03-3501-1087	DOE Cherry	Yes	none to GOJ	NISA has requested up to 10 HPGe detectors for long-term loan and free of charge. DOE is still working to identify which HPGe detectors satisfy the NISA request. DOE will provide NISA the expected policy on liability in case equipment is damaged while being used.	0	DOE has earmarked 1 of the HPGe detectors that has been tested to fulfill this requirement. DOE is awaiting receipt of software and completion of training materials before scheduling delivery with NISA. DOE is also compiling a list of potential HPGe detectors available for loan within DOE in the U.S. DOE is working with NISA to confirm delivery details. Training expense is free of charge (4/1). DOE delivered 2 detectors on 4/05/11. 4 more detectors from Naval Research Labs scheduled to arrive at Yokota on 4/11. DOE loaned 2 detectors on 4/06 (to whom?). Additional detectors were shipped from Naval Research Laboratory (NRL) and will be received in Yokota AB on 4/11. (Please confirm) Per PACOM 11, required liquid N2 is available at Yokota AB.
13a	Request for the following: 2,100 units-Rad Survey Meters, 2,600 units-Personal Dosimetry	Hi	NISA, MOD		DART			DART shipped 2,000 dosimeters; will see what it can do further. GOJ is considering allowing residents in the 20km evacuation zone return to their homes to collect belongings. Will need a large number of dosimeters. NISA will provide the number of Rad survey meters and Personal Dosimeters to be requested. MOFA provided info on number procured from other donor nations on 4/12.	0	List provided to Alan Blamey and Al Hochevar for cabinet meeting 4/2/11. Japan still requesting as many dosimeters as possible. Donor's meeting set for 4/11 or 4/12 will give more information on total # needed and coordination of efforts. Received approval for locating fixed monitoring devices. DART to provide update on dosimeters from Illinois.
13b	Request to know the number of personal dosimeters (in addition to those provided in request 13a) the USG could provide free of charge and pre-calibrated.	Hi	NISA		DART - Bill Berger wberger@usaid.gov, NRC - Steve Garchow Steve.Garchow@nrc.gov			The GOJ revised its evacuation plan on 4/11 and METI will check on # of dosimeters needed. GOJ requests # of GOJ is requesting up to 500 personal dosimeters that if they could be provided free of charge and pre-calibrated.	0	EPA Region 5 informed NRC-CDC liaison on 4/13 that EPA has a large number of electronic personnel radiation dosimeters that are ready to be or have already been sent to Japan. NEXT STEPS: NRC - verify EPA availability. EPA POC: jablonowski.eugene@epa.gov; Naval Reactors - check on possible large stock (approx 50,000 units) of personal dosimeters. POC: (b)(6) Other donor countries provided total of 1,250 radiation survey meters and 58,294 personal dosimeters.
13c	Request to know the number of survey meters (in addition to those provided in request 13a) the USG could provide free of charge and pre-calibrated.	Hi	NISA		DART - Bill Berger wberger@usaid.gov, NRC - Steve Garchow Steve.Garchow@nrc.gov			Survey meters have been broken out from the request for personal dosimeters (13b). METI will inform USG on number of survey meters needed.	0	NRC to follow up on number that may be available at no charge, if any.

US-Japan Nuclear-Related Assistance Tracker

20	Heat exchanger to be used in spent fuel pool.	Hi	3/27 Nagashima; 3/29 list	NISA, TEPCO	NISA: Ohshima oshima-toshiyuki@meti.go.jp 03-3501-0621	NRC; INPO (AJ Hochevar, (b)(6) (cell)			TEPCO is trying to get a system design. Placed a design order with Toshiba. INPO can provide info for free. TEPCO may pursue commercial procurement of heat exchanger. We will close this item once NISA believes it will not need any additional information. At 4/20 meeting, NISA asked to keep this open until it can confirm whether any additional info is needed.	0	NEXT STEPS: Check if Shaw has a commercial contract to do work on this. Shaw is not involved with this. Closed—TEPCO has contract and is pursuing purchase. NEXT STEPS: NRC to resend INPO report to NISA, TEPCO and ask if they have any further information needs.	
21b	Water storage tanks (6) and a trailer (1) for low-level contaminated water at 1F	Hi	4/01, NISA-DOE mtg	NISA, TEPCO	NISA - Oshima oshima-toshiyuki@meti.go.jp 03-3501-0621; TEPCO - Umino Akahiro@tepcoco.jp 03-6373-6044	DOE Cherry, Duncan	No		NEXT STEPS: DOE/State Embassy Team and NISA/TEPCO had a telecon this morning to discuss options. DOE and SPS evaluating both "by sea" and "by air" freighting options. Also, if urgent, but GOJ cannot pay, we will consider DoD Airlift. TEPCO was investigating sea transport as of 04/12. At 4/14 crisis mgt. working group meeting, GOJ reported tanks should be shipped by sea and DOE had agreed to pay shipping cost. DOE provided shipping cost estimates. TEPCO was informed it would need to cover air shipping costs and the USG might cover sea shipping. Need to confirm this with DOE and estimate timing of arrival. At 4/20 WG, NISA and TEPCO confirmed that DOE-funded sea transport (taking 30-45 days) is acceptable. TEPCO will check whether domestic companies exist that can fabricate the tanks in country, and find information on where Japanese companies currently acquire such tanks locally.	0	GoJ sourcing other donors, cost to ship by air is \$1.6M. DOE personnel on the call (Ron Cherry/Alice) will follow-up about cost estimates. NEXT Steps: DOE - confirm whether DOE will pay cost of sea freight.	
<p>High Priority Requests - Information Requests/Inquiries</p>												
21	Devices for condensing radiation contaminated water & Information on evaporation technology	Hi	3/29 draft list	NISA	NISA: OHSHIMA oshima-toshiyuki@meti.go.jp 03-3501-0621	DOE Cherry CherryRC@state.gov, Duncan DuncanAD@state.gov			Expanded request: On March 28 DCCS Fukuyama asked for information on measures to remove contaminated water. DOE sent white paper to Dr. Ohshima on 4/8. NISA to confirm whether Dr. Ohshima has all the information he requested.	0		

US-Japan Nuclear-Related Assistance Tracker

	Other Open Requests - Equipment & Supplies									
2a	Measurement by DOE using ground radiation monitoring devices, mobile and stationary	3/25 GOJ list	MEXT, NSC, NISA, MOFA	JAEA: M.Kanamori	DOE Cherry			Mobile ground monitoring began 3/17. Installation of unattended in-field monitoring equipment completed on 4/15. Data sharing will begin when testing has been completed. We can close this item after data sharing procedures are finalized.	0	Mobile monitoring is closed. Stationary monitoring is the open item. This was a GoJ request and the idea is to possibly install a system such as the EPA Radnet system. DOE currently has operating air samplers on the roof of the US Embassy, at the consequence Management Team HQ in Yokota AB, and occasional field deployments. DOE is working to install has installed 8 "infield" radiation detection backpacks in "unattended mode" ringing Fukushima NPP from 20 to 45 km 10 to 20 miles within small police stations (Koban). MEXT has approved the DOE request. Once notification process is completed for radiation detection alarms, GOJ and USG officials will be provided access to the real-time data.
2b	Loaning friskers -hand /foot monitors	3/28 Cab mtng	MEXT, NSC, NISA, MOFA	TEPCO: TAKENAKA takenaka.keisuke@tepcoco.jp 03-6373-4958	NRC Blamey; INPO			20 hand/foot detectors from Bruce Co., STP, San Onofre Determined to send. Discussing of shipping expense (4/5). The Bruce Power Station in Canada has approx. 20 detectors to send to GOJ. They plan to ship 20 by sea (25 days) or allow the GOJ to pay for air shipment, in which case the detectors can reach the GOJ much sooner. Alan Blamey invited TEPCO on 4/12 to talk directly with INPO. GOJ to confirm whether this is a Government to Government or a Commercial to Commercial transaction. Bruce shipped 2 hand/foot monitors by air. 4/20 - NISA is working with Narita customs to clear 2 detectors. TEPCO still wants the additional 18 detectors and is coordinating sea shipping.	0	authorization of commercial transport for Bruce monitors. (U.S. Embassy to advise). INPO to query utility-arranged transport of SONGS and STP equipment. Process of approving transportation needs to be solidified. Shipping payments are being investigated as to who will pay for shipments. STP has 1 parcel that is internally contaminated that may be shipped to Bruce Co. to be included in their shipment to Japan. Alan Blamey will attempt to have to moved forward quickly through the DART team. Equipment has no low-level contamination. SONGS and STP items have shipped. Bruce not shipped yet. Wait for information from GoJ as they may want sooner and may pay for it. No change on item; ship by air next week. Mark Scullion (GOC) appears interested in helping to ship. NRC recommends we allow Mr. Scullion time to provide funding for shipping before we discuss with GOJ.

US-Japan Nuclear-Related Assistance Tracker

5	Robotic monitoring devices - 1 robot, 3 radiation sensors, 5 Radiation-hardened cameras & Gamma Camera, plus extra video link for the iRobot	3/25 list, 3/26	METI, NISA, TEPCO	METI: Hatada hatada-hiroyuki@meti.go.jp 03-3501-1512 x 75167; NISA: SAKUMA sakumayasuhiro@meti.go.jp 03-3501-1087; TEPCO: YOSHINO	DOE Cherry, Duncan	yes-DOE providing training	DOE to pay for equipment and experts	U.S. confirmed 3/26 Cabinet meeting can provide QinetiQ Talon, M2, Radiation-hardened cameras. Per 3/31 WG meeting, DOE will also provide additional radiation sensor kits. DOE/Idaho National Laboratory (INL) determined M2 cannot be refurbished due to unavailability of unique components. Property title transfers document completed 4/9. Equipment delivered to AIST 4/13. INL team provided training at AIST on 4/14-15. Meeting with METI, TEPCO, and JAEA held 4/16 to determine follow-up training. Further assistance may be necessary in using the robots on-site. Training by INL provided training to TEPCO and JAEA at Hitachi Naka. INL experts to remain on standby during training in Onahama through 4/23. We will close this once NISA and TEPCO feel there is no longer a need for further assistance.	0	DOE is handling Ground robotics and hardened cameras only. UAVs and handhelds are separate. At 4/14 Crisis Mgt. Working Group Meeting, it was agreed to keep item open while training and other follow-up support is ongoing.	
18	Potassium iodide (KI) preparation 1 million 17-dose bottles	3/25 list	NISA, MHLW, MOFA		HHS Dr. Colemanto provide; USAID to transport; Embassy Gabor			MOFA said 3/30 it would accept the 1 million bottles (17 doses each) of liquid KI offered; requested via note verbale to DOS in D.C. (3/30); USG to share grant document text with GOJ before shipping.	0	Industry had tablets available, but HHS had liquid tablets that they were to provide. A. Blamey to verify with GOJ. May be caught up in logistics. Coming from USAID and CDC. Currently tied up within GoJ legal.	
24	Medical triage re: exposure to radiation (decontamination capability)	3/25 list	MHLW, NSC, NISA, MEXT, MOD-Col. Towne		DOD; DOE; USAID; NIH Coleman			MOD initially identified as principal action ministry along with MHLW, subsequently changed 3/29. Chem Bio Initial Response Force (CBIRF) provided for this purpose.	0	4/9: Need to clarify with USAID re: CBIRF support. CBIRF exercises planned with JSDF through 4/22.	
<p>Other Open Requests - Information Requests/Inquiries</p>											
33	Clarify for RST the indications that can be used to assess RPV integrity and location of core. (RST request)		NISA		NRC			ongoing project, comments that shift focus are received during 1100 status call 3/29	0	4/9: Ongoing NRC to prepare list of what we have available.	
34	List alternative flowpaths that can be used for purging, given accessibility challenges. (RST request)		NISA		NRC			GE to provide 3/29 list, INPO providing technical review. NISA will confirm whether any additional info is needed by 4/22.	0	INPO to confirm this was provided. 4/9: NRC RST reviewing.	

US-Japan Nuclear-Related Assistance Tracker

35	Confirm RST recommendation that RPV injection can be maximized once containment has been purged and vented (RST)			NISA		NRC			Technical: Ongoing project, comments that shift focus are received during 1100 status call 3/29	O	4/19: Ongoing
Closed Requests											
1	Aerial survey for AMS measurement, data sharing and analysis	3/25 GOJ list		MEXT, NSC, NISA, MAFF	MEXT: N.Akasaka	DOE Cherry, Duncan			DOE coordinates with MEXT, NSC, NISA, MOFF, MOFA. Daily sharing of AMS data and products. Per 4/4 meeting with GOJ, agreement on joint aerial surveys 4/6-4/12. Joint Staff is sharing U.S. aerial survey info USFJ-Yokota.	C	NRC's PMT provided this info to the white house (NITOPS). The feedback was that NITOPS won't task NARAC to run analysis until approval is received from the White House
2c	Loaning mobile radiation monitors	3/25 GOJ list		MEXT	JAEA (MEXT): N. KANAMORI neat-i02@neat.gr.jp 029-264-2681	INPO: Hochevar		no cost - donated	Six sets of Telectors from San Onofre and several kinds of detectors from South Texas Project/INPO arrived at NEAT/JAEA on 4/8/11.	C	We thought this was redundant with 2b, but it was a separate request and is now fulfilled.
3	Conduct simulation by radiation diffusion model (compare with SPEEDI data)			NSC, MEXT		DOE Cherry, Duncan			DOE coordinates with NSC. NSC is the leading POC with the GOJ. GOJ has provided SPEEDI source term to NRC 3/25 and meteorological data with NARAC.	C	DOE coordinates with NSC. NSC is the leading POC with the GOJ. GOJ discussed with NARAC on an idea to estimate the source term from monitoring data. GOJ provided information on meteorological data which is open to public.
5a	Information on Radiation shielding materials for vehicles.	3/26 cabinet meeting; 3/29 list		METI, NISA		DOE Cherry			NRC provided information on tungsten materials. DOE provided response to TEPCO questionnaire on 4/12. GOJ to confirm this is closed.	C	Japan provided additional information on 8 April to DOE HQ. Preliminary response from DOE received 4/8. Forwarded to METI. GOJ proposed to close action at 4/14 WG meeting.
5c	Westinghouse working on the UAV request and coordinating with Texas A&M expert			TEPCO					Westinghouse working with Texas A&M University expert.	C	
5d	GOJ request for shielding			INPO					This has been closed out. (Confirm how and by whom?)	C	
6	Robotic debris clearing machines	3/25 list, quantity set 3/26		METI, NISA		DOE Cherry, Duncan	N/A		DOE coordinates with NRC, DOD/USFJ. Japan dropped request for equipment 3/28. An options paper to mitigate contaminated water was provided to Embassy on 4/7/11.	C	Based on discussions with Embassy, the K-MAX helicopter is not needed, however Per NNSA (Jay Tilden) a whole range of remote heavy equipment will likely be needed. This is an open item being discussed by the Remote Control Project Team.
7	Provision of data obtained from UAVs	3/25 list		MOD, MOFA		DOD			GOJ is receiving Global Hawk images	C	Follow up action with Japan. Handled separately from Ground robotics and hardened cameras NISA will hold a meeting to discuss and determine needs for vauge items on the lists.

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8	Unmanned helicopter - GOJ is looking for helicopter to spray nondispersant.		3/25 list	MOD, NISA, MOFA		DOD DAO		4 T-Hawks on-site. MOD looking into DOD options (KS); repeated by Mr. Nagashima on 3/27 as unmanned helicopter with camera. NRC agreed 3/27 to follow using specs provided by Japan; NISA promised documents stating Japan's needs. MOD is not interested in KMAX.	C	PACOM indicated no longer needed and taken off the table.
9	Transportation of fresh water by barges and delivery of pumps		3/25 list	MOD, NISA		POL-MIL, DAO		PACOM paid \$3m for #9, 9b, 10, 11. Provided. Arrangement made for three vendor support representatives to stay and train.	C	There is one train that is installed. There is no need for further trains. DOD has the appropriate guidance. Alan Blamey will work with Japanese embassy officials to re-validate the need for this asset. R Neilson says that second train is in Australia. A. Blamey to determine from Embassy if still needed and to share with R. Neilson so that Bechtel and can be advised
9a	Water barges			MOD, NISA		J4, PACOM		PACOM gave to GOJ. (Need to confirm.) Per J4 the barges have been outfitted and tested. Barges are in Fukushima and pumping.	C	
9b	Fresh water supply pumps from Bechtel			NISA				PACOM paid \$3m for #9, 9b, 10, 11. First train in Japan	C	
10	High quality pumps and hoses.		3/26 meeting and previous discussion	TEPCO		NRC		PACOM paid \$3m for #9, 9b, 10, 11. CLOSED: NRC rec'd info 3/26 on possible hose and said would investigate further; request withdrawn at 3/29 Cab meeting.	C	
11	High pressure hose (3 x 500 m) and couplers (for cooling reactor)		3/25 list and previous discussion	NISA		NRC; DOD		PACOM paid \$3m for #9, 9b, 10, 11. Hose delivered as part of Australia/Bechtel equipment; in J-Village.	C	
12	Protective body armor	Hi	3/25 list	NISA - Sakuna, MOD	NISA, MOD	NRC - Blamey		INPO provided info on commercial sources. Body Armor Closed.	C	
19	Bottled water for infant formula		3/25 list	MHLW		USAID/OFDA		USAID and USFJ responded with initial stocks; paperwork underway at USAID/State for possible delivery April 1-2. Confirmed delivery to Tokyo Met. Gov. warehouse.	C	On the Embassy list for tracking
21a	Assistance in dealing with accumulated radioactive water in turbine buildings	Hi	3/27 meeting	NISA		DOE Cherry, Duncan; NRC		DOE paper provided to Amb. Roos and Amb. Fujisaki on 3/29/11. Management of cont. water. Closed by GOJ on 4/12/11	C	
21c	Information on "evaporation technologies"	Hi	3/28 - DCCS Fukuyama	NISA		DOE Cherry, Duncan		DOE in the process of determining appropriate contacts for sources of technology. Additional info from GOJ may be needed. Closed by GOJ on 4/12/11	C	

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21d	Obtain contact info for industry personnel with experience in handling and disposal of open pools/trenches of high dose rate(>100 R/hr) water. Rcvd Mar 29 from Al Hochevar from Hososn	Hi		NISA				Contacts developed and provided through INPO- Al Hochevar	C	
21e	Direct request from GOJ to Pacific Northwest Labs for technical assistance with water decontamination and storage issues.	Hi		NISA		DOE Cherry, Duncan		DOE considering Basic Ordering Agreement. GOJ wants to know if there will be a consultation fee. DOE needs to understand scope of work to estimate cost. Closed by GOJ on 4/12/11.	C	NEXT STEPS: DOE- Duncan to follow up with NISA to learn potential scope of work.
21f	Determine whether temporary radwaste processing skids are available or would be a good idea (for removing contaminated water)	Hi		NISA		INPO		Closed by GOJ on 4/12/11.	C	Private to Private transfer. Close after passing to TEPCO.
21g	Temporary holding tanks (for removing contaminated water)	Hi		NISA		DOE; DOD; INPO		Need to hold discussions with GOJ at working level. Withdrawn by GOJ on 4/12/11. TEPCO can procure these within Japan.	C	Develop recommendations for removal of water in basements of Units 1,2 and 3 per Task Tracker #3235. The Toshiba Team has investigated the use of large storage bladders to be used as temporary contaminated water storage. These bladders can hold up to 189,000 liters per bladder. Bladders can eventually be handled as a relatively small volume of solid waste. Need to develop a single water management team to handle all water issues once decision is made on how to proceed forward. DOE has been contacted by a private company from Nw Jersey.
21h	Tanker trucks as a temporary holding area (for removing high-level contaminated water)	Hi		NISA		DOE; DOD; INPO		Need to hold discussions with GOJ at working level. Withdrawn by GOJ on 4/12/11. TEPCO can procure these within Japan.	C	Develop recommendations for removal of water in basements of Units 1,2 and 3 per Task Tracker #3235. The Toshiba team is concerned that the relative capacity of tanker trucks is small and that the trucks will have to remain onsite once contaminated. This option should be reserved for special situations.
21i	Investigate whether there is a technology that would absorb contaminated materials from water (for removing contaminated water)	Hi		NISA		DOE		Closed by GOJ on 4/12/11.	C	Secretary Chu reportedly told this to the Japanese. The Toshiba Team has developed draft plans for water treatment with a focus on fission product removal and minimization of solids waste processing.
23	INFO: Technical support on radiation technology, nuclear technology, and health effects		3/25 list	MHLW CAS NSC NISA MEXT MOD		Dr. Coleman (NIH via HHS); USAID				

US-Japan Nuclear-Related Assistance Tracker

23a	Information on KI and drinking water											C	
23b	Health cooperation in three areas: environmental monitoring; KI policy; risk communication			CAS	Dr. Akashi	USAID, State, NIH Coleman, CDC, USDA, DOD			Both sides agreed to the recommendations in these three areas.			C	
25	INFO: Extinguishant/coolant	3/25 list	NISA						Request further info from GOJ. We need more information on the specific needs of the GOJ. TEPCO had been looking at equipment from American Defense Systems, but was able to procure the same type of product locally. Closed by GOJ on 4/12/11.			C	A. Blamey to Verify with GOJ what is exactly needed in this request
26	Incorporate PNNL into crisis mgmt dialogue/Spent Fuel WG	3/26, 3/28 - DCCS Fukuyama	NISA			DOE Cherry; NRC			PNNL team in Tokyo and providing support. Need to confirm with GOJ that we can close this, now tha the PNNL team has arrived.			C	PNNL team in Tokyo and providing support.
27	U.S. cooperation in bringing private sector engineers into Shielding WG	3/26 meeting - Nagashima	NISA			NRC			Not included on draft 3/29 request list. NISA does not need any more private sector engineers at this time. Will notify the USG if this changes.			C	Items 27, 29 and 29b are interrelated. 4/9: Action for Alan Blamey to coordinate with INPO and determine what is meant by shielding.
28	Assessment of possible fuel damage in units 1, 2, 3	3/27 - Hosono	NISA			NRC			NRC provided brief response at meeting.			C	
29	Assessment of structural stability of spent fuel pools	3/27 - Naga- shima ; 3/28 - Fukuyama	NISA			NRC reactor Safety Team			In preparation for decisions on shielding. NRC completed assessment of current spent fuel pool weight. Further analysis needed. Closed by the GOJ on 4/12/11. If NISA gets new information, we may have to reopen this request.			C	Need GOJ input
29a	Information on shielding for individual rooms and for the facility in general		NISA						Provided to GOJ through INPO-AI Hochevar.			C	
29b	Japan asked for NRC expertise on temporary shielding options, to determine whether the NPP Plant buildings are strong enough to hold up under additional pressure		NISA			NRC			From Cabinet Office Crisis Mgt. Team Meeting notes 3-28-2011. Closed by the GOJ on 4/12/11. If NISA gets new information, we may have to reopen this request.			C	NRC has completed a gross analysis and does not have sufficient information to perform a detailed analysis for shielding. From Cabinet Office Crisis Management Team Meeting notes, 3/28/11. A. Blamey to discuss further with Japan
30	Information on tools/methods for moving damaged fuel, plus contacts of those with experience at TMI-2 and Chernobyl. From Mr. Hosono.		NISA		Hosono's Office				Provided to GOJ through INPO-AI Hochevar on 3/30.			C	

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31	SAMG Technical Document			TEPCO				Guidance has been sent to INPO contact in Japan and is being updated. Includes injection rate and best assessment to plant conditions; TEPCO confirmed receiving info at 4/7 meeting with INPO.	C	TEPCO received.
32	GEH is following up on the Nitrogen purge issue analysis			NISA, TEPCO				GE is following. No need for further analysis. Closed by GOJ on 04/15/2011.	C	NRC Japan to confirm with GE. 4/9. NRC has analysis for review.
36	Requests for military air transport			MOD			JA, PACOM	PACOM is involved in review and approval of all requests for military airlift to Japan. Requests should include weight and dimensions of the cargo. 1st choice should be commercial carrier for timely delivery; should limit requests to materiel that is difficult for commercial carriers to deliver.	C	
37	Protective body armor with very high radiation tolerance	Hi		CAS Hosono			METI: HATADA hatada-hiroyuki@meti.go.jp 080-3093-9172 TEPCO: WATANABE watanabe.kunimichi@tepco.co.jp 03-6373-4882	DOE Cherry, NRC Blamey Alan.Blamey@nrc.gov	C	In parallel to GOJ gov to gov request, TEPCO is discussing commercial to commercial procurement. NRC's Blamey provided info to METI's Funaki on 4/13 about a private US vendor that is working with Toshiba to provide tungsten vests to TEPCO. We do not believe DOE or US Navy would have additional shielding options. Offer of lead blankets appears in separate sheet - "Other U.S. Offers."

U.S. Offers (including Commercial to Commercial)						
	date offered	USG Agency Offering	GOJ Agency to Receive	Need Addressed	Costs	status
balloons for unmanned radiation measurement	3/26/2011	NOAA				Japan accepted in principle; Japan to identify appropriate ministry
200-300 pieces of radiation measurement equipment		INPO through NRC				3/26 Japan said it would take all equipment offered
U.S. expert on radiological tolerance of food to travel to Japan for consultations with FCS	3/26/2011	FDA				DCCS Fukuyama asked that FDA and FSC communicate directly
Chem Bio Initial Response Force (CBIRF)	3/29/2011	DOD	MOD			Currently, CBIRF team is at Yokota Air Base, conducting training with SDF.
600 lead blankets, currently in Atsugi, available for donation. 500 blankets @ 76cm x 30cm 100 blankets @ 46cm x 15cm	4/15/2011	USFJ	TBD, but must be witin GOJ for G-to-G transfer	Vehicle shielding, workspace shielding	none for blankets, need to pay for transportation from Atsugi	USFJ is confirming what costs, if any, will be involved

From: Weber, Michael
Sent: Tuesday, April 12, 2011 4:16 PM
To: Carpenter, Cynthia
Cc: ET05 Hoc; OST02 HOC; Burnell, Scott; Brenner, Eliot; FOIA Response.hoc Resource
Subject: FYI - Japanese estimates of total release of radioactivity to atmosphere

From: Fetter, Steve [mailto:(b)(6)]
Sent: Tuesday, April 12, 2011 9:31 AM
To: DL-NITsolutions
Cc: Adams, Ian
Subject: Japanese estimates of total release of radioactivity to atmosphere

Japan's Nuclear and Industrial Safety Agency (NISA) has upgraded the accident at Fukushima Daiichi to Level 7, the most severe accident on the IAEA scale. The press release, available at <http://www.nisa.meti.go.jp/english/files/en20110412-4.pdf>, includes estimates of the total release to the atmosphere by NISA and by the Nuclear Safety Commission (NSC). These estimates, together with early estimates by IAEA and NRC are given below. Also given for comparison are the releases from Chernobyl and Three Mile Island.

	NISA	NSC	IAEA	NRC	Chernobyl	TMI
Bequerels						
I-131	1.3E+17	1.5E+17	6.4E+15	4.4E+16	1.8E+18	6.7E+11
Cs-137	6.1E+15	1.2E+16	7.0E+14	4.8E+15	8.5E+16	
kilocuries						
I-131	3,500	4,100	170	1,200	48,000	0.018
Cs-137	160	320	19	130	2,300	
Percent Chernobyl						
I-131	7%	9%	0.4%	3%	100%	0.00004%
Cs-137	7%	14%	0.8%	6%	100%	

NISA/NSC estimate that 3.5-4.1 MCi of I-131 (7-9% of Chernobyl) and 160-320 kCi of Cs-137 (7-14% of Chernobyl) were released to the atmosphere. The NRC "plausible realistic case" estimates for I-131 and Cs-137 were 30-35% and 40-80% of the NISA/NSC estimates. The IAEA estimates were an order of magnitude less than the NISA/NSC estimates.

Note that the NISA/NSC estimates do not include other releases to the environment (e.g., discharges of contaminated water into the ocean).

Steve Fetter
Assistant Director at-large
Office of Science and Technology Policy
Executive Office of the President

(b)(6)

From: Blount, Tom
Sent: Saturday, April 09, 2011 9:11 PM
To: ET05 Hoc
Subject: FW: April 9 2200hrs.docx
Attachments: April 9 2200hrs.docx

Importance: High

Bill – any input??

From: Blount, Tom
Sent: Saturday, April 09, 2011 9:10 PM
To: LIA08 Hoc; LIA06 Hoc; Hoc, PMT12; RST01 Hoc
Subject: April 9 2200hrs.docx
Importance: High

Please review and comment in prep for turnover.
I would appreciate your feedback by 2130hrs....

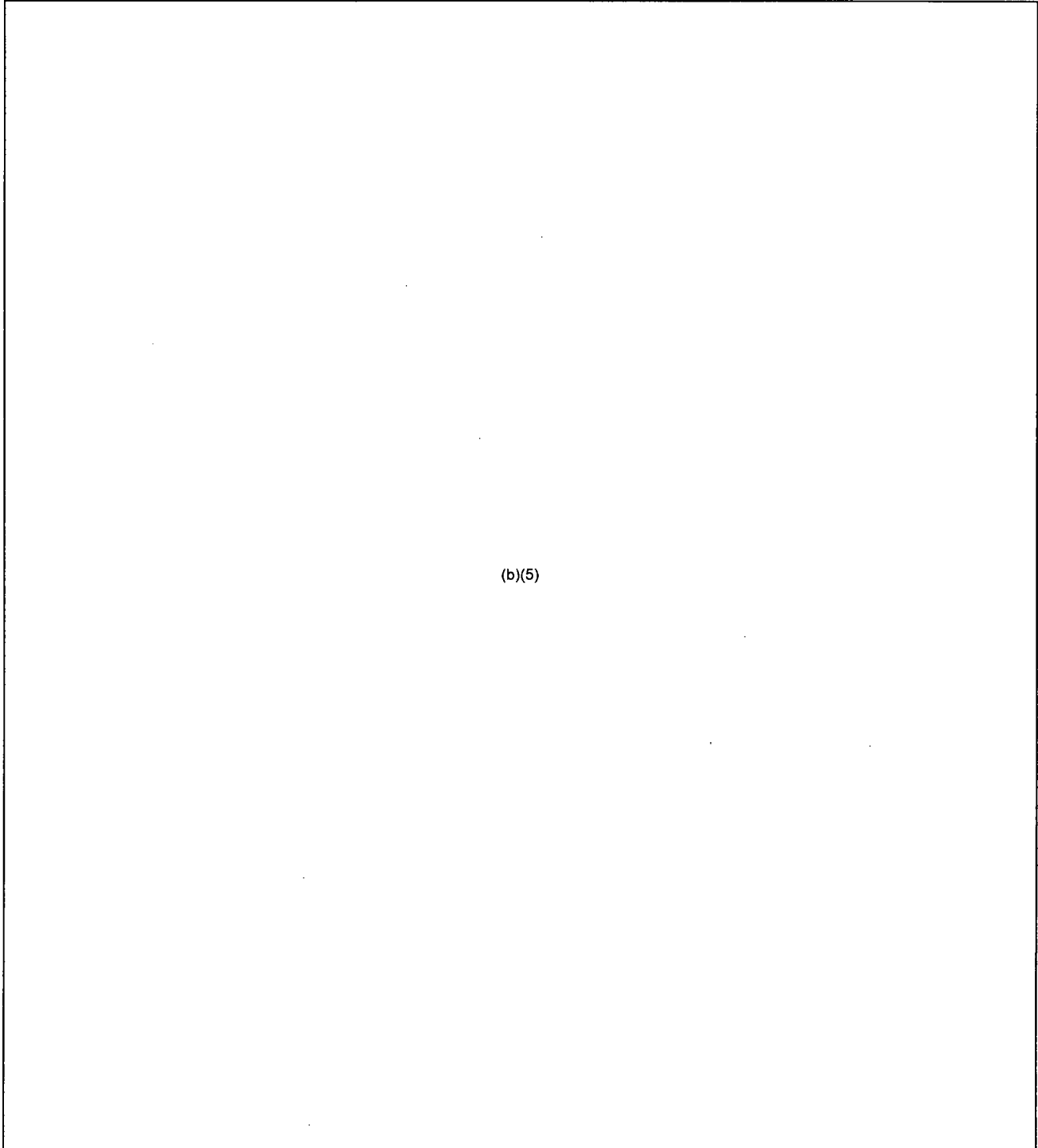
Thanks,
Tom



April 9, 2011

2200 EDT

**Briefing Sheet
Fukushima Daiichi**



(b)(5)

From: ET05 Hoc
Sent: Saturday, April 09, 2011 2:55 PM
To: Blount, Tom
Subject: Draft Daily Assessment Template
Attachments: boardfile.docx

Tom,

Attached is the subject file. The file has been saved in the ET Misc. Documents Collection.

-Melissa

From: LIA06 Hoc
Sent: Saturday, April 09, 2011 1:20 PM
To: ET05 Hoc; Miller, Chris
Cc: LIA08 Hoc; LIA06 Hoc; RST01 Hoc; PMT01 Hoc
Subject: LT markup of transition plan
Attachments: LT markup - OpsCtr transition fukushima1.docx

Thanks

Liaison Team Director
U.S. Nuclear Regulatory Commission
Operations Center



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Operations Center Transition Plan to Reduced Staffing for Fukushima Dai-ichi Event

Based on the Chairman's April 8, 2011 memorandum to the EDO with approval of Operations Center staffing for the Japan event, staff is beginning to transition current staffing levels to a six-person team as described in the memorandum:

"I have been briefed by the staff and understand their proposal recommending a reduction in the Operations Center staffing in response to the event. Provided that adequate support to the site team can be maintained, I approve the staff's recommendation to reduce the Operations Center response team to one team directed by a member of the Executive Team (ET), and consisting of two members from the Reactor Safety Team (RST), one member of the Protective Measures Team (PMT), and one member of the Liaison Team (L T) to provide immediate support to the site team, and one assistant to the ET director. The team should be supplemented as necessary based on workload, and line organizations should be tasked as a high priority for support as needed. The team should be staffed around-the-clock as long as the site team is staffed."

The intent of this document is to detail the actions taken and planned for an orderly transition to the six-person agency watch staff, the associated actions to transfer incoming requests to NRC line organizations, and the subsequent reduction of products delivered by the agency watch team and/or participation in conferences or calls regarding the event. It is expected that each NRC Office will have a central point of contact and a distribution network to properly process and distribute to key available staff members the requests sent by the agency watch team as it continues to support the needs of the Site Team in Japan. The principal roles of the team in the Operations Center are to provide a point of contact for the site team and to ensure that site team needs are met with a similar response time as a fully-staffed Operations Center. The change is that the Operations Center team is not expected to provide support directly, but rather to manage that support from the line organizations. The Operations Center team will provide direct support consistent with the limited resources and available skill sets of the new team size.

Actions by Team:

Executive Team

General:

1. Define roles and skills needed for each position
- 1-2. Change to __ TA briefings per week starting April __.
- 2-3. Eliminate Ops Center Status Update as of April __.
4. Brief TAs on new schedule for and-status updates.

- 3.5. Determine criteria or date to move team of 6 to the _____ Room?
- 6. Determine staff for the start of the 6 person team on Monday April 11 – April 16
- 7. Develop implementing plan for new staffing starting April 17.
- 4.8. _____ etc

EST:

- 1. Notify
- 2. Determine computer watch station usage and how to transition to the 6 person team functions.
- 3. etc

Protective Measures Team

- 1. etc
- 2. etc

Reactor Safety Team

- 1. etc
- 2. etc

Liaison Team

In addition to site team support, the LT member is responsible for providing liaison support to the Operations Center team consistent with normal Liaison Team responsibilities. The LT member will work with the POCs identified in each supporting office (principally OIP, FSME, and OCA) to ensure that tasks, deliverables, and schedules are understood by the appropriate line organization.

The LT member will participate on the following calls:

- 1. etc Calls with the site team,
- 2. 1100 Emergency Support Function (ESF)-8 call – this occurs on Tuesdays only now (state or OIP and LT Coordinator)
- 3. 1400 USAID Congressional call – this call occurs on Tuesdays only now (OCA and LT Coordinator)
- 4. 1700 HHS call with 50 states and federal partners – State Liaison and LT Coordinator participate – now down to Tuesdays and Thursdays only

These calls can be handled by the LT member and, at their judgment, by including appropriate program office staff. These calls may stop altogether in the near future due to diminishing interest by other stakeholders.

Actions to Implement Prior to Transition

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4. — There are no LT calls that need to be cancelled and no actions required to interact with other stakeholders prior to implementing the new ops center staffing plan.

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2.5. etc

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From: Hoc, PMT12
Sent: Saturday, April 09, 2011 1:06 PM
To: ET05 Hoc
Subject: Reoccurring Daily Actions and Calls Rev 27 (2)
Attachments: Reoccurring Daily Actions and Calls Rev 27 (2).docx

Update from PMT. I'll stop by with more suggestions from Trish Holahan.

From: Miller, Chris
Sent: Saturday, April 09, 2011 10:28 AM
To: ET05 Hoc; ET07 Hoc; Evans, Michele; Case, Michael; Bergman, Thomas; Holahan, Patricia
Cc: Miller, Chris; FOIA Response.hoc Resource; McDermott, Brian; Blount, Tom
Subject: OpsCtr transition fukushima.docx This is a shell to start your lists going for transition. ET05 Hoc will take the team updates
Attachments: OpsCtr transition fukushima.docx
Importance: High



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Operations Center Transition Plan to Reduced Staffing for Fukushima Dai-ichi Event

Based on the Chairman's April 8, 2011 memorandum to the EDO with approval of Operations Center staffing for the Japan event, staff is beginning to transition current staffing levels to a six-person team as described in the memorandum:

"I have been briefed by the staff and understand their proposal recommending a reduction in the Operations Center staffing in response to the event. Provided that adequate support to the site team can be maintained, I approve the staff's recommendation to reduce the Operations Center response team to one team directed by a member of the Executive Team (ET), and consisting of two members from the Reactor Safety Team (RST), one member of the Protective Measures Team (PMT), and one member of the Liaison Team (L T) to provide immediate support to the site team, and one assistant to the ET director. The team should be supplemented as necessary based on workload, and line organizations should be tasked as a high priority for support as needed. The team should be staffed around-the-clock as long as the site team is staffed."

The intent of this document is to detail the actions taken and planned for an orderly transition to the six-person agency watch staff, the associated actions to transfer incoming requests to NRC line organizations, and the subsequent reduction of products delivered by the agency watch team and/or participation in conferences or calls regarding the event. It is expected that each NRC Office will have a central point of contact and a distribution network to properly process and distribute to key available staff members the requests sent by the agency watch team as it continues to support the needs of the Site Team in Japan.

Actions by Team:

Executive Team

General:

1. Change to __ TA briefings per week starting April __.
2. Eliminate Ops Center Status Update as of April ____.
3. Brief TAs on new schedule for and status updates.
4. etc

EST:

1. Notify

2. Determine computer watch station usage and how to transition to the 6 person team functions.
3. etc

Protective Measures Team

1. etc
2. etc

Reactor Safety Team

1. etc
2. etc

Liaison Team

1. etc
2. etc

From: Wiggins, Jim
Sent: Monday, April 11, 2011 11:19 AM
To: Dyer, Jim
Cc: LIA06 Hoc
Subject: FW: REPLY: Possible Deputies Meeting

Need to pass this along. We should have the preps fairly-well done....they cover 4 issues: stability, re-entry (grab-and-go); relaxation of the 50 mile PA; ??????. They were being consolidated into one composite paper the last I heard.

From: Bentz, Julie A. [mailto:(b)(6)]
Sent: Monday, April 11, 2011 9:17 AM
To: Virgilio, Martin; LIA08 Hoc; Donnell, Charles D.; Landau, Zachary L.
Cc: LIA06 Hoc; Zimmerman, Roy; Wiggins, Jim; ET07 Hoc; ET02 Hoc; ET05 Hoc; Temple, Jeffrey; Blount, Tom; Weber, Michael; Borchardt, Bill; HOO Hoc; Zerr, Thomas J.; #RESILIENCE
Subject: RE: REPLY: Possible Deputies Meeting

Marty,

There has been a decision to hold an IPC on Japan tomorrow (time TBD). My understanding is that

(b)(5)

Please reach out to Chuck Donnell (who is building the agenda) NLT noon today. To participate in the IPC, NRC should contact Zach Landau. Both are on the to:line

Thanks!

Julie Bentz

(b)(6)

From: Virgilio, Martin [mailto:Martin.Virgilio@nrc.gov]
Sent: Saturday, April 09, 2011 10:17 AM
To: Bentz, Julie A.; LIA08 Hoc
Cc: LIA06 Hoc; Zimmerman, Roy; Wiggins, Jim; ET07 Hoc; ET02 Hoc; ET05 Hoc; Temple, Jeffrey; Blount, Tom; Weber, Michael; Borchardt, Bill
Subject: REPLY: Possible Deputies Meeting

Julie

I left you a voice mail yesterday. I think an IPC might work. We will be in a better position to judge early next week.

Marty

From: Bentz, Julie A. [mailto:(b)(6)]
Sent: Friday, April 08, 2011 6:29 PM
To: Virgilio, Martin; LIA08 Hoc
Cc: LIA06 Hoc; Zimmerman, Roy; Wiggins, Jim; ET07 Hoc; ET02 Hoc; ET05 Hoc; Temple, Jeffrey; Blount, Tom; Weber, Michael; Borchardt, Bill
Subject: RE: Possible Deputies Meeting

Marty,

Would NRC be OK if we tackled this at the established Japan IPC?

Thanks!

Julie Bentz

(b)(6)

From: Virgilio, Martin [mailto:Martin.Virgilio@nrc.gov]

Sent: Friday, April 08, 2011 6:15 PM

To: Bentz, Julie A.; LIA08 Hoc

Cc: LIA06 Hoc; Zimmerman, Roy; Wiggins, Jim; ET07 Hoc; ET02 Hoc; ET05 Hoc; Temple, Jeffrey; Blount, Tom; Weber, Michael; Borchardt, Bill

Subject: RE: Possible Deputies Meeting

Hi Julie

(b)(5)

Marty

(b)(6)

From: Bentz, Julie A. [mailto:(b)(6)]

Sent: Friday, April 08, 2011 6:08 PM

To: LIA08 Hoc

Cc: LIA06 Hoc; Zimmerman, Roy; Wiggins, Jim; ET07 Hoc; ET02 Hoc; ET05 Hoc; Temple, Jeffrey; Blount, Tom; Weber, Michael; Virgilio, Martin; Borchardt, Bill

Subject: RE: Possible Deputies Meeting

(b)(5)

Thanks!

Julie Bentz

(b)(6)

From: LIA08 Hoc [mailto:LIA08.Hoc@nrc.gov]

Sent: Friday, April 08, 2011 5:49 PM

To: Bentz, Julie A.

Cc: LIA06 Hoc; Zimmerman, Roy; Wiggins, Jim; ET07 Hoc; ET02 Hoc; ET05 Hoc; Temple, Jeffrey; Blount, Tom; Weber, Michael; Virgilio, Martin; Borchardt, Bill

Subject: Possible Deputies Meeting

Colonel,

(b)(5)

V/R,

R C Ragland
LT Coordinator

From: LIA08 Hoc
Sent: Friday, April 08, 2011 10:50 PM
To: Stahl, Eric
Cc: Blamey, Alan; Emche, Danielle; Wittick, Brian; 'CipulloTL@state.gov'; 'TDYSpurlockKR@state.gov'; [REDACTED] (b)(6); LIA02 Hoc; LIA06 Hoc; ET05 Hoc
Subject: Updated GOJ Assistance Request List
Attachments: Nuclear Team Asks and Offers Tracker 04-09-2011.xlsx

Eric,

Attached is the updated request list, based on tonight's 8PM EDT call, for your use. Please review and make corrections as needed. We request that you send out the updated list several hours before the next 8PM EDT call, scheduled for Sunday April 10 to LIA02 and cc: LIA06 and LIA08, who will then distribute the list to the Executive Team. Thanks!

Clyde
LT Coordinator

From: Stahl, Eric
Sent: Friday, April 08, 2011 9:10 PM
To: LIA08 Hoc; LIA02 Hoc
Cc: Blamey, Alan; Emche, Danielle; Wittick, Brian; Stahl, Eric; 'CipulloTL@state.gov'; 'TDYSpurlockKR@state.gov'; [REDACTED] (b)(6)
Subject: Updated GOJ Assistance Request List

Can you please confirm that the following people (all CCed) are included on the distribution list for the GOJ Assistance Request list?

Alan Blamey, NRC Japan Team
Eric Stahl, NRC Japan Team
Danielle Emche, NRC Japan Team
Brian Wittick, NRC Japan Team
Tim Cipullo, Embassy-Tokyo Econ Section
Lt. Col Aaron Leong, USAF
Cap. Ken Spurlock

Thanks,
Eric

Eric Stahl
U.S. Nuclear Regulatory Commission
Office of International Programs
Tel: +1 301-415-0246
Mob: [REDACTED] (b)(6)

US-Japan Nuclear-Related Assistance Tracker

Last update: April 9 - 1100 hrs JST													
Equipment/Supplies/Services Requested by GOJ													
Emb No.	Equipment/Service Being Requested	Priority (Hi Med Lo)	Date of request	Requesting GOJ Office	GOJ Action Office & POC	USG Action Office & POC	Target Date	Training Needed?	Cost / Reimbursement	Status of Response	Open/ Closed	Comments	NRC No.
	High Priority Requests												
21	Devices for condensing radiation contaminated water & Information on evaporation technology	Hi	3/29 draft list	NISA		DOE Cherry, Duncan, DOD Adm. Gregory				Expanded request: On March 28 DCCS Fukuyama asked for information on measures to remove contaminated water.	O	4/9: Items 21-21i: No new information. GoJ needs to provide more information.	
21a	Assistance in dealing with accumulated radioactive water in turbine buildings	Hi	3/27 meeting	NISA		DOE Cherry, Duncan, NRC				DOE paper provided to Amb. Roos and Amb Fujisaki on 3/29/11. Management of cont. water.	O		30, 31 & 32
21b	Water storage tanks (6) and a trailer (1) for contaminated water at 1F	Hi	4/01, NISA-DOE mtg	NISA, TEPCO	NISA - Oshima, TEPCO - Umino	DOE Cherry, Duncan		No		NISA asks info on specs, usage, installation. Asks if more are available. Request under consideration by USG. Need GOJ confirmation of request. TEPCO will pay shipping costs, requests estimate for sea & air shipment. DOE to provide these. NEXT STEPS: DOE/State Embassy Team and NISA/TEPCO had a telecon this morning to discuss options. DOE and SRS evaluating both "by sea" and "by air" freighting options. Also, if urgent, but GOJ cannot pay, we will consider DoD airlift.	O	GoJ sourcing other donors, cost to ship by air is \$1.3M	30 & 31
21c	Information on "evaporation technologies"	Hi	3/28 - DCCS Fukuyama	NISA		DOE Cherry, Duncan							32
21e	Direct request from GOJ to Pacific Northwest Labs for technical assistance with water decontamination and storage issues.	Hi		NISA		DOE Cherry, Duncan				DOE considering Basic Ordering Agreement. GOJ wants to know if there will be a consultation fee. DOE needs to understand scope of work to estimate cost.	O	NEXT STEPS: DOE- Cherry to follow up with NISA to learn potential scope of work.	13
21f	Determine whether temporary radwaste processing skids are available or would be a good idea (for removing contaminated water)	Hi		NISA		INPO					O		

US-Japan Nuclear-Related Assistance Tracker

21g	Temporary holding tanks (for removing contaminated water)	Hi		NISA		DOE; DOD; INPO					O	Develop recommendations for removal of water in basements of Units 1,2 and 3 per Task Tracker #3235. The Toshiba Team has investigated the use of large storage bladders to be used as temporary contaminated water storage. These bladders can hold up to 189,000 liters per bladder. Bladders can eventually be handled as a relatively small volume of solid waste. Need to develop a single water management team to handle all water issues once decision is made on how to proceed forward.	30
21h	Tanker trucks as a temporary holding area (for removing contaminated water)	Hi		NISA		DOE; DOD; INPO					O	Develop recommendations for removal of water in basements of Units 1,2 and 3 per Task Tracker #3235. The Toshiba team is concerned that the relative capacity of tanker trucks is small and that the trucks will have to remain onsite once contaminated. This option should be reserved for special situations.	31
21i	Investigate whether there is a technology that would absorb contaminated materials from water (for removing contaminated water)	Hi		NISA		DOE					O	Secretary Chu reportedly told this to the Japanese. The Toshiba Team has developed draft plans for water treatment with a focus on fission product removal and minimization of solids waste processing.	32
20	Heat exchanger to be used in spent fuel pool.	Hi	3/27 Nagashima; 3/29 list	NISA		NRC; INPO (A) Hochevar, (b)(6) (cell)			INPO is currently providing sources of comm'l heat exchangers that can be used to cool a spent fuel pool. (This will not result in purchase of heat exchanger.) TEPCO is trying to get a system design. Placed a design order with Toshiba. INPO can provide info for free. TEPCO may pursue commercial procurement of heat exchanger.		C	NEXT STEPS: Check if Show has a commercial contract to do work on this. Closed - TEPCO has contract and is persuing purchase.	

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4	Germanium semiconductor detectors	Hi	3/25 GOJ list	MEXT, NISA, MAFF, TEPCO	MAFF: Y.Yamad a MHLW: T.Tokawa TEPCO: H.Kanehama DOE Cherry				INPO - US industry does not have spare detectors at this time (3/29). One detector has been loaned & training is underway. DOE to provide 1 detector each to MAFF and MHLW, due 4/6; 4 more for MAFF & MHLW, delivery TBD. NISA requested 1 HPE, under discussion. Detectors will be used to test contamination of water and food. MHLW to receive 1 loaned detector. Wants to know the weight (already emailed this question to DOE?). NISA requests at least 1; wants to know how many available. Cabinet Secretariat (CAS) to discuss with MAFF and local governments and provide to USG total number requested. MEXT withdrew request for 3 detectors because they lack shielding. Training expense is free of charge (4/1). DOE delivered 2 detectors on 4/05/11. 4 more detectors from Naval Research Labs scheduled to arrive at Yokota on 4/11.	DOE - may offer TEPCO 2 units and discuss about not to return the instruments. NEXT STEPS: DOE - Cherry will add POCs for USG. Send to DartDOELiaison1@ofda.gov and request update. DOE has loaned 2 detectors on 4/06/11. 4 additional detector were shipped from Naval Research Laboratory (NRL) and will be received in Yokota AB on April 11. Fedex tracking # 9178 16713088 and # 9178 16713099. 4/9: breaking this down into each requestor, next version will have each of the ministries listed; due to be tested and calibrated. Per PACOM J4, required liquid N2 is available at Yokota AB.	19
13a	Request for the following: 2,100 units-Rad Survey Meters, 2,600 units-Personal Dosimetry, 5,100 units- iodine absorbent masks, 33,000 units-iodine absorption cans	Hi		NISA, MOD	DART				DART shipped 2,000 dosimeters; will see what it can do further. GOJ is considering allowing residents in the 20km evacuation zone return to their homes to collect belongings. Will need a large number of dosimeters. NISA requests USG inform GOJ how many we can provide. MOFA to provide info on number procured from other donor nations. Need status update	List provided to Alan Blamey and Al Hochevar for cabinet meeting 4/2/11. NEXT STEP: DART - raise in 4/7 meeting with Cabinet. Donor's meeting set for 4/11 or 4/12 will give more information on total # needed and coordination of efforts.	34
Other Open Requests											
Za	Loaning ground radiation monitoring devices, mobile and stationary (incl radiation friskers -20 hand /foot/cloth monitors)		3/25 GOJ list	MEXT, NSC, NISA, MOFA, TEPCO	JAEA: M.Kanamori DOE Cherry				Mobile ground monitoring began 3/17. Discussions ongoing re fixed ground-based monitors. Need GOJ approval to proceed; MOFA is coordinating. Need to determine locations for fixed monitoring stations.	Mobile monitoring is closed. Stationary monitoring is the open item. This was a GOJ request and the idea is to possibly install a system such as the EPA Radnet system. DOE currently has operating air samplers on the roof of the US Embassy, at the consequence Management Team HQ in Yokota AB, and occasional field deployments. DOE is working to install 8 "infield" radiation detection backpacks in "unattended mode" ringing Fukushima NPP from 10 to 30 miles within small police stations (Koban). MEXT has approved the DOE request, and awaiting Japanese National Police approval. JNP approval obtained 4/8.	20 & 22

US-Japan Nuclear-Related Assistance Tracker

2b	(incl radiation friskers –hand /foot monitors)	3/28 Cab mtng	MEXT, NSC, NISA, MOFA	JAEA: M.Kanamori TEPCO: H.Kanehara	NRC Blamey; INPO				Elaborates on request above - 20 hand/foot detectors from Bruce Co., STP, San Onofre Determined to send. Discussing of shipping expense (4/5)	0	(Commercial to TEPCO) This activity is awaiting authorization of commercial transport for Bruce monitors. (U.S. Embassy to advise). INPO to query utility-arranged transport of SONGS and STP equipment. Process of approving transportation needs to be solidified Shipping payments are being investigated as to who will pay for shipments. STP has 1 parcel that is internally contaminated that may be shipped to Bruce Co. to be included in their shipment to Japan. Alan Blaney will attempt to have moved forward quickly through the DART team. Equipment has no low-level contamination. SONGS and STP items have shipped. Bruce not shipped yet. Wait for information from GoJ as they may want sooner and may pay for it. no change on item; ship by air next week.		
5	Robotic monitoring devices - 1 robot, 3 radiation sensors, 5 cameras	3/25 list, quantity set 3/26	MEXT, NISA, TEPCO	MEXT: Hatada	DOE Cherry; Duncan	o/a 4/6/11	Shipment Japan office	yes-DOE proposed training through QinetiC	DOE to pay for equipment and experts	0	Scheduled to arrive in Japan 4/9/11. NISA to inform USC whether it wants DOE experts (at no cost). DOE coordinates with NRC, DOD/USFJ. U.S. confirmed 3/26 Cabinet meeting can provide QinetiC Talon, M2, Radiation-hardened cameras. Per 3-31 WG meeting, DOE will also provide additional radiation sensor kits.	DOE is handling Ground robotics and hardened cameras only. UAVs and handhelds are separate. DOE is looking to send 1) Robotics expert and 2) cameras expert. NEXT STEP: DOE - check if GOJ needs technical experts. FEDEX Tracking Number (PRO) is S4501824. DOE is awaiting a decision from GOJ this evening. 4/9: will arrive within hours.	21
5a	Information on Radiation shielding materials for vehicles.	3/26 cabinet meeting; 3/29 list	MEXT, NISA						NRC provided information on tungsten materials; MEXT still wants advice on shielding for heavy equipment.	0			
5b	Radiation-hardened cameras & Gamma Camera	3/26 cabinet meeting	MEXT, NISA		DOE	4/6/2011 shipment expected			US confirmed at 3/26 cabinet meeting that it can provide camera and system for mapping gamma rays. DOE to send five cameras and one gamma cam.	0	Tied to Item #5 - this equipment is with the robots.		
16	Separation materials for masks (as many as possible)	3/29 draft list	NISA							0	Same as 12c.		
18	Potassium iodide (KI) preparation 1 million 17-dose bottles	3/25 list	NISA, MHLW, MOFA		HHS Dr. Coleman to provide; USAID to transport; Embassy Gabor				MOFA said 3/30 it would accept the 1 million bottles (17 doses each) of liquid KI offered; requested via note verbale to DOS in D.C. (3/30); USG to share grant document text with GOJ before shipping.	0	Industry had tablets available, but HHS had liquid tablets that they were to provide. A. Blamey to verify with GOJ. May be caught up in logistics. Coming from USAID and CDC. Currently tied up within CoJ legal.	27	
24	Medical triage re: exposure to radiation (decontamination capability)	3/25 list	MHLW, NSC, NISA, MEXT, MOD		DOD; DOE; USAID; NIH Coleman				MOD initially identified as principal action ministry along with MHLW, subsequently changed 3/29. Chem Bio Initial Response Force (CBIRF) provided for this purpose.	0	4/9: Need to clarify with USAID re: CBIRF support.		

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25	INFO: Extinguishant/coolant	3/25 list	NISA					Request further info from GOJ.	O	A. Blamey to Verify with GOJ what is exactly needed in this request	28
26	Incorporate PNL into crisis mgmt dialogue/Spent Fuel WG	3/26, 3/28 - DCCS Fukuyama	NISA			DOE Cherry; NRC		PNNL team in Tokyo and providing support.	C	PNNL team in Tokyo and providing support.	
27	U.S. cooperation in bringing private sector engineers into Shielding WG	3/26 meeting - Nagashima	NISA			NRC		Not included on draft 3/29 request list	O	Items 27, 29 and 29b are interrelated. 4/9: Action for Alan Blamey to coordinate with INPO and determine what is meant by shielding.	
29	Assessment of structural stability of spent fuel pools	3/27 - Nagashima; 3/28 - Fukuyama	NISA			NRC reactor Safety Team		In preparation for decisions on shielding. NRC completed assessment of current spent fuel pool weight. Further analysis needed.	O	Need GoJ input	
29b	Japan asked for NRC expertise on temporary shielding options, to determine whether the NPP Plant buildings are strong enough to hold up under additional pressure		NISA			NRC		From Cabinet Office Crisis Mgt. Team Meeting notes 3-28-2011	O	NRC has completed a gross analysis and does not have sufficient information to perform a detailed analysis for shielding. From Cabinet Office Crisis Management Team Meeting notes, 3/28/11. A. Blamey to discuss further with Japan	33
32	GEH is following up on the Nitrogen purge issue analysis		NISA, TEPCO					GE is following	O	NRC Japan to confirm with GE. 4/9: NRC has analysis for review.	111
33	Clarify for RST the indications that can be used to assess RPV integrity and location of core. (RST request)		NISA			NRC	40632	ongoing project, comments that shift focus are received during 1100 status call 3/29	O	4/9: Ongoing	
34	List alternative flowpaths that can be used for purging, given accessibility challenges. (RST request)		NISA			NRC	40632	GE to provide 3/29 list, INPO providing technical review	O	INPO to confirm this was provided. 4/9: NRC RST reviewing.	
35	Confirm RST recommendation that RPV injection can be maximized once containment has been purged and vented (RST)		NISA			NRC	40632	Technical: Ongoing project, comments that shift focus are received during 1100 status call 3/29	O	4/9: Ongoing	
Closed Requests											

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9b	Fresh water supply pumps from Bechtel			NISA					First train in Japan	C		24
10	High quality pumps and hoses.		3/26 meeting and previous discussion	TEPCO		NRC			CLOSED: NRC rec'd info 3/26 on possible hose and said would investigate further, request withdrawn at 3/29 Cab meeting.	C		3
11	High pressure hose (3 x 500 m) and couplers (for cooling reactor)		3/25 list and previous discussion	NISA		NRC; DOD			Hose delivered as part of Australia/Bechtel equipment, in J-Village.	C		3
12	Protective body armor, radioactive survey meters and dosimeters, radioactive measuring instruments, iodine absorption masks, separation materials.	Hi	3/25 list	NISA - Sakuna, MOD	NISA, MOD	NRC - Blamey			INPO provided info on commercial sources. Body Armor Closed. Japan repeated 3/27. (note: USAID has already provided 10,000 sets of protective clothing). Supply chain: Materials sourced; to be obtained commercially. Info sent to GOJ through Al Hochevar GOJ to establish need. Communicated to them that they are payers by Hochevar.	C		
17	2,000 personal radiation dosimeters (PAD)		3/28 meeting	NISA, MEXT, RIKEN			yes		Comment: State (Jandy Thur) email 3/24 said "MEXT has declined to provide a statement of need" and said it will not be needing the units, need to check status"	Ø	List provided to Alan Blamey and Al Hochevar for cabinet meeting 4/2/11.	34
19	Bottled water for infant formula		3/25 list	MHLW		USAID/OFDA	4/01 - 4/02		USAID and USFJ responded with initial stocks; paperwork underway at USAID/State for possible delivery April 1-2. Confirmed delivery to Tokyo Met. Gov. warehouse.	C	On the Embassy list for tracking	29
21d	Obtain contact info for industry personnel with experience in handling and disposal of open pools/trenches of high dose rate (>100 R/hr) water. Rcvd Mar 29 from Al Hochevar from Hoson	Hi		NISA					Contacts developed and provided through INPO- Al Hochevar	C		108
23	INFO: Technical support on radiation technology, nuclear technology, and health effects		3/25 list	MHLW CAS NSC NISA MEXT MOD		Dr. Coleman (NIH via HHS); USAID						
23a	Information on KI and drinking water									C		

US-Japan Nuclear-Related Assistance Tracker

23b	Health cooperation in three areas: environmental monitoring; KI policy; risk communication		CAS	Dr. Akashi	USAID, State, NIH Coleman, CDC, USDA, DOD			Both sides agreed to the recommendations in these three areas.	C	
28	Assessment of possible fuel damage in units 1, 2, 3	3/27 - Hosono	NISA		NRC			NRC provided brief response at meeting.	C	
29a	Information on shielding for individual rooms and for the facility in general		NISA					Provided to GOJ through INPO-AI Hochevar.	C	107
30	Information on tools/methods for moving damaged fuel, plus contacts of those with experience at TMI-2 and Chernobyl. From Mr. Hosono.		NISA	Hosono's Office	40632			Provided to GOJ through INPO-AI Hochevar on 3/30.	C	106
31	SAMG Technical Document		TEPCO					Guidance has been sent to INPO contact in Japan and is being updated. Includes injection rate and best assessment to plant conditions; TEPCO confirmed receiving info at 4/7 meeting with INPO.	C	TEPCO received. 110
36	Requests for military air transport		MOD	J4, PACOM				PACOM is involved in review and approval of all requests for military airlift to Japan. Requests should include weight and dimensions of the cargo. 1st choice should be commercial carrier for timely delivery; should limit requests to materiel that is difficult for commercial carriers to deliver.	C	118

U.S. Offers (including Commercial to Commercial)				
	date offered	USG agency	Embassy office responsible	status
balloons for unmanned radiation measurement	3/26/2011	NOAA	ECON	Japan accepted in principle; Japan to identify appropriate ministry
200-300 pieces of radiation measurement equipment		INPO through NRC		3/26 Japan said it would take all equipment offered
provide info on options for spent fuel transfer	3/26/2011	NRC		
U.S. expert on radiological tolerance of food to travel to Japan for consultations with FCS	3/26/2011	FDA	FAS	DCCS Fukuyama asked that FDA and FSC communicate directly
Canadian power plant to provide equipment for hand/foot monitoring	3/27/2011	INPO		
information on contamination control	3/28/2011			
Chem Bio Initial Response Force (CBIRF)		DOD	USFJ?	Currently, CBIRF team is at Yokota Air Base, conducting training with S

From: Blount, Tom
Sent: Friday, April 08, 2011 10:28 PM
To: LIA07 Hoc; OST04 Hoc
Cc: ET05 Hoc; Hoc, PMT12; RST01 Hoc; LIA06 Hoc
Subject: April 8 2200hrs.docx
Attachments: April 8 2200hrs.docx

Amy – pls print color copy....

All – this is the latest for turnover.
Thanks,
Tom

From: Hoc, PMT12
Sent: Friday, April 08, 2011 10:17 PM
To: PMT09 Hoc
Subject: FW: OUO - addition to paper

From: ET05 Hoc
Sent: Friday, April 08, 2011 10:16 PM
To: Hoc, PMT12; Cool, Donald
Subject: .OUO - addition to paper

This is from Roy.

This document is marked "Official Use Only." This document is sensitive and should be handled appropriately by the recipients. Therefore, this document is intended to be reviewed by the addressed recipients and is **not** intended to be shared with other stakeholders without NRC approval.

From: LIA08 Hoc
Sent: Friday, April 08, 2011 9:53 PM
To: ET05 Hoc
Subject: FW: Decision on Forwarding to the States "USNRC Emergency Operations Center Status Update"

From: LIA04 Hoc
Sent: Friday, April 08, 2011 8:08 PM
To: Noonan, Amanda; Easson, Stuart; Flannery, Cindy; LIA04 Hoc; Lukes, Kim; Maupin, Cardelia; OST05 Hoc; Rautzen, William; Rivera, Alison; Ryan, Michelle; Turtill, Richard; Virgilio, Rosetta
Cc: LIA06 Hoc; LIA08 Hoc
Subject: Decision on Forwarding to the States "USNRC Emergency Operations Center Status Update"

State Liaison Operations Team:

It was decided by Liaison Team Director and others that the "USNRC Emergency Operations Center Status Update", Earthquake / Tsunami Status Update compiled by Executive Briefing Team, and which is generated at 0430 and 1800 daily, is **not** to be sent to the States. The report is marked Official Use Only, and the document is to be distributed solely by the Executive Briefing Team Coordinator.

Richard Turtill
U.S. NRC Operations Center
State Liaison

From: ET05 Hoc
Sent: Friday, April 08, 2011 9:52 PM
To: RST03 Hoc
Subject: Matrix
Attachments: Document Status.docx

All Teams Major Document Status
Last Updated: April 8, 2011 @ 2000 EST



Document Title	Team	Current Status	Stakeholders Input to Request	Due Date	Action	Other
Priority 1: Compilation of the 3 Documents into 1 Composite Document						
Composite Analysis for Daiichi regarding EPZ and Stability	Lead team on Document: PMT Work with RST on document LT has the lead to compile the rollup of the talking points for the comprehensive document	PMT and RST are working on creating and refining the composite document.	Site Team EPA Naval Reactors	Next deputies call or IPC call	Take the following 3 documents and create a composite document with a rollup of talking points. <ul style="list-style-type: none"> - Criteria for Relaxing of 50 mile EPZ (PMT) - Grab & Go criteria in 50-mile EPZ (PMT) - Reactor Stable Conditions (Stability Doc) (RST) Review April 8 th NR draft conclusion of long-term habitability assessment; consistent with PMT assessment?	Substantive input provided by Trish Milligan, EPA, Naval Reactors, PMT, and RST.
Re-entry into Tokyo	State Department Document PMT	PMT provided comments on document	PMT comments, Japan Team Comments, State Dept. comments	N/A	Continue to talk to State Department and review any other drafts of this document. Continue to discuss with Japan Site Team about getting a copy of the document if it goes final.	Review April 8 th NR draft conclusion of long-term habitability assessment; consistent with PMT assessment?
NOTE: Send the final products of Priority 1 to Vince Holahan when completed at PACOM						

All Teams Major Document Status
Last Updated: April 8, 2011 @ 2000 EST

Document Title	Team	Current Status	Stakeholders Input to Request	Due Date	Action	Other
Priority 2: Review/Completion of Documents Below						
Reactor Safety Assessment, Rev 2	RST	Under revision	Industry comments, all comments are due on Monday, April 11th	No driving deadline	Send Rev 0 and Rev 1 to Vince Holahan	Putting off until this weekend
Overall SFP Assessment Document	RST	Draft	Need site team comments and NR has comments			
SFP - Slurry	RST	Issued	Site Team has it for comment, NR does not have for comment			
SFP Structural (Pool 4) Assessment	RST	Waiting for GE-H input	To be received by Monday			
DOE's Slurry Paper	DOE	Issued, Sent to the site team, DOE and NRC papers are aligned that this method should be a last resort				
Plume Modeling with NOAA	PMT	Determine What to give them and what runs need.	Need to determine their timeframe	TBD		
Comprehensive (Global) Assessment	NRC Japan Site Team					Need to find out if Chuck is still working on this.
Development of information for Secretary of State (Clinton) Visit	LT	Working with RST and PMT to answer information that Chuck sent in	PMT RST LT NRC Japan Site Team	Friday April 15, 2011	Work with RST and PMT to answer information that Chuck sent in, LT will coordinate this action	

All Teams Major Document Status
Last Updated: April 8, 2011 @ 2000 EST

From: ET05 Hoc
Sent: Friday, April 08, 2011 8:56 PM
To: LIA06 Hoc; LIA08 Hoc
Subject: Consortium Call - April 8, 2001 @ 2000
Attachments: Call with Industry Consortium April 8, 2011 at 8pm EST.docx

See attached.

EST Actions Officer

Consortium Call – 4/7/11 20:00

Attendees:

- NRC Headquarters Operations Officer
- Roy Zimmerman, NRC ET Director
- Joe Giitter, NRC EST Director & Response Advisor
- Mark Lombard, NRC LT Director
- Clyde, NRC LT Coordinator
- Amy Roundtree, NRC EST Actions Officer
- Russ Chazell, NRC LT
- NRC Japan Team
- Lt. Coronial Price
- Rick M. Nielsen, INPO
- J4
- DOE
- Bill Berger
- Jay Tildeon
- Alice?

Organizational Issues/Roles & Responsibilities

- **U.S. Agency Roles and Leads** – No update
- **U.S. Industry Support Structure and Roles** – No update

Current Action Items and Material Request List (i.e., Matrix)

- Item #21: This item will handle by Monica's group (DOE). Dealing with the contaminated water. Japan Team and GOJ need have to have more discussions on this item especially the tanks (PNNL). What sequence should these be acted on? Next step: need to clarify these actions with GOJ in coordination with DOE HQ.
- Item 21b: Water Tanks: wanted to go by sea, quote won't be in until tomorrow morning. GOJ just want air and sea estimates. Hope to have estimates tomorrow. GOJ has moved this down this list.
- Item # 20: Heat Exchanger to be used on SFP, TEPCO is trying to get a design with GE, Next Steps – INPO is going to forward information to NISA. Information dump to NISA.
- Germanium : Loaned 2 high purity Germanium detectors, 4 more on the way to be delivered on April 11th. Still open but progressing
- Item 13a: a large number of meters, shielding, etc. – GOJ wants every dosimeter in the world so that people entering the area can have one. Is there a need to do sources at an industry level (INPO)? This is a long-term response item. Will get back to INPO on need.
- Item 1: Data sharing and analysis – ongoing and good and have no problems; joint aerial monitoring mission that is taking place, at the end of the period April 12th and the analysts will get together and complete the product. Close item
- Item 2a: Global and Stationary radiation monitors – Installing 8 radiation backpacks (10-30miles out); waiting for coordination of the Japanese police. Move write up to embassy list.
- Item 2b: South Texas and SONGS items have shipped. One open item is to work with Japanese authority to receive low level contamination items, until resolved could limit the types and items from industry by sea. Bruce's intent is to pay for them by themselves. Do not ship the ones by sea until get a response from the GOJ.

- Item 3: close this item
- Item 5: waiting on GOJ to come over to Japan. No cost to GOJ.
- Item 5a, 5b: under control. Sent in with the robotics.
- Item 5c: close this item
- Unmanned Helicopter – no longer needed, close item
- Item 16 and 13a: redundant items – close item 16
- Item 18: close item, this item is hung up with the GOJ, lawyers have it
- Item 24: medical – military team there.
- Item 25: extinguish coolant – need to forward to NSIA, still need to find out what they want and need for this item
- Item 26: raise tomorrow to Ron
- Item 27: shielding with industry into working group – revisit this tomorrow
- Item 29: structure of SFP – needs input from TEPCO/GOJ, need to understand if they need more specific analysis, not on priority list as of yesterday
- Shielding options: same as Item 29
- Item 31: SAMG technical guidance – TEPCO has received information, close this item
- Item 32: move items to TEPCO and NSIA with the analysis
- Item 33: Pressure vessel integrity – ongoing
- Item 34: purging – will verify
- Item 35: ongoing
- Item 12: protective body armor – closed
- Rest of items are closed

New Actions – none

Other

- Roy said he appreciates the amount of information in the comments and the embassy list. The want is to merge these lists. Embassy list has been decided the list to go off of for today's meeting. When merging the lists, put items that are not official requests for the GOJ at the bottom if we want to track them.

Call concluded at 2058 EST.

Consortium Call – 4/8/11 20:00 EST

Attendees:

- NRC Headquarters Operations Officer
- Roy Zimmerman, NRC ET Director
- Tom Blout, NRC ET Deputy Director
- Rich Correia, NRC LT Director
- Clyde R., NRC LT Coordinator
- Amy Roundtree, NRC EST Actions Officer
- Naval Reactors Representative
- Industry Support Team Tokyo
- Rick M. Nielsen, INPO
- J4
- NRC Japan Team

Organizational Issues/Roles & Responsibilities

- **U.S. Agency Roles and Leads** – No update
- **U.S. Industry Support Structure and Roles** – No update

Current Action Items and Material Request List (i.e., Matrix)

- Items 21(a-i) – no new information. Need GOJ to give more information
- Item 20 – need confirmation from GOJ that need nothing more on this item. NISA provided the information. TEPCO has a commercial contract. This item can be closed.
- Item 4 – breaking this down into each requestor, next version will have each of the ministries; due to be tested and calibrated
- Item 13a – donors meeting coming up on Monday or Tuesday will give more information on total number needed and coordination of efforts
- Item 2a – items are there but need to be installed
- Item 2b – no change on item; ship by air next week
- Item 5 – arriving to Japan within hours
- Item 5a – GOJ gave more information, so information is being passed on to Jay Tildeon
- Item 5b – equipment is with the robots
- Item 18 – USAID has this action, tied up with legal
- Item 24 – question this item to be resolved by USAID
- Item 25 – no update
- Item 26 – close this item, PNNL has been attending the meetings
- Item 27 – analysis has been done; see if GOJ needs additional expertise
- Item 29 – same as Item 27
- Item 29b – same as Item 27
- Item 32 – ongoing
- Item 33 – ongoing
- Item 34 – ongoing
- Item 35 – ongoing

New Actions – None

Other

- Next meeting will be Sunday, April 10th at 2000 EST

Call concluded at 2053 EST.

From: ET05 Hoc
Sent: Friday, April 08, 2011 7:34 PM
To: LIA06 Hoc; LIA08 Hoc
Subject: FW: Briefing Calls for Chairman Jaczko - CANCELLED FOR 0715

From: HOO Hoc
Sent: Friday, April 08, 2011 7:28 PM
To: LIA07 Hoc; OST01 HOC; OST02 HOC; OST03 HOC
Cc: ET07 Hoc; ET05 Hoc; ET02 Hoc
Subject: FW: Briefing Calls for Chairman Jaczko - CANCELLED FOR 0715

FYI

From: Pace, Patti
Sent: Friday, April 08, 2011 7:25 PM
To: HOO Hoc
Cc: Batkin, Joshua
Subject: Briefing Calls for Chairman Jaczko

Good Evening,

Please note, Chairman Jaczko would like to cancel the 7:15AM briefing calls on Saturday April 9th and Sunday April 10th. Please keep the 3:15p briefing call and 6:30p call with Chuck Casto for each day over the weekend.

Thank you!

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



From: LIA06 Hoc
Sent: Friday, April 08, 2011 6:26 PM
To: Blamey, Alan; 2404605130@vtext.com
Subject: RE: RE:: 2000 (EDT) call today

Alan,

If at all possible, please call me or send a reply to Tom Bergman's email below. If you feel we need a call, we will set it up as usual.

Many thanks

Rich Correia

Liaison Team Director
U.S. Nuclear Regulatory Commission
Operations Center

From: LIA06 Hoc
Sent: Friday, April 08, 2011 11:54 AM
To: Blamey, Alan
Cc: 'wberger@usaid.gov'; LIA08 Hoc
Subject: RE: RE:: 2000 (EDT) call today

(b)(5)

Thanks

Tom Bergman
Liaison Team Director
U.S. Nuclear Regulatory Commission
Operations Center

From: Wiggins, Jim
Sent: Friday, April 08, 2011 12:01 PM
To: ET05 Hoc
Subject: ACTION: Check the highlighted sections to make sure they're in the Task Tracker

Date/Time:	04/08/2011 07:01:19	Position:	ET Director
Offgoing:	Jennifer Uhle	Oncoming:	Jim Wiggins
Status:	No change in status		
Current Priorities:	Develop briefing material for the Chairman's April 11 Deputies call. <div style="border: 1px solid black; padding: 5px; text-align: center;">(b)(5)</div>		
Actions Accomplished During Shift:	<p>progress made on the papers: 1) stable conditions; 2) radiation levels near Fukushima to Tokyo; 3) reentry criteria to Tokyo. Documents located in team logs. Closing of action item regarding adding sand slurry to the Unit 4 SFP-- site team discussed NRC concerns with TEPCo and TEPCo indicated there are no plans to add slurry. Closing of action item for the response back to Tokyo press <div style="border: 1px solid black; padding: 2px;">(b)(5)</div></p> <p><div style="border: 1px solid black; padding: 2px;">(b)(5)</div> Document provided to OPA. Vince Holahan indicated via phone call that he is unaware of 6 pages of questions from PACOM provided to RST. RST will provide Vince these questions to help determine their source. RST stable conditions paper and RST Assessment (based on SAMGs) paper were provided to Vince to transfer to DTRA.</p>		
Planned/Continuing Actions:	Finalization of Chairman briefing material for April 11 meeting. <div style="border: 1px solid black; padding: 5px; text-align: center;">(b)(5)</div>		
Challenges:	Determining the Chairman's needs for the April 11 meeting pertaining to reentry criteria.		
Significant Policy/Process Decisions Made:	During the previous shift, the Chairman highlighted in a phone call that NRC should not do any further consequence modeling but MELCOR calculations to help inform our understanding our conditions is acceptable.		
Miscellaneous:			

From: Wiggins, Jim
Sent: Friday, April 08, 2011 11:42 AM
To: ET05 Hoc; ET07 Hoc; LIA01 Hoc; Bergman, Thomas
Subject: FW: Need your approval: Emergent JWICS Video Implementation To Support PACOM/Japan

From: Holahan, Patricia
Sent: Friday, April 08, 2011 11:37 AM
To: Stapleton, Bernard; Ash, Darren
Cc: Wiggins, Jim; Evans, Michele; Erlanger, Craig; Howard, Patrick
Subject: RE: Need your approval: Emergent JWICS Video Implementation To Support PACOM/Japan

Thanks in advance. That would certainly help communications with PACOM.

From: Stapleton, Bernard
Sent: Friday, April 08, 2011 11:36 AM
To: Ash, Darren
Cc: Wiggins, Jim; Evans, Michele; Holahan, Patricia; Erlanger, Craig; Howard, Patrick
Subject: Need your approval: Emergent JWICS Video Implementation To Support PACOM/Japan
Importance: High

Darren,

At the request of Admiral Willard, Commander, US Pacific Command (PACOM) the Defense Intelligence Agency (DIA) will be loaning us a Desktop Video Teleconferencing (DVTC) appliance to be installed on our Joint World Wide Intelligence Communications System (JWICS) as a node in the Two White Flint North Sensitive Compartmented Information Facility. This is in support of NRC activities in response to the Japanese nuclear event.

The Information Security Branch has coordinated this installation with DIA, PACOM, and the National Security Agency(NSA). Responsibility for the security controls will fall to DIA and NSA . This system will be a temporary installation until the capability to securely communicate with PACOM, for the Japan issue, is no longer needed.

PACOM has requested the DVTC be installed today, Friday April 8, 2011. An email from you or your designee authorizing the activation of this unit to our JWICS network would be required.

Please feel free to contact me at any time if you have any questions. Mike Mangefrida of my staff is coordinating this effort.

Thank you,

Bernard (Bern) Stapleton
Chief, Information Security Branch
U.S. Nuclear Regulatory Commission
(301) 415-2214 O
(301) 415-2190 F

From: LIA08 Hoc
Sent: Thursday, April 07, 2011 10:19 PM
To: LIA06 Hoc; LIA01 Hoc
Subject: RE: Nuclear Team Asks and Offers Tracker 04-07-2011 DOE comment and 4-7 LT edits (from consortium list) (2).xlsx

FYI - this is saved on the M: drive under M:\LT\Industry Consortium Meeting, Calls, Agendas, Summaries, emails\
Nuclear Team Asks and Offers Tracker 04-07-2011 DOE comment and 4-7 LT edits (from consortium list).xlsx

From: LIA06 Hoc
Sent: Thursday, April 07, 2011 9:57 PM
To: LIA01 Hoc
Cc: LIA08 Hoc
Subject: Nuclear Team Asks and Offers Tracker 04-07-2011 DOE comment and 4-7 LT edits (from consortium list) (2).xlsx

Russ,

Please send this as "the Embassy list updated per the consortium call earlier" to the consortium distribution list.

Thanks,

Mark Lombard
Liaison Team Director
U.S. Nuclear Regulatory Commission
Operations Center

US-Japan Nuclear-Related Assistance Tracker

Last update: April 7 - 1850 hrs. JST													
Equipment/Supplies/Services Requested by GOJ													
Emb No.	Equipment/Service Being Requested	Priority (Hi Med Lo)	Date of request	Requesting GOJ Office	GOJ Action Office & POC	USG Action Office & POC	Target Date	Training Needed?	Cost / Reimbursement	Status of Response	Open/ Closed	Comments	NRC No.
High Priority Requests													
21	Devices for condensing radiation contaminated water & Information on evaporation technology	Hi	3/29 draft list	NISA		DOE Cherry, Duncan; RegalbutoDO D Adm. Gregory				Expanded request: On March 28 DCCS Fukuyama asked for information on measures to remove contaminated water.	0		
21a	Assistance in dealing with accumulated radioactive water in turbine buildings	Hi	3/27 meeting	NISA		DOE Cherry, Duncan; NRC				DOE paper provided to Amb. Roos and Amb Fujisaki on 3/29/11. Management of cont. water.	0		30, 31 & 32
21b	Water storage tanks (5) and a trailer (1) for contaminated water at 1F	Hi	4/01, NISA-DOE mtg	NISA, TEPCO	NISA - Oshima; TEPCO - Umino	DOE Cherry, Duncan		No		NISA asks info on specs, usage, installation. Asks if more are available. Request under consideration by USG. Need GOJ confirmation of request. TEPCO will pay shipping costs, requests estimate for sea & air shipment. DOE to provide these. NEXT STEPS: DOE/State Embassy Team and NISA/TEPCO had a telecon this morning to discuss options. DOE and SRS evaluating both "by sea" and "by air" freighting options. Also, if urgent, but GOJ cannot pay, we will consider DoD Airlift.	0	GOJ sourcing other donors, cost to ship by air is \$1.3M	30 & 31

US-Japan Nuclear-Related Assistance Tracker

21c	Information on "evaporation technologies"	Hi	3/28 - DCCS Fukuyama	NISA	DOE Cherry, Duncan										32
21e	Direct request from GOJ to Pacific Northwest Labs for technical assistance with water decontamination and storage issues.	Hi		NISA	DOE Cherry, Duncan				DOE considering Basic Ordering Agreement. GOJ wants to know if there will be a consultation fee. DOE needs to understand scope of work to estimate cost.	O		NEXT STEPS: DOE- Cherry to follow up with NISA to learn potential scope of work.			13
21f	Determine whether temporary radwaste processing skids are available or would be a good idea (for removing contaminated water)	Hi		NISA	INPO					O					
21g	Temporary holding tanks (for removing contaminated water)	Hi		NISA	DOE; DOD; INPO					O		Develop recommendations for removal of water in basements of Units 1,2 and 3 per Task Tracker #3235. The Toshiba Team has investigated the use of large storage bladders to be used as temporary contaminated water storage. These bladders can hold up to 189,000 liters per bladder. Bladders can eventually be handled as a relatively small volume of solid waste. Need to develop a single water management team to handle all water issues once decision is made on how to proceed forward.			30
21h	Tanker trucks as a temporary holding area (for removing contaminated water)	Hi		NISA	DOE; DOD; INPO					O		Develop recommendations for removal of water in basements of Units 1,2 and 3 per Task Tracker #3235. The Toshiba team is concerned that the relative capacity of tanker trucks is small and that the trucks will have to remain onsite once contaminated. This option should be reserved for special situations.			31
21i	Investigate whether there is a technology that would absorb contaminated materials from water (for removing contaminated water)	Hi		NISA	DOE					O		Secretary Chu reportedly told this to the Japanese. The Toshiba Team has developed draft plans for water treatment with a focus on fission product removal and minimization of solids waste processing.			32

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20	Heat exchanger to be used in spent fuel pool.	Hi	3/27 Nagashima; 3/29 list	NISA	NRC; INPO (AI) Hochevar, (b)(6) (cell)					INPO is currently providing sources of comm'l heat exchangers that can be used to cool a spent fuel pool. (This will not result in purchase of heat exchanger.) TEPCO is trying to get a system design. Placed a design order with Toshiba. INPO can provide info for free. TEPCO may pursue commercial procurement of heat exchanger.	0	NEXT STEPS: Check if Shaw has a commercial contract to do work on this.		
4	Germanium semiconductor detectors	Hi	3/25 GJO list	MEXT, NISA, MAFF, TEPCO	MAFF: Y.Yamada MHLW: T.Tokiwa TEPCO: H.Kanehama DOE Cherry				have spare detectors at this time (3/29). One detector has been loaned & training is underway. DOE to provide 1 detector each to MAFF and MHLW, via 4/6; 4 more for MAFF & MHLW, delivery TBD. NISA requested 1 MPE, under discussion. Detectors will be used to test contamination of water and food. MHLW to receive 1 loaned detector. Wants to know the weight (already emailed this question to DOE?). NISA requests at least 1; wants to know how many available. Cabinet Secretariat (CAS) to discuss with MAFF and local governments and provide to USG total number requested. MEXT withdrew request for 3 detectors because they lack shielding. Training expense is free of charge (4/1). DOE delivering 2 detectors on 4/05/11. 2-4 more detectors	0	DOE - may offer TEPCO 2 units and discuss about not to return the instruments. NEXT STEPS: DOE - Cherry will add POCs for USG. Send to Dart:DOELiaison1@ofda.gov and request update. DOE has loaned 2 detectors on 4/06/11. 4 additional detector were shipped from Naval Research Laboratory (NRL) and will be received in Yokota AB on April 11. Fedex tracking # 9178 16713088 and # 9178 16713099		19	

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13a	Request for the following: 2,100 units-Rad Survey Meters, 2,600 units-Personal Dosimetry, 5,100 units- iodine shielding masks, 33,000 units-iodine absorption cans	Hi		NISA, MOD		DART				DART shipped 2,000 dosimeters; will see what it can do further. GOJ is considering allowing residents in the 20km evacuation zone return to their homes to collect belongings. Will need a large number of dosimeters. NISA requests USG inform GOJ how many we can provide. MOFA to provide info on number procured from other donor nations. Need status update	O	List provided to Alan Blamey and Al Hochevar for cabinet meeting 4/2/11. NEXT STEP: DART - raise in 4/7 meeting with Cabinet			34
Other Open Requests															
1	Aerial survey for AMS measurement, data sharing and analysis		3/25 GOJ list	MEXT, NSC, NISA, MAFF	MEXT: N.Akasaka	DOE Cherry, Duncan	N/A			DOE coordinates with MEXT, NSC, NISA, MOFF, MOFA. Daily sharing of AMS data and products. Per 4/4 meeting with GOJ, agreement on joint aerial surveys 4/6-4/12. Joint Staff is sharing U.S. aerial survey info USFJ-Yokota.	C	NRC's PMT provided this info (b)(5)	(b)(5)		16
2a	Loaning ground radiation monitoring devices, mobile and stationary (incl radiation friskers -20 hand /foot/cloth monitors)		3/25 GOJ list	MEXT, NSC, NISA, MOFA, TEPCO	JAEA: M.Kanamori	DOE Cherry				Mobile ground monitoring began 3/17. Discussions ongoing re fixed ground-based monitors. Need GOJ approval to proceed; MOFA is coordinating. Need to determine locations for fixed monitoring stations.	O	Mobile monitoring is closed. Stationary monitoring is the open item. This was a GOJ request and the idea is to possibly install a system such as the EPA Radnet system. DOE currently has operating air samplers on the roof of the US Embassy, at the consequence Management Team HQ in Yokota AB, and occasional field deployments. DOE is working to install 8 "Infield" radiation detection backpacks in "unattended mode" ringing Fukushima NPP from 10 to 30 miles within small police stations (Koban). MEXT has approved the DOE request, and awaiting Japanese National Police approval.			20 & 22

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2b	(incl radiation friskers –hand /foot monitors)	3/28 Cab mtng	MEXT, NSC, NISA, MOFA	JAEA: M.Kanemori TEPCO: H.Kanehara	NRC Blamey; INPO				Elaborates on request above - 20 hand/foot detectors (Bruce Howard), STP, San Onofre Determined to send. Discussing of shipping expense (4/5)	0	(Commercial to TEPCO) This activity is awaiting authorization of commercial transport for Bruce monitors. (U.S. Embassy to advise). INPO to query utility-arranged transport of SONGS and STP equipment. Process of approving transportation needs to be solidified Shipping payments are being investigated as to who will pay for shipments. STP has 1 parcel that is internally contaminated that may be shipped to Bruce to be included in their shipment to Japan. Alan Blaney will attempt to have to moved forward quickly through the DART team. SONGS and STP items have shipped. Bruce not shipped yet. Wait for information from GoJ as they may want sooner and may pay for it.			
3	Conduct simulation by radiation diffusion model (compare with SPEEDI data)		NSC, MEXT		DOE Cherry, Duncan				DOE coordinates with NSC. NSC is the leading POC with the GOJ. GOJ has provided SPEEDI source term to NRC 3/25 and meteorological data with NARAC.	C	DOE coordinates with NSC. NSC is the leading POC with the GOJ. GOJ discussed with NARAC on an idea to estimate the source term from monitoring data. GOJ provided information on meteorological data which is open to public.			18
5	Robotic monitoring devices - 1 robot, 3 radiation sensors, 5 cameras	3/25 list, quantity set 3/26	MEXT, NISA, TEPCO	MEXT: Hatada	DOE Cherry, Duncan	Shipment o/a 4/6/11	yes-DOE proposed training through Japan office	DOE to pay for equipment and experts	Scheduled to arrive in Japan 4/8/11. NISA to inform USG whether it wants DOE experts (at no cost). DOE coordinates with NRC, DOD/USFJ. U.S. confirmed 3/26 Cabinet meeting can provide Qinetiq Talon, M2, Radiation-hardened cameras. Per 3-31 WG meeting, DOE will also provide additional radiation sensor kits.	0	DOE is handling Ground robotics and hardened cameras only. UAVs and handhelds are separate. DOE is looking to send 1) Robotics expert and 2) cameras expert. NEXT STEP: DOE - check if GOJ needs technical experts. FEDEX Tracking Number (PRO) is 54501824. DOE is awaiting a decision from GOJ this evening.			21
5a	Information on Radiation shielding materials for vehicles.	3/26 cabinet meeting; 3/29 list	MEXT, NISA						NRC provided information on tungsten materials; MEXT still wants advice on shielding for heavy equipment.	0				
5b	Radiation-hardened cameras & Gamma Camera	3/26 cabinet meeting	MEXT, NISA		DOE	4/6/2011 shipment expected			US confirmed at 3/26 cabinet meeting that it can provide camera and system for mapping gamma rays. DOE to send five cameras and one gamma cam.	0				

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5c	Westinghouse working on the UAV request and coordinating with Texas A&M expert			TEPCO					Westinghouse working with Texas A&M University expert.	C			
8	Unmanned helicopter - GOJ is looking for helicopter to spray nondispersant.	3/25 list		MOD, NISA, MOFA		DOD DAO			MOD looking into DOD options (KS); repeated by Mr. Nagashima on 3/27 as unmanned helicopter with camera. NRC agreed 3/27 to follow using specs provided by Japan; NISA promised documents stating Japan's needs. MOD is not interested in KMAX.	C	PACOM indicated no longer needed and taken off the table.		23
16	Separation materials for masks (as many as possible)	3/29 draft list		NISA		DART				C	Redundant - included in Item 13a.		
18	Potassium iodide (KI) preparation 1 million 17-dose bottles	3/25 list		NISA, MHLW, MOFA		HHS Dr. Colemanto provide; USAID to transport; Embassy Gabor			MOFA said 3/30 it would accept the 1 million bottles (17 doses each) of liquid KI offered; requested via note verbale to DOS in D.C. (3/30); USG to share grant document text with GOJ before shipping.	O	Industry had tablets available, but HHS had liquid tablets that they were to provide. A. Blamey to verify with GOJ. May be caught up in logistics. Coming from USAID and CDC. Currently tied up within GoJ legal.		27
24	Medical triage re: exposure to radiation (decontamination capability)	3/25 list		MHLW, NSC, NISA, MEXT, MOD		DOD; DOE; USAID; NIH Coleman			MOD initially identified as principal action ministry along with MHLW, subsequently changed 3/29. Chem Bio Initial Response Force (CBIRF) provided for this purpose.	O			
25	INFO: Extinguishant/coolant	3/25 list		NISA					Request further info from GOJ.	O	A. Blamey to Verify with GOJ what is exactly needed in this request		28
26	Incorporate PNL into crisis mgmt dialogue/Spent Fuel WG	3/26, 3/28 - DCCS Fukuyama		NISA		DOE Cherry; NRC			PNNL team in Tokyo and providing support.	O			

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27	U.S. cooperation in bringing private sector engineers into Shielding WG	3/26 meeting - Nagashima	NISA	NRC				Not included on draft 3/29 request list	0			
29	Assessment of structural stability of spent fuel pools	3/27 - Nagashima ; 3/28 - Fukuyama	NISA	NRC reactor Safety Team				In preparation for decisions on shielding. NRC completed assessment of current spent fuel pool weight. Further analysis needed.	0	Need GoJ input		
29b	Japan asked for NRC expertise on temporary shielding options, to determine whether the NPP Plant buildings are strong enough to hold up under additional pressure		NISA	NRC				From Cabinet Office Crisis Mgt. Team Meeting notes 3-28-2011	0	NRC has completed a gross analysis and does not have sufficient information to perform a detailed analysis for shielding. From Cabinet Office Crisis Management Team Meeting notes, 3/28/11. A. Blamey to discuss further with Japan		33
31	SAMG Technical Document		TEPCO					Guidance has been sent to INPO contact in Japan and is being updated (Rev.1) and will be discussed 4/01; will include injection rate and best assessment to plant conditions; (need to confirm that INPO has received)	C	TEPCO received.		110
32	GEH is following up on the Nitrogen purge issue analysis		NISA, TEPCO					GE is following	0			111
33	Clarify for RST the indications that can be used to assess RPV integrity and location of core. (RST request)		NISA	NRC	40632			ongoing project, comments that shift focus are received during 1100 status call 3/29	0			
34	List alternative flowpaths that can be used for purging, given accessibility challenges. (RST request)		NISA	NRC	40632			GE to provide 3/29 list, INPO providing technical review	0			
35	Confirm RST recommendation that RPV injection can be maximized once containment has been purged and vented (RST)		NISA	NRC	40632			Technical: Ongoing project, comments that shift focus are received during 1100 status call 3/29	0			

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Closed Requests														
5d	(GO) request for shielding			INPO							This has been closed out. (Confirm how and by whom?)	C		
6	Robotic debris clearing machines	3/25 list, quantity set 3/26		METI, NISA		DOE Cherry, Duncan	N/A	N/A			DOE coordinates with NRC, DOD/USFI. Japan dropped request for equipment 3/28	C	Based on discussions with Embassy, the K-MAX helicopter is not needed, however Per NNSA (Jay Tilden) a whole range of remote heavy equipment will likely be needed. This is an open item being discussed by the Remote Control Project Team.	21a
7	Provision of data obtained from UAVs	3/25 list		MOD, MOFA		DOD					GOJ is receiving Global Hawk images	C	Follow up action with Japan. Handled separately from Ground robotics and hardened cameras NISA will hold a meeting to discuss and determine needs for vague items on the lists.	22
9	Transportation of fresh water by barges and delivery of pumps	3/25 list		MOD, NISA		POL-MIL, DAO					Provided. Arrangement made for three vendor support representatives to stay and train.	C	There is one train that is installed. There is no need for further trains. DOD has the appropriate guidance. Alan Blamey will work with Japanese embassy officials to re- validate the need for this asset R Neilson says that second train is in Australia. A. Blamey to determine from Embassy if still needed and to share with R. Neilson so that Bechtel and can be advised	24
9a	Water barges			MOD, NISA		J4, PACOM					Per J4 the barges have been outfitted and tested and are 10 hrs from the NPP site and should arrive Weds. Need ETA	C		24
9b	Fresh water supply pumps from Bechtel			NISA							First train in Japan	C		24
10	High quality pumps and hoses.	3/26 meeting and previous discussion		TEPCO		NRC					CLOSED: NRC rec'd info 3/26 on possible hose and said would investigate further; request withdrawn at 3/29 Cab meeting.	C		3
11	High pressure hose (3 x 500 m) and couplers (for cooling reactor)	3/25 list and previous discussion		NISA		NRC, DOD					Hose delivered as part of Australia/Bechtel equipment; in J-Village.	C		3

US-Japan Nuclear-Related Assistance Tracker

12	Protective body armor, radioactive survey meters and dosimeters, radioactive measuring instruments, iodine absorption masks, separation materials.	Hi	3/25 list	NISA - Sakuna, MOD	NISA, MOD	NRC - Blamey			JAPD provided info on commercial sources. Body Armor Closed. Japan repeated 3/27. (note: USAID has already provided 10,000 sets of protective clothing). Supply chain: Materials sourced, to be obtained commercially. Info sent to GOJ through AI Hochevar GOJ to establish need. Communicated to them that they are payers by Hochevar.	C			
17	2,000 personal radiation dosimeters (RAD)		3/28 meeting	NISA, MEXT, RIKEN			yes		Comment: State (Randy Thur) email 3/24 said "MEXT has declined to provide a statement of needs" and said it will not be needing the units, need to check status."	Ø	List provided to Alan Blamey and AI Hochevar for cabinet meeting 4/2/11.		34
19	Bottled water for infant formula		3/25 list	MHLW		USAID/OFDA	4/01 - 4/02		USAID and USFJ responded with initial stocks; paperwork underway at USAID/State for possible delivery April 1-2. Confirmed delivery to Tokyo Met. Gov. warehouse.	C	On the Embassy list for tracking		29
21d	Obtain contact info for industry personnel with experience in handling and disposal of open pools/trenches of high dose rate(>100 R/hr) water. Rcvd Mar 29 from AI Hochevar from Hososn	Hi		NISA					Contacts developed and provided through INPO-AI Hochevar	C			108
23	INFO: Technical support on radiation technology, nuclear technology, and health effects		3/25 list	MHLW CAS NSC NISA MEXT MOD		Dr. Coleman (NIH via HHS); USAID							
23a	Information on KI and drinking water									C			

US-Japan Nuclear-Related Assistance Tracker

23b	Health cooperation in three areas: environmental monitoring; KI policy; risk communication		CAS	Dr. Akashi	USAID, State, NIH Coleman, CDC, USDA, DOD			Both sides agreed to the recommendations in these three areas.	C		
28	Assessment of possible fuel damage in units 1, 2, 3	3/27 - Hosono	NISA		NRC			NRC provided brief response at meeting.	C		
29a	Information on shielding for individual rooms and for the facility in general		NISA					Provided to GOJ through INPO-AI Hochevar.	C		107
30	Information on tools/methods for moving damaged fuel, plus contacts of those with experience at TMI-2 and Chernobyl. From Mr. Hosono.		NISA	Hosono's Office	40632			Provided to GOJ through INPO-AI Hochevar on 3/30.	C		106
36	Requests for military air transport		MOD					PACOM is involved in review and approval of all requests for military airlift to Japan. Requests should include weight and dimensions of the cargo. 1st choice should be commercial carrier for timely delivery; should limit requests to materiel that is difficult for commercial carriers to deliver.	C		118

U.S. Offers (including Commercial to Commercial)				
	date offered	USG agency	Embassy office responsible	status
balloons for unmanned radiation measurement	3/26/2011	NOAA	ECON	Japan accepted in principle; Japan to identify appropriate ministry
200-300 pieces of radiation measurement equipment		INPO through NRC		3/26 Japan said it would take all equipment offered
provide info on options for spent fuel transfer	3/26/2011	NRC		
U.S. expert on radiological tolerance of food to travel to Japan for consultations with FCS	3/26/2011	FDA	FAS	DCCS Fukuyama asked that FDA and FSC communicate directly
Canadian power plant to provide equipment for hand/foot monitoring	3/27/2011	INPO		
information on contamination control	3/28/2011			

From: Cherry, Ronald C <CherryRC@state.gov>
Sent: Thursday, April 07, 2011 7:57 PM
To: LIA06 Hoc; LIA01 Hoc; hochevarar@inpo.org; Alice.caponiti@hq.doe.gov;
(b)(6) Blamey, Alan; Blount, Tom; Boger, Bruce; Casto, Chuck;
Christensen, Harold; (b)(6) DORLCAL Resource; Dorman, Dan;
DprNrrCal Resource; Emche, Danielle; ET05 Hoc; ET07 Hoc; FOIA Response.hoc
Resource; Giitter, Joseph; (b)(6) HOO Hoc; maddoxje@inpo.org;
inpoercassistance@inpo.org; addyrj@inpo.org; bramblettjw@inpo.org;
lynchje@inpo.org; sequiringc@inpo.org; tropassort@inpo.org;
INPOEmergencyResponseCtr@inpo.org; (b)(6)
Jay.Tilden@nnsa.doe.gov; (b)(6)
Cc: LIA08 Hoc
Subject: Re: Agenda and documents for the 2000hrs Consortium Call

I'll join this call a few minutes late because of a meeting I'm in now.

Thanks.

Ron

This has been sent from my Blackberry

From: LIA06 Hoc <LIA06.Hoc@nrc.gov>
To: LIA01 Hoc <LIA01.Hoc@nrc.gov>; Al Hochevar <hochevarar@inpo.org>; Alice Caponiti
<Alice.caponiti@hq.doe.gov>; (b)(6); Blamey, Alan
<Alan.Blamey@nrc.gov>; Blount, Tom <Tom.Blount@nrc.gov>; Boger, Bruce <Bruce.Boger@nrc.gov>; Casto, Chuck
<Chuck.Casto@nrc.gov>; Christensen, Harold <Harold.Christensen@nrc.gov>; Craig Gaddis
(b)(6); DORLCAL Resource <DORLCAL.Resource@nrc.gov>; Dorman, Dan
<Dan.Dorman@nrc.gov>; DprNrrCal Resource <DprNrrCal.Resource@nrc.gov>; Emche, Danielle
<Danielle.Emche@nrc.gov>; ET05 Hoc <ET05.Hoc@nrc.gov>; ET07 Hoc <ET07.Hoc@nrc.gov>; FOIA Response.hoc
Resource <FOIAResponse.hoc.Resource@nrc.gov>; Giitter, Joseph <Joseph.Giitter@nrc.gov>; Glenn Southern
(b)(6); HOO Hoc <HOO.Hoc@nrc.gov>; INPO <maddoxje@inpo.org>; INPO
<inpoercassistance@inpo.org>; INPO <addyrj@inpo.org>; INPO <bramblettjw@inpo.org>; INPO <lynchje@inpo.org>;
INPO <sequiringc@inpo.org>; INPO <tropassort@inpo.org>; INPO <INPOEmergencyResponseCtr@inpo.org>;
(b)(6); Jay Tilden <Jay.Tilden@nnsa.doe.gov>; (b)(6)
(b)(6); Lee A Gard, (INPO)
<GardLA@INPO.org>; LIA08 Hoc <LIA08.Hoc@nrc.gov>; LIA11 Hoc <LIA11.Hoc@nrc.gov>; McDermott, Brian
<Brian.McDermott@nrc.gov>; McGinty, Tim <Tim.McGinty@nrc.gov>; Miller, Chris <Chris.Miller@nrc.gov>; Monninger,
John <John.Monninger@nrc.gov>; Morris, Scott <Scott.Morris@nrc.gov>; NRC Liaison at USAID
<RMTFACTSU_ELNRC@ofda.gov>; OST02 HOC <OST02.HOC@nrc.gov>; PACOM Watch Officer
(b)(6); Pentagon Japan Crisis Team J-4 Desk <(b)(6)>; Peter Lyons
<peter.lyons@nuclear.energy.gov>; Hoc, PMT12 <PMT12.Hoc@nrc.gov>; (b)(6)
(b)(6); Rick Nielsen <NielsenFM@INPO.org>; Robert Gambone <GamboneRL@INPO.org>; Robert
Mercer <(b)(6)>; Cherry, Ronald C; Ross-Lee, MaryJane <MaryJane.Ross-Lee@nrc.gov>; RST01 Hoc
<RST01.Hoc@nrc.gov>; RST01B Hoc <RST01B.Hoc@nrc.gov>; Sal Golub <sal.golub@hq.doe.gov>; Sal Golub
<sal.golub@nuclear.energy.gov>; Samuel Young <(b)(6)>; Steve Aoki <steven.aoki@nnsa.doe.gov>;
Tom Vavoso <(b)(6)>; Virgilio, Martin
<Martin.Virgilio@nrc.gov>; Weber, Michael <Michael.Weber@nrc.gov>; Wiggins, Jim <Jim.Wiggins@nrc.gov>; William
Webster <Websterwe@inpo.org>; Zimmerman, Roy <Roy.Zimmerman@nrc.gov>
Cc: LIA08 Hoc <LIA08.Hoc@nrc.gov>
Sent: Thu Apr 07 19:16:17 2011
Subject: RE: Agenda and documents for the 2000hrs Consortium Call

Let's please use the DOE updated version of the spreadsheet for the call tonight. It was attached to the email sent at 1812 below.

Thanks,

Mark Lombard
Liaison Team Director
U.S. Nuclear Regulatory Commission
Operations Center

From: LIA01 Hoc

Sent: Thursday, April 07, 2011 6:12 PM

To: Al Hochevar; Alice Caponiti; (b)(6); Blamey, Alan; Blount, Tom; Boger, Bruce; Casto, Chuck; Christensen, Harold; Craig Gaddis; DORLCAL Resource; Dorman, Dan; DprNrrCal Resource; Emche, Danielle; ET05 Hoc; ET07 Hoc; FOIA Response.hoc Resource; Giitter, Joseph; Glenn Southern; HOO Hoc; INPO; INPO; INPO; INPO; INPO; INPO; INPO; (b)(6); Jay Tilden; (b)(6); Lee A Gard, (INPO); LIA01 Hoc; LIA06 Hoc; LIA08 Hoc; LIA11 Hoc; McDermott, Brian; McGinty, Tim; Miller, Chris; Monninger, John; Morris, Scott; NRC Liaison at USAID; OST02 HOC; PACOM Watch Officer; Pentagon Japan Crisis Team J-4 Desk; Peter Lyons; Hoc, PMT12; (b)(6); Rick Nielsen; Robert Gambone; Robert Mercer; Ron Cherry, DOE-Japan Embassy; Ross-Lee, MaryJane; RST01 Hoc; RST01B Hoc; Sal Golub; Sal Golub; Samuel Young; Steve Aoki; Tom Vavoso; (b)(6); Virgilio, Martin; Weber, Michael; Wiggins, Jim; William Webster; Zimmerman, Roy

Cc: LIA08 Hoc; LIA06 Hoc

Subject: FW: Agenda and documents for the 2000hrs Consortium Call

FYI

From: Tilden, Jay [mailto:Jay.Tilden@nnsa.doe.gov]

Sent: Thursday, April 07, 2011 6:09 PM

To: LIA01 Hoc; Caponiti, Alice; Cherry, Ron

Cc: NITOPS; Duncan, Aleshia (State Dept); DL-Policy Working Group; DL-NERT-All

Subject: RE: Agenda and documents for the 2000hrs Consortium Call

Alice, Ron, et al

I will be on this again... (b)(6) Attached is my update based on NITOPS and our telecom last night. These updates were largely "uploaded" to the Embassy run-list, which I will also attach. Thanks - Jay

Jay A. Tilden
Japan Logistics Coordinator &
Dir.
NA-47, NNSA
202-586-3165

-----Original Appointment-----

From: LIA01 Hoc [mailto:LIA01.Hoc@nrc.gov]

Sent: Thursday, April 07, 2011 2:19 PM

To: Al Hochevar; Caponiti, Alice; (b)(6); Blamey, Alan; Blount, Tom; Boger, Bruce; Casto, Chuck; Christensen, Harold; Craig Gaddis; DORLCAL Resource; Dorman, Dan; DprNrrCal Resource; Emche, Danielle; ET05 Hoc; ET07 Hoc; FOIA Response.hoc Resource; Giitter, Joseph; Glenn Southern; HOO Hoc; INPO; INPO; INPO; INPO; INPO; INPO; INPO; (b)(6); Tilden, Jay; (b)(6); Lee A Gard, (INPO); LIA06 Hoc; LIA08 Hoc; LIA11 Hoc; McDermott, Brian; McGinty, Tim; Miller, Chris; Monninger, John; Morris, Scott; NRC Liaison at USAID; OST02 HOC; PACOM Watch Officer; Pentagon Japan Crisis Team J-4 Desk; Lyons, Peter; Hoc, PMT12; (b)(6); Rick Nielsen; Robert Gambone; Robert Mercer; Cherry, Ron; Ross-Lee, MaryJane; RST01 Hoc; RST01B Hoc; Golub, Sal; Golub, Sal; Samuel Young; Aoki, Steven; Tom Vavoso; (b)(6); Virgilio, Martin;

Weber, Michael; Wiggins, Jim; William Webster; Zimmerman, Roy

Subject: Agenda and documents for the 2000hrs Consortium Call

When: Thursday, April 07, 2011 8:00 PM-9:00 PM (GMT-05:00) Eastern Time (US & Canada).

Where:

Attached please find the documents for today's Consortium call at 2000hrs.

Thanks

<< File: Consortium Call Summary from 4 06 11 2000.docx >> << File: Agenda 4 07 2011 2000 (2).docx >> << File: Japanese Government Action Items and Material Request List (Consortium Call) 4 6 2011 2100 Version.xlsx >>

From: Reed, Wendy
Sent: Thursday, April 07, 2011 3:50 PM
To: ET05 Hoc
Subject: RE: Staffing Watchbill for Japanese Earthquake/Tsunami Response

I can fill in the EST Actions Officer role on Thursday April 14th 7am-3pm.

Wendy
301-492-3213

Subject: FW: Agenda and documents for the 2000hrs Consortium Call
Start: Thu 4/7/2011 8:00 PM
End: Thu 4/7/2011 9:00 PM
Recurrence: (none)
Meeting Status: Accepted
Organizer: LIA01 Hoc

When: Thursday, April 07, 2011 8:00 PM-9:00 PM (GMT-05:00) Eastern Time (US & Canada).

Note: The GMT offset above does not reflect daylight saving time adjustments.

~~*~*~*~*~*~*~*~*

-----Original Appointment-----

From: LIA01 Hoc

Sent: Thursday, April 07, 2011 2:19 PM

To: LIA01 Hoc; Al Hochevar; Alice Caponiti; (b)(6) Blamey, Alan; Blount, Tom; Boger, Bruce; Casto, Chuck; Christensen, Harold; Craig Gaddis; DORLCAL Resource; Dorman, Dan; DprNrrCal Resource; Emche, Danielle; ET05 Hoc; ET07 Hoc; FOIA Response.hoc Resource; Giitter, Joseph; Glenn Southern; HOO Hoc; INPO; INPO; INPO; INPO; INPO; INPO; INPO; INPO; (b)(6) Jay Tilden; (b)(6); Lee A Gard, (INPO); LIA01 Hoc; LIA06 Hoc; LIA08 Hoc; LIA11 Hoc; McDermott, Brian; McGinty, Tim; Miller, Chris; Monninger, John; Morris, Scott; NRC Liaison at USAID; OST02 HOC; PACOM Watch Officer; Pentagon Japan Crisis Team J-4 Desk; Peter Lyons; Hoc, PMT12; (b)(6) Rick Nielsen; Robert Gambone; Robert Mercer; Ron Cherry, DOE-Japan Embassy; Ross-Lee, MaryJane; RST01 Hoc; RST01B Hoc; Sal Golub; Sal Golub; Samuel Young; Steve Aoki; Tom Vavoso; (b)(6); Virgilio, Martin; Weber, Michael; Wiggins, Jim; William Webster; Zimmerman, Roy

Subject: Agenda and documents for the 2000hrs Consortium Call

When: Thursday, April 07, 2011 8:00 PM-9:00 PM (GMT-05:00) Eastern Time (US & Canada).

Where:

Attached please find the documents for today's Consortium call at 2000hrs.

Thanks

Agenda for Daily Industry Consortium Teleconference Meeting

April 7, 2011 2000 hrs EDT

(b)(6) (Passcode: (b)(6) #)

Purpose of the Meeting: Alignment of US Government and Nuclear Industry support for Japan in responding to the Fukushima Nuclear Event.

Expected Outcome: Reinforce roles and responsibilities; identify problems and open issues surrounding our support

Meeting Chair: US NRC

- Roll Call
- Continued discussion of organizational Issues / Roles and Responsibilities
 - US Agency Roles and Leads
 - Industry Support Structure and Roles
- Review Current Action Items Spreadsheet
- New Actions

Consortium Call – 4/6/11 20:00

Attendees:

- NRC Headquarters Operations Officer
- Roy Zimmerman, NRC ET Director
- Joe Gitter, NRC EST Director & Response Advisor
- Mark Lombard, NRC LT Director
- Milt Murray, NRC LT Coordinator
- Alan Blamey, NRC Japan Team
- Gary Waldrup, INPO
- Rick M. Nielsen, INPO
- Alice Caponiti, DOE
- Jay Tilden, DOE/NNSA
- Glenn Southern, NR
- Sam Keith, CDC
- LT International Liaison
- LT Federal Liaison

Organizational Issues/Roles & Responsibilities

- **U.S. Agency Roles and Leads** –Understanding is that work continues towards identifying another Federal lead other than NRC. In interim, NRC continues to lead.
- **U.S. Industry Support Structure and Roles** – No update. Per Deputies meeting DOE has technical lead for support matrix.

Current Action Items and Material Request List (i.e., Matrix)

- Matrix updated based on input received during call and in follow-up emails. For latest status of action items, please review attached Matrix.

New Action – None identified.

Other

- South Texas instrumentation will not ship due to internal contamination.
- NRC HQ is working with the Embassy Team to merge the daily call spreadsheet with embassy sheet.
- Long term result is to move this function to the embassy.
- Try to finalize the process .

** Next meeting planned for 4/7/2011 @ 20:00

From: Holonich, Joseph
Sent: Thursday, April 07, 2011 2:19 PM
To: ET05 Hoc
Subject: RE: Please reply to this email with the document <eom>
Attachments: April 7.docx

From: ET05 Hoc
Sent: Thursday, April 07, 2011 2:18 PM
To: Holonich, Joseph
Subject: Please reply to this email with the document <eom>

From: LIA01 Hoc
Sent: Wednesday, April 06, 2011 6:21 PM
To: Al Hochevar; Alice Caponiti; (b)(6); Blamey, Alan; Blount, Tom; Boger, Bruce; Casto, Chuck; Christensen, Harold; Craig Gaddis; DORLCAL Resource; Dorman, Dan; DprNrrCal Resource; Emche, Danielle; ET05 Hoc; ET07 Hoc; FOIA Response.hoc Resource; Giitter, Joseph; Glenn Southern; HOO Hoc; INPO; INPO; INPO; INPO; INPO; INPO; INPO; (b)(6); Jay Tilden; (b)(6); Lee A Gard, (INPO); LIA01 Hoc; LIA06 Hoc; LIA08 Hoc; LIA11 Hoc; McDermott, Brian; McGinty, Tim; Miller, Chris; Monninger, John; Morris, Scott; NRC Liaison at USAID; OST02 HOC; PACOM Watch Officer; Pentagon Japan Crisis Team J-4 Desk; Peter Lyons; Hoc, PMT12; (b)(6); Rick Nielsen; Robert Gambone; Robert Mercer; Ron Cherry, DOE-Japan Embassy; Ross-Lee, MaryJane; RST01 Hoc; RST01B Hoc; Sal Golub; Sal Golub; Samuel Young; Steve Aoki; Tom Vavoso; (b)(6); Virgilio, Martin; Weber, Michael; Wiggins, Jim; William Webster; Zimmerman, Roy
Subject: Updated Action Items & Material Request List and Agenda
Attachments: Japanese Government Action Items and Material Request List (Consortium Call) 4.5.2011 2100 Version.xlsx; Agenda 4.06.2011 2000 (2).docx

Updated version of the spreadsheet attached.

NRC Incident Response Center

From: LIA01 Hoc
Sent: Sunday, April 10, 2011 7:33 AM
To: Stahl, Eric
Cc: LIA02 Hoc; LIA08 Hoc; LIA06 Hoc
Subject: FW: Action Items & Materiel Request List & Agenda for 2000 hrs Consortium Call

Hi Eric,

Two new names for the Consortium distribution list.

Thanks,
Russ

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

From: LIA01 Hoc
Sent: Sunday, April 10, 2011 7:26 AM
To: LIA08 Hoc; LIA06 Hoc
Subject: FW: Action Items & Materiel Request List & Agenda for 2000 hrs Consortium Call

New additions to the Consortium call distribution list.

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

From: LIA01 Hoc
Sent: Sunday, April 10, 2011 7:20 AM
To: 'Worthy Kenneth L CDR USN USFJ J6'
Cc: Conger, Trevor J LT USN; Moorman Daryn J. LCDR USN
Subject: RE: Action Items & Materiel Request List & Agenda for 2000 hrs Consortium Call

Good Morning Commander Worthy,

As requested, I've added Commander Moorman and Lieutenant Conger to the distribution list.

v/r,
Russell Chazell
Federal Liaison
NRC Operations Center

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

From: Worthy Kenneth L CDR USN USFJ J6 [mailto: [\(b\)\(6\)](mailto:(b)(6)@...)]
Sent: Sunday, April 10, 2011 6:51 AM
To: LIA01 Hoc
Cc: Conger, Trevor J LT USN; Moorman Daryn J. LCDR USN
Subject: RE: Action Items & Materiel Request List & Agenda for 2000 hrs Consortium Call

Dear Sir/Ma'am, I am rotating back to the states on Tuesday. Please include LCDR Moorman and LT Conger (cc'd above) to the daily message.

Thanks,

Vr, CDR Worthy
Reactors-Radiological Consequence Management Team Joint Support Force

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

From: LIA01 Hoc [mailto:LIA01.Hoc@nrc.gov]

Sent: Thursday, April 07, 2011 7:11 AM

To: Al Hochevar; Alice Caponiti; Aviles, Armando LT USN; Blamey, Alan; Blount, Tom; Boger, Bruce; Casto, Chuck; Christensen, Harold; Craig Gaddis; DORLCAL Resource; Dorman, Dan; DprNrrCal Resource; Emche, Danielle; ET05 Hoc; ET07 Hoc; FOIA Response.hoc Resource; Giitter, Joseph; Glenn Southern; HOO Hoc; INPO; INPO; INPO; INPO; INPO; INPO; INPO; McKenna, James MAJ USA; Jay Tilden; Spencer, Julie A. CDR USN; Worthy Kenneth L CDR USN USFJ J6; Lee A Gard, (INPO); LIA01 Hoc; LIA06 Hoc; LIA08 Hoc; LIA11 Hoc; McDermott, Brian; McGinty, Tim; Miller, Chris; Monninger, John; Morris, Scott; NRC Liaison at USAID; OST02 HOC; PACOM Watch Officer; Pentagon Japan Crisis Team J-4 Desk; Peter Lyons; Hoc, PMT12; Webb, Richard CDR; Rick Nielsen; Robert Gambone; Mercer, Robert LCDR USN USFJ J3; Ron Cherry, DOE-Japan Embassy; Ross-Lee, MaryJane; RST01 Hoc; RST01B Hoc; Sal Golub; Sal Golub; Young, Samuel E LCDR USN SJFHQ; Steve Aoki; Tom Vavoso; USFJ-CAT-J4; Virgilio, Martin; Weber, Michael; Wiggins, Jim; William Webster; Zimmerman, Roy
Subject: Action Items & Materiel Request List & Agenda for 2000 hrs Consortium Call

See attached for the 2000 hrs call.

NRC Incident Response Center

Federal Liaison



From: LIA07 Hoc
Sent: Wednesday, April 06, 2011 11:18 AM
To: McGinty, Tim
Cc: ET05 Hoc
Subject: FW: April 6 0600 EDT Brief one pager.docx
Attachments: April 6 0600 EDT Brief one pager.docx

Importance: High

This is what I was looking for. Tim

From: Morris, Scott
Sent: Wednesday, April 06, 2011 6:12 AM
To: LIA07 Hoc
Subject: April 6 0600 EDT Brief one pager.docx
Importance: High

Print hard copies and put in WebEOC folder please ...

April 6, 2011

0600 EDT

Briefing Sheet Fukushima Daiichi

ET Overview and Priorities:

- U-1 containment pressure is slowly decreasing (pressure now 7.0 psig) due to unspecified leak (Site Team indicates TEPCO estimates 10-30% leakage rate).
- Unit 1 containment inerting preparations have been made, awaiting procedure updates.
- Site Team developing "current state" assessment using prior assessments/field data; supports high-level discussion on protective actions, to be cleared by NRC, and given to US and GoJ high level. Plan is to include Sandia NL MELCOR and MACCS assessments (under development).
- Leakage of highly contaminated water into the sea from near the Unit 2 discharge point has been stopped.
- Japan is dumping low-level radioactive water from the central radwaste tank into the sea to make room for higher activity water from the Unit 2 turbine building. Smaller quantity of low-level radioactive water is also being dumped into the sea from drain pits of Units 5 and 6 to reduce flooding of important structures and equipment.

RST Overview and Priorities:

- RST continuing to work with consortium on defining "stable" site conditions, draft document has been circulated. Document requested by Site Team to support alignment with NISA.
- RST is evaluating roles and responsibilities regarding the industry consortium now that INPO has established clear communication paths and points of contact with TEPCO. The industry consortium could deal directly with TEPCO on all technical assessment requests and the NRC RST could focus on supporting the site team in advising the Japanese regulator, NISA as requested.
- SFP white paper has been drafted and sent to site team and consortium members for comments. INPO is attempting to organize a phone call at 0500 EDT on April 6 to discuss the Japanese assessment of the SFP's. RST will provide an updated version late on April 6.
- RST drafted "one-pagers" on RPV injection rate and containment fill. Awaiting comments from technical consortium. Once finalized, will be issued to site team and industry consortium.

PMT Overview and Priorities:

- Continue assessment of radiological conditions, dose projections and protective action recommendations. Available dose information continues to show downward trends.
- NOAA and OSTP are convening a group of agency representatives (NOAA, OSTP, DOE, EPA, NRC, DOD (OSD/Joint Staff), DOS, NSF) on oceanic transport modeling and plan to meet on Thursday/Friday of this week. The NRC has identified an NRO staff person in the line organization to participate in the U.S. government efforts supporting plume modeling in ocean.
- 90 Soil samples taken by the Japanese are currently in the process of being shipped to Savannah River Site (DOE) for analysis.
- TEPCO announced the results of samples at the intake of Unit 2. Results from 4/4/11 showed I-131 levels at 200,000 Bq/cm² (5 million times the legal limit) and Cs-137 levels at 99,000 Bq/cm² (1.1 million times the legal limit). Site Team is also coordinating with DOE and GOJ to support data needs for ocean modeling.
- A copy of the 15 and 16 March RASCAL run inputs (attached to the March 16 NRC press release) and assumed plant conditions/meteorology (the results of which used to make protective action recommendation) were provided to Chairman's office and OCA.
- The initial RASCAL run (including input files) to support decision to evacuate beyond 50 miles were provided to the Chairman's office and OCA.

April 6, 2011

0600 EDT

- The embassy accepted all of NRC's comments on the draft memo from the embassy to DOS regarding the return of embassy dependants to Tokyo. The memo will be expanded to discuss impacts if dependants do not return.
- Two SNL severe accident experts are supporting the Japanese site team. Any source terms will be provided to PMT for review.
- NSC has directed that NARAC will not run a source term review because previous runs have bounded the dose projections and there would be minimal additional value.

LT Overview and Priorities:

- IAEA's Incident and Emergency Centre (IEC) is tracking offers for assistance; database posted on ENAC. LT provided U.S. list to Mark Schaffer in Vienna who will clear release of the list through UNVIE to IAEA.
- The CDC employee to be embedded with the LT arrived on 4/5. The specific role of the individual and his hours of work are undefined.
- Maintain a database of any actions assigned to the NRC during Deputies Committee or Principals meetings.
- USAID has requested information on NRC site team regarding roles and responsibilities and time in service, likely from a cost and budget perspective. The NRC team in Japan has provided a list of names assigned to each team there (mirroring the ET, LT, RST, and PMT).

From: ET05 Hoc
Sent: Wednesday, April 06, 2011 11:13 AM
To: McGinty, Tim
Subject: Emailing: boardfile.pdf
Attachments: boardfile.pdf

As you requested.

Thanks

From: McGinty, Tim
Sent: Wednesday, April 06, 2011 10:05 AM
To: ET05 Hoc
Cc: LIA07 Hoc
Subject: Request - 4/6/11 0600 One Pager

Please send the one-pager from this morning to me. Thanks, Tim McGinty

From: LIA06 Hoc
Sent: Tuesday, April 05, 2011 10:19 PM
To: ET05 Hoc
Subject: April 5 1500 EDT Brief one pager (2).docx
Attachments: April 5 1500 EDT Brief one pager (2).docx

Back at you with LT stuff updated and highlighted in the last section. I un-highlighted stuff that was unchanged.

Mark Lombard
Liaison Team Director
U.S. Nuclear Regulatory Commission
Operations Center

To: FOIA Response.hoc Resource
Subject: FOIA request

From: ET05 Hoc
Sent: Tuesday, April 05, 2011 8:34 PM
To: LIA06 Hoc; LIA08 Hoc
Subject: Consortium Call - April 5, 2011
Attachments: Call with Industry Consortium April 5, 2011 at 8pm EST.docx

Write up of April 5, 2011 call with Industry Consortium at 2000 EST.

Please see attached.

EST Action Officer

Consortium Call – 4/5/11 20:00

Attendees:

- NRC Headquarters Operations Officer
- Cindi Carpenter, NRC ET Director
- Joe Giitter, NRC EST Director & Response Advisor
- Mark Lombard, NRC LT Director
- Sam Keith, CDC
- Brian Wittick, LT
- Russ Chazell, LT
- Lt. Coronial Price
- Rick M. Nielsen, INPO
- Gary Waldrup, INPO
- Alan Blamey, NRC Japan Team
- Milt Murray, NRC LT Coordinator

Organizational Issues/Roles & Responsibilities

- **U.S. Agency Roles and Leads** – US agencies roles and leads, hopefully within the next day or so for a process and vetting process from the Japanese government. Figure out if DOE is taking the technical lead. Still need POC for DOE if taking over technical lead.
- **U.S. Industry Support Structure and Roles** – No update.

Current Action Items and Material Request List (i.e., Matrix)

- Radiation Monitors – South Texas has two to send, radiation shipment will not be sent. Japan is not going to receive any contaminated shipments. Friskers will be shipped by air. Has the concrete pumping truck, could friskers be sent with the truck? Truck has already departed from Atlanta. Two of the units will be shipped in the aircraft, don't know exact arrival time (maybe thurs or fri).
- Conduction of simulation (DOE lead) – ongoing, technical interactions and comparison of radiation transport models.
- Germanium (DOE) – should have arrived today, two or four more being shipped to arrive on Friday
- Use of rad monitors on the ground – clarification, we have the equipment in country, DOE will need to man equipment, waiting on Japanese government to ask for this.
- Robotic Equipment – shipped today, should arrive on Friday, should DOE send experts when equipment arrives
- NRC Site Team – no update, the Japanese government needs to make a decision on this.
- Turbine Building water (DOD/DOE) – do not have an update today, will get an update tomorrow, working it, know how the large concrete pumpers were sent, possible airlift to get it to Japan, asking Japanese government if they are willing to pay for airlift (coming from Savannah River)
- Temporary holding tanks and truck/ temporary hold tanks for radiation material –
- Masks, personnel radiation (INPO) – provided a preliminary list and need some feedback, research project (# 34), have a cabinet meeting today at 7pm so hopefully we will get a scrubbed list.

- Use of robots for rubble removal – Japanese government has withdrew this request. The Japanese government only requests expertise on shielding. Need a good radiation mapping of the entire site to do this well.

New Actions – None identified.

Other

- INPO got a phone call from rubber booties (14 warehouses) from the Gulf Spill. Gary Waldrup will get the information to Alan who will contact Bill Berger. Price discount.
- Japan Site Team – list being maintained by the Ambassador to keep this list up-to-date, need to coordinate updating this list, eventually pass this updating to the Ambassador, further discussion is needed. Continue same path we are on now, and then transfer it at some point. Update should be in the “Status/Comments” section.

Call concluded at 2031 EST.

From: Weber, Michael
Sent: Wednesday, April 06, 2011 6:56 PM
To: Zimmerman, Roy
Cc: ET05 Hoc; ET01 Hoc; OST02 HOC
Subject: FYI - information from video conference on 4/5/11 that may be of interest to the consortium

I did not know whether you received this in turnover.

From: LIA06 Hoc
Sent: Tuesday, April 05, 2011 9:44 PM
To: Weber, Michael
Cc: LIA08 Hoc; ET01 Hoc; ET05 Hoc; LIA01 Hoc; LIA06 Hoc
Subject: RE: information from video conference on 4/5/11 that may be of interest to the consortium

Mike,

(b)(5)

(b)(5)

Mark Lombard
Liaison Team Director
U.S. Nuclear Regulatory Commission
Operations Center

From: Weber, Michael
Sent: Tuesday, April 05, 2011 7:55 PM
To: LIA01 Hoc
Cc: LIA06 Hoc; LIA08 Hoc; ET01 Hoc; ET05 Hoc
Subject: Response - information from video conference on 4/5/11 that may be of interest to the consortium

Thanks, Mark. Now I'm confused - I thought that DOE/DOD has the lead to coordinate technical support for Japan. Has this changed? The summary below states that the Ambassador, Embassy staff, DOE, DOD, and NRC are leading different, but related components. Please advise. If we need to clarify, we can escalate.

From: LIA01 Hoc
To: Al Hochevar <'hochevarar@inpo.org'>; Alice Caponiti <Alice.caponiti@hq.doe.gov>; (b)(6)
(b)(6); Blamey, Alan; Blount, Tom; Boger, Bruce; Casto, Chuck; Christensen, Harold; Craig Gaddis
(b)(6); DORLCAL Resource; Dorman, Dan; DprNrrCal Resource; Emche, Danielle; ET05 Hoc;
ET07 Hoc; FOIA Response.hoc Resource; Giitter, Joseph; Glenn Southern (b)(6); HOO Hoc; INPO

<maddoxje@inpo.org>; INPO <inpoercassistance@inpo.org>; INPO <addyj@inpo.org>; INPO
<bramblettjw@inpo.org>; INPO <lynchje@inpo.org>; INPO <sequingc@inpo.org>; INPO <tropassort@inpo.org>; INPO
<INPOEmergencyResponseCtr@inpo.org>; (b)(6); Jay Tilden
<Jay.Tilden@nnsa.doe.gov>; (b)(6);
(b)(6); Lee A Gard, (INPO) <GardLA@INPO.org>; LIA01 Hoc; LIA06 Hoc; LIA08 Hoc; LIA11 Hoc;
McDermott, Brian; McGinty, Tim; Miller, Chris; Monninger, John; Morris, Scott; NRC Liaison at USAID
<RMTPACTSU_ELNRC@ofda.gov>; OST02 HOC; PACOM Watch Officer <(b)(6)>; Pentagon Japan
Crisis Team J-4 Desk <(b)(6)>; Peter Lyons <peter.lyons@nuclear.energy.gov>; Hoc, PMT12;
(b)(6); Rick Nielsen <NielsenFM@INPO.org>; Robert Gambone
<GamboneRL@INPO.org>; Robert Mercer <(b)(6)> Ron Cherry, DOE-Japan Embassy
<CherryRC@state.gov>; Ross-Lee, MaryJane; RST01 Hoc; RST01B Hoc; Sal Golub <sal.golub@hq.doe.gov>; Sal Golub
<sal.golub@nuclear.energy.gov>; Samuel Young <(b)(6)>; Steve Aoki <steven.aoki@nnsa.doe.gov>;
Tom Vavoso <(b)(6)>; (b)(6); Virgilio, Martin; Weber, Michael;
Wiggins, Jim; William Webster <Websterwe@inpo.org>; Zimmerman, Roy
Sent: Tue Apr 05 19:28:12 2011
Subject: FW: information from video conference on 4/5/11 that may be of interest to the consortium

From: LIA06 Hoc
Sent: Tuesday, April 05, 2011 7:21 PM
To: LIA01 Hoc
Subject: informatoin from video conference on 4/5/11 that may be of interest to the consortium

Please send to the consortium distribution:

I wanted to make you all aware of a secure video conference that was hosted today at 1600 Washington, DC time by Major General Jeff Mathis of JCS J3 to discuss coordination of Humanitarian Assistance Disaster Relief (HADR) and Foreign Consequence Management (FCM) efforts in Japan. The conference was attended by White House-NSS, DOS, Admiral Scott Swift of PACOM, OMB, OSD, GSA, and NRC-HQ. While meeting minutes will be issued by J3 by tomorrow morning, items of interest to the consortium from my notes included:

- Ambassador Roos and the NRC are the clearing house for all requests for GoJ (it was stated later that DOE has the technical lead as discussed in the Deputy's meeting yesterday in DC).
- I discussed the industry consortium and its activities to maintain the list of technical support requests from the GoJ, and that we had eliminated humanitarian requests from our list. Admiral Swift did not think his folks were tied into this effort. I did not have the names of the PACOM participants in the consortium calls to pass on. Admiral Swift is checking through his channels to make sure the right folks are plugged into the consortium.
- A video conference with the embassy team in Japan will be set up in the coming days.
- A lead agency needs to be designated. This is being discussed at high levels and a decision will be forthcoming (no target date given).
- A process for validation of funding sources will be established in the next 48 hours or so, including the Japanese reimbursement piece.
- OMB is supporting the funding effort and has the lead to coordinate between DOE (the technical lead) and others.
- There is a need to capture the process, define the interfaces, and include funding needs. I asked who would own the list of approved requests and own and manage the process from womb to tomb. The reply was that this will be determined as the process is developed.
- DOS and NSS will pull the process together. An organization chart will be included.
- The process should include the HADR and FCM requests.
- NRC should take its list and compare it to the two lists provided by OSD (one of them is the list developed by the Embassy in Japan who is in charge of maintaining the list according to the phone call (Bruce Howard) but this is being done by NRC-HQ with input from the members of the consortium) and then push it to DOS. We are reviewing the lists now to identify deltas.

- It was not clear if similar calls would be held going forward.

We can discuss at the call tonight if needed.

Mark Lombard
Liaison Team Director
U.S. Nuclear Regulatory Commission
Operations Center

From: LIA01 Hoc
Sent: Tuesday, April 05, 2011 7:11 PM
To: ET05 Hoc
Subject: RE: Updated Agenda and Action Item List

Thanks!

From: ET05 Hoc
Sent: Tuesday, April 05, 2011 6:50 PM
To: LIA01 Hoc
Subject: RE: Updated Agenda and Action Item List

I have printed both attachments for the ET.

EST Actions Officer

From: LIA01 Hoc
Sent: Tuesday, April 05, 2011 6:38 PM
To: Al Hochevar; Alice Caponiti; Blamey, Alan; Blount, Tom; Boger, Bruce; Casto, Chuck; Christensen, Harold; Craig Gaddis; DORLCAL Resource; Dorman, Dan; DprNrrCal Resource; Emche, Danielle; ET05 Hoc; ET07 Hoc; FOIA Response.hoc Resource; Giitter, Joseph; Glenn Southern; HOO Hoc; INPO; INPO; INPO; INPO; INPO; INPO; INPO; Jay Tilden; Lee A Gard, (INPO); LIA01 Hoc; LIA06 Hoc; LIA08 Hoc; LIA11 Hoc; McDermott, Brian; McGinty, Tim; Miller, Chris; Monninger, John; Morris, Scott; NRC Liaison at USAID; OST02 HOC; PACOM Watch Officer; Pentagon Japan Crisis Team J-4 Desk; Peter Lyons; Hoc, PMT12; Rick Nielsen; Robert Gambone; Robert Mercer; Ron Cherry, DOE-Japan Embassy; Ross-Lee, MaryJane; RST01 Hoc; RST01B Hoc; Sal Golub; Sal Golub; Samuel Young; Steve Aoki; Tom Vavoso; Virgilio, Martin; Weber, Michael; Wiggins, Jim; William Webster; Zimmerman, Roy
Subject: Updated Agenda and Action Item List

From: LIA01 Hoc
Sent: Tuesday, April 05, 2011 6:38 PM
To: Al Hochevar; Alice Caponiti; Blamey, Alan; Blount, Tom; Boger, Bruce; Casto, Chuck; Christensen, Harold; Craig Gaddis; DORLCAL Resource; Dorman, Dan; DprNrrCal Resource; Emche, Danielle; ET05 Hoc; ET07 Hoc; FOIA Response.hoc Resource; Giitter, Joseph; Glenn Southern; HOO Hoc; INPO; INPO; INPO; INPO; INPO; INPO; INPO; Jay Tilden; Lee A Gard, (INPO); LIA01 Hoc; LIA06 Hoc; LIA08 Hoc; LIA11 Hoc; McDermott, Brian; McGinty, Tim; Miller, Chris; Monninger, John; Morris, Scott; NRC Liaison at USAID; OST02 HOC; PACOM Watch Officer; Pentagon Japan Crisis Team J-4 Desk; Peter Lyons; Hoc, PMT12; Rick Nielsen; Robert Gambone; Robert Mercer; Ron Cherry, DOE-Japan Embassy; Ross-Lee, MaryJane; RST01 Hoc; RST01B Hoc; Sal Golub; Sal Golub; Samuel Young; Steve Aoki; Tom Vavoso; Virgilio, Martin; Weber, Michael; Wiggins, Jim; William Webster; Zimmerman, Roy
Subject: Updated Agenda and Action Item List
Attachments: Japanese Government Action Items and Material Request List (Consortium Call) 4.4.2011 2100 Version.xlsx; Agenda 4.05.2011 2000 (2).docx

Agenda for Daily Industry Consortium Teleconference Meeting

April 5, 2011 2000 hrs EDT

(b)(6)

(Passcode: (b)(6) #)

Purpose of the Meeting: Alignment of US Government and Nuclear Industry support for Japan in responding to the Fukushima Nuclear Event.

Expected Outcome: Reinforce roles and responsibilities; identify problems and open issues surrounding our support

Meeting Chair: US NRC

- Roll Call
- Continued discussion of organizational Issues / Roles and Responsibilities
 - US Agency Roles and Leads
 - Industry Support Structure and Roles
- INPO report on status of material requests
- INPO team report status of on-going work on requests for technical support
- Review Current Action Items Spreadsheet
- Debrief of Japan HADR / FCM Phone Call
- New Actions

From: Hoc, PMT12
Sent: Wednesday, April 06, 2011 1:04 PM
To: PMT09 Hoc
Subject: FW: [METI Japan](Apr_5)Update on Seismic and Tsunami Damage Information
Attachments: [METI] Apr 5 1530_Tohoku-Pacific Ocean Earthquake and the Seismic Damages to the NPSs.pdf; Apr_5_Radioactivity Level Map [Chart].pdf

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

From: OST01 HOC
Sent: Tuesday, April 05, 2011 4:34 PM
To: PMT11 Hoc; PMT02 Hoc; Hoc, PMT12
Subject: FW: [METI Japan](Apr_5)Update on Seismic and Tsunami Damage Information

FYI

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

From: HOO Hoc
Sent: Tuesday, April 05, 2011 2:59 PM
To: HOO Hoc
Subject: FW: [METI Japan](Apr_5)Update on Seismic and Tsunami Damage Information



Headquarters Operations Officer
U.S. Nuclear Regulatory Commission
Phone: 301-816-5100
Fax: 301-816-5151
email: hoo.hoc@nrc.gov
secure e-mail: hoo1@nrc.sgov.gov

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

From: meti-info@meti.go.jp [mailto:meti-info@meti.go.jp]
Sent: Tuesday, April 05, 2011 2:44 PM
To: meti-info@meti.go.jp
Subject: [METI Japan](Apr_5)Update on Seismic and Tsunami Damage Information

For your reference, Ministry of Economy, Trade and Industry of Japan (METI) is providing latest information on the seismic and tsunami damages to the nuclear power stations (NPSs) in Japan, including those caused to Fukushima Dai-ichi NPS.

This Tuesday, the following information has been updated.

---- Today's news ----

1. TEPCO initiated discharge of low radioactive waste water to the sea at Fukushima Dai-ichi NPS. [Please refer to 10. below]

---- Updates from METI ----

2. [METI] Apr 5 1530_Tohoku-Pacific Ocean Earthquake and the Seismic Damages to the NPSs [Please refer to the attached file]

3. [METI] Apr 5_Radioactivity Level Map Chart [Please refer to the attached file]

---- Updates from NISA ----

4. [NISA] Apr 4 1500_Current Situation of Onagawa, Fukushima Dai-ichi, Fukushima Dai-ni, Tokai Dai-ni NPSs
<http://www.nisa.meti.go.jp/english/files/en20110404-5-1.pdf>

5. [NISA] Apr 4 1400_Conditions of FukushimaDai-ichi NPS <http://www.nisa.meti.go.jp/english/files/en20110404-5-2.pdf>

6. [NISA] Apr 4 1400_Fukushima Dai-ichi Major Parameters of the Plant
<http://www.nisa.meti.go.jp/english/files/en20110404-5-3.pdf>

---- Major Updates from other agencies of Japanese Government ---

7.[MLIT] Apr 5 AM_Measurement of Radiation Doses in the Ports around Tokyo Bay
http://www.mlit.go.jp/kowan/kowan_fr1_000041.html

Currently, the level of radiation in Tokyo City, Yokohama City, Kawasaki City and Ichikawa City (Chiba) were as shown in the attachment at very safe level to health.

8. [MLIT] Apr 5 AM_Measurement of radiation doses around the Metropolitan Airports
http://www.mlit.go.jp/koku/koku_tk7_000003.html

The current level of radiation does not have any effects on human health.

9. [NSC] Apr 5 1645_Assessment of the result of environment monitoring (only Japanese version is available)
http://www.nsc.go.jp/nsc_mnt/110405_1.pdf

---- Other Updates ----

10. [TEPCO] Apr 4 1703_Discharge of low radioactive wastewater (approximately 10,000 ton in total) from Central Radioactive Waste Disposal Facility to the sea was initiated <http://www.tepco.co.jp/en/press/corp-com/release/11040508-e.html>

TEPCO evaluates the impact on the discharge of the low radioactive wastewater to the sea as approximately 0.6 mSv per year per an adult if an adult eats adjacent fish and seaweeds everyday. The amount (0.6 mSv of effective radioactive doses per year) is one-fourth of annual radioactive dose to which the general public is exposed from nature.

If you need to add other e-mail address to this mailing list or do not need our information mail any more, please contact at meti-info@meti.go.jp

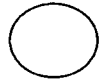
=====
International Public Relations Team
Ministry of Economy, Trade and Industry (METI)
1-3-1 Kasumigaseki, Chiyoda-ku, Tokyo 100-8901, Japan E-mail : meti-info@meti.go.jp
=====

(See attached file: [METI] Apr 5 1530_Tohoku-Pacific Ocean Earthquake and the Seismic Damages to the NPSs.pdf) (See attached file:
Apr_5_Radioactivity Level Map [Chart].pdf)

From: OST02 HOC
Sent: Wednesday, April 06, 2011 4:16 AM
To: Hoc, RST16
Subject: RE: TEPCO Earthquake Information Update on April 5: Result of radioactive water spilled to the sea
Attachments: RST Email (4-6-11).pdf; image001.gif; image002.jpg; image003.gif; image004.jpg; image005.jpg; image006.jpg; image007.jpg

See attached

From: Hoc, RST16
Sent: Wednesday, April 06, 2011 4:09 AM
To: OST02 HOC
Subject: FW: TEPCO Earthquake Information Update on April 5: Result of radioactive water spilled to the sea



Can you please PDF and email back.

Thanks

From: RST01 Hoc
Sent: Wednesday, April 06, 2011 3:53 AM
To: RST08 Hoc; RST07 Hoc; RST09 Hoc; Hoc, RST16
Subject: FW: TEPCO Earthquake Information Update on April 5: Result of radioactive water spilled to the sea

From: LIA02 Hoc
Sent: Wednesday, April 06, 2011 3:38 AM
To: RST01 Hoc; Hoc, PMT12
Subject: FW: TEPCO Earthquake Information Update on April 5: Result of radioactive water spilled to the sea

For your info. See last page for IAEA site visit to Daiichi today and Diani tomorrow. Jeff Temple

From: Hidehiko Yamachika [mailto:yamachika-hidehiko@jnes-usa.org]
Sent: Tuesday, April 05, 2011 2:51 PM
To: LIA02 Hoc

Cc: Aono, Kenjiro; Michael W. Chinworth

Subject: FW: TEPCO Earthquake Information Update on April 5: Result of radioactive water spilled to the sea

FYI

This is from TEPCO Washington Office.

From: 松尾 建次 [mailto:matsuo.kenji@wash.tepco.com] **On Behalf Of** matsuo.kenji@tepco.co.jp

Sent: Tuesday, April 05, 2011 1:57 PM

To: matsuo.kenji@tepco.co.jp

Subject: TEPCO Earthquake Information Update on April 5: Result of radioactive water spilled to the sea

Dear Friends,

Here are updates on radioactive material release from Fukushima Daiichi NPS and information on IAEA's visit to the sites.

- (1) Outflow of fluid containing radioactive materials to the ocean from areas near intake channel of Fukushima Daiichi NPS Unit 2 (continued report)
- (2) Measures taken to stop outflow of radioactive fluid to the ocean from unit 2
- (3) IAEA visit to Fukushima Daiichi and Daini NPS

Contacts:

TEPCO Washington Office 202-457-0790

Kenji Matsuo, Director and General Manager

Yuichi Nagano, Deputy General Manager,

Masayuki Yamamoto, Manager, Nuclear Power Programs

(1) Outflow of fluid containing radioactive materials to the ocean from areas near intake channel of Fukushima Daiichi NPS Unit 2 (continued report)

TEPCO detected water containing radiation dose over 1,000 mSv/h in the pit where supply cables are stored near the intake channel of Unit 2 on April 2. Furthermore, we identified a crack about 20 cm on the concrete lateral of the pit, from where the water in the pit was out flowing.

We have implemented sampling of the water in the pit, together with the seawater in front of the bar screen near the pit. These samples were sent to Fukushima Daini Nuclear Power Station for analysis.

Results of this analysis are shown in Table (1) and Figure (1).

Afterward, we implemented sea water sampling at the inside of the pit and in front of the bar screen near the pit. We conducted radionuclide analysis and found radioactive materials. We reported the results to Nuclear and

Industrial Safety Agency (NISA), Ministry of Economy, Trade and Industry (METI), and Fukushima prefecture respectively. Results of this analysis are shown in Table (2) and Figure (2).

We are announcing 3 type of nucleus (Iodine- 131, Cesium-131, and Cesium-137) as definite value at the result of the analysis. In addition, we will re-evaluate other type of nucleus based on the preventive measures under a strong warning of NISA on April 1st (we have reported this yesterday),

Table (1): Nuclide analysis results from seawater sampling on April 2.

Result of nuclide analysis of the seawater at the cable pit of Unit 2 and screen

Place of sampling	(A) The cable pit before the screen of Unit 2	(B) Outflow water at the screen of Unit 2	(C) Seawater at the screen of Unit 1	(D) Seawater at the screen of Unit 2	(E) Seawater at the screen of Unit 3	(F) Seawater at the screen of Unit 4	Sampling date and time (JST)				
Time of sampling	11:54, April 2nd, 2011	16:30, April 2nd, 2011	17:03, April 2nd, 2011	11:50, April 2nd, 2011	16:54, April 2nd, 2011	16:44, April 2nd, 2011					
Measure of concentration	*Activity concentration (Bq/cm ³), density (Bq/cm ³) and scaling factor (D/P)										
Measurement time	500 seconds		1,000 seconds								
Units of activity concentration	Density (Bq/cm ³)	Density (Bq/cm ³)	Density (Bq/cm ³)	Scaling factor (D/P)	Density (Bq/cm ³)	Scaling factor (D/P)	Density (Bq/cm ³)	Scaling factor (D/P)	Density (Bq/cm ³)	Scaling factor (D/P)	
I-131 (Bq/cm ³)	6.2E+08	6.4E+08	1.8E+04	480,000	3.0E+06	7,500,000	1.6E+04	380,000	1.4E+04	350,000	100%
Cs-137 (Bq/cm ³)	1.8E+08	1.2E+08	7.7E+02	130,000	1.2E+06	2,000,000	6.8E+02	98,000	6.3E+02	57,000	100%
Cs-134 (Bq/cm ³)	1.8E+08	1.2E+08	7.8E+02	88,000	1.2E+06	1,300,000	6.8E+02	66,000	6.3E+02	64,000	100%

Figure (1): Nuclide analysis sampling location on April 2.

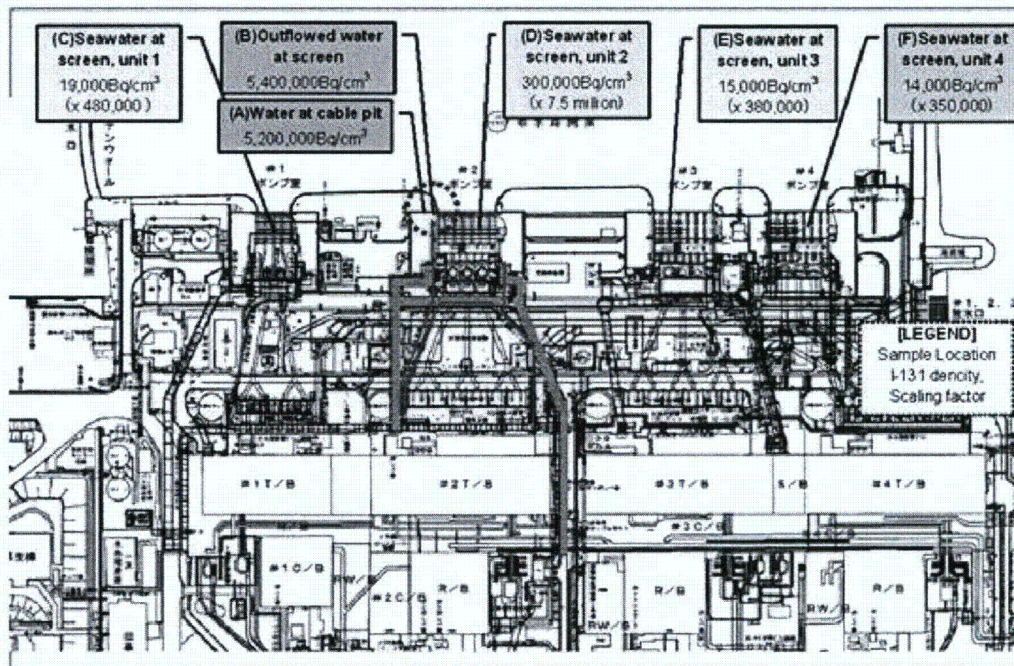
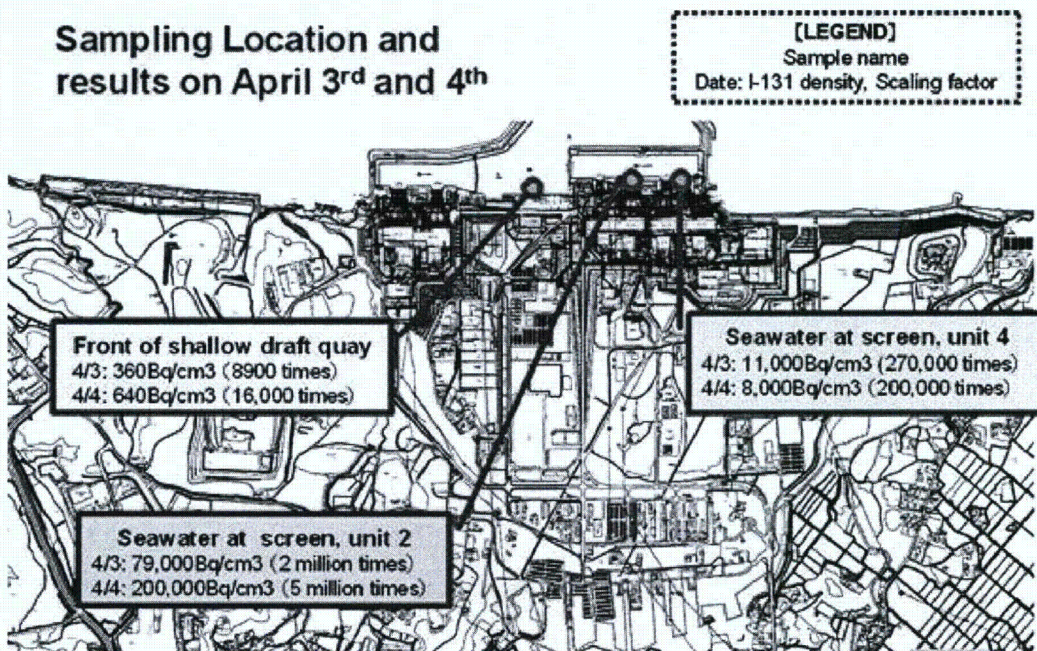


Table (2) : Nuclide analysis results from seawater sampling on April 3 and 4.

Result of possible analysis of seawater at the front of shallow draft quay and screen of Unit 2, 4

Place of collection	The front of shallow draft quay		Seawater at the screen of Unit 2		Seawater at the screen of Unit 4		① Density (Bq/cm ³) ② Scaling factor (①×②)					
Date and date of month	8:30, April 4, 2011	10:55, April 3rd, 2011	9:00, April 4, 2011	18:25, April 3rd, 2011	8:50, April 4, 2011	11:10, April 3rd, 2011						
Number of measurement	Total measured for sample in this location (①, ②) according to sample with its density and scaling factor											
Sampling location	①② records											
Health of the body (unit-Bq)	① Density (Bq/cm ³)	Scaling factor (①×②)	① Density (Bq/cm ³)	Scaling factor (①×②)	① Density (Bq/cm ³)	Scaling factor (①×②)	① Density (Bq/cm ³)	Scaling factor (①×②)	① Density (Bq/cm ³)	Scaling factor (①×②)	① Density (Bq/cm ³)	Scaling factor (①×②)
H-3 (m 4 days)	8.4E+02	16,000	8.8E+02	8,500	2.8E+06	5,000,000	7.8E+04	2,000,000	8.8E+02	200,000	1.1E+04	270,000
Co-60 (m 4 years)	2.7E+02	4,500	1.6E+02	2,500	9.8E+04	1,600,000	8.6E+04	600,000	4.2E+02	70,000	4.8E+02	76,000
Co-137 (m 30 years)	2.7E+02	3,000	1.6E+02	1,600	9.8E+04	1,100,000	8.8E+04	400,000	4.2E+02	47,000	4.8E+02	51,000

Figure (2) : Nuclide analysis sampling location on April 3 and 4.



(2) Measures taken to stop outflow of radioactive fluid to the ocean from unit 2

In the afternoon on April 3, we injected 20 sets of sawdust (approx 60 kg), 80 sets of polymer (approx 8kg), 3 sets of newspapers and 2.5m³ of water to the trench for power cable of intake channel and stirred.

Afterward, we observed the changes of water level inside the pit and the amount of outflow to the sea. However, as of 9:30, April 5th, we could not observe any changes in the amount of the outflow. Meanwhile, from 7:08 am to 7:11 am, we injected white powder as a tracer from the trench shaft of seawater duct and started a survey for the outflow condition. [Amount of injection: approx 13kg, 20 boxes x 660g/box = 13.2 kg]

Currently, we are implementing the water shutoff method of the ground near the screen with the crack surrounding cable duct of the pit. We are injecting materials of water shutoff into the ground to block the outflow channel.

In order to reduce the spread of the radioactive contamination to the sea, we are making efforts to shut the outflow from water intake by installing silt fences and steel sheet piles. Also we will continue to monitor the impact in front of the plant and in the area within 15km from the coast.

Figure (3): Assumed Cause of Contaminated Water Outflow to the Sea.

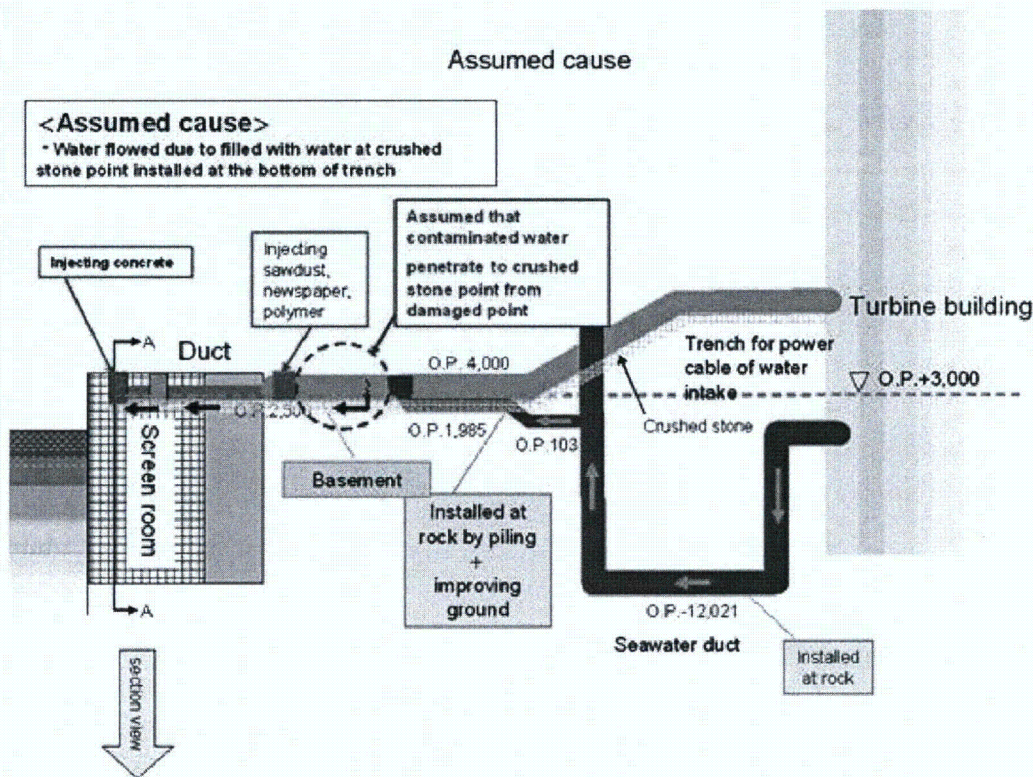


Figure (4): Injection of Water Shutoff Material in the Crushed Stone Layer under the Trench

Tentative planned countermeasure construction

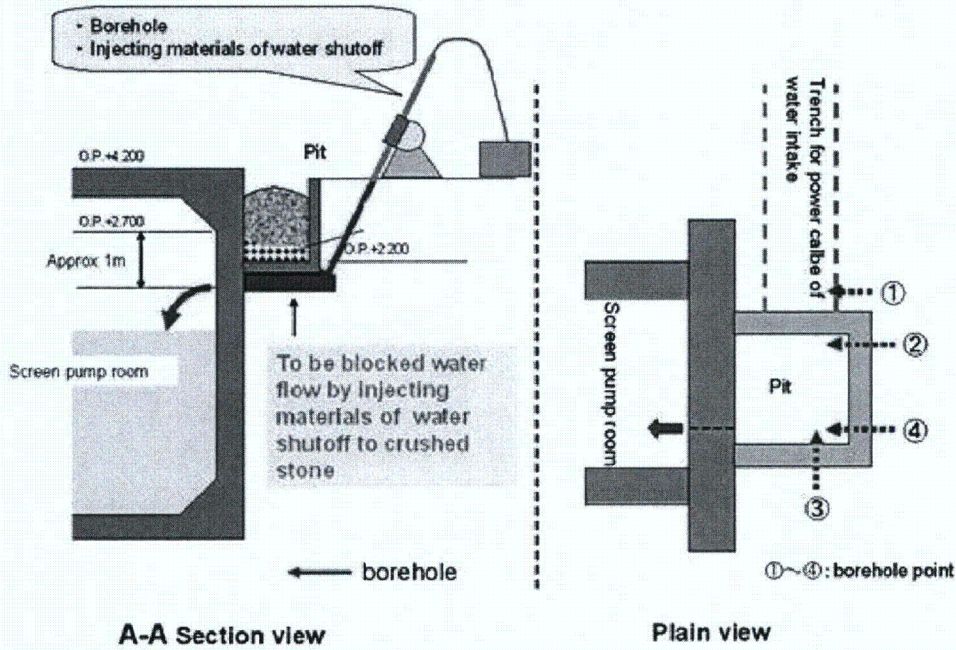
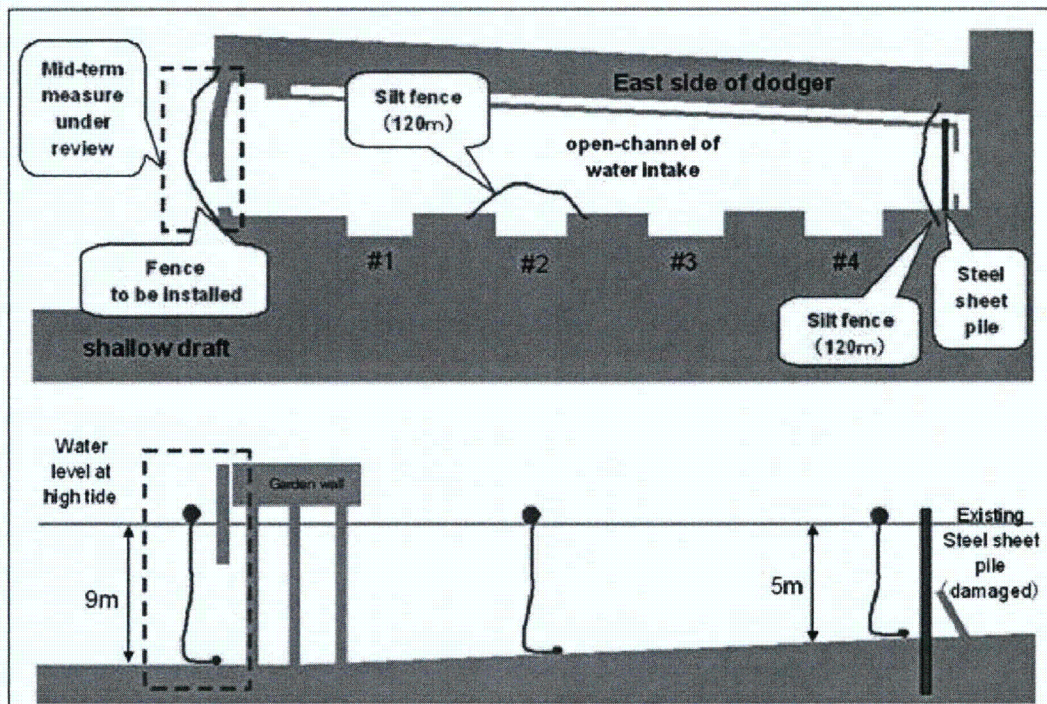


Figure (5): Silt fence installment

Tentative Preventive Measure of Spreading Radioactive Materials



(2) IAEA visit to Fukushima Daiichi and Daini NPS

The IAEA plans to dispatch a survey mission to evaluate the incident once the plants are brought into stable condition. The purpose of the visit this time is to observe the situation to prepare for the main survey mission.

The IAEA will conduct visual observation of plants at Fukushima Daiichi NPS and brief opinion exchange with chief of the plants.

They will arrive at Fukushima Daiichi NPS during the afternoon of April 6(Wed). Then, they move to Fukushima Daini NPS and stay one night. In the morning of April 7(Thu), they will observe Fukushima Daini NPS and return to Tokyo.

The IAEA team consists of Mr. Nobuhiro Muroya, Department of Nuclear Safety and Security, Mr. Edward Bradley and Mr. Katsumi Yamada, BWR experts from Department of Nuclear Energy.