284 Documents

Group DJ

(Records Withheld In Part)

NOTICE

This package contains both Japan and Non-Japan related records. The non-Japan records pertain to the specific request made by FOIA/PA-2011-0140, FOIA/PA-2011-0148, and FOIA/PA-2011-0191.

From: IT_IM_Budget_Resource
To: Baker, Pamela; Bayliff, Shirley; Bettis, Ashley; Blond, Tamoria; Bobryakova, Natalya; Brand, MaryLynn; Brown, Cris; Brusoe, Eric; Butler, Rodney; Cain, Brendan; Cheng, May; Cochrum, Steven; Coleman, Judy; Dabbs, Bill; Dambly, Jan; Dean, Michael; Doornbos, Roger; Dove, Marna; Ellsbury, Richard; Figueroa, Roberto; Flynn, Sean; Gardin, Kathy; Ha, Su; Hall, Donald; Harvey, Sue; Hayden, Elizabeth; Hays, Myra; Holt, BJ; Hopkins, Rhonda; Humphreys, Patti; Hunter, James; Janis, James; Joosten, Sandy; King, Mike; Lockhart, Michelle; Ma, May; Magee, Thomas; Martinson, Rye; McGill, Clinton; McKelvey, Harold; Miller, Mark; Nelson-Wilson, Carlyleamaryllis; Nute-Blackshear, Lora; Picciotto, Colleen; Ricketts, Paul; Rivas, Audrey; Rule, David; Schmidt, Katherine; Shay, Jason; Solorio, Ilka; Somerville, Glenda; Sotiropoulos, Dina; Valencia, Sandra; Vassos, John; Voytko, Victoria; Walker, Tracy; Zilka, Kathleen
Cc: Ghneim, Munira; IT_IM_Budget_Resource
Subject: Corporate Support IT/IM - Lead Office Narratives - Due March 18th
Date: Monday, March 14, 2011 6:17:06 PM
Importance: High

Office Budget Contacts (only):

Per the IT/IM Guidance for FY 2013 (Part 7), and per the OCFO schedule (Step 3a below), please provide us your Corporate Support IT/IM resources in the OCFO Lead Office Corporate IT and IM templates by **Friday, March 18th as per OCFO's schedule**.

If you have any concerns or questions regarding this date or the requested input, please feel free to send an email to IT_IM_Budget_Resource or contact Marna Dove (x5858). OIS would like to ask the offices with ***Corporate Support IT/IM resources*** to indicate via an email to IT_IM_Budget_Resource when they have provided their input on the OCFO Lead Office Template site.

The IT/IM Guidance states: *The OCFO Lead Office Template site in SharePoint, rather than a separate OIS site, will be used to collect the budget narratives and supplemental information from offices with IT and IM resources in the Corporate Support Business Line.*

Step	Milestone/Activity	Activity Lead	Start Date	End Date
3	**Budget Development**		**Mar. 7, 2011**	**Apr. 28, 2011**
3a	All offices update BFS with FY 2013 resource request and develop input for Business Line/ Product Line summaries; offices update performance and output measures	All Offices	Mar. 7, 2011	Mar. 18, 2011

Thank you.

DJ/1

From: Shannon, Valerie
To: Hayden, Elizabeth
Subject: RE: UPDATE: FY 2012 PBPM Policy Support Product Line
Date: Tuesday, March 15, 2011 2:56:52 PM

Hi Beth,

First day of rotation is March 28. I will remind you.

Val

From: Hayden, Elizabeth
Sent: Tuesday, March 15, 2011 2:51 PM
To: Shannon, Valerie
Subject: Fw: UPDATE: FY 2012 PBPM Policy Support Product Line

Remind me about this when I get back--or is the 21st the first day of your rotation?

From: Murray, Heather
To: Decker, David; Hayden, Elizabeth; Jacobs-Baynard, Elizabeth; Joosten, Sandy; Kasputys, Clare; McDevitt, Joan; Poole, Brooke; Shnayder, Yana; Warner, MaryAnn
Cc: Allwein, Russell; Smolik, George
Sent: Tue Mar 15 10:55:36 2011
Subject: UPDATE: FY 2012 PBPM Policy Support Product Line

I have made a few minor edits to the original materials. I have included only those updated items below. (b)(5)
(b)(5)

If you have any problems or questions, please let me know.

Thanks,
Heather

FY 2013 PBPM – Policy Support Offices

I. Each office will need to complete the following activities:

1) **Due Date: March 28, 2011 / Deliverable: Enter resources in to BFS.**
Please enter the FY 2013 base request; (b)(5)
(b)(5)

II. There are a few remaining items that will also need to be completed by each office:

DJ/2

1) **Applicable SRMs**. ~~This form will soon be located on the FY 13 Budget SharePoint site. I will send a separate message with the due date~~. This form can be accessed via the following SharePoint Link: Applicable SRMs. This information is due April 1, 2011.

2) **(OIP Only) Commission Travel and Official Representation of Funds.** ~~This form will soon be located on the FY 13 Budget SharePoint site. I will send a separate message with the due date.~~ This form can be accessed via the following SharePoint Link: Commission Travel and Rep Funds . This information is due April 1, 2011.

From: Murray, Heather
Sent: Monday, March 14, 2011 4:31 PM
To: Decker, David; Hayden, Elizabeth; Jacobs-Baynard, Elizabeth; Joosten, Sandy; Kasputys, Clare; McDevitt, Joan; Poole, Brooke; Shnayder, Yana; Warner, MaryAnn
Cc: Allwein, Russell; Smolik, George
Subject: FY 2012 PBPM Policy Support Product Line

FY 2013 PBPM – Policy Support Offices

Although the FY 2013 Budget Instructions and Commission SRM on FY 13 Planning Guidance have not yet been issued, I wanted to make sure there was enough time to complete the deliverables that will be required of each office. The due dates are quickly approaching.

III. Each office will need to complete the following activities:

2) **Due Date: March 28, 2011 / Deliverable: Enter resources in to BFS.**

(b)(5)

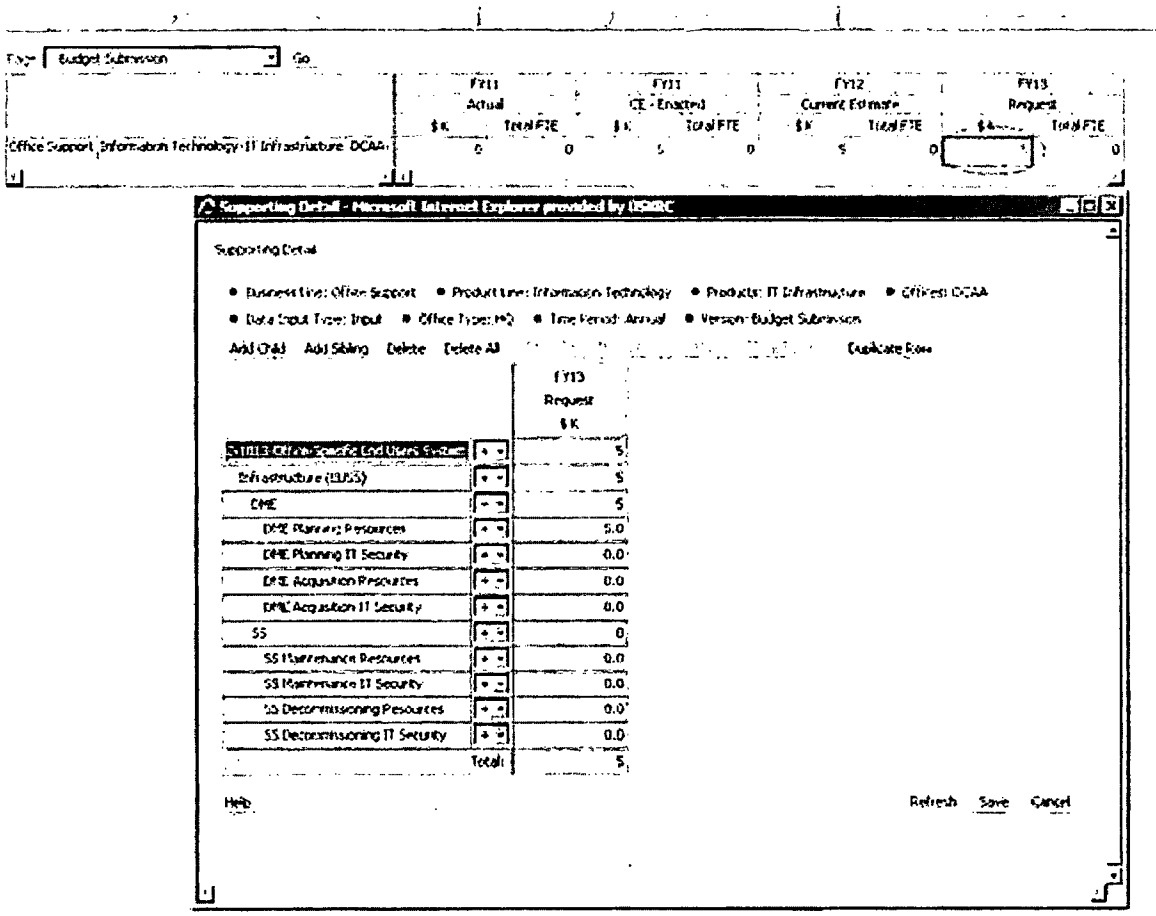
If you need to make changes to FY 12 CE, you must send me an email stating what change needs to be made, the justification, and the "from" and "to" products.

3) **Due Date: March 28, 2010 / Deliverable: Product Line Summary Template**. Each office is required to complete its section of the Product Line Summary template for your **Policy Support products only**. I will consolidate all office responses in to one document. This document will be used by the CFO to present your FY 2013 budget request during the Work-In-Progress meetings to be held towards the end of April. For your convenience, I have attached a copy of the Policy Support Product Line Summary Template that I have populated with the base budget text from last year's Product Line Summary. You can either provide entirely new text or modify the existing narrative. Please highlight your changes.

IV. There are a few remaining items that will also need to be completed by each office:

3) **Exhibit 53 Data.** BFS has now been populated with Ex. 53 details. The details are located in the supporting detail function of BFS within each relevant IT product, i.e., IT Infrastructure and Mission IT. (Please see screenshot). The template shown below will need to be completed, as per OIS' IT/IM instructions that are available at the following link: IT/IM Guidance.

   Several webinars were held the week of March 7, showing offices how to use the supporting detail feature of BFS. If you were unable to attend one of these webinars, another one is scheduled for this week (week of March 14). Additionally, either Jeff Sheldon (BFS administrator) or I are available to come to your desk if you have any questions, or would like another demonstration. Please direct any questions pertaining to the definitions within the template (DME, SS, etc.) to the OIS contact - Marna Dove at 301-4105-5858.



4) **Applicable SRMs.** This form will soon be located on the FY 13 Budget SharePoint site. I will send a separate message with the due date and file location.

5) **(OIP Only) Commission Travel and Official Representation of Funds.** This form will soon be located on the FY 13 Budget SharePoint site. I will send a separate message with the due date and file location.

Please do not hesitate to contact me if you have questions (or need help) concerning anything listed above.

Regards,

Heather L. Murray
Sr. Program Analyst
Budget Analysis Branch/DPB/OCFO
Tel: 301-415-0679
e-mail: heather.murray@nrc.gov

From: Murray, Heather
To: Decker, David; Hayden, Elizabeth; Jacobs-Baynard, Elizabeth; Joosten, Sandy; Kasputys, Clare; McDevitt, Joan; Poole, Brooke; Shnayder, Yana; Warner, MaryAnn
Subject: RE: UPDATE: FY 2012 PBPM Policy Support Product Line
Date: Tuesday, March 15, 2011 5:03:46 PM

Hopefully, this will be the last update to the instructions below. (b)(5)
(b)(5)

Please do not hesitate to contact me if you need assistance or clarifications.

Regards,
Heather L. Murray
Sr. Program Analyst
Budget Analysis Branch/DPB/OCFO
Tel: 301-415-0679
e-mail: heather.murray@nrc.gov

From: Murray, Heather
Sent: Tuesday, March 15, 2011 10:56 AM
To: Decker, David; Hayden, Elizabeth; Jacobs-Baynard, Elizabeth; Joosten, Sandy; Kasputys, Clare; McDevitt, Joan; Poole, Brooke; Shnayder, Yana; Warner, MaryAnn
Cc: Allwein, Russell; Smolik, George
Subject: UPDATE: FY 2012 PBPM Policy Support Product Line

I have made a few minor edits to the original materials. I have included only those updated items below. (b)(5)
(b)(5)

If you have any problems or questions, please let me know.

Thanks,
Heather

FY 2013 PBPM – Policy Support Offices

I. Each office will need to complete the following activities:

1) **Due Date: March 28, 2011 / Deliverable: Enter resources in to BFS.**
Please enter the FY 2013 base request; (b)(5)
(b)(5)

DJ/3

II. There are a few remaining items that will also need to be completed by each office:

1) **Applicable SRMs**. ~~This form will soon be located on the FY 13 Budget SharePoint site. I will send a separate message with the due date~~. This form can be accessed via the following SharePoint Link: Applicable SRMs. This information is due April 1, 2011.

2) **(OIP Only) Commission Travel and Official Representation of Funds.** ~~This form will soon be located on the FY 13 Budget SharePoint site. I will send a separate message with the due date.~~ This form can be accessed via the following SharePoint Link: Commission Travel and Rep Funds . This information is due April 1, 2011.

From: Murray, Heather
Sent: Monday, March 14, 2011 4:31 PM
To: Decker, David; Hayden, Elizabeth; Jacobs-Baynard, Elizabeth; Joosten, Sandy; Kasputys, Clare; McDevitt, Joan; Poole, Brooke; Shnayder, Yana; Warner, MaryAnn
Cc: Allwein, Russell; Smolik, George
Subject: FY 2012 PBPM Policy Support Product Line

FY 2013 PBPM – Policy Support Offices

Although the FY 2013 Budget Instructions and Commission SRM on FY 13 Planning Guidance have not yet been issued, I wanted to make sure there was enough time to complete the deliverables that will be required of each office. The due dates are quickly approaching.

III. Each office will need to complete the following activities:

2) **Due Date: March 28, 2011 / Deliverable: Enter resources in to BFS.**

(b)(5)

If you need to make changes to FY 12 CE, you must send me an email stating what change needs to be made, the justification, and the "from" and "to" products.

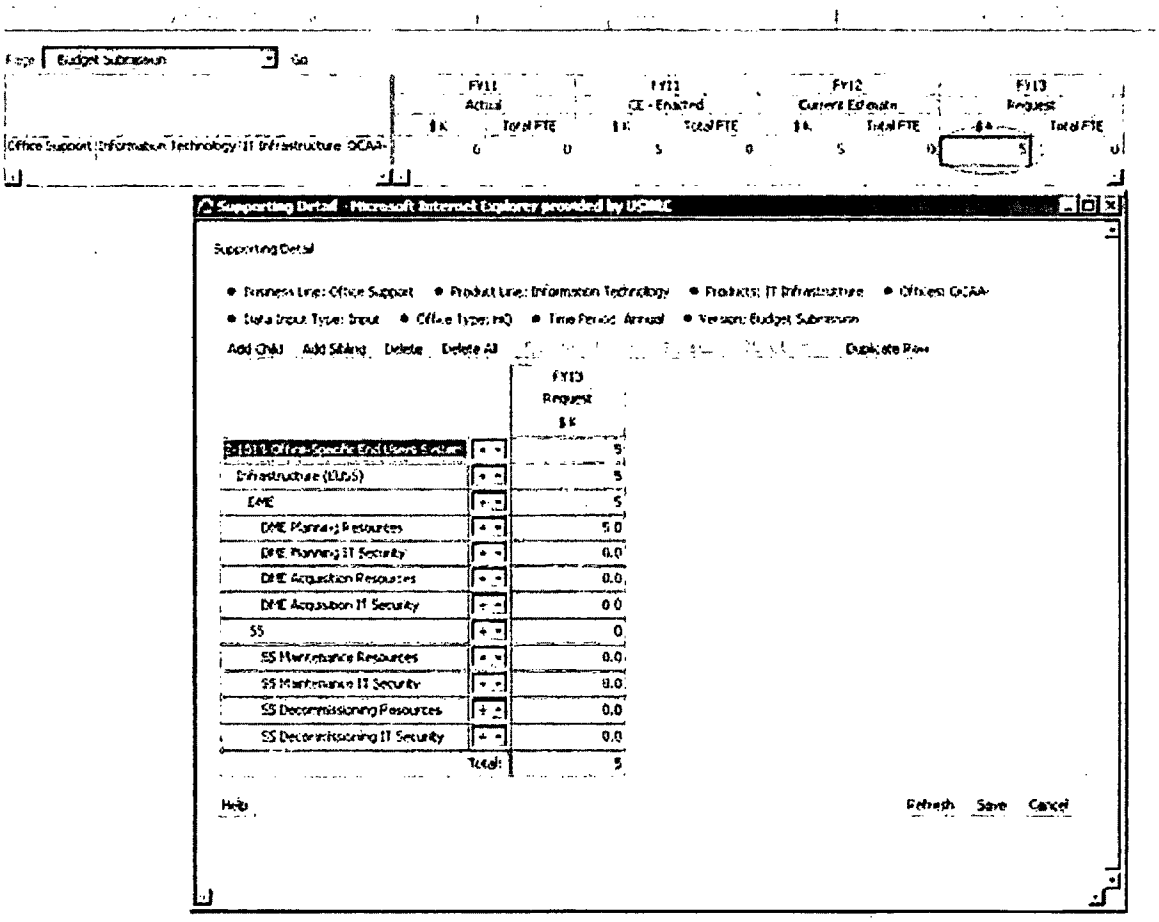
3) **Due Date: March 28, 2010 / Deliverable: Product Line Summary Template**. Each office is required to complete its section of the Product Line Summary template for your **Policy Support products only**. I will consolidate all office responses in to one document. This document will be used by the CFO to present your FY 2013 budget request during the Work-In-Progress meetings to be held towards the end of April. For your

convenience, I have attached a copy of the Policy Support Product Line Summary Template that I have populated with the base budget text from last year's Product Line Summary. You can either provide entirely new text or modify the existing narrative. Please highlight your changes.

IV. There are a few remaining items that will also need to be completed by each office:

3) **Exhibit 53 Data**. BFS has now been populated with Ex. 53 details. The details are located in the supporting detail function of BFS within each relevant IT product, i.e., IT Infrastructure and Mission IT. (Please see screenshot). The template shown below will need to be completed, as per OIS' IT/IM instructions that are available at the following link: IT/IM Guidance.

   Several webinars were held the week of March 7, showing offices how to use the supporting detail feature of BFS. If you were unable to attend one of these webinars, another one is scheduled for this week (week of March 14). Additionally, either Jeff Sheldon (BFS administrator) or I are available to come to your desk if you have any questions, or would like another demonstration. Please direct any questions pertaining to the definitions within the template (DME, SS, etc.) to the OIS contact - Marna Dove at 301-4105-5858.



4) **Applicable SRMs**. This form will soon be located on the FY 13 Budget SharePoint site. I will send a separate message with the due date and file location.

5) **(OIP Only) Commission Travel and Official Representation of Funds.** This form will soon be located on the FY 13 Budget SharePoint site. I will send a separate message with the due date and file location.

Please do not hesitate to contact me if you have questions (or need help) concerning anything listed above.

Regards,

Heather L. Murray
Sr. Program Analyst
Budget Analysis Branch/DPB/OCFO
Tel: 301-415-0679
e-mail: heather.murray@nrc.gov

From: LIA01 Hoc
Sent: Tuesday, March 15, 2011 7:39 PM
To: RST01 Hoc; Hoc, PMT12; PMT01 Hoc; LIA08 Hoc
Subject: FW: Updates: 4 reactor

-----Original Message-----
From: Trapp, James
Sent: Tuesday, March 15, 2011 7:33 PM
To: LIA01 Hoc; LIA07 Hoc; LIA02 Hoc; LIA08 Hoc; Harrington, Holly; McIntyre, David; Burnell, Scott; Taylor, Robert; Marshall, Jane; Gott, William; Grant, Jeffery
Subject: FW: Updates: 4 reactor

From: Ulses, Anthony
Sent: Tuesday, March 15, 2011 7:29 PM
To: Trapp, James
Subject: Fw: Updates: 4 reactor

Sent from NRC BlackBerry
Anthony Ulses
(b)(6)

----- Original Message -----
From: Cherry, Ronald C <CherryRC@state.gov>
To: Sano, Mikako <SanoMX@state.gov>; Russ Morales <russ@earthtabi.com>; Ulses, Anthony; Duncan, Aleshia D <DuncanAD@state.gov>
Sent: Tue Mar 15 19:14:47 2011
Subject: RE: Updates: 4 reactor

Thanks, Sano-san.

This email is UNCLASSIFIED

-----Original Message-----
From: Sano, Mikako
Sent: Wednesday, March 16, 2011 8:14 AM
To: 'Russ Morales'; anthony.ulses@nrc.gov; Duncan, Aleshia D; Cherry, Ronald C
Subject: Updates: 4 reactor

Wednesday, March 16, 2011

Fire Breaks Out Again At Fukushima's No. 4 Reactor: TEPCOTOKYO (Kyodo)--A fire broke out again early Wednesday at the troubled No. 4 reactor of the quake-hit Fukushima No. 1 nuclear power plant, Tokyo Electric Power Co. said.

Around 5:45 a.m., a worker at the plant saw flames on the fourth floor of the reactor's building, believed to be the same spot where an apparent hydrogen explosion caused a fire Tuesday morning in the wake of last Friday's magnitude 9.0 earthquake.

The plant operator said it has reported the incident to firefighters and local governments.

On Tuesday, the utility said water in a pool storing spent nuclear fuel rods at the reactor may be boiling and its level has dropped, exposing the rods, prompting the government to order Tokyo Electric to inject water into the pool ''as soon as possible to avert a major nuclear

DJ/4

disaster.''

Unless the spent fuel rods are cooled down, they could be damaged and emit radioactive substances.

Mikako Sano, Scientific Affairs Analyst
Environment, Science,Technology & Health Unit Economic Affairs Sec. The US Embassy Tokyo
(T) +81-3-3224-5494 (F) +81-3-3224-5229
E-mail: sanomx@state.gov

-----Original Message-----
From: Russ Morales [mailto:russ@earthtabi.com]
Sent: Tuesday, March 15, 2011 11:45 PM
To: anthony.ulses@nrc.gov; Duncan, Aleshia D; Cherry, Ronald C
Cc: Sano, Mikako
Subject: 4 reactor

Folks,,

Just watching the Japanese news at home now and they are reporting this:

They are looking at using fire-fighting helos to lift water and drop it into the pool at reactor 4. There is a hole in the roof and they can drop the water through this hole.

If this does not work, they will try to spray water with a firefighting truck through an 8 meter hole in wall of the #4 reactor to get water into the pool.

Both seem like a bit out of the box solutions and the seem reasonable to a lay-person like me--if they can maintain a high enough rate to overcome boil-off. The news report pointed out, however, how dangerous it would be for the helicopter crew.

Russ

From: Ma, May
Sent: Thursday, March 17, 2011 9:33 PM
To: ET03 Hoc
Cc: Golder, Jennifer; Rheaume, Cynthia; Abraham, Susan; Brown, Cris; Khan, Omar; McDermott, Brian; Allwein, Russell; Mitchell, Reggie; Williams-Johnson, Patrice; Allwein, Russell; Peterson, Gordon; McDermott, Brian
Subject: RE: Re: Ops Center Costs

Appreciate it, Tony!!! Omar will provide response to the second Q.

Take care.

May

From: ET03 Hoc
Sent: Thursday, March 17, 2011 9:27 PM
To: Ma, May
Cc: Golder, Jennifer
Subject: Re: Ops Center Costs

May,

Per the request regarding Ops Center costs in support of the Japan event, below is response to 3 questions specifically asked:

1 – How many people are in the Ops Center?

a. How many shifts? Number of Staff for each shift?

The Ops Center is currently operating on a 24-hr per day basis, 7-days per week, three 8-hr shifts: 7am to 3pm; 3pm to 11pm; 11pm to 7am. The current staffing level includes approximately 35 personnel per shift.

b. How long are we expecting to staff the Ops Center above and beyond the normal everyday level (e.g., 1-month, 2-months, or 3)?

The Ops Center will be staffed as long as we have NRC teams in Japan. We are currently looking at assembling a replacement team to send over to Japan to support thru April 9, 2011. At this time, a good estimate for staffing of the Ops Center at this level should be for a period of one month.

2 – Are there any increased IT costs associated with this situation? Increased contractor support? How much and how long?

Cris Brown, Chief, NSIR/PMDA/ITB, and her staff are working on putting together an estimate that should be forwarded to you sometime late this evening or early tomorrow morning.

3 – Any other administrative costs or technical costs? If so, what, how much, and how long?

DJ/5

Below is an excerpt from an E-mail to Jennifer Golder from Susan Bellosi on Wednesday, March 16, 2011 at 8:56 am regarding some Ops Center costs:

"Below are the costs that ADM has incurred to support activities in Japan:

(b)(5)

Please let me know if you need any additional information.

Tony

Matakas, Gina

From: Lew, David
Sent: Friday, March 18, 2011 11:01 AM
To: Dean, Bill
Subject: Region I Daily Update March 18th

A 9:30 am Office Director call to discuss relief of the team in Japan. Looking for replacing/staffing three key person this coming Monday (+/- one day) and then the rest next Thursday (3/24). Monday positions: (1) an Executive who can assist Chuck; (2) an individual with outstanding people skills and a technical background and (3) an individual .who has a very strong technically and good technical skills. The latter two is a replacement for Trapp. For Thursday positions: (1) and executive to replace Chuck, and (2) individuals with good people skills and expertise in infrared imaging, protective measures , bomb damage or structural. Don't need BWR experts and SRAs skill sets any longer

During the call, it appears that Todd Jackson will be one of the individuals fulfilling the protective measures expertise (we will give Todd a heads up). Pete Wilson's availability was raised. We indicated that there are ongoing priorities in the Region (particularly given that Chris has not reported) and that he would not be available, unless there are no other options for executives. There was a general consensus that the regions should not be tapped too hard and focus on safety and security of the US fleet.

Take away was for each office to re-look at staff availability/volunteers with the pre-requisite skill sets and send an email to Michele by noon today. Held a discussion with the technical Directors at 10:30 am. We will confirm the availability of Todd Jackson (note the date changed from starting 3/27 to 3/24). We would not offer another individual for the team. That said, if there is still some gaps after scrubbing the rest of the agency, we would look at re-prioritizing and shifting work. For example, Ray Lorson may be broken free, but if so only for about two weeks.

Reactors

- MS2 event report due to piping penetration being open upon removal of the halon bottle connection from piping into the control room envelop. Normal resident follow-up.
- PB2 50.72 for HPCI inoperability due void found in the discharge piping when swapping suction sources. Cause of void was a leaking relief valve. Routine resident follow-up.
- Salem 1 experiencing grassing in intake. This is the season for Salem to see grassing, so this is not unusual.
- UCS report highlights three Region 1 issues (IP2 refueling cavity leakage, PB scram time testing, and Calvert dual unit trip). Staff will prepared PAO and SLO on issues.
- (b)(5)
- NMP1 outage begins this weekend.
- Limerick Unit 1 generator taken off line for EHC and MSR work – will occur today (Friday)
- Hope Creek outage to address high SRV tail pipe temperatures – four day outage starting today.
- Lorson raised a question about the FED Day in May and whether the Japan events will come up and how we would approach. Directors Council will take up the issue of all public outreach and whether there needs to be an adjustment due to the Japan event.

Materials

DJ | 6

- From the Springfield DU issue, with MA, DOI, Army and NRC, no contamination was identified in MA surveys. Additionally, someone came forward from the public and indicated that he was involves in sweeping up and collecting metal from the tests. If there is any DU, it will be on MA or private property, therefore the issue will be under the purview of MA. MA plans to conduct onsite surveys in the near term.
- FL event report on a medical misadministration due to incorrect concentrations of Phosphorus-32. TX is involved as well. The FL company (Anazaohealth) incorrectly labeled the concentrations, and the TX licensee (Texas Southwestern Medical Center) did not perform confirmatory test on the concentration as required.
- Signed out enforcement actions for (1) Milone and MacBroom, (2) Pall Corp and (3) University of Maryland.

Corporate

- Pam attending the FEB General Membership Meeting

Recap of items that you already were aware of via emails.

- TMI Annual Assessment Meeting (AAM) postponed (BTW EOC is the internal meeting we had in Feb).
- Calvert 95001 exiting today. White findings will be closed
- New Building: locker rooms will be on the first floor.
- NY Governor request meeting with Chairman
- Notification of Meritorious awardees and non-selectees. DRM will draft an message to the Region I staff.
- EDO all-employee meeting today at 2 pm.

Dave

Matakas, Gina

From: Lew, David
Sent: Friday, March 18, 2011 5:12 PM
To: Dean, Bill
Subject: RE: Region I Daily Update March 17th

I thought it was more than a hint. ;-)

The all hands meeting went well. I addressed the staff afterwards to give the following messages:

- Congrats on meritorious awards (b)(6)
- Emphasis on Region I support – Trapp, Cook and Jackson (Japan) & Neil, Diane, McFadden and Reichard (HQs)
- Thanked others ... SLOs and all staff support
- Thanked all those volunteers but we have to balance the need for the Region to focus on safety and security of US fleet and materials.
- Expounded on a few things, including the shift from BWR experts and severe accident to infrared, explosion, structural and protective measures, which reflect the dire situation in Japan
- On the last item, that shift to protective measures caused Marie Miller to contact Ray Lorson after the meeting and express interest. She caught me in the hallway and said I was a good salesman.

Not many questions. Did have one question on the CR and was able to let folks know that the CR was extended to 4/8.

I will catch up with you on Monday on a couple of other things: (1) results of Don Jacksons review of the SRI performance issue and (2) Hope Creek security information for awareness (may be SGI)

From: Dean, Bill
Sent: Friday, March 18, 2011 4:57 PM
To: Lew, David
Subject: Re: Region I Daily Update March 17th

Thanks dave. And nice hint re: EOC!

How was the all hands mtg go?
Bill Dean
Regional Administrator
Region I, USNRC
Sent from NRC BlackBerry

From: Lew, David
To: Dean, Bill
Sent: Fri Mar 18 08:38:15 2011
Subject: Region I Daily Update March 17th

Bill,

Weekend coverage is as follows

- ORA: Dave
- DRP: Jim
- DRS: Sunil
- DNMS: Ray
- DRM: Pam

DJ/7

- PAO: Diane/Neil (both will be on call this weekend)
- SLO: Doug/Nancy (both will be on call this weekend)
- RDO: Don Jackson

Reactors

- PB2 50.72 for HPCI inoperability due void found in the discharge piping when swapping suction sources. Next steps: resident follow-up, understand extent of condition, review MC 0309/MD 8.3
- (b)(5)
- Limerick Unit 1 generator taken off line for EHC and MSR work
- Prepared for VY groundwater called in light of the Japan event (i.e., had SES participation), however, the Japan event did not come up. Not new info from the Thurs call.
- Hope Creek outage to address high SRV tail pipe temperatures
- Tom Joyce called to inform us of PSEG communications internal to its staff and outreach to local and state officials. Outreach positively received. Most licensee are reaching out at a local/state level while NEI is taking the lead on a national level. We are aware that other licensees have done the same, including Exelon, Entergy, NextEra (and perhaps more). Also, Exelon corporate has staff their EOC to facilitate communications.
- Draft TI to verify industry actions in response to the Japan event for comment. Our comments due COB Friday.
- Connecticut Commissioner of the Department of Environmental Protection had been scheduled to visit Millstone; however, the state had concerns with optics of the visit during the Japan event. As a result, they have asked Dominion to meet with the DEP Commissioner in their offices.
- Followup today with Geri Shapiro on IOUs from last call.
- OI closed a PB "failure to report arrest" issue. It was unsubstantiated.
- (b)(5)

Materials

- Another coordination call on the Springfield DU issue, with MA, DOI, Army and NRC. If there is any DU, it will be on MA or private property, therefore the issue will be under the purview of MA. MA plans to conduct onsite surveys in the near term.
- FL event report on a medical misadministration due to incorrect concentrations of Phosphorus-32. TX is involved as well. The FL company (Anazaohealth) incorrectly labeled the concentrations, and the TX licensee (Texas Southwestern Medical Center) did not perform confirmatory test on the concentration as required.
- (b)(5)

Corporate

- Pam attending the FEB General Membership Meeting

Recap of items that you already were aware of via emails.

- TMI Annual Assessment Meeting (AAM) postponed (BTW, EOC is the internal meeting we had in Feb).
- VY License Renewal issuance on Monday 3/21 – preparation for outreach including Vermont
- Calvert 95001 exiting today. White findings will be closed.
- New Building: locker rooms will be on the first floor.
- NY Governor request meeting with Chairman
- Notification of Meritorious awardees and non-selectees. DRM will draft an message to the Region I staff.

- EDO all-employee meeting today at 2 pm.

Dave

From: Woodward, Aleisha [mailto:WoodwardA@state.gov]
Sent: Saturday, March 19, 2011 9:41 AM
To: Spurlock, Kenneth R (TDY/MDAO); cemercha@bechtel.com; RMTPACTSU_ELNRC@ofda.gov; RST01 Hoc; inpoerc@inpo.org; Walsh, Cody C; Young, Joseph M; Cook, William; Joseph.Hughart@foh.hhs.gov; Hyland, Jason P; Kozal, Jason; LIA11 Hoc; (b)(6) (b)(6) (b)(6)
Cc: Bleich, Jeffrey L; cwrau@Bechtel.com; breilly@bechtel.com; dhammerl@bechtel.com; mfzeiger@bechtel.com; jvhart@bechtel.com; dmottola@bechtel.com
Subject: Re: URGENT-NOTICE TO STAND DOWN

Folks - I'm here at RAAF Pearce and they are pulling trucks back to get the stuff off the base and the C17 is planning to take off somewhere else. If this is not/not shut off we need to know ASAP!

Thanks.
Aleisha

This message was sent via Blackberry. Please forgive any typos or terseness.

From: Spurlock, Kenneth R (TDY/MDAO)
To: 'Merchant, Ned' <cemercha@bechtel.com>; RMTPACTSU_ELNRC@ofda.gov <RMTPACTSU_ELNRC@ofda.gov>; RST01.Hoc@nrc.gov <RST01.Hoc@nrc.gov>; inpoerc@inpo.org <inpoerc@inpo.org>; Walsh, Cody C; Young, Joseph M; william.cook@nrc.gov <william.cook@nrc.gov>; Hughart, Joseph (FOH) <Joseph.Hughart@foh.hhs.gov>; Hyland, Jason P; Kozal, Jason <Jason.Kozal@nrc.gov>; LIA11 Hoc <LIA11.Hoc@nrc.gov>; Pickett, Timothy LCDR PACOM, J46 (b)(6) (b)(6) (b)(6)
Cc: Bleich, Jeffrey L; Rau, Carl <cwrau@Bechtel.com>; Reilly, Brian (Power) <breilly@bechtel.com>; Hammerle, David <dhammerl@bechtel.com>; Zeiger, Mark <mfzeiger@bechtel.com>; Hart, James V <jvhart@bechtel.com>; Mottola, Dennis <dmottola@bechtel.com>
Sent: Sun Mar 20 00:35:47 2011
Subject: RE: URGENT-NOTICE TO STAND DOWN

All,
We are actively trying to get this worked out- what is the drop dead time before this is needs to be removed? If possible, please refrain from offloading if at all possible. We want to keep from jerking the Australian's around-as well as all others who have been engaged.

Respectfully,
Ken
Ken Spurlock
Captain, US Navy
Director, Navy Surface Programs
US Embassy, Tokyo
Embassy Task Force DSN 224-5541
03-3224-5541

DJ/8

This email is UNCLASSIFIED.

From: Merchant, Ned [mailto:cemercha@bechtel.com]
Sent: Saturday, March 19, 2011 10:27 PM
To: RMTPACTSU_ELNRC@ofda.gov; RST01.Hoc@nrc.gov; inpoerc@inpo.org; Walsh, Cody C; Young, Joseph M; william.cook@nrc.gov; Hughart, Joseph (FOH); Hyland, Jason P; Kozal, Jason; LIA11 Hoc; Pickett, Timothy LCDR PACOM, J46; Spurlock, Kenneth R (TDY/MDAO); (b)(6)
(b)(6)
Cc: Bleich, Jeffrey L; Rau, Carl; Reilly, Brian (Power); Hammerle, David; Zeiger, Mark; Hart, James V; Mottola, Dennis
Subject: URGENT-NOTICE TO STAND DOWN
Importance: High

To all:

We have been directed by USAID to cease all activities related to the shipment of material from Perth to Yokota AFB as follows:

I have issued the text below in a previous email and USAID has issued an email that the transport of equipment is not to occur. Therefore, all logistics associated with the move are to be halted.

"USAID will not, and cannot, authorize the funding above 750K for the total project. If any costs are above this cost, then justification needs to be made on the priority, acceptance by Japanese that it will definitely be used, and that other equipment in Japan is not available for use to meet the same need. In other words, the transport of equipment and support personnel is not to happen at this time. This would also include the procurement and transport of the 4 nozzles from Atlanta.

I have sent this direction to my Bechtel personnel in Australia and asked them to take immediate action to offload the material and await further direction.
If you are on distribution of this list, please send to the appropriate personnel.

Best Regards, Ned
"Quality is not an act, it is a habit"

Power Systems Company

TOSHIBA

TOSHIBA Corp. Power Systems Company
1-1-1, SHIBAURA, MINATO-KU, TOKYO 105-8001, JAPAN
Phone: +81-3-3457-3723
E-mail: Keisuke.kitsukawa@toshiba.co.jp

Document Transmittal

Export Control Number: PSN-2011-0413

Date: Mar. 19, 2011

To: NRC staff

(b)(4)

From:
Keisuke Kitsukawa
E-mail: Keisuke.kitsukawa@toshiba.co.jp
Technology Executive LWR System
Nuclear Energy System & Services Div.
TOSHIBA Corp. Power Systems Company

DJ/9

Power Systems Company

TOSHIBA

TOSHIBA Corp. Power Systems Company
1-1-1, SHIBAURA, MINATO-KU, TOKYO 105-8001, JAPAN
Phone: +81-3-3457-3723
E-mail: Keisuke.kitsukawa@toshiba.co.jp

Document Transmittal

Export Control Number: PSN-2011-0419

Date: Mar. 20, 2011

To: NRC staff

(b)(4)

From:
Keisuke Kitsukawa
E-mail: Keisuke.kitsukawa@toshiba.co.jp
Technology Executive LWR System
Nuclear Energy System & Services Div.
TOSHIBA Corp. Power Systems Company

From: James Powers [mailto:jpowers@tane.toshiba.com]
Sent: Sunday, March 20, 2011 12:17 PM
To: RST01 Hoc
Cc: Akio Shioiri; Shigeru Suzuki; Yoshihiro Naruse; keisuke kitsukawa
Subject: Fw: NRC Request for SFP Drawings for Units 1-3 Fukashima Nuclear Power Plant

We have provided on separate emails the requested information for the Fukushima Dai-ichi Unit 3 plant. We are unable to provide the requested drawings for Units 1 & 2 as these Units were not designed by Toshiba. Should you have additional questions, please do not hesitate to contact Mr. Kitsukawa, Technology Executive LWR Systems in Japan. I would also appreciate being copied on future correspondence to support communications.

Regards,

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Jim Powers
Vice President, Engineering Manager
Toshiba American Nuclear Energy
3545 Whitehall Park Drive, Suite 500
Charlotte, NC 28273
Blackberry (b)(6)
Office 704-548-7910
jpowers@tane.toshiba.com
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

----- Forwarded by James Powers/TOSHIBA-TANE on 03/20/2011 11:44 AM -----

From: Akio Shioiri/TOSHIBA-TANE

To: James Powers/TOSHIBA-TANE@TOSHIBA-TANE, Yoshihiro Naruse/TOSHIBA-TANE@TOSHIBA-TANE, Shigeru Suzuki/TOSHIBA-TANE@TOSHIBA-TANE

Date: 03/20/2011 11:05 AM

Subject: Fw: SFP Drawings for Units 1-3 Fukashima Nuclear Power Plant

---

----- Forwarded by Akio Shioiri/TOSHIBA-TANE on 03/20/2011 11:01 AM -----

From: <keisuke.kitsukawa@toshiba.co.jp>

To: <ashioiri@tane.toshiba.com>, <hiroshi6.sakamoto@toshiba.co.jp>

Date: 03/20/2011 10:56 AM

Subject: FW: SFP Drawings for Units 1-3 Fukashima Nuclear Power Plant

---

塩入Ｐ殿、坂本ＳＶＰ殿

ＮＲＣからの最終要求です。

****

㈱東芝　電力システム社

軽水炉技師長
TOSHIBA Corp. Power Systems Company
Technology Executive LWR System
橘川 敬介 Keisuke Kitsukawa
Tel : +81-3-3457-3723
Mail : Keisuke.kitsukawa@toshiba.co.jp
****

From: RST01B Hoc [mailto:RST01B.Hoc@nrc.gov]
Sent: Saturday, March 19, 2011 5:41 AM
To: hiroshi b.; kitsukawa keisuke(橘川 敬介 ㅁ電力社)
Cc: RST01 Hoc
Subject: FW: SFP Drawings for Units 1-3 Fukashima Nuclear Power Plant

Please send detailed cross-sectional geometry info on units 1-3 spent fuel pools for our structural guys. Reply to rst01 hoc@nrc.gov

Thanks.

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

From: RMTPACTSU_ELNRC [RMTPACTSU_ELNRC@ofda.gov]
Sent: Sunday, March 20, 2011 12:58 AM
To: RST01 Hoc; PMT01 Hoc; LIA11 Hoc
Subject: ACTION/?? -- FW: Calcium Bentonite - Relief Aid to Japan

Follow Up Flag: Follow up
Flag Status: Completed

Hello all,

I did not see a response to this request, and USAID still shows this as an open question. Does anyone have an idea of when we might be able to provide some feedback on this? (Please refer to the email string below.)

Thanks in advance for your help!

Cheer,
Leigh

From: RMTPACTSU_ELNRC
Sent: Saturday, March 19, 2011 11:52 AM
To: RST01 Hoc (RST01.Hoc@nrc.gov); PMT01 Hoc (PMT01.Hoc@nrc.gov); LIA11.Hoc@nrc.gov
Subject: Calcium Bentonite - Relief Aid to Japan

Please advise if this would be useful or needed. See below.

Thanks,
Michael I. Dudek

From: kevinjanejohnson@msn.com [mailto:kevinjanejohnson@msn.com] **On Behalf Of** KEVIN JANE JOHNSON
Sent: Saturday, March 19, 2011 11:30 AM
To: RMTPACTSU_ELC
Subject: RE: relief aid to Japan

Thank you for this information Mr. Gelman.

I am completely new to this and so know nothing of the correct procedure or protocol, if there be such.
Should I contact these Gentlemen directly? Should I contact some other person or persons in your Response Management Team to inform them about the availability of our materials?
I expect that time is of the essence in this matter and at this time I am not concerned with haggling over the price for our clay. I will make the initial effort to give our calcium bentonite to them, or into your Agency if this would be the better pathway, so that we might just expedite this and get it going.
Thank you again for your continued consideration and assistance-

Kevin R. Johnson

> Subject: RE: relief aid to Japan
> Date: Fri, 18 Mar 2011 22:40:51 -0400
> From: RMTPACTSU_ELC@ofda.gov
> To: kevinj@montanabentonite.com
>
> Dear Mr. Johnson:
>
> The following individuals have been identified as key contacts by the
> government of Japan:

DJ/10

>
> Ms. Setsuko Kawahara
> Director
> Humanitarian Assistance and Emergency Relief Division International
> Cooperation Bureau Ministry of Foreign Affairs
> Tel: + 81-3-5501-8359
> Email: setsuko.kawahara@mofa.go.jp
>
> Mr. Naoki Mitori
> Deputy Director
> Humanitarian Assistance and Emergency Relief Division International
> Cooperation Bureau Ministry of Foreign Affairs naoki.mitori@mofa.go.jp
> Tel: + 81-3-5501-8359
>
> Mr Yukio Yoshii
> Special Coordinator for Overseas Disaster Assistance Humanitarian
> Assistance and Emergency Relief Division International Cooperation
> Bureau MOFA, Japan yukio.yoshii@mofa.go.jp
> +81 3 5501 8359
>
> Best regards,
>
> Phil Gelman
> External Liaison Coordinator
> USAID Pacific Tsunami and Japan
> Earthquake Response Management Team
>
> -----Original Message-----
> From: kevinj@montanabentonite.com [mailto:kevinj@montanabentonite.com]
> Sent: Friday, March 18, 2011 11:09 AM
> To: Public Inquiries (LPA) (USAID)
> Subject: relief aid to Japan
>
> This form was filled out at:
> http://www.usaid.gov/public_inquiries.html
>
> User's name: Kevin Johnson
>
> Country: United States
> ----------
> Contact? Please Contact Me
>
> We have extended an offer to the energy ministry of Japan of supply of
> our calcium bentonite to them for suppression of the radiation leakage
> and also for treatment of the surely-to-come radiation poisoning of
> their people. Please assist us in making this connection. Please contact
> me directly so that I may explain further and we can begin to figure out
> a supply process. Thank you- Kevin R. Johnson cell phone: (b)(6)
> I'll be at our mine working today. If I can't hear the ring because of
> the equipment, I'll get back to you shortly. Thank you.

3/20/11
0:27:10 ET

Fukushima I Nuclear Power Plant

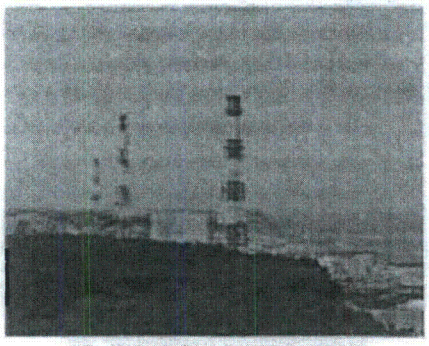
Coordinates: 37°25'22.7"N 141°01'58.5"E

From Wikipedia, the free encyclopedia

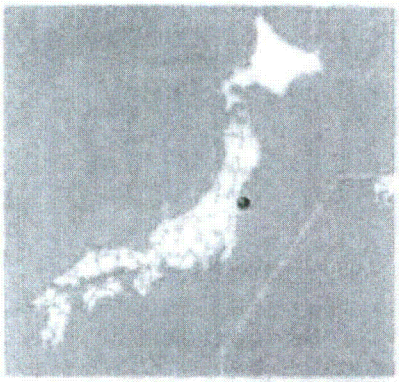
The **Fukushima I Nuclear Power Plant** (福島第一原子力発電所 *Fukushima Dai-Ichi Genshiryoku Hatsudensho*, Fukushima I NPP), often referred to as **Fukushima Dai-ichi** (*Dai-ichi* simply means *number 1*), is a nuclear power plant located in the town of Okuma in the Futaba District of Fukushima Prefecture, Japan, first commissioned in 1971. The plant consists of six boiling water reactors. These light water reactors[1] have a combined power of 4.7 GW, making Fukushima I one of the 15 largest nuclear power stations in the world. Fukushima I was the first nuclear plant to be constructed and run entirely by the Tokyo Electric Power Company (TEPCO). The plant suffered major damage from the 9.0 earthquake and subsequent tsunami that hit Japan on March 11, 2011, disabling the reactor cooling systems and triggering a widespread evacuation surrounding the plant.

The Fukushima II Nuclear Power Plant, 11.5 kilometres (7.1 mi) to the south, is also run by TEPCO.

Fukushima I Nuclear Power Plant



The Fukushima I NPP in 2002



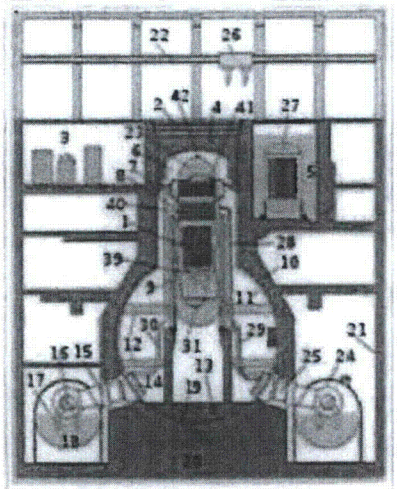
Location of Fukushima I Nuclear Power Plant

Country	Japan
Locale	Ōkuma, Fukushima
Coordinates	37°25'22.7"N 141°01'58.5"E
Status	Damaged, out of service
Construction began	July 25, 1967
Commission date	March 26, 1971
Operator(s)	Tokyo Electric Power Company
Constructor(s)	Kajima
Reactor information	
Reactors operational	1 × 460 MW (Unit 1 damaged) 4 × 784 MW (Units 2, 3,

Contents

Reactors

The reactors for Units 1, 2, and 6 were supplied by General Electric, those for Units 3 and 5 by Toshiba, and Unit 4 by Hitachi. All six reactors were designed by General Electric.[2] Architectural design for General Electric's units was done by Ebasco. All construction was done by Kajima.[3] Since September 2010, Unit 3 has been fueled by mixed-oxide (MOX) fuel, rather than the low enriched uranium (LEU) used in the other reactors.[4][5] Units 1–5 were built with Mark I type (light bulb torus) containment structures, Unit 6 has a Mark II type (over/under) containment structure.[6][7][8]



Cross-section sketch of a typical BWR Mark I containment, as used in Units 1 to 5 with drywell (11), wetwell (18), spent fuel area (5)

Unit 1 is a 460 MW boiling water reactor (BWR-3) constructed in July 1967. It commenced commercial electrical production on March 26, 1971, and was initially scheduled for shutdown in early 2011.[9] In February 2011, Japanese regulators granted an extension of ten years for the continued operation of the reactor.[10] It was damaged during the 2011 Tōhoku earthquake and tsunami.[11]

Unit 1 was designed for a peak ground acceleration of 0.18 g (1.74 m/s^2) and a response spectrum based on the 1952 Kern County earthquake.[6] All units were inspected after the 1978 Miyagi earthquake when the ground acceleration was 0.125 g (1.22 m/s^2) for 30 seconds, but no damage to the critical parts of the reactor was discovered.[6] However the 2011 Sendai earthquake recorded a ground acceleration of 0.35 g (3.43 m/s^2) near the epicenter.[12]

	and 4 damaged; Unit 5 experiencing cooling problems) 1 × 1,100 MW (Unit 6 experiencing cooling problems)
Reactors planned	2 × 1,380 MW
Reactor type(s)	Boiling Water Reactor
Reactor supplier(s)	General Electric Toshiba Hitachi

Power generation information

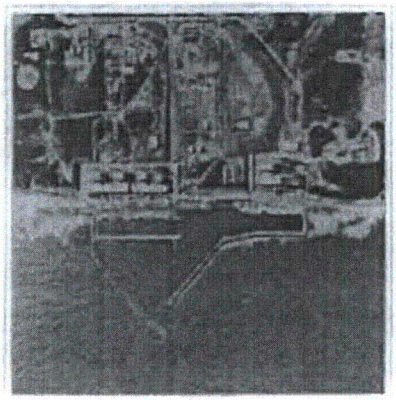
Installed capacity	4,696 MW
Maximum capacity	7,456 MW
Annual generation	29,891 GW·h
Net generation	877,692 GW·h

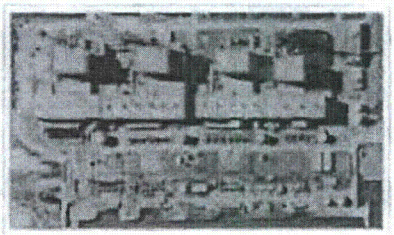
Website

http://www.tepco.co.jp/nu/f1-np/press_f1/2010/2010-j.html

As of March 14, 2011

Webcam (http://www.tepco.co.jp/nu/f1-np/camera/index-j.html)





Closeup of Units 4,3,2 and 1.

Aerial view of the Fukushima I plant area in 1975, showing sea walls and completed reactors showing, reading left (South) to right (North), Units 4,3,2,1 and 5, with Unit 6, on the right, then under construction.

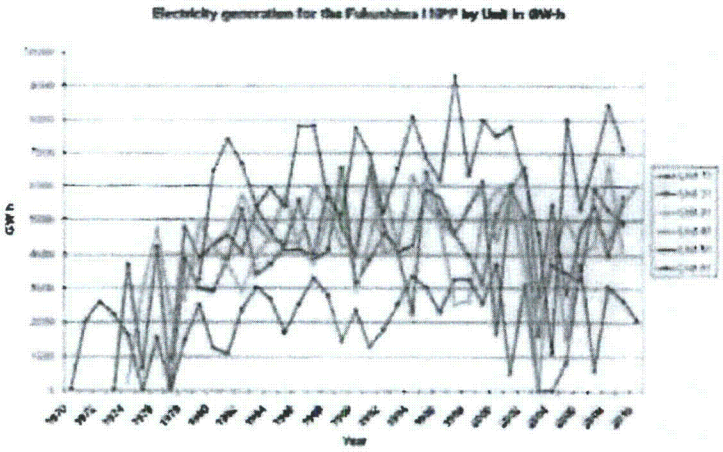
Reactor data

Unit	Type [13]	Start construction [14]	First criticality [14]	Commercial operation[14]	Electric power [14]	Reactor supplier [13]	Architecture [3]	Construction [3]	Fuel
Fukushima I – 1	BWR-3	July 25, 1967	October 10, 1970	March 26, 1971	460 MW	General Electric	Ebasco	Kajima	LEU
Fukushima I – 2	BWR-4	June 9, 1969	May 10, 1973	July 18, 1974	784 MW	General Electric	Ebasco	Kajima	LEU
Fukushima I – 3	BWR-4	December 28, 1970	September 6, 1974	March 27, 1976	784 MW	Toshiba	Toshiba	Kajima	MOX [4]
Fukushima I – 4	BWR-4	February 12, 1973	January 28, 1978	October 12, 1978	784 MW	Hitachi	Hitachi	Kajima	
Fukushima I – 5	BWR-4	May 22, 1972	August 26, 1977	April 18, 1978	784 MW	Toshiba	Toshiba	Kajima	
Fukushima I – 6	BWR-5	October 26, 1973	March 9, 1979	October 24, 1979	1,100 MW	General Electric	Ebasco	Kajima	
Fukushima I – 7 (planned) [15]	ABWR	April 2012		October 2016	1,380 MW				
Fukushima I – 8 (planned) [15]	ABWR	April 2012		October 2017	1,380 MW				

Operating history

The plant reactors came online from 1970 through 1979. From the end of 2002 through 2005, the reactors were among those shut down for a time for safety checks due to the TEPCO data falsification scandal.[16][17]

Electricity generation for the Fukushima I NPP by Unit in GW·h[14]



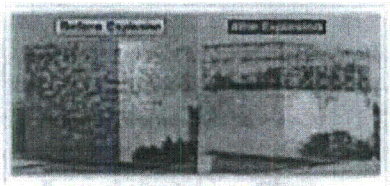
Electricity generation for the Fukushima I

Year	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
1970	60.482					
1971	2024.3					
1972	2589.1					
1973	2216.8	5.949				
1974	1629.7	3670.1	284.7			
1975	0	622.1	2961.8			
1976	1563.9	4191.4	4807.1			
1977	0	49.7	2171.1		875.1	
1978	1497.6	3876.3	2753.7	3163.2	4806.7	
1979	2504.4	2976	4916.3	3917.4	3898.6	3235.6
1980	1249.5	2889	4287	4317	4282.6	6441.1
1981	1084.8	3841.8	3722.8	4667.5	4553.9	7418.6
1982	2355	5290.2	2886.8	5734.7	4061.3	6666.5
1983	3019.5	3422.7	4034	4818.2	5338.8	5387.8
1984	2669.761	3698.718	4497.326	4433.166	4691.482	5933.242
1985	1699.287	4266.285	5798.641	4409.031	4112.429	5384.802
1986	2524.683	5541.101	4234.196	4315.241	4157.361	7783.537
1987	3308.888	3851.078	3748.839	5964.048	3995.012	7789.201
1988	2794.464	4101.251	5122.991	5309.892	5952.712	5593.058
1989	1440.778	6516.393	5706.694	4232.648	4766.535	5128.362
1990	2352.405	3122.761	2919.548	4273.767	3956.549	7727.073
1991	1279.986	3853.054	4491.022	6483.384	6575.818	6948.662
1992	1794.061	4568.531	6098.742	4082.747	4841.234	5213.607
1993	2500.668	4186.704	4204.301	4206.577	4059.685	6530.932
1994	3337.532	2265.961	4202.304	6323.277	4246.206	8079.391
1995	3030.829	6396.469	5966.533	5485.662	5878.681	6850.839
1996	2298.589	5192.318	4909.655	4949.891	5666.866	6157.765
1997	3258.913	4618.869	2516.651	4556.81	4609.382	9307.735
1998	3287.231	3976.16	2632.682	5441.398	5369.912	6328.985
1999	2556.93	3158.382	5116.09	5890.548	6154.135	7960.491
2000	3706.281	5167.247	5932.485	4415.901	1647.027	7495.577
2001	487.504	5996.521	5637.317	5858.452	5905.13	7778.874
2002	3120.2	5101.018	3567.314	4687.718	6590.488	6270.918
2003	0	1601.108	2483.557	0	2723.76	4623.905
2004	0	3671.49	3969.674	4728.987	5471.325	1088.787
2005	851.328	3424.939	5103.85	1515.596	2792.561	7986.451
2006	3714.606	3219.494	4081.932	4811.409	4656.9	5321.767

2007	610.761	5879.862	4312.845	5050.607	5389.565	6833.522
2008	3036.562	5289.599	6668.839	4410.285	3930.677	8424.526
2009	2637.414	4903.293	4037.601	5462.108	5720.079	7130.99
2010	2089.015			6040.782		

Nuclear disaster of 2011

Main article: Fukushima I nuclear accidents



Before and after images of the Unit 1 from March 12, 2011, which suffered a hydrogen explosion.

On March 11, 2011 an earthquake categorised as 9.0 M_W on the moment magnitude scale occurred at 14:46 Japan Standard Time (JST) off the northeast coast of Japan. Reactors 4, 5 and 6 had been shut down prior to the earthquake for planned maintenance.[18][19] The remaining reactors were shut down automatically after the earthquake, but the subsequent tsunami flooded the plant, knocking out emergency generators needed to run pumps which cool and control the reactors. The flooding and earthquake damage prevented assistance being brought from elsewhere. Over the following days there was evidence of partial nuclear meltdowns in reactors 1, 2 and 3; hydrogen explosions destroyed the upper cladding of the building housing reactors 1 and 3; an explosion damaged reactor 2's containment; and severe fires broke out at reactor 4.

The Japanese authorities rated the events at reactors 1, 2 and 3 as a level 5 (Accident With Wider Consequences) on the International Nuclear Event Scale, while the events at reactor 4 were placed at level 3 (Serious incident).

See also

- 2011 Japanese nuclear accidents
- List of boiling water reactors

References

1. ^ "Tokyo Electric Power Co. Fukushima Daiichi Nuclear Power Station" (http://www2.jnes.go.jp/atom-db/en/general/atomic/ke02a13/info_f.html) . jnes.go.jp. http://www2.jnes.go.jp/atom-db/en/general/atomic/ke02a13/info_f.html. Retrieved March 17, 2011.
2. ^ "General Electric-designed reactors in Fukushima have 23 sisters in U.S" (http://openchannel.msnbc.msn.com/_news/2011/03/13/6256121-general-electric-designed-reactors-in-fukushima-have-23-sisters-in-us) . MSNBC. March 13, 2011. http://openchannel.msnbc.msn.com/_news/2011/03/13/6256121-general-electric-designed-reactors-in-fukushima-have-23-sisters-in-us. Retrieved March 14, 2011.
3. ^ a b c "Nuclear Reactor Maps: Fukushima-Daiichi" (http://nuctrans.org/Nuc_Trans/locations/daiichi/daiichi.htm) . Council for Security Cooperation in the Asia Pacific. http://nuctrans.org/Nuc_Trans/locations/daiichi/daiichi.htm. Retrieved March 14, 2011.
4. ^ a b "Fukushima to Restart Using MOX Fuel for First Time" (http://nuclearstreet.com/nuclear_power_industry_news/b/nuclear_power_news/archive/2010/09/17/fukushima-to-restart-using-mox-fuel-for-first-time-091704.aspx) . *Nuclear Street*. September 17, 2010. http://nuclearstreet.com/nuclear_power_industry_news/b/nuclear_power_news/archive/2010/09/17/fukushima-to-restart-using-mox-fuel-for-first-time-091704.aspx. Retrieved March 12, 2011.
5. ^ "Third Japanese reactor to load MOX" (http://www.world-nuclear-news.org/newsarticle.aspx?id=28211) . *World Nuclear News*. August 10, 2010. http://www.world-nuclear-news.org/newsarticle.aspx?id=28211. Retrieved March 12, 2011.

6. ^ [a b c] Brady, A. Gerald (1980). Ellingwood, Bruce. ed. *An Investigation of the Miyagi-ken-oki, Japan, earthquake of June 12, 1978* (http://books.google.com/books?id=qEuWntnoZzYC&pg=PA123) . NBS special publication. **592**. United States Department of Commerce, National Bureau of Standards. p. 123. http://books.google.com/books?id=qEuWntnoZzYC&pg=PA123.
7. ^ "Fact Sheet on Fukushima Nuclear Power Plant" (http://www.nirs.org/reactorwatch/accidents/Fukushimafactsheet.pdf) . Nuclear Information and Resource Service. March 13, 2011. http://www.nirs.org/reactorwatch/accidents/Fukushimafactsheet.pdf. Retrieved March 13, 2011.
8. ^ Sandia National Laboratories (July 2006). *Containment Integrity Research at Sandia National Laboratories - An Overview* (http://www.nrc.gov/reading-rm/doc-collections/nuregs/contract/cr6906/cr6906.pdf) . U.S. Nuclear Regulatory Commission. NUREG/CR-6906, SAND2006-2274P. http://www.nrc.gov/reading-rm/doc-collections/nuregs/contract/cr6906/cr6906.pdf. Retrieved March 13, 2011.
9. ^ "Fukushima Daiichi Information Screen" (http://www.icjt.org/npp/podrobnosti.php?drzava=14&lokacija=818) . Icjt.org. http://www.icjt.org/npp/podrobnosti.php?drzava=14&lokacija=818. Retrieved March 15, 2011.
10. ^ Yamaguchi, Mari; Donn, Jeff (March 12, 2011). "Japan quake causes emergencies at 5 nuke reactors" (http://www.forbes.com/feeds/ap/2011/03/12/general-as-japan-quake-power-plant_8352691.html) . *Forbes*. http://www.forbes.com/feeds/ap/2011/03/12/general-as-japan-quake-power-plant_8352691.html. Retrieved March 12, 2011.
11. ^ "Nuke database system: fukushima daiichi-1" (http://www.icjt.org/plants/uni/a/uni194a.html) . ICJT Nuclear Training Centre. http://www.icjt.org/plants/uni/a/uni194a.html. Retrieved March 12, 2011.
12. ^ Lavelle, Michelle (March 14, 2011). "Japan Battles to Avert Nuclear Power Plant Disaster" (http://news.nationalgeographic.com/news/energy/2011/03/110314-japan-nuclear-power-plant-disaster/) . *National Geographic News*. http://news.nationalgeographic.com/news/energy/2011/03/110314-japan-nuclear-power-plant-disaster/. Retrieved March 16, 2011.
13. ^ [a b] "Reactors in operation" (http://www-pub.iaea.org/MTCD/publications/PDF/CNPP2010_CD/pages/AnnexII/tables/table2.htm) . IAEA. December 31, 2009. http://www-pub.iaea.org/MTCD/publications/PDF/CNPP2010_CD/pages/AnnexII/tables/table2.htm. Retrieved March 12, 2011.
14. ^ [a b c d e] "Japan: Nuclear Power Reactors" (http://www.iaea.org/cgi-bin/db.page.pl/pris.powrea.htm?country=JP) . *Power Reactor Information System - PRIS*. IAEA. http://www.iaea.org/cgi-bin/db.page.pl/pris.powrea.htm?country=JP. Retrieved March 14, 2011.
15. ^ [a b] "Nuclear Power in Japan" (http://www.world-nuclear.org/info/inf79.html) . World Nuclear Association. February 24, 2011. http://www.world-nuclear.org/info/inf79.html. Retrieved March 12, 2011.
16. ^ "Heavy fallout from Japan nuclear scandal" (http://archives.cnn.com/2002/BUSINESS/asia/09/02/japan.tepco/index.html) . CNN. September 2, 2002. http://archives.cnn.com/2002/BUSINESS/asia/09/02/japan.tepco/index.html. Retrieved March 15, 2011.
17. ^ Cooke, Stephanie (2009). *In Mortal Hands: A Cautionary History of the Nuclear Age*. Bloomsbury Publishing. p. 388. ISBN 9781596916173.
18. ^ Black, Richard. "Reactor breach worsens prospects" (http://www.bbc.co.uk/news/science-environment-12745186) . BBC News. http://www.bbc.co.uk/news/science-environment-12745186. Retrieved March 17, 2011.
19. ^ Biela Liwag. "Government Scientists on Japan Nuke Meltdown "No need to worry"" (http://www.noypi.ph/index.php/nation/3295-government-scientists-on-japan-nuke-meltdown-no-need-to-worry.html) . Noypi.ph. http://www.noypi.ph/index.php/nation/3295-government-scientists-on-japan-nuke-meltdown-no-need-to-worry.html. Retrieved March 14, 2011.

External links

- Official site Tokyo Electric Company 東京電力・福島第一原子力発電所 (http://www.tepco.co.jp/nu/f1-np/index-j.html) **(Japanese)**
- TEPCO News (http://www.tepco.co.jp/en/press/corp-com/release/index-e.html) , Tokyo Electric Power Company **(English)**
- TEPCO Webcam showing Fukushima I Nuclear Power Plant (http://www.tepco.co.jp/nu/f1-np/camera/index-j.html)
- Archived photo (http://www.panoramio.com/photo/46503912) . Units 1–4 can be seen from left to right.

Retrieved from "http://en.wikipedia.org/wiki/Fukushima_I_Nuclear_Power_Plant"

Categories: 1967 establishments in Japan | 2011 Japanese nuclear incidents and accidents | Fukushima Prefecture | Nuclear power stations in Japan | Tōhoku region

From: Nakanishi, Tony
To: Brown, Michael; RST01 Hoc
Subject: RE: Spent Fuel Casks??
Date: Sunday, March 20, 2011 9:04:50 PM

Mike,

During a meeting with NISA, a JNES engineer stated that all SF casks at Fukushima reside in a building which is apparently intact. The casks themselves are vertical casks manufactured by Hitachi-Zosen (Hitachi Ship building).

Please let me know if you have additional questions.

Tony Nakanishi (b)(6)

From: Devercelly, Richard
Sent: Sunday, March 20, 2011 8:58 PM
To: Nakanishi, Tony
Subject: FW: Spent Fuel Casks??

From: RST08 Hoc
Sent: Saturday, March 19, 2011 3:34 AM
To: Devercelly, Richard; Cook, William
Subject: Spent Fuel Casks??

Rick and/or Bill,

Has anybody looked at what is the status of the Spent Fuel Casks that are at Fukushima?

Also do we know if they are Vertical or Horizontal casks? There was a question about the vent maybe being plugged.

Just wondering, this is a low priority.

Thanks,

Mike Brown
Reactor Safety Team.

DJ/11

From: James Powers [mailto:jpowers@tane.toshiba.com]
Sent: Sunday, March 20, 2011 11:47 AM
To: RST01 Hoc
Cc: Akio Shioiri; Shigeru Suzuki; Yoshihiro Naruse; keisuke kitsukawa
Subject: Fw: Remaining drawings related to the spent fuel pool - password

The email below provides the password for the requested structural drawings of the spent fuel pool and rack for Fukushima 3. It appears that our initial response email address was not correct, and we apologize for the delay. Should you have any questions, please do not hesitate to contact Mr. Kitsukawa, Technology Executive LWR Systems in Japan. I would appreciate being copied on future correspondence to support communications.

Regards,

Jim Powers
Vice President, Engineering Manager
Toshiba American Nuclear Energy
3545 Whitehall Park Drive, Suite 500
Charlotte, NC 28273
Blackberry (b)(6)
Office 704-548-7910
jpowers@tane.toshiba.com

---- Forwarded by James Powers/TOSHIBA-TANE on 03/20/2011 11:41 AM ----

From: Akio Shioiri/TOSHIBA-TANE
To: James Powers/TOSHIBA-TANE@TOSHIBA-TANE, Shigeru Suzuki/TOSHIBA-TANE@TOSHIBA-TANE, Yoshihiro Naruse/TOSHIBA-TANE@TOSHIBA-TANE
Date: 03/20/2011 11:04 AM
Subject: Fw: Remaining drawings related to the spent fuel pool

---

---- Forwarded by Akio Shioiri/TOSHIBA-TANE on 03/20/2011 11:00 AM ----

From: <keisuke.kitsukawa@toshiba.co.jp>
To: <ashioiri@tane.toshiba.com>, <hiroshi6.sakamoto@toshiba.co.jp>
Date: 03/20/2011 10:49 AM
Subject: FW: Remaining drawings related to the spent fuel pool

---

Password

-----Original Message-----
From: nakajiyo katsuhiko(中条 克彦 o原子力□原O技o原O P 4)
Sent: Sunday, March 20, 2011 10:54 AM

DJ/12

To: rst01
Cc: kitsukawa keisuke(橘川 敬介 □電力社)
Subject: FW: Remaining drawings related to the spent fuel pool

NRC staff,

Here is the file password : (b)(6)

Best regards,

****
Katsuhiko NAKAJOH
Nuclear Energy System & Services Div.
TOSHIBA CORPORATION
Tel : +81-3-3457-3757
Fax : +81-3-5444-9194
Cell : (b)(6)
E-mail : katsuhiko.nakajiyo@toshiba.co.jp
****

差出人: nakajiyo katsuhiko(中条 克彦 o原子力□原O技o原OP4)
送信日時: 2011年3月20日 10:47
宛先: rst01
CC: kitsukawa keisuke(橘川 敬介 □電力社)
件名: Remaining drawings related to the spent fuel pool

NRC staff,

Attached are the remaining drawings that you requested in the email sent on March 18, 2011.
As I mentioned in the previous email, if you have any questions/comments, please contact Mr. Kitsukawa directly by email.
File password will be sent to you later.

Thank you,

****
Katsuhiko NAKAJOH
Nuclear Energy System & Services Div.
TOSHIBA CORPORATION
Tel : +81-3-3457-3757
Fax : +81-3-5444-9194
Cell : (b)(6)
E-mail : katsuhiko.nakajiyo@toshiba.co.jp
****

差出人: nakajiyo katsuhiko(中条 克彦 o原子力□原O技o原OP4)
送信日時: 2011年3月19日 11:46

宛先: rst01
CC: kitsukawa keisuke(橘川 敬介 □電力社)
件名: FW: Drawings related to the spent fuel pool and rack (1F-3)

Dear NRC staff,

I am sending you this email again, just in case you did not receive the first one.

Thank you.

Best regards,

****
Katsuhiko NAKAJOH
Nuclear Energy System & Services Div.
TOSHIBA CORPORATION
Tel : +81-3-3457-3757
Fax : +81-3-5444-9194
Cell : (b)(6)
E-mail : katsuhiko.nakajiyo@toshiba.co.jp
****

差出人: nakajiyo katsuhiko(中条 克彦 o原子力□原O技o原ＯＰ４)
送信日時: 2011年3月19日 11:33
宛先: rst01hoc@nrc.gov
CC: kitsukawa keisuke(橘川 敬介 □電力社)
件名: Drawings related to the spent fuel pool and rack (1F-3)

Dear NRC staff,

According to the NRC's first requirement, I am sending this written response.
Please find the attached files.
File password will be sent to you separately by email soon.

Should you have any questions or comments, please contact Mr. Kitsukawa directly by email.

Thank you.

Sincerely,

****
Katsuhiko NAKAJOH
Nuclear Energy System & Services Div.
TOSHIBA CORPORATION
Tel : +81-3-3457-3757
Fax : +81-3-5444-9194
Cell : (b)(6)
E-mail : katsuhiko.nakajiyo@toshiba.co.jp

****

(b)(5)

(b)(5)

DJ/13

(b)(5)

(b)(5)

(b)(5)

(b)(5)

(b)(5)

(b)(5)

(b)(5)

(b)(5)

(b)(5)

(b)(5)

(b)(5)

(b)(5)

(b)(5)

(b)(5)

(b)(5)

(b)(5)

(b)(5)

(b)(5)

(b)(5)

(b)(5)

(b)(5)

(b)(5)

(b)(5)

(b)(5)

(b)(5)

(b)(5)

(b)(5)

(b)(5)

(b)(5)

(b)(5)

(b)(5)

(b)(5)

From: Merchant, Ned [mailto:cemercha@bechtel.com]
Sent: Monday, March 21, 2011 7:01 AM
To: Rau, Carl; Albert, Craig; Rogers, Ed; Hughes, Michael C (BNI OPS); Reilly, Brian (Power); Thomas, Eugene; Cook, William; RST01 Hoc; inpoerc@inpo.org; Harris, Jeffrey W CIV PACOM, J4; Whitney, Andrew L Civ USAF PACAF 374 CONS/CD; Grana, Brian T. Maj USMC
Cc: Hammerle, David; Zeiger, Mark; Exton, Bob
Subject: FW: C-17 #2 is wheels up; C-17 #1 to depart at 0300 local

FYI. Good news!!!!

Best Regards, Ned
"Quality is not an act, it is a habit"

-----Original Message-----
From: Hart, James V
Sent: Monday, March 21, 2011 5:54 AM
To: Merchant, Ned; Sims, Kelvin D
Subject: Fw: C-17 #2 is wheels up; C-17 #1 to depart at 0300 local

Absolutely fantastic news

----- Original Message -----
From: Grana, Brian T. Maj USMC [mailto: (b)(6)
Sent: Monday, March 21, 2011 06:48 PM
To: (b)(6)
(b)(6)

DJ/14

(b)(6)

Subject: C-17 #2 is wheels up; C-17 #1 to depart at 0300 local

ALCON,

From, Ms Woodward.

C-17 #2 went wheels up at 1835 local, with the three civilian technicians aboard. RAAF Pearce has sent the loadplan to Aussie Air Mobility Command, which will forward it to USFJ.

C-17 #1 - The replacement part has arrived at RAAF Pearce and is being installed. Estimated departure is March 22 0300 local with a probable refueling stop in Darwin. Air Mobility Command has this loadplan as well and will forward to USFJ.

Aleisha Woodward
Consul General
U.S. Consulate General, Perth

-----Original Message-----
From: Lavelle, Timothy [mailto:tjlavell@Bechtel.com]
Sent: Monday, March 21, 2011 6:47 PM
To: (b)(6)

(b)(6)

Subject: Re: Update: C-17 #2 to depart Perth in 60-90 minutes

ANDREW CHINNERY: please respond to all copied with the RAAF load plan for the two aircraft.

Kane: please follow up this e-mail with a call to Warrant Officer Chinnery to request his support.

Tks
Tim LaVelle

From:	Bunnard, James P
To:	Young, Terry E; Fallon, Mark R
Cc:	Gaffney, John P; Routolo, Robert M; McDonnell, James P; Gray, Thomas S; Kanter, Seth J; Drinovsky, Louis J; Murphy, Thomas W; Kutner, Kevin W; McFarlane, Carolyn T; Dickinson, Terrance J; Walter, Kenneth J; Poparad, Adam J; Nelson, Gordon R; Coon, Kenneth M; Jones, Gary W; Crozier, David W; Carlton, Billy G; Hettel, Grover G; Bement, Robert S; Edington, Randall; Ray, Monica; Lacal, Maria L; "pusheekm@inpo.org"; "inpoercin@inpo.org"; Sawtschenko, Steve; McGhee, Mark A; Webb, Marianne N; "whh@nei.org"; Johnson, Larry D
Subject:	PVNGS Identified Iodine-131 Airborne Radioactivity from Sources External to Palo Verde in the March 24, 2011 Daily Sample
Date:	Thursday, March 24, 2011 5:25:00 PM

Summary:

Airborne activity concentrations at Palo Verde Nuclear Generating Station, due to sources of radiation external to PVNGS, decreased to levels lower than Wednesday, 3/23/2011, Tuesday 3/22/2011, Monday, 3/21/2011, Sunday 3/20/2011, and Saturday 3/19/2011. The Iodine-131 concentration is only slightly higher than the minimum detectable activity threshold. Cesium-134 was not identified in the Sunday/Monday, Monday/Tuesday, Tuesday/Wednesday and Wednesday/Thursday samples.

The calculated integrated dose at PVNGS based on the March 19-24 samples is 0.00581 millirem. This is approximately equivalent to the dose incurred by ingesting ½ of one banana.

The radioactive potassium (K-40) contained in each average size banana results in approximately 0.01 millirem of internal exposure to an individual. K-40 is present in many fruits, nuts and vegetables in similar concentrations.

PVNGS personnel identified Iodine-131 airborne radioactivity from sources external to Palo Verde on Saturday, March 19, 2011, Sunday, March 20, 2011, Monday, March 21, 2011, Tuesday, March 22, 2011, Wednesday, March 23, 2011, and Thursday, March 24, 2011. Additionally, Cs-134 airborne radioactivity from sources external to Palo Verde was identified on Sunday, March 20, 2011. Note that PVNGS and the surrounding area experienced rain throughout Sunday 3/20/2011 and into the early morning hours on Monday 3/21/2011 with clouds and humidity decreasing on Tuesday 3/22/2011, and clear to partially cloudy conditions on Wednesday, 3/23/2011. Atmospheric conditions had been clear to partially cloudy with low humidity from Saturday March 12 through Saturday March 19.

Sample Data:

DJ/15

The March 24 sample was obtained over a ~22 hour period (1,345 minutes) beginning on March 23, 2011 at 1455 to March 24, 2011 at 1320. The sample was counted using a gamma multichannel analyzer for 30 minutes. (Effluent sample ID numbers 2-11-0436 (particulate) and 2-11-0437 (iodine))

The March 23 sample was obtained over a ~26 hour period (1,535 minutes) beginning on March 22, 2011 at 1320 to March 23, 2011 at 1455. The sample was counted using a gamma multichannel analyzer for 30 minutes. (Effluent sample ID numbers 2-11-0426 (particulate) and 2-11-0427 (iodine))

The March 22 sample was obtained over a ~26 hour period (1,540 minutes) beginning on March 21, 2011 at 1140 to March 22, 2011 at 1320. The sample was counted using a gamma multichannel analyzer for 30 minutes. (Effluent sample ID numbers 2-11-0421 (particulate) and 2-11-0422 (iodine))

The March 21 sample was obtained over a ~24 hour period (1,420 minutes) beginning on March 20, 2011 at 1200 to March 21, 2011 at 1140. The sample was counted using a gamma multichannel analyzer for 30 minutes. (Effluent sample ID numbers 2-11-0411 (particulate) and 2-11-0412 (iodine))

The March 20 sample was obtained over a ~21 hour period (1,280 minutes) beginning on March 19, 2011 at 1440 to March 20, 2011 at 1200. The sample was counted using a gamma multichannel analyzer for 30 minutes. (Effluent sample ID numbers 2-11-0404 (particulate) and 2-11-0405 (iodine))

The March 19 sample was obtained over a ~25 hour period (1,525 minutes) beginning on March 18, 2011 at 1315 to March 19, 2011 at 1440. The sample was counted using a gamma multichannel analyzer for 30 minutes. (Effluent sample ID numbers 2-11-0401 (particulate) and 2-11-0400 (iodine))

PVNGS RP/Effluents personnel set up air sampling equipment on the Unit 2 Auxiliary Building Roof to obtain particulate and iodine air samples starting on Saturday, March 12, 2011. Particulate and Iodine air samples have been obtained and analyzed on a daily basis. All samples obtained from March 12, 2011 to March 18, 2011 were less than minimum detectable activity for Iodine-131, Cesium-134 and Cesium-137.

Sample results: (~daily sample duration and frequency)

March 24, 2011, 1319: Aux Bldg Roof Particulate: < minimum detectable for all isotopes other than Bi-214, Pb-212, Pb-214 and I-131 (Cs-134 <= 2.15E-13 uCi/cc, Cs-137 <= 3.48E-13 uCi/cc)

March 24, 2011, 1320: Aux Bldg Roof Iodine-131 = 6.30E-13 uCi/cc (0.63

pCi/m3), Atmospheric conditions clear to partially cloudy with low humidity

March 23, 2011, 1454: Aux Bldg Roof Particulate: < minimum detectable for all isotopes other than K-40, Pb-212 and I-131 (Cs-134 <= 2.50E-13 uCi/cc, Cs-137 <= 1.84E-13 uCi/cc)

March 23, 2011, 1455: Aux Bldg Roof Iodine-131 = 7.42E-13 uCi/cc (0.74 pCi/m3), Atmospheric conditions clear to partially cloudy with low humidity

March 22, 2011, 1319: Aux Bldg Roof Particulate: < minimum detectable for all isotopes other than K-40, Bi-214, Pb-212, Pb-214 and I-131 (Cs-134 <= 2.76E-13 uCi/cc, Cs-137 <= 2.93E-13 uCi/cc)

March 22, 2011, 1320: Aux Bldg Roof Iodine-131 = 2.01E-12 uCi/cc (2.01 pCi/m3), Cloudy, rainy, high humidity conditions transitioning to clear/partly cloudy with decreasing humidity conditions

March 21, 2011, 1141: Aux Bldg Roof Particulate: < minimum detectable for all isotopes other than K-40, Pb-212 and I-131 (Cs-134 <= 2.06E-13 uCi/cc, Cs-137 <= 2.71E-13 uCi/cc)

March 21, 2011, 1140: Aux Bldg Roof Iodine-131 = 6.70E-13 uCi/cc (0.67 pCi/m3), Cloudy, rainy, high humidity conditions throughout the sample period

March 20, 2011, 1201: Aux Bldg Roof Particulate: Cs-134 = 3.87E-13 uCi/cc, < minimum detectable for all isotopes other than Bi-214, Pb-212, Pb-214, Tl-208 and I-131 (Cs-137 < minimum detectable activity, <= 5.19E-13 uCi/cc) (Bi-214, Pb-212, Pb-214 and Tl-208 are naturally-occurring isotopes)

March 20, 2011, 1200: Aux Bldg Roof Iodine-131 = 2.50E-12 uCi/cc (2.50 pCi/m3), Atmospheric conditions in transition from low humidity clear/partial cloudy to mostly cloudy, increasing humidity.

March 19, 2011, 1440: Aux Bldg Roof Particulate < minimum detectable for all isotopes other than K-40, Pb-212 and I-131 (Cs-134 <= 2.22E-13 uCi/cc, Cs-137 <= 3.58E-13 uCi/cc)

March 19, 2011, 1439: Aux Bldg Roof Iodine-131 = 1.54E-12 uCi/cc (1.54 pCi/m3), Atmospheric conditions clear to partially cloudy with low humidity

March 18, 2011, 1315: Aux Bldg Roof Particulate < minimum detectable for all isotopes other than K-40 (Cs-134 <= 2.92E-13 uCi/cc, Cs-137 <= 2.20E-13 uCi/cc)

March 18, 2011, 1316: Aux Bldg Roof Iodine-131 < minimum detectable activity (<= 1.57E-13 uCi/cc), Atmospheric conditions clear to light clouds with low humidity

March 17, 2011, 1320: Aux Bldg Roof Particulate < minimum detectable for all isotopes other than Bi-214, PB-212 and Pb-214 (Cs-134 <= 2.24E-13 uCi/cc, Cs-137 <= 3.12E-13 uCi/cc) (Bi-214, Pb-212 and Pb-214 are naturally-occurring isotopes)

March 17, 2011, 1321: Aux Bldg Roof Iodine-131 < minimum detectable activity (<= 1.58E-13 uCi/cc), Atmospheric conditions clear to light clouds with low humidity

March 16, 2011, 1150: Aux Bldg Roof Particulate < minimum detectable for all isotopes other than K-40, Bi-214, PB-212 and Pb-214 (Cs-134 <= 3.15E-13 uCi/cc, Cs-137 <= 3.50E-13 uCi/cc) (Bi-214, Pb-212 and Pb-214 are naturally-occurring isotopes)

March 16, 2011, 1151: Aux Bldg Roof Iodine-131 < minimum detectable activity (<= 2.55E-13 uCi/cc), Atmospheric conditions clear to light clouds with low humidity

March 15, 2011, 1400: Aux Bldg Roof Particulate < minimum detectable for all isotopes other than K-40, Bi-214, PB-212 and Pb-214 (Cs-134 <= 3.06E-13 uCi/cc, Cs-137 <= 2.88E-13 uCi/cc) (Bi-214, Pb-212 and Pb-214 are naturally-occurring isotopes)

March 15, 2011, 1401: Aux Bldg Roof Iodine-131 < minimum detectable activity (<= 1.78E-13 uCi/cc), Atmospheric conditions clear to light clouds with low humidity

March 14, 2011, 1530: Aux Bldg Roof Particulate < minimum detectable for all isotopes other than K-40, Bi-214, PB-212 and Pb-214 (Cs-134 <= 2.04E-13 uCi/cc, Cs-137 <= 2.00E-13 uCi/cc) (Bi-214, Pb-212 and Pb-214 are naturally-occurring isotopes)

March 14, 2011, 1531: Aux Bldg Roof Iodine-131 < minimum detectable activity (<= 1.77E-13 uCi/cc), Atmospheric conditions clear to light clouds with low humidity

March 13, 2011, 0839: Aux Bldg Roof Particulate < minimum detectable for all isotopes other than Bi-214, PB-212 and Pb-214 (Cs-134 <= 3.63E-13 uCi/cc, Cs-137 <= 2.72E-13 uCi/cc) (Bi-214, Pb-212 and Pb-214 are naturally-occurring isotopes)

March 13, 2011, 0840: Aux Bldg Roof Iodine-131 < minimum detectable activity (<= 2.09E-13 uCi/cc), Atmospheric conditions clear to light clouds with low humidity

The samples running from March 23 to March 24 should be removed from sampling equipment for analysis this afternoon (March 24).

Current I-131 concentrations, as of March 24, 2011 = 6.30E-13 uCi/cc. This is 0.32% of the 10CFR20, Appendix B, Table 2 value for effluent concentrations in air (2.00E-10 uCi/cc) and 0.0032% of the occupational value (2.00E-08 uCi/cc).

Note that I-131 in air at 6.30E-13 uCi/cc, if inhaled or ingested continuously over the course of one calendar year, would produce a total effective dose equivalent of 0.158 millirem (0.00158 millisieverts).

Maximum I-131 and Cs-134 Airborne Concentrations were identified on Sunday, March 20, 2011:

The Iodine-131 identified on March 20, 2011 was 2.50E-12 uCi/cc. This is 1.25% of the 10CFR20, Appendix B, Table 2 value for effluent concentrations in air (2.00E-10 uCi/cc) and 0.0125% of the occupational value (2.00E-08 uCi/cc).

Note that I-131 in air at 2.50E-12 uCi/cc, if inhaled or ingested continuously over the course of one calendar year, would produce a total effective dose equivalent of 0.625 millirem (0.00625 millisieverts).

The Cesium-134 identified on March 20, 2011 was 3.87E-13 uCi/cc. This is 0.194% of the 10CFR20, Appendix B, Table 2 value for effluent concentrations in air (2.00E-10 uCi/cc) and 0.00194% of the occupation value (4.00E-08 uCi/cc).

Note that Cs-134 in air at 3.87E-13 uCi/cc, if inhaled or ingested continuously over the course of one calendar year, would produce a total effective dose equivalent of 0.0968 millirem (0.000968 millisieverts).

Note that the sum of I-131 and Cs-134 in air, if inhaled or ingested continuously over the course of one calendar year would produce a total effective dose equivalent of 0.7218 millirem (0.007218 millisieverts).

Therefore, there is negligible impact to PVNGS occupational personnel and members of the public at PVNGS and surrounding areas.

(The annual total effective dose equivalent of 0.7218 millirem is approximately

equivalent to ingesting 72 bananas over the course of a calendar year. The radioactive potassium, K-40, contained in each average size banana results in approximately 0.01 millirem of internal exposure to an individual. K-40 is present in many fruits, nuts and vegetables in similar concentrations.)

Integrated dose based on the March 19, 20, 21, 22, 23 and 24, 2011 sample results.

The following data assumes the airborne concentration for I-131 (and Cs-134 as applicable) was inhaled/ingested continuously for a 24-hour period with the sample results applied for the entire day and that one year equals 365.25 days:

March 24: I-131 at 6.30E-13 uCi/cc: 0.00043 millirem TEDE, Cs-134: 0 millirem TEDE, Total = 0.00043 millirem TEDE

March 23: I-131 at 7.42E-13 uCi/cc: 0.00051 millirem TEDE, Cs-134: 0 millirem TEDE, Total = 0.00051 millirem TEDE

March 22: I-131 at 2.01E-12 uCi/cc: 0.00138 millirem TEDE, Cs-134: 0 millirem TEDE, Total = 0.00138 millirem TEDE

March 21: I-131 at 6.70E-13 uCi/cc: 0.00046 millirem TEDE, Cs-134: 0 millirem TEDE, Total = 0.00046 millirem TEDE

March 20: I-131 at 2.50E-12 uCi/cc: 0.00171 millirem TEDE, Cs-134 at 3.87E-13 uCi/cc: 0.00026 millirem TEDE, Total = 0.00198 millirem TEDE

March 19: I-131 at 1.54E-12 uCi/cc: 0.00105 millirem TEDE, Cs-134: 0 millirem TEDE: Total = 0.00105 millirem TEDE

Total: 0.00581 millirem

Weekly Effluent Results from PVNGS Fuel Building Exhaust:

PVNGS Effluents is currently seeing positive I-131 and CS-134 activity on RU-145 sample media in all 3 units. PVNGS Effluents is also seeing CS-137 in units 2 & 3. This activity is most likely from the Fukushima Daiichi incident. This activity is being included in PVNGS effluent release permits. A note is being added in the comments section of the permit (and CLASS: Chemistry Laboratory Analysis Storage System) stating the I-131, CS-134 & CS-137 activity identified on the sample media used for the permit is suspected to be from the Fukushima Daiichi incident. Also the sample number for the most recent Unit 2 Auxiliary Building roof sample is being included as a reference. The identified

activity is consistent with the samples taken outside on the PVNGS Unit 2 Auxiliary Building roof and is consistent between all three PVNGS units.

The weekly (3/15/2011 to 3/22/2011) Fuel Building effluent filter change-out identified I-131, Cs-134 and Cs-137:

uCi/cc	I-131	Cs-134	Cs-137
Unit 1	1.16E-12	4.84E-14	<3.54E-14
Unit 2	1.18E-12	5.80E-14	5.55E-14
Unit 3	1.21E-12	4.64E-14	6.11E-14

Comparison with Recent Arizona Radiation Regulatory Agency (ARRA) Environmental Sample Data:

ARRA 3-day samples (March 19-21) obtained on March 21, 2011, at seven separate locations in the vicinity of PVNGS ranged from 1.2 pCi/m3 I-131 to 3.6 pCi/m3 I-131.

In comparison, daily samples obtained at PVNGS Unit 2 Auxiliary Building Roof ranged from 1.5 pCi/m3 I-131 to 2.5 pCi/m3 I-131 on March 19 and 20. (The March 21 sample, 0.7 pCi/m3, was most likely affected by rain-out.) Thus, there is good correlation between ARRA and PVNGS sample results obtained in the vicinity of Palo Verde Nuclear Generating Station.

Long Term Radiological Environmental Monitoring Program Results Summary:

This information is contained in PVNGS Annual Radiological Environmental Operating Reports. The most recent report available is for calendar year 2009. The 2010 report is currently being developed:

Pertinent weekly sample results are listed on pages 28 through 32, 45, 46, and 58 of the 2009 annual report. (Similar page numbers in prior reports).

2010 Weekly Airborne Particulates: Gamma composites < LLD with mean Cs-134 LLD of 5E-14 uCi/cc, Cs-137 LLD of 6E-14 uCi/cc (preliminary data, report in development)

2010 Weekly Airborne Radioiodine: All samples < LLD with a mean LLD of 7E-14 uCi/cc (preliminary data, report in development)

2009 Weekly Airborne Particulates: Gamma composites < LLD with mean Cs-134 LLD of 5E-14 uCi/cc, Cs-137 LLD of 6E-14 uCi/cc

2009 Weekly Airborne Radioiodine: All samples < LLD with a mean LLD of 7E-14 uCi/cc

2008 Weekly Airborne Particulates: Gamma composites < LLD with mean Cs-134 LLD of 5E-14 uCi/cc, Cs-137 LLD of 6E-14 uCi/cc

2008 Weekly Airborne Radioiodine: All samples < LLD with a mean LLD of 7E-14 uCi/cc

2007 Weekly Airborne Particulates: Gamma composites < LLD with mean Cs-134 LLD of 5E-14 uCi/cc, Cs-137 LLD of 6E-14 uCi/cc

2007 Weekly Airborne Radioiodine: All samples < LLD with a mean LLD of 7E-14 uCi/cc

2006 Weekly Airborne Particulates: Gamma composites < LLD with mean Cs-134 LLD of 5E-14 uCi/cc, Cs-137 LLD of 6E-14 uCi/cc

2006 Weekly Airborne Radioiodine: All samples < LLD with a mean LLD of 7E-14 uCi/cc

James P. Bungard

Radiation Protection Technical Services Section Leader

Radiological Engineering

Palo Verde Nuclear Generating Station

Mail Station 7663, P.O. Box 52034

Phoenix, Arizona 85072-2034

Tel: 623-393-5007, Fax: 623-393-6640

Cel (b)(6)

Page (b)(6)

E-mail: James.Bungard@aps.com

From: LIA02 Hoc
Sent: Friday, March 25, 2011 9:45 PM
To: LIA10 Hoc
Subject: FW: NEA Update Brief 260800IMAR2011
Attachments: 230326 0800 MR.pdf

Another update

-----Original Message-----
From: JapanEmbassy, TaskForce [mailto:JapanEmbassyTaskForce@state.gov]
Sent: Friday, March 25, 2011 9:31 PM
To: (b)(6)
(b)(6)
Subject: FW: NEA Update Brief 260800IMAR2011

Jennifer Clever
Japan Emergency Command Center
U.S. Embassy, Tokyo

SBU
This email is UNCLASSIFIED-----Original Message-----
From: Carter, Scott D SFC MIL USA USARPAC (b)(6)
Sent: Saturday, March 26, 2011 10:26 AM
To: (b)(6)
(b)(6)
Subject: NEA Update Brief 260800IMAR2011

Gentlemen/Ladies,

DJ/16

Here is the NEA Update Brief as of 0800 26 MAR 11.

VR,
SFC Scott D. Carter
JFLCC Forward J-1/1
(b)(6)

ＭＲ

２３．３．２６　０８００

ＪＴＦ－ＴＨ司令部

実　施　要　領

1　状　況

2　本日の任務等

3　JTF東北指揮官現地視察

　行動予定

4　四役指導等

状　　況

気象情報

26日0600現在

地域	要素	26日（土）			27日（日）
		06時	12時	18時	00時
岩手県沿岸部	天気				
	風（m/s）	8～13	8～13	5～7	3～5
	気温（℃）		（積雪：1～2cm）	0	mm
宮城県東部	天気				
	風（m/s）	10～17	10～17	5～8	3～5
	気温（℃）		8／3		
福島県沿岸部	天気				
	風（m/s）				

天文諸元（仙台）	BMNT	日出	日没	EENT	月齢
	0435	0532	1753	1851	21.3

凡例　0～5 m/s　6～10 m/s　11m/s以上

潮位					
岩手県（釜石）	時刻	0629	1422	2248
	潮位	126cm	22cm	84cm
宮城県（気仙沼）	時刻	0617	1356	2124
	潮位	119cm	17cm	87cm
福島県（相馬）	時刻	0647	1441	2315
	潮位	129cm	22cm	85cm

行動に及ぼす影響

・冬型の気圧配置となり北部を中心に天気が崩れ、午前中は一時雪又は雨が降る見込み。

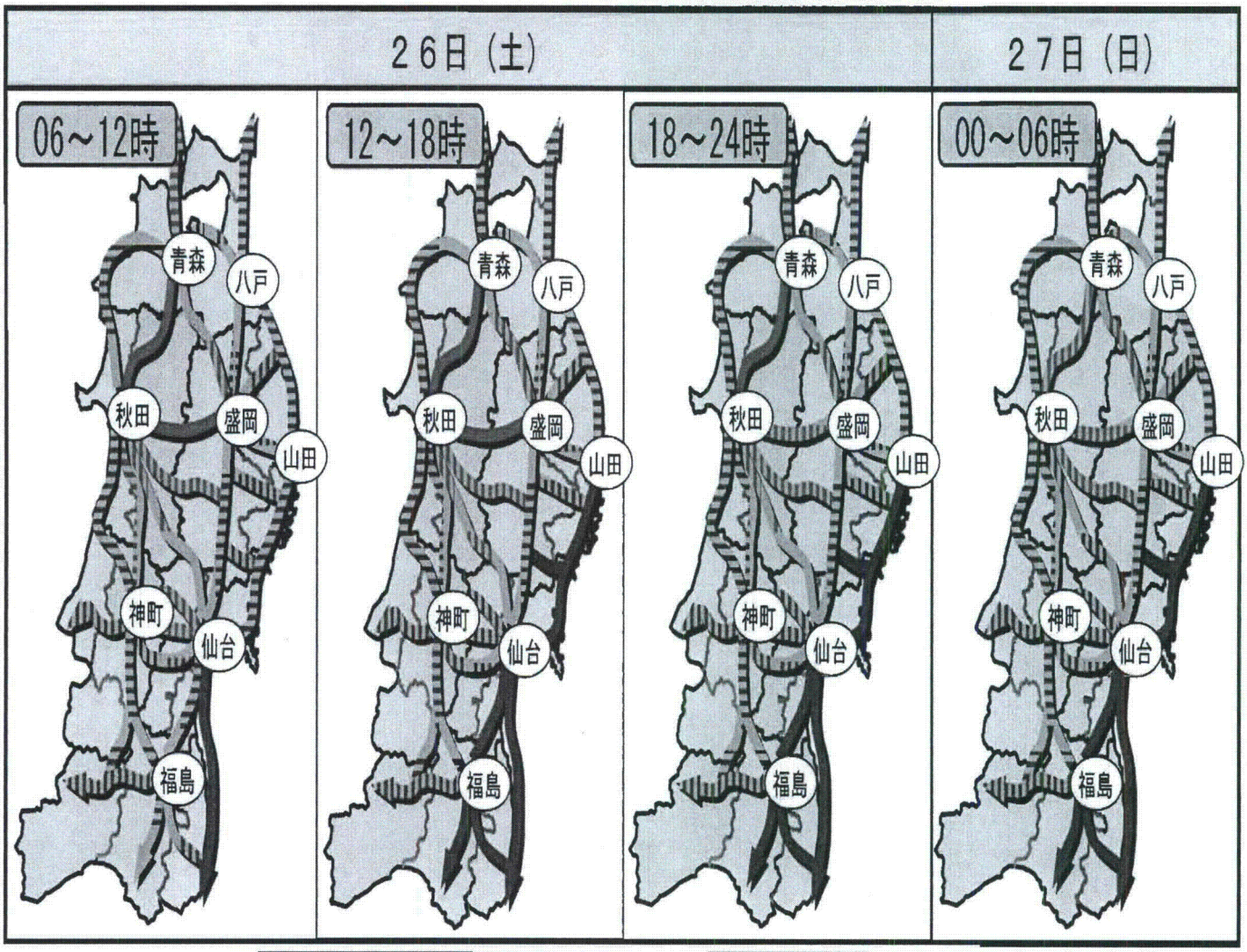
朝のうちは積雪が残り、車両運行に注意が必要となる。

・南部沿岸部では午後以降天気は回復する見込み。

日中は全域で北西風が強まり、瓦礫の飛散等に注意が必要

飛行への影響

26日0600現在



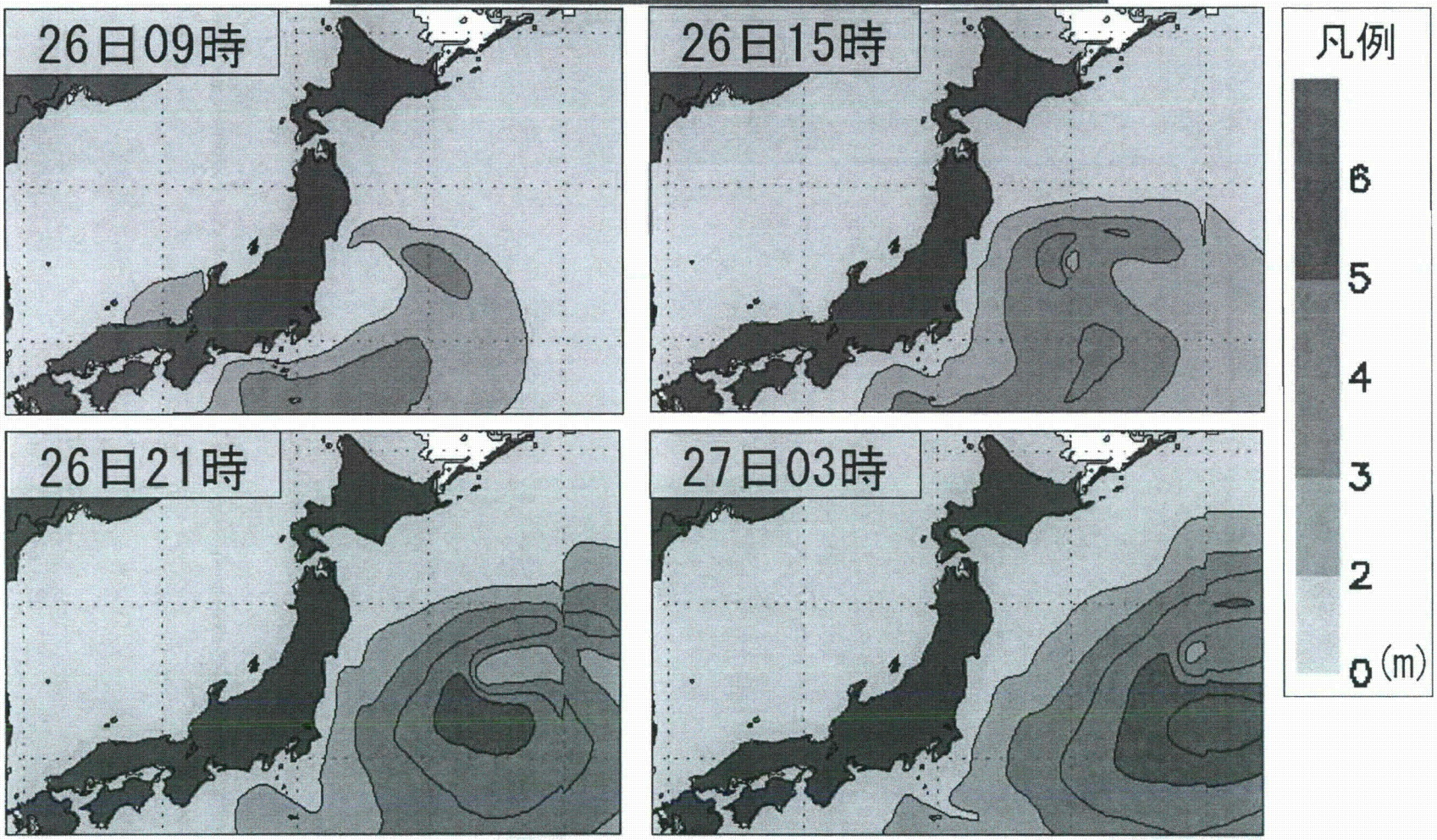
飛行への影響　：影響小　：影響中　：影響大

航空活動に及ぼす影響

・ 北部を中心に天気が崩れ、広い範囲で視程及び飛行高度に制限を受ける見込み。
また、日中は強い北西風となり離着陸の際に注意が必要となる。
（視程：3～4km、雲高：800ｆｔ、風速：15～17m/s）

・ 南部の沿岸部では午後以降回復する見込み。

波　浪　予　想



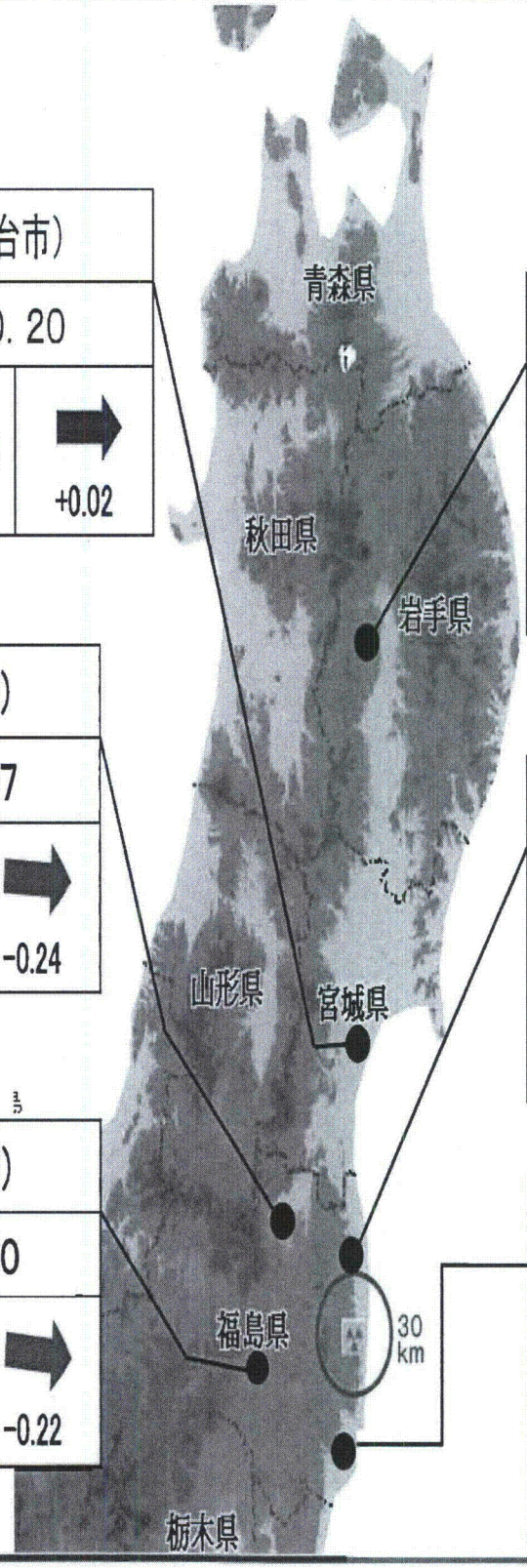
海上活動に及ぼす影響

- 発達した低気圧の影響により、海上暴風及びうねりの発生が予想される。
- 波高は太平洋の沖合いで５ｍ以上となり、海上行動にやや影響を受ける見込み。

環境放射線モニタリング結果

3月26日0500現在

単位:μSv/h



宮城県(仙台市)		
測定値	0.20	
前回との比較	0.18	+0.02

岩手県(盛岡市)		
測定値	0.030	
前回との比較	0.031	-0.001

福島県(福島市)		
測定値	3.97	
前回との比較	4.21	-0.24

福島県(南相馬市)		
測定値	1.17	
前回との比較	1.53	-0.36

福島県(郡山市)		
測定値	3.30	
前回との比較	3.52	-0.22

福島県(いわき市)		
測定値	1.10	
前回との比較	1.30	-0.20

各県別人的被害状況表

26日0500現在

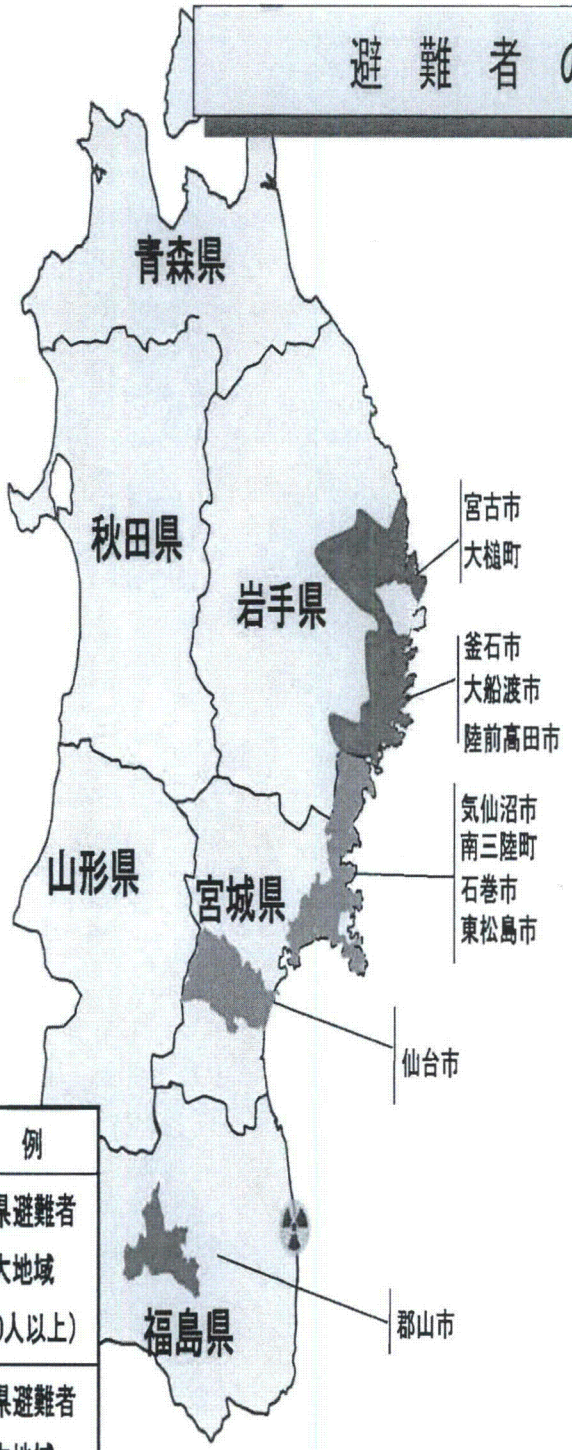
県名	死者	行方不明者	負傷者	避難者	
青森県	3人 (±0)	1人 (±0)	47人 (+4)	324人 (−7)	
岩手県	3，056人 (+80)	4，878人 (+9)	130人 (±0)	43，728人 (+891)	
宮城県	5，904人 (+180)	6，220人 (−416)	1，117人 (−111)	86，919人 (−2，673)	
福島県	856人 (+14)	1，554人 (−45)	203人 (−2)	県内	32，437人 (−1，017)
				県外	24，046人 (±0)
秋田県	0人 (±0)	0人 (±0)	7人 (±0)	0人 (±0)	
山形県	1人 (±0)	0人 (±0)	18人 (±0)	3，387人 (−118)	
管内合計	9，820人 (+274)	12，653人 (−452)	1，522人 (−109)	166，795人 (−2，924)	

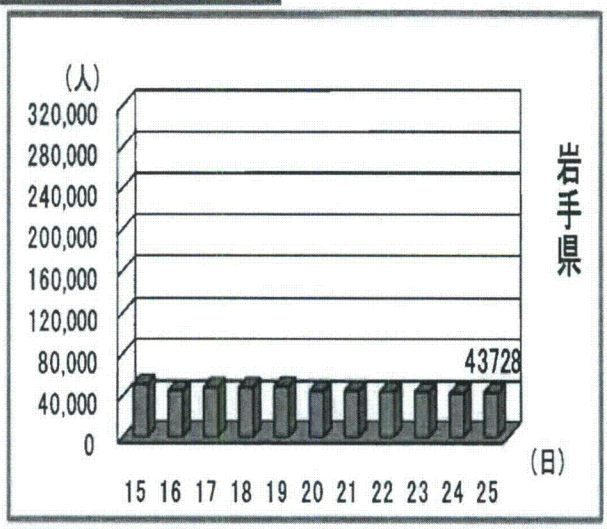
● 宮城・福島県の避難者数の減少は、ライフライン(電気、水道)の回復によるものと思料

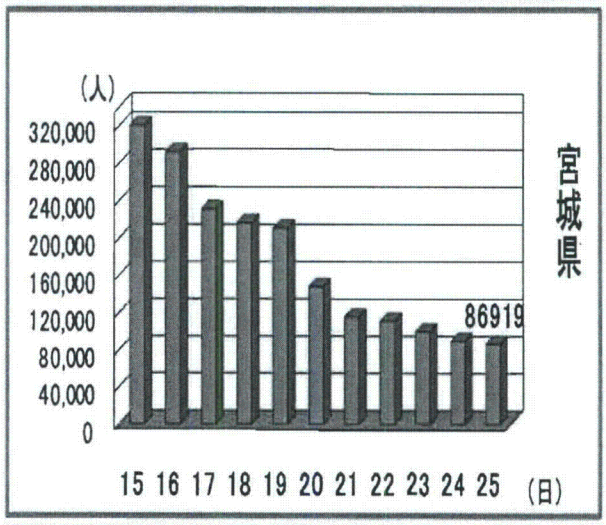
資料源：自治体発表資料

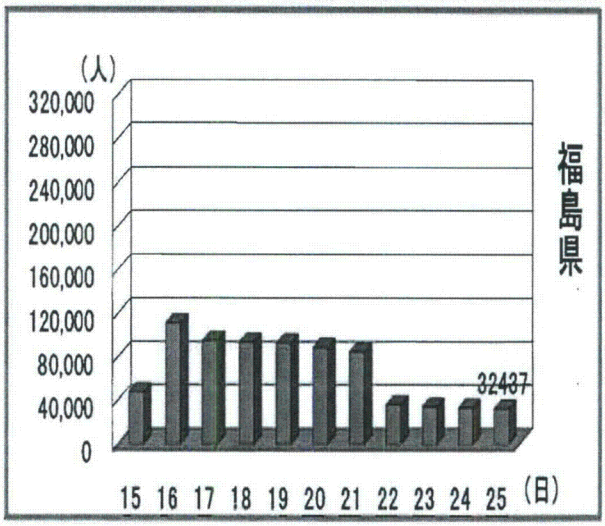
避難者の状況

26日0500現在









凡例	
●	岩手県避難者甚大地域(5,000人以上)
●	宮城県避難者甚大地域(5,000人以上)
●	福島県避難者甚大地域(5,000人以上)

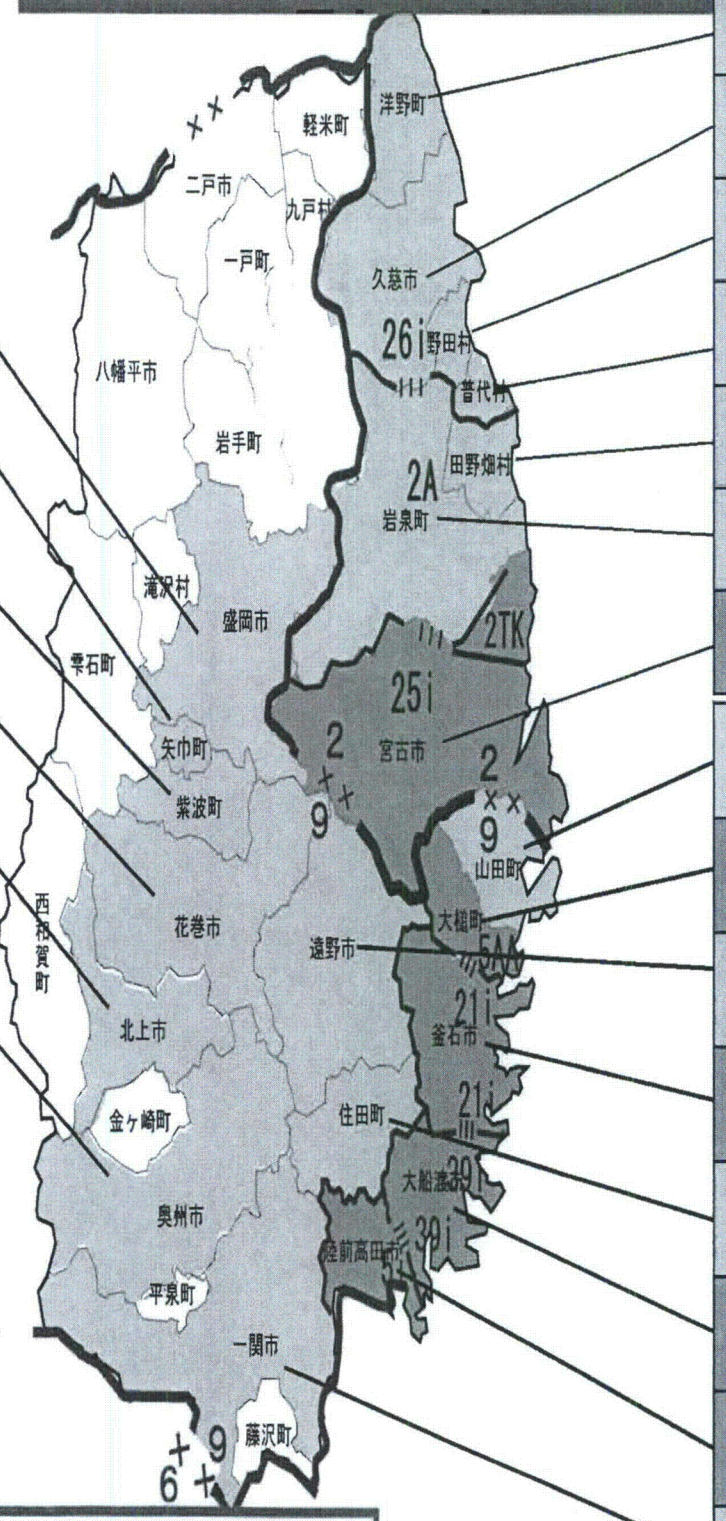
管内合計

166,795人
(−2,924)

資料源:自治体発表資料

3月25日1400現在

県別避難状況図【岩手県】



凡例
5,000名以上
1,000～4,999名
1,000名未満

( )避難所数

2師団

洋野町	15人（1）
久慈市	36人（3）
野田村	401人（11）
普代村	41人（1）
田野畑村	503人（4）
岩泉町	294人（6）
宮古市	5，967人（65）

9師団

山田町	4，417人（31）
大槌町	5，858人（44）
遠野市	89人（2）
釜石市	6，678人（71）
住田町	3人（1）
大船渡市	6，003人（46）
陸前高田市	13，053人（83）
一関市	68人（4）

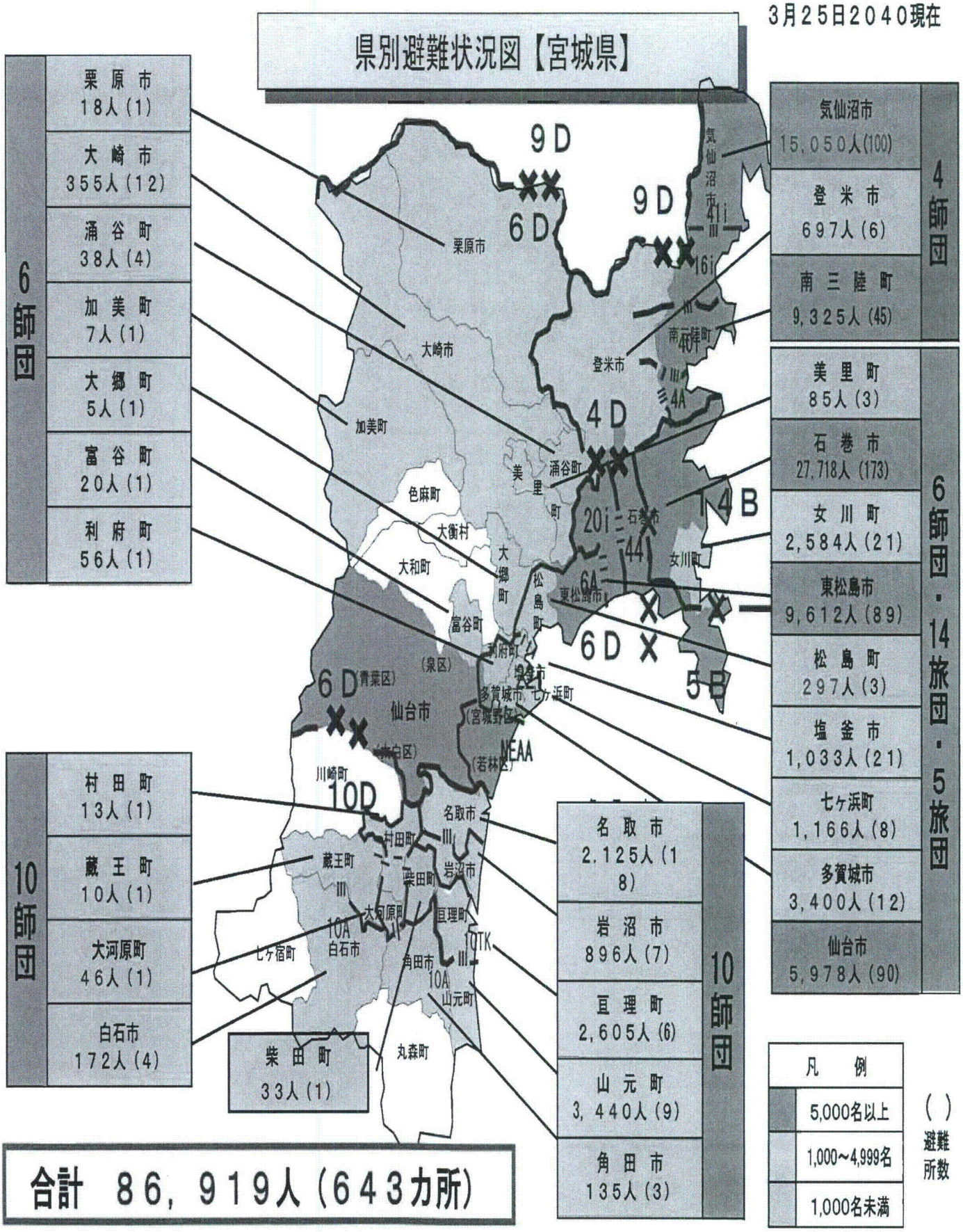
9師団

盛岡市	102人（1）
矢巾町	26人（1）
紫波町	83人（1）
花巻市	32人（1）
北上市	52人（4）
奥州市	7人（2）

合計　43，728人（383カ所）

3月25日2040現在

県別避難状況図【宮城県】



合計 86,919人(643カ所)

区別状況図【仙台市】

３月２５日１４００現在

泉　区	１４１人（　７）	６師団
青葉区	７９０人（２５）	
宮城野区	２，２９５人（２４）	
若林区	２，４４５人（２４）	
太白区	３０７人（１０）	

（　）避難所数

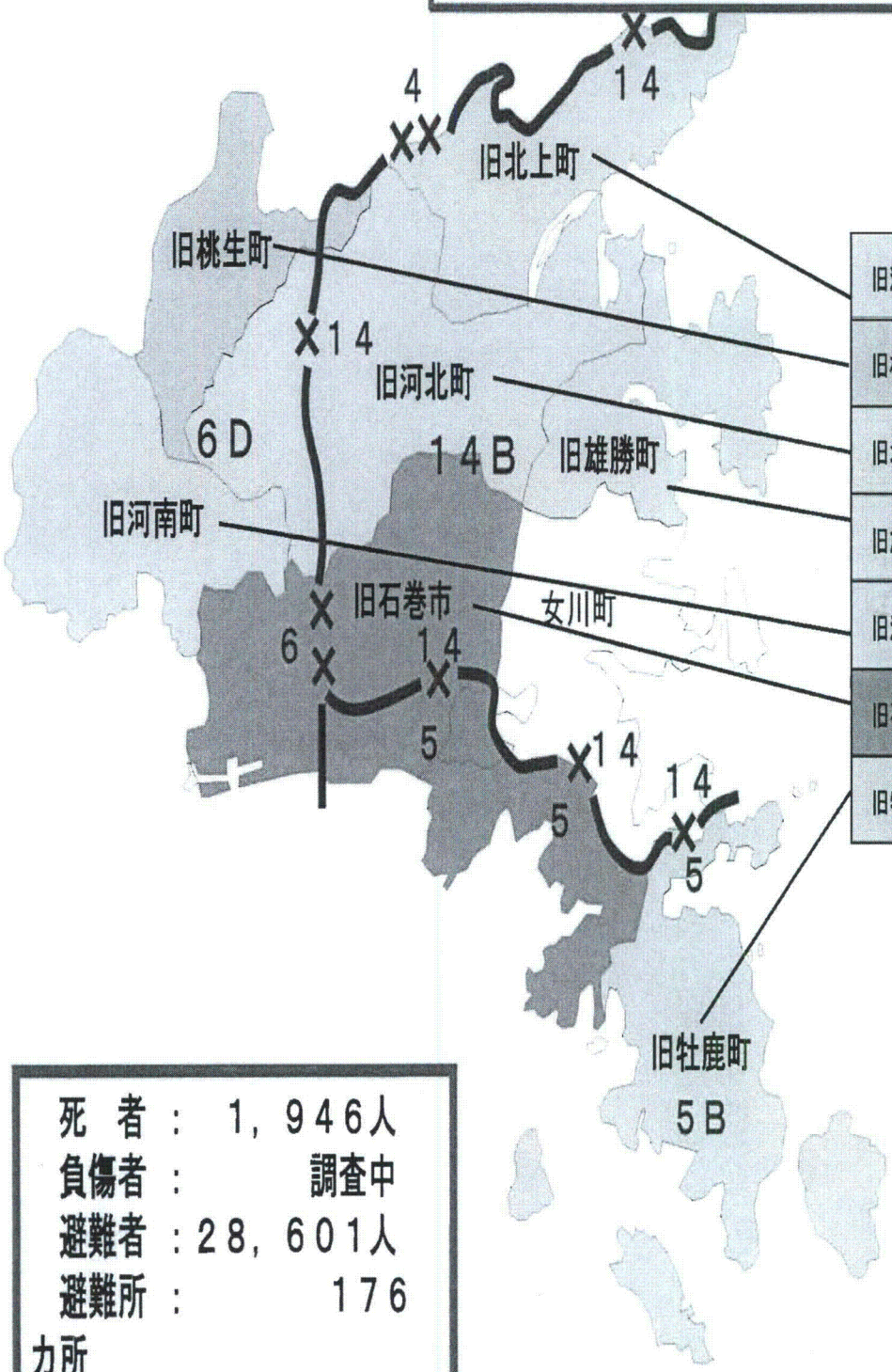
死　者　：　２８１人
負傷者　：　２１３人
避難者　：　５，９７８人
避難所　：　９０カ所
（仙台市発表）

凡　例
5,000名以上
1,000～4,999名
1,000名未満

石巻市状況図【旧市町村区分】

3月25日1400現在

ＥＲから変化なし



旧河北町	1,286人（ 6）	6師団・14旅団・5旅団
旧桃生町	236人（ 4）	
旧北上町	1,503人（ 12）	
旧雄勝町	1,441人（ 17）	
旧河南町	935人（ 9）	
旧石巻市	20,175人（108）	
旧牡鹿町	3,025人（ 20）	

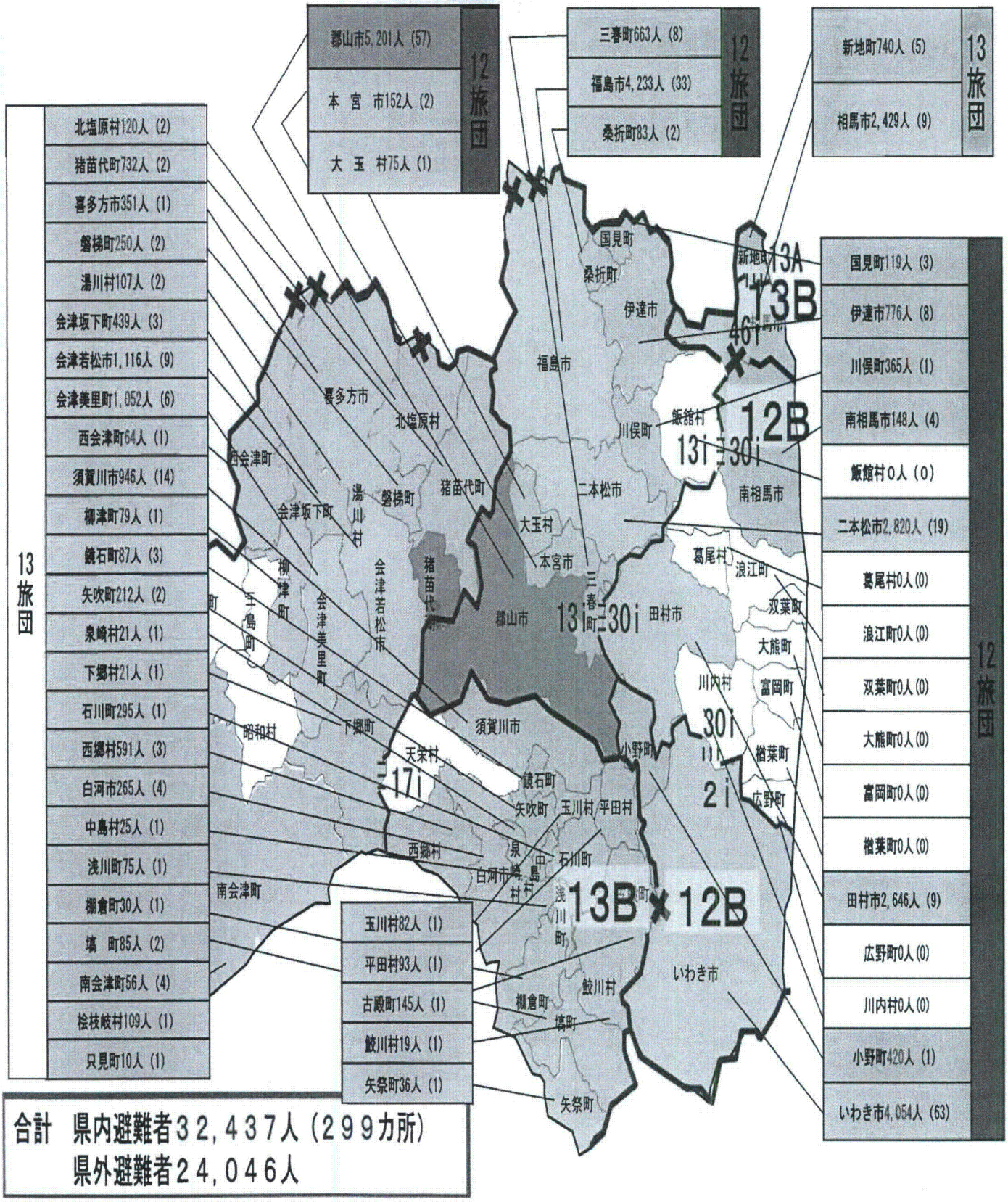
（ ）避難所数

死　者：　1，946人
負傷者：　　調査中
避難者：28，601人
避難所：　　176カ所

凡　例
5,000名以上
1,000～4,999名
1,000名未満

県別避難状況図【福島県】

3月25日1700現在

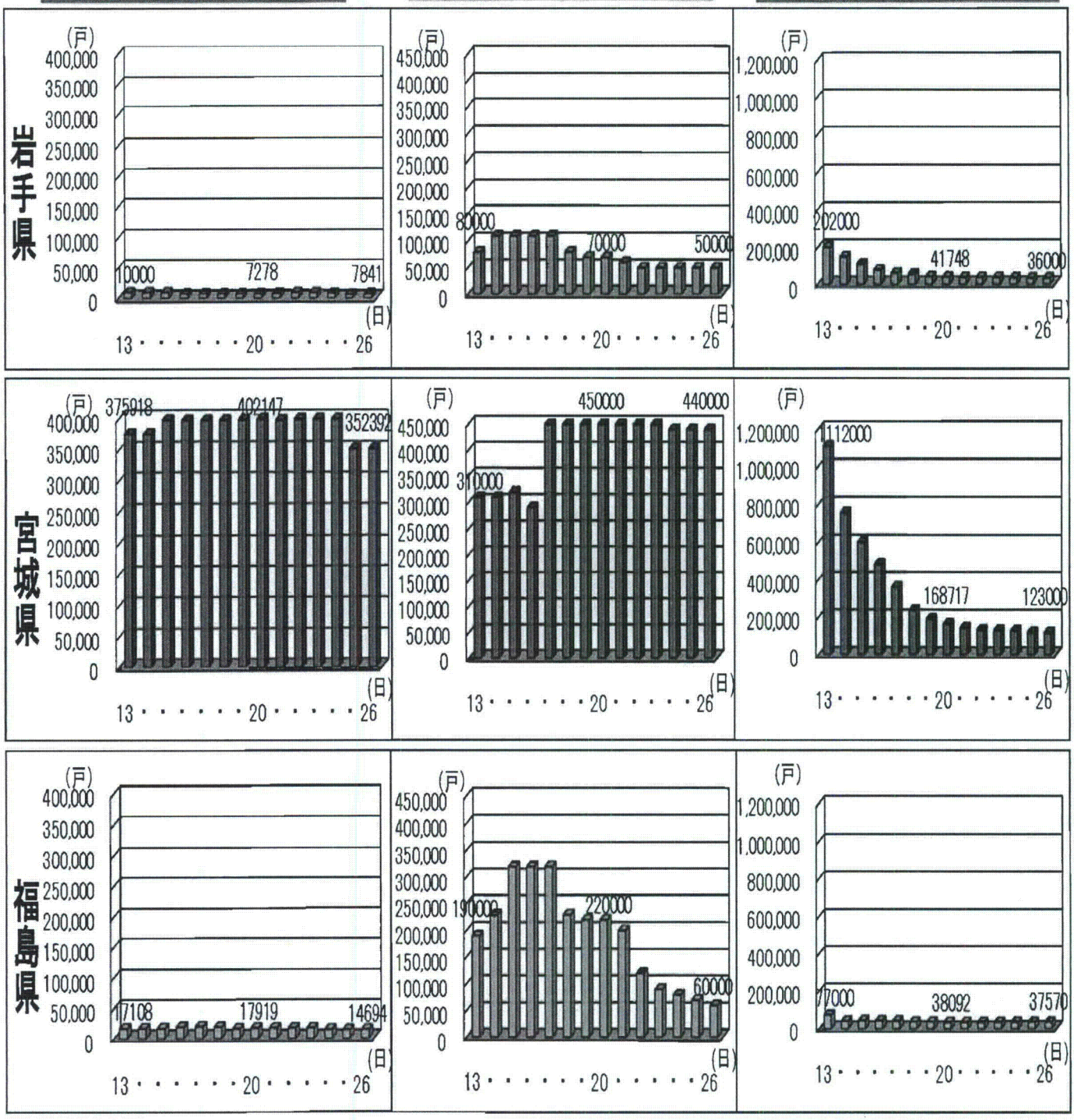


合計　県内避難者３２，４３７人（２９９カ所）
　　県外避難者２４，０４６人

ライフライン状況

26日0500現在

断ガスの状況　断水の状況　停電の状況



資料源：厚生労働省発表資料（24日1430現在報）
経済産業省発表資料（25日08時現在報）
東北電力発表資料（25日10時現在報）

原 発 の 状 況

26日0500現在

【福島県】

・福島第一原発

1号機:外部電源切替完了(中央制御室照明点灯)

251537 原子炉への淡水の注入開始

25日夜 タービン建屋地下で水たまりが見つかり、放射性物質が検出されたと発表

2号機:外部電源受電工事完了、電気機器調査実施中

3号機:外部電源切替完了(中央制御室照明点灯)

251300 原子力安全・保安院「原子炉損傷の可能性あり」について言及

251802 原子炉への淡水の注入開始

251918 原子力安全・保安院「原子炉にひびが入ったり割れたりしていると考えていない」と言及

4号機:外部電源受電工事完了、電気機器調査実施中

5号機:外部電源切替完了

6号機:外部電源切替完了

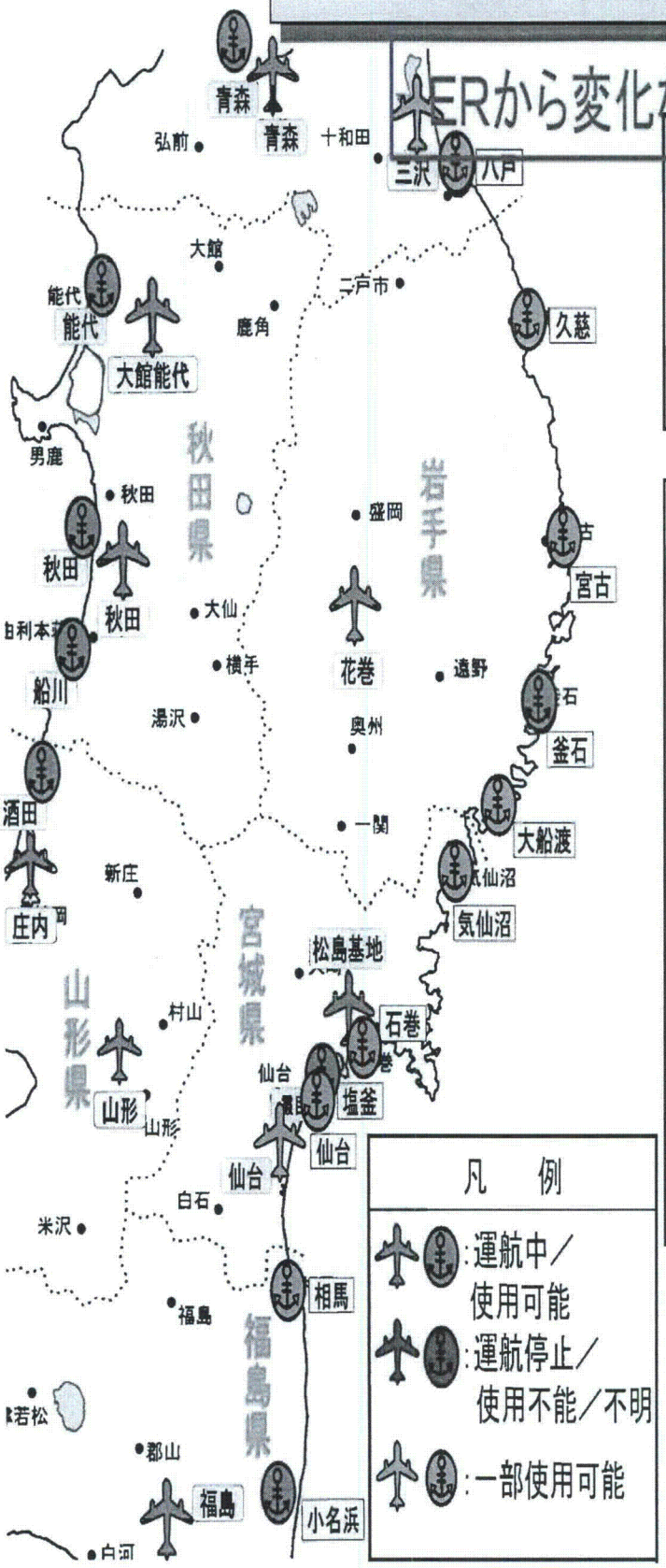
・福島第二原発:停止中

資料源:原子力災害対策本部

空港・港湾被害

26日0500現在

ERから変化なし



【空港等】

三沢・青森・秋田・大館能代・花巻・庄内・山形・福島・花巻空港:使用可能

仙台空港:一部使用可能(1,500m)

【港　湾】

青森港・能代港・船川港・秋田港・酒田港・釜石港・塩釜港区・小名浜港:使用可能

八戸港:一部使用可能　(八太郎地区)
久慈港:　〃　(諏訪下地区)
宮古港:　〃　(藤原地区)
大船渡港:　〃　(野々田地区)
相 馬 港:一部使用可能(1・2号埠頭地区)
気仙沼港:一部使用可能(魚市場地区)
石 巻 港:一部使用可能(釜地区)
仙台港区:一部使用可能(中野地区)

資料源:第二管区海上保安本部

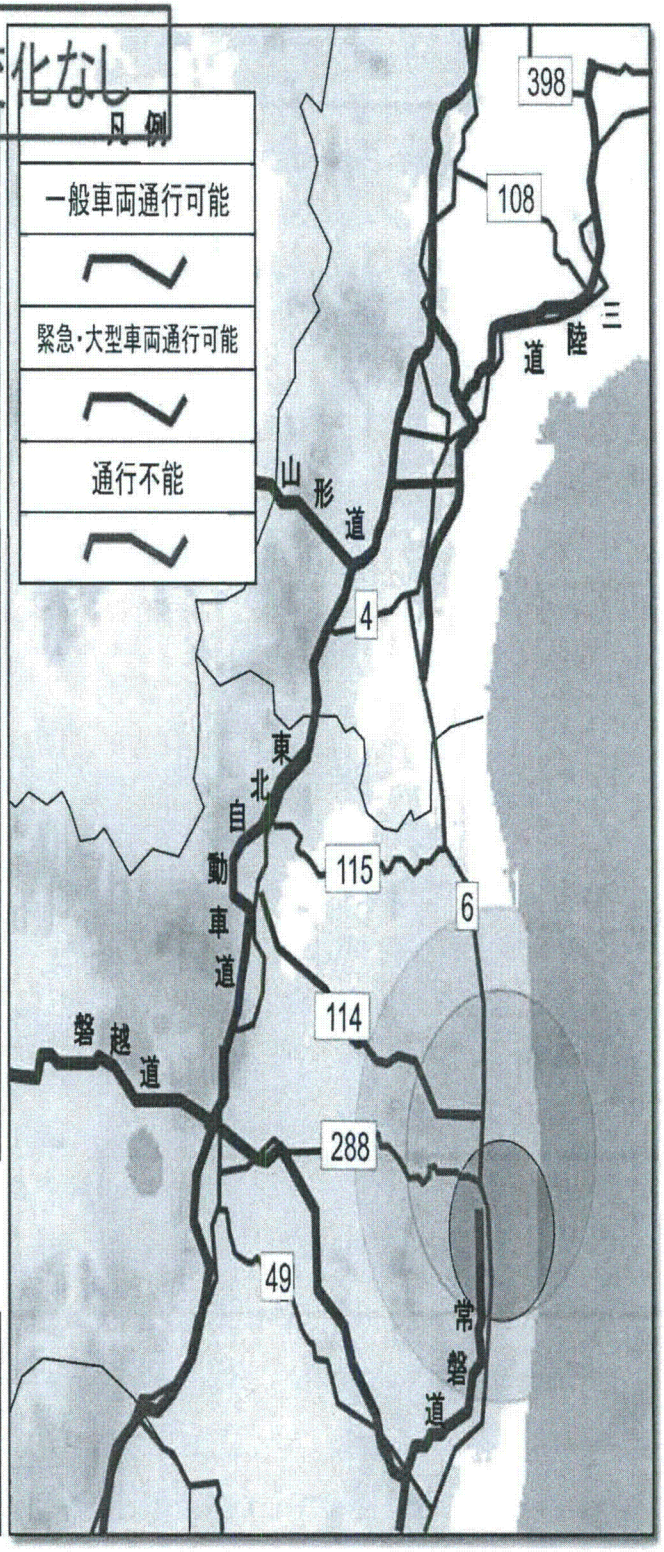
道路被害

3月26日0500現在

ERから変化なし

【高速道路の状況】

- 東北自動車道: 通行可
- 八戸自動車道: 通行可
- 秋田自動車道: 通行可
- 仙台北部道路: 通行可
- 仙台南部道路: 通行可
- 仙台東部道路: 通行可
  (利府JCT～仙台若林JCT:片側交互通行)
- 三陸自動車道:
  仙台港北～鳴瀬奥松島: 通行可
  鳴瀬奥松島～登米東和: 大型緊急車両通行可
- 山形自動車道: 通行可(月山～西川下り通行止)
- 磐越自動車道: 通行可
- 常磐自動車道:
  常磐富岡～広野: 通行止
  広野～いわき中央: 緊急車両通行可
  亘理～山元: 通行可
  ＊ 大型緊急車両通行可には事業用自動車(緑・黒ナンバー) 含む。



【国道の状況】

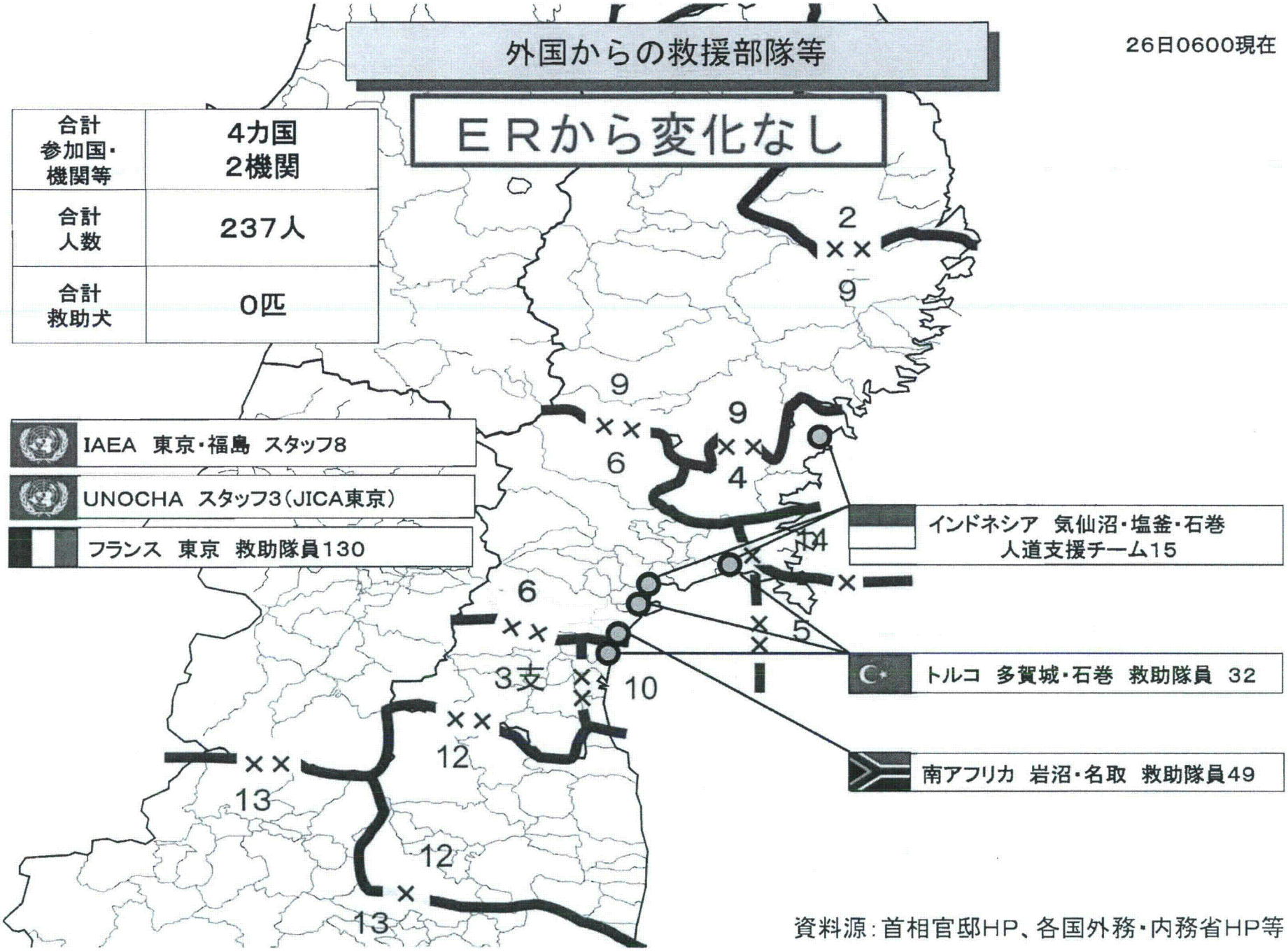
一般車通行可能道路	R4、48、49、107、115、281、283、288
所々通行不能道路	R6、45

外国からの救援部隊等

26日0600現在

ＥＲから変化なし

合計 参加国・ 機関等	4カ国 2機関
合計 人数	237人
合計 救助犬	0匹



資料源：首相官邸HP、各国外務・内務省HP等

ＥＥＩ・ＯＩＲ

EEI

1　県は、どこに避難所を集約しようとしているのか、又、その避難所における常続的な避難者数の見積は？

2　行方不明者捜索の進捗状況は？特に津波被害甚大地域（気仙沼市、南三陸町、石巻市等）の捜索所要は？

OIR

1　福島第1原子力発電所の状況及び住民・部隊への影響は？
2　行方不明者捜索における阻害事項は？
3　各部隊の戦力回復の状況は？
4　ライフラインの復旧状況は？
5　道路、空港、港湾の復旧状況は？
6　仮設住宅の建設計画、避難者の県外移転の状況は？
7　避難所の集約に伴い、自衛隊が支援する避難所は？

部隊等の状況

１　自治体等の状況
２　本日の任務等

自治体等の状況

県知事の発言

政府現地対策本部副本部長の発言趣旨

区　分	発　言　趣　旨
現地対策本部 （宮城県庁） 副本部長の コメントの真意	３月２５日に被災者生活支援特別対策本部長名で政府が示した「東北地方太平洋沖地震における損壊家屋等の撤去等に関する指針」において人の捜索・救出、遺体の搬出その他防疫・防火対策の必要性、社会生活の回復のため、損壊家屋等の撤去等の処置を推進する指針が示された。 ⇩ いまだ岩手・宮城・福島県には、約１．７万人にのぼる行方不明者がいる。 損壊家屋等の瓦礫の下や流出自動車等の中には要救助者（ご遺体）がいる（ある）可能性がある（高い）。 ⇩ ２５日１０００の宮城県対策本部会議における 阿久津　現地対策副本部長（内閣府政務官）のコメント 「本日、瓦礫の撤去について、国から処分方法の指針が示されるが、行方不明者、遺体等に配慮し、あくまでも慎重に進められることを承知されたい。」

ＴＶ放送における岩手・宮城各県知事の発言

「東北関東大震災　いま行政は～被災県知事に聞く」(NHK仙台放送局25日2011～放映)
出演者　：　平野内閣府副大臣、村井宮城県知事、達増岩手県知事(冒頭のみ)等

区分	発　言　内　容
宮城県知事	●　福島原発事故について ・情報が正確に伝わってこない。 ・県は当初から独自に大気中の放射性物資のモニタリングを実施 ・本日から水・原乳・野菜について調査している。 水・原乳は基準値以下（野菜は結果待ち） ●　被災者の一番の要望 仮設住宅の早期建設（プライバシーの保てる生活） ・必要数を２～３万戸と概算しているが早くて半年 ひょっとすると１年はかかる見通し （理由：適する土地がない。人手・資材が乏しい） ※平野内閣府副大臣発言 国土交通省住宅局の職員を各県に派遣して調整中 ・当面の処置として現在の一次避難所から二次避難所 （内陸部のホテル・旅館等の施設）への移動 第一義的には市町村の責任だが県も国と積極的に調整 コミュニティ又は集落ごと移す。

ＴＶ放送における岩手・宮城各県知事の発言

区分	発　言　内　容
宮城県知事	● 被災者の健康管理 ・通院が必要な被災者でガソリンの不足等で通院できない方は、県外の病院に移送し入院していただく。 ・ＤＭＡＴ（８９チーム）、医療救護班（６２チーム）及び保健師（４７チーム）でケア中であるが避難所数が多いため、まだまだ不十分 ・薬については、県から市町村へ十分ではないが届けている。市町村が誰がどんな薬が必要なのかつかめていない。 ● 被災した市町村の支援 県だけではできない。全国の都道府県及び市町村から技術職のみならず一般職も派遣してもらっている。 ※平野内閣府副大臣発言 農水省・財務省のチーム（２～３名）を市町村に派遣している。 ● 県民へのメッセージ（アナウンサーは決意と導入） 「県民のみなさん。必ず元の生活に戻れるようにしてまいりたい。国と市町村と協力して必ず実現する。安心して信頼してください。」

ＴＶ放送における岩手・宮城各県知事の発言

区分	発　言　内　容
岩手県知事 （冒頭のみ出演）	● 国に要望する事項 市町村に対する行政機能支援から、全東北規模での復興の推進まで国を挙げて取り組む強力なリーダーシップ

本日の任務等

1　活動の成果
2　陸災部隊
3　海災部隊
4　空災部隊
5　米　　軍
6　統合輸送

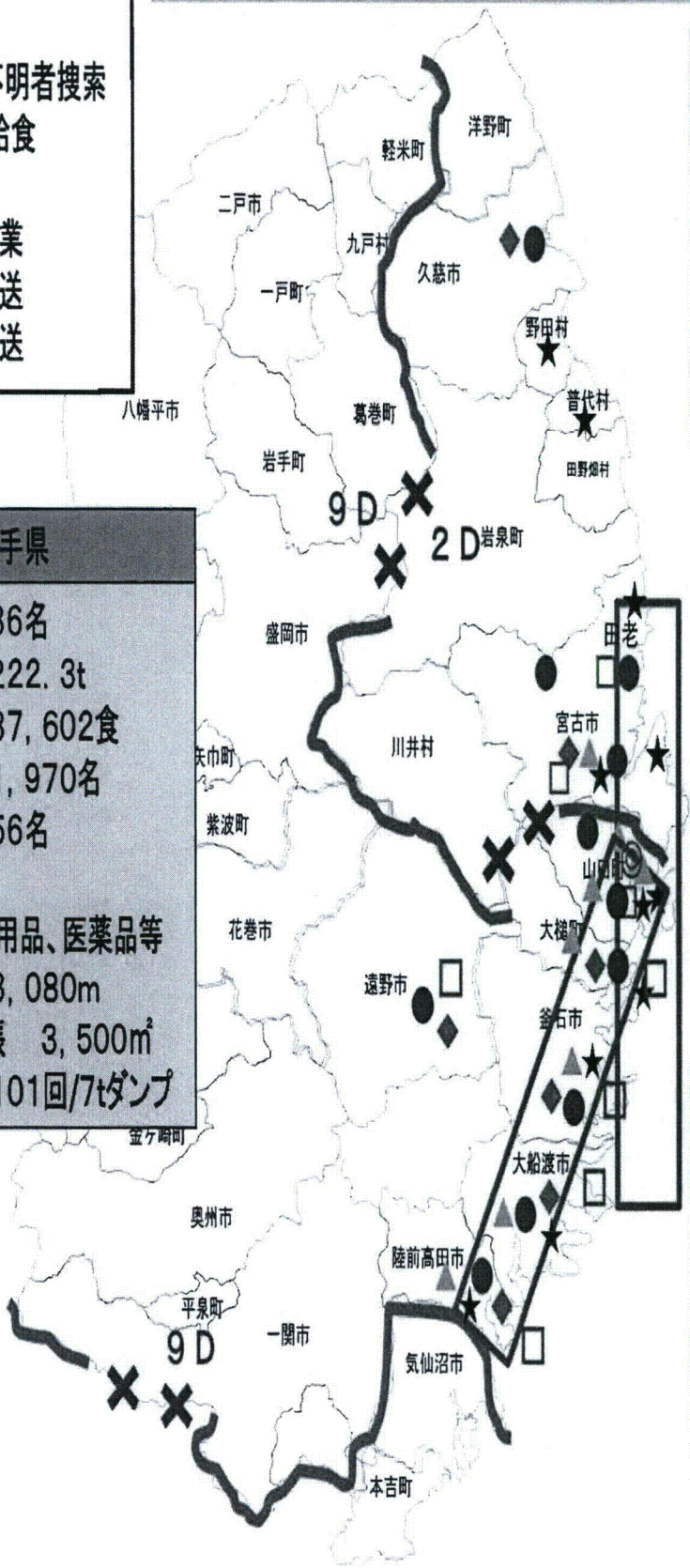
活動（３／２５）の成果

活動の成果(岩手県)

3.252400現在

<凡 例>

★ : 行方不明者捜索
● : 給水・給食
▲ : 入浴
□ : 施設作業
◆ : 物資輸送
◎ : 航空輸送



2 D

- 遺体収容 11名
- 給水 82.3t
- 給食 12,858食
- 入浴支援 241名
- 巡回診療 56名
- 物資輸送 燃料、医薬品、衣類等

岩手県

- 遺体収容 36名
- 給水 222.3t
- 給食 37,602食
- 入浴支援 1,970名
- 巡回診療 56名
- 物資輸送
  燃料、水、日用品、医薬品等
- 道路啓開 3,080m
- 瓦礫置場拡張 3,500㎡
- 瓦礫運搬 101回/7tダンプ

4 E B

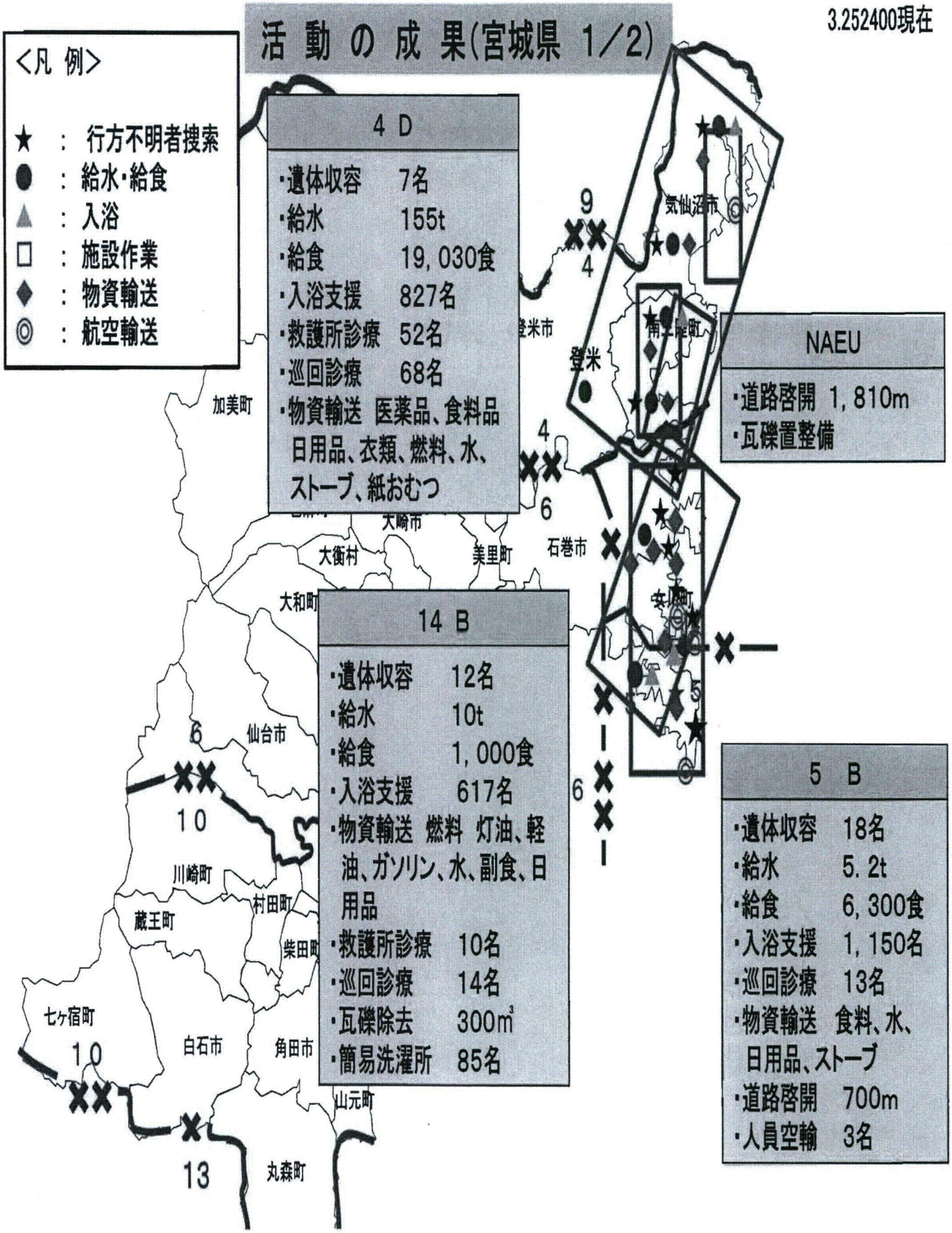
- 道路啓開 980m
- 瓦礫置場拡張 3,500㎡
- 瓦礫除去 101回/7tダンプ

9 D

- 遺体収容 25名
- 給水 140t
- 給食 24,744食
- 入浴支援 1,729名
- 道路啓開 2,100m
- 物資輸送 燃料、水、日用品

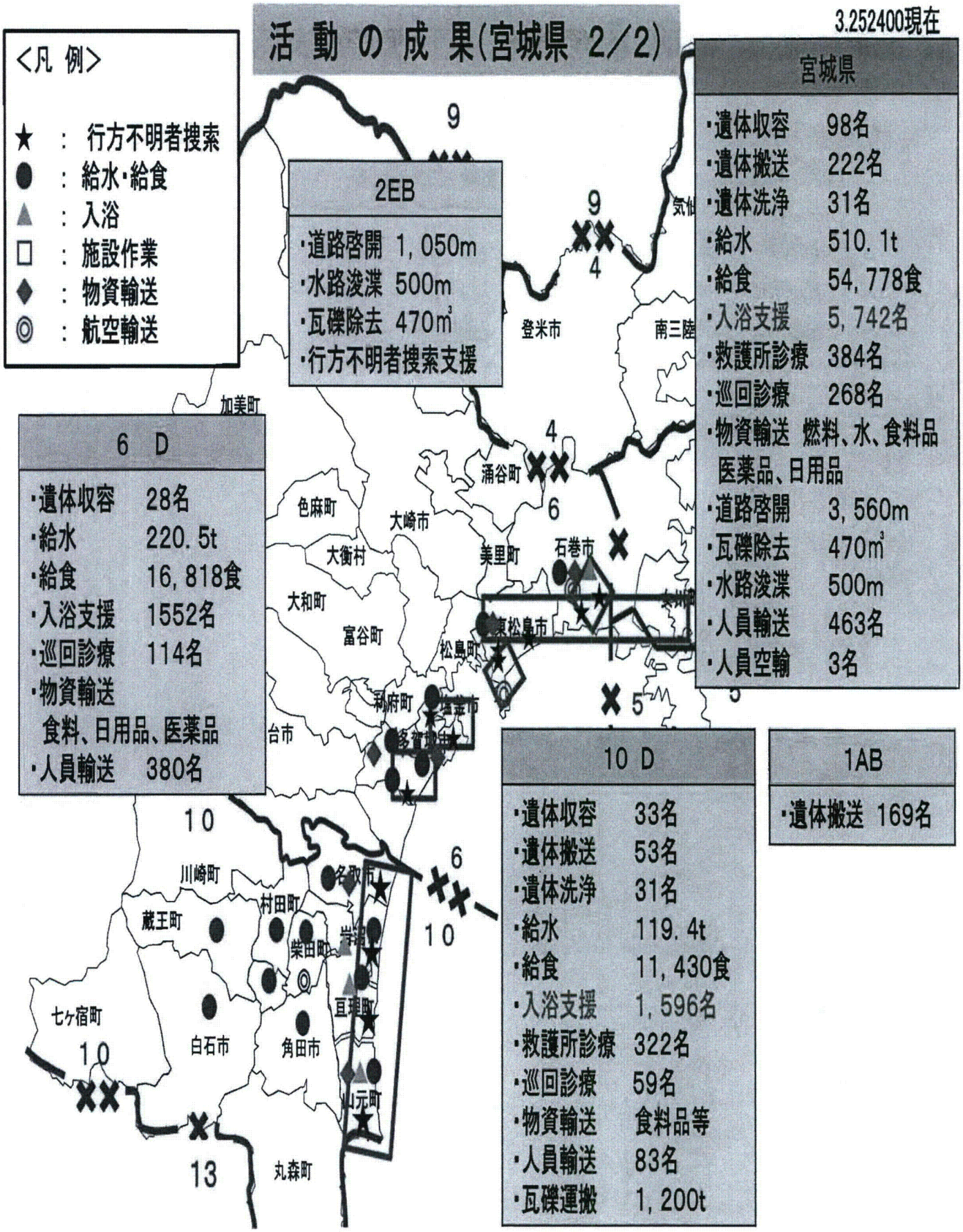
活動の成果(宮城県 1/2)

3.252400現在



活動の成果(宮城県 2/2)

3.252400現在



<凡 例>

- ★ : 行方不明者捜索
- ● : 給水・給食
- ▲ : 入浴
- □ : 施設作業
- ◆ : 物資輸送
- ◎ : 航空輸送

宮城県

- ・遺体収容 98名
- ・遺体搬送 222名
- ・遺体洗浄 31名
- ・給水 510.1t
- ・給食 54,778食
- ・入浴支援 5,742名
- ・救護所診療 384名
- ・巡回診療 268名
- ・物資輸送 燃料、水、食料品 医薬品、日用品
- ・道路啓開 3,560m
- ・瓦礫除去 470㎥
- ・水路浚渫 500m
- ・人員輸送 463名
- ・人員空輸 3名

2EB

- ・道路啓開 1,050m
- ・水路浚渫 500m
- ・瓦礫除去 470㎥
- ・行方不明者捜索支援

6 D

- ・遺体収容 28名
- ・給水 220.5t
- ・給食 16,818食
- ・入浴支援 1552名
- ・巡回診療 114名
- ・物資輸送 食料、日用品、医薬品
- ・人員輸送 380名

10 D

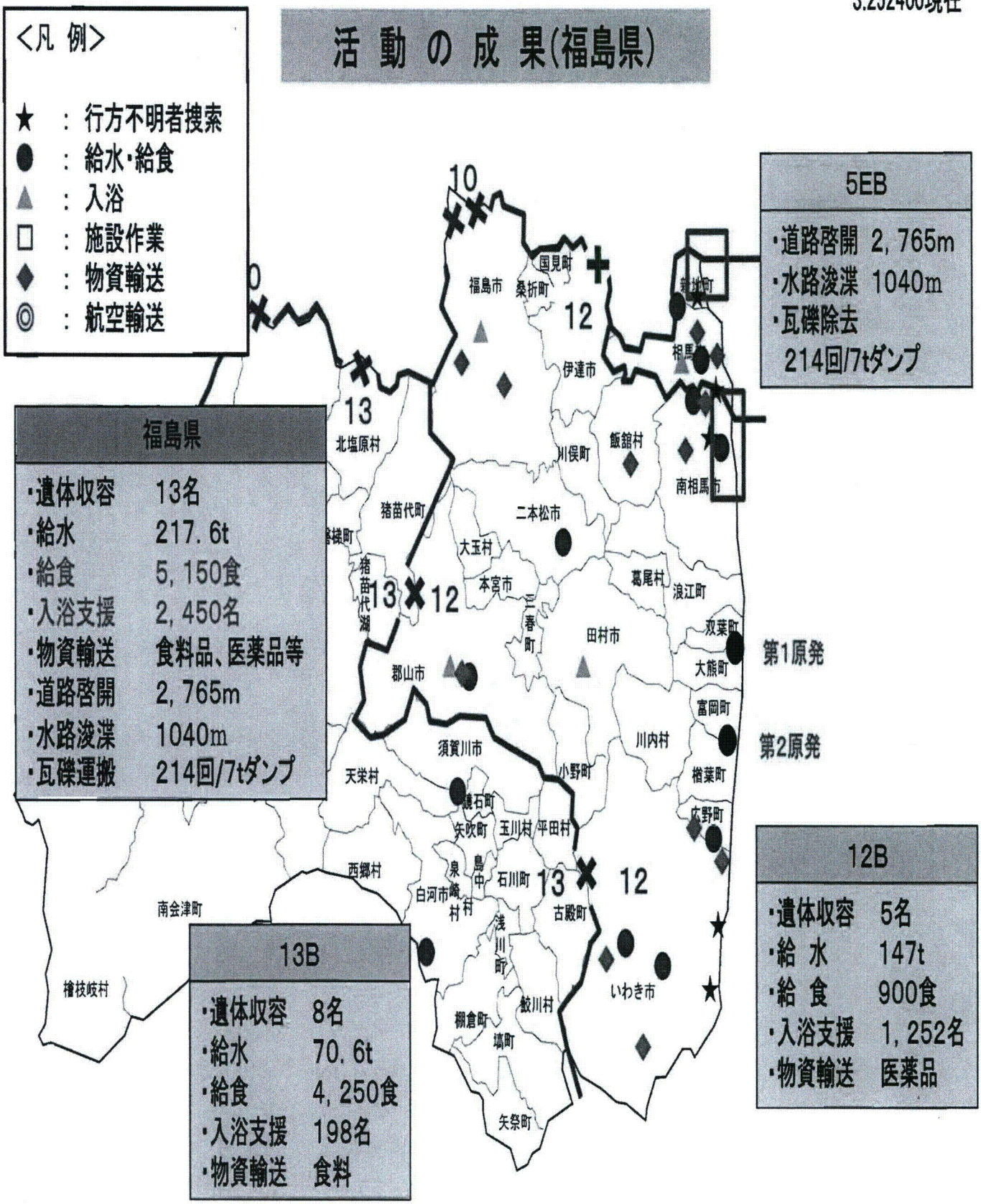
- ・遺体収容 33名
- ・遺体搬送 53名
- ・遺体洗浄 31名
- ・給水 119.4t
- ・給食 11,430食
- ・入浴支援 1,596名
- ・救護所診療 322名
- ・巡回診療 59名
- ・物資輸送 食料品等
- ・人員輸送 83名
- ・瓦礫運搬 1,200t

1AB

- ・遺体搬送 169名

3.252400現在

活動の成果(福島県)



陸災部隊

本日の任務(陸災地上部隊)

	時期	活動場所	担任				活動内容	担任部隊	備考
			陸災	海災	空災	米軍			
岩手県	0600～2200	久慈市、宮古市、山田町、野田村、田老村、重茂半島一帯	◎				行方不明者捜索 給水・給食 入浴支援×3 物資輸送 救護所治療、巡回診療	2D	
	0800～1800	陸前高田市、大船渡市、釜石市大槌町、山田町	◎				行方不明者捜索 給水・給食、入浴支援×4 洗濯支援 道路啓開、物資輸送、 燃料配分、瓦礫置場拡張 埋葬予定地造成 救護所治療、巡回診療	9D	
	0600～終日	陸前高田市、大船渡市、釜石市大槌町、宮古市、山田町	◎				行方不明者捜索支援、 道路啓開、瓦礫除去、 瓦礫置場拡張	4EB	
	終日	花巻空港～盛岡市	◎		○		物資輸送	ALogS	

本日の任務(陸災地上部隊)

	時期	活動場所	担任				活動内容	担任部隊	備考
			陸災	海災	空災	米軍			
宮城県	終日	石巻市、仙台市、多賀城市、 東松島市、塩釜市、七ヶ浜町	◎				行方不明者捜索、給水・給食、 入浴支援×1、道路啓開、物資輸送、 救護所治療、巡回診療、航空輸送	6D	
	0530~終日	気仙沼市、登米市、南三陸町	◎				行方不明者捜索 給水・給食、入浴支援×2 道路啓開、軽徒橋架橋、物資輸送、 救護所治療、巡回診療、家畜埋葬	4D	
	0600~	名取市、岩沼市、亘理町、山元町 蔵王町、柴田町、大河原町、 村田町、白石市、角田市	◎				行方不明者捜索、給水・給食、 入浴支援×3、道路啓開、瓦礫運搬、 物資輸送、人員輸送、遺体搬送、 遺体洗浄、救護所治療、巡回診療	10D	
	0600~終日	石巻市、女川市、宮城野区、 東松島市、七ヶ浜町、仙台市	◎				行方不明者捜索支援、道路啓開、 瓦礫除去、水路浚渫	2EB	
	0615~1800	女川町、石巻市	◎				行方不明者捜索 給水・給食、入浴支援×2 瓦礫除去、物資輸送、救護所治療、 巡回診療、交通統制、荷物仕分	14B	
	0500~1800	石巻市	◎				行方不明者捜索 給水・給食、入浴支援×2 道路啓開、物資輸送、巡回診療	5B	
	0600~終日	気仙沼市、南三陸町	◎				行方不明者捜索支援、道路啓開、 道路補修、瓦礫除去、瓦礫置場整備	NAEU	
	終日	松島基地~仙台市、東松島市	◎		○		物資輸送	ALogS	
	終日	東松島市、石巻市	◎				遺体搬送	1FAB	
	終日	仙台、多賀城	◎				病院治療、巡回診療	Hosp	

本日の任務（陸災地上部隊）

	時期	活動場所	担任				活動内容	担任部隊	備考
			陸災	海災	空災	米軍			
福島県	終日	南相馬市、いわき市、田村市 二本松市、郡山市、白河市、中島村、福島市、浪江町、葛尾村、川村町、楢葉市、広野町	◎				行方不明者捜索 給水・給食 入浴支援×3 物資輸送、荷物仕分 患者後送 危険地域内住民把握	12B	
	0600～終日	新地町、相馬市、いわき市 白河市	◎				行方不明者捜索 給水・給食 入浴支援×1 物資輸送、~~患者後送~~	13B	
	0600～終日	新地町、南相馬市	◎				道路啓開、水路浚渫、 瓦礫除去	5EB	
	終日	福島空港～福島市、郡山市	◎		○		物資輸送	ALogS	
	終日	南相馬市	◎				個人識別	Hosp	

本日の主要任務(陸災航空部隊)

	時期	活動場所	担任				活動内容	担任部隊	備考
			陸災	海災	空災	米軍			
岩手県	0930~1130 1300~1500	八戸~大船渡 大船渡~八戸	◎				映伝	NAAvn	UH×1
	0800~0840 1250~1320	東署H、滝の里工業団地、新日鐵釜石サッカー場	◎				指揮連絡(VCG)	9Avn	UH×1
	1020~1655	花巻~CP岩手~遠野~花巻	◎				人員空輸(NA Dep長)	NAAvn	UH×1
宮城県	1300~1500	霞目~気仙沼	◎				映伝	MAAvn	UH×1
	0830~	寒風沢島漁港	◎				航空輸送(高機動車) 6D	1HB	CH
	0730~	石巻総合運動公園 青葉中、好文館高	◎				航空輸送(食料・衣類)	EAAvn	UH×2
	1230~1810	松島基地、東松島、石巻、女川、気仙沼	◎				JTF指揮官現地視察	NEAAvn	UH×2
	~~1200頃~~	~~霞目~女川運動公園~~	~~◎~~				~~人員空輸(政務官以下10名)~~ 中止(地上で実施)		
	0930~ 1630~	五右衛門運動公園~大島	◎				人員空輸(介護班20名)	WAAvn	CH×1
	0935~1335	石巻、気仙沼	◎				人員空輸(CTS長以下3名)	NEAAvn	UH×1
	0730~0740	多賀城駐屯地 寒風沢島	◎				人員空輸(22i4名)	6Avn	UH×1
福島県	0625~0940	福島第1原発	◎				ｻｰﾓｸﾞﾗﾌｨｰ	CRF	CH×1

海災部隊

本日の任務（海災部隊）

	時　期	活動場所	担任				活動内容	備考 （担任部隊名等）
			陸災	海災	空災	米軍		
青森県	終　日	八戸航空基地		○			診療支援	八戸航空基地隊
岩手県	終　日	沿岸海域		○			漂流者・漂着物の捜索	艦艇、航空機
宮城県	1100～1700	給分地区（石巻市）		○			入浴支援	おおすみ艦内浴室 LCACによる移送
	終　日	浦戸4島		○			物資輸送	艦艇、航空機
	終　日	気仙沼（東湾、西湾）		○			物資輸送	掃海艇
	終　日	沿岸海域		○			漂流者・漂流物の捜索	艦艇、航空機、掃海艇
福島県	終　日	横須賀～小名浜～福島第1原発沖		○			米軍真水バージ移送	ひうちによる曳航 11護隊（さわゆき）警戒艦
	終　日	沿岸海域		○			漂流者・漂流物の捜索	航空機

空災部隊

本日の任務(固定翼、回転翼)

:統幕(J4)計画の統合輸送

	時 期	活動場所	担任				活動内容	備考 (担任部隊名等)
			陸災	海災	空災	米軍		
全域	終日	全活動空域			◎		航空偵察	偵察航空隊(RF−4E)
		百里−市ヶ谷−百里			◎		写真輸送	空救団(UH−60J)
岩手県	1040~1150	入間−花巻	○		◎		民生支援(水、米)	1輸空(C−130H)
	0910~1210	小牧−花巻	○		◎		民生支援(下着)	1輸空(C−130H)
	1430~1520	千歳−花巻	○		◎		民生支援(携帯トイレ)	2輸空(C−1)
	1000~1145	千歳−山田			◎		糧食	救難団(CH−47J)
宮城県	1030~1430	松島−大島−松島			◎		飲料水精製装置	空救団(CH−47J)
	0900~1025	入間−松島			◎		増強人員	空球団(CH−47J)
	1500~1610	三沢−松島			◎		部隊交代	1輸空(C−130H等)
	1010~1120	小松−松島			◎		空輸支援器材	1輸空(C−130H)
	0730~1350	小牧−松島	○		◎		パン	1輸空(C−130H)
	0800~0920	美保−松島	○		◎		民生支援(医療品)	3輸空(C−1)
	1150~1700	千歳−松島	○		◎		飲料水、部隊補給品	2輸空(C−1)
	1210~1630	入間−松島	○		◎		民生支援(おむつ等)	2輸空(C−1)
	0940~1220	福岡−松島	○		◎		民生支援(おむつ等)	3輸空(C−1)

本日の任務（固定翼、回転翼）

：統幕（J4）計画の統合輸送

	時　期	活動場所	担任				活動内容	備考（担任部隊名等）
			陸災	海災	空災	米軍		
福島県	0510～0550	小牧ー福島	○		◎		パン、ウイダーインゼリー、民生支援（日用品、消毒剤等）	1輸空（KC－767）
	0800～0920	美保ー福島	○		◎		民生支援（水、日用品）	3輸空（C－1）
	1330～1400	松島ー福島	○		◎		民生支援（医療品）	1輸空（C－130H）
	0840～1235	名古屋ー福島			◎		部隊交代	2輸空（C－1）

本日の任務(地上部隊)

	時 期	活動場所	担任				活動内容	備考 (担任部隊名等)
			陸災	海災	空災	米軍		
全般	終日	松島基地			◎		(巡回診療) 松島医療チームの派遣(東松島市)	空災医療チーム (待機含む) 三沢:5名　松島:15名 山田:9名　百里:11名 入間:8名　小松:3名 計51名(除 移動中) 広域医療搬送チーム → 待機中 航空機動衛生隊×:2個チーム
		山田分屯基地			◎		(自隊救護) 山田分屯基地	
		百里基地 大滝根山分屯基地			◎		(放射線測定) 百里基地 大滝根分基地	
	0800～	Jヴィレッジ	◎		○		待機	人員×13名 消防車×6台
	終日	松島基地周辺 山田分屯基地周辺 大滝根山分屯基地周辺			◎		道路啓開、捜索救助、給食、給水支援、瓦礫の撤去、燃料輸送	増援各部隊計220名

○ 松島基地
隊員浴場の民間人への開放「希望の湯」　1300～1600

米　　軍

本日の任務(回転翼、固定翼)

	時 期	活動場所.	担任				活動内容	備考 (担任部隊名等)
			陸災	海災	空災	米軍		
宮城	確認中	空母ロナルドレーガンー被災地				◎	航空偵察	E-2C×2、スーパーホーネット(海軍)
	0800-1830	厚木・エセックスー大島				◎	救援物資輸送	CH−46×4、CH−53×1(海兵隊)
	1400−1445	横田-仙台				◎	水輸送	MC−130(米空軍)
	1000−1446	横田-三沢				◎	人員輸送	PC−120(米空軍)
	25.2215-0933	ヒッカム-三沢				◎	人員輸送	C−17(米空軍)
	0630−1800	横田-仙台(3往復)				◎	水輸送	C130H(米空軍)
	0830−2000	横田-仙台(3往復)				◎	水輸送	C130H(米空軍)
	2030−2112	横田-仙台				◎	物資輸送	C−17(米空軍)
	27.0215-27.0330	横田-三沢				◎	簡易ベッド輸送	C−17(米空軍)
	確認中	ウェストオーヴァー-横田(仙台)				◎	K-Max 輸送	C-5B(米空軍)
	0900−1800	横田-被災地				◎	放射線測定	C−12(米空軍)
	0800−1000	岩国-山形				◎	米軍物資輸送	C−130(米海兵隊)
	0900−1200	岩国-山形				◎	米軍物資輸送	C−130(米海兵隊)
	1430−1530	横田-仙台				◎	人員輸送	C−12(米海兵隊)
	0800−1845	横田-東北地区-霞目				◎	人員・パレット輸送	CH−46(米海兵隊)

本日の任務（海上部隊）

	時　期	活動場所	担任				活動内容	備考 （担任部隊名等）
			陸災	海災	空災	米軍		
宮城	1400－1500	エセックス-ひゅうが				◎	水、糧食、日用品輸送	UH－2（米海兵隊）
青森	確認中	八戸港				◎	港湾調査	セーフガード（米海軍）

本日の任務（地上部隊）

	時　期	活動場所	担任				活動内容	備考 （担任部隊名等）
			陸災	海災	空災	米軍		
宮城	0730-1730	仙台空港				◎	空港機能回復	海兵隊・陸軍と民間業者との共同作業
	確認中	東松島市				◎	シャワーセット開設・運営	米海兵隊
	確認中	6D、5B地区				◎	米軍LOの派遣	米海兵隊

統合輸送

統合輸送予定（3月26日）

26日0600現在

1　予　定

統合輸送　　31件　　207ｔ（25日分102ｔを含む）、人員32名

米軍輸送　　8件

2　主要な任務

区　分		海・空輸	陸送（空港・港湾～県集積所）
統合輸送	岩手県	C-1×1、C-130×2 小牧、入間 千歳 水、米、医療品等 花巻	特大×6 県集積所
	宮城県	C-1×5、C-130×3 千歳、小牧福岡 パン、水、毛布、医薬品等 松島	特大×1 県集積所
	福島県	C-1×1、C-130×1、KC-767×1 小牧 ウィダー、医薬品等 福島	特大×7 県集積所

JTF東北指揮官現地視察行動予定

JTF－TH指揮官現地視察(宮城)行動予定

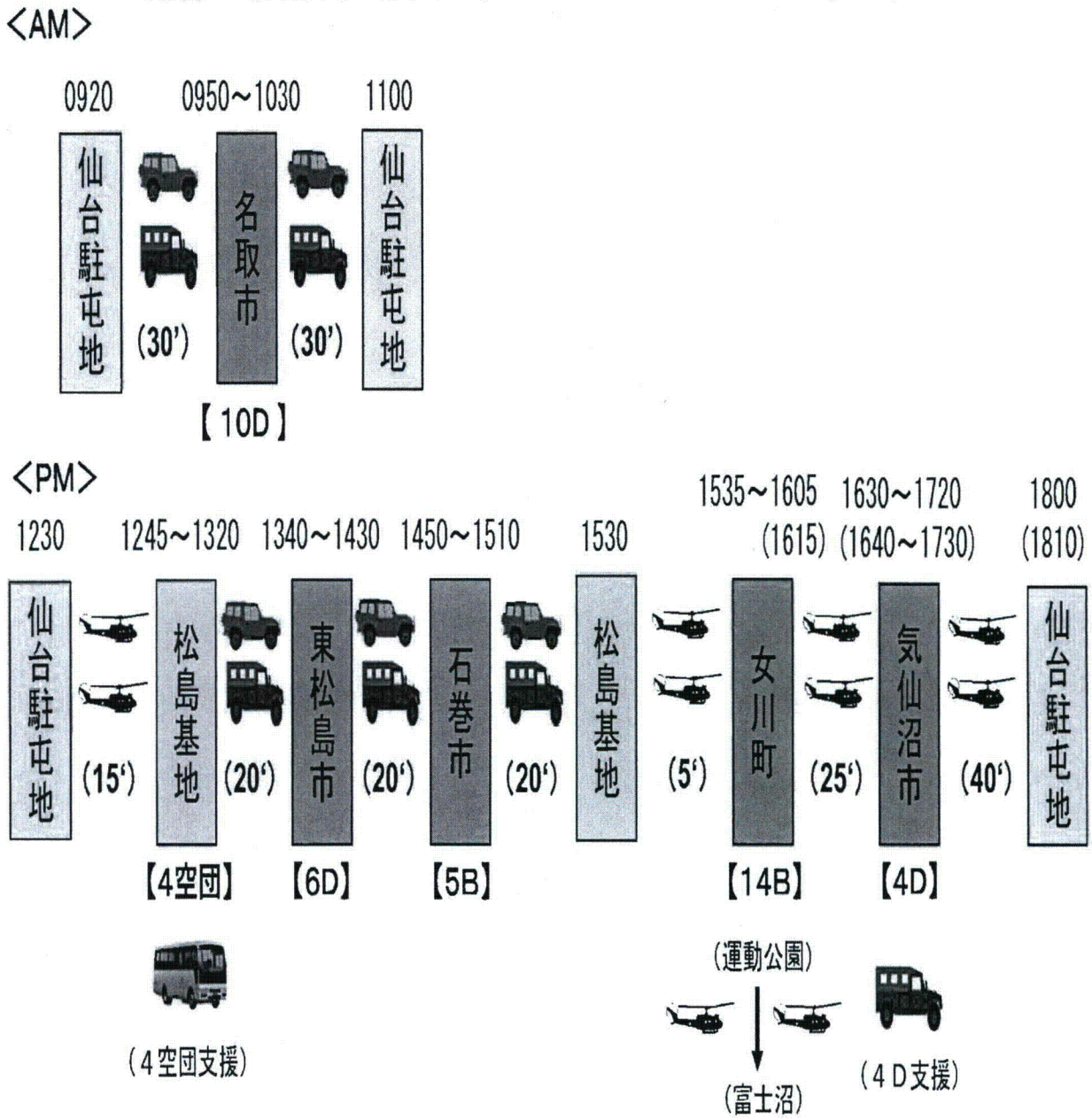
宮城地区

26日

ＪＴＦ指揮官

随行：政策補佐官、防衛課長、総監副官、防衛幹部、広報員

最先任上級曹長(石巻市まで)　　計７名



その他報告・質疑等

・海災、空災部隊、部隊LO
・関係部隊長、アドバイザー、米軍

幕僚副長指導

幕僚長指導

統合任務部隊指揮官指導

From: RST01B Hoc
Sent: Friday, April 01, 2011 1:00 PM
To: Versluis, Rob
Subject: FW: TEPCO 1F4 SFP Structural Analysis translation and Severe Accident Management Guidance Technical Basis Reports (SAMG TBR)
Attachments: AppendixS.3 Burning of Combustible Gases.pdf; TEPCO 1F4 SFP Structural Analysis.pdf

Rob Versluis, PhD, DOE NE-71, 301-903-1890 (o) (b)(6) *(m)*
****

From: RST01 Hoc
Sent: Friday, April 01, 2011 12:56 PM
To: RST01B Hoc; Rob Versluis
Subject: FW: TEPCO 1F4 SFP Structural Analysis translation and Severe Accident Management Guidance Technical Basis Reports (SAMG TBR)

From: Modeen, David [mailto:dmodeen@epri.com]
Sent: Friday, April 01, 2011 12:11 PM
To: INPOERCTech; RST01 Hoc; GE.HitachiNuclearResponseTeam@ge.com
Subject: TEPCO 1F4 SFP Structural Analysis translation and Severe Accident Management Guidance Technical Basis Reports (SAMG TBR)

Team,

Please share with your team members as appropriate.

The 'TEPCO Structural Analysis' translation is attached for your consideration. The introductory remarks were:

A study on the aftershocks of the reactor building

1. Objective: Conducting the study on the aftershocks of the damaged 1F4 reactor building.
2. Study condition:
   (1) For Unit 4, conducting the structural analysis on the aftershocks of the reactor building in "the normal condition" and "full of the water" (if the cooling water is filled and full (the spent fuel pool) <Sekinuma added>). It is assumed that the water is not into the PCV because the Unit 4 was under the refueling and maintenance outage when the earthquake occurred.
   (2) This analysis was based on that all external wall panels were lost above the 4th floor, because some of the external wall panels were lost above the 4th floor of the reactor building.
   (3) The seismic of the aftershock is assumed 200 GAL at the upper foundation slab.

Jeff Gabor referred to the appendix attached on this morning's call. It is provided for your convenience. As further background, you may want to pull down the entire Technical Basis Document Volume 2 from www.epri.com. Please be aware that the reactor vendor Owners Groups turned EPRI's technical basis information into contingency guidance for

DJ/17

plant use. That guidance is intended to provide suggested responses by plant operators based on measured plant parameters (referred to as Plant Damage States) regardless of accident sequence.

An abstract describing the EPRI TBR is below. It is a 28 MB document, so if you want it, download it from www.epri.com. Of course, the GEH Severe Accident Management Guidance would be helpful as well.

Severe Accident Management Guidance Technical Basis Report: Volume 2

Product ID: TR-101869-V2
Date Published: 4/1/1993
File size: 28.87 MB

Sector Name: Nuclear
Document Type: Technical Report
File Type: Adobe PDF (.pdf)

[Download] This Product is publicly available.

Abstract
Severe accident management guidance encompasses actions that would be taken to recover from a damaged core condition and to prevent or mitigate the release of fission products. This report provides the technical basis for developing such guidance by the nuclear steam supply system owners groups.

Related Volume

- TR-101869-V1 - Severe Accident Management Guidance Technical Basis Report: Volumes 1 and 2

Background
For severe accident management guidance, *it is important that the relationships between actions taken during an accident and the possible state of the reactor core, the reactor coolant system, and containment are carefully considered and documented. This report describes the technical basis for assessing the relationship between actions that could be taken (candidate high-level actions) and the effects that could result as a function of the accident state.*

Objective
To provide a technical basis for the development of severe accident management guidelines by the individual owners groups.

Approach
The project team evaluated the effects associated with the implementations of individual candidate high-level actions under an accident condition with respect to the severity of the accident condition. Judgments are not provided on whether these effects are positive or negative, only that they could occur.
Results
The report includes a comprehensive assessment of the possible effects that could result if specific actions are taken following core damage. "Volume 1, Candidate High-Level Actions and Their Effects," contains a tabularized list of effects for each individual action as well as for two special conditions (external cooling of reactor pressure vessel and containment steam inerting). "Volume 2, The Physics of Accident Progression," is a compilation of appendixes that summarize the relevant information and evaluation methods needed for assessing the importance of severe accident phenomena.
EPRI Perspective
Severe accident management guidance is to be developed by the individual owners groups. As a result of the numerous phenomena associated with severe accident conditions, the development of this guidance requires an underlying technical basis that defines the range of effects that could result when actions are taken. This report provides this technical basis. It has been reviewed and approved by an engineering design review committee that includes representatives from the four owners groups and EPRI staff members as well as industry and university experts. The first volume deals with candidate high-level actions and the possible effects that could be anticipated if a given action is taken. The second volume characterizes the individual phenomena. The information is presented in a concise and easy-to-reference manner.
Program
2004 Nuclear Power
Keywords
Severe Accidents
Reactor Safety
Note:
EPRI Customer Assistance Center
(800) 313-3774
email:askepri@epri.com
Direct URL
http://my.epri.com/portal/server.pt?Abstract_id=TR-101869-V2

Director, External Affairs
EPRI Nuclear Power Sector
704-595-2670 (work)
(b)(6) **cell)**
dmodeen@epri.com

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

From: Hoc, PMT12
Sent: Tuesday, April 05, 2011 8:24 AM
To: PMT03 Hoc
Subject: FW: Low level waste question from NTAG teleconference (UNCLASSIFIED)

You might consider putting this in the log to document that Mr. Komp is a point of contact at DOD for LLRW questions.

-----Original Message-----
From: Komp, Greg R Mr CIV USA HQDA ASO [mailto:(b)(6)
Sent: Tuesday, April 05, 2011 7:19 AM
To: Idar, Deanne J CIV OSD POLICY; Hoc, PMT12
Cc: Bentz, Julie A.; Owens, Janice; LIA03 Hoc; LIA02 Hoc; Munning, Gregory A Capt Code 07, 07; (b)(6) Aponte, Manuel COL OSD POLICY
Subject: RE: Low level waste question from NTAG teleconference (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: FOUO

Thanks for getting these out.

I'd be happy to serve as the SME POC to facilitate the discussion. I'm getting more questions that need external DOD answers.

-----Original Message-----
From: Idar, Deanne J CIV OSD POLICY
Sent: Monday, April 04, 2011 7:05 PM
To: 'Hoc, PMT12'
Cc: Bentz, Julie A.; Owens, Janice; LIA03 Hoc; LIA02 Hoc; 'Munning, Gregory A Capt Code 07, 07'; 'Albert.(b)(6) Komp, Greg R Mr CIV USA HQDA ASO; Aponte, Manuel COL OSD POLICY
Subject: RE: Low level waste question from NTAG teleconference

Tim:
Thanks for the follow-up.

I've included the chairman of the DoD LLRW Disposition Advisory Committee, i.e. Mr. Greg Komp, as well as Navy and AF POCs to provide them the information too.

Greg K. -as chairman, are you also willing to serve as SME POC for the DoD LLRW Disposition Advisory Committee on any future telecon regarding these topics?

Best,
Deanne

Deanne J. Idar, Ph.D.
Senior Science Advisor
OSD(P)-GSA/CWMD/ CBRN Defense Policy
Office: Rm 5C746 Pentagon
Phone: 703-571-2327
Blackberry: (b)(6)

-----Original Message-----
From: Hoc, PMT12 [mailto:PMT12.Hoc@nrc.gov]
Sent: Monday, April 04, 2011 5:22 PM
To: Bentz, Julie A.; Idar, Deanne J CIV OSD POLICY; Owens, Janice; LIA03 Hoc; LIA02 Hoc
Cc: eoc.epahq@epa.gov; Eoc.Epahq@epamail.epa.gov; RMTPACTSU_DMO; RMTPACTSU_ELNRC; RMTPACTSU_HHS; RMTPACTSU_MLO; RMTPACTSU_SRO; 'DemingRM@state.gov'; NITOPS; Connery, Joyce; PMT03 Hoc; David Bowman; Mustin, Tracy; Szymanski, John; Zerr, Thomas J.; Regan, Sean P.; Bahar, Michael
Subject: RE: Low level waste question from NTAG teleconference

Julie - Deanne,

NRC has been aware of the potential for this coming up. The NRC POC will be Janice Owens in our Office of International Programs.

DJ/18

WRT to the question of whether licensee's would need to notify recipients that an item was decontaminated and cleared/released, the answer is no. The item should be surveyed (both inside and out) to make a determination that it meets appropriate release criteria.

Tim Harris

PMT - PAAD

From: Bentz, Julie A. [mailto:(b)(6)
Sent: Monday, April 04, 2011 5:12 PM
To: Idar, Deanne J CIV OSD POLICY
Cc: Hoc, PMT12; eoc.epahq@epa.gov; Eoc.Epahq@epamail.epa.gov; RMTPACTSU_DMO; RMTPACTSU_ELNRC; RMTPACTSU_HHS; RMTPACTSU_MLO; RMTPACTSU_SRO; 'DemingRM@state.gov'; NITOPS; Connery, Joyce; David Bowman; Mustin, Tracy; Szymanski, John; Zerr, Thomas J.; Regan, Sean P.; Bahar, Michael
Subject: Low level waste question from NTAG teleconference

Deanne,

I've cc'd NRC Ops, EPA Ops, DOE Ops (and OFDA/State for the question on whether this is a Japan problem or a US problem). I would ask each of the Op centers to identify the appropriate POC who can talk to the low level waste issues and have them contact you directly.

Per this email string, the questions are:

1. Will radwaste generated outside the hot, warm or plume zones be returned to Japan or treated as US generated waste. (Would this be treated differently than the radwaste generated inside those zones?)

2. Can this waste be declared 91b, "national defense" waste or do we need to treat as commercial low level radwaste?

3. If commercial, will we need import permit from NRC.

4. Can we access DOE disposal sites.

Also, the additional questions to DOE on how they plan to decon their AMS systems and what they plan to do with that waste. We should find a pathway on this and tee it up at the IPC on Wednesday if needed.

Julie

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

From: Komp, Greg R Mr CIV USA HQDA ASO [mailto:(b)(6)

Sent: Monday, April 04, 2011 8:15 AM

To: Idar, Deanne J CIV OSD POLICY; Aponte, Manuel COL OSD POLICY

Cc: Farlow, William B Lt Col MIL USAF AF/A5XP; Bentz, Julie A.

Subject: RE: Low level radwaste policy questions (UNCLASSIFIED)

Classification: UNCLASSIFIED

Caveats: FOUO

I received some questions over the weekend concerning the interaction with DOS and other interagency groups.

The radwaste group finished up the initial guidance to the field. A copy is attached.

The next concerns are the return of radwaste that might be accumulated outside the contaminated zones. Both the Navy and Air Force see this as a major concern. I understand that USFJ has engaged at the Embassy level and are trying out find out what is happening at OSD/DOS level. Please see email extract below:

Email extract:

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

From: Gregory, Katherine RDML USN [mailto:(b)(6)

Sent: Sunday, April 03, 2011 23:16

To: Benevides, Luis A CAPT SEA 04

Cc: Wiltse, Jeffrey S COL USA USFJ J5; Sonnenberg, Dale L GS-15 USFJ J0; Capria, Frederick CAPT; Sommer, John T CAPT PACOM, J44

Subject: FW: Operation TOMODACHI LLR Waste Discussion

CAPT,

I confirmed w/ COL Jeff Wiltse (USFJ J5 - (b)(6) dsn 225-4119) and Dale Sonnenberg (USFJ Legal, (b)(6) dsn 225-4509) that they've already engaged w/ the Embassy on this issue.

They would like to know to what degree OSD has been talking to State, and who at OSD is working w/ whom at DoS -- can you help with that?

V/r,

Kate Gregory

End of email extract.

I'm not sure if you've gotten this request through a different channel. As usual there are a several overlapping rings of influence and it's hard to keep track of who is working what. If there is any discussion at the OSD or interagency level, please keep me informed, so I can pass that along to the radwaste channels. We need to start working the second tier of disposal actions to maintain reduced inventories.

Greg

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

From: Idar, Deanne J CIV OSD POLICY

Sent: Wednesday, March 30, 2011 6:41 PM

To: Aponte, Manuel COL OSD POLICY; Komp, Greg R Mr CIV USA HQDA ASO

Cc: Farlow, William B Lt Col MIL USAF AF/A5XP; 'Bentz, Julie A.'

Subject: RE: Low level radwaste policy questions (UNCLASSIFIED)

Gentlemen:

Sorry for the delay in my response. I don't have answers, and these type of questions have certainly been part of the questions raised in the Navy and AF telecons over the past several days.

I also endorse bringing these up in NTAG, and have cc: Julie to make her aware of the questions too.

Best,

Deanne

Deanne J. Idar, Ph.D.

Senior Science Advisor

OSD(P)-GSA/CWMD/ CBRN Defense Policy

Office: Rm 5C746 Pentagon

Phone: 703-571-2327

Blackberry: (b)(6)

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

From: Aponte, Manuel COL OSD POLICY

Sent: Tuesday, March 29, 2011 4:48 PM

To: Komp, Greg R Mr CIV USA HQDA ASO; Idar, Deanne J CIV OSD POLICY

Subject: RE: Low level radwaste policy questions (UNCLASSIFIED)

Wow, these are tough questions that, frankly, I think requires interagency discussion. After all, DoD is not the only department/agency generating LLRW

in Japan, I'm sure.

Deanne, do you have any ideas? Is this something we need to bring to the attention of the Nuclear Technical Advisory Group?

v/r, Manny

COL Manuel Aponte, Jr.

Rad/Nuc Defense Senior Military Advisor ASD (Homeland Defense & Americas' Security Affairs) 2600 Defense Pentagon, Room 3D247 (NOTE NEW ROOM NUMBER!) Washington, DC 20301-2600

571-256-8334 (NOTE NEW PHONE NUMBER!)

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

From: Komp, Greg R Mr CIV USA HQDA ASO [(b)(6)

Sent: Tuesday, March 29, 2011 3:43 PM

To: Aponte, Manuel COL OSD POLICY

Subject: Low level radwaste policy questions (UNCLASSIFIED)

Classification: UNCLASSIFIED

Caveats: FOUO

Considering all the working groups involved, I restricted the Low level radwaste group to actual disposal operations once the trash is generated. We won't address clearance questions or what is contaminated.

We've generated some recommended guidance and a list of questions that need to be addressed with OSD help.

Recommendations:

(b)(5)

(b)(5)

Questions:

1. Will radwaste generated outside the hot, warm or plume zones be returned to Japan or treated as US generated waste.

2. Can this waste be declared 91b, "national defense" waste or do we need to treat as commercial low level radwaste?

3. If commercial, will we need import permit from NRC.

4. Can we access DOE disposal sites.

Once the questions are answered especially 1, then we can develop a set of recommendations to provide to PACOM. Normally, we would address this through the Executive Agent for Low Level Radwaste, Mr. Hew Wolfe, DASA (ESOH), but since there are other interagency groups, it may be best to address in another forum.

Please let me know how you think these questions are best addressed.

Greg

Classification: UNCLASSIFIED

Caveats: FOUO

Classification: UNCLASSIFIED

Caveats: FOUO

Classification: UNCLASSIFIED
Caveats: FOUO

Go, Tony

From: jsturdavant@firstenergycorp.com
Sent: Friday, April 08, 2011 6:23 PM
To: Go, Tony
Cc: dbnrc@firstenergycorp.com; Kimble, Daniel; amperciva@firstenergycorp.com; vncapozziello@firstenergycorp.com; pmboissoneault@firstenergycorp.com; pjmccloskey@firstenergycorp.com
Subject: RE: NRC Request For Information - Post Fukushima Event REMP Sample Results - FOR INFORMATION ONLY - REVISED & UPDATED INFORMATION
Attachments: NRC RFI post-Japan Event CORRECTED (Date) 4-7-11.xls; CR 11-92086 Detectable I-131 On REMP Air Samples Below Reportable Levels.pdf; CR 11-92208 I-131 Detected In Davis-Besse REMP Air Samples.pdf; CR 11-92214 Documentation of I-131 In Beaver Valley REMP Samples After Fukushima.pdf; CR 11-92476 I-131 Detected In Davis-Besse REMP Air Samples For 2nd Week In A Row.pdf
Importance: High

Tony,

As we discussed previously (in light of the Fukushima event) , attached below is a FOR INFORMATION ONLY excel spreadsheet with Davis-Besse REMP Sample results requested by the NRC. There are both pre and post Japanese Earthquake/tsunami/ Fukushima event samples. These are routine REMP samples/results.

This spreadsheet supersedes the previous one in its entirely. It has corrections (ex., Milk sample date on previous spreadsheet was 1/31/11 for both samples, minor data entry errors), and has updated sample information from 3/22 and 3/29/11 for Air Iodine.

In addition to the Condition Reports (CR) previously sent (Beaver Valley, Davis-Besse, Perry as a result of rainwater (manhole and puddle) sample results), attached for your information are CRs initiated from Beaver Valley, Davis-Besse and Perry documenting that I-131 was detected in the REMP air samples. As noted in the CRs, the activity detected is below the required Lower Limit of Detection (LLD) but, above the lab's sample equipment detection capability. The sample results are in-line with the activity levels detected at other facilities so it is believed it is from the Fukushima nuclear facility event.

Regards,

Joe Sturdavant
Davis-Besse Nuclear Power Station, Regulatory Compliance
Phone: (419) 321-8199 Fax: (419) 249-2302

----- Forwarded by Joseph C. Sturdavant/FirstEnergy on 04/08/2011 06:38 PM -----

From: Joseph C. Sturdavant/FirstEnergy
To: tony.go@nrc.gov
Cc: Alfred M. Percival/FirstEnergy@FirstEnergy, Gerald M. Wolf/FirstEnergy@FirstEnergy, Patrick J. McCloskey/FirstEnergy@FirstEnergy, Vincent N. Capozziello/FirstEnergy@FirstEnergy
Date: 03/30/2011 06:24 PM
Subject: NRC Request For Information - Post Fukushima Event REMP Sample Results - FOR INFORMATION ONLY

DJ/19

Tony,

As we discussed last week (in light of the Fukushima event) , attached below is a FOR INFORMATION ONLY excel spreadsheet with Davis-Besse REMP Sample results requested by the NRC. There are both pre and post Japanese Earthquake/tsunami/ Fukushima event samples. These are routine REMP samples/results.

[attachment "NRC RFI post-Japan Event.xls" deleted by Joseph C. Sturdavant/FirstEnergy]

Regards,

Joe Sturdavant
Davis-Besse Nuclear Power Station, Regulatory Compliance
Phone: (419) 321-8199 Fax: (419) 249-2302

Also below, for your information, are Condition Reports initiated from Beaver Valley, Davis-Besse and Perry as a result of rainwater (manhole and puddle) sample results. These samples aren't related to the REMP program and the samples were taken of rainwater collected onsite.

[attachment "CR 11-91762 Detected I-131 In Manhole Samples & Standing Water (Fukishima Potential) at Perry Plant.pdf" deleted by Joseph C. Sturdavant/FirstEnergy] [attachment "CR 11-91798 Possible Fukishima Fallout I-131 Detected at Beaver Valley.pdf" deleted by Joseph C. Sturdavant/FirstEnergy] [attachment "CR 11-91809 Possible Fulisika Fallout I-131 Detected at Davis-Besse.pdf" deleted by Joseph C. Sturdavant/FirstEnergy]

Site: G201

CONDITION REPORT

CR Number 11-92476

TITLE: I-131 DETECTED IN DAVIS-BESSE REMP AIR SAMPLES FOR SECOND WEEK IN A ROW

ORIGINATION

DISCOVERY DATE	TIME	EVENT DATE	TIME	SYSTEM / ASSET#
4/4/2011	NA	4/4/11	NA	

EQUIPMENT DESCRIPTION REMP weekly air samples

System	FLOC	AP-913:

DESCRIPTION OF CONDITION and PROBABLE CAUSE (If known) Summarize any attachments. Identify what, when, where, why, how.

This Condition Report is being written for documentation purposes only.

For the second week in a row, detectable Iodine-131 (I-131) was detected at all ten (10) REMP air sample locations for the period of March 22 through March 29, 2011. I-131 was seen at both Indicator (within 5 miles of Davis-Besse) and Control (greater than 5 miles from Davis-Besse), and ranged between 0.057 and 0.083 pCi/m3. These I-131 concentrations are slightly higher than those reported in the previous week's samples, which ranged between 0.033 and 0.060 pCi/m3.

It should be noted that the detected I-131 coincides with several other locations across the country that are reporting detectable iodine following the earthquake and tsunami events in Japan. Davis-Besse currently has no reported fuel failures and is not observing any airborn releases of I-131 from Station Vent.

The I-131 concentrations and sample locations are attached to this CR.

IMMEDIATE ACTIONS TAKEN / SUPV COMMENTS (Discuss CORRECTIVE ACTIONS completed, basis for closure.)

No actions are required at this time. The ODCM Table 6-4 reporting level for I-131 is 0.90 pCi/m3. SRO review requested to ensure awareness of issue.

QUALITY ORGANIZATION USE ONLY	IDENTIFIED BY (Check one)		ATTACHMENTS
Quality Org. Finding ☐ Yes	☑ Individual/Work Group ☐ Supervision/Management	☐ Self-Revealed ☐ Internal Oversight ☐ External Oversight	☑ Yes ☐ No

ORIGINATOR	ORGANIZATION	DATE	SUPERVISOR	DATE	PHONE EXT.
(b)(6)	DBCH	4/7/2011	(b)(6)	4/7/2011	8549

Site: G201

CONDITION REPORT

CR Number 11-92476

TITLE: I-131 DETECTED IN DAVIS-BESSE REMP AIR SAMPLES FOR SECOND WEEK IN A ROW

PLANT OPERATIONS

SRO REVIEW	EQUIPMENT OPERABLE	EP EQUIP	OPERABILITY ASSESSMENT REQUIRED	ORG. NOTIFIED	IMMED INVEST REQUIRED	ORG. NOTIFIED	MODE CHANGE RESTRAINT
☑ Yes ☐ No	☐ Yes ☐ No ☑ NA	☐ Yes ☑ No	☐ Yes ☑ No		☐ Yes ☑ No		☐ Yes ☑ No

MODE	ASSOCIATED TECH SPEC NUMBER(S)	ASSOCIATED LCO ACTION STATEMENT(S)
N/A	N/A	#1 N/A
		#2
		#3

DECLARED INOPERABLE (Date / Time)	REPORTABLE?		APPLICABLE UNIT(S)
NA	☐ Yes ☑ No ☐ Eval Required	One Hour NA Four Hour NA Eight Hour NA Other NA	☑ U1 ☐ U2 ☐ Both

COMMENTS

This CR documents the fact that detectable I-131 readings have been detected at all ten (10) REMP air sample locations within and outside 5 miles of Davis-Besse. These sample readings also coincide with samples taken nationally and are a result of the earthquake and tsunami events in Japan. The detectable I-131 results are well below the ODCM Table 6-4 reporting level. This CR does not affect Technical Specification equipment, therefore Equipment Operable is marked N/A and Reportable No. This CR does not describe a loss of function or contain Equipment Important to Emergency Response.

Current Mode - Unit 1	Power Level - Unit 1	Current Mode - Unit 2	Power Level - Unit 2
1	100	N/A	N/A

SRO - UNIT 1	SRO - UNIT 2	DATE
(b)(6)	(b)(6)	4/7/2011

CRPA / SUPV / MRB

CATEGORY / EVAL	ASSIGNED ORGANIZATION	DUE DATE
AC	DBCH	

REGULATORY

REPORTABLE? ☐ Yes ☐ No ☐ LER No.

TREND CODES Process / Activity / Cause Code(s)		Comp Type / ID (If Cause T or W)	Cause Org
OP3	9999		

REPORTABILITY REVIEWER

DATE

INVESTIGATION OPTIONS	CLOSED BY	DATE
☐ Maint.Rule ☐ OE Evaluation ☐ Generic Implications ☐ Part 21		

Request for Information from NRC - Tony Go

Air sampling - 2011

Note: Iodine is reported if detected at any concentration. If Iodine is not detected, a <0.07 pCi/m^3 value is reported

T-1 Air Iodine	
Date 2011	pCi/m3
1/4/11	<0.07
1/11/11	<0.07
1/18/11	<0.07
1/25/11	<0.07
1/31/11	<0.07
2/8/11	<0.07
2/15/11	<0.07
2/22/11	<0.07
3/1/11	<0.07
3/8/11	<0.07
3/15/11	<0.07
3/22/11	0.043
3/29/11	0.08
4/5/11	
4/12/11	
4/19/11	
4/26/11	
5/3/11	
5/10/11	
5/17/11	
5/24/11	
5/31/11	
6/7/11	
6/14/11	
6/21/11	
6/28/11	
7/5/11	
7/12/11	
7/19/11	
7/26/11	
8/2/11	

T-2 Air Iodine	
Date 2011	pCi/m3
1/4/11	<.07
1/11/11	<.07
1/18/11	<.07
1/25/11	<.07
1/31/11	<.07
2/8/11	<.07
2/15/11	<.07
2/22/11	<.07
3/1/11	<.07
3/8/11	<.07
3/15/11	<.07
3/22/11	0.047
3/29/11	0.076
4/5/11	
4/12/11	
4/19/11	
4/26/11	
5/3/11	
5/10/11	
5/17/11	
5/24/11	
5/31/11	
6/7/11	
6/14/11	
6/21/11	
6/28/11	
7/5/11	
7/12/11	
7/19/11	
7/26/11	
8/2/11	

T-3 Air Iodine	
Date 2011	pCi/m3
1/4/11	<.07
1/11/11	<.07
1/18/11	<.07
1/25/11	<.07
1/31/11	<.07
2/8/11	<.07
2/15/11	<.07
2/22/11	<.07
3/1/11	<.07
3/8/11	<.07
3/15/11	<.07
3/22/11	0.046
3/29/11	0.07
4/5/11	
4/12/11	
4/19/11	
4/26/11	
5/3/11	
5/10/11	
5/17/11	
5/24/11	
5/31/11	
6/7/11	
6/14/11	
6/21/11	
6/28/11	
7/5/11	
7/12/11	
7/19/11	
7/26/11	
8/2/11	

T-4 Air Iodine	
Date 2011	pCi/m3
1/4/11	<.07
1/11/11	<.07
1/18/11	<.07
1/25/11	<.07
1/31/11	<.07
2/8/11	<.07
2/15/11	<.07
2/22/11	<.07
3/1/11	<.07
3/8/11	<.07
3/15/11	<.07
3/22/11	0.04
3/29/11	0.065
4/5/11	
4/12/11	
4/19/11	
4/26/11	
5/3/11	
5/10/11	
5/17/11	
5/24/11	
5/31/11	
6/7/11	
6/14/11	
6/21/11	
6/28/11	
7/5/11	
7/12/11	
7/19/11	
7/26/11	
8/2/11	

T-7 Air Iod	
Date 2011	
1/4/11	
1/11/11	
1/18/11	
1/25/11	
1/31/11	
2/8/11	
2/15/11	
2/22/11	
3/1/11	
3/8/11	
3/15/11	
3/22/11	
3/29/11	
4/5/11	
4/12/11	
4/19/11	
4/26/11	
5/3/11	
5/10/11	
5/17/11	
5/24/11	
5/31/11	
6/7/11	
6/14/11	
6/21/11	
6/28/11	
7/5/11	
7/12/11	
7/19/11	
7/26/11	
8/2/11	

8/9/11	
8/16/11	
8/23/11	
8/30/11	
9/6/11	
9/13/11	
9/20/11	
9/27/11	
10/4/11	
10/11/11	
10/18/11	
10/25/11	
11/1/11	
11/8/11	
11/15/11	
11/22/11	
11/29/11	
12/6/11	
12/13/11	
12/20/11	
12/27/11	
1/3/12	
Average	

8/9/11	
8/16/11	
8/23/11	
8/30/11	
9/6/11	
9/13/11	
9/20/11	
9/27/11	
10/4/11	
10/11/11	
10/18/11	
10/25/11	
11/1/11	
11/8/11	
11/15/11	
11/22/11	
11/29/11	
12/6/11	
12/13/11	
12/20/11	
12/27/11	
1/3/12	

8/9/11	
8/16/11	
8/23/11	
8/30/11	
9/6/11	
9/13/11	
9/20/11	
9/27/11	
10/4/11	
10/11/11	
10/18/11	
10/25/11	
11/1/11	
11/8/11	
11/15/11	
11/22/11	
11/29/11	
12/6/11	
12/13/11	
12/20/11	
12/27/11	
1/3/12	

8/9/11	
8/16/11	
8/23/11	
8/30/11	
9/6/11	
9/13/11	
9/20/11	
9/27/11	
10/4/11	
10/11/11	
10/18/11	
10/25/11	
11/1/11	
11/8/11	
11/15/11	
11/22/11	
11/29/11	
12/6/11	
12/13/11	
12/20/11	
12/27/11	
1/3/12	

8/9/11
8/16/11
8/23/11
8/30/11
9/6/11
9/13/11
9/20/11
9/27/11
10/4/11
10/11/11
10/18/11
10/25/11
11/1/11
11/8/11
11/15/11
11/22/11
11/29/11
12/6/11
12/13/11
12/20/11
12/27/11
1/3/12

l (required LLD).

ine
pCi/m3
<.07
<.07
<.07
<.07
<.07
<.07
<.07
<.07
<.07
<.07
<.07
0.033
0.081

T-8 Air Iodine	
Date 2011	pCi/m3
1/4/11	<.07
1/11/11	<.07
1/18/11	<.07
1/25/11	<.07
1/31/11	<.07
2/8/11	<.07
2/15/11	<.07
2/22/11	<.07
3/1/11	<.07
3/8/11	<.07
3/15/11	<.07
3/22/11	0.034
3/29/11	0.061
4/5/11	
4/12/11	
4/19/11	
4/26/11	
5/3/11	
5/10/11	
5/17/11	
5/24/11	
5/31/11	
6/7/11	
6/14/11	
6/21/11	
6/28/11	
7/5/11	
7/12/11	
7/19/11	
7/26/11	
8/2/11	

T-9 Air Iodine	
Date 2011	pCi/m3
1/4/11	<.07
1/11/11	<.07
1/18/11	<.07
1/25/11	<.07
1/31/11	<.07
2/8/11	<.07
2/15/11	<.07
2/22/11	<.07
3/1/11	<.07
3/8/11	<.07
3/15/11	<.07
3/22/11	0.056
3/29/11	0.074
4/5/11	
4/12/11	
4/19/11	
4/26/11	
5/3/11	
5/10/11	
5/17/11	
5/24/11	
5/31/11	
6/7/11	
6/14/11	
6/21/11	
6/28/11	
7/5/11	
7/12/11	
7/19/11	
7/26/11	
8/2/11	

T-11 Air Iodine	
Date 2011	pCi/m3
1/4/11	<.07
1/11/11	<.07
1/18/11	<.07
1/25/11	<.07
1/31/11	<.07
2/8/11	<.07
2/15/11	<.07
2/22/11	<.07
3/1/11	<.07
3/8/11	<.07
3/15/11	<.07
3/22/11	0.044
3/29/11	0.083
4/5/11	
4/12/11	
4/19/11	
4/26/11	
5/3/11	
5/10/11	
5/17/11	
5/24/11	
5/31/11	
6/7/11	
6/14/11	
6/21/11	
6/28/11	
7/5/11	
7/12/11	
7/19/11	
7/26/11	
8/2/11	

T-12 Air Iodine	
Date 2011	pCi/m3
1/4/11	<.07
1/11/11	<.07
1/18/11	<.07
1/25/11	<.07
1/31/11	<.07
2/8/11	<.07
2/15/11	<.07
2/22/11	<.07
3/1/11	<.07
3/8/11	<.07
3/15/11	<.07
3/22/11	0.060
3/29/11	0.075
4/5/11	
4/12/11	
4/19/11	
4/26/11	
5/3/11	
5/10/11	
5/17/11	
5/24/11	
5/31/11	
6/7/11	
6/14/11	
6/21/11	
6/28/11	
7/5/11	
7/12/11	
7/19/11	
7/26/11	
8/2/11	

	8/9/11		8/9/11		8/9/11		8/9/11		8/9/11	
	8/16/11		8/16/11		8/16/11		8/16/11		8/16/11	
	8/23/11		8/23/11		8/23/11		8/23/11		8/23/11	
	8/30/11		8/30/11		8/30/11		8/30/11		8/30/11	
	9/6/11		9/6/11		9/6/11		9/6/11		9/6/11	
	9/13/11		9/13/11		9/13/11		9/13/11		9/13/11	
	9/20/11		9/20/11		9/20/11		9/20/11		9/20/11	
	9/27/11		9/27/11		9/27/11		9/27/11		9/27/11	
	10/4/11		10/4/11		10/4/11		10/4/11		10/4/11	
	10/11/11		10/11/11		10/11/11		10/11/11		10/11/11	
	10/18/11		10/18/11		10/18/11		10/18/11		10/18/11	
	10/25/11		10/25/11		10/25/11		10/25/11		10/25/11	
	11/1/11		11/1/11		11/1/11		11/1/11		11/1/11	
	11/8/11		11/8/11		11/8/11		11/8/11		11/8/11	
	11/15/11		11/15/11		11/15/11		11/15/11		11/15/11	
	11/22/11		11/22/11		11/22/11		11/22/11		11/22/11	
	11/29/11		11/29/11		11/29/11		11/29/11		11/29/11	
	12/6/11		12/6/11		12/6/11		12/6/11		12/6/11	
	12/13/11		12/13/11		12/13/11		12/13/11		12/13/11	
	12/20/11		12/20/11		12/20/11		12/20/11		12/20/11	
	12/27/11		12/27/11		12/27/11		12/27/11		12/27/11	
	1/3/12		1/3/12		1/3/12		1/3/12		1/3/12	

T-27 Air Iodine	
Date 2011	pCi/m3
1/4/11	<.07
1/11/11	<.07
1/18/11	<.07
1/25/11	<.07
1/31/11	<.07
2/8/11	<.07
2/15/11	<.07
2/22/11	<.07
3/1/11	<.07
3/8/11	<.07
3/15/11	<.07
3/22/11	0.049
3/29/11	0.057
4/5/11	
4/12/11	
4/19/11	
4/26/11	
5/3/11	
5/10/11	
5/17/11	
5/24/11	
5/31/11	
6/7/11	
6/14/11	
6/21/11	
6/28/11	
7/5/11	
7/12/11	
7/19/11	
7/26/11	
8/2/11	

8/9/11			
8/16/11			
8/23/11			
8/30/11			
9/6/11			
9/13/11			
9/20/11			
9/27/11			
10/4/11			
10/11/11			
10/18/11			
10/25/11			
11/1/11			
11/8/11			
11/15/11			
11/22/11			
11/29/11			
12/6/11			
12/13/11			
12/20/11			
12/27/11			
1/3/12			

Site: G202

CONDITION REPORT

CR Number 11-92086

TITLE: ~~DETECTABLE I-131 ON REMP AIR SAMPLES BELOW REPORTABLE LEVELS~~

ORIGINATION

DISCOVERY DATE	TIME	EVENT DATE	TIME	SYSTEM / ASSET#
3/30/2011	NA	3/30/11	NA	

EQUIPMENT DESCRIPTION NA

System	FLOC	AP-913:

DESCRIPTION OF CONDITION and PROBABLE CAUSE (if known) Summarize any attachments. Identify what, when, where, why, how.

Problem Statement:

The Radiological Environmental Monitoring Program (REMP) weekly air samples from 3/16/11 through 3/23/11 were found to have detectable levels of Iodine 131 (I131) below the required reporting levels

Consequences:
Low level radio-iodine will be incorporated into the human ingestion pathway. The detected level is very low and does not pose any human health hazards.

Details:

Based on recent the Fukushima Daiichi nuclear event and subsequent release of radioactivty to the environment, numerous sampling stations across the country (nuclear, commercial, governmental, and academic) have detected low level radioactive fallout mostly I-131. As the radioactivity has been transported by upper level wind currents (jet stream) in an eastward direction, the REMP program air sampling stations for both the Perry and Davis Besse stations have detected low levels of I-131 on their weekly REMP air samples. For Perry, the sample results collected between 3/16 and 3/23, 2011, all 7 REMP air sampling stations had detectable I-131. The sample activity was in the range of 0.056 pCi/m3 to 0.082 pCi/m3. The ODCM reporting level for airborne I-131 is 0.9 pCi/m3. Sample results are roughly an order of magnitude below the ODCM reporting levels. This level of radioactivity is not unexpected, nor is it an exposure hazard. FENOC has determined that detectable sample results from the REMP program will be reported in the NEI database established for this purpose but no additional actions or sampling is necessary.

IMMEDIATE ACTIONS TAKEN / SUPV COMMENTS (Discuss CORRECTIVE ACTIONS completed, basis for closure.)

Supervsior Comments - Informed Management, informal notification to site resident inspector. Sample results are expected and consistent with reports of other facilities performing air sampling. CR for tracking/trending.

QUALITY ORGANIZATION USE ONLY	IDENTIFIED BY (Check one)		ATTACHMENTS
Quality Org. Finding ☐ Yes	☐ Individual/Work Group ☑ Supervision/Management	☐ Self-Revealed ☐ Internal Oversight ☐ External Oversight	☐ Yes ☑ No

ORIGINATOR	ORGANIZATION	DATE	SUPERVISOR	DATE	PHONE EXT.
(b)(6)	PYCH	3/31/2011	(b)(6)	3/31/2011	5208

CONDITION REPORT

CR Number 11-92086

TITLE: DETECTABLE I-131 ON REMP AIR SAMPLES BELOW REPORTABLE LEVELS

PLANT OPERATIONS

SRO REVIEW	EQUIPMENT OPERABLE	EP EQUIP	OPERABILITY ASSESSMENT REQUIRED	ORG. NOTIFIED	IMMED INVEST REQUIRED	ORG. NOTIFIED	MODE CHANGE RESTRAINT
☑ Yes ☐ No	☐ Yes ☐ No ☑ N/	☐ Yes ☑ No	☐ Yes ☑ No		☐ Yes ☑ No		☐ Yes ☑ No

MODE	ASSOCIATED TECH SPEC NUMBER(S)	ASSOCIATED LCO ACTION STATEMENT(S)
N/A	N/A	#1 N/A
		#2
		#3

DECLARED INOPERABLE (Date / Time)	REPORTABLE?		APPLICABLE UNIT(S)
NA	☐ Yes ☑ No ☐ Eval Required	One Hour NA Four Hour NA Eight Hour NA Other NA	☑ U1 ☐ U2 ☐ Both

COMMENTS

This CR documents the Radiological Environmental Monitoring Program (REMP) weekly air samples from 3/16/11 through 3/23/11 were found to have detectable levels of Iodine 131 (I131) below the required reporting levels. Based on recent the Fukushima Daiichi nuclear event and subsequent release of radioactivty to the environment, numerous sampling stations across the country (nuclear, commercial, governmental, and academic) have detected low level radioactive fallout mostly I-131.

The ODCM reporting level for airborne I-131 is 0.9 pCi/m3. Sample results are roughly an order of magnitude below the ODCM reporting levels. This level of radioactivity is not unexpected, nor is it an exposure hazard. FENOC has determined that detectable sample results from the REMP program will be reported in the NEI database established for this purpose but no additional actions or sampling is necessary.

There is no TS, ORM, E-plan related equipment issues with this CR. This issue is not reportable.

Current Mode - Unit 1	Power Level - Unit 1	Current Mode - Unit 2	Power Level - Unit 2
1	89	N/A	N/A

SRO - UNIT 1	SRO - UNIT 2	DATE
(b)(6)	N/A	3/31/2011

CRPA / SUPV / MRB

CATEGORY / EVAL	ASSIGNED ORGANIZATION	DUE DATE
AC	PYCH	4/30/2011

TREND CODES Process / Activity / Cause Code(s)			Comp Type / ID (If Cause T or W)		Cause Org
OP2	9999	NA			PYCH

REGULATORY

REPORTABLE? ☐ Yes ☑ No ☐ LER No.

REPORTABILITY REVIEWER: Zerr, L

DATE: 04/04/11

INVESTIGATION OPTIONS ☐ Maint.Rule ☐ OE Evaluation ☐ Generic Implications ☐ Part 21

CLOSED BY

DATE 4/5/2011

CONDITION REPORT

CR Number 11-92208

~~TITLE: I-131 DETECTED IN DAVIS-BESSE REMP AIR SAMPLERS~~

ORIGINATION

DISCOVERY DATE	TIME	EVENT DATE	TIME	SYSTEM / ASSET#
3/28/2011	NA	3/28/11	NA	

EQUIPMENT DESCRIPTION NA

System	FLOC	AP-913:

DESCRIPTION OF CONDITION and PROBABLE CAUSE (if known) Summarize any attachments. Identify what, when, where, why, how.

This Condition Report is being written for documentation purposes only.

Detectable Iodine-131 (I-131) was detected at all ten (10) REMP air sample locations for the period of March 15 through March 22, 2011. I-131 was seen at both Indicator (within 5 miles of Davis-Besse) and Control (greater than 5 miles from Davis-Besse) locations, and ranged between 0.033 and 0.060 pCi/m3.

It should be noted that these I-131 concentations are below the vendor laboratory required lower limit of detection (LLD) of 0.07 pCi/m3, and was reported by the lab because they have not detected any I-131 in Davis-Besse samples in recent history, and this is an anomaly.

It should also be noted that the detected I-131 coincides with several other locations across the country that are reporting detectable iodine following the earthquake and tsunami events in Japan.

The concentrations and locations are attached to this CR.

IMMEDIATE ACTIONS TAKEN / SUPV COMMENTS (Discuss CORRECTIVE ACTIONS completed, basis for closure.)

The ODCM required LLD for I-131 in air is 0.07 pCi/m3.

QUALITY ORGANIZATION USE ONLY	IDENTIFIED BY (Check one)		ATTACHMENTS
Quality Org. Finding ☐ Yes	☐ Individual/Work Group ☑ Supervision/Management	☐ Self-Revealed ☐ Internal Oversight ☐ External Oversight	☑ Yes ☐ No

ORIGINATOR	ORGANIZATION	DATE	SUPERVISOR	DATE	PHONE EXT.
(b)(6)	DBCH	4/1/2011	(b)(6)	4/1/2011	7142

CONDITION REPORT

CR Number 11-92208

TITLE: I-131 DETECTED IN DAVIS-BESSE REMP AIR SAMPLERS

PLANT OPERATIONS

SRO REVIEW	EQUIPMENT OPERABLE	EP EQUIP	OPERABILITY ASSESSMENT REQUIRED	ORG. NOTIFIED	IMMED INVEST REQUIRED	ORG. NOTIFIED	MODE CHANGE RESTRAINT
☑ Yes ☐ No	☐ Yes ☐ No ☑ N/	☐ Yes ☑ No	☐ Yes ☑ No		☐ Yes ☑ No		☐ Yes ☑ No

MODE	ASSOCIATED TECH SPEC NUMBER(S)	ASSOCIATED LCO ACTION STATEMENT(S)
N/A	N/A	#1 N/A
		#2
		#3

DECLARED INOPERABLE (Date / Time)	REPORTABLE?		APPLICABLE UNIT(S)
NA	☐ Yes ☑ No ☐ Eval Required	One Hour NA Four Hour NA Eight Hour NA Other NA	☑ U1 ☐ U2 ☐ Both

COMMENTS

Per discussion with the originator, sample activity ranged between 0.033 and 0.06 pCi/m3 (not 0.60 pCi/m3 as noted in the origination).
This CR documents the Radiological Environmental Monitoring Program (REMP) weekly air samples from 3/15 through 3/21/11 were found to have detectible levels of Iodine 131 (I-131) below the required reporting levels. Based on the recent Fukushima Daiichi nuclear event and subsequent release of radioactivity to the environment, numerous sampling stations across the country have detected low level radioactive fallout (mostly I-131).
The sample activity ranged between 0.033 and 0.06pCi/m3. The ODCM reporting limit for Airborne I-131 is 0.9 pCi/m3. This level of activity is not unexpected, nor is it an exposure hazard. FENOC has determined that detectable sample results from the REMP program will be reported in the NEI database established as a result of recent events with the Fukushima Daiichi nuclear event. This condition is not associated with any plant equipment therefore Equipment Operable is marked N/A.

Current Mode - Unit 1	Power Level - Unit 1	Current Mode - Unit 2	Power Level - Unit 2
1	100	N/A	N/A

SRO - UNIT 1	SRO - UNIT 2	DATE
(b)(6)	(b)(6)	4/1/2011

CRPA / SUPV / MRB

CATEGORY / EVAL	ASSIGNED ORGANIZATION	DUE DATE
AC	DBCH	5/1/2011

TREND CODES Process / Activity / Cause Code(s)		Comp Type / ID (If Cause T or W)	Cause Org
OP3	9999		

REGULATORY

REPORTABLE? ☐ Yes ☐ No ☐ LER No.

REPORTABILITY REVIEWER

DATE

INVESTIGATION OPTIONS ☐ Maint.Rule ☐ OE Evaluation ☐ Generic Implications ☐ Part 21

CLOSED BY

DATE

Wittick, Brian

From: Wittick, Brian
Sent: Wednesday, April 13, 2011 7:35 AM
To: Ramsey, Jack
Subject: RE: Long Term Items for Japan

(b)(5)

Sent: Wednesday, April 13, 2011 7:19 AM
To: Wittick, Brian
Subject: FW: Long Term Items for Japan

FYI.

(b)(5)

From: Wittick, Brian
Sent: Tuesday, April 12, 2011 1:36 AM
To: Bloom, Steven; Ramsey, Jack; Evans, Michele
Cc: Collins, Elmo; Mamish, Nader; Doane, Margaret
Subject: Fw: Long Term Items for Japan

Steve,

(b)(5)

Anyway, we would appreciate understanding the plan here shortly for the next group to rotate in and plans for transitioning off USAID.

Thanks

Sent from NRC BlackBerry
Brian Wittick
(b)(6)

From: Collins, Elmo
To: Wittick, Brian
Sent: Tue Apr 12 00:27:11 2011
Subject: FW: Long Term Items for Japan

DJ/20

Should be resource

From: Casto, Chuck
Sent: Monday, April 11, 2011 11:30 PM
To: Collins, Elmo
Subject: FW: Long Term Items for Japan

From: Bloom, Steven
Sent: Friday, March 18, 2011 12:35 AM
To: Casto, Chuck; Monninger, John; Nakanishi, Tony; Kolb, Timothy; Foster, Jack; Cook, William; Devercelly, Richard; Ulses, Anthony; Trapp, James; Smith, Brooke; Foggie, Kirk
Cc: Emche, Danielle
Subject: Long Term Items for Japan

All,

I am working with Jack Ramsey to come up with what would be needed to support an NRC staff for 3 -6 months over in Japan. I came up with some of my own brainstorming thoughts which are below. Please look at my list and think of other items which you may think are necessary to support having members of the NRC over in Japan for about 3 to 6 months. Please send me back your ideas as soon as you can.

Computers and Printers
Office Supplies
Blackberry
Phone Cards
Foreign Power converters
Extension Cords
Radiation Devices
Dosimeters
Anti Cs
Hard Hats

More Staff
Passport support
Contractors
Translators

Analysts to evaluate event
Severe Accident Analysts
Reactor Physics Staff
Research Staff

Money for effort

Easy way to convert dollars to Yen

Access to Medical Doctors
Medicines

Hotel/Apartment arrangements
Airlines

Thank you.

Steve

Steven Bloom, International Relations Specialist
International Cooperation and Assistance Branch (ICA)
301-415-2431
O-4F4
M/S O-4E21

From: IT_IM_Budget Resource

To: Arrighi, Russell; Ash, Melissa; Barnes, Robin; Bellinger, Alesha; Bettis, Ashley; Blond, Tamoria; Bobryakova, Natalya; Brown, Cris; Brown, Vickie; Brusoe, Eric; Butler, Rodney; Cain, Brendan; Champion, Bryan; Cochrum, Steven; Dabbs, Bill; Dean, Michael; Decker, David; Dembek, Stephen; Derr, Kathryn; Doornbos, Roger; Ellsbury, Richard; Figueroa, Roberto; Fitch, Karen; Flynn, Sean; Gardin, Kathy; Green, Jamie; Ha, Su; Harris, Natasha; Hayden, Elizabeth; Hayden, Gwen; Hopkins, Rhonda; Hunter, James; Irani, Guita; Janis, James; Jefferson, Steven; Johnson, Dennis; Joosten, Sandy; Kardaras, Tom; King, Michael; Konzman, Carl; Krupnick, David; Le, Hong; Lin, Chien-Ting; Liu, Steve; Lockhart, Michelle; Madden, Edward; Magee, Thomas; Marks, Sharon; Martinson, Rye; McDevitt, Joan; McGill, Clinton; McKelvey, Harold; Miller, Mark; Moss, Mary; Murray, Heather; New, Edward; Nibert, Patty; Paradiso, Karen; Perry, Jamila; Picciotto, Colleen; Price, Georgette; Rand, Jennifer; Ricketts, Paul; Rivas, Audrey; Schmidt, Katherine; Sentz, Brian; Shay, Jason; Sheldon, Jeffrey; Shnayder, Yana; Somerville, Glenda; Stout, Kathleen; Tenaglia, Mickey; Usilton, William; Vassos, John; Voytko, Victoria; Wagner, Paige; Warner, MaryAnn; Whetstine, Jack; Yimam, Menelik; Zilka, Kathleen; Alemu, Bezakulu; Bristor, Joel; Burdine, Eugene; Castello, Jennifer; Chen, Sunny; Cheng, May; Cozens, Kurt; Dekle, Cynthia; Deucher, Joseph; Ficken, Russell; Fredericks, Carl; Grancorvitz, Rick; Greynolds, Elena; Hite, Christine; Jones, Jackie; Jones, Kevin; Jones, Rosalyn; Khan, Omar; Konduri, Indu; Kristobek, Richard; Lourenco, Thomas; Lovell, Louise; Noory, Roya; Schmit, Matthew; Taylor, Chutima; Valencia, Sandra; Welkie, Andrew; IT_IM_Budget Resource; Gulla, Gerald; Newell, Karenina; Nguyen, Caroline

Subject: IT/IM Supporting Detail - Webinar

When: Tuesday, March 15, 2011 3:00 PM-3:30 PM (GMT-05:00) Eastern Time (US & Canada).
Where: At Your Desk

Note: The GMT offset above does not reflect daylight saving time adjustments.

~~*~*~*~*~*~*~*~*

A series of three Webinars have been ongoing for the BFS IT/IM Supporting Detail.

You have been sent these Webinars so you may join any one of them at your convenience. The same material is provided for each session.
At this time, this will be the last session. More may be scheduled as needed.

Up to 25 people can join each Go To Meeting.

If you need technical assistance with the Webinars, please contact Jeff Sheldon at 415-5743.

For assistance with the IT/IM Guidance or if you have questions on the BFS IT/IM Supporting Detail, you may contact the HYPERLINK "mailto:IT_IM_Budget%20Resource" IT_IM_Budget Resource mailbox, your OCFO Budget Analyst, or Marna Dove (415-5858) if you need further assistance.

Please see the session login and conference call number/passcode below:

1. Please join my meeting, Tuesday, March 15 at 3:00 PM Eastern Daylight Time.
https://www1.gotomeeting.com/join/382619417

2. Join the conference call:
800-369-1966
Participant passcode: (b)(6)

DJ/21

(b)(4)

(b)(4)

DJ|22

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4),(b)(6)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

DJ/23

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

(b)(4)

JAN-16-2001 06:46 FROM:

(b)(5)

(b)(5)

(b)(5)

(b)(5)

(b)(5)

OPTIONAL FORM 99 (7-90)

FAX TRANSMITTAL

# of pages ▶ 1

To Dave Herman	From Gordon Stute
Dept./Agency Naval Reactors	Phone #
Fax # 301-816-5151	Fax # 202 781 6430

NSN 7540-01-317-7368 5099-101 GENERAL SERVICES ADMINISTRATION

DJ/24

~~OFFICIAL USE ONLY~~

~~DRAF~~

OPTIONAL FORM 99 (7-90)

FAX TRANSMITTAL

# of pages ▶ 3

To Tom R [illegible] / Vaughn	From C Sato
Dept./Agency US NAVY [illegible]	Phone #
Fax # 301-816-5151	Fax # 202 781 6430

NSN 7540-01-317-7368 5099-101 GENERAL SERVICES ADMINISTRATION

Goals of the Actions

(b)(5)

(b)(5)

~~DRAFT~~

~~OFFICIAL USE ONLY~~

DJ/25

~~OFFICIAL USE ONLY~~

~~DRAFT~~

(b)(5)

(b)(5)

(b)(5)

DRAFT

~~OFFICIAL USE ONLY~~

(b)(5)

Alternatives Considered

Summary of 14 March meeting with Japanese

Unit Summary

Unit 1

- Partial core damage from exposed fuel.
- As of 2200 on March 14, Japan time, sea water is being injected.
- The reactor was described as "more stable."
- Containment described as "functional."
- Hydrogen explosion has damaged reactor building roof. •

Unit 2

- Hydrogen explosion possibility has been mitigated because a part of the reactor building roof has been removed.
- RCIC has failed.
- Coolant was stopped for quite some time so core damage is assumed. Core was most likely totally uncovered for some time.
- As of 2200 on March 14, Japan time, sea water is being injected.
- Unit 2 containment is described as "functioning."

Unit 3

- Condition described as essentially the same as Unit 1.
- As of 2200 on March 14, Japan time, sea water is being injected.
- Hydrogen explosion has damaged reactor building roof.
- Containment described as "functional."

General Obervations

Japanese extremely concerned about stability and reliability of current sea water injection method. When asked, the described there request for USG assistance with water injection as a means to improve reiiability.

They asked if we had any other suggestions for water injection. The possibility of airlifting pumps to the site was mentioned and when asked, the estimated the distance from the sea to the pump location as approximately 200 m and the distance from the pump to RCS tie in as approximately 250-300 m. More specific information was promised and my contact information was passed to them. I asked for specific design information regarding the RCS tie to ensure that any USG equipment brought to the site will be able to connect into the RCS.

DJ/26

They indicated that debris from the hydrogen burns was part of the reason that they were having difficulty keeping sea water injection flowing.

Contigency Planning

For contingency planning, the GOJ asked for USG advice and assistance regarding:

1. Post accident DECON; and
2. Post core melt long term site stability planning.

Talking Points RE: Trip Wires for Embassy Decisions

(b)(5)

(b)(5)

DJ/27

NRC Question 128 Review of Plan Configuration

Question

For the photos supplied by the NRC showing damage to the 1F3 reactor building, give a GEH assessment of the condition of the spent fuel pool (SFP).

Answer:

(b)(4)

(b)(4)

DJ/28

Issues Related to Sea Water in a BWR Plant

1. Thermal Hydraulic Issues

The use of seawater for reactor core cooling introduces the potential for boiling to concentrate salts and suspended solids within the core assembly, possibly to the extent of hindering or blocking fuel channel flow. Injecting saltwater flow at a sufficiently high rate to prevent boiling would preclude this issue. A feed and bleed process injects subcooled water into the reactor vessel and relies on the change-out of water volume within the core to absorb decay heat before the water temperature reaches saturation and nucleate boiling. There are a number of considerations and challenges that must be addressed before concluding the requisite saltwater injection rate:

- Injection water will absorb heat from metal structure in addition to core decay heat. Both sources of heat must be factored into determining the rate needed to stave-off boiling within the core,
- Blockage is a localized phenomena, so the conditions within a small region would need to be characterized
- Core power peaking factors at the hot spot under normal conditions can provide an initial estimate of the local heat load; however, and effects of core degradation (if currently exists) must be factored into any calculation
- Core hot spot may not be amenable to cooling due to degradation of the local structure.

In the absence of fresh water sources, the use of saltwater for core cooling is a necessary action. The presence of cool water flow in regions surrounding any chloride-blocked regions can still provide beneficial cooling through conduction processes. However, at the earliest opportunity, fresh water sources for cooling flow should be employed at maximized rates. Freshwater flow can provide flushing through regions that may have experienced chloride build-up, thereby reducing restrictions to flow or removing chloride layering that interferes with heat transfer from core structures.

A particular concern would be accumulation of solids in the event the prevailing method to cool the reactors involves seawater addition combined with steam venting. The total decay heat generation for either unit 2 or 3 (which were operating at high power at time of event) for the first ten days after shutdown would be on the order of 6.5E+09 BTU. Removal of this amount of heat by feed and bleed would involve roughly 6E+06 lbm of seawater injection. The specific gravity of seawater is about 1.03 indicating a 3% solids fraction. Hence, the solids deposited within the pressure vessel could be on the order of 200,000 lbm (100 tons). This is a conservative estimate since initial decay heat removal was by normal cooling systems and boildown of initial pure water inventory. However, this calculation demonstrates the potential for large amounts of solid precipitation that would be expected to have a substantial impact on coolant flow and heat transfer for the fueled region.

Sea water contains about three weight percent dissolved solids, mostly sodium chloride. The sodium chloride concentration is about a factor of twelve below saturation near room temperature, but some of the minor constituents are much closer to saturation. Untreated sea water is of course widely used as a heat sink to condense steam. A brief check of the literature suggests that deposition of minerals from the sea water is not a problem for once-through systems, but can be a problem when the sea water is recycled between the condenser and a cooling tower, where some of the sea water evaporates, increasing the concentration of

DJ/29

minerals. Scaling is a major consideration when sea water is evaporated to produce fresh water. Quoting from some product literature from Rosemount Analytical,

> "There are two separate scaling problems that must be dealt with in a sea water evaporator. The first includes both calcium carbonate (limestone) and magnesium hydroxide scale. These are formed under higher pH conditions when bicarbonate ions can form carbonate ions and when more hydroxyl (OH^-) ions are present...
>
> $CaCO_3$ and $Mg(OH)_2$ scaling can be minimized by lowering the pH of the feedwater under 5.7, thus preventing the formation of appreciable amounts of scale. This is commonly achieved by adding citric acid, ferric chloride, or sulfuric acid. However, too much acid can result in corrosion...
>
> The second problem occurs when the feed solution becomes saturated with calcium sulfate. $CaSO_4$ can not be controlled by pH adjustment. It is necessary to maintain the $CaSO_4$ concentration below the saturation point, roughly 2 gpl, by removing a portion of the heavy brine in the evaporator."

The calcium concentration in raw sea water is ~400 ppm, which is equivalent to 1.36 grams of calcium sulfate per liter. Therefore, evaporating as little as one-third of the original volume of the sea water might cause calcium sulfate scaling to begin.

In steam generators, calcium sulfate impurity in the boiler water can be a serious problem, because it precipitates preferentially on the hottest surfaces, where it forms an adherent scale which impedes heat transfer. One of the reasons that sodium phosphate is often used as a boiler water additive is that it causes calcium to precipitate as a phosphate compound rather than as calcium sulfate. The phosphate precipitates are reputed to be less prone to form adherent scales on heat transfer surfaces.

2. Plant Integrity Issues
    a. Stainless Steel Piping and Pressure Vessel Penetrations
        i. BWR's have many bottom penetrations of the pressure vessels related to Control Rod Drive Mechanisms
            1. Stainless Steel Welds
                a. At 100C in an aerated environment stress corrosion cracking of stainless steel welds has likely begun in a period of several hours to a day
                b. At 100C the Stress Corrosion Crack Growth rates of the stainless steel welds will likely proceed at rates on the order of 0.001" per day.
                    i. 125 days before seeing the first signs of leaking in 1/8 inch weld
                    ii. Several years in 1 inch and greater welds
                c. Mitigation techniques
                    i. Once flow is re-establihed in the plants
                        1. Drive down the corrosion potential of the water
                            a. Deaerate the water in the plant
                                i. Hydrazine additions
                            b. Add phosphates
                        2. Replace salt water with fresh water as soon as practical
    b. Pressure Vessel Steel

i. Chlorides not a major concern
    1. Same mitigation techniques as above would be beneficial
ii. Borate
    1. Concentrated borate solutions can cause fast corrosion attack of pressure vessel steel.
    2. Will require concentrating mechanism against the pressure vessel steel
        a. Probably unlikely internal to the reactor
        b. External to the reactor could conceivably occur
            i. Davis Besse Scenario
                1. Primary to atmosphere leak through stainless steel penetrations
                2. Accumulate borates on the outside of the vessel near the leak.

c. Nickel based alloys
    1. Chlorides not a major concern
    2. Same mitigation techniques as for stainless steel above would be beneficial

From:	Chidichimo, Gabriele
To:	Dorman, Dan; Haney, Catherine; Davis, Jack
Cc:	Parker, Nicole
Subject:	March 30th 2010 Memo
Date:	Friday, March 11, 2011 10:49:55 AM
Attachments:	Enclosure 1 March 30th 2010.pdf Enclosure 2 march 30th 2010.pdf

---

Attached please find the two enclosures to the 2010 memo – unchanged.
Thank you
Gaby

From: Chidichimo, Gabriele
Sent: Friday, March 11, 2011 9:36 AM
To: Doolittle, Elizabeth
Cc: Parker, Nicole
Subject: FW: March 30th 2010 Memo

FYI only there is a 2nd memo that Cathy was looking at

Thanks
Gaby

From: Parker, Nicole
Sent: Wednesday, March 09, 2011 11:30 AM
To: Haney, Catherine
Cc: Valencia, Jennifer; Chidichimo, Gabriele; Kokajko, Lawrence; Mohseni, Aby
Subject: March 30th 2010 Memo

Per Your Request

Nicole Parker
Administrative Assistant
Nuclear Materials Safety and Safeguards
Division of High-Level Waste
Nicole.Parker@NRC.GOV
301-492-3181

DJ/30

(b)(5)

(b)(5)

TENTATIVE COMPLETION DATES FOR SAFETY EVALUATION REPORT VOLUMES
(Milestones to be completed no later than dates shown)

SER Volume Number	Volume 1 General Information	Volume 2* Preclosure	Volume 3* Postclosure	Volume 4* Administrative/ Programmatic	Volume 5* License Specifications
HLWRS Staff completes text and Executive Summary	04/23/2010	09/21/2010	06/14/2010	08/5/2010	09/30/2010
HLWRS Management and OGC Volume Review Complete	06/7/2010	11/3/2010	07/27/2010	09/17/2010	11/15/2010
Resolve Comments and Complete Review by Technical Editor	07/6/2010	12/03/2010	08/24/2010	10/18/2010	12/14/2010
OGC Complete Legal Review	07/20/2010	12/17/2010	09/08/2010	11/01/2010	01/13/2011
NMSS Director Review and Concurrence	07/27/2010	01/04/2011	09/22/2010	11/16/2010	01/27/2011
Final OGC Review Complete with "No Legal Objection"	08/03/2010	01/18/2011	10/06/2010	12/01/2010	02/10/2011
Publication of Final SER Volume	08/31/2010	03/01/2011	11/19/2010	01/14/2011	03/24/2011

***Work on these volumes will be discontinued once FY 2010 funds are exhausted**

ENCLOSURE 2

From: Collins, Frank
Sent: Tuesday, March 15, 2011 12:27 PM
To: Vick, Lawrence
Subject: FW: LET ME KNOW
Attachments: image001.jpg

We could use your BWR operations and analysis experience on the Reactor Safety Team in the Operations Center. Can you also look into this simulator question?

From: Collins, Frank
Sent: Tuesday, March 15, 2011 11:44 AM
To: Pavlechko, Frank; Marshall, Jane; Hasselberg, Rick
Subject: Re: LET ME KNOW

Plant design information is a challenge here. Can our simulator people find out who built the Fukushima simulators? Maybe we can get the design data package from the simulator vendor.

Sent from NRC Blackberry
Frank Collins
(b)(6)

From: Pavlechko, Frank
To: Collins, Frank
Sent: Mon Mar 14 13:01:15 2011
Subject: LET ME KNOW

Frank

Having worked at the HQ Emergency Response Center before moving here to TTC I want you to know that I am proficient in the activities there and available to help out if needed for IRD activities associate with the Japanese response.

I hear you may be hard pressed right now and having worked these missions in the past...I know how challenging this time can be and am willing to work **midnight** shift like I normally do.

Let Jane know and I will be standing by.

Frank

Frank L. Pavlechko
USNRC TTC
(423) 855-6506 Office
(b)(6) Blackberry

DJ/31

From: Greten, Timothy <Timothy.Greten@dhs.gov>
Sent: Saturday, March 12, 2011 1:59 PM
To: Mroz (Sahm), Sara
Subject: FW: Talking point for F1 (on REPP program) Due Saturday, March 12

Timothy A. Greten, PMP
Technological Hazards Division Deputy Director/
Federal Radiological Preparedness Coordination Committee Executive Secretariat
FEMA National Preparedness Directorate
Department of Homeland Security
1800 South Bell St.
Arlington, VA, 22202
timothy.greten@dhs.gov
office: (202) 646-3907
cell: (b)(6)

From: Greten, Timothy
Sent: Saturday, March 12, 2011 12:15 PM
To: Chris.Miller@nrc.gov; brian.mcdermott@nrc.gov
Cc: Kish, James
Subject: FW: Talking point for F1 (on REPP program) Due Saturday, March 12

Chris/Brian-
FYI -- These talking points are working their way back up to the hill through FEMA Leg Affairs (Senator Lieberman asked for them Friday for his Sunday morning talk show appearance). I assume these are the first of many...

Timothy A. Greten, PMP
Technological Hazards Division Deputy Director/
Federal Radiological Preparedness Coordination Committee Executive Secretariat
FEMA National Preparedness Directorate
Department of Homeland Security
1800 South Bell St.
Arlington, VA, 22202
timothy.greten@dhs.gov
office: (202) 646-3907
cell: (b)(6)

From: Greten, Timothy
Sent: Saturday, March 12, 2011 12:06 PM
To: Koshgarian, Susan
Cc: Gruber, Corey; Quinn, Vanessa; Sherwood, Harry; Schweitzer, Robert; Horton, Douglas; DeFelice, Anthony; Coons, Albert; Kish, James; Kirin, Alexandra; Balint, Thomas; O'Brien, Moira
Subject: Talking point for F1 (on REPP program) Due Saturday, March 12

DJ/32

USAID -- www.usaid.gov
U.S. Dept. of State -- www.state.gov
FEMA -- www.fema.gov
White House -- www.whitehouse.gov
Nuclear Energy Institute -- www.nei.org
International Atomic Energy Agency -- www.iaea.org/press/ For background information on generic operations at a boiling-water reactor, including an animated graphic, visit the NRC's website at www.nrc.gov.
###
News releases are available through a free listserv subscription at the following Web address: http://www.nrc.gov/public-involve/listserver.html. The NRC homepage at www.nrc.gov also offers a SUBSCRIBE link. E-mail notifications are sent to subscribers when news releases are posted to NRC's website.
NRC NEWS
U.S. NUCLEAR REGULATORY COMMISSION
Office of Public Affairs Telephone: 301/415-8200 Washington, D.C. 20555-0001
E-mail: opa.resource@nrc.gov Site: www.nrc.gov
Blog: http://public-blog.nrc-gateway.gov
No. 11-045
March 12, 2011

From: Miller, Chris
Sent: Tuesday, March 15, 2011 4:30 AM
To: Anderson, Joseph; Johnson, Don; Norris, Michael
Cc: McDermott, Brian; Thaggard, Mark; Wright, Lisa (Gibney); Mroz (Sahm), Sara; Anderson, James
Subject: RE: OPS Center Staffing

Sara and Jim have been port and starboard, essentially. Thought some of your other staff or others in EP not previously engaged may be able to help. Hard to sustain too many days of 12s.

From: Anderson, Joseph
Sent: Tuesday, March 15, 2011 4:19 AM
To: Johnson, Don; Norris, Michael
Cc: McDermott, Brian; Thaggard, Mark; Miller, Chris; Wright, Lisa (Gibney); Mroz (Sahm), Sara; Anderson, James
Subject: Re: OPS Center Staffing

Don - Let me get a status of what is needed when I get in the office. With Lisa gone, need appears to be 11 pm to 7 am shift.

Mike - Please drop by OPS Center Liaison Team Room when you get in the office and get an assessment of needs. We can discuss when I get in to the office.

From: Johnson, Don
To: Anderson, Joseph; Miller, Chris
Sent: Tue Mar 15 04:00:26 2011
Subject: RE: OPS Center Staffing

I am available if you need me. I am actually off today (b)(6) if you need some support for the Ops Center please let me know. I will be in the office on Wednesday and can support whatever you need, and I am available if needed throughout the week and weekend (b)(6) (b)(6) but it is nothing I cannot get out of with some advance notice) . Next week (b)(6) (b)(6) (b)(6) However, if you need someone to staff something in the Ops Center, and (b)(6) I am more than willing to support our efforts with Japan's crisis. (b)(6) (b)(6) Just please let me know if/when you want support.

(b)(6)

From: Anderson, Joseph
Sent: Tuesday, March 15, 2011 3:44 AM
To: Miller, Chris
Cc: Norris, Michael; Johnson, Don; Wright, Lisa (Gibney)
Subject: Re: OPS Center Staffing

(b)(6)

I will talk with Mike and Don this morning as soon as I get in to office.

DJ/33

From: Purvis, James <james.purvis@dhs.gov>
Sent: Tuesday, March 15, 2011 10:24 AM
To: Anderson, James
Cc: Mroz (Sahm), Sara
Subject: FW: SITREP

FYI

. . . seeking to be added to the NRC SITREP distribution list for 'USNRC Earthquake/Tsunami SitRep'. . .

Thanks,

James H Purvis
Emergency Management Specialist
Radiological Emergency Preparedness Program
Technological Hazards Division
DHS/FEMA Protection and National Preparedness Directorate
1800 South Bell Street, Room 830
Arlington, VA 20598-3025
Office: (202) 212-2334
Mobile: (b)(6)
Fax: (703) 305-0738
james.purvis@dhs.gov

From: Purvis, James
Sent: Tuesday, March 15, 2011 8:54 AM
To: 'Sara.mroz@nrc.gov'; 'Lia07.HOC@nrc.gov'
Subject: SITREP

Sara,

Is it possible for me to get added to the distribution list for the 'USNRC Earthquake/Tsunami SitRep'?

- James

DJ/34

From: Constance Perin <cope@MIT.EDU>
Sent: Tuesday, March 15, 2011 6:45 PM
To: Mroz (Sahm), Sara
Subject: RIC session talks

Follow Up Flag: Follow up
Flag Status: Flagged

Will the presentations and Q&A for this session be available online -- aside from the .pdf presentation already available?
Thank you!

--

Constance Perin, PhD
Visiting Scholar, Anthropology
Massachusetts Institute of Technology, 16-267
77 Massachusetts Avenue Cambridge, MA 02139
phone/ 617 621-1331 */cell/* (b)(6) *fax* 617 253-5363
http://www.constanceperin.net

DJ/35

From: Greten, Timothy <Timothy.Greten@dhs.gov>
Sent: Tuesday, March 15, 2011 9:03 PM
To: Mroz (Sahm), Sara
Subject: RE: NOC Phase 1 - Awareness 0330-11 Update Report 16 - Earthquake-Tsunami - Japan (1800 EDT 15 Mar 11)

You are welcome. Besides, its also good info to know you have this already (i.e. means the system is working!)

Have a great night!

Timothy A. Greten, PMP
Technological Hazards Division Deputy Director/ Federal Radiological Preparedness Coordination Committee Executive Secretariat FEMA National Preparedness Directorate Department of Homeland Security
1800 South Bell St.
Arlington, VA, 22202
timothy.greten@dhs.gov
office: (202) 646-3907
cell: (b)(6)

-----Original Message-----
From: prvs=049521319=Sara.Mroz@nrc.gov [mailto:prvs=049521319=Sara.Mroz@nrc.gov] On Behalf Of Mroz (Sahm), Sara
Sent: Tuesday, March 15, 2011 8:56 PM
To: Greten, Timothy
Subject: RE: NOC Phase 1 - Awareness 0330-11 Update Report 16 - Earthquake-Tsunami - Japan (1800 EDT 15 Mar 11)

actually had this already ... (but didn't realize it)
Thank you!!

From: Greten, Timothy [Timothy.Greten@dhs.gov]
Sent: Tuesday, March 15, 2011 8:52 PM
To: Mroz (Sahm), Sara
Subject: FW: NOC Phase 1 - Awareness 0330-11 Update Report 16 - Earthquake-Tsunami - Japan (1800 EDT 15 Mar 11)

Timothy A. Greten, PMP
Technological Hazards Division Deputy Director/
Federal Radiological Preparedness Coordination Committee Executive Secretariat
FEMA National Preparedness Directorate
Department of Homeland Security
1800 South Bell St.
Arlington, VA, 22202
timothy.greten@dhs.gov
office: (202) 646-3907
cell: (b)(6)

DJ/36

-----Original Message-----
From: Fiore, Craig
Sent: Tuesday, March 15, 2011 6:21 PM
To: Quinn, Vanessa; Sherwood, Harry; Seward, Andrew; Greten, Timothy; Coons, Albert; Horwitz, Steve; Ralston, Michelle
Subject: FW: NOC Phase 1 - Awareness 0330-11 Update Report 16 - Earthquake-Tsunami - Japan (1800 EDT 15 Mar 11)

All: FYI, here is the evening report from the DHS NOC. Please disseminate as deemed appropriate.

-CF

-----Original Message-----
From: prvs=1048a88b11=warning.center@ops.calema.ca.gov
[mailto:prvs=1048a88b11=warning.center@ops.calema.ca.gov] On Behalf Of Warning.Center@ops.calema.ca.gov
Sent: Tuesday, March 15, 2011 3:10 PM
To: erik.moyer@cdph.ca.gov; donj@calepa.ca.gov; pguria@calepa.ca.gov; hbacker1@chhs.ca.gov; betsey.lyman@cdph.ca.gov; jrowden@cdfa.ca.gov; terri.gill@cdph.ca.gov; jerry.fuhrman@cdph.ca.gov; jboyd@energy.state.ca.us; jeffrey.lusk@dhs.gov; craig.fiore@dhs.gov; Bbyron@energy.state.ca.us; Stephen Sellers; Randy Schulley; Randy Gonzales; Lee Shin; Mark Bassett; Jim Brown; Mary Montgomery; Jeff Wood; Richard C. Rodriguez; Jay Alan; Ishmael Messer; Michael Griffin; Kimberly Lorenz; Robert Butchart; Jeri Siegel; Jordan Scott; Jim Goltz; Bill Potter; Moustafa Abou-Taleb; Michael Warren; Ken Bobinski; Al Lehenbauer; Scott Frizzie; George Aradi; Paul Walters; Kim Zagaris; Elaine Jennings; Christina Curry; Helen Lopez; David Zocchetti; Mike Dayton; sarah.hartson@oak.doe.gov; Randy_Schulley@oes.ca.gov; Patricia.Rapozo@calema.ca.gov; Barbara.Baker@calema.ca.gov; Randy_Schulley@oes.ca.gov; Randy.Gonzales@calema.ca.gov
Subject: Fw: NOC Phase 1 - Awareness 0330-11 Update Report 16 - Earthquake-Tsunami - Japan (1800 EDT 15 Mar 11)

All for your situational awareness. Please note that these documents are FOUO//Unclassified. Please adhere to any document forwarding instruction/prohibition rules for FOUO information.

Please note:
* The California State Warning Center has changed to the new email address of Warning.Center@ops.calema.ca.gov.
* The old email address of Warning.Center@oes.ca.gov will continue to function to allow time for contacts to update records.
* If you have any questions or concerns, please contact the California State Warning Center at 916-845-8911.
----- Forwarded by Warning Center/OES on 03/15/2011 03:06 PM -----

"NOC.SWO.Restricted" <NOC.SWO.Restricted@dhs.gov>	To	
03/15/2011 03:05 PM	cc	
	Subject	NOC Phase 1 - Awareness 0330-11 Update Report 16 - Earthquake-Tsunami - Japan (1800 EDT 15 Mar 11)

NOC Phase 1 - Awareness 0330-11 Update Report 16 - Earthquake-Tsunami - Japan

Current: The Government of Japan (GoJ) reports the current death toll is approximately 3,373 (+898); 7,558 (+4,440) are reported missing. The US Department of State reports from the Japanese Ministry of Economy, Trade, and Industry that Fukushima Daiichi Units 1 and 3 were regaining stability and estimated radiation levels have dropped to small to negligible levels outside a 12-mile radius from the reactors. The small generator fire reported in Unit 4 was extinguished late yesterday. Initial reports indicate Units 5 and 6 (not in operation at the time of the earthquake) are beginning to increase in temperature, indicating a possible problem with the cooling system. Seawater cooling operations are underway at Units 1,2, and 3. The US Nuclear Regulatory Commission (NRC) reports containment integrity was not assured at Unit 2; however, containment remained intact as of 1200 EDT today. The US Coast Guard reports no impacts to Pacific Area assets. A Federal Emergency Management Agency, East Regional Incident Management Assistance Team has been activated to assist the US Environmental Protection Agency in deploying radiation monitors to Alaska, Hawaii, and Guam.

Future: The US NRC has two experts in Japan and dispatched nine additional experts which are expected to arrive 16 Mar. The Department of Energy
(DOE) is assessing the radioactive plume threat to Guam, Hawaii, and the US West Coast. The 31st Marine Expeditionary Unit is due to arrive in Sendai 0700 EDT, 17 Mar to coordinate debris removal at Sendai Airport. The Department of Homeland Security National Operations Center will continue to monitor this incident. The next scheduled update and Senior Leadership Brief report will be published at 0600 EDT, 16 Mar.

Other: Several US commercial air carriers resumed regular flights to and from Tokyo and flight paths are in accordance with Federal Aviation Administration area restrictions. DOE reports a 19-mile radius no-fly zone has been established around the Fukushima Daiichi Nuclear Power Plant.

Background: At approximately 0046 EST, 11 Mar, the US Geological Survey
(USGS) reported an 8.9 magnitude earthquake off the eastern coast of Honshu, Japan resulting in a tsunami affecting the Pacific region. On 15 Mar, USGS upgraded the magnitude of the earthquake to 9.0.

[IMAGE]

DHS Senior Leadership Brief:

Earthquake-Tsunami-Japan

1800 EDT 15 March 2011

Updates in bold blue

Current Situation

- The U.S. Geological Survey (USGS) has upgraded the magnitude of the earthquake, off the northern coast of Japan from 8.9 to 9.0.

- The U.S. Department of State (DOS) reports 3,373 fatalities; 7,558 missing; 1,990 injured; 220,000 people within the 12 mile radius of Fukushima Daiichi Nuclear Power Plant were preemptively evacuated.

- The Nuclear Regulatory Commission (NRC) reports that no harmful levels of radiation are currently forecast to reach the U.S. DOE is assessing the radioactive plume threat to Guam, Hawaii and the U.S. West Coast. DOE plume model and projections have been updated to include changing wind patterns. The current model is based on collaboration among DOE, NRC, and NOAA.

Government of Japan (GoJ)

- Several U.S. commercial air carriers resumed regular flights to and from Tokyo and flight paths are in accordance with Federal Aviation Administration (FAA) area restrictions.

- Air China has cancelled flights from Beijing and Shanghai to Tokyo. Lufthansa has announced that it would divert Tokyo-bound flights to Nagoya or Osaka due to radiation concerns.

- Japanese Ministry of Defense (MoD) deployed 60,000 personnel, 96 helicopters, seven planes, and 58 naval vessels to conduct urban search and rescue (USAR) activities.

- GoJ requested U.S. military assistance in cleaning up the Sendai airport.

Nuclear Reactors

- DOS requested best case/worst case calculations from NRC to determine if an evacuation of U.S. Citizens from Japan would be prudent.

NRC reports that failure to add water to the core is a hypothetical worst case scenario that will result in containment failure and radioactive release into the environment. There is no mention of evacuation in the report.

- DNDO has compiled an assessment of the worst case scenario based on current modeling. That assessment will be provided separately to the Secretary and senior leadership.

- The Japanese Economic, Trade, and Industry (METI) Minister stated Fukushima Daiichi Units 1 and 3 are regaining stability. The NRC reported that containment integrity was not assured at Fukushima Daiichi Unit 2; however, containment remained intact as of 1200 EDT. The fire in Unit 4 was a small generator fire, which was extinguished late on 14 March.

Current information indicates that the structures that contain the reactor vessels remain intact. Units 5 and 6 were shutdown and cooled at the time of the earthquake. DOS is reporting that Units 5 and 6 are beginning to heat up, indicating a problem with the cooling system.

o Unit 1 is shutdown. The core is damaged and partially uncovered.
Seawater injections continue and there is stable core cooling.

o Unit 2 is shutdown. The core is damaged and not stable. Seawater injections continue. Radiation levels are uncertain at this time.

o Unit 3 is shutdown. The core is damaged and partially uncovered.
Seawater injections continue and there is stable core cooling.

- A 19 mile radius no-fly zone has been established around the Fukushima Daiichi Nuclear Power Plant.

- FEMA reports Fukushima 2 and Onagawa Nuclear Power Plants remain stable.

New Requests for U.S. Assistance from GoJ

- GoJ has requested a supply of potassium iodine tablets from the U.S. Government.

International Support

- 105 countries and 11 international organizations are offering aid to Japan.

DHS Support

U.S. Customs and Border Protection (CBP)

- The CBP Attaché is expected to arrive in Japan on 16 March. The Deputy Attaché is working closely with Japanese customs and immigration officials to expedite the entry of U.S. humanitarian aid through Japanese ports of entry.

- Due to communications issues, CBP Container Security Initiative (CSI) ports in Japan are not operational; National Targeting Center - Cargo (NTC-C) will handle targeting operations.

Federal Emergency Management Agency (FEMA)

- FEMA National Incident Management Assistance Team-East will support EPA in getting radiation monitors to FEMA Regions IV and X. If any radiation is detected the results will be conveyed to the public in easy to understand terms.

Transportation Security Administration (TSA)

- TSA does not screen passengers or checked baggage areas for radiation in the U.S. and does not have the technology or training to do so. Foreign civil aviation authorities and carriers are not required to screen for radiation of inbound U.S. flights.

U.S. Coast Guard (USCG)

- No impacts are reported to the Pacific Area assets.

National Protection and Programs Directorate (NPPD) Office of Infrastructure Protection (IP) National Infrastructure Coordinating Center
(NICC)

- NPPD reports DHS OneNet is experiencing degradation of service in various locations in Japan.

- NICC reports evaluations of impacts to undersea cables and cable landings are ongoing.

Interagency Domestic Actions

- All departments and agencies should be prepared to describe their preparedness capabilities and response plans for a similar radioactive release in the U.S.

National Security Staff (NSS)

- During the 15 March Deputies SVTC, the White House directed radiation plume models from DOE, NRC, and NOAA be shared across the government.

Department of Defense (DoD)

- DoD is proceeding with deploying a 20-person Chemical, Biological, Radiological, Nuclear and High-Yield Explosives (CBRNE) Consequence Management Response Force (CCMRF) planning element.

- The U.S.Forces Japan (USFJ) is providing air transport of Japan Ground Self-Defense Forces (JGSDF) personnel and vehicles to critical areas.

- USFJ and JGSDF are establishing a Civil-Military Operations Center in Yamagata to coordinate all foreign military efforts and a refueling location for helicopters.

- The USS RONALD REAGAN Strike Group continues conducting SAR missions and logistic support to the GoJ.

- GoJ is using two U.S. Air Bases at Misawa and Yokota as logistical staging areas.

Department of Energy (DOE)

- DOE teams have deployed with their own dosimeter readers, which allow for real-time awareness of absorbed doses of radiation. Field operations will be determined by team leads based on local situation.

- Two DOE Radiological Assistance Program (RAP) Teams and Ground Consequence Management Response (GCMR) Team are en route to Yokota Air Base, Japan. The RAP teams will conduct Aerial Measuring System (AMS) flyovers and the GCMR team will assess ground contamination. AMS was scheduled to arrive 1330 EDT 15 March with 32-personnel including five 2-man teams capable of collecting detailed ground data. The GoJ accepted DOEs RAP team assistance.

Health and Human Services (HHS)

- HHS will coordinate with FEMA to develop a public communications plan on potential radiological health impacts on the west coast, Hawaii, Guam, and U.S. territories.

- HHS is working with USDA and NOAA to develop a food safety communications plan to include their capabilities to monitor imports and clear imports that may have been exposed to radiation.

Department of State (DOS)

- DOS has implemented a policy that all U.S. citizens on official travel to Japan will go through screening for radiation before departure for return to the U.S.

National Oceanic and Atmospheric Administration (NOAA)

- As of 0800 EDT 15 March, NOAA reports winds have returned to an easterly direction at 15-25 mph and will continue so until Sunday.

Nuclear Regulatory Commission (NRC)

- Two senior NRC experts supporting USAID response efforts in Japan are engaged with the US Ambassador's staff; nine additional experts are expected to arrive in Tokyo on 16 March.

Michael Inzer

Senior Watch Officer

National Operations Center

U.S. Department of Homeland Security

Unclassified: 202-282-8101

Secure: (b)(6)

(Embedded image moved to file: pic17673.jpg)

(See attached file: Senior Leadership Brief Earthquake - Tsunami - Japan (1800 EDT 15 Mar 11).pdf) (See attached file: NOC Phase 1 - Awareness 0330-11 Update Report 16 - Earthquake - Tsunami - Japan (1800 EDT 15 Mar 11).pptx)

From: Weber, Michael
Sent: Wednesday, March 16, 2011 9:46 PM
To: Mroz (Sahm), Sara; LIA07 Hoc
Subject: Action - Rokkasho Status (03/16/2011)

Please include in the "Go" book. Here is an example where the emergency preparations and designs worked well.

From: Haney, Catherine
To: HOO Hoc
Cc: Weber, Michael; Sheron, Brian; Johnson, Michael; Johnson, Michael; Leeds, Eric
Sent: Wed Mar 16 21:08:22 2011
Subject: Fw: Rokkasho Status (03/16/2011)

Can you provide this email to the ET.

I suggest it also be included in the briefing books being prepared for the office directors (Go Books).

Thanks
Cathy

From: Hiltz, Thomas
To: Haney, Catherine; Dorman, Dan; Tschiltz, Michael; Guttmann, Jack; Davis, Jack; Bailey, Marissa; Kinneman, John; HOO Hoc
Sent: Wed Mar 16 20:17:06 2011
Subject: FW: Rokkasho Status (03/16/2011)

FYI

From: Kazuhiko Hiruta [Hiruta@denjiren.com]
Sent: Wednesday, March 16, 2011 5:16 PM
To: Kazuhiko Hiruta
Subject: Rokkasho Status (03/16/2011)

Dear friends,

Though Fukushima is now in the critical situations, I remind you here that Rokkasho doesn't have problems with the earthquake. I summarize the course of the events at the Rokkasho Site.

a. The earthquake occurred at 2:46 PM on March 11.

b. Since the earthquake cut off the power supply, all facilities at the Rokkasho Site were immediately connected to emergency diesel generators and kept operating safely. It was confirmed that no fire, no damage to equipment, and no injuries to personnel occurred. Radiation levels were measured at a normal level of safety. [As of 9:00 AM on March 12 in Japan Time]

c. At 12:00 AM on March 12, it was observed that 600 liters of water spilled from a spent fuel storage pond. The spilt water was drained and appropriately recovered in liquid waste treatment system.

DJ/37

d. At 10:22 PM on March 13, the power supply for Reprocessing Plant was restored to the commercial electricity from the emergency diesel generator.

e. At 3:12 PM on March 14, the power supply for Enrichment Plant was restored to the commercial electricity from the emergency diesel generator.

f. At 5:10 AM on March 15, the power supply for Spent Fuel Receiving and Storage Facility was restored to the commercial electricity from the emergency diesel generator.

g. At 11:25 AM on March 15, the power supply for Vitrified Waste Storage Center (dedicated to returned waste from France and UK) was restored to the commercial electricity from the emergency diesel generator.

Currently, all facilities at the Rokkasho Site continue safe operations without any malfunctions.

Please feel free to contact me if you have questions or you need more details.

With best regards,
Kazu

==========
Kazuhiko HIRUTA
FEPC Washington Office
"The Federation of Electric Power Companies of Japan"
1901 L Street NW Suite 600 Washington, DC 20036
tel: 202-466-3507
cell: (b)(6)
fax: 202-466-6758
==========

From: Demott Maj Jeremy S (b)(6)
Sent: Thursday, March 17, 2011 12:14 AM
To: LIA07 Hoc; Mroz (Sahm), Sara
Cc: Hitzelberger Maj Timothy A; Kinsey Maj Victoria A; Demott Maj Jeremy S
Subject: USNRC Earthquake/Tsunami SitRep

Hello from Okinawa

Can you please add the cc' line as III MEF G2 watch officers to your subject line distro?

Very Respectfully

Major Jeremy DeMott
III MEF AC/S G2
Operations Officer
DSN 315 622 7315

DJ/38

PACOM JIOC
Pearl Harbor, HI
(808) 473-6520

PS – Hope you get to return to our islands some day.....

From: LIA07 Hoc
Sent: Thursday, March 17, 2011 3:27 AM
To: Friese, William R PACOM JIOC
Cc: Mroz (Sahm), Sara
Subject: RE: Distributions

Will,

Sara finally got to go home. I'll be on for the next 12. Looking forward to working with you. Thanks for the call back number. I'll add the emails you've requested to our distribution. They should see the 0600 EDT status update when it goes out. Let me know if you need anything else.

Thanks,

Jim Anderson
Office of Nuclear Security and Incident Response
US Nuclear Regulatory Commission
james.anderson@nrc.gov
LIA07.HOC@nrc.gov (Operations Center)

From: Friese, William R PACOM JIOC (b)(6)
Sent: Thursday, March 17, 2011 3:19 AM
To: LIA07 Hoc; LIA07 Hoc
Subject: Distributions

Sara,

It was a true pleasure to speak with you today. You were quite kind – especially after a long day. I sincerely appreciate your time and assistance. I have to go back to my HS physics classes to work this sort of issue.
We find your reports full of very useful info.

As we spoke, we would be very grateful if you would add the following personnel to your distribution of your 12-hr USNRC Emergency Operations Center Status Update:

(b)(6)
st.gleen.malimban@pacom.osis.gov
Shull, Marshall D. Capt
stglenn.malimban@pacom.osis.gov
PACOM JOC J2 SWO
Strunk, Lee-Jake K. Capt. USAF

Many thanks!

Will

William R. Friese
Southeast Asia Division

DJ/39

From: Miller, Chris
Sent: Thursday, March 17, 2011 9:19 PM
To: Mroz (Sahm), Sara
Subject: Re: Please put CAPT Jerabeck on distro for status update. thx chris

Thx

----- Original Message -----
From: Mroz (Sahm), Sara
To: Miller, Chris
Sent: Thu Mar 17 20:56:44 2011
Subject: RE: Please put CAPT Jerabeck on distro for status update. thx chris

He's added!

From: Miller, Chris
Sent: Thursday, March 17, 2011 8:12 PM
To: Mroz (Sahm), Sara
Subject: Please put CAPT Jerabeck on distro for status update. thx chris

-----Original Message-----
From: Jerabek, Scott B CAPT USN USFJ J02d (b)(6)
Sent: Thursday, March 17, 2011 12:12 PM
To: Miller, Chris
Subject: RE: 1900 EDT (March 16, 2011) USNRC Earthquake/Tsunami SitRep

Chris,

If you could add me that would be great. Don't break any bones doing it, the DTRA guys down the hall get it too.

Thanks!

R/
Sbj

CAPT Scott Jerabek, USN
Deputy Chief of Staff
U.S. Forces, Japan
BJOCC - 225-6019 (DSN)

DJ/40

From: Souza LCpl David D (b)(6)
Sent: Thursday, March 17, 2011 9:56 PM
To: Mroz (Sahm), Sara
Subject: Distro List

Sara,

I am an (b)(6) f you could add me to the distro list for the updates from the USNRC about the current nuclear situation happening on the east coast of Japan including Fukushima that would be helpful.

Thank you.

V/R

LCpl Souza

DJ/41

From: haydenco@ucia.gov
Sent: Saturday, March 19, 2011 6:10 PM
To: LIA07 Hoc; LIA01 Hoc
Cc: Mroz (Sahm), Sara
Subject: RE: Request for Contact Information re: Daiichi facilities

Our operations center is setting up a SIPR address (like the unclass one) I passed previously. In the meantime you can send them to my SIPR (b)(6) and add theirs once they send it to you. Thanks!

Hayden

From: LIA07 Hoc [mailto:LIA07.Hoc@nrc.gov]
Sent: Friday, March 18, 2011 8:16 PM
To: LIA01 Hoc; LIA07 Hoc
Subject: Request for Contact Information re: Daiichi facilities

We are collecting email addresses for those agencies that may be interested in receiving a classified communication related to the Fukushima Daiichi facilities in the future. We are trying to determine the level of interest and appropriate contact information for such a document.
If you are interested in receiving a classified status communication, please reply to LIA01.HOC@nrc.gov and LIA07.HOC@nrc.gov with your SIPR net address.
Thank you,
Sara

Sara K. Mroz
Office of Nuclear Security and Incident Response
US Nuclear Regulatory Commission
Sara.Mroz@nrc.gov
LIA07.HOC@nrc.gov (Operations Center)

DJ/42

From: Morrow, Jeremy S Civ USAF PACAF 13 AF/A2A (b)(6)
Sent: Tuesday, March 22, 2011 10:15 PM
To: Mroz (Sahm), Sara; LIA07 Hoc
Cc: 13 AF/A2 Org Account
Subject: FW: 1800 EDT (March 22, 2011) USNRC Earthquake/Tsunami Status Update
Attachments: USNRC Earthquake-Tsunami Update.032211.1800EDT.pdf

Sara: Could you also add the info addressee for your excellent reports?

v/r,
Jeremy Morrow
Chief, Northeast Asia Branch
13AF/A2A
Commercial: 808-449-4327
DSN: 315-449-4327
Tandberg: (b)(6)

-----Original Message-----
From: LIA07 Hoc [mailto:LIA07.Hoc@nrc.gov]
Sent: Tuesday, March 22, 2011 12:12 PM
To: undisclosed-recipients
Subject: 1800 EDT (March 22, 2011) USNRC Earthquake/Tsunami Status Update

Attached, please find an 1800 EDT (March 22, 2011) status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

Please note that this information is "Official Use Only" and is only being shared within the federal family.

Please call the Headquarters Operations Officer at 301-816-5100 with questions.

-Sara

Sara K. Mroz

Communications and Outreach

DJ/43

From: OST02 HOC
Sent: Wednesday, March 30, 2011 1:24 PM
To: Russell, Tonya; Bowers, Anthony
Cc: OST01 HOC; Mroz (Sahm), Sara
Subject: RE: MASTER RESPONDER SCHEDULE FOR JAPAN EARTHQUAKE 2011.xlsx

Tonya,

You have been sent a copy of the current scheduled Watchbill for next week. This Watchbill does not have you listed in this slot

---

From: Russell, Tonya
Sent: Wednesday, March 30, 2011 1:18 PM
To: Bowers, Anthony
Cc: OST02 HOC; OST01 HOC; Mroz (Sahm), Sara
Subject: FW: MASTER RESPONDER SCHEDULE FOR JAPAN EARTHQUAKE 2011.xlsx

Tony,

Per schedule sent to me yesterday (TU 3/29) 11:23am, by Michelle, I and you are listed as follows. [Please note the schedule sent by Mary Glenn Crutchley yesterday 3/29 5:08pm only shows this week's schedule 3/27-4/2/11.]

EBT Coordinator			
Sun	10-Apr	7am - 3pm	Anthony Bowers

EST Coordinator			
Sun	10-Apr	7am - 3pm	Tonya Russell

Hence, for purposes of making plans in a timely manner, that is why I asked if we could switch for SUNDAY, April 10.

Thanks

Tonya

From: OST02 HOC
Sent: Tuesday, March 29, 2011 11:23 AM
To: Russell, Tonya
Subject: MASTER RESPONDER SCHEDULE FOR JAPAN EARTHQUAKE 2011.xlsx

Tonya,

See attached. Tony asked me to re-emphasize that any scheduling be handled thru OST01/OST02 and coordinated with each Team Director/Coordinator.

Since you asked, we could use some binder clips and post-it notes.

Thanks!

DJ/44

EST Admin Assistant

Abrams, Charlotte
Abu-Eid, Boby
Adams, John
Afshar-Tous, Mugeh
Ahn, Hosung
Alemu, Bezakulu
Algama, Don
Alter, Peter
Anderson, Brian
Anderson, Jim
Arndt, Steven
Arribas, Maria
Ashkeboussi, Nima
Athey, George, Contractor, RASCAL
Baker, Steve
Ballam, Nick
Barnhurst, Dan
Barr, Cynthia
Barss, Dan
Bazian, Sam
Bell, Stephen, DOE
Bensi, Michelle
Bergman, Tom
Berry, Rollie
Bhachu, Ujager
Bloom, Steve
Blount, Tom
Boger, Bruce
Bonnett, Cassandra, Contractor, OCIMS
Borchardt, Bill
Bowers, Tony
Bowman, Greg
Boyce, Tom (RES)
Brandon, Lou
Brandt, Phil
Brenner, Eliot
Brock, Kathryn
Broockerd, Larry, FEMA
Brown, Cris
Brown, David
Brown, Eva
Brown, Fred
Brown, Mike
Bukharin, Oleg

Buntman, Steven, DOE
Burnell, Scott
Bush-Goddard, Stephanie
Campbell, Steve
Camper, Larry
Carpenter, Cynthia
Carter, Mary
Case, Mike
Casto, Greg
Cecere, Bethany
Cervera, Margaret
Chazell, Russ
Chen, Yen-Ju
Cheok, Mike
Chokshi, Nilesh
Chowdhury, Prosanta
Chung, Donald
Circle, Jeff
Clement, Richard
Clinton, Rebecca
Coe, Doug
Coggins, Anita
Collins, Frank
Connell, Renae, FEMA
Cool, Don
Correia, Richard
Corson, James
Costa, Arlon
Couret, Ivonne
Craffey, Ryan
Crutchley, Mary Glenn
Cruz-Perez, Zahira
Cuadrado, Leira
Cutaiar, Robert
Dacus, Gene
DeCicco,Joe
Decker, David
Dembek, Steven
Devlin, Stephanie
Dimmick, Lisa
Doane, Margaret
Dorman, Dan
Dorsey, Cynthia
Dozier, Jerry

Drake, Margaret
Droggitis, Spiros
Dube, Don
Dudes, Laura
Eads, Johnny
Easson, Stuart B
Emche, Danielle
English, Lance
Erlanger, Craig
Esmaili, Hossein
Field, Christopher, DOS
Figueroa, Roberto
Fiske, Jonathan
Flanders, Scott
Flannery, Cynthia
Floyd, Daphene
Foggie, Kirk
Foster, Jack
Fragoyanis, Nancy
Franovich, Rani
Frasier, Alan
Freshwater, David
Froh, William, DOE
Fuller, Ed
Gale, Terumi, DOS (Interpreter)
Galletta, Tom
Gambone (Ropon), Kimberly
Gardocki, Stanley
Gartman, Michael
Gibson, Kathy
Giitter, Joe
Gilmer, James
Glenn, Nichole
Gordon, Dennis
Gott, Bill
Grant, Jeff
Greenwood, Carol
Grimes, Kelly
Grobe, Jack
Gross, Allen
Gulla, Gerry
Hackett, Ed
Hale, Jerry
Hardesty, Duane

Hardin, Kimberly
Hardin, Leroy
Harrington, Holly
Harris, Donald
Harris, Tim
Harrison, Donald
Hart, Ken
Hart, Michelle
Harvey, Brad
Hasley, LaShawn, FEMA
Hasselberg, Rick
Hayden, Beth
Helton, Don
Henderson, Karen
Herman, David, DOE
Hersey, Paul, DOS (Interpreter)
Hiland, Pat
Hipschman, Thomas
Holahan, Patricia
Holahan, Vince
Holian, Brian
Horn, Brian
Howard, Arlette
Howard, Tabitha
Howe, Allen
Huffert, Tony
Hurd, Sapna
Huyck, Doug
Imboden, Andrew
Isom, Jim
Jackson, Karen
Jacobson, Jeff
Jeremy, David, FEMA
Jervey, Richard
Jessie, Janelle
Johnson, Mike
Jolicoeur, John
Jones, Andrea
Jones, Cynthia
Jones, Henry
Kahler, Carolyn
Kammerer, Annie
Karas, Rebecca
Kauffman, John

Kempf, Tomoko, DOS (Interpreter)
Khan, Omar
Kolb, Tim
Kotzalas, Margie
Kowalczik, Jeffrey
Kratchman, Jessica
Kugler, Andy
Lamb, Chris
Lane, John
Larson, Emily
Laur, Steve
LaVie, Steve
Lewis, Rob
Li, Yong
Lichatz, Taylor
Lising, Jason
Lombard, Mark
Lovell, Louise
Lubinski, John
Lui, Christiana
Lukes, Kim
Lynch, Jeff
Ma, John
Mamish, Nader
Manahan, Michelle
Marksberry, Don
Marshall, Jane
Marshall, Kaori, DOS
Masao, Nagai
Maupin, Cardilia
Mayros, Lauren
Mazaika, Mike
McConnell, Keith
McCoppin, Mike
McDermott, Brian
McGinty, Tim
McGovern, Denise
McIntyre, David
McMurtray, Anthony
Merritt, Christina
Meyer, Karen
Miller, Charles
Miller, Chris
Milligan, Patricia

Miranda, Samuel
Mohensi, Aby
Moore, Scott
Morlang, Mike
Morris, Scott
Mroz, Sara
Munson, Cliff
Murray, Milt
Nash, Harry, FEMA
Nerret, Amanda
Nguyen, Carolyn
Norris, Mike
Norton, Chuck
Opara, Stella
Ordaz, Vonna
Orr, Mark
Owens, Janice
Padovan, Mark
Parillo, John
Patel, Jay
Patel, Pravin
Patrick, Mark
Perin, Vanice
Pope, Tia
Powell, Amy
Purdy, Gary
Purvis, James, FEMA
Quinlan, Kevin
Raddatz, Michael
Ragland, Clyde
Ralph, Melissa
Ramsey, Jack
Reed, Beth
Reed, Sara
Reed, Wendy
Reeves, Rosemary
Reis, Terry
Resner, Mark
Riley, Tim
Riner, Kelly
Rini, Brett
Roach, Edward
Roberts, Thomas, DOE
Robinson, Edward

Rodriguez-Luccioni, Hector
Roggenbrodt, Bill
Ropon, Kimberly
Rosales-Cooper, Cindy
Rosenberg, Stacey
Ross-Lee, Mary Jane
Roundtree, Amy
Ruland, Bill
Russell, Tonya
Ryan, Michelle
Sai, Shuei, DOS (Interpreter)
Salay, Mike
Salter, Susan
Salus, Amy
Sanfilippo, Nathan
Santos, Daniel
Sato, Joji (Interpreter)
Scarbrough, Thomas
Schaperow, Jason
Schmidt, Becky
Schmidt, Duane
Schoenebeck, Greg
Schrader, Eric
Schwartzman, Jen
Seber, Dogan
See, Ken
Shane, Raeann
Shea, Jim
Sheffield, Bonnie, FEMA
Shepherd, Jill
Sheron, Brian
Skarda, Raymond
Skeen, Dave
Sloan, Scott
Smiroldo, Elizabeth
Smith, Brooke
Smith, Stacy
Smith, Ted
Solorio, David
Stahl, Eric
Stang, Annette
Stark, Richard
Steele, Jeffrey, DOE
Steger, Christine

Stieve, Alice
Stills, Nancy Beth, FEMA
Stone, Rebecca
Stransky, Robert
Sturz, Fritz
Sullivan, Randy
Summers, Robert
Sun, Casper
Takacs, Michael
Tappert, John
Tegeler, Bret
Temple, Jeff
Thaggard, Mark
Thomas, Eric
Thorp, John
Tiruneh, Nebiyu
Tobin, Jenny
Trautman, Steve
Trefethan, Jean
Tschiltz, Mike
Turtil, Rich
Uhle, Jennifer
Valencia, Sandra
Vaughn, James
Vavoso, Thomas, DOE
Versluis, Robert, DOE
Vick, Larry
Virgilio, Marty
Virgilio, Rosetta
Willis, Dori Votolato
Ward, Len
Ward, William
Wastler, Sandra
Watson, Bruce
Webber, Bob
Weber, Mike
White, Bernie
Widomski, Michael, FEMA
Wierman, Ken, DOE
Wiggins, Jim
Williams, Donna
Williams, Joseph
Williams, Tamera
Williamson, Linda

Wilt, Mike, FEMA
Wimbush, Andrea
Wittick, Brian
Wray, John
Wright, Lisa
Wright, Ned
Wunder, George
Yokoyama, Yuji, DOS (Interpreter)
Young, Skip
Zimmerman, Jake
Zimmerman, Roy

Permit No	Special Parking Permits	Received	Valid until 31-Mar	Returned on:
1	Jack Grobe	Y	√	
2	Milt Murray	Y	√	
3	Jeffrey Lynch	Y	√	
4	Raeann Shane		√	
5	Bill Gott	Y	√	
6	Charlie Miller		√	
7	Prosanta Chowdhury	Y	√	
8	~~Nima Ashkeboussi~~ Dan Barss	y	√	
9	~~Vince Holahan~~ Patty Pace	Y	√	
10	Bruce Watson	y	√	
11	Michelle Hart	Y	√	
12	Tony Huffert	Y	√	
13	Fritz Sturz	Y	√	
14	~~Kimberly Ropon~~ Philip Brand	Y	√	
15	~~Rich Clement~~ Donnie Harrison	Y	√	
16	Laura Dudes	Y	√	
17	Bill Ruland	Y	√	
18	~~Peter Alter~~ Eva Brown	Y	√	
19	Rick Hassleberg		√	
20	~~Jeff Circle~~ Rick Jervey	Y	√	
21	Don Dube	Y	√	
22	Tim Kolb		√	
23	Chuck Norton	Y	√	
24	Steve Bloom	Y	√	
25	Mary Jane Ross-lee	Y	√	
26	John Grobe		√	
27	Bill Gott	Y	√	
28	~~Kolb, Tim~~		√	
29	Brian McDermott	Y		
29	Joseph Williams	Y	√	
30	Michelle Manahan	Y	√	
31	Matt Thompson	Y	√	
33	Jean Trefethen	Y	√	
34	Tim Harris	Y	√	
35	Jeffrey Kowalczik	Y	√	
36	Bernard Stapleton	Y	√	
37	Mary Glenn Crutchley	Y	√	
38	Rani Franovich	Y	√	
39	Jonathan Fiske	Y	√	
40	~~Robert Versluis~~ Marissa Bailey	Y	√	
41	Rollie Berry	Y	√	
42	Tom Blount	Y	√	
43	Pravin Patel	Y	√	
44	Lou Brandon	Y	√	

45	Eva Brown	Y	√
46	Mike Mazaika	Y	√
47	Charlotte Abrams	Y	√
48	Greg Casto	Y	√
49	Stephen Baker	Y	√
50	Samuel Miranda (Cecere, Bethany)		√
51	Russ Chazell	Y	√
52	Michael McCoppin	Y	√
53	Gene Dacus	Y	√
54	Carol Greenwood	Y	√
55	Steve Bell	Y	√
56	Stephanie Devlin	Y	√
57	~~Joe DiCicco~~ Kelly Grimes	Y	√
58	Dan Dorman	Y	√
59	~~Jerry Dozier~~ John Jolicoeur	Y	√
60	Jennifer Wollenweber	Y	√
62	Nick Ballam (was Johnny Eads)	Y	
63	Danielle Emche	Y	√
64	Hossein Esmaili	Y	√
65	Tom Vavaso (~~Alan Frazier~~)	Y	√
66	Ed Fuller	Y	√
69	~~Laura Dudes~~ Vonna Ordaz	y	√
70	Stuart Easson	Y	
71	Rebecca Stone	Y	√
72	Jerry Hale	Y	√
73	Brad Harvey	y	√
74	Pat Hiland	Y	√
75	Sapna Hurd	Y	√
76	Roy Zimmerman	Y	√
77	Andrea Jones	Y	√
78	Carolyn Kahler	Y	√
80	Jessica Kratchman	Y	√
81	~~Emily Larson~~ Taylor Lichatz	y	√
82	Steve LaVie	Y	√
84	Jason Lising	y	√
85	Nichole Glenn	Y	√
87	Steve Campbell	y	√
89	Algama, Don	Y	√
91	Anthony McMurtray	Y	√
92	Chris Miller	Y	√
94	Scott Morris	Y	√
95	Milt Murray	Y	√
97	~~Vanice Perin~~ Janelle Jessie	Y	√
98	Tia Pope	Y	√
99	Kevin Quinlan	Y	√
100	Beth Reed	Y	√
105	Mike Salay	Y	√

107	Thomas Scarbrough	Y	√
108	Jason Schaperow	Y	√
110	Eric Schrader	Y	√
113	Scott Sloan	Y	√
115	Edward Robinson	Y	√
117	John Tappert	Y	√
118	Jeff Temple	Y	√
119	~~Eric Thomas~~ Jay Patel	Y	√
121	Mike Tschiltz	Y	√
122	Donna Williams	Y	√
123	Joseph Williams	Y	√
124	~~Skip Young~~ Michael Brown	Y	√
126	Duane Hardesty	Y	√
	Don Cool	Y	√
	John Thorp	Y	√
127	~~Robert Lewis~~ James Isom	Y	√
116	~~Casper Sun~~ Craig Walls	Y	√

Special Parking Permits

Permit No	Name	Date Issued	Date Returned
1	Tony McMurtray	3/28/11	
2	Rebecca Stone	3/28/11	
3	Bill Gott	3/28/11	
4	Roy Zimmerman	3/28/11	
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			
31			
32			
33			
34			
35			
36			
37			
38			
39			
40			
41			
42			
43			

44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90

91
92
93
94
95
96
97
98
99
100

127
116

Japan Earthquake ERO Staffing Roster
March 11 - 15, 2011
Pay Period 6 - Week 2

Position	Date	Time	Staff
		Executive Team	
ET Director			
Fri-Sat	3/11-3/12	11pm - 7am	Dan Dorman
Sat	12-Mar	7am - 7pm	Marty Virgilio
Sat	12-Mar	3pm - 11pm	Bill Borchardt
ET Response Advisor			
Fri-Sat	3/11-3/12	7pm - 7am	Scott Morris
Sat	12-Mar	7am - 7pm	Brian McDermott
Sat	12-Mar	3pm - 11pm	Chris Miller
		Executive Briefing Team	
EBT Admin. Assistant			
Fri-Sat	3/11-3/12	11pm - 11am	Sapna Hurd
Sat	12-Mar	11am - 11pm	Annette Stang
EBT Coordinator			
Fri-Sat	3/11-3/12	11pm - 11am	Vanice Perin
Sat	12-Mar	11am - 11pm	Sara Mroz
		Executive Support Team	
EST Status Officer			
Fri-Sat	3/11-3/12	11pm - 11am	Jeff Grant
Sat	12-Mar	7am - 7pm	Jane Marshall
Sat-Sun	3/12-3/13	7pm - 7am	Bill Gott
EST Coordinator			
Fri-Sat	3/11-3/12	11pm - 11am	Jeff Grant
Sat	12-Mar	11am - 11pm	Tony Bowers
Sat-Sun	3/12-3/13	11pm - 11am	Jeff Grant
Sun	13-Mar	11am - 11pm	Tony Bowers
EST Chronology Officer			
Fri-Sat	3/11-3/12	11pm - 11am	Margie Kotzalas
Sat	12-Mar	11am - 11pm	Kratchman, Jessica / Alan Frasier
Sat-Sun	3/12-3/13	11pm - 11am	Greg Bowman
EST Response Ops Mgr			
Fri-Sat	3/11-3/12	7pm-7am	Karen Jackson
Sat	12-Mar	7am-7pm	Omar Khan
Sat-Sun	3/12-3/13	10pm - 7am	Karen Jackson
EST Admin. Assistant			
Fri-Sat	3/11-3/12	3pm - 11am	Linda Williamson/Andrea Wimbush
Sat	11-Mar	3pm - 11pm	Tabitha Howard
Sat	12-Mar	11am - 11pm	Emily Larson
		Liason Team	
LT Director			
Fri-Sat	3/11-3/12	7pm - 2am	Tom Blount
Sat	12-Mar	2am - 7am	Mike Tschiltz
Sat	12-Mar	7am - 11pm	Tim McGinty
Sat-Sun	3/12-3/13	11am - 11pm	Mark Thaggard

Japan Earthquake ERO Staffing Roster
March 11 - 15, 2011
Pay Period 6 - Week 2

Position	Date	Time	Staff
LT Coordinator			
Fri-Sat	3/11-3/12	7pm - 7am	Nathan Sanfilippo
Sat	12-Mar	2am - 7am	Rani Franovich
Sat	12-Mar	7am - 7pm	Jeff Temple/Milt Murray
Sat-Sun	3/12-3/13	7pm - 7am	Janelle Jesse
Sun	13-Mar	7am - 7pm	Jeff Temple/Milt Murray
Sun-Mon	3/13-3/14	7pm - 7am	TBD
Mon	14-Mar	7am - 7pm	Jeff Temple/Milt Murray
Mon-Tue	3/14-3/15	7pm - 7am	TBD
Tue	15-Mar	7am - 7pm	Jeff Temple/Milt Murray
LT Federal Liaison			
Fri-Sat	3/11-3/12	1am - 7am	Ted Smith
Sat	12-Mar	7am - 7pm	Russ Chazell / Beth Reed
LT Congressional Liaison			
Fri-Sat	3/11-3/12	10pm - 7am	Raeann Shane/Gene Dacus
Sat	12-Mar	7am - 2pm	Amy Powell/Becky Schmidt
Sat	12-Mar	2pm - 9pm	Spiros Drogettis/Tim Riley
LT International Liaison			
Fri-Sat	3/11-3/12	11pm - 7am	Eric Stahl
Sat	12-Mar	7am - 7pm	Kirk Foggie
Sat	12-Mar	3pm - 11pm	Jack Ramsey/Danielle Emche
Protective Measures Team			
PMT Coordinator			
Fri-Sat	3/11-3/12	11pm - 7am	Lou Brandon
Sat	12-Mar	7am - 11am	Prosanta Chowdhury
Sat	12-Mar	7am-7pm	Nima Ashkeboussi
PMTR Prot Actions Asst Dir			
Fri-Sat	3/11-3/12	11pm - 7am	Kathryn Brock
Sat	12-Mar	7am - 7pm	Stacey Rosenberg
PMTR RAAD			
Fri-Sat	3/11-3/12	11pm - 7am	Steve LaVie
Sat	12-Mar	7am - 7pm	Bruce Watson
PMTR Dose Assessment (RASCAL)			
Fri-Sat	3/11-3/12	7pm - 7am	Kimberly Ropon
Sat	12-Mar	7am-11am	Prosanta Chowdhury
Sat	12-Mar	11am - 11pm	Gary Purdy
Reactor Safety Team			
RST Director			
Fri-Sat	3/11-3/12	11pm - 7am	Mike Case
Sat	12-Mar	7am - 3pm	Dave Skeen
Sat	12-Mar	3pm - 11pm	Bill Ruland
RST Coordinator			
Fri-Sat	3/11-3/12	11:45pm - 7am	Brett Rini

Japan Earthquake ERO Staffing Roster
March 11 - 15, 2011
Pay Period 6 - Week 2

Position	Date	Time	Staff
Sat	12-Mar	7am - 3pm	Peter Alter
Sat	12-Mar	3pm - 10pm	Rick Hasselberg
Severe Accident/PRA			
Fri-Sat	3/11-3/12	11pm - 7am	Mike Cheok
Sat	12-Mar	7am - 3pm	Jeff Circle
Sat	12-Mar	3pm - 11pm	Don Dube
BWR Expertise			
Fri-Sat	3/11-3/12	11pm - 7am	Eva Brown
Sat	12-Mar	7am - 3pm	Tim Kolb
Sat	12-Mar	3pm - 11pm	Chuck Norton
RST Comm/ERDS Operator			
Fri-Sat	3/11-3/12	11pm - 7am	Jim Isom
Sat	12-Mar	7am - 7pm	Steve Bloom
Sat	12-Mar	3pm - 11pm	Mark Padovan (arrive at 5:00pm)

Japan Earthquake ERO Staffing Roster
March 11 - 15, 2011
Pay Period 7 - Week 1

Position	Date	Time	Staff
Executive Team			
ET Director			
Sat-Sun	3/12-3/13	11pm - 7am	Mike Weber
Sun	13-Mar	7am - 3pm	Marty Virgilio
Sun	13-Mar	3pm - 11pm	Bill Borchardt
Sun-Mon	3/13-3/14	11pm - 7am	Mike Weber
Mon	14-Mar	7am - 3pm	Marty Virgilio
Mon	14-Mar	3pm - 11pm	Bill Borchardt
Mon-Tue	3/14-3/15	11pm - 7am	Mike Weber
Tue	15-Mar	7am - 3pm	Marty Virgilio / Mike Weber
Tue	15-Mar	3pm - 11pm	Jack Grobe
Tue-Wed	3/15-3/16	11pm - 7am	Dan Dorman
Wed	16-Mar	7am - 3pm	Mike Weber
Wed	16-Mar	3pm - 11pm	Bruce Boger
Wed-Thur	3/16-3/17	11pm - 7am	Dan Dorman
Thur	17-Mar	7am - 3pm	Mike Weber
Thur	17-Mar	3pm - 11pm	Jack Grobe
Thur-Fri	3/17-3/18	11pm - 7am	Roy Zimmerman
Fri	18-Mar	7am - 3pm	Jim Wiggins
Fri	18-Mar	3pm - 11pm	Bruce Boger
Fri-Sat	3/18-3/19	11pm-7am	Roy Zimmerman
Sat	19-Mar	7am - 3pm	Jim Wiggins
Sat	19-Mar	3pm-11pm	Brian Sheron
Sat-Sun	3/19-3/20	11pm - 7am	Mike Johnson
ET Response Advisor			
Sat-Sun	3/12-3/13	11pm - 7am	Scott Morris
Sun	13-Mar	7am - 3pm	Brian McDermott
Sun	13-Mar	3pm - 11pm	Mary Jane Ross-Lee
Sun-Mon	3/13-3/14	11pm - 7am	Scott Morris
Mon	14-Mar	7am - 3pm	Brian McDermott
Mon	14-Mar	3pm - 11pm	Chris Miller
Mon-Tue	3/14-3/15	11pm - 7am	Scott Morris
Tue	15-Mar	7am - 3pm	Brian McDermott
Tue	15-Mar	3pm - 11pm	Mary Jane (MJ) Ross-Lee
Tue-Wed	3/15-3/16	11pm - 7am	Chris Miller
Wed	16-Mar	7am - 3pm	Brian McDermott
Wed	16-Mar	3pm - 11pm	Mary Jane (MJ) Ross-Lee
Wed-Thur	3/16-3/17	11pm - 7am	Chris Miller
Thur	17-Mar	7am - 3pm	Brian McDermott
Thur	17-Mar	3pm - 11pm	Mary Jane (MJ) Ross-Lee
Thur-Fri	3/17-3/18	11pm - 7am	Scott Morris (also 3/18-3/19)
Fri	18-Mar	7am - 3pm	Brian McDermott
Fri	18-Mar	3pm - 11pm	Mary Jane (MJ) Ross-Lee
Fri-Sat	3/18-3/19	11pm-7am	Scott Morris
Sat	19-Mar	7am - 3pm	Brian McDermott
Sat	19-Mar	3pm-11pm	Mary Jane (MJ) Ross-Lee
Sat-Sun	3/19-3/20	11pm - 7am	Scott Morris
ET Rx Prot Measures & State Coordinator			

Japan Earthquake ERO Staffing Roster
March 11 - 15, 2011
Pay Period 7 - Week 1

Position	Date	Time	Staff
Tue	15-Mar	7am - 3pm	Charles Miller
Tue	15-Mar	3pm - 11pm	Larry Camper
Tue-Wed	3/15-3/16	11pm - 7am	Rob Lewis
Wed	16-Mar	7am - 3pm	Charles Miller
Wed	16-Mar	3pm - 11pm	Vonna Ordaz
Wed-Thur	3/16-3/17	11pm - 7am	Rob Lewis
Thur	17-Mar	7am - 7pm	Charles Miller
Thur-Fri	3/17-3/18	7pm - 7am	Dan Dorman (Follow - up)
Fri	18-Mar	7am - 3pm	Charles Miller
Fri	18-Mar	3pm - 11pm	Vonna Ordaz
Fri-Sat	3/18-3/19	11pm-7am	Scott Moore
Sat	19-Mar	7am - 3pm	Larry Camper
Sat	19-Mar	3pm-11pm	Patricia Holahan
Sat-Sun	3/19-3/20	11pm - 7am	Rob Lewis
Executive Briefing Team			
EBT Admin. Assistant			
Sat-Sun	3/12-3/13	11pm - 11am	Sapna Hurd
Sun	13-Mar	11am - 11pm	Annette Stang
Sun-Mon	3/13-3/14	11pm - 11am	Christina Merritt
Mon	14-Mar	11am - 11pm	Kelly Riner
Mon-Tue	3/14-3/15	11pm - 7am	Tia Pope
Tue	15-Mar	7am - 3pm	Sapna Hurd
Tue	15-Mar	3pm - 11pm	Annette Stang
Tue-Wed	3/15-3/16	11pm - 7am	Christina Merritt (vac after today)
Wed	16-Mar	7am - 3pm	Melissa Ralph
Wed	16-Mar	3pm - 11pm	Annette Stang
Wed-Thur	3/16-3/17	11pm - 7am	Tia Pope
Thur	17-Mar	7am - 3pm	Sapna Hurd
Thur	17-Mar	3pm - 11pm	Annette Stang
Thru-Fri	3/17-3/18	11pm - 7am	Tia Pope
Fri	18-Mar	7am - 3pm	Carolyn Kahler
Fri	18-Mar	3pm - 11pm	Annette Stang
Fri-Sat	3/18-3/19	11pm-7am	Sapna Hurd
Sat	19-Mar	7am - 3pm	Carolyn Kahler
Sat	19-Mar	3pm-11pm	Annette Stang
Sat-Sun	3/19-3/20	11pm - 9am	Sapna Hurd
EBT Coordinator			
Sat-Sun	3/12-3/13	7pm - 7am	Eric Schrader
Sun	13-Mar	7am - 7pm	Sara Mroz
Sun-Mon	3/13-3/14	7pm - 7am	Jim Anderson
Mon	14-Mar	7am - 7pm	Yen-Ju Chen
Mon-Tue	3/14-3/15	7pm - 7am	Eric Schrader/Rebecca Stone
Tue	15-Mar	7am - 3pm	Jim Anderson
Tue	15-Mar	3pm - 11pm	Sara Mroz
Tue-Wed	3/15-3/16	11pm - 7am	Yen-Ju Chen
Wed	16-Mar	7am - 3pm	Jim Anderson
Wed	16-Mar	3pm - 3am	Sara Mroz
Wed-Thur	3/16-3/17	3am - 3pm	Jim Anderson
Thur	17-Mar	3pm - 11pm	Sara Mroz
Thur-Fri	3/17-3/18	11pm - 7am	Rebecca Clinton

Position	Date	Time	Staff
Fri	18-Mar	7am - 3pm	Jim Anderson
Fri	18-Mar	3pm - 11pm	Sara Mroz
Fri-Sat	3/18-3/19	11pm-7am	Christine Steger
Sat	19-Mar	7am - 3pm	Caroline Nguyen
Sat	19-Mar	3pm-11pm	Sara Mroz
Sat-Sun	3/19-3/20	11pm - 7am	Jim Andersen
Executive Support Team			
EST Status Officer			
Mon-Tue	3/14-3/15	11pm - 7am	Jeff Grant
Tue	15-Mar	7am - 3pm	Jane Marshall
Tue	15-Mar	3pm - 11pm	Bill Gott
Tue-Wed	3/15-3/16	11pm - 7am	Jeff Grant
Wed	16-Mar	7am - 3pm	Jane Marshall
Wed	16-Mar	3pm - 11pm	Bill Gott
Wed-Thur	3/16-3/17	11pm - 7am	Jeff Grant
Thur	17-Mar	7am - 3pm	Jane Marshall
Thur	17-Mar	3pm - 11pm	Bill Gott
Thur-Fri	3/17-3/18	11pm - 7am	Jeff Grant
Fri	18-Mar	7am - 3pm	Jane Marshall
Fri	18-Mar	3pm - 11pm	Bill Gott
Fri-Sat	3/18-3/19	11pm-7am	Doug Huyck
Sat	19-Mar	7am - 3pm	Craig Erlanger
Sat	19-Mar	3pm-11pm	John Jolicoeur
Sat-Sun	3/19-3/20	11pm - 7am	Doug Huyck
EST Actions Officer			
Mon	14-Mar	7am - 3pm	Wendy Reed
Mon	14-Mar	3pm - 11pm	Sarah Mroz
Mon-Tue	3/14-3/15	11pm - 7am	
Tue	15-Mar	7am - 3pm	Zahira Cruz-Perez (until 11am)/Melissa Ralph
Tue	15-Mar	3pm - 11pm	Tony Bowers
Wed	16-Mar	7am - 3pm	Wendy Reed (until 4:30pm)
Wed	16-Mar	3pm - 11pm	Amy Salus
Wed-Thur	3/16 - 3/17	11pm - 7am	
Thur	17-Mar	7am - 3pm	Wendy Reed
Thur	17-Mar	3pm - 11pm	Melissa Ralph
Thur-Fri	3/17 - 3/18	11pm - 7am	Amy Roundtree
Fri	18-Mar	7am - 3pm	Jonathan Fiske
Fri	18-Mar	3pm - 11pm	Melissa Ralph
Fri-Sat	3/18-3/19	11pm-7am	Amy Roundtree
Sat	19-Mar	7am - 3pm	Bezakulu Alemu
Sat	19-Mar	3pm-11pm	Melissa Ralph
Sat-Sun	3/19-3/20	11pm - 7am	Jonathan Fiske
EST Coordinator			
Sat-Sun	3/12-3/13	11pm - 11am	Jeff Grant
Sun	13-Mar	11am - 11pm	Tony Bowers
Sun-Mon	3/13-3/14	11pm - 11am	Jeff Grant
Mon	14-Mar	11am - 11pm	Tony Bowers
Mon-Tue	3/14-3/15	11pm - 7am	Jeff Grant
Tue	15-Mar	7am - 3pm	Tony McMurtray

Japan Earthquake ERO Staffing Roster
March 11 - 15, 2011
Pay Period 7 - Week 1

Position	Date	Time	Staff
Tue	15-Mar	3pm - 11pm	Tony Bowers
Tue-Wed	3/15-3/16	11pm - 7am	Jeff Grant
Wed	16-Mar	7am - 3pm	Tony McMurtray
Wed	16-Mar	3pm - 11pm	Tony Bowers
Wed-Thur	3/16-3/17	11pm - 7am	Rebecca Stone
Thur	17-Mar	7am - 3pm	Tony McMurtray
Thur	17-Mar	3pm - 11pm	Tony Bowers
Thur-Fri	3/17-3/18	11pm - 7am	Rebecca Stone
Fri	18-Mar	7am - 3pm	Tony McMurtray
Fri	18-Mar	3pm - 11pm	Steve Campbell
Fri-Sat	3/18-3/19	11pm-7am	Rebecca Stone
Sat	19-Mar	7am - 3pm	Clyde Ragland
Sat	19-Mar	3pm-11pm	Tony Bowers
Sat-Sun	3/19-3/20	11pm - 7am	Rebecca Stone
EST Chronology Officer			

Sun	13-Mar	11am - 11pm	Alan Frasier
Sun-Mon	3/13-3/14	11pm - 7am	Greg Bowman
Mon	14-Mar	7am - 3pm	Jessica Kratchman
Mon	14-Mar	3pm - 11pm	Rebecca Karas
Mon-Tue	3/14-3/15	11pm - 7am	Scarbrough, Thomas
Tue	15-Mar	7am - 3pm	Jessica Kratchman
Tue	15-Mar	3pm - 11pm	Rebecca Karas
Tue-Wed	3/15-3/16	11pm - 7am	Scarbrough, Thomas
Wed	16-Mar	7am - 3pm	Jessica Kratchman
Wed	16-Mar	3pm - 11pm	Rebecca Karas
Wed-Thur	3/16-3/17	11pm - 7am	Scarbrough, Thomas
Thur	17-Mar	7am - 3pm	Jessica Kratchman
Thur	17-Mar	3pm - 11pm	Rebecca Karas
Thur-Fri	3/17-3/18	11pm - 7am	Scarbrough, Thomas (on travel 3/18-3/19)
Fri	18-Mar	7am - 3pm	Jessica Kratchman
Fri	18-Mar	3pm - 11pm	Rebecca Karas
Fri-Sat	3/18-3/19	11pm-7am	Dennis Gordon
Sat	19-Mar	7am - 3pm	Vanice Perrin
Sat	19-Mar	3pm-11pm	Rebecca Karas
Sat-Sun	3/19-3/20	11pm - 7am	Cynthia Dorsey
EST Response Ops Mgr			

Sun	13-Mar	7am - 7pm	Roberto Figueroa
Sun-Mon	3/13-3/14	7pm - 7am	Omar Khan
Mon	14-Mar	7am - 7pm	Karen Jackson
Mon	14-Mar	3pm - 11pm	Roberto Figueroa
Mon-Tue	3/14-3/15	11pm - 7am	Omar Khan
Tue	15-Mar	7am - 3pm	Karen Jackson
Tue	15-Mar	3pm - 11pm	Roberto Figueroa
Tue-Wed	3/15-3/16	11pm - 7am	Omar Khan
Wed	16-Mar	7am - 3pm	Karen Jackson
Wed	16-Mar	3pm - 11pm	Roberto Figueroa
Wed-Thur	3/16-3/17	11pm - 7am	Omar Khan
Thur	17-Mar	7am - 3pm	Karen Jackson

Japan Earthquake ERO Staffing Roster
March 11 - 15, 2011
Pay Period 7 - Week 1

Position	Date	Time	Staff
Thur	17-Mar	3pm - 11pm	Roberto Figueroa
Thur-Fri	3/17-3/18	11pm - 7am	Omar Khan
Fri	18-Mar	7am - 3pm	Karen Jackson
Fri	18-Mar	3pm - 11pm	Roberto Figueroa
Fri-Sat	3/18-3/19	11pm-7am	Omar Khan
Sat	19-Mar	7am - 3pm	Cris Brown
Sat	19-Mar	3pm-11pm	Bob Stransky
Sat-Sun	3/19-3/20	11pm - 7am	Jean Trefethan
EST Admin. Assistant			
Sat-Sun	3/12-3/13	11pm - 7am	Amy Salus
Sun	13-Mar	7am - 3pm	Mary Glenn Crutchley
Sun	13-Mar	3pm - 11pm	Emily Larson
Sun-Mon	3/13-3/14	11pm - 7am	Linda Williamson
Mon	14-Mar	7am - 3pm	Tabitha Howard
Mon	14-Mar	3pm - 11pm	Michelle Manahan
Mon-Tue	3/14-3/15	11pm - 7am	Amy Salus
Tue	15-Mar	7am - 3pm	Linda Williamson
Tue	15-Mar	3pm - 11pm	Michelle Manahan
Tue-Wed	3/15-3/16	11pm - 7am	Andrea Wimbush
Wed	16-Mar	7am - 3pm	Emily Larson
Wed	16-Mar	3pm - 11pm	Tabitha Howard
Wed-Thur	3/16-3/17	11pm - 7am	Andrea Wimbush
Thur	17-Mar	7am - 3pm	Karen Meyer
Thur	17-Mar	3pm - 11pm	Mary Glenn Crutchley
Thur-Fri	3/17-3/18	11pm - 7am	Linda Williamson
Fri	18-Mar	7am - 3pm	Amy Salus
Fri	18-Mar	3pm - 11pm	Mary Glenn Crutchley
Fri-Sat	3/18-3/19	11pm-7am	Tabitha Howard
Sat	19-Mar	7am - 3pm	Karen Meyer
Sat	19-Mar	3pm-11pm	Amy Salus
Sat-Sun	3/19-3/20	11pm - 7am	Chris Lamb
Liaison Team			
LT Director			
Sat-Sun	3/12-3/13	11pm - 7am	Tom Blount
Sun	13-Mar	7am - 3pm	Mike Tschiltz
Sun	13-Mar	3pm-11pm	Tim McGinty
Sun-Mon	3/13-3/14	11pm - 7am	Tom Blount
Mon	14-Mar	7am - 3pm	Mark Thaggard
Mon	14-Mar	3pm-11pm	Tim McGinty
Mon-Tue	3/14-3/15	11pm - 7am	Tom Blount
Tue	15-Mar	7am - 3pm	Mark Lombard
Tue	15-Mar	3pm - 11pm	Tim McGinty
Tue-Wed	3/15-3/16	11pm - 7am	Tom Blount
Wed	16-Mar	7am - 3pm	Mark Lombard
Wed	16-Mar	3pm - 11pm	Mark Thaggard
Wed-Thur	3/16-3/17	11pm - 7am	Tom Blount
Thur	17-Mar	7am - 3pm	Mark Lombard
Thur	17-Mar	3pm - 11pm	Mark Thaggard
Thur-Fri	3/17-3/18	11pm - 7am	Tom Blount

Japan Earthquake ERO Staffing Roster
March 11 - 15, 2011
Pay Period 7 - Week 1

Position	Date	Time	Staff
Fri	18-Mar	7am - 3pm	Mark Lombard
Fri	18-Mar	3pm - 11pm	Mark Thaggard
Fri-Sat	3/18-3/19	11pm-7am	Tom Blount
Sat	19-Mar	7am - 3pm	Tom Bergman
Sat	19-Mar	3pm-11pm	Bob Webber
Sat-Sun	3/19-3/20	11pm - 7am	John Adams
LT Coordinator			
Sat-Sun	3/12-3/13	7pm - 7am	Janelle Jesse
Sun	13-Mar	7am - 7pm	Jeff Temple/Milt Murray
Sun-Mon	3/13-3/14	7pm - 7am	Nathan Sanfilippo
Mon	14-Mar	7am - 3pm	Rani Franovich
Mon	14-Mar	3pm - 11pm	Milt Murray
Mon-Tue	3/14-3/15	11pm - 7am	Jeff Temple
Tue	15-Mar	7am - 3pm	Milt Murray
Tue	15-Mar	3pm - 11pm	Nathan Sanfilippo
Tue-Wed	3/15-3/16	11pm - 7am	Jeff Temple
Wed	16-Mar	7am-3pm	Milt Murray
Wed	16-Mar	3pm - 11pm	Nathan Sanfilippo
Wed-Thur	3/16-3/17	11pm - 7am	Jeff Temple
Thur	17-Mar	7am - 3pm	Milt Murray
Thur	17-Mar	3pm - 11pm	Rani Franovich
Thur-Fri	3/17-3/18	11pm - 7am	Jeff Temple
Fri	18-Mar	7am - 3pm	Milt Murray
Fri	18-Mar	3pm - 11pm	Rani Franovich
Fri-Sat	3/18-3/19	11pm - 7am	Janelle Jesse
Fri-Sat	3/18-3/19	11pm-7am	Janelle Jessie
Sat	19-Mar	7am - 3pm	Jeff Temple
Sat	19-Mar	3pm-11pm	Rani Franovich
Sat-Sun	3/19-3/20	11pm - 7am	Janelle Jessie
LT State Liaison			
Sun	13-Mar	7am-3pm	Rich Turtil
Thur-Fri	3/17-3/18	9pm-7am	Ryan/Turtil (ON CALL ONLY)
Fri	18-Mar	7am-2pm	Lukes/Flannery
Fri	18-Mar	2pm-9pm	Turtil/Maupin
Fri-Sat	3/18-3/19	9pm-7am	Ryan/Turtil (ON CALL ONLY)
Sat	19-Mar	7am-2pm	Ryan/Turtil (ON CALL ONLY)
Sat	19-Mar	2pm-9pm	Ryan/Turtil (ON CALL ONLY)
Sat-Sun	3/19-3/20	9pm-7am	Ryan/Turtil (ON CALL ONLY)
LT Federal Liaison (2)			
Sat-Sun	3/12-3/13	7pm - 7am	Susan Salter / Jason Lising
Sun	13-Mar	7am - 3pm	Russ Chazell
Sun	13-Mar	3pm - 11 pm	Beth Reed
Sun-Mon	3/13-3/14	11pm - 7am	Ted Smith/ Bethany Cesare
Mon	14-Mar	7am - 7pm	Beth Reed (until 3pm)/Scott Sloan
Mon-Tue	3/14-3/15	7pm - 7am	Jeffrey Lynch/Eddie Robinson
Tue	15-Mar	7am - 3pm	Ted Smith / Beth Reed
Tue	15-Mar	3pm - 11pm	Scott Sloan
Tue-Wed	3/15-3/16	11pm - 7am	Jeff Lynch
Wed	16-Mar	7am - 3pm	Beth Reed/Ted Smith

Japan Earthquake ERO Staffing Roster
March 11 - 15, 2011
Pay Period 7 - Week 1

Position	Date	Time	Staff
Wed	16-Mar	3pm - 11pm	Jerry Hale
Wed-Thur	3/16-3/17	11pm - 7am	Scott Sloan
Thur	17-Mar	7am - 3pm	Beth Reed/Ted Smith
Thur	17-Mar	3pm - 11pm	Jerry Hale
Thur-Fri	3/17-3/18	11pm - 7am	Scott Sloan
Fri	18-Mar	7am - 3pm	Beth Reed/Jeff Lynch
Fri	18-Mar	3pm - 11pm	Ted Smith
Sat-Sun	3/19-3/20	11pm - 7am	Scott Sloan
LT Congressional Liaison (2)			
Sat-Sun	3/12-3/13	9pm -7am	David Decker
Sun	13-Mar	7am - 2pm	Amy Powell
Sun	13-Mar	2pm - 9pm	Tim Riley
Sun-Mon	3/13-3/14	9pm -7am	Gene Dacus
Mon	14-Mar	7am - 2pm	Raeann Shane
Mon	14-Mar	2pm - 9pm	Amy Powell
Mon-Tue	3/14-3/15	9pm -7am	Tim Riley
Tue	15-Mar	7am - 2pm	Spiros Drogettis
Tue	15-Mar	2pm - 7pm	Gene Dacus
Wed	16-Mar	7am - 2pm	Spiros Drogettis
Wed	16-Mar	2pm - 7pm	Tim Riley
Thur	17-Mar	7am - 2pm	David Decker
Thur	17-Mar	2pm-9pm	Raeann Shane
Fri	18-Mar	7am-2pm	Gene Dacus
Fri	18-Mar	2pm - 7pm	Tim Riley
Sat	19-Mar	7am - 2pm	Spiros Droggitis
Sat	19-Mar	2pm-9pm	Tim Riley
LT International Liaison (2)			
Sat-Sun	3/12-3/13	11pm - 7am	Charlotte Abrams/Jen Schwartzman
Sun	13-Mar	7am - 3pm	Nader Mamish/Brooke Smith/Janice Owens
Sun	13-Mar	3pm - 11pm	Kirk Foggie/Karen Henderson
Sun-Mon	3/13-3/14	11pm - 7am	Nancy Fragoyanis/Eric Stahl
Mon	14-Mar	7am - 3pm	Nader Mamish
Mon	14-Mar	3pm - 11pm	Kirk Foggie
Mon-Tue	3/14-3/15	11pm - 7am	Margaret Doane
Tue	15-Mar	7am - 3pm	Margaret Doane/Jen Schwartzman
Tue	15-Mar	3pm - 11pm	Steve Dembeck/Danielle Emche
Tue-Wed	3/15-3/16	11pm - 7am	Nader Mamish/Andrea Jones/Lauren Mayros
Wed	16-Mar	7am - 3pm	Margaret Doane/Skip Young/Karen Henderson
Wed	16-Mar	3pm - 11pm	Steve Dembeck/Eric Stahl
Wed-Thur	3/16-3/17	11pm - 7am	Nader Mamish/Brian Wittick/Elizabeth Smiroldo
Thur	17-Mar	7am - 3pm	Charlotte Abrams/Lance English
Thur	17-Mar	3pm - 11pm	Steve Dembek/Eric Stahl
Thur-Fri	3/17-3/18	11pm - 7am	Nader Mamish/Brian Wittick/Mugeh Afshar-Tous
Fri	18-Mar	7am - 3pm	Jen Schwartzman/Steve Bloom
Fri	18-Mar	3pm - 11pm	Jenny Tobin/Lauren Mayros
Fri-Sat	3/18-3/19	11pm-7am	Elizabeth Smiroldo/Danielle Emche
Sat	19-Mar	7am - 3pm	Lance English/Steve Bloom
Sat	19-Mar	3pm-11pm	Jenny Tobin/Jill Shephard
Sat-Sun	3/19-3/20	11pm - 7am	Elizabeth Smiroldo/Danielle Emche

Position	Date	Time	Staff
Protective Measures Team			
PMTR Director			
Mon	14-Mar	8:30am -5:30pm	Christiana Lui
Mon	14-Mar	3pm - 11pm	Vince Holahan
Mon-Tue	3/14-3/15	11pm - 7am	Patricia Milligan
Tue	15-Mar	7am - 3pm	Cynthia Jones
Tue	15-Mar	3pm - 11pm	John Lubinski
Tue-Wed	3/15-3/16	11pm - 7am	Terry Reis
Wed	16-Mar	7am - 12pm	Cynthia Jones (7am- 12pm)
Wed	16-Mar	12pm - 11pm	Patricia Holahan
Wed-Thur	3/16-3/17	11pm - 7am	Terry Reis
Thur	17-Mar	7am - 3pm	Cynthia Jones
Thur	17-Mar	3pm - 11pm	Don Cool
Thur-Fri	3/17-3/18	11pm - 7am	Aby Mohseni
Fri	18-Mar	7am - 3pm	John Lubinski
Fri	18-Mar	3pm-11pm	Patricia Holahan
Fri-Sat	3/18-3/19	11pm-7am	Kathy Gibson
Sat	19-Mar	7am - 3pm	John Lubinski
Sat	19-Mar	3pm-11pm	Don Cool
Sat-Sun	3/19-3/20	11pm - 7am	Kathy Gibson
PMTR Coordinator			
Sat-Sun	3/12-3/13	7pm - 7am	Lou Brandon
Sun	13-Mar	7am-3pm	Jack Foster
Sun	13-Mar	3pm-11pm	Nima Ashkeboussi
Sun-Mon	3/13-3/14	11pm - 7am	John Lubinski
Mon	14-Mar	7am-3pm	Prosanta Chowdhury
Mon	14-Mar	3pm-11pm	Nima Ashkeboussi
Mon-Tue	3/14-3/15	11pm - 7am	John Lubinski
Tue	15-Mar	7am-3pm	Prosanta Chowdhury
Tue	15-Mar	3pm - 11pm	Johnny Eads
Tue-Wed	3/15-3/16	11pm - 8am	Lou Brandon
Wed	16-Mar	8am - 3pm	Prosanta Chowdhury
Wed	16-Mar	3pm - 11pm	Nima Ashkeboussi
Wed-Thur	3/16-3/17	11pm - 8am	Mike Norris
Thur	17-Mar	8am - 3pm	Prosanta Chowdhury
Thur	17-Mar	3pm - 11pm	Nima Ashkeboussi
Thur-Fri	3/17-3/18	11pm - 7am	Lou Brandon
Fri	18-Mar	7am - 3pm	Duane Hardesty
Fri	18-Mar	3pm - 11pm	Arlon Costa
Fri-Sat	3/18-3/19	11pm-7am	Mike Norris
Sat	19-Mar	7am - 3pm	Duane Hardesty
Sat	19-Mar	3pm-11pm	Jay Patel
Sat-Sun	3/19-3/20	11pm - 7am	Lou Brandon
PMTR Prot Actions Asst Dir			
Sat-Sun	3/12-3/13	7pm - 7am	Greg Casto
Sun	13-Mar	7am-3pm	Kathryn Brock
Sun	13-Mar	3pm-11pm	John Tappert
Sun-Mon	3/13-3/14	11pm - 7am	Greg Casto

Japan Earthquake ERO Staffing Roster
March 11 - 15, 2011
Pay Period 7 - Week 1

Position	Date	Time	Staff
Mon	14-Mar	7am-3pm	Kathryn Brock
Mon	14-Mar	3pm-11pm	Vince Holahan
Mon-Tue	3/14-3/15	11pm-7am	Greg Casto
Tue	15-Mar	7am-3pm	Stacey Rosenberg
Tue	15-Mar	3pm - 11pm	Kathryn Brock
Tue-Wed	3/15-3/16	11pm - 7am	Greg Casto
Wed	16-Mar	7am - 3pm	Kathryn Brock
Wed	16-Mar	3pm - 11pm	Vince Holahan
Wed-Thur	3/16-3/17	11pm - 7am	Greg Casto
Thur	17-Mar	7am - 3pm	Kathryn Brock
Thur	17-Mar	3pm - 11pm	John Tappert
Thur-Fri	3/17-3/18	11pm - 7am	Greg Casto
Fri	18-Mar	7am - 3pm	Kathryn Brock
Fri	18-Mar	3pm - 11pm	Vince Holahan
Fri-Sat	3/18-3/19	11pm-7am	Greg Casto
Sat	19-Mar	7am - 3pm	Kathryn Brock
Sat	19-Mar	3pm-11pm	Kevin Williams
Sat-Sun	3/19-3/20	11pm - 7am	Greg Casto
PMTR RAAD			
Sat-Sun	3/12-3/13	7pm-7am	Michelle Hart
Sun	13-Mar	7am-3pm	Bruce Watson
Sun	13-Mar	3pm-11pm	Steve LaVie
Sun-Mon	3/13-3/14	11pm-7am	Randy Sullivan
Mon	14-Mar	7am-3pm	Bruce Watson
Mon	14-Mar	3pm-11pm	Michelle Hart
Mon-Tue	3/14-3/15	11pm-7am	Patricia Milligan
Tue	15-Mar	7am-3pm	Bruce Watson
Tue	15-Mar	3pm-11pm	Steve LaVie
Tue-Wed	3/15-3/16	11pm - 7am	Patricia Milligan
Wed	16-Mar	7am - 2pm	Bruce Watson
Wed	16-Mar	2pm - 11pm	Steve LaVie
Wed-Thur	3/16-3/17	11pm - 7am	Randy Sullivan
Thur	17-Mar	7am - 3pm	Bruce Watson
Thur	17-Mar	3pm - 11pm	Patricia Milligan
Thur-Fri	3/17-3/18	11pm - 7am	Randy Sullivan
Fri	18-Mar	7am - 3pm	Bruce Watson
Fri	18-Mar	3pm - 11pm	Michelle Hart
Fri-Sat	3/18-3/19	11pm-7am	Randy Sullivan
Sat	19-Mar	7am - 3pm	Bruce Watson
Sat	19-Mar	3pm-11pm	Michelle Hart
Sat-Sun	3/19-3/20	11pm - 7am	Patricia Milligan
PMTR Dose Assessment (RASCAL) - Need 2			
Sat-Sun	3/12-3/13	11pm - 7am	Duane Schmidt
Sun	13-Mar	7am-3pm	Kimberly Ropon Gambone (arrive 11am)
Sun	13-Mar	3pm-11pm	Richard Clement (2pm-7pm)/Casper Sun
Sun-Mon	3/13-3/14	11pm-7am	Patricia Milligan
Mon	14-Mar	7am-3pm	Tony Huffert/Fritz Sturz
Mon	14-Mar	3pm-11pm	Kimberly Gambone / Rich Clement (3pm - 8pm)
Mon-Tue	3/14-3/15	11pm-7am	Randy Sullivan / Joe DeCicco/Eric Schrader
Tue	15-Mar	7am-3pm	Casper Sun / John Parillo

Japan Earthquake ERO Staffing Roster
March 11 - 15, 2011
Pay Period 7 - Week 1

Position	Date	Time	Staff
Tue	15-Mar	3pm - 11pm	Fritz Sturz/Tony Huffert
Tue-Wed	3/15-3/16	11pm - 7am	Bernie White/Joe DeCicco
Wed	16-Mar	7am - 3pm	Kimberly Gambone / Rich Clement
Wed	16-Mar	3pm - 11pm	Gary Purdy/Margaret Cervera/Casper Sun (3-7)
Wed-Thur	3/16-3/17	11pm - 7am	Fritz Sturz, Lou Brandon
Thur	17-Mar	7am - 3pm	John Parillo/Eric Schrader (Mike McCoppin to assist)
Thur	17-Mar	3pm - 11pm	Casper Sun/Duane Schmidt
Thur-Fri	3/17-3/18	11pm - 7am	Kimberly Gambone/Joe DeCicco
Fri	18-Mar	7am - 3pm	John Parillo/Eric Schrader
Fri	18-Mar	3pm - 11pm	Gary Purdy/Casper Sun
Fri-Sat	3/18-3/19	11pm-7am	Duane Schmidt/Tony Huffert
Sat	19-Mar	7am - 3pm	Casper Sun / Joe DeCicco (10am arrive)
Sat	19-Mar	3pm-11pm	Margaret Cervera / Joe DeCicco
Sat-Sun	3/19-3/20	11pm - 7am	Kimberly Gambone/John Parillo
RASCAL Developer			
Tue	15-Mar	1pm-7pm	George Athey (contractor)
PMTR GIS Analyst			
Sun	13-Mar	10:30 am-5pm	Yong Li
Mon	14-Mar	7am - 3pm	Yong Li (leaving @ 4:00)
Mon	14-Mar	3pm - 11pm	George Wunder
Mon-Tue	3/14-3/15	11pm - 7am	Dogan Seber
Tue	15-Mar	7am - 3pm	Yong Li
Tue	15-Mar	3pm - 11pm	Alice Stieve
Tue-Wed	3/15-3/16	11pm - 7am	Stephanie Devlin
Wed	16-Mar	7am - 3pm	Yong Li
Wed	16-Mar	3pm - 11pm	George Wunder
Wed-Thur	3/16-3/17	11pm - 7am	Stephanie Devlin
Thur	17-Mar	7am - 3pm	Yong Li
Thur	17-Mar	3pm - 11pm	George Wunder
Thur-Fri	3/17-3/18	11pm - 7am	Stephanie Devlin
Fri	18-Mar	7am - 3pm	Yong Li
Fri	18-Mar	3pm - 11pm	Dogan Seber
Sat-Sun	3/19-3/20	11pm - 7am	Alice Stieve
Sun	20-Mar	7am - 3pm	Phil Brandt
Sun	20-Mar	3pm-11pm	Ken See
Sun-Mon	3/20-3/21	11pm - 7am	Alice Stieve
PMTR Meteorologist			
Mon	14-Mar	7am - 3pm	Brad Harvey
Mon	14-Mar	3pm - 11pm	Kevin Quinlan
Mon-Tue	3/14-3/15	11pm - 7am	Dave Brown
Tue	15-Mar	7am - 3pm	Tom Galletta
Tue	15-Mar	3pm - 11pm	Kevin Quinlan
Tue-Wed	3/15-3/16	11pm - 7am	Dave Brown
Wed	16-Mar	7am - 3pm	Tom Galletta
Wed	16-Mar	3pm - 11pm	Kevin Quinlan
Wed-Thur	3/16-3/17	11pm - 7am	Dave Brown
Thur	17-Mar	7am - 3pm	Tom Galletta
Thur	17-Mar	3pm - 11pm	Kevin Quinlan
Thur-Fri	3/17-3/18	11pm - 7am	Dave Brown

Position	Date	Time	Staff
Fri	18-Mar	7am - 3pm	Tom Galletta
Fri	18-Mar	3pm - 11pm	Kevin Quinlan
Fri-Sat	18-Mar	3pm-11pm	Mike Mazaika
Sat	3/18-3/19	11pm-7am	Dave Brown
Sat	19-Mar	7am - 3pm	Kevin Quinlan
Sat-Sun	19-Mar	3pm-11pm	Mike Mazaika
Reactor Safety Team			
RST Director			
Sat-Sun	3/12-3/13	11pm - 7am	Mike Case
Sun	13-Mar	7am - 3pm	Pat Hiland
Sun	13-Mar	3pm - 11pm	Fred Brown
Sun-Mon	3/13-3/14	11pm - 7am	Dave Skeen
Mon	14-Mar	7am - 3pm	Laura Dudes
Mon	14-Mar	3pm - 11pm	Bill Ruland
Mon-Tue	3/14-3/15	11pm - 7am	Mike Case
Tue	15-Mar	7am - 3pm	Dave Skeen
Tue	15-Mar	3pm - 11pm	Fred Brown
Tue-Wed	3/15-3/16	11pm - 7am	Pat Hiland
Wed	16-Mar	7am - 3pm	Dave Skeen
Wed	16-Mar	3pm - 11pm	Bill Ruland
Wed-Thur	3/16-3/17	11pm - 7am	Mike Case
Thur	17-Mar	7am - 3pm	Laura Dudes
Thur	17-Mar	3pm - 11pm	Fred Brown
Thur-Fri	3/17-3/18	11pm - 7am	Pat Hiland
Fri	18-Mar	7am - 3pm	Laura Dudes
Fri	18-Mar	3pm - 11pm	Bill Ruland
Fri-Sat	3/18-3/19	11pm-7am	Jennifer Uhle
Sat	19-Mar	7am - 3pm	Laura Dudes
Sat	19-Mar	3pm-11pm	Dave Skeen
Sat-Sun	3/19-3/20	11pm - 7am	Jennifer Uhle
RST Coordinator			
Sat-Sun	3/12-3/13	11pm - 7am	Mike Morlang
Sun	13-Mar	7am - 3pm	Peter Alter
Sun	13-Mar	3pm - 11pm	Rick Hasselberg
Sun-Mon	3/13-3/14	11pm - 7am	Brett Rini
Mon	14-Mar	7am - 3pm	Peter Alter
Mon	14-Mar	3pm - 11pm	R. Berry
Mon-Tue	3/14-3/15	11pm - 7am	R. Berry
Tue	15-Mar	7am - 3pm	Rick Hasselberg
Tue	15-Mar	3pm - 11pm	Frank Collins
Tue-Wed	3/15-3/16	11pm - 7am	Mike Morlang
Wed	16-Mar	7am - 3pm	Rick Hasselberg
Wed	16-Mar	3pm - 11pm	Greg Schoenbeck
Wed-Thur	3/16-3/17	11pm - 7am	Rollie Berry
Thur	17-Mar	7am - 3pm	Frank Collins
Thur	17-Mar	3pm - 11pm	Greg Schoenbeck
Thur-Fri	3/17-3/18	11pm - 7am	Rollie Berry
Fri	18-Mar	7am - 3pm	Peter Alter
Fri	18-Mar	3pm - 11pm	Greg Schoenbeck
Fri-Sat	3/18-3/19	11pm-7am	Rollie Berry

Japan Earthquake ERO Staffing Roster
March 11 - 15, 2011
Pay Period 7 - Week 1

Position	Date	Time	Staff
Sat	19-Mar	7am - 3pm	Scott Sloan
Sat	19-Mar	3pm-11pm	Oleg Bukharin
Sat-Sun	3/19-3/20	11pm - 7am	Frank Collins
Severe Accident/PRA			
Sat-Sun	3/12-3/13	11pm - 7am	Eva Brown
Sun	13-Mar	7am - 3pm	Jeff Circle
Sun	13-Mar	3pm - 11pm	Hossein Esmaili
Sun-Mon	3/13-3/14	11pm - 7am	Mike Cheok
Mon	14-Mar	7am - 3pm	Jeff Circle
Mon	14-Mar	3pm - 11pm	Len Ward
Mon-Tue	3/14-3/15	11pm - 7am	Steve Laur
Tue	15-Mar	7am - 3pm	Jeff Circle
Tue	15-Mar	3pm - 11pm	Michael Salay
Tue-Wed	3/15-3/16	11pm - 7am	J. Schaperow
Wed	16-Mar	7am - 3pm	Ed Fuller
Wed	16-Mar	3pm - 11pm	Hossein Esmaili
Wed-Thur	3/16-3/17	11pm - 7am	Mike Salay
Thur	17-Mar	7am - 3pm	Jeff Circle
Thur	17-Mar	3pm - 11pm	Steve Laur
Thur-Fri	3/17-3/18	11pm - 7am	Mike Salay
Fri	18-Mar	7am - 3pm	Hossein Esmaili
Fri	18-Mar	3pm - 11pm	J. Schaperow
Fri-Sat	3/18-3/19	11pm - 7am	Don Marksberry
Sat	19-Mar	7am - 3pm	Len Ward
Sat	19-Mar	3pm-11pm	Ed Fuller
Sat-Sun	3/19-3/20	11pm - 7am	Mike Salay
BWR Expertise			
Sat-Sun	3/12-3/13	11pm - 7am	Eva Brown
Sun	13-Mar	7am - 3pm	Tim Kolb
Sun	13-Mar	3pm - 11pm	Chuck Norton
Sun-Mon	3/13-3/14	11pm - 7am	Eva Brown
Mon	14-Mar	7am - 3pm	Tim Kolb
Mon	14-Mar	3pm - 11pm	Chuck Norton
Mon-Tue	3/14-3/15	11pm - 7am	Eva Brown
Tue	15-Mar	7am - 3pm	Jim Shea / Peter Alter
Tue	15-Mar	3pm - 11pm	Chuck Norton
Tue-Wed	3/15-3/16	11pm - 7am	Eva Brown
Wed	16-Mar	7am - 3pm	Larry Vick
Wed	16-Mar	3pm - 11pm	Chuck Norton
Wed-Thur	3/16-3/17	11pm - 7am	Eva Brown
Thur	17-Mar	7am - 3pm	Jim Shea (Peter Alter?)
Thur	17-Mar	3pm - 11pm	Chuck Norton
Thur-Fri	3/17-3/18	11pm - 7am	Eva Brown
Fri	18-Mar	7am - 3pm	Jim Shea ?
Fri	18-Mar	3pm - 11pm	Chuck Norton
Fri-Sat	3/18-3/19	11pm-7am	Mike Brown
Sat	19-Mar	7am - 3pm	Peter Alter
Sat	19-Mar	3pm-11pm	Chuck Norton
Sat-Sun	3/19-3/20	11pm - 7am	John Kauffman

Japan Earthquake ERO Staffing Roster
March 11 - 15, 2011
Pay Period 7 - Week 1

Position	Date	Time	Staff
RST Comm/ERDS Operator			
Sat-Sun	3/12-3/13	11pm - 7am	?
Sun	13-Mar	7am-3pm	Joseph Williams
Sun	13-Mar	3pm-11pm	Ken Hart
Sun-Mon	3/13-3/14	11pm - 7am	?
Mon	14-Mar	7am-3pm	Steve Bloom
Mon	14-Mar	3pm-11pm	Mark Padovan
Mon-Tue	3/14-3/15	11pm - 7am	Ken Hart
Tue	15-Mar	7am-3pm	Donna Williams
Tue	15-Mar	3pm - 11pm	Jim Isom
Tue-Wed	3/15-3/16	11pm - 7am	Ken Hart
Wed	16-Mar	7am - 3pm	Joseph Williams
Wed	16-Mar	3pm - 11pm	Steve Bloom
Wed-Thur	3/16-3/17	11pm - 7am	Mark Padovan
Thur	17-Mar	7am - 3pm	Donna Williams
Thur	17-Mar	3pm - 11pm	Frank Collins/John Thorp
Thur-Fri	3/17-3/18	11pm - 7am	John Thorp
Fri	18-Mar	7am - 3pm	Jim Isom
Fri	18-Mar	3pm - 11pm	Ken Hart
Fri-Sat	3/18-3/19	11pm-7am	Andy Kugler
Sat	19-Mar	7am - 3pm	Joseph Williams
Sat	19-Mar	3pm-11pm	John Thorp
Sat-Sun	3/19-3/20	11pm - 7am	Ujagar Bhachu
RST Support (Seismology Q&A)			
Tue	15-Mar	7am - 3pm	Cliff Munson
Tue	15-Mar	3pm - 11pm	Annie Kammerer
Wed	16-Mar	7am - 3pm	Cliff Munson
Wed	16-Mar	3pm - 11pm	Annie Kammerer
Thur	17-Mar	7am - 3pm	Nilesh Chokshi
Thur	17-Mar	3pm - 11pm	Annie Kammerer
Fri	18-Mar	7am - 3pm	Cliff Munson
Fri	18-Mar	3pm - 11pm	Annie Kammerer

Japan Earthquake ERO Staffing Roster
March 20-26, 2011
Pay Period 7 - Week 2

Position	Date	Time	Staff
		Executive Team	
ET Director			
Sat-Sun	3/19-3/20	11pm - 7am	Mike Johnson
Sun	20-Mar	7am - 3pm	Jim Wiggins
Sun	20-Mar	3pm-11pm	Brian Sheron
Sun-Mon	3/20-3/21	11pm - 7am	Mike Johnson
Mon	21-Mar	7am - 3pm	Mike Weber
Mon	21-Mar	3pm-11pm	Jim Wiggins
Mon-Tues	3/21-3/22	11pm - 7am	Mike Johnson
Tues	22-Mar	7am - 3pm	Mike Weber
Tues	22-Mar	3pm-11pm	Jim Wiggins
Tues-Wed	3/22-3/23	11pm - 7am	Bruce Boger
Wed	23-Mar	7am - 3pm	Mike Weber
Wed	23-Mar	3pm-11pm	Roy Zimmerman
Wed-Thur	3/23-3/24	11pm - 7am	Bruce Boger
Thur	24-Mar	7am - 3pm	Mike Weber
Thur	24-Mar	3pm-11pm	Roy Zimmerman
Thur-Fri	3/24-3/25	11pm - 7am	Jennifer Uhle
Fri	25-Mar	7am - 3pm	Jim Dyer
Fri	25-Mar	3pm-11pm	Roy Zimmerman
Fri-Sat	3/25-3/26	11pm-7am	Jennifer Uhle
Sat	26-Mar	7am - 3pm	Jim Dyer
Sat	26-Mar	3pm-11pm	Brian Sheron
Sat-Sun	3/26-3/27	11pm - 7am	Jennifer Uhle
ET Response Advisor			
Sat-Sun	3/19-3/20	11pm - 7am	Scott Morris
Sun	20-Mar	7am - 3pm	Chris Miller
Sun	20-Mar	3pm-11pm	Mary Jane (MJ) Ross-Lee
Sun-Mon	3/20-3/21	11pm - 7am	Scott Morris
Mon	21-Mar	7am - 3pm	Brian McDermott
Mon	21-Mar	3pm-11pm	Chris Miller
Mon-Tues	3/21-3/22	11pm - 7am	Scott Morris
Tues	22-Mar	7am - 3pm	Mary Jane (MJ) Ross-Lee
Tues	22-Mar	3pm-11pm	Chris Miller
Tues-Wed	3/22-3/23	11pm - 7am	Tim McGinty
Wed	23-Mar	7am - 3pm	Brian McDermott
Wed	23-Mar	3pm-11pm	Joe Giitter
Wed-Thur	3/23-3/24	11pm - 7am	Tim McGinty
Thur	24-Mar	7am - 3pm	Mary Jane (MJ) Ross-Lee
Thur	24-Mar	3pm-11pm	Joe Giitter
Thur-Fri	3/24-3/25	11pm - 7am	Tim McGinty
Fri	25-Mar	7am - 3pm	Mary Jane (MJ) Ross-Lee
Fri	25-Mar	3pm-11pm	Joe Giitter
Fri-Sat	3/25-3/26	11pm-7am	Tim McGinty
Sat	26-Mar	7am - 3pm	Mary Jane (MJ) Ross-Lee
Sat	26-Mar	3pm-11pm	Joe Giitter
Sat-Sun	3/26-3/27	11pm - 7am	Chris Miller
ET Rx Prot Measures & State Coordinator			
Sat-Sun	3/19-3/20	11pm - 7am	Rob Lewis

Sun	20-Mar	7am - 3pm	Vonna Ordaz
Sun	20-Mar	3pm-11pm	Larry Camper
Sun-Mon	3/20-3/21	11pm - 7am	Cynthia Carpenter
Mon	21-Mar	7am - 3pm	Charlie Miller
Mon	21-Mar	3pm-11pm	Larry Camper
Mon-Tues	3/21-3/22	11pm - 7am	Rob Lewis
Tues	22-Mar	7am - 3pm	Charlie Miller
Tues	22-Mar	3pm-11pm	Patricia Holahan
Tues-Wed	3/22-3/23	11pm - 7am	Cynthia Carpenter
Wed	23-Mar	7am - 3pm	Charlie Miller
Wed	23-Mar	3pm-11pm	Patricia Holahan
Wed-Thur	3/23-3/24	11pm - 7am	N/A
Thur	24-Mar	7am - 3pm	Larry Camper
Thur	24-Mar	3pm-11pm	Cynthia Carpenter
Thur-Fri	3/24-3/25	11pm - 7am	N/A
Fri	25-Mar	7am - 3pm	Cynthia Carpenter
Fri	25-Mar	3pm-11pm	Patricia Holahan
Fri-Sat	3/25-3/26	11pm-7am	N/A
Sat	26-Mar	7am - 3pm	N/A
Sat	26-Mar	3pm-11pm	N/A
Sat-Sun	3/26-3/27	11pm - 7am	N/A
		Executive Briefing Team	
EBT Admin. Assistant			
Sat-Sun	3/19-3/20	11pm - 9am	Sapna Hurd
Sun	20-Mar	9am - 7pm	Annette Stang
Sun-Mon	3/20-3/21	7pm-7am	Carolyn Kahler
Mon	21-Mar	7am - 3pm	A. Stang (7-11) / Sapna Hurd (11-3)
Mon	21-Mar	3pm-11pm	Tia Pope
Mon-Tues	3/21-3/22	11pm - 7am	Christina Merritt
Tues	22-Mar	7am - 3pm	Carolyn Kahler/Sapna Hurd
Tues	22-Mar	3pm-11pm	Jon Fiske
Tues-Wed	3/22-3/23	11pm - 7am	Tia Pope
Wed	23-Mar	7am - 3pm	Jon Fiske
Wed	23-Mar	3pm-11pm	Annette Stang
Wed-Thur	3/23-3/24	11pm - 7am	Christina Merritt
Thur	24-Mar	7am - 3pm	Carolyn Kahler/Sapna Hurd
Thur	24-Mar	3pm-11pm	Jonathan Fiske
Thur-Fri	3/24-3/25	11pm - 7am	Tia Pope
Fri	25-Mar	7am - 3pm	Jon Fiske
Fri	25-Mar	3pm-11pm	Sapna Hurd
Fri-Sat	3/25-3/26	11pm-7am	Carolyn Kahler
Sat	26-Mar	7am - 3pm	Kelly Riner
Sat	26-Mar	3pm-11pm	Louise Lovell
Sat-Sun	3/26-3/27	11pm - 7am	Jonathan Fiske
EBT Coordinator			
Sat-Sun	3/19-3/20	11pm - 7am	Jim Andersen
Sun	20-Mar	7am - 3pm	Yen-Ju Chen
Sun	20-Mar	3pm-11pm	Caroline Nguyen
Sun-Mon	3/20-3/21	11pm - 7am	Jim Andersen
Mon	21-Mar	7am - 3pm	Yen-Ju Chen

Mon	21-Mar	3pm-11pm	Sara Mroz
Mon-Tues	3/21-3/22	11pm - 7am	Jim Andersen
Tues	22-Mar	7am - 3pm	Caroline Nguyen
Tues	22-Mar	3pm-11pm	Sara Mroz
Tues-Wed	3/22-3/23	11pm - 7am	Jim Andersen
Wed	23-Mar	7am - 3pm	Yen-Ju Chen
Wed	23-Mar	3pm-11pm	Sara Mroz
Wed-Thur	3/23-3/24	11pm - 7am	Jim Andersen
Thur	24-Mar	7am - 3pm	Yen-Ju Chen
Thur	24-Mar	3pm-11pm	Sara Mroz
Thur-Fri	3/24-3/25	11pm - 7am	Jim Andersen
Fri	25-Mar	7am - 3pm	Caroline Nguyen
Fri	25-Mar	3pm-11pm	Sara Mroz
Fri-Sat	3/25-3/26	11pm-7am	Jim Andersen
Sat	26-Mar	7am - 3pm	Yen-Ju Chen/Tonya Russell
Sat	26-Mar	3pm-11pm	Sara Mroz
Sat-Sun	3/26-3/27	11pm - 7am	Jim Anderson
		Executive Support Team	
EST Status Officer			
Sat-Sun	3/19-3/20	11pm - 7am	Doug Huyck
Sun	20-Mar	7am - 3pm	Craig Erlanger
Sun	20-Mar	3pm-11pm	John Jolicoeur
Sun-Mon	3/20-3/21	11pm - 7am	Doug Huyck
Mon	21-Mar	7am - 3pm	Jane Marshall
Mon	21-Mar	3pm-11pm	Bill Gott
Mon-Tues	3/21-3/22	11pm - 7am	Jeff Grant
Tues	22-Mar	7am - 3pm	John Jolicoeur
Tues	22-Mar	3pm-11pm	Bill Gott
Tues-Wed	3/22-3/23	11pm - 7am	Jeff Grant
Wed	23-Mar	7am - 3pm	Sally Billings/Jane Marshall
Wed	23-Mar	3pm-11pm	Bill Gott
Wed-Thur	3/23-3/24	11pm - 7am	Jeff Grant
Thur	24-Mar	7am - 3pm	Jane Marshall
Thur	24-Mar	3pm-11pm	Bill Gott
Thur-Fri	3/24-3/25	11pm - 7am	Jeff Grant
Fri	25-Mar	7am - 3pm	Jane Marshall
Fri	25-Mar	3pm-11pm	Bill Gott
Fri-Sat	3/25-3/26	11pm-7am	Jeff Grant
Sat	26-Mar	7am - 3pm	Jane Marshall ?
Sat	26-Mar	3pm-11pm	Bill Gott
Sat-Sun	3/26-3/27	11pm - 7am	Jeff Grant
EST Actions Officer			
Sat-Sun	3/19-3/20	11pm - 7am	Jonathan Fiske
Sun	20-Mar	7am - 3pm	Melissa Ralph
Sun	20-Mar	3pm-11pm	Jonathan Fiske
Sun-Mon	3/20-3/21	11pm - 7am	Dori Votolato-Willis
Mon	21-Mar	7am - 3pm	Melissa Ralph
Mon	21-Mar	3pm-11pm	Amanda Nerret
Mon-Tues	3/21-3/22	11pm - 7am	Kelly Grimes
Tues	22-Mar	7am - 3pm	Melissa Ralph

Tues	22-Mar	3pm-11pm	Dori Votolato-Willis
Tues-Wed	3/22-3/23	11pm - 7am	Kelly Grimes
Wed	23-Mar	7am - 3pm	Melissa Ralph
Wed	23-Mar	3pm-11pm	Dori Votolato-Willis
Wed-Thur	3/23-3/24	11pm - 7am	Kelly Grimes
Thur	24-Mar	7am - 3pm	Wendy Reed
Thur	24-Mar	3pm-11pm	Dori Votolato-Willis
Thur-Fri	3/24-3/25	11pm - 7am	N/A
Fri	25-Mar	7am - 3pm	Amanda Nerret
Fri	25-Mar	3pm-11pm	Melissa Ralph
Fri-Sat	3/25-3/26	11pm-7am	N/A
Sat	26-Mar	7am - 3pm	James Corson
Sat	26-Mar	3pm-11pm	Don Algama
Sat-Sun	3/26-3/27	11pm - 7am	N/A
EST Coordinator			
Sat-Sun	3/19-3/20	11pm - 7am	Rebecca Stone
Sun	20-Mar	7am - 3pm	Clyde Ragland
Sun	20-Mar	3pm-11pm	Tony Bowers
Sun-Mon	3/20-3/21	11pm - 7am	Rebecca Stone
Mon	21-Mar	7am - 3pm	Tony McMurtray
Mon	21-Mar	3pm-11pm	Tony Bowers
Mon-Tues	3/21-3/22	11pm - 7am	Rebecca Stone
Tues	22-Mar	7am - 3pm	Tony McMurtray
Tues	22-Mar	3pm-11pm	Clyde Ragland
Tues-Wed	3/22-3/23	11pm - 7am	Rebecca Stone
Wed	23-Mar	7am - 3pm	Tony McMurtray
Wed	23-Mar	3pm-11pm	Clyde Ragland
Wed-Thur	3/23-3/24	11pm - 7am	Rebecca Stone
Thur	24-Mar	7am - 3pm	Tony McMurtray
Thur	24-Mar	3pm-11pm	Clyde Ragland
Thur-Fri	3/24-3/25	11pm - 7am	Steve Campbell
Fri	25-Mar	7am - 3pm	Taylor Lichatz
Fri	25-Mar	3pm-11pm	Tony McMurtray
Fri-Sat	3/25-3/26	11pm-7am	Steve Campbell
Sat	26-Mar	7am - 3pm	Tonya Russell
Sat	26-Mar	3pm-11pm	Tony McMurtray
Sat-Sun	3/26-3/27	11pm - 7am	Steve Campbell
EST Chronology Officer			
Sat-Sun	3/19-3/20	11pm - 7am	Cynthia Dorsey
Sun	20-Mar	7am - 3pm	James Vaughn
Sun	20-Mar	3pm-11pm	Rebecca Karas
Sun-Mon	3/20-3/21	11pm - 7am	Mark Resner
Mon	21-Mar	7am - 3pm	Hector Rodriguez-Luccioni
Mon	21-Mar	3pm-11pm	Rebecca Karas
Mon-Tues	3/21-3/22	11pm - 7am	Thomas Scarbrough
Tues	22-Mar	7am - 3pm	Hector Rodriguez-Luccioni
Tues	22-Mar	3pm-11pm	Rebecca Karas
Tues-Wed	3/22-3/23	11pm - 7am	Thomas Scarbrough
Wed	23-Mar	7am - 3pm	James Vaughn
Wed	23-Mar	3pm-11pm	Rebecca Karas

Wed-Thur	3/23-3/24	11pm - 7am	Nick Ballam
Thur	24-Mar	7am - 3pm	Hector Rodriguez-Luccioni
Thur	24-Mar	3pm-11pm	Rebecca Karas
Thur-Fri	3/24-3/25	11pm - 7am	Thomas Scarbrough
Fri	25-Mar	7am - 3pm	Hector Rodriguez-Luccioni
Fri	25-Mar	3pm-11pm	Rebecca Karas
Fri-Sat	3/25-3/26	11pm-7am	Thomas Scarbrough
Sat	26-Mar	7am - 3pm	Nick Ballam
Sat	26-Mar	3pm-11pm	Rebecca Karas
Sat-Sun	3/26-3/27	11pm - 7am	Thomas Scarbrough
EST Response Ops Mgr			
Sat-Sun	3/19-3/20	11pm - 7am	Jean Trefethan
Sun	20-Mar	7am - 3pm	Karen Jackson
Sun	20-Mar	3pm-11pm	Roberto Figueroa
Sun-Mon	3/20-3/21	11pm - 7am	Jean Trefethan
Mon	21-Mar	7am - 3pm	Bob Stransky
Mon	21-Mar	3pm-11pm	Omar Khan
Mon-Tues	3/21-3/22	11pm - 7am	Cris Brown
Tues	22-Mar	7am - 3pm	Bob Stransky
Tues	22-Mar	3pm-11pm	Karen Jackson
Tues-Wed	3/22-3/23	11pm - 7am	Roberto Figueroa
Wed	23-Mar	7am - 3pm	Bob Stransky
Wed	23-Mar	3pm-11pm	Jean Trefethan
Wed-Thur	3/23-3/24	11pm - 7am	Cris Brown
Thur	24-Mar	7am - 3pm	Karen Jackson
Thur	24-Mar	3pm-11pm	Omar Khan
Thur-Fri	3/24-3/25	11pm - 7am	Roberto Figueroa
Fri	25-Mar	7am - 3pm	Jean Trefethan
Fri	25-Mar	3pm-11pm	Cris Brown
Fri-Sat	3/25-3/26	11pm-7am	Roberto Figueroa
Sat	26-Mar	7am - 3pm	Omar Khan
Sat	26-Mar	3pm-11pm	Cris Brown
Sat-Sun	3/26-3/27	11pm - 7am	Roberto Figueroa
EST Admin. Assistant			
Sat-Sun	3/19-3/20	11pm - 7am	Chris Lamb
Sun	20-Mar	7am - 3pm	Karen Meyer
Sun	20-Mar	3pm-11pm	Linda Williamson
Sun-Mon	3/20-3/21	11pm - 7am	Chris Lamb
Mon	21-Mar	7am - 3pm	Karen Meyer
Mon	21-Mar	3pm-11pm	Mary Glenn Crutchley
Mon-Tues	3/21-3/22	11pm - 7am	Andrea Wimbush
Tues	22-Mar	7am - 3pm	Cynthia Dorsey
Tues	22-Mar	3pm-11pm	Mary Glenn Crutchley
Tues-Wed	3/22-3/23	11pm - 7am	Michelle Manahan
Wed	23-Mar	7am - 3pm	Karen Meyer
Wed	23-Mar	3pm-11pm	Mary Glenn Crutchley
Wed-Thur	3/23-3/24	11pm - 7am	Andrea Wimbush
Thur	24-Mar	7am - 3pm	Cynthia Dorsey
Thur	24-Mar	3pm-11pm	Mary Glenn Crutchley
Thur-Fri	3/24-3/25	11pm - 7am	N/A

Fri	25-Mar	7am - 3pm	Karen Meyer
Fri	25-Mar	3pm-11pm	Cynthia Dorsey
Fri-Sat	3/25-3/26	11pm-7am	N/A
Sat	26-Mar	7am - 3pm	
Sat	26-Mar	3pm-11pm	Cynthia Dorsey
Sat-Sun	3/26-3/27	11pm - 7am	N/A
		Liaison Team	
LT Director			
Sat-Sun	3/19-3/20	11pm - 7am	John Adams
Sun	20-Mar	7am - 3pm	Tom Bergman
Sun	20-Mar	3pm-11pm	Bob Webber
Sun-Mon	3/20-3/21	11pm - 7am	John Adams
Mon	21-Mar	7am - 3pm	Tom Bergman
Mon	21-Mar	3pm-11pm	Bob Webber
Mon-Tues	3/21-3/22	11pm - 7am	John Adams
Tues	22-Mar	7am - 3pm	Tom Bergman
Tues	22-Mar	3pm-11pm	Bob Webber
Tues-Wed	3/22-3/23	11pm - 7am	John Adams
Wed	23-Mar	7am - 3pm	Michael Tschiltz
Wed	23-Mar	3pm-11pm	Rich Correia
Wed-Thur	3/23-3/24	11pm - 7am	Jake Zimmerman
Thur	24-Mar	7am - 3pm	Michael Tschiltz
Thur	24-Mar	3pm-11pm	Rich Correia
Thur-Fri	3/24-3/25	11pm - 7am	Jake Zimmerman
Fri	25-Mar	7am - 3pm	Michael Tschiltz
Fri	25-Mar	3pm-11pm	Rich Correia
Fri-Sat	3/25-3/26	11pm-7am	Jake Zimmerman
Sat	26-Mar	7am - 3pm	Michael Tschiltz
Sat	26-Mar	3pm-11pm	Rich Correia
Sat-Sun	3/26-3/27	11pm - 7am	Marissa Bailey
LT Coordinator			
Sat-Sun	3/19-3/20	11pm - 7am	Janelle Jessie
Sun	20-Mar	7am - 3pm	Jeff Temple
Sun	20-Mar	3pm-11pm	Nathan Sanfilippo
Sun-Mon	3/20-3/21	11pm - 7am	Milt Murray
Mon	21-Mar	7am - 3pm	Jeff Temple
Mon	21-Mar	3pm-11pm	Nathan Sanfilippo
Mon-Tues	3/21-3/22	11pm - 7am	Milt Murray
Tues	22-Mar	7am - 3pm	Rani Franovich
Tues	22-Mar	3pm-11pm	Nathan Sanfilippo
Tues-Wed	3/22-3/23	11pm - 7am	Milt Murray
Wed	23-Mar	7am - 3pm	Rani Franovich
Wed	23-Mar	3pm-11pm	Jeff Temple
Wed-Thur	3/23-3/24	11pm - 7am	Milt Murray
Thur	24-Mar	7am - 3pm	Rani Franovich
Thur	24-Mar	3pm-11pm	Jeff Temple
Thur-Fri	3/24-3/25	11pm - 7am	Milt Murray
Fri	25-Mar	7am - 3pm	Janelle Jessie
Fri	25-Mar	3pm-11pm	Rani Franovich
Fri-Sat	3/25-3/26	11pm-7am	Milt Murray

Sat	26-Mar	7am - 3pm	Janelle Jessie
Sat	26-Mar	3pm-11pm	Rani Franovich
Sat-Sun	3/26-3/27	11pm - 7am	Milt Murray
LT State Liaison			
Sat-Sun	3/19-3/20	9pm-7am	Michelle Ryan/Rich Turtil (ON CALL)
Sun	20-Mar	7am-2pm	Michelle Ryan/Rich Turtil (ON CALL)
Sun	20-Mar	2pm-9pm	Michelle Ryan/Rich Turtil (ON CALL)
Sun-Mon	3/20-3/21	9pm-7am	Michelle Ryan/Rich Turtil (ON CALL)
Mon	21-Mar	7am-2pm	Flannery (Riveria-On Call)
Mon	21-Mar	2pm-9pm	Easson (Turtil-On Call)
Mon-Tue	3/21-3/22	9pm-7am	Michelle Ryan/Rich Turtil (ON CALL)
Tue	22-Mar	7am-2pm	Maupin
Tue	22-Mar	2pm-9pm	Easson/Michelle Ryan
Tue-Wed	3/22-3/23	9pm-7am	Alison Rivera/Amanda Noonan (ON CALL)
Wed	23-Mar	7am-2pm	Maupin
Wed	23-Mar	2pm-9pm	Alison Rivera
Wed-Thur	3/23-3/24	9pm-7am	Michelle Ryan/Turtil (ON CALL)
Thur	24-Mar	7am-2pm	Flannery
Thur	24-Mar	2pm-9pm	Amanda Noonan
Thur-Fri	3/24-3/25	9pm-7am	Rivera/Turtil (ON CALL)
Fri	25-Mar	7am-2pm	Kim Lukes
Fri	25-Mar	2pm-9pm	Michelle Ryan
Fri-Sat	3/25-3/26	9pm-7am	Alison Rivera/Amanda Noonan (ON CALL)
Sat	26-Mar	7am-2pm	Michelle Ryan/Amanda Noonan (ON CALL)
Sat	26-Mar	2pm-9pm	Michelle Ryan/Amanda Noonan (ON CALL)
Sat-Sun	3/26-3/27	9pm-7am	Michelle Rivera/Amanda Noonan (ON CALL)
LT Federal Liaison (2)			
Sun	20-Mar	7am - 3pm	Ned Wright
Sun	20-Mar	3pm-11pm	Jeff Temple
Sun-Mon	3/20-3/21	11pm - 7am	Scott Sloan
Sun-Mon	3/20-3/21	11pm - 7am	Lisa Wright
Mon	21-Mar	7am - 3pm	Beth Reed/Ted Smith
Mon	21-Mar	3pm-11pm	Ned Wright
Mon-Tues	3/21-3/22	11pm - 7am	Lisa Wright
Tues	22-Mar	7am - 3pm	Beth Reed/Ted Smith
Tues	22-Mar	3pm-11pm	Ned Wright
Tues-Wed	3/22-3/23	11pm - 7am	Lisa Wright
Wed	23-Mar	7am - 3pm	Jerry Hale/Ted Smith
Wed	23-Mar	3pm-11pm	Ned Wright
Wed-Thur	3/23-3/24	11pm - 7am	Lisa Wright
Thur	24-Mar	7am - 3pm	Ted Smith/Bethany Cecere
Thur	24-Mar	3pm-11pm	Jerry Hale
Thur-Fri	3/24-3/25	11pm - 7am	Scott Sloan
Fri	25-Mar	7am - 3pm	Ted Smith/Bethany Cecere
Fri	25-Mar	3pm-11pm	Jason Lising
Fri-Sat	3/25-3/26	11pm-7am	Scott Sloan
Sat	26-Mar	7am - 3pm	Lisa Gibney
Sat	26-Mar	3pm-11pm	Jeff Temple
Sat-Sun	3/26-3/27	11pm - 7am	Scott Sloan

LT Congressional Liaison (2)			
Sun	20-Mar	7am - 2pm	Rebecca Schmidt
	20-Mar	2pm-9pm	Reanne Shane
Mon	21-Mar	7am - 2pm	Spiros Droggitis
	21-Mar	2pm-9pm	Tim Riley
Tues	22-Mar	7am - 2pm	Tim Riley
	22-Mar	2pm-9pm	Spiros Droggitis
Wed	23-Mar	7am - 2pm	Gene Dacus
	23-Mar	2pm-9pm	Raeann Shane
Thur	24-Mar	7am - 2pm	Spiros Droggitis
	24-Mar	2pm-9pm	Raeann Shane
Fri	25-Mar	7am - 2pm	Gene Dacus
	25-Mar	2pm-9pm	Amy Powell
Sat	26-Mar	7am - 3pm	Amy Powell (ON CALL)
Sat	26-Mar	3pm-11pm	Amy Powell (ON CALL)
Sun	3/26-3/27	11pm - 7am	Amy Powell (ON CALL)
LT International Liaison (2)			
Sat-Sun	3/19-3/20	11pm - 7am	Elizabeth Smiroldo/Danielle Emche
Sun	20-Mar	7am - 3pm	Karen Henderson/Steve Baker
Sun	20-Mar	3pm-11pm	Eric Stahl/Nancy Fragoyanis
Sun-Mon	3/20-3/21	11pm - 7am	Elizabeth Smiroldo/Jenny Tobin
Mon	21-Mar	7am - 3pm	Jen Schwartzman/Charlotte Abrams/Nancy (12-3)
Mon	21-Mar	3pm-11pm	Danielle Emche/Lauren Mayros
Mon-Tues	3/21-3/22	11pm - 7am	Eric Stahl/Mugeh Afshar-Tous
Tues	22-Mar	7am - 3pm	Jen Schwartzman/Charlotte Abrams/Nancy (12-3)
Tues	22-Mar	3pm-11pm	Danielle Emche/Lauren Mayros
Tues-Wed	3/22-3/23	11pm - 7am	Eric Stahl/Mugeh
Wed	23-Mar	7am - 3pm	Jen Schwartzman/Charlotte Abrams/Nancy (12-3)
Wed	23-Mar	3pm-11pm	Danielle Emche/Lauren Mayros
Wed-Thur	3/23-3/24	11pm - 7am	Eric Stahl/Mugeh
Thur	24-Mar	7am - 3pm	Steve Bloom/Lance English
Thur	24-Mar	3pm-11pm	Janice/Jenny Tobin
Thur-Fri	3/24-3/25	11pm - 7am	Andrea/Elizabeth Smiroldo
Fri	25-Mar	7am - 3pm	Steve Bloom/Lance English
Fri	25-Mar	3pm-11pm	Janice/Jenny Tobin
Fri-Sat	3/25-3/26	11pm-7am	Andrea/Elizabeth Smiroldo
Sat	26-Mar	7am - 3pm	Steve Bloom / Lance English
Sat	26-Mar	3pm-11pm	Janice Owens / Jenny Tobin
Sat-Sun	3/26-3/27	11pm - 7am	Cindy Rosales/ Elizabeth Smiroldo
		Protective Measures Team	
PMTR Director			
Sat-Sun	3/19-3/20	11pm - 7am	Kathy Gibson
Sun	20-Mar	7am - 3pm	John Lubinski
Sun	20-Mar	3pm-11pm	Don Cool
Sun-Mon	3/20-3/21	11pm - 7am	Kathy Gibson
Mon	21-Mar	7am - 3pm	John Lubinski
Mon	21-Mar	3pm-11pm	Don Cool
Mon-Tues	3/21-3/22	11pm - 7am	John Tappert
Tues	22-Mar	7am - 3pm	John Lubinski
Tues	22-Mar	3pm-11pm	Don Cool

Tues-Wed	3/22-3/23	11pm - 7am	John Tappert
Wed	23-Mar	7am - 3pm	Terry Reis
Wed	23-Mar	3pm-11pm	Cindy Jones
Wed-Thur	3/23-3/24	11pm - 7am	Randy Sullivan
Thur	24-Mar	7am - 3pm	Terry Reis
Thur	24-Mar	5pm-11pm	Cindy Jones
Thur-Fri	3/24-3/25	11pm - 7am	Randy Sullivan
Fri	25-Mar	7am - 3pm	Terry Reis
Fri	25-Mar	3pm-11pm	Cindy Jones
Fri-Sat	3/25-3/26	11pm-7am	Randy Sullivan
Sat	26-Mar	7am - 3pm	Terry Reis
Sat	26-Mar	3pm-11pm	Cindy Jones
Sat-Sun	3/26-3/27	11pm - 7am	Randy Sullivan
PMTR Coordinator			
Sat-Sun	3/19-3/20	11pm - 7am	Lou Brandon
Sun	20-Mar	7am - 3pm	Nima Ashkeboussi
Sun	20-Mar	3pm-11pm	Jay Patel
Sun-Mon	3/20-3/21	11pm - 7am	Lou Brandon
Mon	21-Mar	7am - 3pm	Prosanta Chowdhury (8 am)
Mon	21-Mar	3pm-11pm	Jay Patel
Mon-Tues	3/21-3/22	11pm - 7am	Lou Brandon
Tues	22-Mar	7am - 3pm	Prosanta Chowdhury (8 am)
Tues	22-Mar	3pm-11pm	Nima Ashkeboussi
Tues-Wed	3/22-3/23	11pm - 7am	Mike Norris
Wed	23-Mar	7am - 3pm	John Wray
Wed	23-Mar	3pm-11pm	Nima Ashkeboussi
Wed-Thur	3/23-3/24	11pm - 7am	Mike Norris
Thur	24-Mar	7am - 3pm	John Wray
Thur	24-Mar	3pm-11pm	Jay Patel/Joe DeCicco
Thur-Fri	3/24-3/25	11pm - 7am	Mike Norris
Fri	25-Mar	7am - 3pm	Duane Hardesty/Joe DeCicco
Fri	25-Mar	3pm-11pm	Ryan Craffey
Fri-Sat	3/25-3/26	11pm-7am	Lou Brandon
Sat	26-Mar	7am - 3pm	Arlon Costa
Sat	26-Mar	3pm-11pm	Kimberly Hardin
Sat-Sun	3/26-3/27	11pm - 7am	Lou Brandon
PMTR Prot Actions Asst Dir			
Sat-Sun	3/19-3/20	11pm - 7am	Greg Casto
Sun	20-Mar	7am - 3pm	Kathryn Brock
Sun	20-Mar	3pm-11pm	Tim Harris
Sun-Mon	3/20-3/21	11pm - 7am	Greg Casto (Jessica Kratchman - to shadow)
Mon	21-Mar	7am - 3pm	Kathryn Brock
Mon	21-Mar	3pm-11pm	Dan Barss
Mon-Tues	3/21-3/22	11pm - 7am	Jessica Kratchman
Tues	22-Mar	7am - 3pm	Kathryn Brock
Tues	22-Mar	3pm-11pm	Tim Harris
Tues-Wed	3/22-3/23	11pm - 7am	Jessica Kratchman
Wed	23-Mar	7am - 3pm	Sandra Wastler
Wed	23-Mar	3pm-11pm	Vince Holahan
Wed-Thur	3/23-3/24	11pm - 7am	Jessica Kratchman

Thur	24-Mar	7am - 3pm	Sandra Wastler
Thur	24-Mar	3pm-11pm	Stacey Rosenberg
Thur-Fri	3/24-3/25	11pm - 7am	Jessica Kratchman
Fri	25-Mar	7am - 3pm	Kathryn Brock
Fri	25-Mar	3pm-11pm	Vince Holahan
Fri-Sat	3/25-3/26	11pm-7am	Greg Casto
Sat	26-Mar	7am - 3pm	Dan Barss
Sat	26-Mar	3pm-11pm	Sandra Wastler
Sat-Sun	3/26-3/27	11pm - 7am	Greg Casto/Tim Harris
PMTR RAAD			
Sat-Sun	3/19-3/20	11pm - 7am	Patricia Milligan
Sun	20-Mar	7am - 3pm	Eric Schrader
Sun	20-Mar	3pm-11pm	Steve LaVie
Sun-Mon	3/20-3/21	11pm - 7am	Mike Norris
Mon	21-Mar	7am - 3pm	Michelle Hart
Mon	21-Mar	3pm-11pm	Steve Lavie
Mon-Tues	3/21-3/22	11pm - 7am	Boby Abu-Eid
Tues	22-Mar	7am - 3pm	Bruce Watson
Tues	22-Mar	3pm-11pm	Steve LaVie
Tues-Wed	3/22-3/23	11pm - 7am	Boby Abu-Eid
Wed	23-Mar	7am - 3pm	Bruce Watson
Wed	23-Mar	3pm-11pm	Michelle Hart
Wed-Thur	3/23-3/24	11pm - 7am	Duane Schmidt
Thur	24-Mar	7am - 3pm	Bruce Watson
Thur	24-Mar	3pm-11pm	Steve LaVie
Thur-Fri	3/24-3/25	11pm - 7am	Cynthia Barr
Fri	25-Mar	7am - 3pm	Bruce Watson
Fri	25-Mar	3pm-11pm	Michelle Hart
Fri-Sat	3/25-3/26	11pm-7am	Cynthia Barr
Sat	26-Mar	7am - 3pm	Boby Abu-Eid
Sat	26-Mar	3pm-11pm	Steve LaVie
Sat-Sun	3/26-3/27	11pm - 7am	Mike Norris
PMTR Dose Assessment (RASCAL) - Need 2			
Sat-Sun	3/19-3/20	11pm - 7am	Kimberly Gambone/John Parillo
Sun	20-Mar	7am - 3pm	Casper Sun / Duane Schmidt
Sun	20-Mar	3pm-11pm	Margaret Cervera / Tony Huffert
Sun-Mon	3/20-3/21	11pm - 7am	Kimberly Gambone/John Parillo
Mon	21-Mar	7am - 3pm	Eric Schrader/Rich Clement
Mon	21-Mar	3pm-11pm	Margaret Cervera/Tony Huffert
Mon-Tues	3/21-3/22	11pm - 7am	John Parillo / Bernie White
Tues	22-Mar	7am - 3pm	Eric Schrader/Rich Clement
Tues	22-Mar	3pm-11pm	Gary Purdy/Casper Sun
Tues-Wed	3/22-3/23	11pm - 7am	Margaret Cervera/Tony Huffert
Wed	23-Mar	7am - 3pm	Eric Schrader/Rich Clement
Wed	23-Mar	3pm-11pm	Kimberly Gambone/Casper Sun
Wed-Thur	3/23-3/24	11pm - 7am	Tony Huffert/John Parillo
Thur	24-Mar	7am - 3pm	Eric Schrader/Rich Clement
Thur	24-Mar	3pm-11pm	Kimberly Gambone/Casper Sun
Thur-Fri	3/24-3/25	11pm - 7am	Tony Huffert/John Parillo
Fri	25-Mar	7am - 3pm	Eric Schrader/Rich Clement

Fri	25-Mar	3pm-11pm	Gary Purdy/Casper Sun
Fri-Sat	3/25-3/26	11pm-7am	John Parillo / Bernie White
Sat	26-Mar	7am - 3pm	Charlie Hinson/Tony Huffert
Sat	26-Mar	3pm-11pm	Leroy Hardin / Ed Roach
Sat-Sun	3/26-3/27	11pm - 7am	John Parillo/Ron LaVera
PMTR GIS Analyst			
Sun-Mon	3/20-3/21	11pm - 7am	Alice Stieve
Mon	21-Mar	7am - 3pm	Nebiyu Tiruneh
Mon	21-Mar	3pm-11pm	Stephanie Devlin
Mon-Tues	3/21-3/22	11pm - 7am	Alice Stieve
Tues	22-Mar	7am - 3pm	Yong Li
Tues	22-Mar	3pm-11pm	Stephanie Devlin
Tues-Wed	3/22-3/23	11pm - 7am	Alice Stieve
Wed	23-Mar	7am - 3pm	Allen Gross
Wed	23-Mar	3pm-11pm	Stephanie Devlin
Wed-Thur	3/23-3/24	11pm - 7am	Phil Brandt
Thur	24-Mar	7am - 3pm	Yong Li
Thur	24-Mar	3pm-11pm	Stephanie Devlin
Thur-Fri	3/24-3/25	11pm - 7am	Dogan Seber
Fri	25-Mar	7am - 3pm	Allen Gross
Fri	25-Mar	3pm-11pm	N/A
Fri-Sat	3/25-3/26	11pm-7am	N/A
Sat	26-Mar	7am - 3pm	(ON CALL)
Sat	26-Mar	3pm-11pm	N/A
Sat-Sun	3/26-3/27	11pm - 7am	N/A
PMTR Meteorologist			
Sat-Sun	19-Mar	3pm-11pm	Mike Mazaika
Sun	3/19-3/20	11pm - 7am	David Brown
Sun	20-Mar	7am - 3pm	Kevin Quinlan
Sun	20-Mar	3pm-11pm	Mike Mazaika
Sun-Mon	3/20-3/21	11pm - 7am	David Brown
Mon	21-Mar	7am - 3pm	Mike Mazaika
Mon	21-Mar	3pm-11pm	Brad Harvey
Mon-Tues	3/21-3/22	11pm - 7am	Kevin Quinlan
Tues	22-Mar	7am - 3pm	David Brown
Tues	22-Mar	3pm-11pm	Brad Harvey
Tues-Wed	3/22-3/23	11pm - 7am	Andy Imboden/Kevin Quinlan
Wed	23-Mar	7am - 3pm	Mike Mazaika
Wed	23-Mar	3pm-11pm	Brad Harvey
Wed-Thur	3/23-3/24	11pm - 7am	Kevin Quinlan
Thur	24-Mar	7am - 3pm	David Brown
Thur	24-Mar	3pm-11pm	Brad Harvey
Thur-Fri	3/24-3/25	11pm - 7am	Kevin Quinlan
Fri	25-Mar	7am - 3pm	Mike Mazaika
Fri	25-Mar	3pm-11pm	N/A
Fri-Sat	3/25-3/26	11pm-7am	N/A
Sat	26-Mar	7am - 3pm	(ON CALL)
Sat	26-Mar	3pm-11pm	N/A
Sat-Sun	3/26-3/27	11pm - 7am	N/A

Japan Earthquake ERO Staffing Roster
March 20-26, 2011
Pay Period 7 - Week 2

Reactor Safety Team			
RST Director			
Sat-Sun	3/19-3/20	11pm - 7am	Jennifer Uhle
Sun	20-Mar	7am - 3pm	Laura Dudes
Sun	20-Mar	3pm-11pm	Dave Skeen
Sun-Mon	3/20-3/21	11pm - 7am	Jennifer Uhle
Mon	21-Mar	7am - 3pm	Fred Brown
Mon	21-Mar	3pm-11pm	Dave Skeen
Mon-Tues	3/21-3/22	11pm - 7am	Jennifer Uhle
Tues	22-Mar	7am - 3pm	Fred Brown
Tues	22-Mar	3pm-11pm	Dave Skeen
Tues-Wed	3/22-3/23	11pm - 7am	Brian Holian
Wed	23-Mar	7am - 3pm	Fred Brown
Wed	23-Mar	3pm-11pm	Bill Ruland
Wed-Thur	3/23-3/24	11pm - 7am	Brian Holian
Thur	24-Mar	7am - 3pm	Fred Brown
Thur	24-Mar	3pm-11pm	Bill Ruland
Thur-Fri	3/24-3/25	11pm - 7am	Brian Holian
Fri	25-Mar	7am - 3pm	Pat Hiland
Fri	25-Mar	3pm-11pm	Bill Ruland
Fri-Sat	3/25-3/26	11pm-7am	Brian Holian
Sat	26-Mar	7am - 3pm	Pat Hiland
Sat	26-Mar	3pm-11pm	Bill Ruland
Sat	3/26-27/2011	11pm - 7am	Dave Skeen
RST Coordinator			
Sat-Sun	3/19-3/20	11pm - 7am	Frank Collins
Sun	20-Mar	7am - 3pm	Peter Alter
Sun	20-Mar	3pm-11pm	Eric Thomas
Sun-Mon	3/20-3/21	11pm - 7am	Mike Morlang
Mon	21-Mar	7am - 3pm	Peter Alter
Mon	21-Mar	3pm-11pm	Greg Schoenebeck
Mon-Tues	3/21-3/22	11pm - 7am	Frank Collins
Tues	22-Mar	7am - 3pm	Rick Hasselberg
Tues	22-Mar	3pm-11pm	Mike Morlang
Tues-Wed	3/22-3/23	11pm - 7am	Oleg Bukharin
Wed	23-Mar	7am - 3pm	Eric Thomas
Wed	23-Mar	3pm-11pm	Greg Schoenebeck
Wed-Thur	3/23-3/24	11pm - 7am	Frank Collins
Thur	24-Mar	7am - 3pm	Rick Hasselberg
Thur	24-Mar	3pm-11pm	Brett Rini
Thur-Fri	3/24-3/25	11pm - 7am	Tom Boyce (RES)
Fri	25-Mar	7am - 3pm	Eric Thomas
Fri	25-Mar	3pm-11pm	Brett Rini
Fri-Sat	3/25-3/26	11pm-7am	Frank Collins
Sat	26-Mar	7am - 3pm	Eric Thomas
Sat	26-Mar	3pm-11pm	Mark Orr
Sat-Sun	3/26-3/27	11pm - 7am	Brett Rini
Severe Accident/PRA			
Sat-Sun	3/19-3/20	11pm - 7am	Mike Salay
Sun	20-Mar	7am - 3pm	John Lane

Sun	20-Mar	3pm-11pm	Jim Gilmer
Sun-Mon	3/20-3/21	11pm - 7am	Don Dube
Mon	21-Mar	7am - 3pm	Jeff Circle
Mon	21-Mar	3pm-11pm	Hossein Esmaili
Mon-Tues	3/21-3/22	11pm - 7am	Jim Gilmer
Tues	22-Mar	7am - 3pm	Ed Fuller
Tues	22-Mar	3pm-11pm	Len Ward
Tues-Wed	3/22-3/23	11pm - 7am	Sam Miranda
Wed	23-Mar	7am - 3pm	Jeff Circle
Wed	23-Mar	3pm-11pm	Steven Arndt
Wed-Thur	3/23-3/24	11pm - 7am	Mike Salay
Thur	24-Mar	7am - 3pm	Jeff Circle
Thur	24-Mar	3pm-11pm	Steve Laur
Thur-Fri	3/24-3/25	11pm - 7am	Don Helton
Fri	25-Mar	7am - 3pm	Steven Arndt
Fri	25-Mar	3pm-11pm	Steve Laur
Fri-Sat	3/25-3/26	11pm-7am	Don Helton
Sat	26-Mar	7am - 3pm	Steven Arndt
Sat	26-Mar	3pm-11pm	Jerry Dozier
Sat-Sun	3/26-3/27	11pm - 7am	Ray Skarda
BWR Expertise			
Sat-Sun	3/19-3/20	11pm - 7am	John Kauffman
Sun	20-Mar	7am - 3pm	Larry Vick
Sun	20-Mar	3pm-11pm	Chuck Norton
Sun-Mon	3/20-3/21	11pm - 7am	Mike Brown
Mon	21-Mar	7am - 3pm	Bob Summers
Mon	21-Mar	3pm-11pm	Chuck Norton
Mon-Tues	3/21-3/22	11pm - 7am	Mike Brown
Tues	22-Mar	7am - 3pm	Tom Boyce (RES)
Tues	22-Mar	3pm-11pm	Chuck Norton
Tues-Wed	3/22-3/23	11pm - 7am	Mike Brown
Wed	23-Mar	7am - 3pm	Larry Vick
Wed	23-Mar	3pm-11pm	Chuck Norton
Wed-Thur	3/23-3/24	11pm - 7am	Eva Brown
Thur	24-Mar	7am - 3pm	Peter Alter
Thur	24-Mar	3pm-11pm	Chuck Norton
Thur-Fri	3/24-3/25	11pm - 7am	Eva Brown
Fri	25-Mar	7am - 3pm	Bob Summers
Fri	25-Mar	3pm-11pm	Chuck Norton
Fri-Sat	3/25-3/26	11pm-7am	Eva Brown
Sat	26-Mar	7am - 3pm	Mike Brown
Sat	26-Mar	3pm-11pm	Chuck Norton
Sat-Sun	3/26-3/27	11pm - 7am	Eva Brown
RST Comm/ERDS Operator			
Sat-Sun	3/19-3/20	11pm - 7am	Ujagar Bhachu
Sun	20-Mar	7am - 3pm	Denise McGovern
Sun	20-Mar	3pm-11pm	Donna Williams
Sun-Mon	3/20-3/21	11pm - 7am	Ujagar Bhachu
Mon	21-Mar	7am - 3pm	Joseph Williams
Mon	21-Mar	3pm-11pm	John Thorp

Mon-Tues	3/21-3/22	11pm - 7am	Bill Roggenbrodt
Tues	22-Mar	7am - 3pm	Steve Bloom
Tues	22-Mar	3pm-11pm	Jim Isom
Tues-Wed	3/22-3/23	11pm - 7am	Bill Roggenbrodt
Wed	23-Mar	7am - 3pm	Joseph Williams
Wed	23-Mar	3pm-11pm	Ken Hart
Wed-Thur	3/23-3/24	11pm - 7am	Bill Roggenbrodt
Thur	24-Mar	7am - 3pm	John Thorp
Thur	24-Mar	3pm-11pm	Ken Hart
Thur-Fri	3/24-3/25	11pm - 7am	Bill Roggenbrodt
Fri	25-Mar	7am - 3pm	Donna Williams
Fri	25-Mar	3pm-11pm	David Solorio
Fri-Sat	3/25-3/26	11pm-7am	Rick Hasselberg
Sat	26-Mar	7am - 3pm	John Thorp
Sat	26-Mar	3pm-11pm	Stan Gardocki
Sat-Sun	3/26-3/27	11pm - 7am	Denise McGovern
RST Support (Seismology Q&A)			
Fri-Sat	3/18-3/19	11pm-7am	Off (ON CALL)
Sat	19-Mar	7am - 3pm	Off (ON CALL)
Sat	19-Mar	3pm-11pm	Off (ON CALL)
Sat-Sun	3/19-3/20	11pm - 7am	Alice Stieve (ON CALL) Working as PMT GIS
Sun	20-Mar	7am - 3pm	Cliff Munson (ON CALL)
Sun	20-Mar	3pm-11pm	Annie Kammerer (ON CALL)
Sun-Mon	3/20-3/21	11pm - 7am	Stephanie Devlin (ON CALL)
Mon	21-Mar	7am - 3pm	Cliff Munson (ON CALL)
Mon	21-Mar	3pm-11pm	A. Kammerer 3-11; M. Bensi 3-6 (ON CALL)
Mon-Tues	3/21-3/22	11pm - 7am	Dogan Seber (ON CALL)
Tues	22-Mar	7am - 3pm	Nilesh Chokchi On Call)
Tues	22-Mar	3pm-11pm	S. Devlin 3-11; M. Bensi 3-6 (ON CALL)
Tues-Wed	3/22-3/23	11pm - 7am	Cliff Munson (ON CALL)
Wed	23-Mar	7am - 3pm	Nilesh Chokchi On Call)
Wed	23-Mar	3pm-11pm	A. Kammerer 3-11, M. Bensi 3-6 (ON CALL)
Wed-Thur	3/23-3/24	11pm - 7am	Annie Kammerer (ON CALL)
Thur	24-Mar	7am - 3pm	Cliff Munson (ON CALL)
Thur	24-Mar	3pm-11pm	A. Kammerer 3-11, M. Bensi 3-6 (ON CALL)
Thur-Fri	3/24-3/25	11pm - 7am	Dogan Seber (ON CALL)
Fri	25-Mar	7am - 3pm	Dogan Seber (ON CALL)
Fri	25-Mar	3pm-11pm	A.Kammerer 3-11, M. Bensi 3-6 (ON CALL)
Fri-Sat	3/25-3/26	11pm-7am	Dogan Seber (ON CALL)
Sat	26-Mar	7am - 3pm	(ON CALL)
Sat	26-Mar	3pm-11pm	(ON CALL)
Sat-Sun	3/26-3/27	11pm - 7am	(ON CALL)
RST Support (Structural)			
Fri-Sat	3/18-3/19	11pm-7am	Off (ON CALL)
Sat	19-Mar	7am - 3pm	Off (ON CALL)
Sat	19-Mar	3pm-11pm	Off (ON CALL)
Sat-Sun	3/19-3/20	11pm - 7am	Off (ON CALL)
Sun	20-Mar	7am - 3pm	Off (ON CALL)
Sun	20-Mar	3pm-11pm	Off (ON CALL)
Sun-Mon	3/20-3/21	11pm - 7am	Off (ON CALL)

Japan Earthquake ERO Staffing Roster
March 20-26, 2011
Pay Period 7 - Week 2

Mon	21-Mar	7am - 3pm	Off (ON CALL)
Mon	21-Mar	3pm-11pm	Bret Tegeler (ON CALL)
Mon-Tues	3/21-3/22	11pm - 7am	Bret Tegeler (ON CALL)
Tues	22-Mar	7am - 3pm	Pravin Patel (ON CALL)
Tues	22-Mar	3pm-11pm	Bret Tegeler (ON CALL)
Tues-Wed	3/22-3/23	11pm - 7am	Bret Tegeler (ON CALL)
Wed	23-Mar	7am - 3pm	Pravin Patel (ON CALL)
Wed	23-Mar	3pm-11pm	Samir Chakrabart (ON CALL)
Wed-Thur	3/23-3/24	11pm - 7am	Samir Chakrabart (ON CALL)
Thur	24-Mar	7am - 3pm	Pravin Patel (ON CALL)
Thur	24-Mar	3pm-11pm	Jerry Chung (ON CALL)
Thur-Fri	3/24-3/25	11pm - 7am	Jerry Chung(ON CALL)
Fri	25-Mar	7am - 3pm	Pravin Patel (ON CALL)
Fri	25-Mar	3pm-11pm	Manas Chakravorty (ON CALL)
Fri-Sat	3/25-3/26	11pm-7am	Manas Chakravorty (ON CALL)
Sat	26-Mar	7am - 3pm	Off (ON CALL)
Sat	26-Mar	3pm-11pm	Off (ON CALL)
Sat-Sun	3/26-3/27	11pm - 7am	Off (ON CALL)

Japan Earthquake ERO Staffing Roster

Mar 27-Apr 2, 2011 (Pay Period 8)

File Name: MASTER RESPONDER SCHEDULE FOR JAPAN EARTHQUAKE 2011.xlsx as of 3/28/11

Position	Date	Time	Staff
		Executive Team	
ET Director			
Sat-Sun	3/26-3/27	11pm - 7am	Jennifer Uhle
Sun	27-Mar	7am - 3pm	Jim Dyer
Sun	27-Mar	3pm-11pm	Brian Sheron
Sun-Mon	3/27-3/28	11pm - 7am	Jim Wiggins
Mon	28-Mar	7am - 3pm	Mike Weber
Mon	28-Mar	3pm-11pm	Roy Zimmerman
Mon-Tue	3/28-3/29	11pm - 7am	Jim Wiggins
Tue	29-Mar	7am - 3pm	Mike Weber
Tue	29-Mar	3pm-11pm	Roy Zimmerman
Tue-Wed	3/29-3/30	11pm - 7am	Jim Wiggins
Wed	30-Mar	7am - 3pm	Bruce Boger
Wed	30-Mar	3pm-11pm	Roy Zimmerman
Wed-Thur	3/30-3/31	11pm - 7am	Jim Wiggins
Thur	31-Mar	7am - 3pm	Bruce Boger
Thur	31-Mar	3pm-11pm	Brian Sheron
Thur-Fri	3/31-4/1	11pm - 7am	Cynthia Carpenter
Fri	1-Apr	7am - 3pm	Mike Weber
Fri	1-Apr	3pm-11pm	Bruce Boger
Fri-Sat	4/1-4/2	11pm-7am	Cynthia Carpenter
Sat	2-Apr	7am - 3pm	
Sat	2-Apr	3pm-11pm	
Sat-Sun	4/2-4/3	11pm - 7am	Cynthia Carpenter
ET Response Advisor			
Sat-Sun	3/26-3/27	11pm - 7am	Chris Miller
Sun	27-Mar	7am - 3pm	Tom Blount
Sun	27-Mar	3pm-11pm	Brian McDermott
Sun-Mon	3/27-3/28	11pm - 7am	Chris Miller
Mon	28-Mar	7am - 3pm	Tom Blount
Mon	28-Mar	3pm-11pm	Brian McDermott
Mon-Tue	3/28-3/29	11pm - 7am	Scott Morris
Tue	29-Mar	7am - 3pm	Tom Blount
Tue	29-Mar	3pm-11pm	Brian McDermott
Tue-Wed	3/29-3/30	11pm - 7am	Scott Morris
Wed	30-Mar	7am - 3pm	Tom Blount
Wed	30-Mar	3pm-11pm	Brian McDermott
Wed-Thur	3/30-3/31	11pm - 7am	Scott Morris
Thur	31-Mar	7am - 3pm	Joe Giitter
Thur	31-Mar	3pm-11pm	Mark Thaggard
Thur-Fri	3/31-4/1	11pm - 7am	Scott Morris
Fri	1-Apr	7am - 3pm	Tom Blount
Fri	1-Apr	3pm-11pm	Mark Thaggard
Fri-Sat	4/1-4/2	11pm-7am	Scott Morris
Sat	2-Apr	7am - 3pm	
Sat	2-Apr	3pm-11pm	Mary Jane Ross Lee
Sat-Sun	4/2-4/3	11pm-7am	Brian McDermott

Japan Earthquake ERO Staffing Roster

Mar 27-Apr 2, 2011 (Pay Period 8)

File Name: MASTER RESPONDER SCHEDULE FOR JAPAN EARTHQUAKE 2011.xlsx as of 3/28/11

ET Rx Prot Measures & State Coordinator			
Sat-Sun	3/26-3/27	11pm - 7am	N/A
Sun	27-Mar	7am - 3pm	N/A
Sun	27-Mar	3pm-11pm	N/A
Sun-Mon	3/27-3/28	11pm - 7am	N/A
Mon	28-Mar	7am - 3pm	N/A
Mon	28-Mar	3pm-11pm	N/A
Mon-Tue	3/28-3/29	11pm - 7am	N/A
Tue	29-Mar	7am - 3pm	N/A
Tue	29-Mar	3pm-11pm	N/A
Tue-Wed	3/29-3/30	11pm - 7am	N/A
Wed	30-Mar	7am - 3pm	N/A
Wed	30-Mar	3pm-11pm	N/A
Wed-Thur	3/30-3/31	11pm - 7am	N/A
Thur	31-Mar	7am - 3pm	N/A
Thur	31-Mar	3pm-11pm	N/A
Thur-Fri	3/31-4/1	11pm - 7am	N/A
Fri	1-Apr	7am - 3pm	N/A
Fri	1-Apr	3pm-11pm	N/A
Fri-Sat	4/1-4/2	11pm-7am	N/A
Sat	2-Apr	7am - 3pm	N/A
Sat	2-Apr	3pm-11pm	N/A
Sat-Sun	4/2-4/3	11pm - 7am	N/A
		Executive Briefing Team	
EBT Admin. Assistant			
Sat-Sun	3/26-3/27	11pm - 7am	Jonathan Fiske
Sun	27-Mar	7am - 3pm	Annette Stang
Sun	27-Mar	3pm-11pm	Carolyn Kahler
Sun-Mon	3/27-3/28	11pm - 7am	Christina Merritt
Mon	28-Mar	7am - 3pm	Louise Lovell
Mon	28-Mar	3pm-11pm	Annette Stang
Mon-Tue	3/28-3/29	11pm - 7am	Jonathan Fiske (11pm - 9am)
Tue	29-Mar	7am - 3pm	Sapna Hurd (9am - 3pm)
Tue	29-Mar	3pm-11pm	Tonya Russell
Tue-Wed	3/29-3/30	11pm - 7am	Christina Merritt
Wed	30-Mar	7am - 3pm	Carolyn Kahler/Sapna Hurd
Wed	30-Mar	3pm-11pm	Tonya Russell
Wed-Thur	3/30-3/31	11pm - 7am	Jeanne Dempsey
Thur	31-Mar	7am - 3pm	Louise Lovell
Thur	31-Mar	3pm-11pm	Tonya Russell
Thur-Fri	3/31-4/1	11pm - 7am	Tia Pope
Fri	1-Apr	7am - 3pm	Annette Stang
Fri	1-Apr	3pm-11pm	Sapna Hurd
Fri-Sat	4/1-4/2	11pm-7am	
EBT Coordinator			
Sat-Sun	3/26-3/27	11pm - 7am	Jim Anderson
Sun	27-Mar	7am - 3pm	Eddie Robinson
Sun	27-Mar	3pm-11pm	Nichole Glenn

Japan Earthquake ERO Staffing Roster

Mar 27-Apr 2, 2011 (Pay Period 8)

File Name: MASTER RESPONDER SCHEDULE FOR JAPAN EARTHQUAKE 2011.xlsx as of 3/28/11

Sun-Mon	3/27-3/28	11pm - 7am	Caroline Nguyen
Mon	28-Mar	7am - 3pm	Yen Chen
Mon	28-Mar	3pm-11pm	Sara Mroz
Mon-Tue	3/28-3/29	11pm - 7am	Jim Anderson
Tue	29-Mar	7am - 3pm	Yen Chen
Tue	29-Mar	3pm-11pm	Sara Mroz
Tue-Wed	3/29-3/30	11pm - 7am	Jim Anderson
Wed	30-Mar	7am - 3pm	Yen Chen
Wed	30-Mar	3pm-11pm	Sara Mroz
Wed-Thur	3/30-3/31	11pm - 7am	Jim Anderson
Thur	31-Mar	7am - 3pm	Yen Chen
Thur	31-Mar	3pm-11pm	Sara Mroz
Thur-Fri	3/31-4/1	11pm - 7am	Jim Anderson
Fri	1-Apr	7am - 3pm	Yen Chen
Fri	1-Apr	3pm-11pm	Sara Mroz
Fri-Sat	4/1-4/2	11pm-7am	Jim Anderson
Sat	2-Apr	7am - 3pm	Tonya Russell
Sat	2-Apr	3pm-11pm	Nichole Glenn
Sat-Sun	4/2-4/3	11pm - 7am	
		Executive Support Team	
EST Status Officer			
Sat-Sun	3/26-3/27	11pm - 7am	Jeff Grant
Sun	27-Mar	7am - 3pm	Jane Marshall
Sun	27-Mar	3pm-11pm	Bill Gott
Sun-Mon	3/27-3/28	11pm - 7am	Jeff Grant
Mon	28-Mar	7am - 3pm	Jane Marshall
Mon	28-Mar	3pm-11pm	Bill Gott
Mon-Tue	3/28-3/29	11pm - 7am	Jeff Grant
Tue	29-Mar	7am - 3pm	Jane Marshall
Tue	29-Mar	3pm-11pm	Bill Gott
Tue-Wed	3/29-3/30	11pm - 7am	Jeff Grant
Wed	30-Mar	7am - 3pm	Jane Marshall
Wed	30-Mar	3pm-11pm	Bill Gott
Wed-Thur	3/30-3/31	11pm - 7am	Jeff Grant
Thur	31-Mar	7am - 3pm	Jane Marshall
Thur	31-Mar	3pm-11pm	Bill Gott
Thur-Fri	3/31-4/1	11pm - 7am	Jeff Grant
Fri	1-Apr	7am - 3pm	Jane Marshall
Fri	1-Apr	3pm-11pm	Bill Gott
Fri-Sat	4/1-4/2	11pm-7am	Jeff Grant
Sat	2-Apr	7am - 3pm	
Sat	2-Apr	3pm-11pm	Craig Erlanger
Sat-Sun	4/2-4/3	11pm - 7am	
EST Actions Officer			
Sat-Sun	3/26-3/27	11pm - 7am	N/A
Sun	27-Mar	7am - 3pm	Kelly Grimes
Sun	27-Mar	3pm-11pm	Melissa Ralph
Sun-Mon	3/27-3/28	11pm - 7am	N/A

Japan Earthquake ERO Staffing Roster

Mar 27-Apr 2, 2011 (Pay Period 8)

File Name: MASTER RESPONDER SCHEDULE FOR JAPAN EARTHQUAKE 2011.xlsx as of 3/28/11

Mon	28-Mar	7am - 3pm	Zahira Cruz
Mon	28-Mar	3pm-11pm	Melissa Ralph
Mon-Tue	3/28-3/29	11pm - 7am	N/A
Tue	29-Mar	7am - 3pm	Bezakulu Alemu/Kelly Grimes
Tue	29-Mar	3pm-11pm	Melissa Ralph
Tue-Wed	3/29-3/30	11pm - 7am	N/A
Wed	30-Mar	7am - 3pm	Wendy Reed
Wed	30-Mar	3pm-11pm	Melissa Ralph
Wed-Thur	3/30-3/31	11pm - 7am	N/A
Thur	31-Mar	7am - 3pm	Jonathan Fiske
Thur	31-Mar	3pm-11pm	Melissa Ralph
Thur-Fri	3/31-4/1	11pm - 7am	N/A
Fri	1-Apr	7am - 3pm	Wendy Reed
Fri	1-Apr	3pm-11pm	Melissa Ralph
Fri-Sat	4/1-4/2	11pm-7am	Don Algama
Sat	2-Apr	7am - 3pm	Anthony Bowers
Sat	2-Apr	3pm-11pm	Bezakulu Alemu
Sat-Sun	4/2-4/3	11pm - 7am	N/A
EST Coordinator			
Sat-Sun	3/26-3/27	11pm - 7am	Steve Campbell
Sun	27-Mar	7am - 3pm	Tonya Russell
Sun	27-Mar	3pm-11pm	Stella Opara
Sun-Mon	3/27-3/28	11pm - 7am	Taylor Lichatz
Mon	28-Mar	7am - 3pm	Tony McMurtray
Mon	28-Mar	3pm-11pm	Rebecca Stone
Mon-Tue	3/28-3/29	11pm - 7am	Stacy Smith
Tue	29-Mar	7am - 3pm	Tony McMurtray
Tue	29-Mar	3pm-11pm	Tony Bowers
Tue-Wed	3/29-3/30	11pm - 7am	Rebecca Stone
Wed	30-Mar	7am - 3pm	Tony McMurtray
Wed	30-Mar	3pm-11pm	Stacy Smith
Wed-Thur	3/30-3/31	11pm - 7am	Rebecca Stone
Thur	31-Mar	7am - 3pm	Anthony Bowers
Thur	31-Mar	3pm-11pm	Tony McMurtray
Thur-Fri	3/31-4/1	11pm - 7am	Rebecca Stone
Fri	1-Apr	7am - 3pm	Steve Campbell
Fri	1-Apr	3pm-11pm	Tony McMurtray
Fri-Sat	4/1-4/2	11pm-7am	Rebecca Stone
Sat	2-Apr	7am - 3pm	Stacy Smith
Sat	2-Apr	3pm-11pm	Steve Campbell
Sat-Sun	4/2-4/3	11pm - 7am	Rebecca Stone
EST Chronology Officer			
Sat-Sun	3/26-3/27	11pm - 7am	Thomas Scarbrough
Sun	27-Mar	7am - 3pm	Hector Rodriguez
Sun	27-Mar	3pm-11pm	Rebecca Karas
Sun-Mon	3/27-3/28	11pm - 7am	Thomas Scarbrough
Mon	28-Mar	7am - 3pm	Hector Rodriguez
Mon	28-Mar	3pm-11pm	Rebecca Karas

Japan Earthquake ERO Staffing Roster

Mar 27-Apr 2, 2011 (Pay Period 8)

File Name: MASTER RESPONDER SCHEDULE FOR JAPAN EARTHQUAKE 2011.xlsx as of 3/28/11

Mon-Tue	3/28-3/29	11pm - 7am	Nick Ballam
Tue	29-Mar	7am - 3pm	Vanice Perin
Tue	29-Mar	3pm-11pm	Rebecca Karas
Tue-Wed	3/29-3/30	11pm - 7am	Nick Ballam
Wed	30-Mar	7am - 3pm	Hector Rodriguez
Wed	30-Mar	3pm-11pm	Rebecca Karas
Wed-Thur	3/30-3/31	11pm - 7am	Thomas Scarbrough
Thur	31-Mar	7am - 3pm	Vanice Perin
Thur	31-Mar	3pm-11pm	Rebecca Karas
Thur-Fri	3/31-4/1	11pm - 7am	Nick Ballam
Fri	1-Apr	7am - 3pm	Sandra Valencia
Fri	1-Apr	3pm-11pm	Margie Kotzalas/Rebecca Karas
Fri-Sat	4/1-4/2	11pm-7am	Nick Ballam
Sat	2-Apr	7am - 3pm	Mark Resner
Sat	2-Apr	3pm-11pm	Rebecca Karas
Sat-Sun	4/2-4/3	11pm - 7am	Nick Ballam
EST Response Ops Mgr			
Sat-Sun	3/26-3/27	11pm - 7am	Roberto Figueroa
Sun	27-Mar	7am - 3pm	Omar Khan
Sun	27-Mar	3pm-11pm	Cris Brown
Sun-Mon	3/27-3/28	11pm - 7am	Roberto Figueroa
Mon	28-Mar	7am - 3pm	Karen Jackson
Mon	28-Mar	3pm-11pm	Cris Brown
Mon-Tue	3/28-3/29	11pm - 7am	Omar Khan
Tue	29-Mar	7am - 3pm	Bob Stransky
Tue	29-Mar	3pm-11pm	Cris Brown
Tue-Wed	3/29-3/30	11pm - 7am	Karen Jackson
Wed	30-Mar	7am - 3pm	Omar Khan
Wed	30-Mar	3pm-11pm	Cris Brown
Wed-Thur	3/30-3/31	11pm - 7am	Bob Stransky
Thur	31-Mar	7am - 3pm	Karen Jackson
Thur	31-Mar	3pm-11pm	Omar Khan
Thur-Fri	3/31-4/1	11pm - 7am	Bob Stransky
Fri	1-Apr	7am - 3pm	Roberto Figueroa
Fri	1-Apr	3pm-11pm	Karen Jackson
Fri-Sat	4/1-4/2	11pm-7am	Omar Khan
Sat	2-Apr	7am - 3pm	Roberto Figueroa
Sat	2-Apr	3pm-11pm	Karen Jackson
Sat-Sun	4/2-4/3	11pm - 7am	Omar Khan
EST Admin. Assistant			
Sat-Sun	3/26-3/27	11pm - 7am	N/A
Sun	27-Mar	7am - 3pm	Tonya Russell/Karen Meyer
Sun	27-Mar	3pm-11pm	Cynthia Dorsey
Sun-Mon	3/27-3/28	11pm - 7am	N/A
Mon	28-Mar	7am - 3pm	Michelle Manahan
Mon	28-Mar	3pm-11pm	Carol Greenwood
Mon-Tue	3/28-3/29	11pm - 7am	N/A
Tue	29-Mar	7am - 3pm	Michelle Manahan

Japan Earthquake ERO Staffing Roster

Mar 27-Apr 2, 2011 (Pay Period 8)

File Name: MASTER RESPONDER SCHEDULE FOR JAPAN EARTHQUAKE 2011.xlsx as of 3/28/11

Tue	29-Mar	3pm-11pm	Mary Glenn Crutchley
Tue-Wed	3/29-3/30	11pm - 7am	N/A
Wed	30-Mar	7am - 3pm	Cynthia Dorsey
Wed	30-Mar	3pm-11pm	Mary Glenn Crutchley
Wed-Thur	3/30-3/31	11pm - 7am	N/A
Thur	31-Mar	7am - 3pm	Amy Salus
Thur	31-Mar	3pm-11pm	Tabitha Howard
Thur-Fri	3/31-4/1	11pm - 7am	N/A
Fri	1-Apr	7am - 3pm	Carol Greenwood
Fri	1-Apr	3pm-11pm	Tabitha Howard
Fri-Sat	4/1-4/2	11pm-7am	N/A
Sat	2-Apr	7am - 3pm	Karen Meyer
Sat	2-Apr	3pm-11pm	Cynthia Dorsey
Sat-Sun	4/2-4/3	11pm - 7am	N/A
		Liaison Team	
LT Director			
Sat-Sun	3/26-3/27	11pm - 7am	Marissa Bailey
Sun	27-Mar	7am - 3pm	Mike Tschiltz
Sun	27-Mar	3pm-11pm	Marrisa Bailey
Sun-Mon	3/27-3/28	11pm - 7am	Mark Thaggard
Mon	28-Mar	7am - 3pm	Allen Howe
Mon	28-Mar	3pm-11pm	Marrisa Bailey
Mon-Tue	3/28-3/29	11pm - 7am	Bob Caldwell
Tue	29-Mar	7am - 3pm	Allen Howe
Tue	29-Mar	3pm-11pm	Marrisa Bailey
Tue-Wed	3/29-3/30	11pm - 7am	Bob Caldwell
Wed	30-Mar	7am - 3pm	Allen Howe
Wed	30-Mar	3pm-11pm	Marrisa Bailey
Wed-Thur	3/30-3/31	11pm - 7am	Andy Campbell
Thur	31-Mar	7am - 3pm	John Adams
Thur	31-Mar	3pm-11pm	Mark Lombard
Thur-Fri	3/31-4/1	11pm - 7am	Bob Webber
Fri	1-Apr	7am - 3pm	John Adams
Fri	1-Apr	3pm-11pm	Mark Lombard
Fri-Sat	4/1-4/2	11pm-7am	Tom Bergman
Sat	2-Apr	7am - 3pm	John Adams
Sat	2-Apr	3pm-11pm	Marissa Bailey
Sat-Sun	4/2-4/3	11pm - 7am	Tom Bergman
LT Coordinator			
Sat-Sun	3/26-3/27	11pm - 7am	Milt Murray
Sun	27-Mar	7am - 3pm	Lisa Gibney
Sun	27-Mar	3pm-11pm	Jeff Temple
Sun-Mon	3/27-3/28	11pm - 7am	Milt Murray
Mon	28-Mar	7am - 3pm	Jeff Temple
Mon	28-Mar	3pm-11pm	Rani Franovich
Mon-Tue	3/28-3/29	11pm - 7am	Janelle Jessie
Tue	29-Mar	7am - 3pm	Milt Murray
Tue	29-Mar	3pm-11pm	Rani Franovich

Japan Earthquake ERO Staffing Roster

Mar 27-Apr 2, 2011 (Pay Period 8)

File Name: MASTER RESPONDER SCHEDULE FOR JAPAN EARTHQUAKE 2011.xlsx as of 3/28/11

Tue-Wed	3/29-3/30	11pm - 7am	Janelle Jessie
Wed	30-Mar	7am - 3pm	Milt Murray
Wed	30-Mar	3pm-11pm	Jeff Temple
Wed-Thur	3/30-3/31	11pm - 7am	Rani Franovich
Thur	31-Mar	7am - 3pm	Milt Murray
Thur	31-Mar	3pm-11pm	Jeff Temple
Thur-Fri	3/31-4/1	11pm - 7am	Rani Franovich
Fri	1-Apr	7am - 3pm	Jeff Temple
Fri	1-Apr	3pm-11pm	Janelle Jessie
Fri-Sat	4/1-4/2	11pm-7am	Rani Franovich
Sat	2-Apr	7am - 3pm	Jeff Temple
Sat	2-Apr	3pm-11pm	Milt Murray
Sat-Sun	4/2-4/3	11pm - 7am	Joe Rivers
LT State Liaison			
Sat-Sun	3/26-3/27	9pm-7am	A. Rivera/A. Noonan (ON CALL)
Sun	27-Mar	7am-2pm	Alison Rivera (ON CALL)
Sun	27-Mar	2pm-9pm	Alison Rivera (ON CALL)
Sun-Mon	3/27-3/28	9pm-7am	Alison Rivera (ON CALL)
Mon	28-Mar	7am-2pm	C. Maupin/C. Flannery (ON CALL)
Mon	28-Mar	2pm-9pm	Stuart Easson
Mon-Tue	3/28-3/29	9pm-7am	R. Virgilio (ON CALL)
Tue	29-Mar	7am-2pm	C. Maupin/R. Turtil (ON CALL)
Tue	29-Mar	2pm-9pm	Stuart Easson
Tue-Wed	3/29-3/30	9pm-7am	Richard Turtil (ON CALL)
Wed	30-Mar	7am-2pm	Cindy Flannery
Wed	30-Mar	2pm-9pm	Michelle Ryan
Wed-Thur	3/30-3/31	9pm-7am	Richard Turtil (ON CALL)
Thur	31-Mar	7am-2pm	Amanda Noonan
Thur	31-Mar	2pm-9pm	Michelle Ryan
Thur-Fri	3/31-4/1	9pm-7am	Richard Turtil (ON CALL)
Fri	1-Apr	7am-2pm	Kim Lukes
Fri	1-Apr	2pm-9pm	Alison Rivera
Fri-Sat	4/1-4/2	9pm-7am	Richard Turtil (ON CALL)
Sat	2-Apr	7am-2pm	Amanda Noonan (ON CALL)
Sat	2-Apr	2pm-9pm	Amanda Noonan (ON CALL)
Sat-Sun	2-Apr	9pm-7am	Amanda Noonan (ON CALL)
LT Federal Liaison (2)			
Sat-Sun	3/26-3/27	11pm - 7am	Scott Sloan
Sun	27-Mar	7am - 3pm	Susan Salter / Lisa Wright
Sun	27-Mar	3pm-11pm	Jerry Hale
Sun-Mon	3/27-3/28	11pm - 7am	Scott Sloan
Mon	28-Mar	7am - 3pm	Jason Lising/Susan Salter
Mon	28-Mar	3pm-11pm	Lisa Wright
Mon-Tue	3/28-3/29	11pm - 7am	Ned Wright
Tue	29-Mar	7am - 3pm	Susan Salter / Jerry Hale
Tue	29-Mar	3pm-11pm	Lisa Wright
Tue-Wed	3/29-3/30	11pm - 7am	Ned Wright
Wed	30-Mar	7am - 3pm	Jerry Hale

Japan Earthquake ERO Staffing Roster

Mar 27-Apr 2, 2011 (Pay Period 8)

File Name: MASTER RESPONDER SCHEDULE FOR JAPAN EARTHQUAKE 2011.xlsx as of 3/28/11

Wed	30-Mar	3pm-11pm	Lisa Wright
Wed-Thur	3/30-3/31	11pm - 7am	Bethany Cecere
Thur	31-Mar	7am - 3pm	Jason Lising
Thur	31-Mar	3pm-11pm	Jeff Lynch
Thur-Fri	3/31-4/1	11pm - 7am	Ned Wright
Fri	1-Apr	7am - 3pm	Jeff Lynch / Beth Reed
Fri	1-Apr	3pm-11pm	Jerry Hale
Fri-Sat	4/1-4/2	11pm-7am	Jason Lising
Sat	2-Apr	7am - 3pm	Beth Reed
Sat	2-Apr	3pm-11pm	Bethany Cecere
Sat-Sun	4/2-4/3	11pm - 7am	Jason Lising
LT Congressional Liaison (2)			
Sat-Sun	3/26-3/27	11pm - 7am	Amy Powell (ON CALL)
Sun	27-Mar	7am - 3pm	Amy Powell (ON CALL)
Sun	27-Mar	3pm-11pm	Amy Powell (ON CALL)
Sun-Mon	3/27-3/28	11pm - 7am	Amy Powell (ON CALL)
Mon	28-Mar	7am - 3pm	Amy Powell (ON CALL)
Mon	28-Mar	3pm-11pm	Amy Powell (ON CALL)
Mon-Tue	3/28-3/29	11pm - 7am	Amy Powell (ON CALL)
Tue	29-Mar	7am - 3pm	Amy Powell (ON CALL)
Tue	29-Mar	3pm-11pm	Amy Powell (ON CALL)
Tue-Wed	3/29-3/30	11pm - 7am	Amy Powell (ON CALL)
Wed	30-Mar	7am - 3pm	Amy Powell (ON CALL)
Wed	30-Mar	3pm-11pm	Amy Powell (ON CALL)
Wed-Thur	3/30-3/31	11pm - 7am	Amy Powell (ON CALL)
Thur	31-Mar	7am - 3pm	Amy Powell (ON CALL)
Thur	31-Mar	3pm-11pm	Amy Powell (ON CALL)
Thur-Fri	3/31-4/1	11pm - 7am	Amy Powell (ON CALL)
Fri	1-Apr	7am - 2pm	Amy Powell (ON CALL)
Fri	1-Apr	2pm-9pm	Amy Powell (ON CALL)
Sat	2-Apr	7am - 2pm	Amy Powell (ON CALL)
Sat	2-Apr	2pm-9pm	Amy Powell (ON CALL)
Sun	3-Apr	7am-2pm	Amy Powell (ON CALL)
LT International Liaison (2)			
Sat-Sun	3/26-3/27	11pm - 7am	Cindy Rosales/ Elizabeth Smiroldo
Sun	27-Mar	7am - 3pm	Jill Shepard/ Karen Henderson
Sun	27-Mar	3pm-11pm	Nancy Fragoyannis/ Jenny Tobin
Sun-Mon	3/27-3/28	11pm - 7am	Steve Baker / Brian Wittick
Mon	28-Mar	7am - 3pm	Jill Shepard/ Karen Henderson
Mon	28-Mar	3pm-11pm	Nancy Fragoyannis / Cindy Rosales
Mon-Tue	3/28-3/29	11pm - 7am	Steve Baker / Brian Wittick
Tue	29-Mar	7am - 3pm	Jill Shepard/ Karen Henderson
Tue	29-Mar	3pm-11pm	Nancy Fragoyannis / Gerri Fehst
Tue-Wed	3/29-3/30	11pm - 7am	Steve Baker / Brian Wittick
Wed	30-Mar	7am - 3pm	Charlotte Abrahams / Lauren Mayros (J. Tobin 12-3)
Wed	30-Mar	3pm-11pm	Gerri Fesht / Mugah Afshar-Tous
Wed-Thur	3/30-3/31	11pm - 7am	Jen Schwartman / Charlotte Abrams
Thur	31-Mar	7am - 3pm	Jill Shepard/Lauren Mayros

Japan Earthquake ERO Staffing Roster

Mar 27-Apr 2, 2011 (Pay Period 8)

File Name: MASTER RESPONDER SCHEDULE FOR JAPAN EARTHQUAKE 2011.xlsx as of 3/28/11

Thur	31-Mar	3pm-11pm	Gerri Fehst/Mugah Afshar-Tous
Thur-Fri	3/31-4/1	11pm - 7am	Jen Schwartman / Charlotte Abrams
Fri	1-Apr	7am - 3pm	Cindy Rosales/ Lauren Mayros
Fri	1-Apr	3pm-11pm	Gerri Fehst/Mugah Afshar-Tous
Fri-Sat	4/1-4/2	11pm-7am	Jen Schwartman / Charlotte Abrams
Sat	2-Apr	7am - 3pm	Steve Bloom/ Karen Henderson
Sat	2-Apr	3pm-11pm	Janice Owens / Jenny Tobin
Sat-Sun	4/2-4/3	11pm - 7am	Gerri Fehst / Elizabeth Smiroldo
Protective Measures Team			
PMTR Director			
Sat-Sun	3/26-3/27	11pm - 7am	Randy Sullivan
Sun	27-Mar	7am - 3pm	Don Cool
Sun	27-Mar	3pm-11pm	Christiana Lui
Sun-Mon	3/27-3/28	11pm - 7am	John Tappert
Mon	28-Mar	7am - 3pm	Don Cool
Mon	28-Mar	3pm-11pm	Doug Coe
Mon-Tue	3/28-3/29	11pm - 7am	John Tappert
Tue	29-Mar	7am - 3pm	Don Cool
Tue	29-Mar	3pm-11pm	Doug Coe
Tue-Wed	3/29-3/30	11pm - 7am	Greg Casto
Wed	30-Mar	7am - 3pm	Don Cool
Wed	30-Mar	3pm-11pm	Doug Coe
Wed-Thur	3/30-3/31	11pm - 7am	Greg Casto
Thur	31-Mar	7am - 3pm	Randy Sullivan
Thur	31-Mar	3pm-11pm	John Lubinski
Thur-Fri	3/31-4/1	11pm - 7am	Christiana Lui
Fri	1-Apr	7am - 3pm	Randy Sullivan
Fri	1-Apr	3pm-11pm	Don Cool
Fri-Sat	4/1-4/2	11pm-7am	Christiana Lui
Sat	2-Apr	7am - 3pm	Randy Sullivan
Sat	2-Apr	3pm-11pm	Don Cool
Sat-Sun	4/2-4/3	11pm - 7am	Christiana Lui
PMTR Coordinator			
Sat-Sun	3/26-3/27	11pm - 7am	Lou Brandon
Sun	27-Mar	7am - 3pm	Ryan Craffey
Sun	27-Mar	3pm-11pm	Jay Patel
Sun-Mon	3/27-3/28	11pm - 7am	Lou Brandon
Mon	28-Mar	7am - 3pm	Duane Hardesty
Mon	28-Mar	3pm-11pm	Nima Ashkeboussi
Mon-Tue	3/28-3/29	11pm - 7am	Lou Brandon
Tue	29-Mar	7am - 3pm	Duane Hardesty
Tue	29-Mar	3pm-11pm	Nima Ashkeboussi
Tue-Wed	3/29-3/30	11pm - 7am	Lou Brandon
Wed	30-Mar	7am - 3pm	Michael Raddatz
Wed	30-Mar	3pm-11pm	Jay Patel
Wed-Thur	3/30-3/31	11pm - 7am	Ryan Craffey
Thur	31-Mar	7am - 3pm	Duane Hardesty
Thur	31-Mar	3pm-11pm	Michael Raddatz

Thur-Fri	3/31-4/1	11pm - 7am	Kimberly Hardin/ Lou Brandon
Fri	1-Apr	7am - 3pm	Duane Hardesty
Fri	1-Apr	3pm-11pm	Nima Ashkeboussi
Fri-Sat	4/1-4/2	11pm-7am	Lou Brandon
Sat	2-Apr	7am - 3pm	Prosanta Chowdhury
Sat	2-Apr	3pm-11pm	Kimberly Hardin
Sat-Sun	4/2-4/3	11pm - 7am	Lou Brandon
PMTR Prot Actions Asst Dir			
Sat-Sun	3/26-3/27	11pm - 7am	Greg Casto
Sun	27-Mar	7am - 3pm	Kevin Williams
Sun	27-Mar	3pm-11pm	Tim Harris
Sun-Mon	3/27-3/28	11pm - 7am	Greg Casto
Mon	28-Mar	7am - 3pm	Sandra Wastler
Mon	28-Mar	3pm-11pm	Mike McCoppin
Mon-Tue	3/28-3/29	11pm - 7am	Greg Casto
Tue	29-Mar	7am - 3pm	Michael Takacs
Tue	29-Mar	3pm-11pm	Tim Harris
Tue-Wed	3/29-3/30	11pm - 7am	Bruce Musico
Wed	30-Mar	7am - 3pm	Michael Takacs
Wed	30-Mar	3pm-11pm	Sandra Wastler
Wed-Thur	3/30-3/31	11pm - 7am	Bruce Musico
Thur	31-Mar	7am - 3pm	Jessica Kratchman
Thur	31-Mar	3pm-11pm	Tim Harris
Thur-Fri	3/31-4/1	11pm - 7am	Eric Benner
Fri	1-Apr	7am - 3pm	Jessica Kratchman
Fri	1-Apr	3pm-11pm	
Fri-Sat	4/1-4/2	11pm-7am	
Sat	2-Apr	7am - 3pm	
Sat	2-Apr	3pm-11pm	Sandra Wastler
Sat-Sun	4/2-4/3	11pm - 7am	
PMTR RAAD			
Sat-Sun	3/26-3/27	11pm - 7am	Mike Norris
Sun	27-Mar	7am - 3pm	Michelle Hart
Sun	27-Mar	3pm-11pm	Leroy Hardin
Sun-Mon	3/27-3/28	11pm - 7am	Mike Norris
Mon	28-Mar	7am - 3pm	Steve LaVie
Mon	28-Mar	3pm-11pm	Michelle Hart
Mon-Tue	3/28-3/29	11pm - 7am	Mike Norris
Tue	29-Mar	7am - 3pm	Bruce Watson
Tue	29-Mar	3pm-11pm	Steve LaVie
Tue-Wed	3/29-3/30	11pm - 7am	Mike Norris
Wed	30-Mar	7am - 3pm	Bruce Watson
Wed	30-Mar	3pm-11pm	Steve LaVie
Wed-Thur	3/30-3/31	11pm - 7am	Eric Benner
Thur	31-Mar	7am - 3pm	Michelle Hart
Thur	31-Mar	3pm-11pm	Eric Schrader
Thur-Fri	3/31-4/1	11pm - 7am	Mike Norris
Fri	1-Apr	7am - 3pm	

Japan Earthquake ERO Staffing Roster

Mar 27-Apr 2, 2011 (Pay Period 8)

File Name: MASTER RESPONDER SCHEDULE FOR JAPAN EARTHQUAKE 2011.xlsx as of 3/28/11

Fri	1-Apr	3pm-11pm	Steve LaVie
Fri-Sat	4/1-4/2	11pm-7am	Michelle Hart
Sat	2-Apr	7am - 3pm	
Sat	2-Apr	3pm-11pm	
Sat-Sun	4/2-4/3	11pm - 7am	Mike Norris
PMTR Dose Assessment (RASCAL) - Need 2 people per day			
Sat-Sun	3/26-3/27	11pm - 7am	John Parillo/Ron LaVera
Sun	27-Mar	7am - 3pm	Tony Huffert/Larry Wheeler
Sun	27-Mar	3pm-11pm	Casper Sun/Ed Roach
Sun-Mon	3/27-3/28	11pm - 7am	Margaret Cervera/John Parillo
Mon	28-Mar	7am - 3pm	Rich Clement/Tony Huffert
Mon	28-Mar	3pm-11pm	Bernie White/Casper Sun
Mon-Tue	3/28-3/29	11pm - 7am	Margaret Cervera/John Parillo
Tue	29-Mar	7am - 3pm	Tony Huffert/Rich Clement
Tue	29-Mar	3pm-11pm	Casper Sun/Fritz Sturtz
Tue-Wed	3/29-3/30	11pm - 7am	Margaret Cervera/Bernie White
Wed	30-Mar	7am - 3pm	Tony Huffert/Rich Clement
Wed	30-Mar	3pm-11pm	Casper Sun/Ron LaVera
Wed-Thur	3/30-3/31	11pm - 7am	Margaret Cervera/John Parillo
Thur	31-Mar	7am - 3pm	Rich Clement/Joe DeCicco
Thur	31-Mar	3pm-11pm	Bernie White?/Casper Sun
Thur-Fri	3/31-4/1	11pm - 7am	John Parillo/Leroy Hardin
Fri	1-Apr	7am - 3pm	Margaret Cervera/Rich Clement
Fri	1-Apr	3pm-11pm	Casper Sun/Fritz Sturtz
Fri-Sat	4/1-4/2	11pm-7am	John Parillo/?
Sat	2-Apr	7am - 3pm	?/Ronald LaVera
Sat	2-Apr	3pm-11pm	Casper Sun/Leroy Hardin
Sat-Sun	4/2-4/3	11pm - 7am	John Parillo/Fritz Sturtz
PMTR GIS Analyst			
Sat-Sun	3/26-3/27	11pm - 7am	N/A
Sun	27-Mar	7am - 3pm	(ON CALL)
Sun	27-Mar	3pm-11pm	N/A
Sun-Mon	3/27-3/28	11pm - 7am	N/A
Mon	28-Mar	7am - 3pm	(ON CALL)
Mon	28-Mar	3pm-11pm	N/A
Mon-Tue	3/28-3/29	11pm - 7am	N/A
Tue	29-Mar	7am - 3pm	(ON CALL)
Tue	29-Mar	3pm-11pm	N/A
Tue-Wed	3/29-3/30	11pm - 7am	N/A
Wed	30-Mar	7am - 3pm	(ON CALL)
Wed	30-Mar	3pm-11pm	N/A
Wed-Thur	3/30-3/31	11pm - 7am	N/A
Thur	31-Mar	7am - 3pm	(ON CALL)
Thur	31-Mar	3pm-11pm	N/A
Thur-Fri	3/31-4/1	11pm - 7am	N/A
Fri	1-Apr	7am - 3pm	(ON CALL)
Fri	1-Apr	3pm-11pm	N/A
Fri-Sat	4/1-4/2	11pm-7am	N/A

Sat	2-Apr	7am - 3pm	(ON CALL)
Sat	2-Apr	3pm-11pm	N/A
Sat-Sun	4/2-4/3	11pm - 7am	N/A
PMTR Meteorologist			
Sat-Sun	3/26-3/27	11pm - 7am	N/A
Sun	27-Mar	7am - 3pm	(ON CALL)
Sun	27-Mar	3pm-11pm	N/A
Sun-Mon	3/27-3/28	11pm - 7am	N/A
Mon	28-Mar	7am - 3pm	(ON CALL)
Mon	28-Mar	3pm-11pm	N/A
Mon-Tue	3/28-3/29	11pm - 7am	N/A
Tue	29-Mar	7am - 3pm	(ON CALL)
Tue	29-Mar	3pm-11pm	N/A
Tue-Wed	3/29-3/30	11pm - 7am	N/A
Wed	30-Mar	7am - 3pm	(ON CALL)
Wed	30-Mar	3pm-11pm	N/A
Wed-Thur	3/30-3/31	11pm - 7am	N/A
Thur	31-Mar	7am - 3pm	(ON CALL)
Thur	31-Mar	3pm-11pm	N/A
Thur-Fri	3/31-4/1	11pm - 7am	N/A
Fri	1-Apr	7am - 3pm	(ON CALL)
Fri	1-Apr	3pm-11pm	N/A
Fri-Sat	4/1-4/2	11pm-7am	N/A
Sat	2-Apr	7am - 3pm	(ON CALL)
Sat	2-Apr	3pm-11pm	N/A
Sat-Sun	4/2-4/3	11pm - 7am	N/A
		Reactor Safety Team	
RST Director			
Sat-Sun	3/26-3/27	11pm - 7am	Dave Skeen
Sun	27-Mar	7am - 3pm	Pat Hiland
Sun	27-Mar	3pm-11pm	Fred Brown
Sun-Mon	3/27-3/28	11pm - 7am	Dave Skeen
Mon	28-Mar	7am - 3pm	Pat Hiland
Mon	28-Mar	3pm-11pm	Fred Brown
Mon-Tue	3/28-3/29	11pm - 7am	Dave Skeen
Tue	29-Mar	7am - 3pm	Ed Hackett
Tue	29-Mar	3pm-11pm	Fred Brown
Tue-Wed	3/29-3/30	11pm - 7am	Dave Skeen
Wed	30-Mar	7am - 3pm	Brian Holian
Wed	30-Mar	3pm-11pm	Fred Brown
Wed-Thur	3/30-3/31	11pm - 7am	Mike Case
Thur	31-Mar	7am - 3pm	Ed Hackett
Thur	31-Mar	3pm-11pm	Bill Ruland
Thur-Fri	3/31-4/1	11pm - 7am	Mike Case
Fri	1-Apr	7am - 3pm	Allen Howe
Fri	1-Apr	3pm-11pm	Bill Ruland
Fri-Sat	4/1-4/2	11pm-7am	Mike Case
Sat	2-Apr	7am - 3pm	Brian Holian

Sat	2-Apr	3pm-11pm	
Sat-Sun	4/2-4/3	11pm - 7am	Mike Case
RST Coordinator			
Sat-Sun	3/26-3/27	11pm - 7am	Brett Rini
Sun	27-Mar	7am - 3pm	Peter Alter
Sun	27-Mar	3pm-11pm	Rick Hasselberg
Sun-Mon	3/27-3/28	11pm - 7am	Frank Collins
Mon	28-Mar	7am - 3pm	Peter Alter
Mon	28-Mar	3pm-11pm	Tom Boyce (RES)/Dion
Mon-Tue	3/28-3/29	11pm - 7am	Mike Morlang
Tue	29-Mar	7am - 3pm	Brett Rini
Tue	29-Mar	3pm-11pm	Greg Schoenebeck
Tue-Wed	3/29-3/30	11pm - 7am	Mike Morlang
Wed	30-Mar	7am - 3pm	Peter Alter
Wed	30-Mar	3pm-11pm	Greg Schoenebeck
Wed-Thur	3/30-3/31	11pm - 7am	Frank Collins
Thur	31-Mar	7am - 3pm	Peter Alter
Thur	31-Mar	3pm-11pm	Greg Schoenebeck
Thur-Fri	3/31-4/1	11pm - 7am	Frank Collins
Fri	1-Apr	7am - 3pm	Brett Rini
Fri	1-Apr	3pm-11pm	Mark Orr
Fri-Sat	4/1-4/2	11pm-7am	Frank Collins
Sat	2-Apr	7am - 3pm	Peter Alter
Sat	2-Apr	3pm-11pm	Brett Rini
Sat-Sun	4/2-4/3	11pm - 7am	Oleg Bukharin
Severe Accident/PRA			
Sat-Sun	3/26-3/27	11pm - 7am	Ray Skarda
Sun	27-Mar	7am - 3pm	Andy Howe
Sun	27-Mar	3pm-11pm	Jeff Mitman
Sun-Mon	3/27-3/28	11pm - 7am	Jim Gilmer
Mon	28-Mar	7am - 3pm	Jeff Circle
Mon	28-Mar	3pm-11pm	Len Ward
Mon-Tue	3/28-3/29	11pm - 7am	Donnie Harrison
Tue	29-Mar	7am - 3pm	Hossein Esmaili
Tue	29-Mar	3pm-11pm	Ed Fuller
Tue-Wed	3/29-3/30	11pm - 7am	Donnie Harrison
Wed	30-Mar	7am - 3pm	Jim Gilmer
Wed	30-Mar	3pm-11pm	Hossein Esmaili
Wed-Thur	3/30-3/31	11pm - 7am	Steve Arndt
Thur	31-Mar	7am - 3pm	Don Chung
Thur	31-Mar	3pm-11pm	Hossein Esmaili
Thur-Fri	3/31-4/1	11pm - 7am	Steve Arndt
Fri	1-Apr	7am - 3pm	Jeff Mitman
Fri	1-Apr	3pm-11pm	Don Hilton
Fri-Sat	4/1-4/2	11pm-7am	Ray Skarda
Sat	2-Apr	7am - 3pm	Hossein Esmaili
Sat	2-Apr	3pm-11pm	
Sat-Sun	4/2-4/3	11pm - 7am	Ray Skarda

Japan Earthquake ERO Staffing Roster

Mar 27-Apr 2, 2011 (Pay Period 8)

File Name: MASTER RESPONDER SCHEDULE FOR JAPAN EARTHQUAKE 2011.xlsx as of 3/28/11

BWR Expertise			
Sat-Sun	3/26-3/27	11pm - 7am	Eva Brown
Sun	27-Mar	7am - 3pm	Mike Brown
Sun	27-Mar	3pm-11pm	Chuck Norton
Sun-Mon	3/27-3/28	11pm - 7am	Eva Brown
Mon	28-Mar	7am - 3pm	Mike Brown
Mon	28-Mar	3pm-11pm	Chuck Norton
Mon-Tue	3/28-3/29	11pm - 7am	Jim Shea
Tue	29-Mar	7am - 3pm	Mike Brown
Tue	29-Mar	3pm-11pm	Chuck Norton
Tue-Wed	3/29-3/30	11pm - 7am	Jim Shea
Wed	30-Mar	7am - 3pm	Mike Brown
Wed	30-Mar	3pm-11pm	Chuck Norton
Wed-Thur	3/30-3/31	11pm - 7am	Jim Shea
Thur	31-Mar	7am - 3pm	Mike Brown
Thur	31-Mar	3pm-11pm	Chuck Norton
Thur-Fri	3/31-4/1	11pm - 7am	Jim Shea
Fri	1-Apr	7am - 3pm	Mike Brown
Fri	1-Apr	3pm-11pm	Chuck Norton
Fri-Sat	4/1-4/2	11pm-7am	Eva Brown
Sat	2-Apr	7am - 3pm	Mike Brown
Sat	2-Apr	3pm-11pm	Chuck Norton
Sat-Sun	4/2-4/3	11pm - 7am	Eva Brown
RST Comm/ERDS Operator			
Sat-Sun	3/26-3/27	11pm - 7am	Denise McGovern
Sun	27-Mar	7am - 3pm	Mark Padovan
Sun	27-Mar	3pm-11pm	Bill Roggenbrodt
Sun-Mon	3/27-3/28	11pm - 7am	Denise McGovern
Mon	28-Mar	7am - 3pm	Mark Padovan
Mon	28-Mar	3pm-11pm	Rick Jervey
Mon-Tue	3/28-3/29	11pm - 7am	Brian Horn
Tue	29-Mar	7am - 3pm	John Thorp
Tue	29-Mar	3pm-11pm	Andy Kugler
Tue-Wed	3/29-3/30	11pm - 7am	Brian Horn
Wed	30-Mar	7am - 3pm	Steve Bloom
Wed	30-Mar	3pm-11pm	Bill Roggenbrodt
Wed-Thur	3/30-3/31	11pm - 7am	Liliana Ramadan
Thur	31-Mar	7am - 3pm	Jerry Dozier
Thur	31-Mar	3pm-11pm	John Thorp
Thur-Fri	3/31-4/1	11pm - 7am	Mark Padovan
Fri	1-Apr	7am - 3pm	Andy Kugler
Fri	1-Apr	3pm-11pm	David Solario
Fri-Sat	4/1-4/2	11pm-7am	Liliana Ramadan
Sat	2-Apr	7am - 3pm	John Thorp
Sat	2-Apr	3pm-11pm	
Sat-Sun	4/2-4/3	11pm - 7am	
RST Support (Seismology Q&A)			

Japan Earthquake ERO Staffing Roster

Mar 27-Apr 2, 2011 (Pay Period 8)

File Name: MASTER RESPONDER SCHEDULE FOR JAPAN EARTHQUAKE 2011.xlsx as of 3/28/11

Sat-Sun	3/26-3/27	11pm - 7am	(ON CALL)
Sun	27-Mar	7am - 3pm	(ON CALL)
Sun	27-Mar	3pm-11pm	(ON CALL)
Sun-Mon	3/27-3/28	11pm - 7am	(ON CALL)
Mon	28-Mar	7am - 3pm	(ON CALL)
Mon	28-Mar	3pm-11pm	(ON CALL)
Mon-Tue	3/28-3/29	11pm - 7am	(ON CALL)
Tue	29-Mar	7am - 3pm	(ON CALL)
Tue	29-Mar	3pm-11pm	(ON CALL)
Tue-Wed	3/29-3/30	11pm - 7am	(ON CALL)
Wed	30-Mar	7am - 3pm	(ON CALL)
Wed	30-Mar	3pm-11pm	(ON CALL)
Wed-Thur	3/30-3/31	11pm - 7am	(ON CALL)
Thur	31-Mar	7am - 3pm	(ON CALL)
Thur	31-Mar	3pm-11pm	(ON CALL)
Thur-Fri	3/31-4/1	11pm - 7am	(ON CALL)
Fri	1-Apr	7am - 3pm	(ON CALL)
Fri	1-Apr	3pm-11pm	(ON CALL)
Fri-Sat	4/1-4/2	11pm-7am	(ON CALL)
Sat	2-Apr	7am - 3pm	(ON CALL)
Sat	2-Apr	3pm-11pm	(ON CALL)
Sat-Sun	4/2-4/3	11pm - 7am	(ON CALL)
RST Support (Structural)			
Sat-Sun	3/26-3/27	11pm - 7am	Off (ON CALL)
Sun	27-Mar	7am - 3pm	Off (ON CALL)
Sun	27-Mar	3pm-11pm	Off (ON CALL)
Sun-Mon	3/27-3/28	11pm - 7am	Off (ON CALL)
Mon	28-Mar	7am - 3pm	Pravin Patel (ON CALL)
Mon	28-Mar	3pm-11pm	Pravin Patel (ON CALL)
Mon-Tues	3/28-3/29	11pm - 7am	Pravin Patel (ON CALL)
Tues	29-Mar	7am - 3pm	Pravin Patel (ON CALL)
Tues	29-Mar	3pm-11pm	Pravin Patel (ON CALL)
Tues-Wed	3/29-3/30	11pm - 7am	Pravin Patel (ON CALL)
Wed	30-Mar	7am - 3pm	Pravin Patel (ON CALL)
Wed	30-Mar	3pm-11pm	Pravin Patel (ON CALL)
Wed-Thur	3/30-3/31	11pm - 7am	Pravin Patel (ON CALL)
Thur	31-Mar	7am - 3pm	Pravin Patel (ON CALL)
Thur	31-Mar	3pm-11pm	Pravin Patel (ON CALL)
Thur-Fri	3/31-4/1	11pm - 7am	Pravin Patel (ON CALL)
Fri	1-Apr	7am - 3pm	Pravin Patel (ON CALL)
Fri	1-Apr	3pm-11pm	Pravin Patel (ON CALL)
Fri-Sat	4/1-4/2	11pm-7am	Pravin Patel (ON CALL)

Japan Earthquake ERO Staffing Roster
April 3-9, 2011
Pay Period 8 - Week 2

Position	Date	Time	Staff
		Executive Team	
ET Director			
Sat-Sun	4/2-4/3	11pm - 7am	Cynthia Carpenter
Sun	3-Apr	7am - 3pm	
Sun	3-Apr	3pm-11pm	Brian Sheron
Sun-Mon	4/3-4/4	11pm - 7am	Mike Johnson
Mon	4-Apr	7am - 3pm	Jim Wiggins
Mon	4-Apr	3pm-11pm	Cynthia Carpenter
Mon-Tue	4/4-4/5	11pm - 7am	Mike Johnson
Tue	5-Apr	7am - 3pm	Jim Wiggins
Tue	5-Apr	3pm-11pm	Cynthia Carpenter
Tue-Wed	4/5-4/6	11pm - 7am	Mike Johnson
Wed	6-Apr	7am - 3pm	Jim Wiggins
Wed	6-Apr	3pm-11pm	Roy Zimmerman
Wed-Thur	4/6-4/7	11pm - 7am	Mike Johnson
Thur	7-Apr	7am - 3pm	Mike Weber
Thur	7-Apr	3pm-11pm	Roy Zimmerman
Thur-Fri	4/7-4/8	11pm - 7am	Jennifer Uhle
Fri	8-Apr	7am - 3pm	Mike Weber
Fri	8-Apr	3pm-11pm	Roy Zimmerman
Fri-Sat	4/8-4/9	11pm-7am	Jennifer Uhle
Sat	9-Apr	7am - 3pm	
Sat	9-Apr	3pm-11pm	
Sat-Sun	4/9-4/10	11pm - 7am	Jennifer Uhle
ET Response Advisor			
Sat-Sun	4/2-4/3	11pm - 7am	Brian McDermott
Sun	3-Apr	7am - 3pm	
Sun	3-Apr	3pm-11pm	Chris Miller
Sun-Mon	4/3-4/4	11pm - 7am	Brian McDermott
Mon	4-Apr	7am - 3pm	Tim McGinty
Mon	4-Apr	3pm-11pm	Joe Giitter
Mon-Tue	4/4-4/5	11pm - 7am	Brian McDermott
Tue	5-Apr	7am - 3pm	Tim McGinty
Tue	5-Apr	3pm-11pm	Joe Giitter
Tue-Wed	4/5-4/6	11pm - 7am	Brian McDermott
Wed	6-Apr	7am - 3pm	Tim McGinty
Wed	6-Apr	3pm-11pm	Joe Giitter
Wed-Thur	4/6-4/7	11pm - 7am	Scott Morris
Thur	7-Apr	7am - 3pm	Tim McGinty
Thur	7-Apr	3pm-11pm	Joe Giitter
Thur-Fri	4/7-4/8	11pm - 7am	Chris Miller
Fri	8-Apr	7am - 3pm	
Fri	8-Apr	3pm-11pm	Tom Blount
Fri-Sat	4/8-4/9	11pm-7am	Mark Thaggard
Sat	9-Apr	7am - 3pm	Chris Miller
Sat	9-Apr	3pm-11pm	Tom Blount
Sat-Sun	4/9-4/10	11pm - 7am	Mark Thaggard
ET Rx Prot Measures & State Coordinator			

Sat-Sun	4/2-4/3	11pm - 7am	N/A
Sun	3-Apr	7am - 3pm	N/A
Sun	3-Apr	3pm-11pm	N/A
Sun-Mon	4/3-4/4	11pm - 7am	N/A
Mon	4-Apr	7am - 3pm	N/A
Mon	4-Apr	3pm-11pm	N/A
Mon-Tue	4/4-4/5	11pm - 7am	N/A
Tue	5-Apr	7am - 3pm	N/A
Tue	5-Apr	3pm-11pm	N/A
Tue-Wed	4/5-4/6	11pm - 7am	N/A
Wed	6-Apr	7am - 3pm	N/A
Wed	6-Apr	3pm-11pm	N/A
Wed-Thur	4/6-4/7	11pm - 7am	N/A
Thur	7-Apr	7am - 3pm	N/A
Thur	7-Apr	3pm-11pm	N/A
Thur-Fri	4/7-4/8	11pm - 7am	N/A
Fri	8-Apr	7am - 3pm	N/A
Fri	8-Apr	3pm-11pm	N/A
Fri-Sat	4/8-4/9	11pm-7am	N/A
Sat	9-Apr	7am - 3pm	N/A
Sat	9-Apr	3pm-11pm	N/A
Sat-Sun	4/9-4/10	11pm - 7am	N/A
		Executive Briefing Team	
EBT Admin. Assistant			
Sat-Sun	4/2-4/3	11pm - 7am	
Sun	3-Apr	7am - 3pm	
Sun	3-Apr	3pm-11pm	
Sun-Mon	4/3-4/4	11pm - 7am	John Fiske
Mon	4-Apr	7am - 3pm	
Mon	4-Apr	3pm-11pm	
Mon-Tue	4/4-4/5	11pm - 9am	John Fiske
Tue	5-Apr	9am - 3pm	Carolyn Kahler/ Sapna Hurd
Tue	5-Apr	3pm-11pm	
Tue-Wed	4/5-4/6	11pm - 9am	John Fiske
Wed	6-Apr	9am - 3pm	Carolyn Kahler/ Sapna Hurd
Wed	6-Apr	3pm-11pm	
Wed-Thur	4/6-4/7	11pm - 7am	John Fiske
Thur	7-Apr	7am - 3pm	
Thur	7-Apr	3pm-11pm	
Thur-Fri	4/7-4/8	11pm - 7am	John Fiske
Fri	8-Apr	7am - 3pm	
Fri	8-Apr	3pm-11pm	Sapna Hurd
Fri-Sat	4/8-4/9	11pm-7am	John Fiske
Sat	9-Apr	7am - 3pm	Kelly Riner
Sat	9-Apr	3pm-11pm	
Sat-Sun	4/9-4/10	11pm - 7am	
EBT Coordinator			
Sat-Sun	4/2-4/3	11pm - 7am	
Sun	3-Apr	7am - 3pm	
Sun	3-Apr	3pm-11pm	

Sun-Mon	4/3-4/4	11pm - 7am	
Mon	4-Apr	7am - 3pm	Sara Mroz
Mon	4-Apr	3pm-11pm	Yen Chen
Mon-Tue	4/4-4/5	11pm - 7am	Jim Anderson
Tue	5-Apr	7am - 3pm	Sara Mroz
Tue	5-Apr	3pm-11pm	
Tue-Wed	4/5-4/6	11pm - 7am	Jim Anderson
Wed	6-Apr	7am - 3pm	Sara Mroz
Wed	6-Apr	3pm-11pm	Yen Chen
Wed-Thur	4/6-4/7	11pm - 7am	Jim Anderson
Thur	7-Apr	7am - 3pm	Sara Mroz
Thur	7-Apr	3pm-11pm	Yen Chen
Thur-Fri	4/7-4/8	11pm - 7am	Jim Anderson
Fri	8-Apr	7am - 3pm	Sara Mroz
Fri	8-Apr	3pm-11pm	Yen Chen
Fri-Sat	4/8-4/9	11pm-7am	Jim Anderson
Sat	9-Apr	7am - 3pm	
Sat	9-Apr	3pm-11pm	
Sat-Sun	4/9-4/10	11pm - 7am	
		Executive Support Team	
EST Status Officer			
Sat-Sun	4/2-4/3	11pm - 7am	
Sun	3-Apr	7am - 3pm	
Sun	3-Apr	3pm-11pm	
Sun-Mon	4/3-4/4	11pm - 7am	
Mon	4-Apr	7am - 3pm	
Mon	4-Apr	3pm-11pm	
Mon-Tue	4/4-4/5	11pm - 7am	
Tue	5-Apr	7am - 3pm	
Tue	5-Apr	3pm-11pm	
Tue-Wed	4/5-4/6	11pm - 7am	
Wed	6-Apr	7am - 3pm	
Wed	6-Apr	3pm-11pm	
Wed-Thur	4/6-4/7	11pm - 7am	
Thur	7-Apr	7am - 3pm	
Thur	7-Apr	3pm-11pm	
Thur-Fri	4/7-4/8	11pm - 7am	
Fri	8-Apr	7am - 3pm	
Fri	8-Apr	3pm-11pm	
Fri-Sat	4/8-4/9	11pm-7am	
Sat	9-Apr	7am - 3pm	
Sat	9-Apr	3pm-11pm	
Sat-Sun	4/9-4/10	11pm - 7am	
EST Actions Officer			
Sat-Sun	4/2-4/3	11pm - 7am	N/A
Sun	3-Apr	7am - 3pm	Kelly Grimes
Sun	3-Apr	3pm-11pm	
Sun-Mon	4/3-4/4	11pm - 7am	N/A
Mon	4-Apr	7am - 3pm	

Mon	4-Apr	3pm-11pm	
Mon-Tue	4/4-4/5	11pm - 7am	N/A
Tue	5-Apr	7am - 3pm	Anthony Bowers
Tue	5-Apr	3pm-11pm	
Tue-Wed	4/5-4/6	11pm - 7am	N/A
Wed	6-Apr	7am - 3pm	Kelly Grimes
Wed	6-Apr	3pm-11pm	
Wed-Thur	4/6-4/7	11pm - 7am	N/A
Thur	7-Apr	7am - 3pm	Anthony Bowers
Thur	7-Apr	3pm-11pm	
Thur-Fri	4/7-4/8	11pm - 7am	N/A
Fri	8-Apr	7am - 3pm	Kelly Grimes
Fri	8-Apr	3pm-11pm	
Fri-Sat	4/8-4/9	11pm-7am	N/A
Sat	9-Apr	7am - 3pm	
Sat	9-Apr	3pm-11pm	
Sat-Sun	4/9-4/10	11pm - 7am	N/A
EST Coordinator			
Sat-Sun	4/2-4/3	11pm - 7am	Rebecca Stone
Sun	3-Apr	7am - 3pm	Tonya Russell
Sun	3-Apr	3pm-11pm	Anthony Bowers
Sun-Mon	4/3-4/4	11pm - 7am	Rebecca Stone
Mon	4-Apr	7am - 3pm	Steve Campbell
Mon	4-Apr	3pm-11pm	Tonya Russell
Mon-Tue	4/4-4/5	11pm - 7am	Rebecca Stone
Tue	5-Apr	7am - 3pm	Steve Campbell
Tue	5-Apr	3pm-11pm	Tonya Russell
Tue-Wed	4/5-4/6	11pm - 7am	Rebecca Stone
Wed	6-Apr	7am - 3pm	Steve Campbell
Wed	6-Apr	3pm-11pm	Tonya Russell
Wed-Thur	4/6-4/7	11pm - 7am	Rebecca Stone
Thur	7-Apr	7am - 3pm	Steve Campbell
Thur	7-Apr	3pm-11pm	Tonya Russell
Thur-Fri	4/7-4/8	11pm - 7am	Stacy Smith
Fri	8-Apr	7am - 3pm	Steve Campbell
Fri	8-Apr	3pm-11pm	Tonya Russell
Fri-Sat	4/8-4/9	11pm-7am	
Sat	9-Apr	7am - 3pm	Tonya Russell
Sat	9-Apr	3pm-11pm	
Sat-Sun	4/9-4/10	11pm - 7am	
EST Chronology Officer			
Sat-Sun	4/2-4/3	11pm - 7am	
Sun	3-Apr	7am - 3pm	
Sun	3-Apr	3pm-11pm	Carolyn Faria-Ocasio
Sun-Mon	4/3-4/4	11pm - 7am	
Mon	4-Apr	7am - 3pm	
Mon	4-Apr	3pm-11pm	
Mon-Tue	4/4-4/5	11pm - 7am	
Tue	5-Apr	7am - 3pm	

Tue	5-Apr	3pm-11pm	
Tue-Wed	4/5-4/6	11pm - 7am	
Wed	6-Apr	7am - 3pm	
Wed	6-Apr	3pm-11pm	
Wed-Thur	4/6-4/7	11pm - 7am	Carolyn Faria-Ocasio
Thur	7-Apr	7am - 3pm	
Thur	7-Apr	3pm-11pm	
Thur-Fri	4/7-4/8	11pm - 7am	
Fri	8-Apr	7am - 3pm	Stella Opara
Fri	8-Apr	3pm-11pm	
Fri-Sat	4/8-4/9	11pm-7am	
Sat	9-Apr	7am - 3pm	
Sat	9-Apr	3pm-11pm	
Sat-Sun	4/9-4/10	11pm - 7am	
EST Response Ops Mgr			
Sat-Sun	4/2-4/3	11pm - 7am	
Sun	3-Apr	7am - 3pm	
Sun	3-Apr	3pm-11pm	
Sun-Mon	4/3-4/4	11pm - 7am	
Mon	4-Apr	7am - 3pm	
Mon	4-Apr	3pm-11pm	
Mon-Tue	4/4-4/5	11pm - 7am	
Tue	5-Apr	7am - 3pm	
Tue	5-Apr	3pm-11pm	
Tue-Wed	4/5-4/6	11pm - 7am	
Wed	6-Apr	7am - 3pm	
Wed	6-Apr	3pm-11pm	
Wed-Thur	4/6-4/7	11pm - 7am	
Thur	7-Apr	7am - 3pm	
Thur	7-Apr	3pm-11pm	
Thur-Fri	4/7-4/8	11pm - 7am	
Fri	8-Apr	7am - 3pm	
Fri	8-Apr	3pm-11pm	
Fri-Sat	4/8-4/9	11pm-7am	
Sat	9-Apr	7am - 3pm	
Sat	9-Apr	3pm-11pm	
Sat-Sun	4/9-4/10	11pm - 7am	
EST Admin. Assistant			
Sat-Sun	4/2-4/3	11pm - 7am	N/A
Sun	3-Apr	7am - 3pm	Michelle Manahan
Sun	3-Apr	3pm-11pm	Cynthia Dorsey
Sun-Mon	4/3-4/4	11pm - 7am	N/A
Mon	4-Apr	7am - 3pm	Michelle Manahan
Mon	4-Apr	3pm-11pm	Mary Glenn Crutchley
Mon-Tue	4/4-4/5	11pm - 7am	N/A
Tue	5-Apr	7am - 3pm	Karen Meyer
Tue	5-Apr	3pm-11pm	Mary Glenn Crutchley
Tue-Wed	4/5-4/6	11pm - 7am	N/A
Wed	6-Apr	7am - 3pm	Michelle Manahan

Wed	6-Apr	3pm-11pm	Mary Glenn Crutchley
Wed-Thur	4/6-4/7	11pm - 7am	N/A
Thur	7-Apr	7am - 3pm	Taylor Lichatz
Thur	7-Apr	3pm-11pm	Tabitha Howard
Thur-Fri	4/7-4/8	11pm - 7am	N/A
Fri	8-Apr	7am - 3pm	Karen Meyer
Fri	8-Apr	3pm-11pm	Tabitha Howard
Fri-Sat	4/8-4/9	11pm-7am	N/A
Sat	9-Apr	7am - 3pm	Karen Meyer
Sat	9-Apr	3pm-11pm	Cynthia Dorsey
Sat-Sun	4/9-4/10	11pm - 7am	N/A
		Liaison Team	
LT Director			
Sat-Sun	4/2-4/3	11pm - 7am	Tom Bergman
Sun	3-Apr	7am - 3pm	John Adams
Sun	3-Apr	3pm-11pm	Mark Lombard
Sun-Mon	4/3-4/4	11pm - 7am	Tom Bergman
Mon	4-Apr	7am - 3pm	
Mon	4-Apr	3pm-11pm	Mark Lombard
Mon-Tue	4/4-4/5	11pm - 7am	Tom Webber
Tue	5-Apr	7am - 3pm	
Tue	5-Apr	3pm-11pm	Mark Lombard
Tue-Wed	4/5-4/6	11pm - 7am	Tom Webber
Wed	6-Apr	7am - 3pm	
Wed	6-Apr	3pm-11pm	
Wed-Thur	4/6-4/7	11pm - 7am	Tom Webber
Thur	7-Apr	7am - 3pm	
Thur	7-Apr	3pm-11pm	Mark Lombard
Thur-Fri	4/7-4/8	11pm - 7am	Tom Webber
Fri	8-Apr	7am - 3pm	
Fri	8-Apr	3pm-11pm	
Fri-Sat	4/8-4/9	11pm-7am	
Sat	9-Apr	7am - 3pm	Mark Thaggard
Sat	9-Apr	3pm-11pm	Tom Blount
Sat-Sun	4/9-4/10	11pm - 7am	Marissa Bailey
LT Coordinator			
Sat-Sun	4/2-4/3	11pm - 7am	Joe Rivers
Sun	3-Apr	7am - 3pm	Jeff Temple
Sun	3-Apr	3pm-11pm	Milt Murray
Sun-Mon	4/3-4/4	11pm - 7am	Joe Rivers
Mon	4-Apr	7am - 3pm	Rani Franovich
Mon	4-Apr	3pm-11pm	Milt Murray
Mon-Tue	4/4-4/5	11pm - 7am	Jeff Temple
Tue	5-Apr	7am - 3pm	Rani Franovich
Tue	5-Apr	3pm-11pm	Milt Murray
Tue-Wed	4/5-4/6	11pm - 7am	Jeff Temple
Wed	6-Apr	7am - 3pm	Rani Franovich
Wed	6-Apr	3pm-11pm	Milt Murray
Wed-Thur	4/6-4/7	11pm - 7am	Janelle Jessie

Thur	7-Apr	7am - 3pm	Jeff Temple
Thur	7-Apr	3pm-11pm	Milt Murray
Thur-Fri	4/7-4/8	11pm - 7am	Janelle Jessie
Fri	8-Apr	7am - 3pm	Jeff Temple
Fri	8-Apr	3pm-11pm	Milt Murray
Fri-Sat	4/8-4/9	11pm-7am	Rani Franovich
Sat	9-Apr	7am - 3pm	Jeff Temple
Sat	9-Apr	3pm-11pm	Milt Murray
Sat-Sun	4/9-4/10	11pm - 7am	Rani Franovich
LT State Liaison			
Sat-Sun	2-Apr	9pm-7am	Amanda Noonan (ON CALL)
Sun	3-Apr	7am-2pm	Michelle Ryan (ON CALL)
Sun	3-Apr	2pm-9pm	Michelle Ryan (ON CALL)
Sun-Mon	4/3-4/4	9pm-7am	Michelle Ryan (ON CALL)
Mon	4-Apr	7am-2pm	Cindy Flannery
Mon	4-Apr	2pm-9pm	Stuart Easson
Mon-Tue	4/4-4/5	9pm-7am	Alison Rivera
Tue	5-Apr	7am-2pm	Kim Lukes
Tue	5-Apr	2pm-9pm	Michelle Ryan
Tue-Wed	4/5-4/6	9pm-7am	Amanda Noonan
Wed	6-Apr	7am-2pm	Cindy Flannery
Wed	6-Apr	2pm-9pm	Stuart Easson
Wed-Thur	4/6-4/7	9pm-7am	Alison Rivera
Thur	7-Apr	7am-2pm	Amanda Noonan
Thur	7-Apr	2pm-9pm	Alison Rivera
Thur-Fri	4/7-4/8	9pm-7am	Richard Turtil
Fri	8-Apr	7am-2pm	Alison Rivera
Fri	8-Apr	2pm-9pm	Richard Turtil
Fri-Sat	4/8-4/9	9pm-7am	Amanda Noonan
Sat	9-Apr	7am-2pm	Amanda Noonan (ON CALL)
Sat	9-Apr	2pm-9pm	Amanda Noonan (ON CALL)
Sat-Sun	4/9-4/10	9pm-7am	Amanda Noonan (ON CALL)
LT Federal Liaison (2)			
Sat-Sun	4/2-4/3	11pm - 7am	Jason Lising
Sun	3-Apr	7am - 3pm	Jerry Hale/Russ Chazell
Sun	3-Apr	3pm-11pm	Susan Salter
Sun-Mon	4/3-4/4	11pm - 7am	Jason Lising
Mon	4-Apr	7am - 3pm	Jerry Hale
Mon	4-Apr	3pm-11pm	Susan Salter/Russ Chazell
Mon-Tue	4/4-4/5	11pm - 7am	Jason Lising
Tue	5-Apr	7am - 3pm	Jeff Temple/Beth Reed
Tue	5-Apr	3pm-11pm	Susan Salter/Russ Chazell
Tue-Wed	4/5-4/6	11pm - 7am	Scott Sloan
Wed	6-Apr	7am - 3pm	Lisa Wright/Ned Wright
Wed	6-Apr	3pm-11pm	Jerry Hale
Wed-Thur	4/6-4/7	11pm - 7am	Scott Sloan
Thur	7-Apr	7am - 3pm	Lisa Wright/Ned Wright
Thur	7-Apr	3pm-11pm	Jerry Hale/Russ Chazell
Thur-Fri	4/7-4/8	11pm - 7am	Scott Sloan

Fri	8-Apr	7am - 3pm	Lisa Wright/Ned Wright
Fri	8-Apr	3pm-11pm	Jerry Hale
Fri-Sat	4/8-4/9	11pm-7am	Scott Sloan
Sat	9-Apr	7am - 3pm	Lisa Wright/Russ Chazell
Sat	9-Apr	3pm-11pm	Jeff Lynch
Sat-Sun	4/9-4/10	11pm - 7am	Scott Sloan
LT Congressional Liaison (2)			
Sat	2-Apr	7am - 2pm	Amy Powell (ON CALL ONLY)
Sat	2-Apr	2pm-9pm	Amy Powell (ON CALL ONLY)
Sun	3-Apr	7am - 2pm	Amy Powell (ON CALL ONLY)
Sun	3-Apr	2pm-9pm	Amy Powell (ON CALL ONLY)
Mon	4-Apr	7am - 2pm	Amy Powell (ON CALL ONLY)
Mon	4-Apr	2pm-9pm	Amy Powell (ON CALL ONLY)
Tue	5-Apr	7am - 2pm	Amy Powell (ON CALL ONLY)
Tue	5-Apr	2pm-9pm	Amy Powell (ON CALL ONLY)
Wed	6-Apr	7am - 2pm	Amy Powell (ON CALL ONLY)
Wed	6-Apr	2pm-9pm	Amy Powell (ON CALL ONLY)
Thur	7-Apr	7am - 2pm	Amy Powell (ON CALL ONLY)
Thur	7-Apr	2pm-9pm	Amy Powell (ON CALL ONLY)
Fri	8-Apr	7am - 2pm	Amy Powell (ON CALL ONLY)
Fri	8-Apr	2pm-9pm	Amy Powell (ON CALL ONLY)
Sat	9-Apr	7am - 2pm	Amy Powell (ON CALL ONLY)
Sat	9-Apr	2pm-9pm	Amy Powell (ON CALL ONLY)
Sun	10-Apr	7am - 2pm	Amy Powell (ON CALL ONLY)
LT International Liaison (2)			
Sat-Sun	4/2-4/3	11pm - 7am	Gerri Fehst / Elizabeth Smiroldo
Sun	3-Apr	7am - 3pm	Steve Bloom / Karen Henderson
Sun	3-Apr	3pm-11pm	Janice Owens / Jenny Tobin
Sun-Mon	4/3-4/4	11pm - 7am	Jill Shepard / Elizabeth Smiroldo
Mon	4-Apr	7am - 3pm	Steve Bloom/Lance English
Mon	4-Apr	3pm-11pm	Janice Owens / Jenny Tobin
Mon-Tue	4/4-4/5	11pm - 7am	Jill Shepard / Elizabeth Smiroldo
Tue	5-Apr	7am - 3pm	Skip Young / Kirk Foggie
Tue	5-Apr	3pm-11pm	Steve Baker / Brian Wittick
Tue-Wed	4/5-4/6	11pm - 7am	Jill / Gerri Fehst
Wed	6-Apr	7am - 3pm	Skip Young / Kirk Foggie
Wed	6-Apr	3pm-11pm	Steve Baker / Brian Wittick
Wed-Thur	4/6-4/7	11pm - 7am	Jenny Tobin / Gerri Fehst
Thur	7-Apr	7am - 3pm	Skip Young / Kirk Foggie
Thur	7-Apr	3pm-11pm	Steve Baker / Brian Wittick
Thur-Fri	4/7-4/8	11pm - 7am	Jenny Tobin / Gerri Fehst
Fri	8-Apr	7am - 3pm	Eric Stahl / Mugeh Afshar-Tous
Fri	8-Apr	3pm-11pm	Jen Schwartzman / Charlotte Abrams
Fri-Sat	4/8-4/9	11pm-7am	Elizabeth Smiroldo / Lauren Mayros
Sat	9-Apr	7am - 3pm	Eric/Mugeh
Sat	9-Apr	3pm-11pm	Jen S / Charlotte
Sat-Sun	4/9-4/10	11pm - 7am	Jenny/Lauren
Protective Measures Team			

Japan Earthquake ERO Staffing Roster
April 3-9, 2011
Pay Period 8 - Week 2

PMTR Director			
Sat-Sun	4/2-4/3	11pm - 7am	Christiana Lui
Sun	3-Apr	7am - 3pm	Cyndi Jones
Sun	3-Apr	3pm-11pm	Scott Flanders
Sun-Mon	4/3-4/4	11pm - 7am	John Lubinski
Mon	4-Apr	7am - 3pm	Cyndi Jones
Mon	4-Apr	3pm-11pm	Scott Flanders
Mon-Tue	4/4-4/5	11pm - 7am	John Lubinski
Tue	5-Apr	7am - 3pm	Cyndi Jones
Tue	5-Apr	3pm-11pm	Scott Flanders
Tue-Wed	4/5-4/6	11pm - 7am	John Lubinski
Wed	6-Apr	7am - 3pm	Cyndi Jones
Wed	6-Apr	3pm-11pm	Scott Flanders
Wed-Thur	4/6-4/7	11pm - 7am	John Lubinski
Thur	7-Apr	7am - 3pm	Doug Coe
Thur	7-Apr	3pm-11pm	Don Cool
Thur-Fri	4/7-4/8	11pm - 7am	Kathy Gibson
Fri	8-Apr	7am - 3pm	Doug Coe
Fri	8-Apr	3pm-11pm	Don Cool
Fri-Sat	4/8-4/9	11pm-7am	Kathy Gibson
Sat	9-Apr	7am - 3pm	Doug Coe
Sat	9-Apr	3pm-11pm	Don Cool
Sat-Sun	4/9-4/10	11pm - 7am	Kathy Gibson
PMTR Coordinator			
Sat-Sun	4/2-4/3	11pm - 7am	Lou Brandon
Sun	3-Apr	7am - 3pm	?
Sun	3-Apr	3pm-11pm	?
Sun-Mon	4/3-4/4	11pm - 7am	Lou Brandon
Mon	4-Apr	7am - 3pm	Arlon Costa
Mon	4-Apr	3pm-11pm	Nima Ashkeboussi
Mon-Tue	4/4-4/5	11pm - 7am	Lou Brandon
Tue	5-Apr	7am - 3pm	Duane Hardesty
Tue	5-Apr	3pm-11pm	Nima Ashkeboussi
Tue-Wed	4/5-4/6	11pm - 7am	Lou Brandon
Wed	6-Apr	7am - 3pm	Arlon Costa
Wed	6-Apr	3pm-11pm	Nima Ashkeboussi
Wed-Thur	4/6-4/7	11pm - 7am	?
Thur	7-Apr	7am - 3pm	Duane Hardesty
Thur	7-Apr	3pm-11pm	?
Thur-Fri	4/7-4/8	11pm - 7am	Lou Brandon
Fri	8-Apr	7am - 3pm	Arlon Costa
Fri	8-Apr	3pm-11pm	Ryan Craffey
Fri-Sat	4/8-4/9	11pm-7am	Lou Brandon
Sat	9-Apr	7am - 3pm	Duane Hardesty
Sat	9-Apr	3pm-11pm	Ryan Craffey
Sat-Sun	4/9-4/10	11pm - 7am	?
PMTR Prot Actions Asst Dir			
Sat-Sun	4/2-4/3	11pm - 7am	?
Sun	3-Apr	7am - 3pm	?

Sun	3-Apr	3pm-11pm	Tim Harris
Sun-Mon	4/3-4/4	11pm - 7am	Greg Casto
Mon	4-Apr	7am - 3pm	Kathy Brock
Mon	4-Apr	3pm-11pm	?
Mon-Tue	4/4-4/5	11pm - 7am	Greg Casto
Tue	5-Apr	7am - 3pm	Kathy Brock
Tue	5-Apr	3pm-11pm	Tim Harris
Tue-Wed	4/5-4/6	11pm - 7am	Greg Casto
Wed	6-Apr	7am - 3pm	Kathy Brock
Wed	6-Apr	3pm-11pm	Sandra Wastler
Wed-Thur	4/6-4/7	11pm - 7am	Greg Casto
Thur	7-Apr	7am - 3pm	Kathy Brock
Thur	7-Apr	3pm-11pm	Tim Harris
Thur-Fri	4/7-4/8	11pm - 7am	Greg Casto
Fri	8-Apr	7am - 3pm	Kathy Brock
Fri	8-Apr	3pm-11pm	Sandra Wastler
Fri-Sat	4/8-4/9	11pm-7am	
Sat	9-Apr	7am - 3pm	
Sat	9-Apr	3pm-11pm	Sandra Wastler
Sat-Sun	4/9-4/10	11pm - 7am	
PMTR RAAD			
Sat-Sun	4/2-4/3	11pm - 7am	Mike Norris
Sun	3-Apr	7am - 3pm	?
Sun	3-Apr	3pm-11pm	?
Sun-Mon	4/3-4/4	11pm - 7am	Mike Norris
Mon	4-Apr	7am - 3pm	Bruce Watson
Mon	4-Apr	3pm-11pm	Steve LaVie
Mon-Tue	4/4-4/5	11pm - 7am	Mike Norris
Tue	5-Apr	7am - 3pm	Bruce Watson
Tue	5-Apr	3pm-11pm	?
Tue-Wed	4/5-4/6	11pm - 7am	Mike Norris
Wed	6-Apr	7am - 3pm	Bruce Watson
Wed	6-Apr	3pm-11pm	Michelle Hart
Wed-Thur	4/6-4/7	11pm - 7am	Mike Norris
Thur	7-Apr	7am - 3pm	Bruce Watson
Thur	7-Apr	3pm-11pm	Steve LaVie
Thur-Fri	4/7-4/8	11pm - 7am	Mike Norris
Fri	8-Apr	7am - 3pm	Bruce Watson
Fri	8-Apr	3pm-11pm	Michelle Hart
Fri-Sat	4/8-4/9	11pm-7am	?
Sat	9-Apr	7am - 3pm	?
Sat	9-Apr	3pm-11pm	?
Sat-Sun	4/9-4/10	11pm - 7am	?
PMTR Dose Assessment (RASCAL) - Need 2 people/day			
Sat-Sun	4/2-4/3	11pm - 7am	John Parillo/?
Sun	3-Apr	7am - 3pm	Ed Roach/Tony Huffert
Sun	3-Apr	3pm-11pm	Casper Sun/Kimberly (Rapon) Gambone
Sun-Mon	4/3-4/4	11pm - 7am	John Parillo/?
Mon	4-Apr	7am - 3pm	Tony Huffert/Rich Clement

Mon	4-Apr	3pm-11pm	
Mon-Tue	4/4-4/5	11pm - 7am	John Parillo/?
Tue	5-Apr	7am - 3pm	Tony Huffert/Rich Clement
Tue	5-Apr	3pm-11pm	Casper Sun/?
Tue-Wed	4/5-4/6	11pm - 7am	?
Wed	6-Apr	7am - 3pm	Tony Huffert/Rich Clement
Wed	6-Apr	3pm-11pm	Casper Sun/Ron LaVera
Wed-Thur	4/6-4/7	11pm - 7am	?
Thur	7-Apr	7am - 3pm	Tony Huffert/Rich Clement
Thur	7-Apr	3pm-11pm	Casper Sun/Kimberly (Rapon) Gambone
Thur-Fri	4/7-4/8	11pm - 7am	?
Fri	8-Apr	7am - 3pm	Tony Huffert/Rich Clement
Fri	8-Apr	3pm-11pm	Casper Sun/?
Fri-Sat	4/8-4/9	11pm-7am	Ron LaVera/?
Sat	9-Apr	7am - 3pm	?
Sat	9-Apr	3pm-11pm	Casper Sun/?
Sat-Sun	4/9-4/10	11pm - 7am	?
PMTR GIS Analyst			
Sat-Sun	4/2-4/3	11pm - 7am	N/A
Sun	3-Apr	7am - 3pm	ON CALL ONLY
Sun	3-Apr	3pm-11pm	N/A
Sun-Mon	4/3-4/4	11pm - 7am	N/A
Mon	4-Apr	7am - 3pm	ON CALL ONLY
Mon	4-Apr	3pm-11pm	N/A
Mon-Tue	4/4-4/5	11pm - 7am	N/A
Tue	5-Apr	7am - 3pm	ON CALL ONLY
Tue	5-Apr	3pm-11pm	N/A
Tue-Wed	4/5-4/6	11pm - 7am	N/A
Wed	6-Apr	7am - 3pm	ON CALL ONLY
Wed	6-Apr	3pm-11pm	N/A
Wed-Thur	4/6-4/7	11pm - 7am	N/A
Thur	7-Apr	7am - 3pm	ON CALL ONLY
Thur	7-Apr	3pm-11pm	N/A
Thur-Fri	4/7-4/8	11pm - 7am	N/A
Fri	8-Apr	7am - 3pm	ON CALL ONLY
Fri	8-Apr	3pm-11pm	N/A
Fri-Sat	4/8-4/9	11pm-7am	N/A
Sat	9-Apr	7am - 3pm	ON CALL ONLY
Sat	9-Apr	3pm-11pm	N/A
Sat-Sun	4/9-4/10	11pm - 7am	N/A
PMTR Meteorologist			
Sat-Sun	4/2-4/3	11pm - 7am	N/A
Sun	3-Apr	7am - 3pm	ON CALL ONLY
Sun	3-Apr	3pm-11pm	N/A
Sun-Mon	4/3-4/4	11pm - 7am	N/A
Mon	4-Apr	7am - 3pm	ON CALL ONLY
Mon	4-Apr	3pm-11pm	N/A
Mon-Tue	4/4-4/5	11pm - 7am	N/A
Tue	5-Apr	7am - 3pm	ON CALL ONLY

Tue	5-Apr	3pm-11pm	N/A
Tue-Wed	4/5-4/6	11pm - 7am	N/A
Wed	6-Apr	7am - 3pm	ON CALL ONLY
Wed	6-Apr	3pm-11pm	N/A
Wed-Thur	4/6-4/7	11pm - 7am	N/A
Thur	7-Apr	7am - 3pm	ON CALL ONLY
Thur	7-Apr	3pm-11pm	N/A
Thur-Fri	4/7-4/8	11pm - 7am	N/A
Fri	8-Apr	7am - 3pm	ON CALL ONLY
Fri	8-Apr	3pm-11pm	N/A
Fri-Sat	4/8-4/9	11pm-7am	N/A
Sat	9-Apr	7am - 3pm	ON CALL ONLY
Sat	9-Apr	3pm-11pm	N/A
Sat-Sun	4/9-4/10	11pm - 7am	N/A
		Reactor Safety Team	
RST Director			
Sat-Sun	4/2-4/3	11pm - 7am	Mike Case
Sun	3-Apr	7am - 3pm	Brian Holian
Sun	3-Apr	3pm-11pm	Bill Ruland
Sun-Mon	4/3-4/4	11pm - 7am	Laura Dudes
Mon	4-Apr	7am - 3pm	Brian Holian
Mon	4-Apr	3pm-11pm	
Mon-Tue	4/4-4/5	11pm - 7am	Laura Dudes
Tue	5-Apr	7am - 3pm	Brian Holian
Tue	5-Apr	3pm-11pm	
Tue-Wed	4/5-4/6	11pm - 7am	Laura Dudes
Wed	6-Apr	7am - 3pm	Mike Case
Wed	6-Apr	3pm-11pm	Ed Hackett
Wed-Thur	4/6-4/7	11pm - 7am	Laura Dudes
Thur	7-Apr	7am - 3pm	Mike Case
Thur	7-Apr	3pm-11pm	Brian Holian
Thur-Fri	4/7-4/8	11pm - 7am	Fred Brown
Fri	8-Apr	7am - 3pm	Mike Case
Fri	8-Apr	3pm-11pm	
Fri-Sat	4/8-4/9	11pm-7am	
Sat	9-Apr	7am - 3pm	
Sat	9-Apr	3pm-11pm	
Sat-Sun	4/9-4/10	11pm - 7am	
RST Coordinator			
Sat-Sun	4/2-4/3	11pm - 7am	Oleg Bukharin
Sun	3-Apr	7am - 3pm	
Sun	3-Apr	3pm-11pm	Eric Thomas
Sun-Mon	4/3-4/4	11pm - 7am	Frank Collins
Mon	4-Apr	7am - 3pm	Peter Alter
Mon	4-Apr	3pm-11pm	Brett Rini
Mon-Tue	4/4-4/5	11pm - 7am	Mike Morlang
Tue	5-Apr	7am - 3pm	Frank Collins
Tue	5-Apr	3pm-11pm	Greg Schoenebeck
Tue-Wed	4/5-4/6	11pm - 7am	Mike Morlang

Wed	6-Apr	7am - 3pm	Peter Alter
Wed	6-Apr	3pm-11pm	Greg Schoenebeck
Wed-Thur	4/6-4/7	11pm - 7am	Frank Collins
Thur	7-Apr	7am - 3pm	
Thur	7-Apr	3pm-11pm	Greg Schoenebeck
Thur-Fri	4/7-4/8	11pm - 7am	
Fri	8-Apr	7am - 3pm	
Fri	8-Apr	3pm-11pm	
Fri-Sat	4/8-4/9	11pm-7am	Frank Collins
Sat	9-Apr	7am - 3pm	
Sat	9-Apr	3pm-11pm	
Sat-Sun	4/9-4/10	11pm - 7am	
Severe Accident/PRA			
Fri-Sat	4/1-4/2	11pm-7am	Ray Skarda
Sat	2-Apr	7am - 3pm	Hossein Esmaili
Sat	2-Apr	3pm-11pm	
Sat-Sun	4/2-4/3	11pm - 7am	Ray Skarda
Sun	3-Apr	7am - 3pm	Antonio Zoulis
Sun	3-Apr	3pm-11pm	Jerry Dozier
Sun-Mon	4/3-4/4	11pm - 7am	
Mon	4-Apr	7am - 3pm	Mirela Gavrilas
Mon	4-Apr	3pm-11pm	Hossein Esmali
Mon-Tue	4/4-4/5	11pm - 7am	
Tue	5-Apr	7am - 3pm	Jim Gilmer
Tue	5-Apr	3pm-11pm	Ed Fuller
Tue-Wed	4/5-4/6	11pm - 7am	
Wed	6-Apr	7am - 3pm	
Wed	6-Apr	3pm-11pm	
Wed-Thur	4/6-4/7	11pm - 7am	
Thur	7-Apr	7am - 3pm	Mirela Gavrilas
Thur	7-Apr	3pm-11pm	
Thur-Fri	4/7-4/8	11pm - 7am	
Fri	8-Apr	7am - 3pm	Mirela Gavrilas
Fri	8-Apr	3pm-11pm	Jerry Dozier
Fri-Sat	4/8-4/9	11pm-7am	
Sat	9-Apr	7am - 3pm	
Sat	9-Apr	3pm-11pm	Jeff Mitman
Sat-Sun	4/9-4/10	11pm - 7am	
BWR Expertise			
Sat-Sun	4/2-4/3	11pm - 7am	Eva Brown
Sun	3-Apr	7am - 3pm	Mike Brown
Sun	3-Apr	3pm-11pm	Chuck Norton
Sun-Mon	4/3-4/4	11pm - 7am	Eva Brown
Mon	4-Apr	7am - 3pm	Mike Brown
Mon	4-Apr	3pm-11pm	Chuck Norton
Mon-Tue	4/4-4/5	11pm - 7am	Eva Brown
Tue	5-Apr	7am - 3pm	Mike Brown
Tue	5-Apr	3pm-11pm	Chuck Norton
Tue-Wed	4/5-4/6	11pm - 7am	Eva Brown

Wed	6-Apr	7am - 3pm	Mike Brown
Wed	6-Apr	3pm-11pm	Chuck Norton
Wed-Thur	4/6-4/7	11pm - 7am	Eva Brown
Thur	7-Apr	7am - 3pm	Mike Brown
Thur	7-Apr	3pm-11pm	Chuck Norton
Thur-Fri	4/7-4/8	11pm - 7am	Eva Brown
Fri	8-Apr	7am - 3pm	
Fri	8-Apr	3pm-11pm	Chuck Norton
Fri-Sat	4/8-4/9	11pm-7am	Eva Brown
Sat	9-Apr	7am - 3pm	
Sat	9-Apr	3pm-11pm	Chuck Norton
Sat-Sun	4/9-4/10	11pm - 7am	
RST Comm/ERDS Operator			
Sat-Sun	4/2-4/3	11pm - 7am	
Sun	3-Apr	7am - 3pm	Mark Padovan
Sun	3-Apr	3pm-11pm	Andy Kugler
Sun-Mon	4/3-4/4	11pm - 7am	
Mon	4-Apr	7am - 3pm	Donna Williams
Mon	4-Apr	3pm-11pm	John Thorp
Mon-Tue	4/4-4/5	11pm - 7am	
Tue	5-Apr	7am - 3pm	Mark Padovan
Tue	5-Apr	3pm-11pm	Andy Kugler
Tue-Wed	4/5-4/6	11pm - 7am	
Wed	6-Apr	7am - 3pm	Steve Bloom
Wed	6-Apr	3pm-11pm	Mark Padovan
Wed-Thur	4/6-4/7	11pm - 7am	Rick Jervey
Thur	7-Apr	7am - 3pm	John Thorp
Thur	7-Apr	3pm-11pm	
Thur-Fri	4/7-4/8	11pm - 7am	
Fri	8-Apr	7am - 3pm	Mark Padovan
Fri	8-Apr	3pm-11pm	
Fri-Sat	4/8-4/9	11pm-7am	
Sat	9-Apr	7am - 3pm	Mark Padovan
Sat	9-Apr	3pm-11pm	
Sat-Sun	4/9-4/10	11pm - 7am	
RST Support (Seismology Q&A)			
Fri-Sat	4/1-4/2	11pm-7am	A. Kammerer (On Call)
Sat	2-Apr	7am - 3pm	A. Kammerer (On Call)
Sat	2-Apr	3pm-11pm	A. Kammerer (On Call)
Sat-Sun	4/2-4/3	11pm - 7am	A. Kammerer (On Call)
Sun	3-Apr	7am - 3pm	A. Kammerer (On Call)
Sun	3-Apr	3pm-11pm	A. Kammerer (On Call)
Sun-Mon	4/3-4/4	11pm - 7am	A. Kammerer (On Call)
Mon	4-Apr	7am - 3pm	A. Kammerer (On Call)
Mon	4-Apr	3pm-11pm	A. Kammerer (On Call)
Mon-Tue	4/4-4/5	11pm - 7am	A. Kammerer (On Call)
Tue	5-Apr	7am - 3pm	A. Kammerer (On Call)
Tue	5-Apr	3pm-11pm	A. Kammerer (On Call)
Tue-Wed	4/5-4/6	11pm - 7am	A. Kammerer (On Call)

Japan Earthquake ERO Staffing Roster
April 3-9, 2011
Pay Period 8 - Week 2

Wed	6-Apr	7am - 3pm	A. Kammerer (On Call)
Wed	6-Apr	3pm-11pm	A. Kammerer (On Call)
Wed-Thur	4/6-4/7	11pm - 7am	A. Kammerer (On Call)
Thur	7-Apr	7am - 3pm	A. Kammerer (On Call)
Thur	7-Apr	3pm-11pm	A. Kammerer (On Call)
Thur-Fri	4/7-4/8	11pm - 7am	A. Kammerer (On Call)
Fri	8-Apr	7am - 3pm	A. Kammerer (On Call)
Fri	8-Apr	3pm-11pm	A. Kammerer (On Call)
Fri-Sat	4/8-4/9	11pm-7am	A. Kammerer (On Call)
Sat	9-Apr	7am - 3pm	A. Kammerer (On Call)
Sat	9-Apr	3pm-11pm	A. Kammerer (On Call)
Sat-Sun	4/9-4/10	11pm - 7am	A. Kammerer (On Call)
RST Support (Structural)			
Fri-Sat	4/1-4/2	11pm-7am	Off (On Call)
Sat	2-Apr	7am - 3pm	Off (On Call)
Sat	2-Apr	3pm-11pm	Off (On Call)
Sat-Sun	4/2-4/3	11pm - 7am	Off (On Call)
Sun	3-Apr	7am - 3pm	Off (On Call)
Sun	3-Apr	3pm-11pm	Off (On Call)
Sun-Mon	4/3-4/4	11pm - 7am	Off (On Call)
Mon	4-Apr	7am - 3pm	Off (On Call)
Mon	4-Apr	3pm-11pm	Off (On Call)
Mon-Tues	4/4-4/5	11pm - 7am	Off (On Call)
Tues	5-Apr	7am - 3pm	Off (On Call)
Tues	5-Apr	3pm-11pm	Off (On Call)
Tues-Wed	4/5-4/6	11pm - 7am	Off (On Call)
Wed	6-Apr	7am - 3pm	Off (On Call)
Wed	6-Apr	3pm-11pm	Off (On Call)
Wed-Thur	4/6-4/7	11pm - 7am	Off (On Call)
Thur	7-Apr	7am - 3pm	Off (On Call)
Thur	7-Apr	3pm-11pm	Off (On Call)
Thur-Fri	4/7-4/8	11pm - 7am	Off (On Call)
Fri	8-Apr	7am - 3pm	Off (On Call)
Fri	8-Apr	3pm-11pm	Off (On Call)
Fri-Sat	4/8-4/9	11pm-7am	Off (On Call)

Japan Earthquake ERO Staffing Roster
April 10-16, 2011
Pay Period 9 - Week 1

Position	Date	Time	Staff
Executive Team			
ET Director			
Sat-Sun	4/9-4/10	11pm - 7am	Jennifer Uhle
Sun	10-Apr	7am - 3pm	
Sun	10-Apr	3pm-11pm	
Sun-Mon	4/10-4/11	11pm - 7am	Jennifer Uhle
Mon	11-Apr	7am - 3pm	
Mon	11-Apr	3pm-11pm	
Mon-Tue	4/11-12/5	11pm - 7am	
Tue	12-Apr	7am - 3pm	
Tue	12-Apr	3pm-11pm	
Tue-Wed	4/12-13/6	11pm - 7am	
Wed	13-Apr	7am - 3pm	
Wed	13-Apr	3pm-11pm	
Wed-Thur	4/13-4/14	11pm - 7am	
Thur	14-Apr	7am - 3pm	
Thur	14-Apr	3pm-11pm	
Thur-Fri	4/14-4/15	11pm - 7am	
Fri	15-Apr	7am - 3pm	
Fri	15-Apr	3pm-11pm	
Fri-Sat	4/15-4/16	11pm-7am	
ET Response Advisor			
Sat-Sun	4/9-4/10	11pm - 7am	Mark Thaggard
Sun	10-Apr	7am - 3pm	
Sun	10-Apr	3pm-11pm	Tom Blount
Sun-Mon	4/10-4/11	11pm - 7am	Mark Thaggard
Mon	11-Apr	7am - 3pm	
Mon	11-Apr	3pm-11pm	
Mon-Tue	4/11-12/5	11pm - 7am	
Tue	12-Apr	7am - 3pm	
Tue	12-Apr	3pm-11pm	
Tue-Wed	4/12-13/6	11pm - 7am	
Wed	13-Apr	7am - 3pm	
Wed	13-Apr	3pm-11pm	
Wed-Thur	4/13-4/14	11pm - 7am	
Thur	14-Apr	7am - 3pm	
Thur	14-Apr	3pm-11pm	
Thur-Fri	4/14-4/15	11pm - 7am	
Fri	15-Apr	7am - 3pm	
Fri	15-Apr	3pm-11pm	
Fri-Sat	4/15-4/16	11pm-7am	
ET Rx Prot Measures & State Coordinator			
Sat-Sun	4/9-4/10	11pm - 7am	N/A

Sun	10-Apr	7am - 3pm	N/A
Sun	10-Apr	3pm-11pm	N/A
Sun-Mon	4/10-4/11	11pm - 7am	N/A
Mon	11-Apr	7am - 3pm	N/A
Mon	11-Apr	3pm-11pm	N/A
Mon-Tue	4/11-12/5	11pm - 7am	N/A
Tue	12-Apr	7am - 3pm	N/A
Tue	12-Apr	3pm-11pm	N/A
Tue-Wed	4/12-13/6	11pm - 7am	N/A
Wed	13-Apr	7am - 3pm	N/A
Wed	13-Apr	3pm-11pm	N/A
Wed-Thur	4/13-4/14	11pm - 7am	N/A
Thur	14-Apr	7am - 3pm	N/A
Thur	14-Apr	3pm-11pm	N/A
Thur-Fri	4/14-4/15	11pm - 7am	N/A
Fri	15-Apr	7am - 3pm	N/A
Fri	15-Apr	3pm-11pm	N/A
Fri-Sat	4/15-4/16	11pm-7am	N/A
Executive Briefing Team			
EBT Admin. Assistant			
Sat-Sun	4/9-4/10	11pm - 7am	
Sun	10-Apr	7am - 3pm	
Sun	10-Apr	3pm-11pm	
Sun-Mon	4/10-4/11	11pm - 7am	
Mon	11-Apr	7am - 3pm	
Mon	11-Apr	3pm-11pm	
Mon-Tue	4/11-12/5	11pm - 7am	
Tue	12-Apr	7am - 3pm	Carolyn Kahler/Sapna Hurd
Tue	12-Apr	3pm-11pm	
Tue-Wed	4/12-13/6	11pm - 7am	
Wed	13-Apr	7am - 3pm	Carolyn Kahler/Sapna Hurd
Wed	13-Apr	3pm-11pm	
Wed-Thur	4/13-4/14	11pm - 7am	Christina Merritt
Thur	14-Apr	7am - 3pm	
Thur	14-Apr	3pm-11pm	Sapna Hurd
Thur-Fri	4/14-4/15	11pm - 7am	
Fri	15-Apr	7am - 3pm	
Fri	15-Apr	3pm-11pm	Sapna Hurd
Fri-Sat	4/15-4/16	11pm-7am	
EBT Coordinator			
Sat-Sun	4/9-4/10	11pm - 7am	
Sun	10-Apr	7am - 3pm	Tonya Russell
Sun	10-Apr	3pm-11pm	
Sun-Mon	4/10-4/11	11pm - 7am	

Mon	11-Apr	7am - 3pm	
Mon	11-Apr	3pm-11pm	
Mon-Tue	4/11-12/5	11pm - 7am	
Tue	12-Apr	7am - 3pm	
Tue	12-Apr	3pm-11pm	
Tue-Wed	4/12-13/6	11pm - 7am	
Wed	13-Apr	7am - 3pm	
Wed	13-Apr	3pm-11pm	
Wed-Thur	4/13-4/14	11pm - 7am	
Thur	14-Apr	7am - 3pm	
Thur	14-Apr	3pm-11pm	
Thur-Fri	4/14-4/15	11pm - 7am	
Fri	15-Apr	7am - 3pm	
Fri	15-Apr	3pm-11pm	
Fri-Sat	4/15-4/16	11pm-7am	
Executive Support Team			
EST Status Officer			
Sat-Sun	4/9-4/10	11pm - 7am	
Sun	10-Apr	7am - 3pm	
Sun	10-Apr	3pm-11pm	
Sun-Mon	4/10-4/11	11pm - 7am	
Mon	11-Apr	7am - 3pm	
Mon	11-Apr	3pm-11pm	
Mon-Tue	4/11-12/5	11pm - 7am	
Tue	12-Apr	7am - 3pm	
Tue	12-Apr	3pm-11pm	
Tue-Wed	4/12-13/6	11pm - 7am	
Wed	13-Apr	7am - 3pm	
Wed	13-Apr	3pm-11pm	
Wed-Thur	4/13-4/14	11pm - 7am	
Thur	14-Apr	7am - 3pm	
Thur	14-Apr	3pm-11pm	
Thur-Fri	4/14-4/15	11pm - 7am	
Fri	15-Apr	7am - 3pm	
Fri	15-Apr	3pm-11pm	
Fri-Sat	4/15-4/16	11pm-7am	
EST Actions Officer			
Sat-Sun	4/9-4/10	11pm - 7am	N/A
Sun	10-Apr	7am - 3pm	
Sun	10-Apr	3pm-11pm	
Sun-Mon	4/10-4/11	11pm - 7am	N/A
Mon	11-Apr	7am - 3pm	
Mon	11-Apr	3pm-11pm	
Mon-Tue	4/11-12/5	11pm - 7am	N/A

Tue	12-Apr	7am - 3pm	
Tue	12-Apr	3pm-11pm	
Tue-Wed	4/12-13/6	11pm - 7am	N/A
Wed	13-Apr	7am - 3pm	
Wed	13-Apr	3pm-11pm	
Wed-Thur	4/13-4/14	11pm - 7am	N/A
Thur	14-Apr	7am - 3pm	
Thur	14-Apr	3pm-11pm	
Thur-Fri	4/14-4/15	11pm - 7am	N/A
Fri	15-Apr	7am - 3pm	
Fri	15-Apr	3pm-11pm	
Fri-Sat	4/15-4/16	11pm-7am	N/A
EST Coordinator			
Sat-Sun	4/9-4/10	11pm - 7am	
Sun	10-Apr	7am - 3pm	Anthony Bowers
Sun	10-Apr	3pm-11pm	Tony McMurtray
Sun-Mon	4/10-4/11	11pm - 7am	
Mon	11-Apr	7am - 3pm	Tony McMurtray
Mon	11-Apr	3pm-11pm	Tonya Russell
Mon-Tue	4/11-4/12	11pm - 7am	Rebecca Stone
Tue	12-Apr	7am - 3pm	Tony McMurtray
Tue	12-Apr	3pm-11pm	Tonya Russell
Tue-Wed	4/12-4/13	11pm - 7am	Rebecca Stone
Wed	13-Apr	7am - 3pm	Tony McMurtray
Wed	13-Apr	3pm-11pm	Tonya Russell
Wed-Thur	4/13-4/14	11pm - 7am	Rebecca Stone
Thur	14-Apr	7am - 3pm	Tony McMurtray
Thur	14-Apr	3pm-11pm	Tonya Russell
Thur-Fri	4/14-4/15	11pm - 7am	Rebecca Stone
Fri	15-Apr	7am - 3pm	Tony McMurtray
Fri	15-Apr	3pm-11pm	Tonya Russell
Fri-Sat	4/15-4/16	11pm-7am	
EST Chronology Officer			
Sat-Sun	4/9-4/10	11pm - 7am	
Sun	10-Apr	7am - 3pm	
Sun	10-Apr	3pm-11pm	
Sun-Mon	4/10-4/11	11pm - 7am	
Mon	11-Apr	7am - 3pm	Vanice Perin
Mon	11-Apr	3pm-11pm	
Mon-Tue	4/11-12/5	11pm - 7am	
Tue	12-Apr	7am - 3pm	
Tue	12-Apr	3pm-11pm	
Tue-Wed	4/12-13/6	11pm - 7am	
Wed	13-Apr	7am - 3pm	Vanice Perin

Wed	13-Apr	3pm-11pm	
Wed-Thur	4/13-4/14	11pm - 7am	
Thur	14-Apr	7am - 3pm	
Thur	14-Apr	3pm-11pm	
Thur-Fri	4/14-4/15	11pm - 7am	
Fri	15-Apr	7am - 3pm	Vanice Perin
Fri	15-Apr	3pm-11pm	
Fri-Sat	4/15-4/16	11pm-7am	
EST Response Ops Mgr			
Sat-Sun	4/9-4/10	11pm - 7am	
Sun	10-Apr	7am - 3pm	
Sun	10-Apr	3pm-11pm	
Sun-Mon	4/10-4/11	11pm - 7am	
Mon	11-Apr	7am - 3pm	
Mon	11-Apr	3pm-11pm	
Mon-Tue	4/11-12/5	11pm - 7am	
Tue	12-Apr	7am - 3pm	
Tue	12-Apr	3pm-11pm	
Tue-Wed	4/12-13/6	11pm - 7am	
Wed	13-Apr	7am - 3pm	
Wed	13-Apr	3pm-11pm	
Wed-Thur	4/13-4/14	11pm - 7am	
Thur	14-Apr	7am - 3pm	
Thur	14-Apr	3pm-11pm	
Thur-Fri	4/14-4/15	11pm - 7am	
Fri	15-Apr	7am - 3pm	
Fri	15-Apr	3pm-11pm	
Fri-Sat	4/15-4/16	11pm-7am	
EST Admin. Assistant			
Sat-Sun	4/9-4/10	11pm - 7am	N/A
Sun	10-Apr	7am - 3pm	Karen Meyer
Sun	10-Apr	3pm-11pm	Cynthia Dorsey
Sun-Mon	4/10-4/11	11pm - 7am	N/A
Mon	11-Apr	7am - 3pm	Michelle Manahan
Mon	11-Apr	3pm-11pm	Mary Glenn Crutchley
Mon-Tue	4/11-12/5	11pm - 7am	N/A
Tue	12-Apr	7am - 3pm	Karen Meyer
Tue	12-Apr	3pm-11pm	Mary Glenn Crutchley
Tue-Wed	4/12-13/6	11pm - 7am	N/A
Wed	13-Apr	7am - 3pm	Michelle Manahan
Wed	13-Apr	3pm-11pm	Mary Glenn Crutchley
Wed-Thur	4/13-4/14	11pm - 7am	N/A
Thur	14-Apr	7am - 3pm	Karen Meyer
Thur	14-Apr	3pm-11pm	Tabitha Howard

Thur-Fri	4/14-4/15	11pm - 7am	N/A
Fri	15-Apr	7am - 3pm	Cynthia Dorsey
Fri	15-Apr	3pm-11pm	Tabitha Howard
Fri-Sat	4/15-4/16	11pm-7am	N/A
Liaison Team			
LT Director			
Sat-Sun	4/9-4/10	11pm - 7am	Marissa Bailey
Sun	10-Apr	7am - 3pm	Mark Thaggard
Sun	10-Apr	3pm-11pm	Tom Blount
Sun-Mon	4/10-4/11	11pm - 7am	Mark Lombard
Mon	11-Apr	7am - 3pm	
Mon	11-Apr	3pm-11pm	
Mon-Tue	4/11-12/5	11pm - 7am	
Tue	12-Apr	7am - 3pm	
Tue	12-Apr	3pm-11pm	
Tue-Wed	4/12-13/6	11pm - 7am	
Wed	13-Apr	7am - 3pm	
Wed	13-Apr	3pm-11pm	
Wed-Thur	4/13-4/14	11pm - 7am	
Thur	14-Apr	7am - 3pm	
Thur	14-Apr	3pm-11pm	
Thur-Fri	4/14-4/15	11pm - 7am	
Fri	15-Apr	7am - 3pm	
Fri	15-Apr	3pm-11pm	
Fri-Sat	4/15-4/16	11pm-7am	
LT Coordinator			
Sat-Sun	4/9-4/10	11pm - 7am	Rani Franovich
Sun	10-Apr	7am - 3pm	Milt Murray
Sun	10-Apr	3pm-11pm	
Sun-Mon	4/10-4/11	11pm - 7am	Jeff Temple
Mon	11-Apr	7am - 3pm	Milt Murray
Mon	11-Apr	3pm-11pm	
Mon-Tue	4/11-12/5	11pm - 7am	Jeff Temple
Tue	12-Apr	7am - 3pm	Milt Murray
Tue	12-Apr	3pm-11pm	
Tue-Wed	4/12-13/6	11pm - 7am	Jeff Temple
Wed	13-Apr	7am - 3pm	Milt Murray
Wed	13-Apr	3pm-11pm	
Wed-Thur	4/13-4/14	11pm - 7am	Jeff Temple
Thur	14-Apr	7am - 3pm	Milt Murray
Thur	14-Apr	3pm-11pm	Rani Franovich
Thur-Fri	4/14-4/15	11pm - 7am	Janelle Jessie
Fri	15-Apr	7am - 3pm	Milt Murray
Fri	15-Apr	3pm-11pm	Jeff Temple

Fri-Sat	4/15-4/16	11pm-7am	Rani Franovich
LT State Liaison			
Sat-Sun	4/9-4/10	9pm-7am	
Sun	10-Apr	7am-2pm	
Sun	10-Apr	2pm-9pm	
Sun-Mon	4/10-4/11	9pm-7am	
Mon	11-Apr	7am-2pm	
Mon	11-Apr	2pm-9pm	
Mon-Tue	4/11-4/12	9pm-7am	
Tue	12-Apr	7am-2pm	
Tue	12-Apr	2pm-9pm	
Tue-Wed	4/12-4/13	9pm-7am	
Wed	13-Apr	7am-2pm	
Wed	13-Apr	2pm-9pm	
Wed-Thur	4/13-4/14	9pm-7am	
Thur	14-Apr	7am-2pm	
Thur	14-Apr	2pm-9pm	
Thur-Fri	4/14-4/15	9pm-7am	
Fri	15-Apr	7am-2pm	
Fri	15-Apr	2pm-9pm	
Fri-Sat	4/15-4/16	9pm-7am	
LT Federal Liaison (2)			
Sat-Sun	4/9-4/10	11pm - 7am	Scott Sloan
Sun	10-Apr	7am - 3pm	Russ Chazell
Sun	10-Apr	3pm-11pm	Jeff Lynch
Sun-Mon	4/10-4/11	11pm - 7am	Ned Wright
Mon	11-Apr	7am - 3pm	Russ Chazell/Beth Reed
Mon	11-Apr	3pm-11pm	Jerry Hale
Mon-Tue	4/11-12/5	11pm - 7am	Ned Wright
Tue	12-Apr	7am - 3pm	Russ Chazell/Beth Reed
Tue	12-Apr	3pm-11pm	Bethany Cecere
Tue-Wed	4/12-13/6	11pm - 7am	Ned Wright
Wed	13-Apr	7am - 3pm	Russ Chazell/Beth Reed
Wed	13-Apr	3pm-11pm	Bethany Cecere
Wed-Thur	4/13-4/14	11pm - 7am	Susan Salter
Thur	14-Apr	7am - 3pm	Jason Lising/Beth Reed
Thur	14-Apr	3pm-11pm	Jerry Hale/Russ Chazell
Thur-Fri	4/14-4/15	11pm - 7am	Susan Salter
Fri	15-Apr	7am - 3pm	Russ Chazell/Beth Reed
Fri	15-Apr	3pm-11pm	Jerry Hale
Fri-Sat	4/15-4/16	11pm-7am	Susan Salter
LT Congressional Liaison (2)			
Sat	9-Apr	7am - 2pm	Amy Powell (ON CALL ONLY)

Sat	9-Apr	2pm-9pm	Amy Powell (ON CALL ONLY)
Sun	10-Apr	7am - 2pm	Amy Powell (ON CALL ONLY)
Sun	10-Apr	2pm-9pm	Amy Powell (ON CALL ONLY)
Mon	11-Apr	7am - 2pm	Amy Powell (ON CALL ONLY)
Mon	11-Apr	2pm-9pm	Amy Powell (ON CALL ONLY)
Tue	12-Apr	7am - 2pm	Amy Powell (ON CALL ONLY)
Tue	12-Apr	2pm-9pm	Amy Powell (ON CALL ONLY)
Wed	13-Apr	7am - 2pm	Amy Powell (ON CALL ONLY)
Wed	13-Apr	2pm-9pm	Amy Powell (ON CALL ONLY)
Thur	14-Apr	7am - 2pm	Amy Powell (ON CALL ONLY)
Thur	14-Apr	2pm-9pm	Amy Powell (ON CALL ONLY)
Fri	15-Apr	7am - 2pm	Amy Powell (ON CALL ONLY)
Fri	15-Apr	2pm-9pm	Amy Powell (ON CALL ONLY)
LT International Liaison (2)			
Sat-Sun	4/9-4/10	11pm - 7am	Danielle/Lauren
Sun	10-Apr	7am - 3pm	Eric/Mugeh
Sun	10-Apr	3pm-11pm	Jen S./Charlotte
Sun-Mon	4/10-4/11	11pm - 7am	Danielle/Lauren
Mon	11-Apr	7am - 3pm	Steve Bloom/Lance
Mon	11-Apr	3pm-11pm	Janice/Jenny
Mon-Tue	4/11-12/5	11pm - 7am	Gerri / Elizabeth
Tue	12-Apr	7am - 3pm	Steve Bloom/Lance
Tue	12-Apr	3pm-11pm	Janice/Jenny
Tue-Wed	4/12-13/6	11pm - 7am	/ Elizabeth
Wed	13-Apr	7am - 3pm	Steve Bloom/Lance
Wed	13-Apr	3pm-11pm	Janice/Jenny
Wed-Thur	4/13-4/14	11pm - 7am	Gerri / Elizabeth
Thur	14-Apr	7am - 3pm	Steve Baker/Brian
Thur	14-Apr	3pm-11pm	Jill/Karen
Thur-Fri	4/14-4/15	11pm - 7am	Skip/Nancy
Fri	15-Apr	7am - 3pm	Steve Baker/Brian
Fri	15-Apr	3pm-11pm	Jill/Karen
Fri-Sat	4/15-4/16	11pm-7am	Skip/Nancy
Protective Measures Team			
PMTR Director			
Sat-Sun	4/9-4/10	11pm - 7am	Vince Holahan
Sun	10-Apr	7am - 3pm	
Sun	10-Apr	3pm-11pm	
Sun-Mon	4/10-4/11	11pm - 7am	
Mon	11-Apr	7am - 3pm	
Mon	11-Apr	3pm-11pm	
Mon-Tue	4/11-12/5	11pm - 7am	
Tue	12-Apr	7am - 3pm	
Tue	12-Apr	3pm-11pm	

Tue-Wed	4/12-13/6	11pm - 7am	
Wed	13-Apr	7am - 3pm	
Wed	13-Apr	3pm-11pm	
Wed-Thur	4/13-4/14	11pm - 7am	
Thur	14-Apr	7am - 3pm	
Thur	14-Apr	3pm-11pm	
Thur-Fri	4/14-4/15	11pm - 7am	
Fri	15-Apr	7am - 3pm	
Fri	15-Apr	3pm-11pm	
Fri-Sat	4/15-4/16	11pm-7am	
PMTR Coordinator			
Sat-Sun	4/9-4/10	11pm - 7am	
Sun	10-Apr	7am - 3pm	
Sun	10-Apr	3pm-11pm	Ryan Craffey
Sun-Mon	4/10-4/11	11pm - 7am	
Mon	11-Apr	7am - 3pm	
Mon	11-Apr	3pm-11pm	Nima Ashkeboussi
Mon-Tue	4/11-12/5	11pm - 7am	
Tue	12-Apr	7am - 3pm	
Tue	12-Apr	3pm-11pm	Nima Ashkeboussi
Tue-Wed	4/12-13/6	11pm - 7am	
Wed	13-Apr	7am - 3pm	
Wed	13-Apr	3pm-11pm	Nima Ashkeboussi
Wed-Thur	4/13-4/14	11pm - 7am	
Thur	14-Apr	7am - 3pm	
Thur	14-Apr	3pm-11pm	
Thur-Fri	4/14-4/15	11pm - 7am	
Fri	15-Apr	7am - 3pm	
Fri	15-Apr	3pm-11pm	
Fri-Sat	4/15-4/16	11pm-7am	
PMTR Prot Actions Asst Dir			
Sat-Sun	4/9-4/10	11pm - 7am	
Sun	10-Apr	7am - 3pm	Kathy Brock
Sun	10-Apr	3pm-11pm	
Sun-Mon	4/10-4/11	11pm - 7am	Greg Casto
Mon	11-Apr	7am - 3pm	Kathy Brock
Mon	11-Apr	3pm-11pm	
Mon-Tue	4/11-12/5	11pm - 7am	Greg Casto
Tue	12-Apr	7am - 3pm	Kathy Brock
Tue	12-Apr	3pm-11pm	
Tue-Wed	4/12-13/6	11pm - 7am	Greg Casto
Wed	13-Apr	7am - 3pm	Kathy Brock
Wed	13-Apr	3pm-11pm	Sandra Wastler
Wed-Thur	4/13-4/14	11pm - 7am	Greg Casto

Thur	14-Apr	7am - 3pm	Kathy Brock
Thur	14-Apr	3pm-11pm	
Thur-Fri	4/14-4/15	11pm - 7am	
Fri	15-Apr	7am - 3pm	Sandra Wastler
Fri	15-Apr	3pm-11pm	
Fri-Sat	4/15-4/16	11pm-7am	
PMTR RAAD			
Sat-Sun	4/9-4/10	11pm - 7am	
Sun	10-Apr	7am - 3pm	
Sun	10-Apr	3pm-11pm	
Sun-Mon	4/10-4/11	11pm - 7am	
Mon	11-Apr	7am - 3pm	Bruce Watson
Mon	11-Apr	3pm-11pm	
Mon-Tue	4/11-12/5	11pm - 7am	
Tue	12-Apr	7am - 3pm	Bruce Watson
Tue	12-Apr	3pm-11pm	
Tue-Wed	4/12-13/6	11pm - 7am	
Wed	13-Apr	7am - 3pm	Bruce Watson
Wed	13-Apr	3pm-11pm	
Wed-Thur	4/13-4/14	11pm - 7am	
Thur	14-Apr	7am - 3pm	Bruce Watson
Thur	14-Apr	3pm-11pm	
Thur-Fri	4/14-4/15	11pm - 7am	
Fri	15-Apr	7am - 3pm	
Fri	15-Apr	3pm-11pm	
Fri-Sat	4/15-4/16	11pm-7am	
PMTR Dose Assessment (RASCAL) - Need 2			
Sat-Sun	4/9-4/10	11pm - 7am	
Sun	10-Apr	7am - 3pm	Tony Huffert
Sun	10-Apr	3pm-11pm	
Sun-Mon	4/10-4/11	11pm - 7am	
Mon	11-Apr	7am - 3pm	Tony Huffert/Rich Clement
Mon	11-Apr	3pm-11pm	
Mon-Tue	4/11-12/5	11pm - 7am	
Tue	12-Apr	7am - 3pm	Tony Huffert/Rich Clement
Tue	12-Apr	3pm-11pm	Casper Sun/?
Tue-Wed	4/12-13/6	11pm - 7am	
Wed	13-Apr	7am - 3pm	Tony Huffert/Rich Clement
Wed	13-Apr	3pm-11pm	Casper Sun/?
Wed-Thur	4/13-4/14	11pm - 7am	
Thur	14-Apr	7am - 3pm	Tony Huffert/Rich Clement
Thur	14-Apr	3pm-11pm	Kimberly Gambone/Casper Sun
Thur-Fri	4/14-4/15	11pm - 7am	
Fri	15-Apr	7am - 3pm	

Fri	15-Apr	3pm-11pm	Casper Sun/?
Fri-Sat	4/15-4/16	11pm-7am	
PMTR GIS Analyst			
Sat-Sun	4/9-4/10	11pm - 7am	N/A
Sun	10-Apr	7am - 3pm	ON CALL ONLY
Sun	10-Apr	3pm-11pm	N/A
Sun-Mon	4/10-4/11	11pm - 7am	N/A
Mon	11-Apr	7am - 3pm	ON CALL ONLY
Mon	11-Apr	3pm-11pm	N/A
Mon-Tue	4/11-12/5	11pm - 7am	N/A
Tue	12-Apr	7am - 3pm	ON CALL ONLY
Tue	12-Apr	3pm-11pm	N/A
Tue-Wed	4/12-13/6	11pm - 7am	N/A
Wed	13-Apr	7am - 3pm	ON CALL ONLY
Wed	13-Apr	3pm-11pm	N/A
Wed-Thur	4/13-4/14	11pm - 7am	N/A
Thur	14-Apr	7am - 3pm	ON CALL ONLY
Thur	14-Apr	3pm-11pm	N/A
Thur-Fri	4/14-4/15	11pm - 7am	N/A
Fri	15-Apr	7am - 3pm	ON CALL ONLY
Fri	15-Apr	3pm-11pm	N/A
Fri-Sat	4/15-4/16	11pm-7am	N/A
PMTR Meteorologist			
Sat-Sun	4/9-4/10	11pm - 7am	N/A
Sun	10-Apr	7am - 3pm	ON CALL ONLY
Sun	10-Apr	3pm-11pm	N/A
Sun-Mon	4/10-4/11	11pm - 7am	N/A
Mon	11-Apr	7am - 3pm	ON CALL ONLY
Mon	11-Apr	3pm-11pm	N/A
Mon-Tue	4/11-12/5	11pm - 7am	N/A
Tue	12-Apr	7am - 3pm	ON CALL ONLY
Tue	12-Apr	3pm-11pm	N/A
Tue-Wed	4/12-13/6	11pm - 7am	N/A
Wed	13-Apr	7am - 3pm	ON CALL ONLY
Wed	13-Apr	3pm-11pm	N/A
Wed-Thur	4/13-4/14	11pm - 7am	N/A
Thur	14-Apr	7am - 3pm	ON CALL ONLY
Thur	14-Apr	3pm-11pm	N/A
Thur-Fri	4/14-4/15	11pm - 7am	N/A
Fri	15-Apr	7am - 3pm	ON CALL ONLY
Fri	15-Apr	3pm-11pm	N/A
Fri-Sat	4/15-4/16	11pm-7am	N/A
		Reactor Safety Team	

Japan Earthquake ERO Staffing Roster
April 10-16, 2011
Pay Period 9 - Week 1

RST Director			
Sat-Sun	4/9-4/10	11pm - 7am	Fred Brown
Sun	10-Apr	7am - 3pm	Dave Skeen
Sun	10-Apr	3pm-11pm	Pat Hiland
Sun-Mon	4/10-4/11	11pm - 7am	Fred Brown
Mon	11-Apr	7am - 3pm	
Mon	11-Apr	3pm-11pm	
Mon-Tue	4/11-12/5	11pm - 7am	
Tue	12-Apr	7am - 3pm	
Tue	12-Apr	3pm-11pm	
Tue-Wed	4/12-13/6	11pm - 7am	
Wed	13-Apr	7am - 3pm	
Wed	13-Apr	3pm-11pm	
Wed-Thur	4/13-4/14	11pm - 7am	
Thur	14-Apr	7am - 3pm	
Thur	14-Apr	3pm-11pm	
Thur-Fri	4/14-4/15	11pm - 7am	
Fri	15-Apr	7am - 3pm	
Fri	15-Apr	3pm-11pm	
Fri-Sat	4/15-4/16	11pm-7am	
RST Coordinator			
Sat-Sun	4/9-4/10	11pm - 7am	
Sun	10-Apr	7am - 3pm	
Sun	10-Apr	3pm-11pm	
Sun-Mon	4/10-4/11	11pm - 7am	
Mon	11-Apr	7am - 3pm	
Mon	11-Apr	3pm-11pm	
Mon-Tue	4/11-12/5	11pm - 7am	
Tue	12-Apr	7am - 3pm	
Tue	12-Apr	3pm-11pm	
Tue-Wed	4/12-13/6	11pm - 7am	
Wed	13-Apr	7am - 3pm	
Wed	13-Apr	3pm-11pm	
Wed-Thur	4/13-4/14	11pm - 7am	
Thur	14-Apr	7am - 3pm	
Thur	14-Apr	3pm-11pm	
Thur-Fri	4/14-4/15	11pm - 7am	
Fri	15-Apr	7am - 3pm	
Fri	15-Apr	3pm-11pm	
Fri-Sat	4/15-4/16	11pm-7am	
Severe Accident/PRA			
Sat-Sun	4/9-4/10	11pm - 7am	
Sun	10-Apr	7am - 3pm	
Sun	10-Apr	3pm-11pm	

Sun-Mon	4/10-4/11	11pm - 7am	
Mon	11-Apr	7am - 3pm	
Mon	11-Apr	3pm-11pm	
Mon-Tue	4/11-12/5	11pm - 7am	
Tue	12-Apr	7am - 3pm	
Tue	12-Apr	3pm-11pm	
Tue-Wed	4/12-13/6	11pm - 7am	
Wed	13-Apr	7am - 3pm	
Wed	13-Apr	3pm-11pm	
Wed-Thur	4/13-4/14	11pm - 7am	
Thur	14-Apr	7am - 3pm	
Thur	14-Apr	3pm-11pm	
Thur-Fri	4/14-4/15	11pm - 7am	
Fri	15-Apr	7am - 3pm	
Fri	15-Apr	3pm-11pm	
Fri-Sat	4/15-4/16	11pm-7am	
BWR Expertise			
Sat-Sun	4/9-4/10	11pm - 7am	
Sun	10-Apr	7am - 3pm	
Sun	10-Apr	3pm-11pm	
Sun-Mon	4/10-4/11	11pm - 7am	
Mon	11-Apr	7am - 3pm	
Mon	11-Apr	3pm-11pm	
Mon-Tue	4/11-12/5	11pm - 7am	
Tue	12-Apr	7am - 3pm	
Tue	12-Apr	3pm-11pm	
Tue-Wed	4/12-13/6	11pm - 7am	
Wed	13-Apr	7am - 3pm	
Wed	13-Apr	3pm-11pm	
Wed-Thur	4/13-4/14	11pm - 7am	
Thur	14-Apr	7am - 3pm	
Thur	14-Apr	3pm-11pm	
Thur-Fri	4/14-4/15	11pm - 7am	
Fri	15-Apr	7am - 3pm	
Fri	15-Apr	3pm-11pm	
Fri-Sat	4/15-4/16	11pm-7am	
RST Comm/ERDS Operator			
Sat-Sun	4/9-4/10	11pm - 7am	
Sun	10-Apr	7am - 3pm	
Sun	10-Apr	3pm-11pm	
Sun-Mon	4/10-4/11	11pm - 7am	
Mon	11-Apr	7am - 3pm	
Mon	11-Apr	3pm-11pm	
Mon-Tue	4/11-12/5	11pm - 7am	

Tue	12-Apr	7am - 3pm	
Tue	12-Apr	3pm-11pm	
Tue-Wed	4/12-13/6	11pm - 7am	
Wed	13-Apr	7am - 3pm	
Wed	13-Apr	3pm-11pm	
Wed-Thur	4/13-4/14	11pm - 7am	
Thur	14-Apr	7am - 3pm	
Thur	14-Apr	3pm-11pm	
Thur-Fri	4/14-4/15	11pm - 7am	
Fri	15-Apr	7am - 3pm	
Fri	15-Apr	3pm-11pm	
Fri-Sat	4/15-4/16	11pm-7am	
RST Support (Seismology Q&A)			
Sat-Sun	4/9-4/10	11pm - 7am	
Sun	10-Apr	7am - 3pm	
Sun	10-Apr	3pm-11pm	
Sun-Mon	4/10-4/11	11pm - 7am	
Mon	11-Apr	7am - 3pm	
Mon	11-Apr	3pm-11pm	
Mon-Tue	4/11-12/5	11pm - 7am	
Tue	12-Apr	7am - 3pm	
Tue	12-Apr	3pm-11pm	
Tue-Wed	4/12-13/6	11pm - 7am	
Wed	13-Apr	7am - 3pm	
Wed	13-Apr	3pm-11pm	
Wed-Thur	4/13-4/14	11pm - 7am	
Thur	14-Apr	7am - 3pm	
Thur	14-Apr	3pm-11pm	
Thur-Fri	4/14-4/15	11pm - 7am	
Fri	15-Apr	7am - 3pm	
Fri	15-Apr	3pm-11pm	
Fri-Sat	4/15-4/16	11pm-7am	
RST Support (Structural)			
Sat-Sun	4/9-4/10	11pm - 7am	Off (On Call)
Sun	10-Apr	7am - 3pm	Off (On Call)
Sun	10-Apr	3pm-11pm	Off (On Call)
Sun-Mon	4/10-4/11	11pm - 7am	Off (On Call)
Mon	11-Apr	7am - 3pm	Off (On Call)
Mon	11-Apr	3pm-11pm	Off (On Call)
Mon-Tues	4/11-12/5	11pm - 7am	Off (On Call)
Tues	12-Apr	7am - 3pm	Off (On Call)
Tues	12-Apr	3pm-11pm	Off (On Call)
Tues-Wed	4/12-13/6	11pm - 7am	Off (On Call)
Wed	13-Apr	7am - 3pm	Off (On Call)

Japan Earthquake ERO Staffing Roster
April 10-16, 2011
Pay Period 9 - Week 1

Wed	13-Apr	3pm-11pm	Off (On Call)
Wed-Thur	4/13-4/14	11pm - 7am	Off (On Call)
Thur	14-Apr	7am - 3pm	Off (On Call)
Thur	14-Apr	3pm-11pm	Off (On Call)
Thur-Fri	4/14-4/15	11pm - 7am	Off (On Call)
Fri	15-Apr	7am - 3pm	Off (On Call)
Fri	15-Apr	3pm-11pm	Off (On Call)
Fri-Sat	4/15-4/16	11pm-7am	Off (On Call)

Position	Date	Time	Staff
ET Director	03/17 - 03/18	11pm - 7am	Roy Zimmerman
ET Response Advisor	03/17 - 03/18	11pm - 7am	Scott Morris
ET Rx Prot Measures & State Coordinator	03/17 - 03/18	11pm - 7am	Dan Dorman
EBT Admin Assistant	03/17 - 03/18	11pm - 7am	Tia Pope
EBT Coordinator	03/17 - 03/18	11pm - 7am	Yen-Ju Chen
EST Status Officer	03/17 - 03/18	11pm - 7am	Jeff Grant
EST Actions Officer	03/17 - 03/18	11pm - 7am	Open
EST Coordinator	03/17 - 03/18	11pm - 7am	Rebecca Stone
EST Chronology Officer	03/17 - 03/18	11pm - 7am	Thomas Scarbrough
EST Response Ops Mgr	03/17 - 03/18	11pm - 7am	Omar Khan
EST Admin Assistant	03/17 - 03/18	11pm - 7am	Linda Williamson
LT Director	03/17 - 03/18	11pm - 7am	Tom Blount
LT Coordinator	03/17 - 03/18	11pm - 7am	Jeff Temple
LT Federal Liason	03/17 - 03/18	11pm - 7am	Scott Sloan
LT Congressional Liason	03/17 - 03/18	11pm - 7am	Nadar Mamish / Brian Wittick / Mugeh Afshar - Tous
PMTR Director	03/17 - 03/18	11pm - 7am	Aby Mohseni
PMTR Coordinator	03/17 - 03/18	11pm - 7am	Lou Brandon
PMTR Prot Actions Asst. Dir.	03/17 - 03/18	11pm - 7am	Greg Casto
PMRT RAAD	03/17 - 03/18	11pm - 7am	Randy Sullivan
PMRT Dose Assessment (RASCAL)	03/17 - 03/18	11pm - 7am	Kimberly Gambone / Joe DiCicco
PMRT GIS Analyst	03/17 - 03/18	11pm - 7am	Stephanie Devin
PMRT Meteorologist	03/17 - 03/18	11pm - 7am	Dave Brown
RST Director	03/17 - 03/18	11pm - 7am	Eric Thomas
Severe Accident / PRA	03/17 - 03/18	11pm - 7am	Open
BWR Expertise	03/17 - 03/18	11pm - 7am	Eva Brown
RST Comm / ERDS Operator	03/17 - 03/18	11pm - 7am	Ken Hart

SEISMOLOGY STRUCTURAL CALLOUT INFORMATION

~~**SENSITIVE INFORMATION**~~

DO NOT DISTRIBUTE ~~OUTSIDE OF NRC~~ OPERATIONS CENTER

RST Support (Seismology Q&A)	PHONE
Michelle Bensi	(b)(6)
Nilesh Chokchi	
Stephanie Devlin	
Annie Kammerer	
Cliff Munson	
Dogan Seber	
Alice Stieve	

RST Support (Structural)
John Ma
Pravin Patel
Bret Tegeler

From: Susco, Jeremy
Sent: Tuesday, April 05, 2011 11:08 AM
To: Mroz (Sahm), Sara
Subject: Ops center

Hi Sarah,

As of now, are Ops Center operations planned for the following week (week of 4/11) too?

Jeremy

Sent from my NRC BlackBerry
Jeremy Susco
(b)(6)

DJ/45

From: Stang, Annette
Sent: Tuesday, April 05, 2011 12:28 PM
To: Chen, Yen-Ju; Lovell, Louise
Cc: Mroz (Sahm), Sara
Subject: RE: EBT Admin Asst

Thank you Yen.

From: Chen, Yen-Ju
Sent: Tuesday, April 05, 2011 12:25 PM
To: Lovell, Louise
Cc: Stang, Annette; Mroz (Sahm), Sara
Subject: RE: EBT Admin Asst

From the attached EDO Update, we will continue for another week if there is a shutdown. Then, I believe we will receive additional instructions if the shutdown is longer than 1 week.

From: Lovell, Louise
Sent: Tuesday, April 05, 2011 11:56 AM
To: Chen, Yen-Ju
Cc: Stang, Annette; Mroz (Sahm), Sara
Subject: EBT Admin Asst

Thanks, Yen.
I'm only scheduled for this Friday 3pm to 11pm. I had thought to stop by this noon and see if someone signed up for the Wed time, hopefully.

I'll come by this afternoon to meet with Annette Stang; that would be great to get complete information; I was simply following along with what others had done.

Is there any guidance on the shutdown? (I'm scheduled for next week I think).

Louise

From: Chen, Yen-Ju
Sent: Tuesday, April 05, 2011 11:18 AM
To: Lovell, Louise
Cc: Stang, Annette; Mroz (Sahm), Sara
Subject: RE: EBT Admin Asst

Hi, Louise:

We are evaluating the staffing for EBT. We may decide to eliminate 7-3 shift completely. We will know for sure later today.

I apologize that I did not give you a complete training on EBT Administrative Assistant position. Annette Stang has been doing it for a few weeks. She will be at the Ops Ctr on April 5 & 6, between 3-11 pm. I think it would be beneficial for you to stop by the Ops Ctr during these time slots to receive the complete information from Annette.

Thanks,

DJ/46

Yen

From: Lovell, Louise
Sent: Friday, April 01, 2011 5:49 PM
To: Chen, Yen-Ju
Subject: EBT Admin Asst

Hi Yen,
It looks like Jon Fiske took the 7-3pm slots this coming week.
Let me know if you need additional support.
At this point, I'm only signed up for April 8 Friday evening 3-11pm.
Thanks,
Louise

Ps—if needed, my home phone is (b)(6)

From: Wong, Pamela
Sent: Friday, April 08, 2011 7:17 PM
To: Mroz (Sahm), Sara
Subject: RE: Ops Center Staffing

Sara, please let me know if I can work the 3 pm – 11 pm shift on Friday, April 15, 2011.

Thank you, Pam

From: Mroz (Sahm), Sara
Sent: Wednesday, April 06, 2011 4:12 PM
To: Glenn, Nichole
Cc: Wong, Pamela
Subject: RE: Ops Center Staffing

Thanks Nichole and thanks Pam!
We're hoping to have people who are already trained fill the slots, but should we come up short, I'll definitely get in touch with you Pam!
Have fun with your family Nichole! And thanks for all you did to help out!
-Sara

From: Glenn, Nichole
Sent: Wednesday, April 06, 2011 3:56 PM
To: Mroz (Sahm), Sara
Cc: Wong, Pamela
Subject: Ops Center Staffing

Hi, Sara,

Haven't seen you in a couple of weeks, so I hope you're hanging in there.

(b)(6) so I won't be as readily available as usual—however, one of my coworkers, Pam Wong, has expressed interest in helping out if there are gaps she can fill. I'll leave you two to negotiate schedules, but if you could use another set of hands, Pam is a conscientious person who would do a great job!

Thanks!

Nichole

Nichole Glenn, PMP®, LSSGB
Sr. Program/Business Analyst
NRR/Center for Planning & Analysis
301.415.3019

DJ/47

From: Harrington, Holly
Sent: Thursday, April 28, 2011 10:18 AM
To: Mroz (Sahm), Sara
Subject: RE: Blog Comment Response

It's really too late now

From: Mroz (Sahm), Sara
Sent: Wednesday, April 27, 2011 5:50 PM
To: Harrington, Holly
Subject: Blog Comment Response
Importance: High

Can we post this in response to the one comment on the blog?

04/28/11	9:30 A.M.	PART 1 - Briefing on Status of NRC Response to Events in Japan and Briefing on Station Blackout (PUBLIC MEETING) (Contact: George Wilson, 301-415-1711) Webcast
	11:30 A.M.	PART 2 - Briefing on Status of NRC Response to Events in Japan and Briefing on Station Blackout – Security Issues (Closed Ex. 3)

-Sara

Sara K. Mroz
Communications and Outreach
Office of Nuclear Security and Incident Response
US Nuclear Regulatory Commission
301-415-1692 (direct)
sara.mroz@nrc.gov

DJ/48

From: McDermott, Brian
Sent: Saturday, April 30, 2011 5:48 AM
To: Morris, Scott
Subject: Re: Japan Speaking Requests Coordination

May need you to work with Mindy if they are not doing enough to get at our concerns.

Brian

Brian J. McDermott, Director
Division of Preparedness and Response
(b)(6) (mobile)

From: Morris, Scott
To: McDermott, Brian
Sent: Fri Apr 29 10:06:44 2011
Subject: RE: Japan Speaking Requests Coordination

I have the same concern ... glad that Sara and OEDO are engaged.

At this point any presentations should be just the facts as we know them ...

From: McDermott, Brian
Sent: Friday, April 29, 2011 5:51 AM
To: Morris, Scott
Subject: Fw: Japan Speaking Requests Coordination

JW and I spoke with Sara about this topic yesterday.

At present we see a gap and Sara is scoping out whether OEDO comms are going to fill, or if DPR will need to help.

Goal is to ensure that the variety of speakers on the FD event do no presuppose the TF results or speculate on what the Commission will decide to do. Concern would be with a presenter giving personal opinions on what they consider an "obvious" issues for action - we are not make projections on what the reviews will find. Need to let them do their work.

When we talk, I'll cover your/DPRs role.

Brian

Brian J. McDermott, Director
Division of Preparedness and Response
(b)(6) (mobile)

DJ/49

From: Mroz (Sahm), Sara
To: Rakovan, Lance
Cc: Landau, Mindy; McDermott, Brian
Sent: Thu Apr 28 15:24:32 2011
Subject: Japan Speaking Requests Coordination

Lance,
Can we talk about the coordination tool that you're creating for tracking requests for speakers about the Japan events? I'm available all day on Friday.
Thanks,
Sara

Sara K. Mroz
Communications and Outreach
Office of Nuclear Security and Incident Response
US Nuclear Regulatory Commission
301-415-1692 (direct)
sara.mroz@nrc.gov

From: Gonzalez, Maj Kimberly A. (b)(6)
Sent: Friday, March 18, 2011 8:44 AM
To: Anderson, James; LIA07 Hoc; Mroz (Sahm), Sara
Subject: March 18 USNRC Earthquake/Tsunami SitRep

Sir/Ma'am,

Could I please get a copy of this morning's USNRC Emergency Operations Center Status Update regarding the earthquake & tsunami? It would be greatly appreciated. We are working with our DoD teams in keeping our senior leadership apprised of the situation.

Regards,
Maj Kimberly Gonzalez

Kimberly A. Gonzalez, Major, USAF
DXI-4 WMD Issue Manager
202-231-7379

DJ/50

From: Anderson, James
Sent: Monday, March 21, 2011 11:52 PM
To: Simmers, Keith MAJ USA
Subject: RE: It is a go for putting USFJ on distribution

Major,

You and the other cc addresses have been added to our distribution.

Thank you,

Jim Anderson

Office of Nuclear Security and Incident Response
US Nuclear Regulatory Commission
james.anderson@nrc.gov
LIA07.HOC@nrc.gov (Operations center)

From: Simmers, Keith MAJ USA (b)(6)
Sent: Monday, March 21, 2011 8:53 AM
To: Anderson, James
Cc: (b)(6)
Subject: FW: It is a go for putting USFJ on distribution

Mr. Anderson,
Please include those in the 'cc' line for distribution of the daily USNRC Earthquake-Tsunami Update reports.

We understand that the report is "Official Use Only" and is only being shared within the federal family.

Thanks,
Keith

KEITH SIMMERS
MAJ, USA
Deputy Chief, Collaboration and Transition Division

From: Cook, William
Sent: Mon 3/21/2011 8:09 AM
To: Simmers, Keith MAJ USA
Subject: It is a go for putting USFJ on distribution

Major Simmers,
Please provide Jim Anderson with an appropriate email or email addresses and we will ensure USFJ gets the Update via email along with everyone else.
REgards,
Bill Cook

ps Jim's email address is on the cover email I provided you.

DJ/51

From: Holahan, Patricia
Sent: Sunday, March 13, 2011 10:12 PM
To: Stapleton, Bernard
Cc: Westreich, Barry
Subject: Re: ISB efforts during Japanese Nuclear Event

Thanks. Looking forward to the full debrief at 8 am tomorrow.

From: Stapleton, Bernard
To: Holahan, Patricia
Cc: Westreich, Barry
Sent: Sun Mar 13 22:07:56 2011
Subject: RE: ISB efforts during Japanese Nuclear Event

Today was slower for us. We staffed up at 9am (Jim Dodmead); I was onsite from 9am til 4pm. Darryl Parsons relieved Jim at 11:30 and stayed until 3pm. Wayne Rutz came in at 3pm and stayed til 6pm. Jane Marshall and Brian McDermott concurred in our dropping off at 6pm. They knew our contact information and that we could respond within 60 minutes.

We notified Ops Center shortly after 9:15am that National Security Advisor, Brennan, wanted to speak with the Chairman. Our secure comm. Center received the call from the White House Situation Room. Chairman was at home and ended up taking the call on his cell phone. Ops Center also received the request about 10 minutes later but with less information than we had so we filled in the gaps. We were notified by Ops Center that a secure video conference was scheduled for 11am, but it got cancelled after we set up with White House just before Marty was ready to walk over. We thought another one would be scheduled for later in the afternoon but it never materialized.

(b)(5)

Jack Ramsey has routine interaction with people on JWICS. I don't know who he interacts with but they are probably more technical than the people ILTAB corresponds with.

From: Holahan, Patricia
Sent: Sunday, March 13, 2011 9:46 PM
To: Stapleton, Bernard
Cc: Westreich, Barry
Subject: Re: ISB efforts during Japanese Nuclear Event

How did things go today? You didn't have to man it beyond 6? Why was Jack (b)(5) thru JWICS?

From: Stapleton, Bernard
To: Holahan, Patricia
Sent: Sun Mar 13 09:59:50 2011
Subject: RE: ISB efforts during Japanese Nuclear Event

DJ/52

Just speculating, but when I told Marty that Brennan was the National Security Advisor that might have caused Marty to request any additional information concerning National Security type issues. Timing seems about right.

Bern

From: Holahan, Patricia
Sent: Sunday, March 13, 2011 9:10 AM
To: Stapleton, Bernard
Subject: Re: ISB efforts during Japanese Nuclear Event

Todd just called. Matt has been asked to come in and go thru the intell info to see if there's anything else. I told Todd that you were standing up the SCIF, etc. So Matt is not planning on being there all day, but I told Todd to have him touch base with the Op Center before he leaves.

From: Stapleton, Bernard
To: Holahan, Patricia
Sent: Sat Mar 12 21:27:44 2011
Subject: RE: ISB efforts during Japanese Nuclear Event

Chairman did a good job with the White House in stating there is very little solid information and for people not to speculate. But, the Japanese Regulatory Authority said there was cesium, so there was a partial melt of the reactor fuel. About 1.5 meters of the reactor were exposed in unit 1. Two other units are having trouble with cooling. Salt water is being introduced and rad levels seem to have stabilized. Plume cloud would go out to sea and not over any population areas. 12 mile radius was evacuated. US sent people from NRC and NNSA to Japan with some radiation detection equipment from Nellis AFB in Las Vegas. Everyone seemed to agree it will not be a Chernobyl. More like a TMI. Primary reactor vessel did not rupture.

From: Holahan, Patricia
Sent: Saturday, March 12, 2011 8:12 PM
To: Stapleton, Bernard
Subject: Re: ISB efforts during Japanese Nuclear Event

And according to the news, there are mixed messages about a possible meltdown

---

From: Stapleton, Bernard
To: Holahan, Patricia
Sent: Sat Mar 12 19:46:31 2011
Subject: RE: ISB efforts during Japanese Nuclear Event

Thanks for the offer. No need to come in for staffing of the SCIF. I can see a few small things we'll change based on this event. Definitely a two person operation so I'm glad we double booked people. ISB staff was very quick to respond to my calls and nobody griped.

I thought the Op Center looked very professional.

The Japanese event seems to be stabilizing, but lots of concerns about poor information flow.

From: Holahan, Patricia
Sent: Saturday, March 12, 2011 7:33 PM
To: Stapleton, Bernard; Westreich, Barry
Subject: Re: ISB efforts during Japanese Nuclear Event

Thank you. Do you need Barry or I to come in tomorrow?

From: Stapleton, Bernard
To: Westreich, Barry; Holahan, Patricia
Sent: Sat Mar 12 19:08:49 2011
Subject: ISB efforts during Japanese Nuclear Event

Trish/Barry:

On Friday afternoon and early evening we staffed our SCIF and conference room and facilitated a secure video teleconference call with the White House Situation Room and several other government agencies (DoD, DOE, FEMA, DHS, USAID, State, etc.). The Chairman and NRR were the lead officials. The call lasted approximately 90 minutes.

This morning I was called by the Operations Center to staff our facililty Saturday morning for another White House conference call (this time the Chairman was at the White House but Marty V. was on the call in our SCIF with others from the Op Center) and we responded with Jim Dodmead, Darryl Parsons, and myself staffing the center from 10am until 3:30pm.

We were also asked to open the SCIF for JWICS accounts for OIP. This occurred at 5-6pm.

We will staff the SCIF again on Sunday morning from 9am until 6pm as we expect another White House conference call and JWICS account use by OIP.

I intend to go back to normal staffing for Monday. Staff time from Friday evening thru Sunday will be approximately 40 hours. Our staffing was coordinated with Jane Marshall, Op Center Branch Chief. I decided not to staff on a 24/7 basis and Jane concurred in this.

Any questions, call me at (b)(6)

Bern

From: Holahan, Patricia
Sent: Tuesday, March 15, 2011 5:02 PM
To: Westreich, Barry
Subject: FW: Japan's nuclear emergency

From: Sandler, Ben CIVILIAN (b)(6)
Sent: Tuesday, March 15, 2011 7:38 AM
To: Whitney, James; Hahn, Matthew; Pearson, Laura; Allston, Dennis; Johnson, Daryl; Masse, Todd
Cc: Warren, Roberta; Holahan, Patricia; Jones, Cynthia; Way, Ralph
Subject: Japan's nuclear emergency

Here's a nice open source timeline of events regarding the current situation in Japan. The timeline has associated graphics.

http://www.washingtonpost.com/wp-srv/special/world/japan-nuclear-reactors-and-seismic-activity/

-Ben

Benjamin M. Sandler
Senior Intelligence Specialist
Defense Threat Reduction Agency
U.S. Department of Defense
Phone (b)(6)
Unclass

DJ/53

From: Holahan, Patricia
Sent: Sunday, March 20, 2011 9:11 AM
To: Johnson, Clay; Brady, Denis
Cc: Westreich, Barry
Subject: Re: Question

Thanks. We got some info last night that there is concrete on top of the reactor building so you may want to talk to the RST about what your actually trying to do.

----- Original Message -----
From: Johnson, Clay
To: Holahan, Patricia; Brady, Denis
Cc: Westreich, Barry
Sent: Sun Mar 20 09:05:49 2011
Subject: Re: Question

On it.

Sent from an NRC Blackberry
Clay Johnson
(b)(6)

----- Original Message -----
From: Holahan, Patricia
To: Johnson, Clay; Brady, Denis
Cc: Westreich, Barry
Sent: Sat Mar 19 23:40:53 2011
Subject: Question

----- Original Message -----
From: Holahan, Patricia
To: Johnson, Clay; Brady, Denis
Cc: Westreich, Barry
Sent: Sat Mar 19 23:28:56 2011
Subject: Japan

Do you remember the question I asked you the other day - the one about nonexplosively breaching the roof of a reactor. Well, it's now a high priority and we were wondering if either of you were available tomorrow to go in during the day and brainstorm the question. We may have to pull in our contractors.

Thanks, Trish

DJ/54

From: Holahan, Patricia
Sent: Saturday, April 09, 2011 1:46 PM
To: (b)(6) Holahan, Vincent
Subject: FW: Japan Event Info. Website URIs

These are all public available websites.

From: RST02 Hoc
Sent: Saturday, April 09, 2011 12:26 PM
To: Holahan, Patricia
Subject: FW: Japan Event Info. Website URIs

Patricia,

FYI.

Mark

From: RST02 Hoc
Sent: Saturday, April 09, 2011 11:40 AM
To: Allston, Dennis
Subject: Japan Event Info. Website URIs

Dennis,

Here are the URLs I am using to get info. On the Japan event – perhaps this is useful to PACOM:

TEPCO: http://www.tepco.co.jp/en/index-e.html
JAIF: http://www.jaif.or.jp/english/
IAEA News: http://www.iaea.org/newscenter/news/tsunamiupdate01.html
NISA: http://www.nisa.meti.go.jp/english/press/index.html
NEI: http://www.nei.org/newsandevents/newsreleases/?year=2011

Mark (Ops. Center)

DJ/55

From: Holahan, Patricia
Sent: Saturday, April 09, 2011 4:12 PM
To: Hoc, PMT12
Subject: Fw: Japan Event Info. Website URIs

Can you ask the RST this question please?

----- Original Message -----
From: Holahan, Eugene V SES PACOM, J91 <(b)(6)
To: Holahan, Patricia
Sent: Sat Apr 09 13:50:56 2011
Subject: RE: Japan Event Info. Website URIs

Familiar with these sites. Is the NRC situation update based solely on these websites or is additional information from TEPCO used to augment it??? Is any information received directly from TEPCO used to develop the situation report?

thx

-----Original Message-----
From: Holahan, Patricia [mailto:Patricia.Holahan@nrc.gov]
Sent: Saturday, April 09, 2011 7:46
To: Holahan, Eugene V SES PACOM, J91; Holahan, Vincent
Subject: FW: Japan Event Info. Website URIs

These are all public available websites.

From: RST02 Hoc
Sent: Saturday, April 09, 2011 12:26 PM
To: Holahan, Patricia
Subject: FW: Japan Event Info. Website URIs

Patricia,

FYI.

Mark

From: RST02 Hoc

DJ/56

Sent: Saturday, April 09, 2011 11:40 AM
To: Allston, Dennis
Subject: Japan Event Info. Website URls

Dennis,

Here are the URLs I am using to get info. On the Japan event - perhaps this is useful to PACOM:

TEPCO: http://www.tepco.co.jp/en/index-e.html

JAIF: http://www.jaif.or.jp/english/

IAEA News: http://www.iaea.org/newscenter/news/tsunamiupdate01.html

NISA: http://www.nisa.meti.go.jp/english/press/index.html

NEI: http://www.nei.org/newsandevents/newsreleases/?year=2011

Mark (Ops. Center)

From: Holahan, Patricia
Sent: Monday, April 11, 2011 9:05 PM
To: Holahan, Vincent
Subject: Re: FYI: ILTAB support for Japan

No, because Tony was tied up and Barry was coming up to speed. Jim Whitney let COL Traub know before the call that NRC wouldn't be participating today. We'll be on Wednesday.

From: Holahan, Vincent
To: Holahan, Patricia
Sent: Mon Apr 11 19:00:55 2011
Subject: RE: FYI: ILTAB support for Japan

The Radiological Community of Interest conference call is at 1545 hr on MWF. Should the Monday hours of operation be extended so NRC can participate in this call. No participation today from NRC.

Vince

From: Holahan, Patricia
Sent: Monday, April 11, 2011 4:47 PM
To: Uhle, Jennifer; Wiggins, Jim; Boger, Bruce; Zimmerman, Roy; Johnson, Michael; Dyer, Jim; Carpenter, Cynthia; Weber, Michael; Virgilio, Martin
Cc: Evans, Michele; Masse, Todd; Erlanger, Craig; Westreich, Barry; Holahan, Vincent; (b)(6) Stapleton, Bernard
Subject: FYI: ILTAB support for Japan

Given the relative and substantial decrease in the flow of intelligence related to the situation in Japan, and consistent with the initiative to have NRC line organizations continue to support the NRC team in Japan, NSIR's Intelligence Liaison and Threat Assessment (ILTAB) Branch is taking the following actions:

- ILTAB will discontinue its own Situation Report (SitRep). The branch will, however, continue to coordinate the classified *Defense Intelligence Report* with the NRC Protective Measures and Reactor Safety Teams, as well we with the Intelligence Community and Pacific Command (PACOM). The once daily produced NRC Emergency Operations Center Status Update is included in the *Defense Intelligence Report.*

- ILTAB will continue to monitor intelligence related to Japan for any items which remain high priority intelligence requirements. Any such items will be provided immediately to the Chairman, the ET, and will be included in the intelligence pouch for provision to the Commission and others as deemed necessary.

- ILTAB will continue to coordinate secure teleconferences and secure calls with PACOM and DNI representatives to ensure they are receiving appropriate technical assessments of reactor safety and health to inform their decision-making processes. Reactor safety team members will be requested to participate in these calls.

DJ | 57

- ILTAB will no longer staff the TWF SCIF on the weekends. The ILTAB SCIF will be staffed from 5:30 to 18:00, Tuesday, Wednesday, and Friday, and from 5:30 until 16:00 Monday and Thursday.

- ILTAB will have a duty officer on 24x7 who can be reached through the Operations Center.

Thanks, Trish

Patricia K. Holahan
Director, Division of Security Operations
Office of Nuclear Security and Incident Response
U.S. Nuclear Regulatory Commission
Washington, DC 20555

(301) 415-6828 (work)
(b)(6)
patricia.holahan@nrc.gov

From: Holahan, Patricia
Sent: Wednesday, April 20, 2011 9:26 AM
To: Evans, Michele
Subject: Re: Hi

Not yet. Chuck sent an e-mail saying that things are changing so Marty and I are going to call Chuck to determine what he actually believes he needs

----- Original Message -----
From: Evans, Michele
To: Holahan, Patricia
Sent: Wed Apr 20 09:13:37 2011
Subject: Hi

Hope all is well. (b)(6)

Do we have any idea yet on number we will send to Japan?

Sent from an NRC Blackberry
Michele Evans

DJ/58

From: Holahan, Patricia
Sent: Wednesday, April 20, 2011 12:17 PM
To: Holahan, Vincent
Subject: Re: Hi there

So will they let you come home earlier?

----- Original Message -----
From: Holahan, Vincent
To: Holahan, Patricia
Sent: Wed Apr 20 12:13:57 2011
Subject: RE: Hi there

Also, have not had success reaching out to Japan from here. Our duty day is midnight to noon in Japan. Hard to synch time and availability. Most of my communication has been through PMT to Tony Huffert. Got an email from Chuck yesterday with apology that they would have emailed sooner but they are busy. Got it. Tried to return call and no one picks up. Best solution is being able to respond to Japan team and not initiate calls from here.

Off to the office.. Will reply from there.

LYM EV

-----Original Message-----
From: Holahan, Patricia
Sent: Wednesday, April 20, 2011 12:05 PM
To: Holahan, Vincent
Subject: Re: Hi there

I think that will work. I've already reached out to Eric and I'm going to work with Tony Ulses, Dave Skeen, Jon Joicouer, and Barry Westreich to be available on a rotating basis. Then we'll have you, Don, and Cyndi that have SCI on the PMT side. I already cleared it with Marty.

LYM, PK

----- Original Message -----
From: Holahan, Vincent
To: Holahan, Patricia
Sent: Wed Apr 20 11:15:09 2011
Subject: RE: Hi there

It sent on its own. Enough to drive you nuts.

Listening to industry call.

...will not be in the bubble all the time. I can imagine having very little to do with Fukushima after I get back. Your thoughts?

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

DJ/59

From: Holahan, Patricia
Sent: Wednesday, April 20, 2011 11:07 AM
To: Holahan, Vincent
Subject: Re: Hi there

You didn't complete your e-mail

----- Original Message -----
From: Holahan, Vincent
To: Holahan, Patricia
Sent: Wed Apr 20 10:53:50 2011
Subject: RE: Hi there

I have discussed this with Steve Greco in J57. My recommendation is no back fill. However, we need to establish and maintain regular communications. The COI call is not a good example of regular communications. Of particular importance is the ability to reach out to NRC and touch someone in the know. I do not want to be the defacto NRC contact for PACOM because I

-----Original Message-----
From: Holahan, Patricia
Sent: Wednesday, April 20, 2011 6:57 AM
To: Holahan, Eugene V SES PACOM, J91; Holahan, Vincent
Subject: RE: Hi there

(b)(6)

Are you hoping to find out today whether or not they want (and need) somebody else to replace you? We are looking for your recommendation.

LYM, PK

-----Original Message-----
From: Holahan, Eugene V SES PACOM, J91 (b)(6)
Sent: Tuesday, April 19, 2011 10:25 PM
To: Holahan, Patricia
Subject: RE: Hi there

(b)(6) Wonderful.

Going to try and contact Steve Reynolds now.

Sleep well.

LYM EV

-----Original Message-----
From: Holahan, Patricia [mailto:Patricia.Holahan@nrc.gov]
Sent: Tuesday, April 19, 2011 16:24
To: Holahan, Eugene V SES PACOM, J91
Subject: Re: Hi there

(b)(6)

LYM, PK

----- Original Message -----
From: Holahan, Eugene V SES PACOM, J91 (b)(6)
To: Holahan, Patricia
Sent: Tue Apr 19 22:09:57 2011
Subject: RE: Hi there

They are taking a long weekend from what I gather here as well. Friday will be a training holiday for the military. Don't know what they will do with the civilians. Op Tempo has slown down dramatically due to the reduction of meeting frequency. The daily meetings like the PUB is Sunday, Tuesday, Thursday except the last Sunday and next Sunday PUBs have been cancelled. The COI meetings are Tues and Thursday (Jim Whitney had equipment problems and didn't call in). Still have the daily NRC calls (to include weekends), but at least the 5 am call with industry has been more productive and contains more content than in recent weeks. Don't know if they will continue over the weekend or not. More important, OSTP wants to get involved. (b)(6)

(b)(6)

(b)(6) Was she in the ET? Not sure how that is related to Jim leaving early.

Will be leaving soon.

LYM EV

-----Original Message-----
From: Holahan, Patricia [mailto:Patricia.Holahan@nrc.gov]
Sent: Tuesday, April 19, 2011 15:51
To: Holahan, Eugene V SES PACOM, J91
Subject: Hi there

Haven't communicated with you since early am. (b)(6) (b)(6) and then I went to Marty's direct report meeting for Jim. Tomorrow is the AARM meeting and then Thurs is the Senior Leadership Meeting. Friday, I'm hoping to work half a day. We just heard that the Japanese team is taking a long weekend. Any word yet on whether the op tempo there is slowing down.

(b)(6)

LYM, PK

From: ANS.HOC@nrc.gov
Sent: Thursday, April 14, 2011 9:13 AM
Subject: ACTION: Commissioners Assistants Briefing Notification
Attachments: USNRC Earthquake-Tsunami Update.041311.1200EDT.pdf

There will be a Commissioners Assistants Briefing given by NRC HQ at 1000 EDT this morning, Thursday April 14, concerning the Reactor Events in Japan. Call 1-800-772-3842 approximately 5 minutes before the scheduled start time. When prompted, enter security code (b)6 You may call 301-816-5164 at this time and follow the voice prompts if you do not wish to receive this notification from our Automatic Notification System.

D3/60

FOR: James E. Dyer
Chief Financial Officer

FROM: R.W. Borchardt
Executive Director for Operations

Margaret M. Doane, Director
Office of international Programs

SUBJECT: RESOURCE IMPLICATIONS - FUKUSHIMA LONG-TERM INTERNATIONAL ENGAGEMENTS

PURPOSE:

(b)(5)

DISCUSSION:

(b)(5)

DJ/61

(b)(5)

(b)(5)

(b)(5)

(b)(5)

(b)(5)

(b)(5)

(b)(5)

(b)(5)

(b)(5)

From: Rivers, Joseph
Sent: Friday, March 11, 2011 4:14 PM
To: Giantelli, Joseph
Cc: Thomas, Eric
Subject: Re: JAPAN - Press of Interest: Radioactive Steam Could be Released from Troubled Plant

Joe,

(b)(5),(b)(6)

Joe
Sent from NRC Blackberry
Joe Rivers
Senior Level Advisor on Security
NSIR/DSP
US NRC
(b)(6)

From: Giantelli, Joseph
To: Rivers, Joseph
Cc: Thomas, Eric
Sent: Fri Mar 11 15:46:03 2011
Subject: RE: JAPAN - Press of Interest: Radioactive Steam Could be Released from Troubled Plant

Joe,
This information needs to taken with a grain of salt. The information below is lacking too many details to give a reasonable answer.

From: Rivers, Joseph
Sent: Friday, March 11, 2011 2:35 PM
To: Giantelli, Joseph
Cc: Caldwell, Robert; Giantelli, Adelaide
Subject: Fw: JAPAN - Press of Interest: Radioactive Steam Could be Released from Troubled Plant

Joe,

(b)(6) - any info you can provide would be helpful.

On the other email - Steve Chase is one of our contacts at FEMA.

Thanks,

Joe

Joe
Sent from NRC Blackberry
Joe Rivers
Senior Level Advisor on Security
NSIR/DSP

DJ/62

US NRC
(b)(6)

From: (b)(6)
To: Rivers, Joseph
Cc: Caldwell, Robert; Giantelli, Joseph; Giantelli, Adelaide
Sent: Fri Mar 11 14:32:27 2011
Subject: Re: JAPAN - Press of Interest: Radioactive Steam Could be Released from Troubled Plant

Joe R. Thanks for the connection!
Joe G. Would it be possible to get an answer to my question below? Uppers are asking!
Bob-great to have you on this email string!! Who should I put on my speed dial over the weekend?
(b)(6)

From: Rivers, Joseph <Joseph.Rivers@nrc.gov>
To (b)(6)
Cc: Caldwell, Robert <Robert.Caldwell@nrc.gov>; Giantelli, Joseph <Joseph.Giantelli@nrc.gov>; Giantelli, Adelaide <Adelaide.Giantelli@nrc.gov>
Sent: Fri Mar 11 14:20:47 2011
Subject: Re: JAPAN - Press of Interest: Radioactive Steam Could be Released from Troubled Plant

(b)(6)

I am not a reactor expert. But one of my colleagues, Adelaide Giantelli, said her husband was going to be very busy because of the Japanese reactor problems. You may want to check with Joe Giantelli.

Joe
Sent from NRC Blackberry
Joe Rivers
Senior Level Advisor on Security
NSIR/DSP
US NRC
(b)(6)

From (b)(6)
To: Rivers, Joseph
Sent: Fri Mar 11 14:16:20 2011
Subject: Fw: JAPAN - Press of Interest: Radioactive Steam Could be Released from Troubled Plant

Joe,
Is there someone who can answer my original question below or validate the answer from DOE?
Thanks!
(b)(6)

From: Bowman, David <David.Bowman@nnsa.doe.gov>
To (b)(6) Kratzenberg, Dean <Dean.Kratzenberg@nnsa.doe.gov>
Sent: Fri Mar 11 14:14:10 2011
Subject: RE: JAPAN - Press of Interest: Radioactive Steam Could be Released from Troubled Plant

(b) I am not a reactor guy – you will probably get a better answer from NRC. With that caveat, they are probably going to relieve pressure in containment through filters. The only thing that should come out is the noble gases, Krypton and Xenon. These are non-reactive and should disperse quickly.

From: (b)(6)
Sent: Friday, March 11, 2011 2:10 PM
To: Bowman, David; Kratzenberg, Dean
Subject: Fw: JAPAN - Press of Interest: Radioactive Steam Could be Released from Troubled Plant

Dave, what are the implications of this? Any idea what's in the steam? Will it all dissipate "up"?
Thanks (- know you're swamped)
(b)(6)

From: Bradford, Qiana Y.
To: #Earthquake
Sent: Fri Mar 11 13:48:53 2011
Subject: JAPAN - Press of Interest: Radioactive Steam Could be Released from Troubled Plant

Tokyo, March 12 Kyodo – Japanese authorities are nearing a decision to release radioactive steam from a troubled nuclear reactor, industry minister Benri Kaieda said Saturday. Kaieda was referring to the rising pressure inside the No.1 reactor at Fukushima No.1 plant, which was hit by a powerful earthquake Friday.

Source: OSC f8997

From: Opara, Stella
Sent: Monday, March 21, 2011 10:17 AM
To: Erlanger, Craig
Subject: RE: Information on Supporting the Operations Center During the Events in Japan

Ok, thank you!

From: Erlanger, Craig
Sent: Monday, March 21, 2011 10:15 AM
To: Opara, Stella
Subject: RE: Information on Supporting the Operations Center During the Events in Japan

My apologies. I din't see Lou's note #2, feel free to write Tony directly and indicate your shift preference. I'm fine with this for about ~ two weeks but then it is LICENSING time....
Craig

From: Opara, Stella
Sent: Monday, March 21, 2011 10:09 AM
To: Erlanger, Craig
Subject: FW: Information on Supporting the Operations Center During the Events in Japan

Craig,

I am interested in volunteering in the Ops Center to help provide support to the events in Japan. My intent is to help out two days a week, so I can still provide support to the cyber team as well. Please advise.

Thanks,

Stella Opara
USNRC/NSIR
Office: 301-415-5969

From: Cubellis, Louis
Sent: Friday, March 18, 2011 4:26 PM
To: Baxter, Brad; Biddison, John; Chalk, Wayne; Coflin, Monika; Cubellis, Louis; Erlanger, Craig; Harris, Paul; Lee, Eric; Nerret, Amanda; Opara, Stella; Pederson, Perry; Peduzzi, Francis; Resner, Mark; Rycyna, John; Tomlinson, John
Cc: Wastler, Sandra; Huyck, Doug; Caldwell, Robert; Correia, Richard; Layton, Michael; Prescott, Peter; Kohen, Marshall; Schnetzler, Bonnie; Shropshire, Alan; Rivers, Joseph; Bagley, Susan
Subject: Information on Supporting the Operations Center During the Events in Japan

Good afternoon,

I understand some of our branch members are interested in working in the Ops Center during the current activation. Earlier today, I spoke with Tony McMurtray, Executive Support Team Coordinator, and he related the following:

1) Interested personnel should obtain their branch chief's approval before volunteering to work in the Ops Center.

D3/63

2) Volunteers should provide the following information via e-mail to Tony (Anthony.McMurtray@nrc.gov) and the HQ Ops Officers (HOO.hoc@nrc.gov):
   a. First and last name
   b. Current position or title
   c. Office phone number
   d. Office location
   e. General shift(s) that you're willing to work (i.e., 7:00am – 3:00pm, 3:00 – 11:00pm, or 11:00pm – 7:00am)
   f. Area of expertise (e.g., BWR, dose assessment, fuels, nuclear, severe accident, systems analysis, T/H, etc.)
   g. Cell phone number, or other number where you can be reached outside your office

3) Anyone who has experience related to health physics or dose assessment is critically needed and can start work as soon as tomorrow's shifts (on the Protective Measures Team).

If you have any questions, please let me know.

Respectfully,

Lou

Louis J. Cubellis, Jr
Integrated Security Coordination Team Leader
U.S. Nuclear Regulatory Commission
Office of Nuclear Security and Incident Response
Division of Security Policy
Integrated Security Coordination and Policy Branch
11545 Rockville Pike
Rockville, MD 20852
Phone: (301) 415-7114
Cell: (b)(6)
Mail Stop: T-4F25M
E-mail: Louis.Cubellis@nrc.gov

From: Norris, Michael
Sent: Tuesday, April 19, 2011 3:40 PM
To: Dudek, Michael
Subject: RE: ACTION: Review of EPA vs. NRC re-entry guidance documents

Until when, after I have my first happy hour draft in front of me?

From: Dudek, Michael
Sent: Tuesday, April 19, 2011 3:01 PM
To: Norris, Michael
Subject: FW: ACTION: Review of EPA vs. NRC re-entry guidance documents

FYI – I would hold off on your review... ☹

Michael Dudek | Technical Assistant | NSIR/Division of Preparedness & Response | U.S. NRC
11555 Rockville Pike, Rockville, MD 20852 | ☎ (301) 415-6500 | ✉: Michael.Dudek@nrc.gov

---

From: Milligan, Patricia
Sent: Tuesday, April 19, 2011 2:40 PM
To: Merzke, Daniel; Zimmerman, Roy; Dudek, Michael; Williams, Kevin; McDermott, Brian; Wiggins, Jim; Dudek, Michael
Subject: Re: ACTION: Review of EPA vs. NRC re-entry guidance documents

The problem is they are apples and oranges and have nothing to do with each other. One is a recommendation for US citizens in a FOREIGN country (as in we have NO authority in the FOREIGN country) the other is a prescriptive document for use on US soil where the US government has some authority. These documents can't be compared side by side. Don't do it
Sent from my NRC Blackberry
Patricia A Milligan, CHP RPh
(b)(6)

From: Merzke, Daniel
To: Milligan, Patricia
Sent: Tue Apr 19 14:26:28 2011
Subject: RE: ACTION: Review of EPA vs. NRC re-entry guidance documents

I told Michael they need to come up with a Plan B. Yes, you're the expert, but you're not available. Somebody else has to be around who can compare the two documents. I told him to talk to Kevin Williams to see if they could round someone up to do it. I don't know if there's going to be any success.

From: Milligan, Patricia
Sent: Tuesday, April 19, 2011 2:15 PM
To: Merzke, Daniel
Subject: Re: ACTION: Review of EPA vs. NRC re-entry guidance documents

Totally
Sent from my NRC Blackberry
Patricia A Milligan, CHP RPh
(b)(6)

DJ/64

From: Merzke, Daniel
To: Milligan, Patricia
Sent: Tue Apr 19 14:13:45 2011
Subject: RE: ACTION: Review of EPA vs. NRC re-entry guidance documents

It's out of control.

From: Milligan, Patricia
Sent: Tuesday, April 19, 2011 2:12 PM
To: Merzke, Daniel
Subject: Fw: ACTION: Review of EPA vs. NRC re-entry guidance documents
Importance: High

Help
Sent from my NRC Blackberry
Patricia A Milligan, CHP RPh
(b)(6)

From: Dudek, Michael
To: Milligan, Patricia
Cc: Williams, Kevin; Holahan, Patricia; McDermott, Brian; Merzke, Daniel
Sent: Tue Apr 19 14:05:29 2011
Subject: ACTION: Review of EPA vs. NRC re-entry guidance documents

Trish,
I have receive this tasking from the ET and I believe that this is in your purview. Due date is ASAP for meeting at the White House tomorrow. Please refer all questions to PMT.

Question to be answered by NSIR:

An EPA drafted re-entry guidance document has come to light. We need this document to be reviewed as soon as possible against our own, noting similarities and disparities in the re-entry criteria. Sounds like there will be a principles meeting tomorrow morning, with the potential to be involved in meeting with National Security Staff at the White House.

This ticket is being tracked in the Japan SharePoint page (http://nsir-ops.nrc.gov/Lists/HOC%20Red%20Tickets/AllItems.aspx) under ticket number **4906.**

Please provide a response to this email to confirm receipt. Thank you,
Michael I. Dudek

Michael Dudek | Technical Assistant | NSIR/Division of Preparedness & Response | U.S. NRC
11555 Rockville Pike, Rockville, MD 20852 | ☎ (301) 415-6500 | ✉: Michael.Dudek@nrc.gov

---

From: Hoc, PMT12
Sent: Tuesday, April 19, 2011 1:10 PM
To: Dudek, Michael
Subject: ACTION: Review of EPA vs. NRC re-entry guidance documents
Importance: High

Michael,

An EPA drafted re-entry guidance document has come to light. We need this document to be reviewed as soon as possible against our own, noting similarities and disparities in the re-entry criteria. Sounds like there will be a principles

meeting tomorrow morning, with the potential to be involved in meeting with National Security Staff at the White House.

Please be diligent in assigning this task.

V/r,

Kimberly Gambone
PMT12

From: Kammerer, Annie
Sent: Friday, March 11, 2011 7:53 AM
To: Hasselberg, Rick
Subject: FW: preliminiary unconfirmed confidential information

FYI

From: Kammerer, Annie
Sent: Friday, March 11, 2011 7:52 AM
To: RES_DE_SGSEB; Chokshi, Nilesh; Bagchi, Goutam; Manoly, Kamal; Karas, Rebecca; Cook, Christopher; Sheron, Brian; Uhle, Jennifer; Case, Michael; Richards, Stuart
Subject: preliminiary unconfirmed confidential information

Fukushima (there are two plants...not sure which this occurred at): Station blackout. Loss of offsite power and the diesels didn't start. They are brining in generators from an outside facility

Onagawa 0.567g recorded at the base mat. Fire in the turbine building.

Tokai shook but no information yet.

Dr. Annie Kammerer, PE
Senior Seismologist and Earthquake Engineer
US Nuclear Regulatory Commission
Office of Nuclear Regulatory Research
Washington DC 20555
(b)(6) mobile
BB

DJ/65

From: Dozier, Jerry
Sent: Monday, March 14, 2011 8:13 AM
To: Lee, Samson; Hasselberg, Rick; Burnell, Scott
Cc: Cheok, Michael; Harrison, Donnie
Subject: FYI: Public Affairs information provided to Nuclear Engineering Students at MIT

My daughter is a graduate student at MIT...below is some of the information that is being disseminated regarding the Japanese event...some very impressive.

From: Frances Dozier [mailto:(b)(6)
Sent: Sunday, March 13, 2011 10:46 PM
To: Dozier, Jerry; Tami Dozier
Subject: Fwd: [ans-grads] Fwd: [ANS Board] Fukushima Update-7pm EDT, March 13, 2011

---------- Forwarded message ----------
From: **Jacob DeWitte** <jdewitte@mit.edu>
Date: Sun, Mar 13, 2011 at 10:15 PM
Subject: [ans-grads] Fwd: [ANS Board] Fukushima Update-7pm EDT, March 13, 2011
To: ANS Graduate Students <ans-grads@mit.edu>, ans-undergrads <ans-undergrads@mit.edu>

All,

You may have received an email from ANS President Joe Colvin regarding the events in Japan, here is some more information:

- This cite is doing a good job of aggregating news stories about the situation so you can track it as it evolves: http://ansnuclearcafe.org/

- Here is a pretty entry-level overview of what is happening: http://www.nytimes.com/interactive/2011/03/12/world/asia/the-explosion-at-the-japanese-reactor.html?nl=todaysheadlines&emc=tha2

- Here is a more detailed and technical-jargon oriented summary: http://www.world-nuclear-news.org/RS_Venting_at_Fukushima_Daiichi_3_1303111.html

The faculty have been addressing various media outlets nonstop over the weekend, and plan on addressing the Institute on Tuesday. ANS has also been contacted with the opportunity to post updates on a widely read blog to make sure correct and accurate information is being distributed. We need students to help post information, filter posts, and respond to posts on this site (which will soon be under NSE ownership) to make sure we get the right information out. If you are interested in participating, please let me know. We need to be transparent and honest with the community, and a lot of trust can be earned in the next few weeks if we handle this correctly.

Thanks,
Jake

DJ/66

---------- Forwarded message ----------
From: **COLVIN, Joe** <jfc@nei.org>
Date: Sun, Mar 13, 2011 at 7:49 PM
Subject: [ANS Board] Fukushima Update-7pm EDT, March 13, 2011
To: Board of Directors <board@list.ans.org>

ANS Board Members

This is the 7pm EDT update on the situation at Fukushima.

Joe Colvin

March 13, 2011, 7 p.m. EDT Update

Fukushima Daiichi

The hydrogen explosion on March 11 between the primary containment vessel and secondary containment building of the reactor did not damage the primary containment vessel or the reactor core. To control the pressure of the reactor core, TEPCO began to inject seawater and boric acid into the primary containment vessels of Unit 1 on March 12 and Unit 3 on March 13. There is likely some damage to the fuel rods contained in reactors 1 and 3.

At both reactors 1 and 3, seawater and boric acid is being injected into the reactor using fire pumps. On reactor 3, a pressure relief valve in the containment structure failed to open, but was restored by connecting an air pressure to the line driving valve operation.

The water level in the reactor vessel of reactor 2 reactor is steady.

Personnel from TEPCO are closely monitoring the status of all three reactors.

The highest recorded radiation level at the Fukushima Daiichi site was 155.7 millirem at 1:52 p.m. on March 13. Radiation levels were reduced to 4.4 millirem by the evening of March 13. The NRC's radiation dose limit for the public is 100 millirem per year.

Japanese government officials acknowledged the potential for partial fuel meltdowns at Fukushima Daiichi Unit 1 and 3 reactors, but there is no danger for core explosion, as occurred at the nuclear power station at Chernobyl in 1986. Control rods have been successfully inserted at all of the reactors, thereby ending the chain reaction. The reactor cores at Fukushima Daiichi and Daini power stations are surrounded by steel and concrete containment vessels of 40 to 80 inches thick that are designed to contain radioactive materials.

Fukushima Daini

The Fukushima Daini plants remains in a state of emergency. There is electricity available at all four of the reactors at Fukushima Daini, although there is limited availability of the cooling water pumps at reactors 1, 2 and 4.

TEPCO is working to maintain constant cooling in the primary containment vessels of those reactors. No radioactivity has been recorded outside of the secondary containment buildings at Fukushima Daini, according to TEPCO.

Two other nuclear power plants in the Tohoku region, Onagawa Nuclear Power Station and Tokai Nuclear Power Station, were automatically shut down in response to the earthquake. The four reactors at these plants have functioning cooling systems and are being monitored by plant operators.

The Rokkasho Reprocessing Plant and accompanying facilities, located far north of the tsunami zone in Rokkasho Town, is operating safely on backup power generation systems.

Japanese nuclear facilities are designed to withstand powerful seismic events, such as earthquakes. In this earthquake—the strongest recorded over the past 100 years in Japan—the containment structures of Fukushima Daiichi maintained their structural integrity. These facilities were designed to withstand tsunamis within a range of assumed strength, however the force of the tsunami on March 10 exceeded the assumed range and flooded diesel generators at Fukushima Daiichi power station. This precipitating the loss of power for the reactor cooling systems.

The automatic shutdown of the 11 operating reactors at the Onagawa Nuclear Power Station, Tokai Nuclear Power Station, Fukushima Daiichi and Daini, represents a loss of 3.5% of electric generation capacity for Japan.

FOLLOW US ON

An official energy sponsor of the Washington Capitals

Board mailing list
Board@list.ans.org

Ans-grads mailing list
Ans-grads@mit.edu
http://mailman.mit.edu/mailman/listinfo/ans-grads

From: Vargo, George <gvargo@state.pa.us>
Sent: Thursday, April 07, 2011 11:21 AM
To: Tosh Ushino (b)(6) Dan Strom (b)(6) Dan Strom (strom@pnl.gov); George J. Vargo (vargo@physicist.net); Reeves, Glen I. CONTRACTOR; Hasselberg, Rick; 'Ronald E Goans, MD, PhD'; Whitehead, Jeffrey; Allard, David; Barnhart, James; Chippo, John (DEP); Easton, Randolph; Gallagher, Dennis (DEP); Gilcrist, Tara; Handley, Lu-Ann; Janati, Rich; Kutchman, Randy; Melnic, Joseph; Seiber, Benjamin; Skelton, Donielle; Tamanini, Henry; Wagner, William
Cc: George J Vargo; 'Susan E. Vargo'; 'Vargo Susan'; 'Karen Barcal'
Subject: Fukushima Daiichi NPP Update #29 - 4/7/11
Attachments: Fukushima_Daiichi_NPP_Status_Report#0029-040711-1100.doc

DJ/67

Fukushima Daiichi NPP Status Report #29 April 7, 2011 – 1100
(4/XX/11 0000 JST)

Ed. Note: In the General Electric Mark 1 containment, air is displaced by nitrogen during power operations. This is done to prevent the production of an explosive hydrogen-oxygen environment in the event of a loss of coolant to the reactor core. The zirconium/water reaction that generates hydrogen has a threshold around 1800°F. Some of the items below note that the plant operator is once again adding nitrogen to the containments of the affected units in order to prevent further accumulations of combustible or explosive gas mixtures.

Photographs: Thanks to Robin Hill of PNNL for the following link to high-resolution photographs from the Fukushima Daiichi site:
http://cryptome.org/eyeball/daiichi-npp/daiichi-photos.htm
###

From **IAEA** (http://www.iaea.org/newscenter/news/tsunamiupdate01.html) accessed 4/7/11 0820:

Fukushima Nuclear Accident Update (6 April 2011, 15:15 UTC)

Japanese authorities have informed the IAEA that TEPCO has been authorized to begin injection of nitrogen into the primary containment vessel (PCV) of Unit 1 at the Fukushima Daiichi nuclear power plant. Injection of nitrogen is intended to displace oxygen inside the containment vessel, thereby reducing a risk of explosion due to the combustible combination of hydrogen and oxygen.
###

From **NEI** (http://www.nei.org/newsandevents/information-on-the-japanese-earthquake-and-reactors-in-that-region/) accessed 4/6/11 1430:

UPDATE AS OF 11:30 A.M. EDT, WEDNESDAY, APRIL 6:
Tokyo Electric Power Co. (TEPCO) today began injecting nitrogen into the containment vessel of reactor 1 at the Fukushima Daiichi nuclear power plant. Nitrogen, an inert gas, is used in reactor containment vessels to stabilize the atmosphere and prevent ignition of the hydrogen that is believed to be accumulating inside the containment. The injection will proceed slowly, at 10 percent of the normal rate. It is expected to take six days to complete the process.

TEPCO has stopped a leak of highly radioactive water from the site into the Pacific Ocean. TEPCO had been trying various means to plug the leak in a concrete enclosure that carries electric cables since it was discovered Saturday. Pouring concrete and later an absorbent polymer into the enclosure were unsuccessful.

On Monday, workers injected a colored liquid tracer into the system of enclosures to determine the flow path of the water. It showed that the radioactive water may be leaking from a cracked

pipe, and then seeping through gravel into the concrete enclosure. Additional testing showed leakage from the crack in the enclosure into the ocean.

Beginning yesterday, TEPCO injected approximately 1,600 gallons of liquid glass into the system, which stanched the flow of water. TEPCO is considering injecting more liquid glass into the area as a preventive measure.

Workers continue to inject cooling water into reactors 1, 2 and 3 and to the used fuel storage pools at reactors 1-4. Radioactive water in the turbine buildings continues to hinder efforts to fully restore cooling functions.

Some residents of the 20-kilometer (12.5-mile) evacuation zone around Fukushima Daiichi may be permitted brief visits to retrieve personal items from their homes. The Japanese government is analyzing radiation data and is expected to draft a plan for the visits.
###

From **NHK** (http://www3.nhk.or.jp/daily/english/society.html) accessed 4/6/11 1845:

Evacuation standards being reviewed

Nuclear experts are suggesting the government revise the radioactive standards for evacuation advisories involving the emergency at the Fukushima Daiichi nuclear power plant.

The move comes almost 4 weeks after tsunami disabled the nuclear plant.

According to existing guidelines, people should remain indoors when radiation levels outdoors reach 10 millisieverts several days after any accident. Evacuation is only considered when levels reach 50 millisieverts. The guidelines were set by the Nuclear Safety Commission using standards adopted by organizations including the International Atomic Energy Agency.

The government has advised residents living in areas within 20 kilometers of the Fukushima Daiichi nuclear power plant to "evacuate" while those in areas between 20 and 30 kilometers have been told to "stay indoors".

However, the amount of exposure is likely to rise in these areas as little progress has been made in cooling the nuclear fuels or containing radiation leaks.

Taking into consideration the fact that the situation may be prolonged, the Nuclear Safety Commission has reviewed its guidelines using a 2007 advisory issued by the International Committee on Radiological Protection. The commission now says an evacuation advisory should be issued to prevent residents from being exposed to a total of 20 millisieverts a year.

A member of the commission says the evacuation advisories should reflect the possibility that the situation at the nuclear power plant will be drawn out.

According to the member, the Commission has suggested to a task force that measures should be taken when radiation levels exceed 20 millisieverts. The member says it is the Commission's responsibility to monitor and collect data in each affected area.

Scientists say the limit allowed for an average person is 1 millisiervert a year. The Nuclear Safety Commission is suggesting revising the evacuation standard only for the current emergency. It says it does not necessarily mean that the 1-millisievert limit should be raised. The commission says the government has already begun briefing the affected local communities on the matter.

Thursday, April 07, 2011 06:48 +0900 (JST)
###

From **NHK** (http://www3.nhk.or.jp/daily/english/06_40.html) accessed 4/6/11 1850:

Plutonium detected again in Fukushima plant soil

Tokyo Electric Power Company has again detected a very small volume of plutonium in soil samples from the disaster-stricken Fukushima Daiichi nuclear power plant.

The operator of the plant collected samples from 4 locations at the compound of the plant on March 25th and 28th for analysis by an outside organization.

The utility says the radioactive substance was detected on the soil about 500 meters west-northwest of the No.1 reactor and a site near a solid waste storage facility 500 meters north of the reactor.

The first sample measured 0.26 becquerels of plutonium-238 per 1 kilogram of soil, down about 50 percent from the volume found earlier.

Highly toxic plutonium, a byproduct of the nuclear power generation process, was also found at the same locations in samples collected on March 21st and 22nd.

The plutonium appears to be related to the ongoing nuclear accident. TEPCO says the volume is so small that it does not pose a threat to human health.

This level is almost the same as the amount usually in the Japanese soil and also about the same the level of fallout from nuclear tests in the atmosphere outside Japan.

TEPCO says the No.3 reactor at the Fukushima plant was powered with uranium-plutonium mixed-oxide fuel.

But the company says that it cannot identify which reactor released the plutonium, because plutonium is produced at other reactors using uranium fuel.

Wednesday, April 06, 2011 21:50 +0900 (JST)
###

From **NHK** (http://www3.nhk.or.jp/daily/english/06_37.html) accessed 4/6/11 1855:

Radiation levels in seawater remain high

The operator of the troubled Fukushima Daiichi nuclear power plant says radiation levels detected in seawater near the plant remain high.

Tokyo Electric Power Company says it detected 11,000 bequerels of radioactive iodine-131 per cubic centimeter in seawater samples collected around the water intake of the No.2 reactor on Tuesday morning.

That's 280,000 times higher than the maximum allowed under the government's standards.

The recorded radioactive concentration was still high even though it was lower than that of last Saturday, when 7.5 million times the legal limit was detected at the same spot.
The utility also detected 24 bequerels of iodine-131 per cubic centimeter, about 600 times higher than the legal limit, in samples taken near the water outlet of the No.5 and No.6 reactors on Tuesday. The figure was higher than that of the previous day.

At a location about 330 meters south of the water outlet of the 4 reactors, the iodine-131 concentration had fallen from 4,385 times the legal limit detected last Wednesday to 400 times the legal limit, or 16 bequerels per cubic centimeter on Tuesday.

Wednesday, April 06, 2011 21:50 +0900 (JST)
###

From **NHK** (http://www3.nhk.or.jp/daily/english/07_32.html) accessed 4/7/11 0745:

Moving radioactive water likely to take long time

Japan's nuclear agency says moving highly radioactive water from the Fukushima Daiichi power plant's turbine building to a storage facility may not start for another week.

The water in the basement of the turbine building of the plant's Number 2 reactor and a concrete tunnel has been hampering work to restore the reactor's cooling systems.

The plant's operator, Tokyo Electric Power Company, has been discharging lower-level radioactive water into the sea from the facility to make room for the highly radioactive water. The work is to end on Thursday.

But the government's Nuclear and Industrial Safety Agency says the facility must first be checked for cracks that might have been caused by the earthquake, and that this could take several days to a week.

The agency says the facility was designed to store low-level radioactive water, and that every effort must be made to make sure that highly radioactive water does not leak.

Thursday, April 07, 2011 17:11 +0900 (JST)
###

From **NHK** (http://www3.nhk.or.jp/daily/english/07_30.html) accessed 4/7/11 0750:

Daily radiation checks on fish begin in Ibaraki

The Japanese government has begun monitoring radiation levels in fish in the Pacific off Ibaraki Prefecture, which is located south of the crippled Fukushima Daiichi nuclear power plant.

A trawler left Nakaminato Port at Hitachinaka City in the prefecture on Thursday to catch fish such as plaice and anglerfish as test samples.

The daily checks follow the detection of radioactive cesium above the legal limit in small fish called sand lance. The fish were caught Monday in seas off northern Ibaraki Prefecture, which is nearer to the nuclear plant.

Radiation exceeding the limit has not been found in other fish so far. But all fishing off the Ibaraki coast has been suspended because brokers and retailers are refusing to buy fish from the area.

Nakaminato fisheries cooperative official Kazumi Nemoto says the checks are necessary to confirm the safety of fish off Ibaraki so that consumers can eat them without worry.

Thursday, April 07, 2011 16:19 +0900 (JST)
###

From **NHK** (http://www3.nhk.or.jp/daily/english/07_20.html) accessed 4/7/1 0755:

TEPCO: Nitrogen injection going well

The operator of the crippled Fukushima Daiichi nuclear power plant says it continues to inject nitrogen gas into the containment vessel of the No.1 reactor without problems. The nitrogen gas is being used to prevent a hydrogen blast at the reactor.

The Tokyo Electric Power Company, or TEPCO, says that as of 6 AM Thursday pressure inside the containment vessel of the No.1 reactor had risen only slightly and that this indicates the operation is going well. The gas injection began at 1:30 AM Thursday.

Fuel rods inside the No.1 reactor are nearly half exposed because coolant water levels remain low. It is thought that the overheated fuel rods have caused a buildup of the volatile mix of hydrogen and oxygen. It is hoped the chemically stable nitrogen will counteract this buildup.

TEPCO says it plans to continue the injection for about 6 days and will also consider taking similar measures at the No. 2 and No. 3 reactors.

Regarding another problem, TEPCO said the pool of highly contaminated water in the underground tunnel connected to the No. 2 reactor rose 5 centimeters in the 24 hours leading up to 7 AM Thursday.

TEPCO says the rise is probably related to stopping the leakage of highly radioactive water from a concrete pit of the No. 2 reactor with the use of a hardening agent on Wednesday.

The company says there is still one meter of room to ground level, but will keep a close watch on the situation because an overflow would seriously hamper the already difficult restoration work.

TEPCO is also continuing the release of 8,000 tons of low-level radioactive wastewater from the plant to make storage space for more highly contaminated water. Around 6,000 tons have been discharged so far.

Thursday, April 07, 2011 12:09 +0900 (JST)
###

From **The New York Times**
(http://www.nytimes.com/2011/04/06/world/asia/06nuclear.html?_r=1) accessed 4/6/11 1215:

U.S. Sees Array of New Threats at Japan's Nuclear Plant
by James Glanz and William J. Broad
Published: April 5, 2011

United States government engineers sent to help with the crisis in Japan are warning that the troubled nuclear plant there is facing a wide array of fresh threats that could persist indefinitely, and that in some cases are expected to increase as a result of the very measures being taken to keep the plant stable, according to a confidential assessment prepared by the Nuclear Regulatory Commission.

Among the new threats that were cited in the assessment, dated March 26, are the mounting stresses placed on the containment structures as they fill with radioactive cooling water, making them more vulnerable to rupture in one of the aftershocks rattling the site after the earthquake and tsunami of March 11. The document also cites the possibility of explosions inside the

containment structures due to the release of hydrogen and oxygen from seawater pumped into the reactors, and offers new details on how semimolten fuel rods and salt buildup are impeding the flow of fresh water meant to cool the nuclear cores.

In recent days, workers have grappled with several side effects of the emergency measures taken to keep nuclear fuel at the plant from overheating, including leaks of radioactive water at the site and radiation burns to workers who step into the water. The assessment, as well as interviews with officials familiar with it, points to a new panoply of complex challenges that water creates for the safety of workers and the recovery and long-term stability of the reactors.

While the assessment does not speculate on the likelihood of new explosions or damage from an aftershock, either could lead to a breach of the containment structures in one or more of the crippled reactors, the last barriers that prevent a much more serious release of radiation from the nuclear core. If the fuel continues to heat and melt because of ineffective cooling, some nuclear experts say, that could also leave a radioactive mass that could stay molten for an extended period.

The document, which was obtained by The New York Times, provides a more detailed technical assessment than Japanese officials have provided of the conundrum facing the Japanese as they struggle to prevent more fuel from melting at the Fukushima Daiichi plant. But it appears to rely largely on data shared with American experts by the Japanese.

Among other problems, the document raises new questions about whether pouring water on nuclear fuel in the absence of functioning cooling systems can be sustained indefinitely. Experts have said the Japanese need to continue to keep the fuel cool for many months until the plant can be stabilized, but there is growing awareness that the risks of pumping water on the fuel present a whole new category of challenges that the nuclear industry is only beginning to comprehend.

The document also suggests that fragments or particles of nuclear fuel from spent fuel pools above the reactors were blown "up to one mile from the units," and that pieces of highly radioactive material fell between two units and had to be "bulldozed over," presumably to protect workers at the site. The ejection of nuclear material, which may have occurred during one of the earlier hydrogen explosions, may indicate more extensive damage to the extremely radioactive pools than previously disclosed.

David A. Lochbaum, a nuclear engineer who worked on the kinds of General Electric reactors used in Japan and now directs the nuclear safety project at the Union of Concerned Scientists, said that the welter of problems revealed in the document at three separate reactors made a successful outcome even more uncertain.

"I thought they were, not out of the woods, but at least at the edge of the woods," said Mr. Lochbaum, who was not involved in preparing the document. "This paints a very different picture, and suggests that things are a lot worse. They could still have more damage in a big way if some of these things don't work out for them."

The steps recommended by the nuclear commission include injecting nitrogen, an inert gas, into the containment structures in an attempt to purge them of hydrogen and oxygen, which could combine to produce explosions. On Wednesday, the Tokyo Electric Power Company, which owns the plant, said it was preparing to take such a step and to inject nitrogen into one of the reactor containment vessels.

The document also recommends that engineers continue adding boron to cooling water to help prevent the cores from restarting the nuclear reaction, a process known as criticality.

Even so, the engineers who prepared the document do not believe that a resumption of criticality is an immediate likelihood, Neil Wilmshurst, vice president of the nuclear sector at the Electric Power Research Institute, said when contacted about the document. "I have seen no data to suggest that there is criticality ongoing," said Mr. Wilmshurst, who was involved in the assessment.

The document was prepared for the commission's Reactor Safety Team, which is assisting the Japanese government and the Tokyo Electric Power Company. It says it is based on the "most recent available data" from numerous Japanese and American organizations, including the electric power company, the Japan Atomic Industrial Forum, the United States Department of Energy, General Electric and the Electric Power Research Institute, an independent, nonprofit group.

The document contains detailed assessments of each of the plant's six reactors along with recommendations for action. Nuclear experts familiar with the assessment said that it was regularly updated but that over all, the March 26 version closely reflected current thinking.

The assessment provides graphic new detail on the conditions of the damaged cores in reactors 1, 2 and 3. Because slumping fuel and salt from seawater that had been used as a coolant is probably blocking circulation pathways, the water flow in No. 1 "is severely restricted and likely blocked." Inside the core itself, "there is likely no water level," the assessment says, adding that as a result, "it is difficult to determine how much cooling is getting to the fuel." Similar problems exist in No. 2 and No. 3, although the blockage is probably less severe, the assessment says.

Some of the salt may have been washed away in the past week with the switch from seawater to fresh water cooling, nuclear experts said.

A rise in the water level of the containment structures has often been depicted as a possible way to immerse and cool the fuel. The assessment, however, warns that "when flooding containment, consider the implications of water weight on seismic capability of containment."

Experts in nuclear plant design say that this warning refers to the enormous stress put on the containment structures by the rising water. The more water in the structures, the more easily a large aftershock could rupture one of them.

Margaret Harding, a former reactor designer for General Electric, warned of aftershocks and said, "If I were in the Japanese's shoes, I'd be very reluctant to have tons and tons of water sitting in a containment whose structural integrity hasn't been checked since the earthquake."

The N.R.C. document also expressed concern about the potential for a "hazardous atmosphere" in the concrete-and-steel containment structures because of the release of hydrogen and oxygen from the seawater in a highly radioactive environment.

Hydrogen explosions in the first few days of the disaster heavily damaged several reactor buildings and in one case may have damaged a containment structure. That hydrogen was produced by a mechanism involving the metal cladding of the nuclear fuel. The document urged that Japanese operators restore the ability to purge the structures of these gases and fill them with stable nitrogen gas, a capability lost after the quake and tsunami.

Nuclear experts say that radiation from the core of a reactor can split water molecules in two, releasing hydrogen. Mr. Wilmshurst said that since the March 26 document, engineers had calculated that the amount of hydrogen produced would be small. But Jay A. LaVerne, a physicist at Notre Dame, said that at least near the fuel rods, some hydrogen would in fact be produced, and could react with oxygen. "If so," Mr. LaVerne said in an interview, "you have an explosive mixture being formed near the fuel rods."

Nuclear engineers have warned in recent days that the pools outside the containment buildings that hold spent fuel rods could pose an even greater danger than the melted reactor cores. The pools, which sit atop the reactor buildings and are meant to keep spent fuel submerged in water, have lost their cooling systems.

The N.R.C. report suggests that the fuel pool of the No. 4 reactor suffered a hydrogen explosion early in the Japanese crisis and could have shed much radioactive material into the environment, what it calls "a major source term release."

Experts worry about the fuel pools because explosions have torn away their roofs and exposed their radioactive contents. By contrast, reactors have strong containment vessels that stand a better chance of bottling up radiation from a meltdown of the fuel in the reactor core.

"Even the best juggler in the world can get too many balls up in the air," Mr. Lochbaum said of the multiplicity of problems at the plant. "They've got a lot of nasty things to negotiate in the future, and one missed step could make the situation much, much worse."
###

From **MSNBC**
(http://us.cnn.com/2011/WORLD/asiapcf/04/07/japan.nuclear.reactors/index.html?hpt=T2#)
accessed 4/7/11 0930:

Hydrogen buildup spurs more concern at Japanese nuclear plant
by Matt Smith, CNN

April 7, 2011 3:47 a.m. EDT
Tokyo (CNN) -- Engineers began injecting non-flammable nitrogen into the No. 1 reactor at the crippled Fukushima Daiichi nuclear power plant Thursday to counter a buildup of potentially explosive hydrogen, the plant's owner reported.

The Tokyo Electric Power Company said the danger of another hydrogen explosion, like the one that blew the roof and upper walls off the reactor building in March, was "extremely low." But it warned that more hydrogen could build up in the damaged reactor and that it planned a similar procedure for reactors 2 and 3.

Hydrogen buildup is a symptom of overheated fuel rods in the cores of the reactors, which plant workers have been struggling to keep under control since the March 11 earthquake and tsunami. The nitrogen injections are aimed at displacing oxygen in the reactor shell, reducing the possibility of an explosion.

In addition to the March 12 blast at Unit 1, a hydrogen explosion blew apart the No. 3 reactor building on March 14 and a suspected hydrogen explosion is believed to have damaged the No. 2 reactor the following day.

Tokyo Electric and Japanese regulators believe No. 2 is the source of the highly contaminated water they are now struggling to contain at Fukushima Daiichi, 240 kilometers (150 miles) north of Tokyo. Plant workers are pouring 8 tons of water (2,100 gallons) into that reactor every hour to keep it cool, and the water that flows out carries extremely high concentrations of radioactive particles.

That highly radioactive fluid is building up in the turbine plant and the service tunnels around the unit, leaving Japanese officials grasping for ways to contain it.

Until Wednesday, some of that water had been bleeding out into the Pacific Ocean through a cracked utility shaft behind the plant. On Saturday, the day the leak was discovered, concentrations of the reactor byproduct iodine-131 in seawater next to the shaft was as 7.5 million times higher than the legal limit, according to sampling data taken by the utility.

Those levels prompted Japanese authorities to start dumping nearly 10,000 tons of less-radioactive water into the Pacific on Monday night, largely to make room in a waste treatment reservoir for the No. 2 reactor coolant. The move enraged the country's fishing industry and drew protests from neighboring South Korea, but Japan's government called it an emergency move to prevent a worse discharge.

"They have to be injecting water," said Michael Friedlander, a former senior operator at U.S. nuclear power plants. "They have to keep the core covered. And I can tell you, you do not want to take that water out of containment right now, because it's screaming with radioactivity and you have absolutely no capabilities whatsoever to process it."

Japan is currently consulting with Russian authorities on whether a shipborne decontamination plant has the capability to handle the wastewater, the Japanese Foreign Ministry told CNN on

Thursday. But Tokyo has not yet asked for the vessel to be brought into the fight, said Tomosaburo Esaki, an official with the ministry's arms control and disarmament division.

The ship, the Suzeran ("Lily of the Valley"), can process up to 35 tons of radioactive waste a day and store about 800 tons. Japan built the vessel for Russia in the 1990s to help Moscow take aging nuclear submarines out of service.

Sergey Novikov, a spokesman for Russia's state-run nuclear energy company Rosatom, told CNN that, "The ball is now in their court."

"We have responded to their questions regarding the plant, and they sent us their additional questions, to which we responded as well," Novikov said. "They are still studying this issue, and we hope to hear from them soon."

Reactors 1 to 3 are all believed to have suffered damage to the fuel assemblies at their cores from overheating when the quake and tsunami knocked out cooling systems at Fukushima Daiichi.

Stopping the flow of radioactive water from No. 2 was a victory for plant workers, but Tokyo Electric and a top Japanese official warned the fight was far from over.

Hidehiko Nishiyama, a spokesman for Japan's Nuclear and Industrial Safety Agency, said Wednesday that the now-contained water "may lead to more leakage somewhere else," and the utility said Thursday that the water level in a service tunnel leading out of the unit's turbine plant had gone up about 2 cm (0.8 inches) since the leak was plugged.

Contamination levels behind the plant were falling sharply even before the leak was plugged, with iodine-131 down to about 4 percent from Saturday's peak on Tuesday, according to the utility's sampling data. The level remained 280,000 times higher than the legal limit, but those concentrations were dropping sharply as the water flowed out into the Pacific.

Levels of longer-lived cesium-137 were down sharply as well -- but they remained 61,000 times the legal standard behind the plant.

Experts have said the releases likely won't pose any long-term health risks to humans or sea life despite the eye-popping levels. Iodine-131 loses half its radiation every eight days, and the vast Pacific will quickly dilute the contaminated water, they said.

Samples from a monitoring point 20 kilometers (12.5 miles) southeast of the plant found iodine-131 levels down to 1.5 times legal levels, with no reading for cesium, Tokyo Electric reported Wednesday. Meanwhile, levels of airborne radiation nearby and further away have been declining steadily, government readings show.

"So hopefully the churning of the ocean and the currents will quickly disperse this so that it gets to very dilute concentrations relatively quickly," said Timothy Jorgensen, chairman of the radiation safety committee at Georgetown University Medical Center.

The company has added three monitoring stations offshore to keep track of the spread of contamination. It also has been rebuilding a damaged sea wall around the back of the plant with large sandbags to limit the flow of seawater out of the area.

CNN's Junko Ogura in Tokyo and Maxim Tkachenko in Moscow contributed to this report.
###

From **MSNBC** (http://www.msnbc.msn.com/id/42441638/ns/world_news-disaster_in_japan/) accessed 4/6/11 1415:

Japan faces another dilemma: Radiation-contaminated bodies
Near Fukushima plant, hundreds of corpses uncollected because of contamination fears

byKari Huus
Reporter
msnbc.com msnbc.com

As if the Japanese government did not have enough on its hands, now it has this dilemma: What to do with as many as 1,000 bodies near the leaking Fukushima nuclear plant that may be contaminated with radiation.

A solution will require decisive action and a high-degree of delicacy.

After losing family members to the tsunami and earthquake, most Japanese would normally go forward with a traditional cremation and place the remains with those of the victims' kin. But the bodies near the plant have been exposed to radiation, making them potentially dangerous to handle or move. And nearly a month after the disaster, decontaminating them so they can be transported is rapidly becoming impossible.

The earthquake and tsunami that struck Japan on March 11 badly damaged the Fukushima Dai-Ichi nuclear power plant owned by Tokyo Electric Power Co., or TEPCO. As the crisis around the plant built, the Japanese government called for evacuation of residents living within 12 miles of the damaged plant, which is now essentially a no-go zone.

Does the government have a plan?
Emergency responders have been struggling ever since to cool the plant's reactors and prevent a catastrophic meltdown. But several explosions, fires and discharged water from the plant have released radiation into the air and ocean near the plant, affecting anyone who remains in the area — including the dead.

If the Japanese government has a plan for the bodies in "hot zone," it has not been made public. The Japanese Ministry of Health, Labor and Welfare, which is in charge of disposition of disaster victims' remains, did not respond to msnbc.com queries on the subject and has said very little about it.

For the first three days of April, some 25,000 Japanese and American troops mounted a massive search for thousands of dead or missing residents. But they did not enter the 12-mile "exclusion zone" around the Fukushima plant, according to the Japanese government.

The International Atomic Energy Agency, which is working closely with the Japanese government to monitor radiation in the water and food, does not know how Japanese authorities plan to deal with the Fukushima victims.

"This is an area of concern that the IAEA and other UN organizations have been seeking clarification and information about from Japan," said a spokesperson for the IAEA.

Safe handling of the bodies may not allow for cremation according to Japanese tradition — yet another blow to people who have endured losses from the quake, the tsunami and evacuation due to the ongoing crisis at the plant.

'Worst case' scenario for survivors

"They say the worst case is when you don't have anything to bury or cremate, that's why the surviving family members are desperate," said Kyoko Tokuno, senior lecturer of East Asian religions at University of Washington in Seattle. "What they want to do is bring back the remains, which presumes finding the body and cremating them."

Internationally, there are various protocols on managing all types of materials contaminated with radiation, including bodies.

Two sets made available to msnbc.com — a 1,000-page protocol issued by the National Council on Radiation Safety in the United States and similar guidelines from the Centers for Disease Control — urge against cremation, calling instead for deep burial in a sealed container marked by radiation warning symbols.

The NCRS does describe a way of decontaminating a body that could make it safe for cremation, especially if, like the victims in Fukushima, the body was contaminated externally only.

"If it's a surface contamination as this probably was ... normally you could wash it off or wipe it off and remove clothing, to remove most of the contamination," said Kathryn Higley, head of the Department of Nuclear Engineering and Radiation Health Physics at Oregon State University. "But the body decomposes, so it might be more complicated."

Bodies likely 'not intact'

After more than three weeks outside, bodies of quake-tsunami victims would be "not skeletonized, but not intact, either," according to a California forensic scientist, who spoke on condition that he not be identified.

One Japanese press report said that a worker killed at the nuclear power plant had been decontaminated and cremated.

Other reports suggest decontamination has already become impractical, or impossible in some cases.

Japan's Kyodo news service reported that the police in Fukushima put off collecting remains of the dead after measuring an extremely high level of radiation on the body of a man found on March 27.

"Police were considering performing decontamination where the bodies are found," the report said. But another Kyodo report four days later said that "there are some difficulties around cleansing the bodies, resulting in damaging the already decomposing victims."

Even identification is going to be difficult, according to theKyodo report:

"The victims' nails can be extracted for DNA testing for identification, however, nails also need to be decontaminated and this will take tremendous amount of work and time," it said.

Cremation believed to release karmic energy
Cremation is important to Japanese Buddhists because it is thought to release the karmic energy that continues on and leads to future rebirth. That belief, and Japan's severe shortage of land for graveyards, means that nearly all Japanese are cremated after death.

Perhaps even more critical is the idea of recovering the bones so that they can be placed in the family tomb, with kin.

"One of the things that is important to people is that family members are buried together," said Tokuno, the University of Washington lecturer. "To be scattered all over is not comforting. Being buried together ... is very comforting."

For now, the Japanese government is preoccupied with the crisis at the Fukushima reactor, but Tokuno says it will have new problems if it fails to address survivors' concerns.

"If the government and TEPCO do not pay attention and delay the proper treatment of people in terms of basic necessities — including how they treat the deceased in terms of tradition — there may be some serious consequences," said Tokuno. "I think there will be an outcry."
###

Perspective:

From **ANS** (http://ansnuclearcafe.org/2011/04/07/decommissioning-fukushima/) accessed 4/7/11 0835:

Decommissioning Fukushima
Posted on April 7, 2011 by ansnuclearcafe
It has all the challenges of Three Mile Island plus there are four damaged reactors not just one

By Dan Yurman

The effort to contain the nuclear reactor crisis at Fukushima brings to mind the 1933 horror movie King Kong, in which a giant ape, escaped from captivity, and perched at the top of the Empire State Building, is fatally wounded by a swarm of war planes of the era.

While fictional film character Carl Denham intones his famous last line "It was beauty killed the beast," a less prosaic New York sanitation department might have been wondering how to remove a giant dead gorilla carcass from the corner of 5th Ave. and 34th St.

Kong's fall would have created a cleanup problem of immense scale. It would have been "beyond the design basis" of even the entire fleet of city garbage trucks.

Six gorillas at Fukushima

This dramatic movie metaphor is relevant as a visual image of the scope of the problem faced by Tokyo Electric Power Corp. (TEPCO) with the eventual decommissioning of six reactors at Fukushima. The utility doesn't have just one dead giant gorilla, there are six. The first three nuclear reactors are likely to be found to be fatally compromised with heat damaged fuel assemblies from loss of cooling water. Partial melting of fuel may be part of the problem.

Massive hydrogen explosions blew the roofs off of secondary containment structures at reactors 1, 3, and 4. The fourth reactor is also likely severely damaged beyond repair. Its spent fuel pool is exposed to the open air as a result of one of the huge hydrogen explosions.

The fifth and sixth reactors, relatively undamaged, may never restart because of wrecked balance of plant infrastructure and ferocious public opposition which is leveraged by Japanese law that gives veto power over nuclear facilities to the provincial government.

The 15-meter high tsunami swept away the normal infrastructure of a nuclear power station which, along with rubble from the hydrogen explosions, put debris across access roads and rail sidings blocking delivery of emergency equipment. Efforts to control leaks from buildings and trenches may go on for months or years. In short, it will be a very dangerous place to conduct cleanup work.

Precedent from Three Mile Island

The precedent TEPCO will have to rely on is the cleanup of the Three Mile Island (TMI) accident in the U.S. The cleanup of the badly damaged reactor at Three Mile Island, which began in 1979, took more than a decade ending in 1993. TEPCO's timeline may be much longer.

The New York Times reported that the first major phase of the TMI cleanup was completed in April 1990, when workers finished shipping 150 tons of radioactive wreckage from the damaged reactor vessel to Idaho for storage. According to a history of the Idaho lab's involvement in the project, 49 casks containing reactor fuel debris were transported by rail through 10 states in 22 shipments. Cleanup at that point had cost over $1 billion.

There are significant differences between the situation at TMI and Fukushima. The biggest and most dangerous differences are the extent of uncontrolled radioactive contamination outside the reactors at the plant site.

A second cleanup challenge, unlike the TMI experience, is that the surrounding countryside in Japan is like a war zone with lack of access by road and rail, power lines are down, and potable water, food, and housing are all in very short supply.

There some immediate steps TEPCO needs to take to start the cleanup process at Fukushima. It must get most of the radioactive water off the site and control what remains. It needs to control radioactive debris from the hydrogen explosions. Most importantly, it must find a path to remove the fuel from the damaged reactors or execute a plan to store it in place indefinitely.

Drying out the Fukushima reactor site

The removal of huge volumes of radioactive water from the site is the first priority. The Japanese have been pouring uncounted tons/day of water on four reactors since mid-March. Headlines in the news media on April 5 report TEPCO needs to remove 11,500 metric tonnes of water from the plant.

The Wall Street Journal reported April 5 that TEPCO was discharging 4,800 (short) tons/day of radioactive water directly into the ocean. That would be 96,000pounds or about 11,500 gallons of water. TEPCO characterized the radioactivity level of the discharge as "low."

According to the WSJ, authorities said about 20,000 tons of radioactive seawater still remain in the turbine building and the cable trench of each of reactors Nos. 1-3, for a total of 60,000 tons. That's 120 million pounds of water or 14,370,000 gallons of water. (1 gallon of water weighs 8.35 pounds)

Readers should be aware that the western press has had numerous difficulties with translations of Japanese language reports of reactor status information. Mistakes and errors by TEPCO, as well as wholesale retractions, have created problems for almost all numerical references from the utility subjecting them to continuous second guessing and review.

Anyway you count it, there is a lot of water and no way to store or dispose of it on the site. The option exists for TEPCO is to run a pipeline several miles out to sea from the reactor site and pump the water out there.

According to a BBC report for April 4, 2011, the Kuroshio Current is the North Pacific equivalent of the Gulf Stream in the Atlantic. It hugs the Asian continental slope until about 35 degrees North, where it is deflected due east into the deep ocean as the Kuroshio Extension.

Experts interviewed by the BBC say this means pollutants in its grasp, such as radioactive water from Fukushima, will tend over time to be driven out into the middle of the Pacific where they will become well mixed and diluted over time.

There will likely be heated political objections to this scenario, but TEPCO is more or less out of land-based options. It needs to get the radioactive water out of the plant if it has any chance to make progress with gaining control of even more dangerous radioactive contamination throughout the entire reactor complex including spent fuel in Unit 4 and damaged fuel in Units 1-3.

Securing the site

Next, the site needs to be washed down to remove surface radioactive contamination. Yes, this will produce more radioactive water, but it's better to send it out to sea than to leave it in place to harm site workers.

Also, according to an April 6 New York Times report, radioactive particles from the spent fuel pool for unit 4 may have been blown as much as a mile away by the hydrogen explosion. These materials need to be found and removed to a safe interim disposal area.

Fukushima reactor units 1-4 could to be covered by an semi-rigid, inflatable tent the size of a football stadium. This structure, supported by a light steel framework and constant air pressure blown into it, would protect the damaged reactors and cleanup workers from the elements. While a typhoon or other extreme weather could damage the air supported structure, it is easier, quicker, and less costly, to rebuild one than to try to encase all four reactors in a giant concrete shell.

None of this site preparation work can take place until the reactors themselves are in a state of cold shutdown. This may be accomplished through restoration of electrical power and control of the reactor cooling systems. If the cooling systems are damaged, and don't work, TEPCO will have to come up with a system that does the job which will likely continue producing hundreds of tons a day of radioactive wastewater.

It could be some time, perhaps as long as several years, before remote controlled, radiation hardened robots can be sent into the reactor cores at Units 1-3 to take a look at damage there. The reason is the wreckage of the damaged secondary containment structures at reactor units 1 & 2 will have to be removed so a work crew and their gear can be staged to access the primary containment structure. Unit 3, which has a relatively intact secondary containment structure, could be the first reactor to give up its secrets.

According to a Wall Street Journal interview April 2 with veterans of the cleanup at TMI, heat damaged fuel elements will be difficult to extract from the reactor pressure vessels especially if temperatures were high enough to melt the zirconium cladding that hold the fuel elements in place. Once that happens, fuel pellets fall to the floor of the reactor pressure vessel.

If the any of the fuel itself is melted, TEPCO might opt to wait for years with a buttoned up reactor pressure vessel and secure primary containment structure for everything to cool down through natural attenuation of residual heat and the cycle of radioactive half lives. Eventually, like TMI, the fuel from the reactors and spent fuel pools could be transferred to permanent dry cask storage.

If TEPCO can't find safe technical path forward to this solution, then an alternative is to eventually entomb the reactor pressure vessels in place by pouring concrete into the primary containment structures for units 1-3, and the spent fuel pool in unit 4. This solution may be forced on TEPCO if it finds that any of the primary containment structures are damaged from the original earthquake or by aftershocks.

According to a Bloomberg news report for March 30, the government hasn't ruled out sealing the plants 1-4 in concrete says Chief Cabinet Secretary Yukio Edano. Though he didn't mention it, one of the issues the government will need to evaluate is whether the primary containment structures could safely hold all that concrete. That weight could put new stressed on the structures.

Cost of cleanup

TEPCO's long-term cleanup costs could be in the tens of billions and take decades to complete. This activity alone could turn the utility into a semi-permanent ward of the state unless cleanup, and liabilities, are taken over entirely by the government through some form of receivership for the reactor site.

Fukushima could remain a no man's land for decades given the huge, almost unimaginable costs of cleanup. The government will likely look to find reasons to stretch out cleanup for financial reasons regardless of domestic and international pressure. Japan's government is carrying a huge debt load as it is.

The complexity of performing the decommissioning of six reactors four of which are severely damaged and in an unknown condition will drive up costs at every turn. The last time Japan decommissioned a reactor, which was a clean site, it took the government more than two decades to complete the job.

By comparison, the decommission of the Zion nuclear power plant in Illinois, which is well controlled under regulatory scrutiny from the NRC, is expected to cost $900 million and take a decade to complete. A New York Times report for November 22, 2010, noted it cost Exelon $10 million a year just to "baby sit" the plant in cold shutdown status.

The plant will be chopped up into pieces and shipped to a special landfill in Utah that can receive solid radioactive waste. There will be no separation of radioactive and non-radioactive materials. Everything will be assumed to be radioactive and will go to one disposal site.

Where to put radioactive waste?

This raises a key question for Japan. Where will it dispose of radioactive debris from Fukushima? It can't leave the material at the seashore to perpetually contaminate the cities and farms in the surrounding countryside and pollute highly productive fishing waters.

The Kyodo News wire service reported April 5 that the Japanese government is studying the possibility of borrowing a Japan-funded radioactive waste disposal facility from Russia to help contain radioactive water.

"We are checking whether it is technically possible to use the facility for this current event, and whether the facility's machines are working smoothly," Hidehiko Nishiyama, a spokesman for the government's Nuclear and Industrial Safety Agency, told a press conference.

He also said Japan has been communicating with Russia about using a floating facility, called Suzuran, (right) which Japan gave to Russia in 2001 to help dispose of low-level radioactive liquid waste from decommissioned nuclear-powered submarines.

Japan gave the facility to Russia as environmental concerns were raised after Russia dumped radioactive waste into the Sea of Japan in 1993 in the process of dismantling its nuclear subs.

There is even less certainty for high level waste and other solid radioactive debris (RH-TRU) which cannot be contact handled in the near term. Ten years ago, Japan created the Nuclear Waste Management Organization of Japan (NUMO) which was established under the jurisdiction of the Ministry of Economy, Trade and Industry.

NUMO is responsible for selecting a permanent deep geologic repository site, construction, operation and closure of the facility for waste emplacement by 2040. Site selection was begun in 2002.

Final selection of a repository location is expected by 2027. Japan may have to speed up the site selection process once it gets serious about the decommissioning of the six reactors at Fukushima. A 2008 briefing shows a lot of process work but not much progress in selecting much less building a geologic repository for high level waste. There's a long way to go.
###

From Reuters (http://af.reuters.com/article/energyOilNews/idAFN0621681520110406) accessed 4/7/11 1050:

UPDATE 3-Democrats probe worst fears for U.S. nuclear power
Wed Apr 6, 2011 10:03pm GMT

* Democrats: Simulation worrying for Peach Bottom plant
* Worst-case disaster would bring plant close to meltdown
* NRC official: Simulation is for highly improbable events
* NRC says Fukushima reactor core has not breached vessel
* Some signs Japan reactor design did not keep pace - NRC

By Roberta Rampton and Ayesha Rascoe

WASHINGTON, April 6 (Reuters) - Democratic lawmakers raised concerns on Wednesday about whether regulators and the nuclear power industry are doing enough to ensure U.S. reactors can withstand worst-case scenarios in the wake of Japan's crisis.

Concerns focused on a Pennsylvania nuclear plant with the same kind of reactor design as the Fukushima Daiichi facility, which Japanese authorities are still trying to bring under control since a March 11 earthquake and tsunami.

Some lawmakers argued that the U.S. plant could be at risk of meltdown in the case of a severe emergency.

A Nuclear Regulatory Commission study on the Peach Bottom nuclear plant, owned by utilities Exelon (EXC.N: Quote) and Public Service Enterprise Group Inc's (PEG.N: Quote) PSEG Power, showed it would come "dangerously close to core damage" in a worst-case emergency, said Diana DeGette, a Democrat from Colorado.

The modeling exercise was done on only two of the 104 U.S. nuclear plants, and draft results were obtained through a Freedom of Information Act request from the Union of Concerned Scientists, which has been critical of the nuclear industry.

A top NRC official said the computer modeling ignored the likelihood of worst-case power loss.

"We look at very unrealistic events as part of that analysis," said Martin Virgilio, deputy executive director for the NRC's reactor and preparedness programs, at a House Energy and Commerce subcommittee hearing.

The president of PSEG Power said he had not seen the draft study and could not comment on its findings, but noted the analysis assumes all backup systems in plants fail.

"There's a healthy process here. These very issues that happened in Japan, we're already asking ourselves, what if this happened?" William Levis told Reuters after the hearing.

The hearing came as documents released by an independent safety watchdog group showed the NRC had privately expressed doubts that some U.S. nuclear power plants are prepared for a Fukushima-scale crisis.

Internal NRC emails and memos -- also obtained by the Union of Concerned Scientists -- questioned the adequacy of the back-up plans to keep reactor cooling systems running if off-site power were lost for an extended period.

PLANT NOT VULNERABLE TO TSUNAMI

A nuclear engineer from the University of Wisconsin-Madison said the modeling exercise did not consider the various levels of risks at the plants.

"It's as if I was flying in an airplane and I lost a wing or two engines, and then asked, 'What would happen?' It's a consequence thing," Michael Corradini told reporters.

Republican Tim Murphy from Pennsylvania noted the plant is "a few hundred feet above sea level", making it unlikely to be hit by a tsunami.

DeGette and other lawmakers at the hearing raised concerns about the nuclear industry's reliance on back-up batteries for cooling, similar to the kind used at Fukushima, which last only four to eight hours before they need additional power.

In the event of a major disaster in which power cannot be restored for days, they said the short lifespan of the batteries would place U.S. plants at risk.

"I am disturbed by both members of Congress and also some of the industry just making blanket statements that our nuclear energy system is safe and implying that we don't need to do anything further," DeGette told Reuters.

NRC: FUKUSHIMA VESSEL NOT BREACHED

At the hearing, Edward Markey, a prominent critic of the nuclear industry, said he had received information from the NRC that Fukushima's No. 2 reactor had likely melted through its vessel, a key part of containment for radioactive materials.

But Virgilio said that had not happened yet, based on information from NRC staff in Tokyo.

"We get situation reports from our team multiple times during the day and so far we do not believe the core has actually breached" the vessel, Virgilio told reporters.

There has been confusion among experts about whether the vessel has been breached. Inside the NRC, there also seems to be differing information about the state of the reactor.

Emails provided by Markey's office from an NRC staffer on Tuesday said "the NRC staff speculates that part of the Unit 2 core may be out of the reactor pressure vessel and may be in the lower space of the drywell".

"Lower radiation readings in the torus suggest that there is not core material in the torus," the email said, referring to the water at the bottom of the reactor containment unit.

Virgilio also said there were differences in the designs of the reactors in the United States and Japan, both boiling water reactors designed by GE (GE.N: Quote).

"We've done quite a bit to modify that design over the life of the facilities as a result of operating experience. We don't know for sure, but there are some evidence that the Japanese designs did not keep pace, they did not make the same modifications that we've made," he said.

(Reporting by Roberta Rampton and Ayesha Rascoe; Editing by Lisa Shumaker and Dale Hudson)
###

From: Hasselberg, Rick
Sent: Thursday, April 07, 2011 10:34 PM
To: (b)(6)
Subject: FW: Fukushima Daiichi NPP Update #29 - 4/7/11
Attachments: Fukushima_Daiichi_NPP_Status_Report#0029-040711-1100.doc

-----Original Message-----
From: Vargo, George [mailto:gvargo@state.pa.us]
Sent: Thursday, April 07, 2011 11:21 AM
To: Tosh Ushino (b)(6) Dan Strom (b)(6) Dan Strom (strom@pnl.gov); George J. Vargo (vargo@physicist.net); Reeves, Glen I. CONTRACTOR; Hasselberg, Rick; 'Ronald E Goans, MD, PhD'; Whitehead, Jeffrey; Allard, David; Barnhart, James; Chippo, John (DEP); Easton, Randolph; Gallagher, Dennis (DEP); Gilcrist, Tara; Handley, Lu-Ann; Janati, Rich; Kutchman, Randy; Melnic, Joseph; Seiber, Benjamin; Skelton, Donielle; Tamanini, Henry; Wagner, William
Cc: George J Vargo; 'Susan E. Vargo'; 'Vargo Susan'; 'Karen Barcal'
Subject: Fukushima Daiichi NPP Update #29 - 4/7/11

DJ/68

Fukushima Daiichi NPP Status Report #29 April 7, 2011 – 1100
(4/XX/11 0000 JST)

Ed. Note: In the General Electric Mark I containment, air is displaced by nitrogen during power operations. This is done to prevent the production of an explosive hydrogen-oxygen environment in the event of a loss of coolant to the reactor core. The zirconium/water reaction that generates hydrogen has a threshold around 1800°F. Some of the items below note that the plant operator is once again adding nitrogen to the containments of the affected units in order to prevent further accumulations of combustible or explosive gas mixtures.

Photographs: Thanks to Robin Hill of PNNL for the following link to high-resolution photographs from the Fukushima Daiichi site:
http://cryptome.org/eyeball/daiichi-npp/daiichi-photos.htm
###

From **IAEA** (http://www.iaea.org/newscenter/news/tsunamiupdate01.html) accessed 4/7/11 0820:

Fukushima Nuclear Accident Update (6 April 2011, 15:15 UTC)

Japanese authorities have informed the IAEA that TEPCO has been authorized to begin injection of nitrogen into the primary containment vessel (PCV) of Unit 1 at the Fukushima Daiichi nuclear power plant. Injection of nitrogen is intended to displace oxygen inside the containment vessel, thereby reducing a risk of explosion due to the combustible combination of hydrogen and oxygen.
###

From **NEI** (http://www.nei.org/newsandevents/information-on-the-japanese-earthquake-and-reactors-in-that-region/) accessed 4/6/11 1430:

UPDATE AS OF 11:30 A.M. EDT, WEDNESDAY, APRIL 6:
Tokyo Electric Power Co. (TEPCO) today began injecting nitrogen into the containment vessel of reactor 1 at the Fukushima Daiichi nuclear power plant. Nitrogen, an inert gas, is used in reactor containment vessels to stabilize the atmosphere and prevent ignition of the hydrogen that is believed to be accumulating inside the containment. The injection will proceed slowly, at 10 percent of the normal rate. It is expected to take six days to complete the process.

TEPCO has stopped a leak of highly radioactive water from the site into the Pacific Ocean. TEPCO had been trying various means to plug the leak in a concrete enclosure that carries electric cables since it was discovered Saturday. Pouring concrete and later an absorbent polymer into the enclosure were unsuccessful.

On Monday, workers injected a colored liquid tracer into the system of enclosures to determine the flow path of the water. It showed that the radioactive water may be leaking from a cracked

pipe, and then seeping through gravel into the concrete enclosure. Additional testing showed leakage from the crack in the enclosure into the ocean.

Beginning yesterday, TEPCO injected approximately 1,600 gallons of liquid glass into the system, which stanched the flow of water. TEPCO is considering injecting more liquid glass into the area as a preventive measure.

Workers continue to inject cooling water into reactors 1, 2 and 3 and to the used fuel storage pools at reactors 1-4. Radioactive water in the turbine buildings continues to hinder efforts to fully restore cooling functions.

Some residents of the 20-kilometer (12.5-mile) evacuation zone around Fukushima Daiichi may be permitted brief visits to retrieve personal items from their homes. The Japanese government is analyzing radiation data and is expected to draft a plan for the visits.
###

From **NHK** (http://www3.nhk.or.jp/daily/english/society.html) accessed 4/6/11 1845:

Evacuation standards being reviewed

Nuclear experts are suggesting the government revise the radioactive standards for evacuation advisories involving the emergency at the Fukushima Daiichi nuclear power plant.

The move comes almost 4 weeks after tsunami disabled the nuclear plant.

According to existing guidelines, people should remain indoors when radiation levels outdoors reach 10 millisieverts several days after any accident. Evacuation is only considered when levels reach 50 millisieverts. The guidelines were set by the Nuclear Safety Commission using standards adopted by organizations including the International Atomic Energy Agency.

The government has advised residents living in areas within 20 kilometers of the Fukushima Daiichi nuclear power plant to "evacuate" while those in areas between 20 and 30 kilometers have been told to "stay indoors".

However, the amount of exposure is likely to rise in these areas as little progress has been made in cooling the nuclear fuels or containing radiation leaks.

Taking into consideration the fact that the situation may be prolonged, the Nuclear Safety Commission has reviewed its guidelines using a 2007 advisory issued by the International Committee on Radiological Protection. The commission now says an evacuation advisory should be issued to prevent residents from being exposed to a total of 20 millisieverts a year.

A member of the commission says the evacuation advisories should reflect the possibility that the situation at the nuclear power plant will be drawn out.

According to the member, the Commission has suggested to a task force that measures should be taken when radiation levels exceed 20 millisieverts. The member says it is the Commission's responsibility to monitor and collect data in each affected area.

Scientists say the limit allowed for an average person is 1 millisiervert a year. The Nuclear Safety Commission is suggesting revising the evacuation standard only for the current emergency. It says it does not necessarily mean that the 1-millisievert limit should be raised. The commission says the government has already begun briefing the affected local communities on the matter.

Thursday, April 07, 2011 06:48 +0900 (JST)
###

From **NHK** (http://www3.nhk.or.jp/daily/english/06_40.html) accessed 4/6/11 1850:

Plutonium detected again in Fukushima plant soil

Tokyo Electric Power Company has again detected a very small volume of plutonium in soil samples from the disaster-stricken Fukushima Daiichi nuclear power plant.

The operator of the plant collected samples from 4 locations at the compound of the plant on March 25th and 28th for analysis by an outside organization.

The utility says the radioactive substance was detected on the soil about 500 meters west-northwest of the No.1 reactor and a site near a solid waste storage facility 500 meters north of the reactor.

The first sample measured 0.26 becquerels of plutonium-238 per 1 kilogram of soil, down about 50 percent from the volume found earlier.

Highly toxic plutonium, a byproduct of the nuclear power generation process, was also found at the same locations in samples collected on March 21st and 22nd.

The plutonium appears to be related to the ongoing nuclear accident. TEPCO says the volume is so small that it does not pose a threat to human health.

This level is almost the same as the amount usually in the Japanese soil and also about the same the level of fallout from nuclear tests in the atmosphere outside Japan.

TEPCO says the No.3 reactor at the Fukushima plant was powered with uranium-plutonium mixed-oxide fuel.

But the company says that it cannot identify which reactor released the plutonium, because plutonium is produced at other reactors using uranium fuel.

Wednesday, April 06, 2011 21:50 +0900 (JST)
###

From **NHK** (http://www3.nhk.or.jp/daily/english/06_37.html) accessed 4/6/11 1855:

Radiation levels in seawater remain high

The operator of the troubled Fukushima Daiichi nuclear power plant says radiation levels detected in seawater near the plant remain high.

Tokyo Electric Power Company says it detected 11,000 bequerels of radioactive iodine-131 per cubic centimeter in seawater samples collected around the water intake of the No.2 reactor on Tuesday morning.

That's 280,000 times higher than the maximum allowed under the government's standards.

The recorded radioactive concentration was still high even though it was lower than that of last Saturday, when 7.5 million times the legal limit was detected at the same spot.
The utility also detected 24 bequerels of iodine-131 per cubic centimeter, about 600 times higher than the legal limit, in samples taken near the water outlet of the No.5 and No.6 reactors on Tuesday. The figure was higher than that of the previous day.

At a location about 330 meters south of the water outlet of the 4 reactors, the iodine-131 concentration had fallen from 4,385 times the legal limit detected last Wednesday to 400 times the legal limit, or 16 bequerels per cubic centimeter on Tuesday.

Wednesday, April 06, 2011 21:50 +0900 (JST)
###

From **NHK** (http://www3.nhk.or.jp/daily/english/07_32.html) accessed 4/7/11 0745:

Moving radioactive water likely to take long time

Japan's nuclear agency says moving highly radioactive water from the Fukushima Daiichi power plant's turbine building to a storage facility may not start for another week.

The water in the basement of the turbine building of the plant's Number 2 reactor and a concrete tunnel has been hampering work to restore the reactor's cooling systems.

The plant's operator, Tokyo Electric Power Company, has been discharging lower-level radioactive water into the sea from the facility to make room for the highly radioactive water. The work is to end on Thursday.

But the government's Nuclear and Industrial Safety Agency says the facility must first be checked for cracks that might have been caused by the earthquake, and that this could take several days to a week.

The agency says the facility was designed to store low-level radioactive water, and that every effort must be made to make sure that highly radioactive water does not leak.

Thursday, April 07, 2011 17:11 +0900 (JST)
###

From **NHK** (http://www3.nhk.or.jp/daily/english/07_30.html) accessed 4/7/11 0750:

Daily radiation checks on fish begin in Ibaraki

The Japanese government has begun monitoring radiation levels in fish in the Pacific off Ibaraki Prefecture, which is located south of the crippled Fukushima Daiichi nuclear power plant.

A trawler left Nakaminato Port at Hitachinaka City in the prefecture on Thursday to catch fish such as plaice and anglerfish as test samples.

The daily checks follow the detection of radioactive cesium above the legal limit in small fish called sand lance. The fish were caught Monday in seas off northern Ibaraki Prefecture, which is nearer to the nuclear plant.

Radiation exceeding the limit has not been found in other fish so far. But all fishing off the Ibaraki coast has been suspended because brokers and retailers are refusing to buy fish from the area.

Nakaminato fisheries cooperative official Kazumi Nemoto says the checks are necessary to confirm the safety of fish off Ibaraki so that consumers can eat them without worry.

Thursday, April 07, 2011 16:19 +0900 (JST)
###

From **NHK** (http://www3.nhk.or.jp/daily/english/07_20.html) accessed 4/7/1 0755:

TEPCO: Nitrogen injection going well

The operator of the crippled Fukushima Daiichi nuclear power plant says it continues to inject nitrogen gas into the containment vessel of the No.1 reactor without problems. The nitrogen gas is being used to prevent a hydrogen blast at the reactor.

The Tokyo Electric Power Company, or TEPCO, says that as of 6 AM Thursday pressure inside the containment vessel of the No.1 reactor had risen only slightly and that this indicates the operation is going well. The gas injection began at 1:30 AM Thursday.

Fuel rods inside the No.1 reactor are nearly half exposed because coolant water levels remain low. It is thought that the overheated fuel rods have caused a buildup of the volatile mix of hydrogen and oxygen. It is hoped the chemically stable nitrogen will counteract this buildup.

TEPCO says it plans to continue the injection for about 6 days and will also consider taking similar measures at the No. 2 and No. 3 reactors.

Regarding another problem, TEPCO said the pool of highly contaminated water in the underground tunnel connected to the No. 2 reactor rose 5 centimeters in the 24 hours leading up to 7 AM Thursday.

TEPCO says the rise is probably related to stopping the leakage of highly radioactive water from a concrete pit of the No. 2 reactor with the use of a hardening agent on Wednesday.

The company says there is still one meter of room to ground level, but will keep a close watch on the situation because an overflow would seriously hamper the already difficult restoration work.

TEPCO is also continuing the release of 8,000 tons of low-level radioactive wastewater from the plant to make storage space for more highly contaminated water. Around 6,000 tons have been discharged so far.

Thursday, April 07, 2011 12:09 +0900 (JST)
###

From **The New York Times**
(http://www.nytimes.com/2011/04/06/world/asia/06nuclear.html?_r=1) accessed 4/6/11 1215:

U.S. Sees Array of New Threats at Japan's Nuclear Plant
by James Glanz and William J. Broad
Published: April 5, 2011

United States government engineers sent to help with the crisis in Japan are warning that the troubled nuclear plant there is facing a wide array of fresh threats that could persist indefinitely, and that in some cases are expected to increase as a result of the very measures being taken to keep the plant stable, according to a confidential assessment prepared by the Nuclear Regulatory Commission.

Among the new threats that were cited in the assessment, dated March 26, are the mounting stresses placed on the containment structures as they fill with radioactive cooling water, making them more vulnerable to rupture in one of the aftershocks rattling the site after the earthquake and tsunami of March 11. The document also cites the possibility of explosions inside the

containment structures due to the release of hydrogen and oxygen from seawater pumped into the reactors, and offers new details on how semimolten fuel rods and salt buildup are impeding the flow of fresh water meant to cool the nuclear cores.

In recent days, workers have grappled with several side effects of the emergency measures taken to keep nuclear fuel at the plant from overheating, including leaks of radioactive water at the site and radiation burns to workers who step into the water. The assessment, as well as interviews with officials familiar with it, points to a new panoply of complex challenges that water creates for the safety of workers and the recovery and long-term stability of the reactors.

While the assessment does not speculate on the likelihood of new explosions or damage from an aftershock, either could lead to a breach of the containment structures in one or more of the crippled reactors, the last barriers that prevent a much more serious release of radiation from the nuclear core. If the fuel continues to heat and melt because of ineffective cooling, some nuclear experts say, that could also leave a radioactive mass that could stay molten for an extended period.

The document, which was obtained by The New York Times, provides a more detailed technical assessment than Japanese officials have provided of the conundrum facing the Japanese as they struggle to prevent more fuel from melting at the Fukushima Daiichi plant. But it appears to rely largely on data shared with American experts by the Japanese.

Among other problems, the document raises new questions about whether pouring water on nuclear fuel in the absence of functioning cooling systems can be sustained indefinitely. Experts have said the Japanese need to continue to keep the fuel cool for many months until the plant can be stabilized, but there is growing awareness that the risks of pumping water on the fuel present a whole new category of challenges that the nuclear industry is only beginning to comprehend.

The document also suggests that fragments or particles of nuclear fuel from spent fuel pools above the reactors were blown "up to one mile from the units," and that pieces of highly radioactive material fell between two units and had to be "bulldozed over," presumably to protect workers at the site. The ejection of nuclear material, which may have occurred during one of the earlier hydrogen explosions, may indicate more extensive damage to the extremely radioactive pools than previously disclosed.

David A. Lochbaum, a nuclear engineer who worked on the kinds of General Electric reactors used in Japan and now directs the nuclear safety project at the Union of Concerned Scientists, said that the welter of problems revealed in the document at three separate reactors made a successful outcome even more uncertain.

"I thought they were, not out of the woods, but at least at the edge of the woods," said Mr. Lochbaum, who was not involved in preparing the document. "This paints a very different picture, and suggests that things are a lot worse. They could still have more damage in a big way if some of these things don't work out for them."

The steps recommended by the nuclear commission include injecting nitrogen, an inert gas, into the containment structures in an attempt to purge them of hydrogen and oxygen, which could combine to produce explosions. On Wednesday, the Tokyo Electric Power Company, which owns the plant, said it was preparing to take such a step and to inject nitrogen into one of the reactor containment vessels.

The document also recommends that engineers continue adding boron to cooling water to help prevent the cores from restarting the nuclear reaction, a process known as criticality.

Even so, the engineers who prepared the document do not believe that a resumption of criticality is an immediate likelihood, Neil Wilmshurst, vice president of the nuclear sector at the Electric Power Research Institute, said when contacted about the document. "I have seen no data to suggest that there is criticality ongoing," said Mr. Wilmshurst, who was involved in the assessment.

The document was prepared for the commission's Reactor Safety Team, which is assisting the Japanese government and the Tokyo Electric Power Company. It says it is based on the "most recent available data" from numerous Japanese and American organizations, including the electric power company, the Japan Atomic Industrial Forum, the United States Department of Energy, General Electric and the Electric Power Research Institute, an independent, nonprofit group.

The document contains detailed assessments of each of the plant's six reactors along with recommendations for action. Nuclear experts familiar with the assessment said that it was regularly updated but that over all, the March 26 version closely reflected current thinking.

The assessment provides graphic new detail on the conditions of the damaged cores in reactors 1, 2 and 3. Because slumping fuel and salt from seawater that had been used as a coolant is probably blocking circulation pathways, the water flow in No. 1 "is severely restricted and likely blocked." Inside the core itself, "there is likely no water level," the assessment says, adding that as a result, "it is difficult to determine how much cooling is getting to the fuel." Similar problems exist in No. 2 and No. 3, although the blockage is probably less severe, the assessment says.

Some of the salt may have been washed away in the past week with the switch from seawater to fresh water cooling, nuclear experts said.

A rise in the water level of the containment structures has often been depicted as a possible way to immerse and cool the fuel. The assessment, however, warns that "when flooding containment, consider the implications of water weight on seismic capability of containment."

Experts in nuclear plant design say that this warning refers to the enormous stress put on the containment structures by the rising water. The more water in the structures, the more easily a large aftershock could rupture one of them.

Margaret Harding, a former reactor designer for General Electric, warned of aftershocks and said, "If I were in the Japanese's shoes, I'd be very reluctant to have tons and tons of water sitting in a containment whose structural integrity hasn't been checked since the earthquake."

The N.R.C. document also expressed concern about the potential for a "hazardous atmosphere" in the concrete-and-steel containment structures because of the release of hydrogen and oxygen from the seawater in a highly radioactive environment.

Hydrogen explosions in the first few days of the disaster heavily damaged several reactor buildings and in one case may have damaged a containment structure. That hydrogen was produced by a mechanism involving the metal cladding of the nuclear fuel. The document urged that Japanese operators restore the ability to purge the structures of these gases and fill them with stable nitrogen gas, a capability lost after the quake and tsunami.

Nuclear experts say that radiation from the core of a reactor can split water molecules in two, releasing hydrogen. Mr. Wilmshurst said that since the March 26 document, engineers had calculated that the amount of hydrogen produced would be small. But Jay A. LaVerne, a physicist at Notre Dame, said that at least near the fuel rods, some hydrogen would in fact be produced, and could react with oxygen. "If so," Mr. LaVerne said in an interview, "you have an explosive mixture being formed near the fuel rods."

Nuclear engineers have warned in recent days that the pools outside the containment buildings that hold spent fuel rods could pose an even greater danger than the melted reactor cores. The pools, which sit atop the reactor buildings and are meant to keep spent fuel submerged in water, have lost their cooling systems.

The N.R.C. report suggests that the fuel pool of the No. 4 reactor suffered a hydrogen explosion early in the Japanese crisis and could have shed much radioactive material into the environment, what it calls "a major source term release."

Experts worry about the fuel pools because explosions have torn away their roofs and exposed their radioactive contents. By contrast, reactors have strong containment vessels that stand a better chance of bottling up radiation from a meltdown of the fuel in the reactor core.

"Even the best juggler in the world can get too many balls up in the air," Mr. Lochbaum said of the multiplicity of problems at the plant. "They've got a lot of nasty things to negotiate in the future, and one missed step could make the situation much, much worse."
###

From **MSNBC**
(http://us.cnn.com/2011/WORLD/asiapcf/04/07/japan.nuclear.reactors/index.html?hpt=T2#)
accessed 4/7/11 0930:

Hydrogen buildup spurs more concern at Japanese nuclear plant
by Matt Smith, CNN

April 7, 2011 3:47 a.m. EDT
Tokyo (CNN) -- Engineers began injecting non-flammable nitrogen into the No. 1 reactor at the crippled Fukushima Daiichi nuclear power plant Thursday to counter a buildup of potentially explosive hydrogen, the plant's owner reported.

The Tokyo Electric Power Company said the danger of another hydrogen explosion, like the one that blew the roof and upper walls off the reactor building in March, was "extremely low." But it warned that more hydrogen could build up in the damaged reactor and that it planned a similar procedure for reactors 2 and 3.

Hydrogen buildup is a symptom of overheated fuel rods in the cores of the reactors, which plant workers have been struggling to keep under control since the March 11 earthquake and tsunami. The nitrogen injections are aimed at displacing oxygen in the reactor shell, reducing the possibility of an explosion.

In addition to the March 12 blast at Unit 1, a hydrogen explosion blew apart the No. 3 reactor building on March 14 and a suspected hydrogen explosion is believed to have damaged the No. 2 reactor the following day.

Tokyo Electric and Japanese regulators believe No. 2 is the source of the highly contaminated water they are now struggling to contain at Fukushima Daiichi, 240 kilometers (150 miles) north of Tokyo. Plant workers are pouring 8 tons of water (2,100 gallons) into that reactor every hour to keep it cool, and the water that flows out carries extremely high concentrations of radioactive particles.

That highly radioactive fluid is building up in the turbine plant and the service tunnels around the unit, leaving Japanese officials grasping for ways to contain it.

Until Wednesday, some of that water had been bleeding out into the Pacific Ocean through a cracked utility shaft behind the plant. On Saturday, the day the leak was discovered, concentrations of the reactor byproduct iodine-131 in seawater next to the shaft was as 7.5 million times higher than the legal limit, according to sampling data taken by the utility.

Those levels prompted Japanese authorities to start dumping nearly 10,000 tons of less-radioactive water into the Pacific on Monday night, largely to make room in a waste treatment reservoir for the No. 2 reactor coolant. The move enraged the country's fishing industry and drew protests from neighboring South Korea, but Japan's government called it an emergency move to prevent a worse discharge.

"They have to be injecting water," said Michael Friedlander, a former senior operator at U.S. nuclear power plants. "They have to keep the core covered. And I can tell you, you do not want to take that water out of containment right now, because it's screaming with radioactivity and you have absolutely no capabilities whatsoever to process it."

Japan is currently consulting with Russian authorities on whether a shipborne decontamination plant has the capability to handle the wastewater, the Japanese Foreign Ministry told CNN on

Thursday. But Tokyo has not yet asked for the vessel to be brought into the fight, said Tomosaburo Esaki, an official with the ministry's arms control and disarmament division.

The ship, the Suzeran ("Lily of the Valley"), can process up to 35 tons of radioactive waste a day and store about 800 tons. Japan built the vessel for Russia in the 1990s to help Moscow take aging nuclear submarines out of service.

Sergey Novikov, a spokesman for Russia's state-run nuclear energy company Rosatom, told CNN that, "The ball is now in their court."

"We have responded to their questions regarding the plant, and they sent us their additional questions, to which we responded as well," Novikov said. "They are still studying this issue, and we hope to hear from them soon."

Reactors 1 to 3 are all believed to have suffered damage to the fuel assemblies at their cores from overheating when the quake and tsunami knocked out cooling systems at Fukushima Daiichi.

Stopping the flow of radioactive water from No. 2 was a victory for plant workers, but Tokyo Electric and a top Japanese official warned the fight was far from over.

Hidehiko Nishiyama, a spokesman for Japan's Nuclear and Industrial Safety Agency, said Wednesday that the now-contained water "may lead to more leakage somewhere else," and the utility said Thursday that the water level in a service tunnel leading out of the unit's turbine plant had gone up about 2 cm (0.8 inches) since the leak was plugged.

Contamination levels behind the plant were falling sharply even before the leak was plugged, with iodine-131 down to about 4 percent from Saturday's peak on Tuesday, according to the utility's sampling data. The level remained 280,000 times higher than the legal limit, but those concentrations were dropping sharply as the water flowed out into the Pacific.

Levels of longer-lived cesium-137 were down sharply as well -- but they remained 61,000 times the legal standard behind the plant.

Experts have said the releases likely won't pose any long-term health risks to humans or sea life despite the eye-popping levels. Iodine-131 loses half its radiation every eight days, and the vast Pacific will quickly dilute the contaminated water, they said.

Samples from a monitoring point 20 kilometers (12.5 miles) southeast of the plant found iodine-131 levels down to 1.5 times legal levels, with no reading for cesium, Tokyo Electric reported Wednesday. Meanwhile, levels of airborne radiation nearby and further away have been declining steadily, government readings show.

"So hopefully the churning of the ocean and the currents will quickly disperse this so that it gets to very dilute concentrations relatively quickly," said Timothy Jorgensen, chairman of the radiation safety committee at Georgetown University Medical Center.

The company has added three monitoring stations offshore to keep track of the spread of contamination. It also has been rebuilding a damaged sea wall around the back of the plant with large sandbags to limit the flow of seawater out of the area.

CNN's Junko Ogura in Tokyo and Maxim Tkachenko in Moscow contributed to this report.
###

From **MSNBC** (http://www.msnbc.msn.com/id/42441638/ns/world_news-disaster_in_japan/) accessed 4/6/11 1415:

Japan faces another dilemma: Radiation-contaminated bodies
Near Fukushima plant, hundreds of corpses uncollected because of contamination fears

byKari Huus
Reporter
msnbc.com msnbc.com

As if the Japanese government did not have enough on its hands, now it has this dilemma: What to do with as many as 1,000 bodies near the leaking Fukushima nuclear plant that may be contaminated with radiation.

A solution will require decisive action and a high-degree of delicacy.

After losing family members to the tsunami and earthquake, most Japanese would normally go forward with a traditional cremation and place the remains with those of the victims' kin. But the bodies near the plant have been exposed to radiation, making them potentially dangerous to handle or move. And nearly a month after the disaster, decontaminating them so they can be transported is rapidly becoming impossible.

The earthquake and tsunami that struck Japan on March 11 badly damaged the Fukushima Dai-Ichi nuclear power plant owned by Tokyo Electric Power Co., or TEPCO. As the crisis around the plant built, the Japanese government called for evacuation of residents living within 12 miles of the damaged plant, which is now essentially a no-go zone.

Does the government have a plan?
Emergency responders have been struggling ever since to cool the plant's reactors and prevent a catastrophic meltdown. But several explosions, fires and discharged water from the plant have released radiation into the air and ocean near the plant, affecting anyone who remains in the area — including the dead.

If the Japanese government has a plan for the bodies in "hot zone," it has not been made public. The Japanese Ministry of Health, Labor and Welfare, which is in charge of disposition of disaster victims' remains, did not respond to msnbc.com queries on the subject and has said very little about it.

For the first three days of April, some 25,000 Japanese and American troops mounted a massive search for thousands of dead or missing residents. But they did not enter the 12-mile "exclusion zone" around the Fukushima plant, according to the Japanese government.

The International Atomic Energy Agency, which is working closely with the Japanese government to monitor radiation in the water and food, does not know how Japanese authorities plan to deal with the Fukushima victims.

"This is an area of concern that the IAEA and other UN organizations have been seeking clarification and information about from Japan," said a spokesperson for the IAEA.

Safe handling of the bodies may not allow for cremation according to Japanese tradition — yet another blow to people who have endured losses from the quake, the tsunami and evacuation due to the ongoing crisis at the plant.

'Worst case' scenario for survivors

"They say the worst case is when you don't have anything to bury or cremate, that's why the surviving family members are desperate," said Kyoko Tokuno, senior lecturer of East Asian religions at University of Washington in Seattle. "What they want to do is bring back the remains, which presumes finding the body and cremating them."

Internationally, there are various protocols on managing all types of materials contaminated with radiation, including bodies.

Two sets made available to msnbc.com — a 1,000-page protocol issued by the National Council on Radiation Safety in the United States and similar guidelines from the Centers for Disease Control — urge against cremation, calling instead for deep burial in a sealed container marked by radiation warning symbols.

The NCRS does describe a way of decontaminating a body that could make it safe for cremation, especially if, like the victims in Fukushima, the body was contaminated externally only.

"If it's a surface contamination as this probably was ... normally you could wash it off or wipe it off and remove clothing, to remove most of the contamination," said Kathryn Higley, head of the Department of Nuclear Engineering and Radiation Health Physics at Oregon State University. "But the body decomposes, so it might be more complicated."

Bodies likely 'not intact'

After more than three weeks outside, bodies of quake-tsunami victims would be "not skeletonized, but not intact, either," according to a California forensic scientist, who spoke on condition that he not be identified.

One Japanese press report said that a worker killed at the nuclear power plant had been decontaminated and cremated.

Other reports suggest decontamination has already become impractical, or impossible in some cases.

Japan's Kyodo news service reported that the police in Fukushima put off collecting remains of the dead after measuring an extremely high level of radiation on the body of a man found on March 27.

"Police were considering performing decontamination where the bodies are found," the report said. But another Kyodo report four days later said that "there are some difficulties around cleansing the bodies, resulting in damaging the already decomposing victims."

Even identification is going to be difficult, according to theKyodo report:

"The victims' nails can be extracted for DNA testing for identification, however, nails also need to be decontaminated and this will take tremendous amount of work and time," it said.

Cremation believed to release karmic energy
Cremation is important to Japanese Buddhists because it is thought to release the karmic energy that continues on and leads to future rebirth. That belief, and Japan's severe shortage of land for graveyards, means that nearly all Japanese are cremated after death.

Perhaps even more critical is the idea of recovering the bones so that they can be placed in the family tomb, with kin.

"One of the things that is important to people is that family members are buried together," said Tokuno, the University of Washington lecturer. "To be scattered all over is not comforting. Being buried together ... is very comforting."

For now, the Japanese government is preoccupied with the crisis at the Fukushima reactor, but Tokuno says it will have new problems if it fails to address survivors' concerns.

"If the government and TEPCO do not pay attention and delay the proper treatment of people in terms of basic necessities — including how they treat the deceased in terms of tradition — there may be some serious consequences," said Tokuno. "I think there will be an outcry."
###

Perspective:

From **ANS** (http://ansnuclearcafe.org/2011/04/07/decommissioning-fukushima/) accessed 4/7/11 0835:

Decommissioning Fukushima
Posted on April 7, 2011 by ansnuclearcafe
It has all the challenges of Three Mile Island plus there are four damaged reactors not just one

By Dan Yurman

The effort to contain the nuclear reactor crisis at Fukushima brings to mind the 1933 horror movie King Kong, in which a giant ape, escaped from captivity, and perched at the top of the Empire State Building, is fatally wounded by a swarm of war planes of the era.

While fictional film character Carl Denham intones his famous last line "It was beauty killed the beast," a less prosaic New York sanitation department might have been wondering how to remove a giant dead gorilla carcass from the corner of 5th Ave. and 34th St.

Kong's fall would have created a cleanup problem of immense scale. It would have been "beyond the design basis" of even the entire fleet of city garbage trucks.

Six gorillas at Fukushima

This dramatic movie metaphor is relevant as a visual image of the scope of the problem faced by Tokyo Electric Power Corp. (TEPCO) with the eventual decommissioning of six reactors at Fukushima. The utility doesn't have just one dead giant gorilla, there are six. The first three nuclear reactors are likely to be found to be fatally compromised with heat damaged fuel assemblies from loss of cooling water. Partial melting of fuel may be part of the problem.

Massive hydrogen explosions blew the roofs off of secondary containment structures at reactors 1, 3, and 4. The fourth reactor is also likely severely damaged beyond repair. Its spent fuel pool is exposed to the open air as a result of one of the huge hydrogen explosions.

The fifth and sixth reactors, relatively undamaged, may never restart because of wrecked balance of plant infrastructure and ferocious public opposition which is leveraged by Japanese law that gives veto power over nuclear facilities to the provincial government.

The 15-meter high tsunami swept away the normal infrastructure of a nuclear power station which, along with rubble from the hydrogen explosions, put debris across access roads and rail sidings blocking delivery of emergency equipment. Efforts to control leaks from buildings and trenches may go on for months or years. In short, it will be a very dangerous place to conduct cleanup work.

Precedent from Three Mile Island

The precedent TEPCO will have to rely on is the cleanup of the Three Mile Island (TMI) accident in the U.S. The cleanup of the badly damaged reactor at Three Mile Island, which began in 1979, took more than a decade ending in 1993. TEPCO's timeline may be much longer.

The New York Times reported that the first major phase of the TMI cleanup was completed in April 1990, when workers finished shipping 150 tons of radioactive wreckage from the damaged reactor vessel to Idaho for storage. According to a history of the Idaho lab's involvement in the project, 49 casks containing reactor fuel debris were transported by rail through 10 states in 22 shipments. Cleanup at that point had cost over $1 billion.

There are significant differences between the situation at TMI and Fukushima. The biggest and most dangerous differences are the extent of uncontrolled radioactive contamination outside the reactors at the plant site.

A second cleanup challenge, unlike the TMI experience, is that the surrounding countryside in Japan is like a war zone with lack of access by road and rail, power lines are down, and potable water, food, and housing are all in very short supply.

There some immediate steps TEPCO needs to take to start the cleanup process at Fukushima. It must get most of the radioactive water off the site and control what remains. It needs to control radioactive debris from the hydrogen explosions. Most importantly, it must find a path to remove the fuel from the damaged reactors or execute a plan to store it in place indefinitely.

Drying out the Fukushima reactor site

The removal of huge volumes of radioactive water from the site is the first priority. The Japanese have been pouring uncounted tons/day of water on four reactors since mid-March. Headlines in the news media on April 5 report TEPCO needs to remove 11,500 metric tonnes of water from the plant.

The Wall Street Journal reported April 5 that TEPCO was discharging 4,800 (short) tons/day of radioactive water directly into the ocean. That would be 96,000pounds or about 11,500 gallons of water. TEPCO characterized the radioactivity level of the discharge as "low."

According to the WSJ, authorities said about 20,000 tons of radioactive seawater still remain in the turbine building and the cable trench of each of reactors Nos. 1-3, for a total of 60,000 tons. That's 120 million pounds of water or 14,370,000 gallons of water. (1 gallon of water weighs 8.35 pounds)

Readers should be aware that the western press has had numerous difficulties with translations of Japanese language reports of reactor status information. Mistakes and errors by TEPCO, as well as wholesale retractions, have created problems for almost all numerical references from the utility subjecting them to continuous second guessing and review.

Anyway you count it, there is a lot of water and no way to store or dispose of it on the site. The option exists for TEPCO is to run a pipeline several miles out to sea from the reactor site and pump the water out there.

According to a BBC report for April 4, 2011, the Kuroshio Current is the North Pacific equivalent of the Gulf Stream in the Atlantic. It hugs the Asian continental slope until about 35 degrees North, where it is deflected due east into the deep ocean as the Kuroshio Extension.

Experts interviewed by the BBC say this means pollutants in its grasp, such as radioactive water from Fukushima, will tend over time to be driven out into the middle of the Pacific where they will become well mixed and diluted over time.

There will likely be heated political objections to this scenario, but TEPCO is more or less out of land-based options. It needs to get the radioactive water out of the plant if it has any chance to make progress with gaining control of even more dangerous radioactive contamination throughout the entire reactor complex including spent fuel in Unit 4 and damaged fuel in Units 1-3.

Securing the site

Next, the site needs to be washed down to remove surface radioactive contamination. Yes, this will produce more radioactive water, but it's better to send it out to sea than to leave it in place to harm site workers.

Also, according to an April 6 New York Times report, radioactive particles from the spent fuel pool for unit 4 may have been blown as much as a mile away by the hydrogen explosion. These materials need to be found and removed to a safe interim disposal area.

Fukushima reactor units 1-4 could to be covered by an semi-rigid, inflatable tent the size of a football stadium. This structure, supported by a light steel framework and constant air pressure blown into it, would protect the damaged reactors and cleanup workers from the elements. While a typhoon or other extreme weather could damage the air supported structure, it is easier, quicker, and less costly, to rebuild one than to try to encase all four reactors in a giant concrete shell.

None of this site preparation work can take place until the reactors themselves are in a state of cold shutdown. This may be accomplished through restoration of electrical power and control of the reactor cooling systems. If the cooling systems are damaged, and don't work, TEPCO will have to come up with a system that does the job which will likely continue producing hundreds of tons a day of radioactive wastewater.

It could be some time, perhaps as long as several years, before remote controlled, radiation hardened robots can be sent into the reactor cores at Units 1-3 to take a look at damage there. The reason is the wreckage of the damaged secondary containment structures at reactor units 1 & 2 will have to be removed so a work crew and their gear can be staged to access the primary containment structure. Unit 3, which has a relatively intact secondary containment structure, could be the first reactor to give up its secrets.

According to a Wall Street Journal interview April 2 with veterans of the cleanup at TMI, heat damaged fuel elements will be difficult to extract from the reactor pressure vessels especially if temperatures were high enough to melt the zirconium cladding that hold the fuel elements in place. Once that happens, fuel pellets fall to the floor of the reactor pressure vessel.

If the any of the fuel itself is melted, TEPCO might opt to wait for years with a buttoned up reactor pressure vessel and secure primary containment structure for everything to cool down through natural attenuation of residual heat and the cycle of radioactive half lives. Eventually, like TMI, the fuel from the reactors and spent fuel pools could be transferred to permanent dry cask storage.

If TEPCO can't find safe technical path forward to this solution, then an alternative is to eventually entomb the reactor pressure vessels in place by pouring concrete into the primary containment structures for units 1-3, and the spent fuel pool in unit 4. This solution may be forced on TEPCO if it finds that any of the primary containment structures are damaged from the original earthquake or by aftershocks.

According to a Bloomberg news report for March 30, the government hasn't ruled out sealing the plants 1-4 in concrete says Chief Cabinet Secretary Yukio Edano. Though he didn't mention it, one of the issues the government will need to evaluate is whether the primary containment structures could safely hold all that concrete. That weight could put new stressed on the structures.

Cost of cleanup

TEPCO's long-term cleanup costs could be in the tens of billions and take decades to complete. This activity alone could turn the utility into a semi-permanent ward of the state unless cleanup, and liabilities, are taken over entirely by the government through some form of receivership for the reactor site.

Fukushima could remain a no man's land for decades given the huge, almost unimaginable costs of cleanup. The government will likely look to find reasons to stretch out cleanup for financial reasons regardless of domestic and international pressure. Japan's government is carrying a huge debt load as it is.

The complexity of performing the decommissioning of six reactors four of which are severely damaged and in an unknown condition will drive up costs at every turn. The last time Japan decommissioned a reactor, which was a clean site, it took the government more than two decades to complete the job.

By comparison, the decommission of the Zion nuclear power plant in Illinois, which is well controlled under regulatory scrutiny from the NRC, is expected to cost $900 million and take a decade to complete. A New York Times report for November 22, 2010, noted it cost Exelon $10 million a year just to "baby sit" the plant in cold shutdown status.

The plant will be chopped up into pieces and shipped to a special landfill in Utah that can receive solid radioactive waste. There will be no separation of radioactive and non-radioactive materials. Everything will be assumed to be radioactive and will go to one disposal site.

Where to put radioactive waste?

This raises a key question for Japan. Where will it dispose of radioactive debris from Fukushima? It can't leave the material at the seashore to perpetually contaminate the cities and farms in the surrounding countryside and pollute highly productive fishing waters.

The Kyodo News wire service reported April 5 that the Japanese government is studying the possibility of borrowing a Japan-funded radioactive waste disposal facility from Russia to help contain radioactive water.

"We are checking whether it is technically possible to use the facility for this current event, and whether the facility's machines are working smoothly," Hidehiko Nishiyama, a spokesman for the government's Nuclear and Industrial Safety Agency, told a press conference.

He also said Japan has been communicating with Russia about using a floating facility, called Suzuran, (right) which Japan gave to Russia in 2001 to help dispose of low-level radioactive liquid waste from decommissioned nuclear-powered submarines.

Japan gave the facility to Russia as environmental concerns were raised after Russia dumped radioactive waste into the Sea of Japan in 1993 in the process of dismantling its nuclear subs.

There is even less certainty for high level waste and other solid radioactive debris (RH-TRU) which cannot be contact handled in the near term. Ten years ago, Japan created the Nuclear Waste Management Organization of Japan (NUMO) which was established under the jurisdiction of the Ministry of Economy, Trade and Industry.

NUMO is responsible for selecting a permanent deep geologic repository site, construction, operation and closure of the facility for waste emplacement by 2040. Site selection was begun in 2002.

Final selection of a repository location is expected by 2027. Japan may have to speed up the site selection process once it gets serious about the decommissioning of the six reactors at Fukushima. A 2008 briefing shows a lot of process work but not much progress in selecting much less building a geologic repository for high level waste. There's a long way to go.
###

From Reuters (http://af.reuters.com/article/energyOilNews/idAFN0621681520110406) accessed 4/7/11 1050:

UPDATE 3-Democrats probe worst fears for U.S. nuclear power
Wed Apr 6, 2011 10:03pm GMT

* Democrats: Simulation worrying for Peach Bottom plant
* Worst-case disaster would bring plant close to meltdown
* NRC official: Simulation is for highly improbable events
* NRC says Fukushima reactor core has not breached vessel
* Some signs Japan reactor design did not keep pace - NRC

By Roberta Rampton and Ayesha Rascoe

WASHINGTON, April 6 (Reuters) - Democratic lawmakers raised concerns on Wednesday about whether regulators and the nuclear power industry are doing enough to ensure U.S. reactors can withstand worst-case scenarios in the wake of Japan's crisis.

Concerns focused on a Pennsylvania nuclear plant with the same kind of reactor design as the Fukushima Daiichi facility, which Japanese authorities are still trying to bring under control since a March 11 earthquake and tsunami.

Some lawmakers argued that the U.S. plant could be at risk of meltdown in the case of a severe emergency.

A Nuclear Regulatory Commission study on the Peach Bottom nuclear plant, owned by utilities Exelon (EXC.N: Quote) and Public Service Enterprise Group Inc's (PEG.N: Quote) PSEG Power, showed it would come "dangerously close to core damage" in a worst-case emergency, said Diana DeGette, a Democrat from Colorado.

The modeling exercise was done on only two of the 104 U.S. nuclear plants, and draft results were obtained through a Freedom of Information Act request from the Union of Concerned Scientists, which has been critical of the nuclear industry.

A top NRC official said the computer modeling ignored the likelihood of worst-case power loss.

"We look at very unrealistic events as part of that analysis," said Martin Virgilio, deputy executive director for the NRC's reactor and preparedness programs, at a House Energy and Commerce subcommittee hearing.

The president of PSEG Power said he had not seen the draft study and could not comment on its findings, but noted the analysis assumes all backup systems in plants fail.

"There's a healthy process here. These very issues that happened in Japan, we're already asking ourselves, what if this happened?" William Levis told Reuters after the hearing.

The hearing came as documents released by an independent safety watchdog group showed the NRC had privately expressed doubts that some U.S. nuclear power plants are prepared for a Fukushima-scale crisis.

Internal NRC emails and memos -- also obtained by the Union of Concerned Scientists -- questioned the adequacy of the back-up plans to keep reactor cooling systems running if off-site power were lost for an extended period.

PLANT NOT VULNERABLE TO TSUNAMI

A nuclear engineer from the University of Wisconsin-Madison said the modeling exercise did not consider the various levels of risks at the plants.

"It's as if I was flying in an airplane and I lost a wing or two engines, and then asked, 'What would happen?' It's a consequence thing," Michael Corradini told reporters.

Republican Tim Murphy from Pennsylvania noted the plant is "a few hundred feet above sea level", making it unlikely to be hit by a tsunami.

DeGette and other lawmakers at the hearing raised concerns about the nuclear industry's reliance on back-up batteries for cooling, similar to the kind used at Fukushima, which last only four to eight hours before they need additional power.

In the event of a major disaster in which power cannot be restored for days, they said the short lifespan of the batteries would place U.S. plants at risk.

"I am disturbed by both members of Congress and also some of the industry just making blanket statements that our nuclear energy system is safe and implying that we don't need to do anything further," DeGette told Reuters.

NRC: FUKUSHIMA VESSEL NOT BREACHED

At the hearing, Edward Markey, a prominent critic of the nuclear industry, said he had received information from the NRC that Fukushima's No. 2 reactor had likely melted through its vessel, a key part of containment for radioactive materials.

But Virgilio said that had not happened yet, based on information from NRC staff in Tokyo.

"We get situation reports from our team multiple times during the day and so far we do not believe the core has actually breached" the vessel, Virgilio told reporters.

There has been confusion among experts about whether the vessel has been breached. Inside the NRC, there also seems to be differing information about the state of the reactor.

Emails provided by Markey's office from an NRC staffer on Tuesday said "the NRC staff speculates that part of the Unit 2 core may be out of the reactor pressure vessel and may be in the lower space of the drywell".

"Lower radiation readings in the torus suggest that there is not core material in the torus," the email said, referring to the water at the bottom of the reactor containment unit.

Virgilio also said there were differences in the designs of the reactors in the United States and Japan, both boiling water reactors designed by GE (GE.N: Quote).

"We've done quite a bit to modify that design over the life of the facilities as a result of operating experience. We don't know for sure, but there are some evidence that the Japanese designs did not keep pace, they did not make the same modifications that we've made," he said.

(Reporting by Roberta Rampton and Ayesha Rascoe; Editing by Lisa Shumaker and Dale Hudson)
###

From: Vargo, George <gvargo@state.pa.us>
Sent: Friday, April 08, 2011 11:01 AM
To: Tosh Ushino (b)(6); Dan Strom (b)(6); Dan Strom (strom@pnl.gov); George J. Vargo (vargo@physicist.net); Reeves, Glen I. CONTRACTOR; Hasselberg, Rick; 'Ronald E Goans, MD, PhD'; Whitehead, Jeffrey; Allard, David; Barnhart, James; Chippo, John (DEP); Easton, Randolph; Gallagher, Dennis (DEP); Gilcrist, Tara; Handley, Lu-Ann; Janati, Rich; Kutchman, Randy; Melnic, Joseph; Seiber, Benjamin; Skelton, Donielle; Tamanini, Henry; Wagner, William
Cc: 'Susan E. Vargo'; 'Vargo Susan'; George J Vargo; 'Karen Barcal'
Subject: Fukushima Daiichi NPP Update 4/8/11 - 1100
Attachments: Fukushima_Daiichi_NPP_Status_Report#0030-040811-1100.doc

DJ/69

Fukushima Daiichi NPP Status Report #30 April 8, 2011 – 1100
(4/09/11 0000 JST)

From **IAEA** (http://www.iaea.org/newscenter/news/tsunamiupdate01.html) accessed 4/8/11 0815:

IAEA Briefing on Fukushima Nuclear Accident (7 April 2011, 18:00 UTC)
Presentation:
→ Summary of Reactor Status
→ Radiological Monitoring and Consequences
→ Status of Fukushima Units
→ Marine Environment Monitoring

1. Current Situation
Overall, the situation at the Fukushima Daiichi plant remains very serious although there are early signs of recovery in some functions such as electrical power and instrumentation.

On 6th April it was reported that the leakage of water from the sidewall of the pit closest to the sea has stopped after coagulation agents (liquid glass) were injected into the holes drilled around the pits. Work continues to prevent further releases to the sea.

According to the TEPCO Press Release of 4th April, approximately 10,000 T of water from the radioactive waste treatment plant and 1,500 T of subsurface waters stored in the sub drain pits of **Unit 5 and 6** are being discharged to the sea to provide room to store water with higher levels of radioactivity in a safer manner. TEPCO has estimated that these discharges would increase the effective dose to a member of the public by 0.6 mSv, if he/she were to eat seaweed and seafood from 1 km from the discharge point every day for a year. It should be noted however that the movements of all ships, including fishing boats, are restricted within a 30km zone from the NPP.

In **Unit 1** fresh water is being continuously injected into the reactor pressure vessel through the feed-water line at an indicated flow rate of 6 m3/h using a temporary electric pump with off-site power. Fresh water is being injected continuously into the RPVs through the fire extinguisher lines in **Units 2 and 3** at indicated rates of 8 m3/h and 7 m3/h respectively using a temporary electric pump with off-site power.

As of 6th April, TEPCO started injecting nitrogen gas to **Unit 1** containment vessel to provide an inerted atmosphere to reduce the possibility of hydrogen combustion within the containment vessel.

On **Unit 1** the indicated temperature at the feed water nozzle of the RPV is 224° and at the bottom of RPV it is 117°. Instrumentation 'B' for Reactor Pressure indicates that the pressure in the RPV is increasing and instrumentation 'A' indicates that it has stabilized. NISA has indicated that some instruments in the reactor vessel may not be working properly. Drywell pressure has increased slightly due to the injection of nitrogen. In **Unit 2** the indicated temperature at the feed water nozzle of the RPV is stable at 143°. The temperature at the bottom of RPV was not

reported. Indicated Drywell pressure remains at atmospheric pressure. The indicated temperature at the feed water nozzle of the RPV in **Unit 3** is 88° and at the bottom of RPV is about 115°.

Additional water was injected via the Spent Fuel Cooling System line to the spent fuel pool by a temporary pump on 4th April.
There has been no change in status on **Units 4, 5, 6** and the Common Spent Fuel Storage Facility

2. Radiation monitoring

On 6th April, low levels of deposition of both I-131 and Cs-137 were detected in 4 and 6 prefectures respectively. The values reported for I-131 ranged from 3.4 to 10 becquerels per square metre, for Cs-137 from 4.9 to 19 becquerels per square metre. Gamma dose rates continue decreasing . There is no significant change in gamma dose rates reported for 6th April compared to yesterday.

As of 5th April, I-131 and Cs-134/137 was detectable in drinking water in a small number of prefectures. All values were well below levels that would initiate recommendations for restrictions of drinking water. As of 6th April, one restriction for infants related to I-131 (100 Bq/l) is in place as a precautionary measure in only one village of the Fukushima prefecture.

TEPCO is responsible for near-shore sampling, taking samples of surface seawater. Samples near discharge areas are collected daily. Until 3rd April a general decreasing trend was observed. However, after the discharge of contaminated water at 4th April, an increase from about 11 kBq/l as measured at 09:00 to 41 kBq/l at 14:00 for I-131; from 5.1 kBq/l at 09:00 to 19 kBq/l for both, Cs-134 and Cs-137 at 14:00 was recorded. On the 5th April a decrease was observed as compared to the previous day, with seawater concentration of 5 kBq/l for Cs-137 and 11 kBq/l for I-131.

Since 4th April TEPCO added 3 new sampling points 15 km offshore, in addition to the already established 3 sampling points at the same distance, this resulting in a total of 6 sampling points situated along a north-south transect at a distance of 15 km from the coast.

Levels of radionuclides reported at these l°ations for the 5th of April are in the range 57 - 200 Bq/l for I-131, 18 - 310 Bq/l for Cs-134 and 18 - 320 Bq/l for Cs-137.
There were no new data for 30 km off shore monitoring, carried out under the responsibility of MEXT, compared to yesterday's briefing.

On 6th April the marine expert from the IAEA Environment Laboratories Monaco completed his mission in Japan. From the 2nd to 4th April he embarked on the research vessel MIRAI to observe the sampling conducted 30 km offshore. He visited the JAEA laboratory in Tokai where the gamma spectrometric analyses are performed. He briefed representatives of the Japanese Government

Since our written briefing of yesterday, data related to food contamination were reported on 6th April by the Japanese Ministry of Health, Labour and Welfare. These reported analytical results covered a total of 78 samples taken on 3rd April (2 samples), 4th April (39 samples), 5th April

(35 samples) and 6th April (2 samples). Analytical results for 52 of the 78 samples for various vegetables, spinach and other leafy vegetables, fruit (strawberry) and unpr°essed raw milk in eight prefectures (Fukushima, Gunma, Hyogo, Ibaraki, Kanagawa, Niigata, Saitama and Yamagata) indicated that I-131, Cs-134 and/or Cs-137 were either not detected or were below the regulation values set by the Japanese authorities. However, it was reported that analytical results for 26 of the total 41 samples taken in Fukushima prefecture for various vegetables, spinach and other leafy vegetables indicated that I-131 and/or Cs-134/Cs-137 exceeded the regulation values set by the Japanese authorities.

On 5th April, the Japanese Ministry of Health, Labour and Welfare issued a press release indicating that a new provisional regulation value was set for I-131 at a limit of 2000 Bq/kg in fishery products.

As of 4th April, food restrictions (distribution and/or consumption) are in place in four prefectures (Fukushima, Ibaraki, T°higi, and Gunma) and in certain l°ations in Chiba prefecture (Katori City, Tako Town and Asahi City).

In Fukushima, there are restrictions on the consumption of leafy vegetables, headed and non-headed leafy vegetables (e.g. spinach, komatsuna, cabbage), and flower-headed brassicas (br°coli, cauliflower). There are also restrictions on the distribution of headed and non-headed leafy vegetables, flower-headed brassicas (including turnips), spinach, kakina and unpr°essed raw milk produced in the prefecture.

In Ibaraki, there are restrictions on the distribution of unpr°essed raw milk, parsley, spinach and kakina produced in the prefecture.

In Chiba, there are restrictions on the distribution of spinach produced in Katori City and Tako Town. There are also restrictions on the distribution of spinach, chingensai, shungiku, sanchu, celery and parsley produced in Asahi City.

In Gunma and T°higi, there are restrictions on the distribution of spinach and kakina produced in these prefectures.

3. IAEA Activities

The two agency experts in BWR technology are in Japan to have a direct exchange of views with the Japanese counterparts. They met with officials of NISA, TEPCO, the Japanese Atomic Energy Commission and the Nuclear Safety Commission. They visited the off-site emergency response center and the Fukushima Daiichi site. A third agency expert will join the team in Tokyo to have follow-up meetings with TEPCO and NISA at the end of the week.

The following countries have submitted monitoring data and/or links to national websites where data is available: Austria, Belgium, Bulgaria, Canada, China, Finland, France, Greece, Iran, Ireland, Italy, Malaysia, Poland, Romania, Russian Federation, Singapore, Spain, Sweden, Switzerland, and Ukraine.

IAEA Update: New earthquake in Japan (7 April, 17:30 UTC)

The IAEA confirms that an earthquake occurred in Japan at 14:32 UTC 7 April. The IAEA International Seismic Safety Centre has rated it as a 7.1 magnitude, revised from an initial 7.4 magnitude. The epicenter of the earthquake was 20 km from the Onagawa nuclear power plant and approximately 120 km from the Fukushima Daiichi and Daini nuclear power plants.
The IAEA has been in contact with NISA and can confirm the status of the following nuclear facilities:

Fukushima Daiichi Nuclear Power Plant
NISA confirms that no changes have been observed at the on-site radiation monitoring posts. The injection of water into the reactor pressure vessels of Units 1, 2 and 3 was not interrupted.

Fukushima Daini Nuclear Power Plant

NISA confirms that no changes have been observed of the readings at the on-site radiation monitoring posts.

Onagawa Nuclear Power Plant
All reactors have been in cold shutdown since the 11 March earthquake.
NISA has confirmed that two out of the three lines supplying off-site power to the site were lost following the 7 April earthquake. Off-site power continues to be supplied through the third line. Cooling of the spent fuel pool was temporarily lost, but has subsequently been restored.
No change has been observed in the readings from the on-site radiation monitoring post. The status of the plant is currently being checked.

Tokai Daini Nuclear Power Plant
Tokai Daini nuclear power plant remains in cold shutdown since the 11 March earthquake. No abnormality has been observed.

Higashidori Nuclear Power Plant
NISA has confirmed that the Higashidori NPP was shutdown and in a maintenance outage at the time of the 7 April earthquake. Off-site power has been lost. Emergency power supply to the site is operating. All the fuel had been removed from the reactor core and stored in the spent fuel pool. Cooling of the spent fuel pool is operational.

Tomari Nuclear Power Plant (in Hokkaido)
At the time of the 7 April earthquake Tomari Unit 1 and Unit 2 were in operation. Following the 7 April earthquake, the Hokkaido Electric Power Company reduced the generating power to 90% of capacity.

Rokkasho Reprocessing Plant
NISA confirms that Rokkasho Reprocessing Plant and uranium enrichment facility lost off-site power. Emergency power supply to the site is operating.
The IAEA will issue further information as soon as it becomes available.

###

From **NEI** (http://www.nei.org/newsandevents/information-on-the-japanese-earthquake-and-reactors-in-that-region/) accessed 4/8/11 0930:

UPDATE AS OF 1:00 P.M. EDT, THURSDAY, APRIL 7:
Tokyo Electric Power Co. continued to inject cooling water into reactors 1, 2 and 3 at the Fukushima Daiichi nuclear power plant, despite a 7.1 magnitude aftershock that hit 70 miles north of the plant.

The temblor, the largest aftershock since the 9.0 magnitude earthquake on March 11, hit at 11:32 pm JST today off the northeast coast. The Japanese government issued a tsunami warning after the earthquake, but lifted it about 90 minutes later.

Three nuclear power plants—Fukushima Daini, Fukushima Daiichi and Onagawa—were shaken, but officials reported no new damage and no injuries to employees. Two of the three electric power lines that supply the Onagawa plant were offline, but normal operations continued with the remaining power line to maintain reactor cooling systems. The plant had been safely shut down since March 11.

Fukushima Daiichi
Seawater radiation levels, while still significantly higher than government safety limits, have decreased near the power plant since TEPCO blocked a leak of highly radioactive water into the ocean. TEPCO said it is too early to credit stopping the leak with the decline.

Workers continued to inject nitrogen gas into the containment vessel of reactor 1, a process that began Wednesday. Inert nitrogen gas is used in reactor containment vessels to stabilize the atmosphere. The nitrogen injection is to prevent possible ignition of the hydrogen that is believed to be accumulating inside the reactor 1 containment. It is expected to take six days to complete the process. Spraying water onto the used fuel storage pools at reactors 1-4 was interrupted briefly because of the earthquake.

TEPCO continued its controlled discharge of low-level radioactive water into the Pacific Ocean to make room in storage tanks for more highly contaminated water on the site. The highly radioactive water in turbine building basements is hampering efforts to restore cooling systems, particularly for reactor 2, where the radiation is highest. Before the highly radioactive water is pumped into the wastewater storage tank, the facility must be inspected for damage, the Japan Atomic Industrial Forum reported. Inspection could take up to a week.

The Japanese government is evaluating possible evacuation of some residents from areas within 12.5 to 18.5 miles of the Fukushima Daiichi site. Residents in the 12.5-mile zone were evacuated early in the emergency. Those within the outer area have been advised to stay indoors. The additional evacuation would be from areas where radiation has accumulated since March 11.

UPDATE AS OF 11:30 A.M. EDT, THURSDAY, APRIL 7:
A 7.1 magnitude aftershock in northeastern Japan today caused no damage to nuclear power plants in the area, the Nuclear and Industrial Safety Agency reported. Plant employees at the Fukushima Daiichi, Fukushima Daini and Onagawa plants were evacuated for safety after the tremor, which struck at 11:32 pm JST.

Two of the three electric power lines that supply the Onagawa site were down, officials said, but operations at the plant's three reactors were continuing as normal with power from the remaining line. There was no change in radiation levels near the plant.

The reactors at the three sites had been shut down since the magnitude 9.0 earthquake on March 11.

There were no damages reported at the Fukushima Daiichi and Daini plants. At Daiichi, where engineers have been working to cool reactors since the March 11 earthquake, fresh water injection continued.
###

From **NHK** (http://www3.nhk.or.jp/daily/english/08_18.html) accessed 4/8/11 0745:

Work to get Fukushima plant under control goes on

Work to restore reactor cooling systems at the Fukushima Daiichi nuclear power plant will continue on Friday following a strong earthquake overnight.

The magnitude 7.4 tremor was one of the largest since the devastating quake on March 11th. The plant operator, Tokyo Electric Power Company, says no new irregularities have been detected in radiation readings or the facilities.

It says it will continue discharging lower-level radioactive water into the sea from a storage facility on Friday.

The work is designed to make room for highly radioactive water that leaked into the basement of the turbine building next to the plant's No. 2 reactor and a concrete tunnel.

On Thursday, about 7,700 tons of relatively lower-level radioactive water was released, and the remaining 300 tons will be discharged on Friday.

TEPCO says the latest quake has not caused further leakage of contaminated water into the sea from a concrete pit outside the No. 2 reactor.

The company says it will also continue work to inject nitrogen into the containment vessel of the No. 1 reactor to prevent a possible hydrogen explosion.

Nearly half of the nuclear fuel rods in the reactor are feared to be exposed -- generating hydrogen that could explode if it reacts with oxygen.

Friday, April 08, 2011 11:09 +0900 (JST)
###

From **NHK** (http://www3.nhk.or.jp/daily/english/08_20.html) accessed 4/6/11 1850:

Thursday's quake damages Onagawa nuclear plant

Tohoku Electric Power Company says Thursday night's strong earthquake caused water to overflow from spent fuel storage pools at one of its nuclear power plants.

The power company reported on Friday that water had spilled onto the floor at all 3 reactors at the Onagawa nuclear power plant in Miyagi Prefecture. The amount of water spilled was 3.8 liters at the most.

The utility firm also found water leaks at 5 locations in the plant, including inside buildings housing the reactors.

The company added that blowout panels--devices designed to control pressure inside the buildings--were damaged at the turbine building of the Number 3 reactor.

The newly reported problems add to the downing of 3 of 4 external power lines at the Onagawa plant. The plant is maintaining its cooling capabilities with the remaining power line.

Tohoku Electric Power Company is continuing its efforts to determine the extent of the damage caused by the latest quake. But it says no change has yet been seen in radiation levels around the plant.

Friday, April 08, 2011 11:59 +0900 (JST)
###

From **NHK** (http://www3.nhk.or.jp/daily/english/08_39.html) accessed 4/8/11 0950:

Water radiation levels rise north of nuke plant

The operator of the troubled Fukushima Daiichi nuclear power plant says seawater radiation levels continue to rise in areas north of the plant.

Tokyo Electric Power Company says it detected on Thursday 110 becquerels of radioactive iodine-131 per cubic centimeter in seawater samples collected 30 meters from outlets in the northern part of the complex.

The figure is 2,800 times higher than the maximum allowed under government standards. Measurements at the same spot were 600 times the standard on Tuesday and 1,000 times on Wedneday.

In a series of surveys 15 kilometers from the coastline, a reading 9.3 times the national limit was detected north of the plant, off the coast of Minami-soma City.

The government's nuclear safety agency has instructed the Fukushima plant operator to review its monitoring activities, as the radioactive material is likely to be carried northward by ocean currents.

The agency stressed the need to monitor areas of high radiation concentration more closely to clarify possible contamination of the ocean.
Friday, April 08, 2011 21:57 +0900 (JST)
###

From **NHK** (http://www3.nhk.or.jp/daily/english/08_16.html) accessed 4/8/11 0955:

No. 1 reactor lost cooling function on March 11

Unreleased data obtained by NHK suggest that the failure to maintain the cooling functions of the No. 1 reactor at the troubled Fukushima Daiichi nuclear power plant possibly triggered a hydrogen explosion at an early stage.

The data show that the water level inside the No. 1 reactor dropped to 45 centimeters above the fuel rods, or about one-tenth the normal level, nearly 7 hours after the March 11th earthquake and tsunami. The fuel rods become exposed 11 hours later.

Water levels in the No. 2 and No. 3 reactors were kept at around 4 meters through the use of emergency generators despite the power outages. It was a day and a half to 3 days before their fuel rods were exposed.

University of Tokyo Professor Naoto Sekimura says the loss of cooling functions at the No.1 reactor and the subsequent exposure of the fuel rods may have caused the hydrogen explosion as early as the next day.

The plant's operator, Tokyo Electric Power Company, has so far only disclosed data from the day after the quake.

Friday, April 08, 2011 11:24 +0900 (JST)
###

From **The New York Times**
(http://www.nytimes.com/2011/04/08/science/earth/08water.html?hpw) accessed 4/8/1 1048:

Pennsylvania Calls for More Water Tests
By IAN URBINA
Published: April 7, 2011

Pennsylvania environmental regulators said Wednesday that they were calling for waste treatment plants and drinking water facilities to increase testing for radioactive pollutants and other contaminants, to see whether they are ending up in rivers because of the growth of natural gas drilling in the state.

The move follows a March 7 letter that the federal Environmental Protection Agency sent to the state, instructing it to perform testing for radioactivity within 30 days and to review the permits of state treatment plants handling the wastewater.

"Over the past three years, we have taken the actions necessary to protect the environment and public health without stifling the growth of the natural gas industry," said Michael Krancer, acting secretary of the Pennsylvania Department of Environmental Protection.

He added that his office had sent letters requiring new testing to 14 public water authorities. It also contacted 25 wastewater plants, requesting that those with older permits "voluntarily" begin testing for radium, uranium and other pollutants.

The letters from federal and state regulators follow reports in The New York Times about gas industry wastewater with high levels of radioactivity being discharged into rivers and streams by sewage treatment plants that were not designed to remove radioactive materials.

The state's letter also comes almost a month after a lengthy conference call among E.P.A. officials and state regulators, during which they discussed how to improve regulation of natural gas industry wastewater in Pennsylvania.

During the call, federal regulators raised concerns about sludge, often called biosolids, from waste treatment plants receiving drilling wastewater.

When wastewater is sent through these plants, some of the heavier contaminants settle out during the treatment process. Radioactive elements like radium may also settle and concentrate in the sludge, which is sometimes sold by treatment plants for use as fertilizer.

E.P.A. officials said they were concerned that the state had not forbidden treatment plants to distribute the sludge for such purposes. Asked by E.P.A. officials about this issue, Pennsylvania regulators said they planned to address it in a new guideline.

"It's not really a requirement, but it's in guidance," said Ron Furlan, an official from the Pennsylvania Department of Environmental Protection, according to a transcript of the March 15 conference call.

Mr. Furlan added that the reason for the new guidance on biosolids is that "we don't have a good handle on the radiological concerns right now, and in any case we don't want people land-applying biosolids that may be contaminated to any significant level by Radium 226-228 or other emitters."

During the conference call, E.P.A. officials said they had been informed that the Johnstown Plant in western Pennsylvania was still receiving biosolids and distributing them to be spread on fields.

"I don't know for a fact," Mr. Furlan said, "but I'm sure that there are some P.O.T.W.'s that are accepting brine natural gas wastewater and are still land applying, but we are still trying to stop that basically." P.O.T.W.'s refers to publicly owned treatment works, or sewage treatment plants.

A message seeking comment from officials who oversee the Johnstown plant was not responded to. On its Web site, the plant says that it "produces 20,000 tons of lime-stabilized biosolids per year."

Documents reviewed by The Times in February indicate that the Johnstown plant has accepted wastewater with levels of alpha radioactivity roughly 2,157 times higher than the drinking water standard.

In an interview last December, an official from the Johnstown, Pa., plant said his plant usually accepted 50,00 to 100,000 gallons of drilling wastewater per day.

In Pennsylvania, waste treatment plant operators have to test sludge for a range of contaminants before they can distribute it to be used for fertilizer. The list of contaminants does not include radium, according to a 1999 report by Pennsylvania State University. State officials did not respond to questions about whether these standards had been updated.

During the conference call, E.P.A. officials pushed state regulators to consider re-evaluating all of the permits at wastewater treatment plants that are accepting drilling waste and adding stricter standards for testing of radionuclides and other contaminants.

"It's basically out of the question," Mr. Furlan said, rejecting the idea and explaining that "it's too resource intensive" and that industry would push back too strongly.

Mr. Furlan also said that the real threat of radionuclides from drilling wastewater being sent through sewage treatment plants was that it would settle in the sediment at the bottom of rivers.

The letters sent this week by Pennsylvania regulators made no mention of any plans to test river sediment or to restrict applications on land of sludge from these waste treatment plants that are accepting drilling waste.

"There is no sediment testing as far as I know," Mr. Furlan said when asked by E.P.A officials. "But if you were really looking for radionuclides, that's the first place I would look."
###

From **The New York Times**
(http://www.nytimes.com/2011/04/08/world/asia/08toshiba.html?_r=1&hpw) accessed 4/8/11 1040:

From Safe Distance, U.S.-Japanese Team Draws Up Plan to Demolish Reactors
By Ken Belson
Published: April 7, 2011

TOKYO — Hydrogen explosions. High levels of radiation. Thousands of gallons of contaminated water dumped into the sea. With the drumbeat of bad news, including another powerful aftershock on Thursday, it will take months, if not years, to stabilize the reactors and spent fuel pools that were damaged in last month's earthquake and tsunami at the Fukushima Daiichi plant.
Yet it is not too soon for a team of engineers from Japan and the United States to begin working on the thorny task of how to dismantle the reactors, four of which are so badly damaged that the plant's operator has said they will be scrapped.

Already, dozens of engineers from Toshiba, which helped build four of the Fukushima Daiichi reactors, have been joined by experts from the United States to prepare for the decommissioning work, a job so big that the planning needs to start even now, in parallel with the efforts to contain the crisis.

The team includes experts from Westinghouse, whose majority owner is Toshiba; the Shaw Power Group, a civil engineering firm; and the Babcock & Wilcox Company, an energy technology and services company, one of whose specialties is the disposal of hazardous materials.

The plans to take apart the reactors are complicated not only by the volatility of the situation but also by the uncertainty about the reactors' condition once they finally cool. No one has ever decommissioned four damaged reactors at one power plant, let alone reactors rocked by a powerful earthquake and swamped by a tsunami.

In fact, no Japanese nuclear power plant has ever been entirely decommissioned, which is one reason Westinghouse and Babcock & Wilcox — companies that helped shut down the damaged reactor at Three Mile Island in Pennsylvania after the accident there in 1979 — have joined the effort.

Among myriad problems, the engineers must find ways to dispose of the fuel, remove reactors, demolish buildings, and clean up nearby land and water.

"Each of these problems is solvable and have been solved before," said Hiroshi Sakamoto, a senior vice president at Toshiba America Nuclear Energy Corporation, who returned to Japan to lead the team. (It has dubbed itself "Mt. Fuji," short for Management Support for Fukushima U.S. and Japan Initiative.)

"The situation is really the complexity and combination of factors," he said.

While the team makes plans, 800 of Toshiba's engineers are helping the Tokyo Electric Power Company, which operates the Fukushima Daiichi plant, with the more pressing problem of cooling the reactors and reducing the radioactivity there. About 250 engineers are stationed in Fukushima, and an additional 500 are working at Toshiba's nuclear engineering center in Yokohama, Japan.

They are helping to re-establish electrical power to pumps and motors and to install power panels; draining contaminated water; and acquiring desalination equipment, underwater pumps and air purifiers to filter radioactive dust. Westinghouse has provided Tokyo Electric with boron, fuel, spare pumps and other supplies.

"We are taking a two-tier approach for Fukushima," said Kiyoshi Okamura, chief of Toshiba's nuclear business. "These efforts are mutually complementary."

Because of the emergency, Toshiba's engineers — those who are helping Tokyo Electric and those planning the decommissioning — are working without a formal contract. But the Japanese-American team submitted a proposal to Tokyo Electric on April 4 that lays out a long-term plan to remove and transfer spent fuel as part of a larger project.

Toshiba has not been told when a decision will be made on the proposal, which might ultimately be worth billions of dollars.

Westinghouse, Shaw and Babcock & Wilcox were eager to help when it became apparent early on that the Fukushima reactors might have to be scrapped. But the crisis made it difficult for Tokyo Electric to respond. By joining hands with Toshiba, the American companies won instant credibility and found a conduit to reach the utility.

"It was chaos at the beginning, so it helps to have Toshiba" as a partner, said Jack Allen, the president of Westinghouse in Asia.

Two weeks ago, engineers from the American companies started arriving in Japan, where they were briefed about the situation. They moved into a war room at Toshiba's headquarters that includes offices in a secure part of the building. The rooms are stuffed with desks, computers, whiteboards and dozens of engineers slumped over laptops.

One door is covered with business cards and a sheet that includes photographs of the engineers so that names can be more easily matched to faces. On the walls are aerial photographs and schematics of the Fukushima reactors, as well as charts and photographs from decommissioned reactors at Three Mile Island and the Maine Yankee nuclear power plant in Wiscasset, Me., which took eight years to shut down. Graphic illustrations of cranes and other equipment are taped to the walls.

A well-used coffee cart sits in the hallway. Soda cans and snacks share desk space with laptops. A mixture of Japanese and English fills the air.

Though it is still in its early days, the "Mt. Fuji" team has proposed installing devices around the Fukushima Daiichi plant to monitor radioactivity. It is weighing what machinery is needed, based on various scenarios, and will soon open an office in New York so that engineers there can take over when the team in Tokyo is asleep.

Most of all, the team is waiting for the engineers at Fukushima Daiichi to cool the reactors so it can begin work. "All things hinge," said David J. Richardson, a president at Babcock & Wilcox, "on having safe access."
###

From **The Los Angeles Times** (http://www.latimes.com/news/nationworld/world/la-fg-japan-nuclear-20110408,0,2828502.story?track=rss) accessed 4/8/11 1055:

Japan nuclear crisis ebbing, U.S. experts say
Although the situation at the Fukushima Daiichi nuclear plant is far from stabilized, evidence suggests that a complete meltdown is unlikely, Obama administration experts say. Meanwhile, a 7.1 aftershock rattles Japan, killing two and injuring more than 130.

By Ralph Vartabedian, Los Angeles Times

April 8, 2011
Although the damaged Fukushima Daiichi nuclear power plant has not yet been stabilized, there is no evidence that overheating during the last month has resulted in any melting of the reactor vessels or their containment structures, Obama administration officials said Thursday.

If that assessment is correct, then significant additional releases of radioactivity into the environment will be limited, and emergency crews should have a far better chance of preventing further damage to the plant's reactors.

The assessment, provided to The Times on background, suggests that the plant is unlikely to suffer a complete meltdown, in which uranium fuel gets so hot that it melts through the bottom of the reactor and containment vessels, spewing high-level radiation into the plant's underlying foundation.

"We are a long way from a point where anybody would say this is stable," a senior administration official said. "But it is not a runaway. For a long time, we will be at a declining level of risk."

The conclusions by Obama administration experts appear more optimistic about the outcome at Fukushima than recent reports that have leaked out of the Nuclear Regulatory Commission, which have suggested that the situation is increasingly risky and dangerous.

Separately, the staff of the NRC came under heavy questioning Thursday by the Advisory Committee on Reactor Safeguards, a panel of outside experts, academics and nuclear industry officials that provides guidance to the agency.

At a committee meeting, NRC officials were asked about the scientific basis for their agency's advice that Americans evacuate a 50-mile zone around the plant. NRC officials said they couldn't provide an explanation and would have to get back to the committee.

NRC officials were unavailable for comment afterward.

Meanwhile, northern Japan was rattled by a 7.1 aftershock, the strongest since March 11, when the magnitude 9 earthquake and tsunami struck the region and set in motion the nuclear disaster at Fukushima.

Authorities blamed two deaths on Thursday's 11:30 p.m. earthquake, which triggered a new tsunami warning that was later canceled. A 79-year-old man died of shock, and a woman in her 60s perished when a power failure turned off her oxygen tank, Japanese media reports said. More than 130 people were injured, police said.

The operator of the battered nuclear plant said there were no indications that the aftershock caused any new problems or injuries there.

The information filtering out of Japan increasingly appears to be setting a boundary for the severity of the problem at Fukushima — though no doubt it is going to take years, if not decades, to remediate the damage already caused.

The most telling evidence about the condition of the reactors is the absence of heavy radionuclide contamination around the plant, which would indicate that uranium fuel became so overheated that it vaporized heavy fission products such as strontium and technetium, experts said.

Instead, the main contaminants have been isotopes of iodine and cesium, which are water soluble and are not held in the uranium fuel itself.

The Obama administration experts said it appears that three reactors could be leaking radioactive water and other contaminants into areas of the plant that should be free from radioactivity, although the cause of breaches is not yet known.

"We don't know how the containment failed," one expert said. "It is more of a leak than a massive rupture. There is an extremely low probability of a melt-through of the reactor vessel. There is no conclusive evidence of a melt-through."

Temperature gauges at the bottom of the reactor vessel recorded levels of 300 degrees Celsius, far below the 1,500-degree melting point of steel. Even if that level were reached, the experts said they are confident that water in the containment structure would have prevented any melt.

Instead of a melt-through, the experts said the leakage from the reactors might be coming through various pieces of equipment that enter the heavy-gauge steel reactor vessel, including mechanical systems that operate control rods or pipes.
###

From **Nasdaq** (http://www.nasdaq.com/aspx/stock-market-news-story.aspx?storyid=201104071534dowjonesdjonline000624&title=us-nuclear-official-data-from-japan-not-what-we-would-have-expected) accessed 4/8/11 1040:

US Nuclear Official: Data From Japan Not 'What We Would Have Expected'

By Tennille Tracy, Of DOW JONES NEWSWIRES
WASHINGTON -(Dow Jones)- U.S. officials failed to get "succinct information" from Japanese authorities before clearing a 50-mile evacuation zone around the Fukushima nuclear plant on March 16, a move that raised alarm bells by going beyond a 12-mile zone imposed at the time by the Japanese.

Even when U.S. officials were able to get information from Japan, it "wasn't at all what we would have expected [during] a nuclear event in the U.S.," said Randy Sullivan, a senior emergency-preparedness specialist with the U.S. Nuclear Regulatory Commission.

"We didn't get much information that would tell us things were going in the right direction," Sullivan said Thursday during a meeting of the NRC's Advisory Committee on Reactor Safeguards.

A decision by the U.S. to evacuate citizens and military personnel within 50 miles of the Fukushima Daiichi nuclear plant has been scrutinized and questioned, in part because it appeared to undermine Japanese officials who had cleared a smaller area.

During a meeting Thursday, the NRC's Advisory Committee on Reactor Safeguards--an independent committee made up of scientists and nuclear experts - -asked the NRC to reveal which risk calculations served as the basis for the 50- mile determination.

Committee members also asked the NRC to disclose the identity of top-level officials who reviewed these calculations before the evacuation decision was made.

One committee member, Michael Corradini, who is the chairman of the engineering physics department at the University of Wisconsin, asked the NRC to consider how the U.S. would respond if Japan had done the same thing during the 1979 meltdown at Three Mile Island in Pennsylvania.

"Let me reverse this, 32 years ago if Japan would have done an [independent] calculation about Three-Mile Island and said all the Japanese within 50 miles of Harrisburg should get out. What would be our response? From a policy standpoint? "

The move "could potentially create a misimpression," Corradini said.
NRC officials said they decided to recommend a wider evacuation zone amid concern over spent nuclear fuel pools while suffering from a lack of clear information.

Sullivan said the NRC called Japan's Nuclear and Industrial Safety Agency on the morning on March 16. Sullivan said one official with the agency "did his best to inform us of what he knew," but didn't provide a clear picture of the risks, Sullivan said.

-By Tennille Tracy, Dow Jones Newswires
###

From: Vargo, George <gvargo@state.pa.us>
Sent: Saturday, April 09, 2011 7:24 PM
To: Allard, David; Barnhart, James; Chippo, John (DEP); Dan Strom (b)(6) Dan Strom (strom@pnl.gov); Easton, Randolph; Gallagher, Dennis (DEP); George J. Vargo (vargo@physicist.net); Gilcrist, Tara; Handley, Lu-Ann; Janati, Rich; Kutchman, Randy; Melnic, Joseph; Reeves, Glen I. CONTRACTOR; Hasselberg, Rick; 'Ronald E Goans, MD, PhD'; Seiber, Benjamin; Skelton, Donielle; Tamanini, Henry; Tosh Ushino (b)(6) Wagner, William; Whitehead, Jeffrey
Cc: Susan E. Vargo (b)(6) Vargo Susan; George J. Vargo (vargo@physicist.net); Karen K. Barcal (b)(6)
Subject: Fukushima Daiichi NPP Update #31 4/9/11 1915
Attachments: Fukushima_Daiichi_NPP_Status_Report#0031-040911-1915.doc

These are getting a bit slimmer as the pace of changes decreases.

DJ/70

Fukushima Daiichi NPP Status Report #31 April 8, 2011 – 1915
(4/10/11 0815 JST)

Special Video – Cell phone video of tsunami coming ashore at Fukushima Daiichi:
http://www.msnbc.msn.com/id/21134540/vp/42510337#42510337 accessed 4/9/11 1705
###

From **IAEA** (http://www.iaea.org/newscenter/news/tsunamiupdate01.html) accessed 4/9/11 0815:
IAEA Briefing on Fukushima Nuclear Accident (9 April 2011, 15:00 UTC)

Presentation:
→ Summary of Reactor Status
On Saturday, 9 April 2011, the IAEA provided the following information on the current status of nuclear safety in Japan:

1. Current Situation

Earthquake of 7 April
The IAEA confirms that an earthquake occurred in Japan at 14:32 UTC 7th April. The IAEA International Seismic Safety Centre has rated it as a 7.1 magnitude, revised from an initial 7.4 magnitude. The epicenter of the earthquake was 20 km from the Onagawa nuclear power plant and approximately 120 km from the Fukushima Daiichi and Daini nuclear power plants. With the recovery of external power at the Rokkasho Reprocessing Plant, all sites reported on yesterday have external power.

Changes to Fukushima Daiichi Plant Status
In Units 1, 2 and 3, 60,000 tons of contaminated water need to be removed from the turbine buildings and trenches. This water will be transferred to the condensers of each unit and the Radioactive Waste Treatment facility. In addition, temporary storage tanks have been ordered to provide additional capacity for the water and will be located adjacent to the Radioactive Waste Treatment facility.

Nitrogen gas is continuing to be injected into the **Unit 1** containment vessel to reduce the possibility of hydrogen combustion within the containment vessel. The pressure in this containment vessel is increasing due to the addition of nitrogen.

In **Unit 1** fresh water is being continuously injected into the reactor pressure vessel through feed-water line at an indicated flow rate of 6 m3/h using a temporary electric pump with off-site power. In **Units 2 and 3** fresh water is being continuously injected through the fire extinguisher lines at indicated rates of 8 m^3/h and 7 m^3/h respectively using temporary electric pumps with off-site power.

In Unit 1 the pressure in the RPV is increasing as indicated on both channels of instrumentation. NISA has indicated that some instruments in the reactor vessel may not be working properly. **In Units 2 and 3** Reactor Pressure Vessel and Drywell pressures remain at atmospheric pressure.

RPV temperatures remain above cold shutdown conditions, typically less than 95 °C. In Unit 1 temperature at the feed water nozzle of the RPV is 246 °C and at the bottom of the RPV is 119 °C. In **Unit 2** the temperature at the feed water nozzle of the RPV is 141 °C. The temperature at the bottom of the RPV was not reported. In **Unit 3** the temperature at the feed water nozzle of the RPV is 89 °C and at the bottom of the RPV is 110 °C.

The concrete pump vehicle continued to spray fresh water to the spent fuel pool in Unit 3 on 8 April.

There has been no change in status in **Units 4, 5 and 6** and the Common Spent Fuel Storage Facility

2. Radiation monitoring

On 8th April, low levels of deposition of both iodine-131 and cesium-137 were detected in 10 and 7 prefectures respectively. The values reported for iodine-131 ranged from 1 to 46 becquerel per square metre, for cesium-137 from 5 to 42 becquerel per square metre.

Gamma dose rates are measured daily in all 47 prefectures and the values continue to decrease. For Fukushima, on 8th April a dose rate of 2.3 μSv/h, for the Ibaraki prefecture a gamma dose rate of 0.15 μSv/h were reported. The gamma dose rates reported for the other 45 prefectures were below 0.1μSv/h.

Since the end of March, MEXT has set up an additional monitoring programme in cooperation with local universities. Measurements are made in 26 cities in 13 prefectures. As of 8th April, in 17 cities, the gamma dose rates were below 0.1 μSv/h. In 8 other cities, gamma dose rates ranged from 0.13 to 0.17 μSv/h, In Fukushima City, a value of 0.42 μSv/h was observed. Typical normal background levels are in the range 0.05 to 0.1 μSv/hr.

The IAEA Team in Fukushima made measurements on the 8th April at 8 different locations at distances of 24 to 42 km, in Northwesterly directions from the Fukushima nuclear power plant. At these locations, the dose rates ranged from 1.6 to 56 microsievert per hour. At the same locations, results of beta-gamma contamination measurements ranged from 0.2 to 5.0 Megabecquerel per square metre. The highest beta-gamma contaminations have been determined at distances of less than 30 km.

Since our written brief of yesterday, data related to food contamination has not been reported. However, on 8th April the Ministry of Health, Labour and Welfare reported that the Emergency Response headquarters had approved the lifting of restrictions on the distribution of unprocessed raw milk in certain locations in Fukushima prefecture (city of Kitakata and the towns of Aizumisato, Bandai, Inawashiro, Michima, Minamiaizu and Simogo) and on the distribution of spinach and kakina in Gunma prefecture.

As reported in the brief of 8th April TEPCO is conducting a programme for seawater (surface sampling) at a number of near-shore and off-shore monitoring locations as illustrated in the Map 1

Map 1: TEPCO Seawater Sampling Locations

Until 3rd April a general decreasing trend was observed at the sampling points TEPCO 1 to TEPCO 4. After the discharge of contaminated water on 4th April, a temporary increase has been reported.

On 6th April at the near-shore sampling points TEPCO 1, TEPCO 3 and TEPCO 4 a decrease in the concentration of I-131 and Cs-137 have been reported. However, at the sampling point TEPCO 2 an increase in the concentration of I-131 (from about 20 kBq/l on 5th April to about 40 kBq/l) and Cs-137 (from about 15 kBq/l on 5th April to about 25 kBq/l) was observed.

For the six sampling points TEPCO 5 to TEPCO 10 on 6th April levels of I-131 below 0.4 kBq/l and Cs-137 below 0.2 kBq/l were measured.

MEXT Off-shore Monitoring Programme
As reported in the brief of 8th April, MEXT initiated the off-shore monitoring program on 23rd March and subsequently points 9 and 10 were added to the off-shore sampling scheme. On 4th April, MEXT added two further sampling points to the north and west of sampling point 1. These are referred to as points A and B on the map below.

Map 2: MEXT Seawater Sampling Locations

On 9 April new data have been reported for samples taken on the 5th April. These data were for the sampling points MEXT3 and MEXT5. At MEXT3 there was an increase from about 3 Bq/l on 1st April to about 10 Bq/l on 5th April for I-131. At MEXT5 there was an increase from about 12 Bq/l on 1st April to about 65 Bq/l for I-131and from about 15 Bq/l to about 40 Bq/l for Cs-137 on 5th April.

No new data for the other sampling points have been reported.

3. IAEA Activities

A team of three agency experts in BWR technology continue to meet with TEPCO and NISA officials in Tokyo.
###

From **NEI** (http://www.nei.org/newsandevents/information-on-the-japanese-earthquake-and-reactors-in-that-region/) accessed 4/9/11 1710:

UPDATE AS OF 11:30 A.M. EDT, SATURDAY, APRIL 9:
Tokyo Electric Power Co. (TEPCO) has increased its efforts to remove highly radioactive water that is slowing restoration of reactor cooling systems at the Fukushima Daiichi nuclear power plant, the Japan Atomic Industrial Forum reports.

For the last several days, TEPCO workers have been discharging low-level radioactive water from a storage tank to the Pacific Ocean to make room for highly contaminated water that has

accumulated in the basements of reactor turbine buildings. After the discharge is complete, which is expected by Sunday, and after the storage tank has been inspected for possible earthquake damage, workers can begin to pump the radioactive water out of the turbine buildings.

Earlier this week, TEPCO sealed a crack in a concrete enclosure near reactor 2 that was allowing highly radioactive water to leak into the ocean. Since then, the utility has reported the water level in the enclosure has risen, but said it is not expected to overflow from the enclosure. TEPCO has not identified the source of the contaminated water.

Workers continue to use backup pumps to inject cooling water into reactors 1, 2 and 3 at the Fukushima Daiichi site. Spraying water onto the used fuel pools of reactors 1-4 continues on an as-needed basis. TEPCO also continues to inject nitrogen gas into the primary containment of reactor 1. The nitrogen will prevent possible ignition of hydrogen that may be accumulating in the containment.

TEPCO is preparing to fly a small, unmanned helicopter over the plant to take infrared photos of areas that have been out of reach. The photos may help the company plan its restoration work.

Overall, dose rates around the site continue to decline.
###

From **NHK** (http://www3.nhk.or.jp/daily/english/10_03.html) accessed 4/9/11 1845:

Radioactive water disposal delayed

Work to dispose of highly radioactive water at the crippled Fukushima Daiichi nuclear power plant is not proceeding smoothly as more time is needed for preparations.

Heavily contaminated water in turbine buildings and a concrete tunnel is hampering work to restore cooling functions in the troubled reactors. The total amount of water in question is estimated at more than 50,000 tons.

The plant's operator, Tokyo Electric Power Company, plans to transfer the highly radioactive water to a nuclear waste processing facility and turbine condensers.

The utility firm is now working to lay hoses between the turbine buildings and the facility.

Holes have already been bored in the walls of the buildings, but work to install the hoses has yet to begin.

In addition, the waste disposal facility needs to be closely checked before the procedure can begin.

Meanwhile, the level of highly radioactive water filling the concrete tunnel of the No.2 reactor had reached 93 centimeters below the ground's surface as of Saturday evening. That is a rise of 11 centimeters since the leakage of the water into the sea was stopped on Wednesday.

Tokyo Electric plans to start moving the water in the tunnel into the reactor's condenser as early as Sunday.

Sunday, April 10, 2011 07:30 +0900 (JST)
###

From **NHK** (http://www3.nhk.or.jp/daily/english/10_05.html) accessed 4/9/11 1850:

Govt to release radiation guidelines for schools

Japan's education ministry will release radiation exposure safety guidelines for school children in the coming week.

The ministry is drawing up the guidelines in response to a request from the Fukushima prefectural government, which hosts the disaster-stricken nuclear power plant.

Officials say the guidelines are based on data collected through radiation level surveys at schools and soil samples taken from schoolyards.

The guidelines will mandate that schools suspend classes, stop outdoor lessons, and ensure students wear face masks if radiation surpasses certain levels.

The education ministry says it will seek technical advice from the Nuclear Safety Commission before finalizing the guidelines.

The commission told reporters on Saturday that given the high radioactive readings registered in various locations, many schools in the affected areas would be asked to meet certain conditions before resuming lessons.

Sunday, April 10, 2011 06:52 +0900 (JST)
###

From **The New York Times**
(http://www.nytimes.com/2011/04/10/world/asia/10workers.html?_r=1&hp=&adxnnl=1&adxnnlx=1302390014-/xnmdJgib9DDQJ38fFM7CA) accessed 4/9/11 1850:

Japanese Workers Braved Radiation for a Temp Job
By HIROKO TABUCHI
Published: April 9, 2011

KAZO, Japan — The ground started to buck at the Fukushima Daiichi nuclear power plant, and Masayuki Ishizawa could scarcely stay on his feet. Helmet in hand, he ran from a workers' standby room outside the plant's No. 3 reactor, near where he and a group of workers had been doing repair work. He saw a chimney and crane swaying like weeds. Everybody was shouting in a panic, he recalled.

Mr. Ishizawa, 55, raced to the plant's central gate. But a security guard would not let him out of the complex. A long line of cars had formed at the gate, and some drivers were blaring their horns. "Show me your IDs," Mr. Ishizawa remembered the guard saying, insisting that he follow the correct sign-out procedure. And where, the guard demanded, were his supervisors?

"What are you saying?" Mr. Ishizawa said he shouted at the guard. He looked over his shoulder and saw a dark shadow on the horizon, out at sea, he said. He shouted again: "Don't you know a tsunami is coming?"

Mr. Ishizawa, who was finally allowed to leave, is not a nuclear specialist; he is not even an employee of the Tokyo Electric Power Company, the operator of the crippled plant. He is one of thousands of untrained, itinerant, temporary laborers who handle the bulk of the dangerous work at nuclear power plants here and in other countries, lured by the higher wages offered for working with radiation. Collectively, these contractors were exposed to levels of radiation about 16 times as high as the levels faced by Tokyo Electric employees last year, according to Japan's Nuclear and Industrial Safety Agency, which regulates the industry. These workers remain vital to efforts to contain the nuclear crisis at the Fukushima nuclear plants.

They are emblematic of Japan's two-tiered work force, with an elite class of highly paid employees at top companies and a subclass of laborers who work for less pay, have less job security and receive fewer benefits. Such labor practices have both endangered the health of these workers and undermined safety at Japan's 55 nuclear reactors, critics charge.

"This is the hidden world of nuclear power," said Yuko Fujita, a former physics professor at Keio University in Tokyo and a longtime campaigner for improved labor conditions in the nuclear industry. "Wherever there are hazardous conditions, these laborers are told to go. It is dangerous for them, and it is dangerous for nuclear safety."

Of roughly 83,000 workers at Japan's 18 commercial nuclear power plants, 88 percent were contract workers in the year that ended in March 2010, the nuclear agency said. At the Fukushima Daiichi plant, 89 percent of the 10,303 workers during that period were contractors. In Japan's nuclear industry, the elite are operators like Tokyo Electric and the manufacturers that build and help maintain the plants like Toshiba and Hitachi. But under those companies are contractors, subcontractors and sub-subcontractors — with wages, benefits and protection against radiation dwindling with each step down the ladder.

Interviews with about a half-dozen past and current workers at Fukushima Daiichi and other plants paint a bleak picture of workers on the nuclear circuit: battling intense heat as they clean off radiation from the reactors' drywells and spent-fuel pools using mops and rags, clearing the

way for inspectors, technicians and Tokyo Electric employees, and working in the cold to fill drums with contaminated waste.

Some workers are hired from construction sites, and some are local farmers looking for extra income. Yet others are hired by local gangsters, according to a number of workers who did not want to give their names.

They spoke of the constant fear of getting fired, trying to hide injuries to avoid trouble for their employers, carrying skin-colored adhesive bandages to cover up cuts and bruises.

In the most dangerous places, current and former workers said, radiation levels would be so high that workers would take turns approaching a valve just to open it, turning it for a few seconds before a supervisor with a stopwatch ordered the job to be handed off to the next person. Similar work would be required at the Fukushima Daiichi plant now, where the three reactors in operation at the time of the earthquake shut down automatically, workers say.

"Your first priority is to avoid pan-ku," said one current worker at the Fukushima Daini plant, using a Japanese expression based on the English word puncture. Workers use the term to describe their dosimeter, which measures radiation exposure, from reaching the daily cumulative limit of 50 millisieverts. "Once you reach the limit, there is no more work," said the worker, who did not want to give his name for fear of being fired by his employer.

Takeshi Kawakami, 64, remembers climbing into the spent-fuel pool of the No. 1 reactor at the Fukushima Daiichi plant during an annual maintenance shutdown in the 1980s to scrub the walls clean of radiation with brushes and rags. All workers carried dosimeters set to sound an alarm if exposure levels hit a cumulative dose limit; Mr. Kawakami said he usually did not last 20 minutes.

"It was unbearable, and you had your mask on, and it was so tight," Mr. Kawakami said. "I started feeling dizzy. I could not even see what I was doing. I thought I would drown in my own sweat."

Since the mid-1970s, about 50 former workers have received workers' compensation after developing leukemia and other forms of cancer. Health experts say that though many former workers are experiencing health problems that may be a result of their nuclear work, it is often difficult to prove a direct link. Mr. Kawakami has received a diagnosis of stomach and intestinal cancer.

News of workers' mishaps turns up periodically in safety reports: one submitted by Tokyo Electric to the government of Fukushima Prefecture in October 2010 outlines an accident during which a contract worker who had been wiping down a turbine building was exposed to harmful levels of radiation after accidentally using one of the towels on his face. In response, the company said in the report that it would provide special towels for workers to wipe their sweat.

Most day workers were evacuated from Fukushima Daiichi after the March 11 earthquake and tsunami, which knocked out the plant's power and pushed some of the reactors to the brink of a

partial meltdown. Since then, those who have returned have been strictly shielded from the news media; many of them are housed at a staging ground for workers that is off limits to reporters. But there have been signs that such laborers continue to play a big role at the crippled power plant.

The two workers who were injured two weeks ago when they stepped in radioactive water were subcontractor employees. As of Thursday, 21 workers at the plant had each been exposed to cumulative radiation levels of more than 100 millisieverts, or the usual limit set for nuclear plant workers during an emergency, according to Tokyo Electric. (That limit was raised to 250 millisieverts last month.)

The company refused to say how many contract workers had been exposed to radiation. Of roughly 300 workers left at the plant on Thursday, 45 were employed by contractors, the company said.

Day laborers are being lured back to the plant by wages that have increased along with the risks of working there. Mr. Ishizawa, whose home is about a mile from the plant and who evacuated with the town's other residents the day after the quake, said he had been called last week by a former employer who offered daily wages of about $350 for just two hours of work at the Fukushima Daiichi plant — more than twice his previous pay. Some of the former members of his team have been offered nearly $1,000 a day. Offers have fluctuated depending on the progress at the plant and the perceived radiation risks that day. So far, Mr. Ishizawa has refused to return.

Working conditions have improved over the years, experts say. While exposure per worker dropped in the 1990s as safety standards improved, government statistics show, the rates have been rising since 2000, partly because there have been more accidents as reactors age. Moreover, the number of workers in the industry has risen, as the same tasks are carried out by more employees to reduce individual exposure levels.

Tetsuen Nakajima, chief priest of the 1,200-year-old Myotsuji Temple in the city of Obama near the Sea of Japan, has campaigned for workers' rights since the 1970s, when the local utility started building reactors along the coast; today there are 15 of them. In the early 1980s, he helped found the country's first union for day workers at nuclear plants.

The union, he said, made 19 demands of plant operators, including urging operators not to forge radiation exposure records and not to force workers to lie to government inspectors about safety procedures. Although more than 180 workers belonged to the union at its peak, its leaders were soon visited by thugs who kicked down their doors and threatened to harm their families, he said.

"They were not allowed to speak up," Mr. Nakajima said. "Once you enter a nuclear power plant, everything's a secret."

Last week, conversations among Fukushima Daiichi workers at a smoking area at the evacuees' center focused on whether to stay or go back to the plant. Some said construction jobs still

seemed safer, if they could be found. "You can see a hole in the ground, but you can't see radiation," one worker said.

Mr. Ishizawa, the only one who allowed his name to be used, said, "I might go back to a nuclear plant one day, but I'd have to be starving." In addition to his jobs at Daiichi, he has worked at thermal power plants and on highway construction sites in the region. For now, he said, he will stay away from the nuclear industry.

"I need a job," he said, "but I need a safe job."
###

From **The New York Times**
(http://www.nytimes.com/2011/04/10/world/asia/10japan.html?src=un&feedurl=http%3A%2F%2Fjson8.nytimes.com%2Fpages%2Fworld%2Fasia%2Findex.jsonp) accessed 4/9/11 1905:

Japan Orders Nuclear Plant Operators to Obtain More Emergency Generators
By ANDREW POLLACK
Published: April 9, 2011

TOKYO — The Japanese government on Saturday ordered the nation's nuclear power plant operators to secure more emergency generators after a series of malfunctions at two such plants raised concerns about whether Japan was vulnerable to a second nuclear accident.

The government also moved to ban the planting of rice in soil containing too much radioactive material. While sales of some milk, vegetables and fish have already been prohibited because of contamination, the new measures affect the nation's staple crop, a foundation of its culture as well as its diet.

The new nuclear malfunctions followed an aftershock of magnitude 7.1 that ripped through northeastern Japan late Thursday night, knocking out power to more than four million households and businesses.

The already crippled Fukushima Daiichi plant, which has been spreading radioactive materials into the air and water for nearly a month, came through the aftershock relatively unscathed, officials say, although there was a sharp spike in radiation levels inside one part of reactor No. 1.

That could indicate that some radioactive material could have escaped from the steel reactor pressure vessel and fallen into the containment structure, a potentially dangerous development. However, the operator of the Fukushima plant, the Tokyo Electric Power Company, dismissed the high radiation reading as erroneous.

But the impetus for the new government order on diesel generators came from some problems at two other nuclear power plants, both run by the Tohoku Electric Power Company. Both suffered temporary losses of cooling to spent fuel pools, electricity cutoffs and problems with backup diesel generators after Thursday's aftershock.

The Higashidori plant lost all outside power. While it had three backup diesel generators, two were out of service for periodic maintenance. The remaining one worked for a while, but later, after some outside power was restored, it stopped because of a spill of oil.

At the Onagawa plant, three out of four outside power lines went down, but the plant continued to operate on the fourth line. While diesel backup was not needed, one of the plant's two diesel generators had been out of order since April 1.

"There was no problem this time," said Hidehiko Nishiyama, deputy director general of the Nuclear and Industrial Safety Agency, which regulates the atomic energy industry, at a news conference. However, he said, nuclear plant operators will now be required to have more backup diesel generators available and working.

Mr. Nishiyama said his agency was also trying to find the causes for the loss of cooling to spent fuel pools. The Higashidori cooling system stopped for 21 minutes. At Onagawa, which has three reactors, the cooling was out for up to 80 minutes. The cause of one stoppage seemed to be essentially a blown fuse, Mr. Nishiyama said.

Loss of cooling can allow spent fuel to heat up, which can lead to the release of radioactive materials.

The new policy on rice will ban planting of the crop in soil that has more than 5,000 becquerels of cesium-137 per kilogram of soil.

So far, only two spots in Japan, both in the town of Iitate, 25 miles northwest of the Fukushima plant, have had cesium levels that high. But the national and prefectural governments are now hurriedly performing soil surveys to identify which areas would be off limits to planting.

With planting about to begin, "we don't have so much time," said Sumito Yasuoka, an official in the Ministry of Agriculture, Forestry and Fisheries, who said farmers pressed the government to let them know if they could plant their crop. The government also wants to assure consumers that the rice they eat will be safe.

"Rice is Japan's main staple, and it is a very important food," Mr. Yasuoka said. "It's very important to maintain the safety of rice as well."

The level of 5,000 becquerels per kilogram was chosen because rice grown in such soil would be expected to end up with about 500 becquerels of cesium 137 in the rice itself. That is the existing limit for vegetables and some other foods, Mr. Yasuoka said.

Fukushima Prefecture is the nation's fourth-largest rice producer, and rice is its biggest crop, so any ban on planting would cause financial hardship.

"It hurts terribly," said Yoshinori Sato, an official of an agricultural cooperative in Fukushima Prefecture with 13,000 households as members. Mr. Sato said that about half the rice acres his

co-op's members hoped to plant this year might be off limits, either because of radiation or because of damage from the tsunami.

Mindful of the sensitivities, Michihiko Kano, the minister of agriculture, visited Iitate on Saturday and promised that farmers who were not allowed to grow rice because of soil contamination would be compensated.

Thursday's aftershock, which occurred off the northeastern coast of Japan, was the largest since March 11, the day of the 9.0-magnitude earthquake that set off a giant tsunami and the crisis at the Fukushima Daiichi plant. More than four million households or stores lost power Thursday night, but by Saturday, only about 160,000 were without power.

The fire and disaster management agency said that two people had died in the aftershock, but news reports cited more.

Yasuko Kamiizumi, Ken Ijichi and Kantaro Suzuki contributed reporting.
###

From **ABC**
(http://www.cnn.com/2011/WORLD/asiapcf/04/09/japan.nuclear.reactors/index.html?hpt=T1)
accessed 4/9/11 1715:

Video shows tsunami crashing into Fukushima nuclear site
By Brian Walker and Matt Smith, CNN
April 9, 2011 4:02 p.m. EDT

Tokyo (CNN) -- A brief video clip released Saturday captures the massive tsunami that crippled Japan's Fukushima Daiichi power plant, showing the wall of water that slammed into the facility and created an ongoing crisis.

The video shows the giant wave generated by the historic March 11 earthquake crashing over the plant's seawall and engulfing the facility, with one sheet of spray rising higher than the buildings that house the plant's six reactors. Tokyo Electric Power, the plant's owner, told reporters the wall of water was likely 14 to 15 meters (45 to 48 feet) higher than normal sea levels -- easily overwhelming the plant's 5-meter seawall.

The footage was was shot from high ground about 900 meters south of the plant by a worker who evacuated before the tsunami hit, the Tokyo Electric Power Company said in releasing the six-second clip.

Photos released by the company showed shattered windows, scattered papers and dangling ceiling tiles throughout the plant's now-empty office annex. Two workers were killed in the basement of the No. 4 reactor's turbine plant when the tsunami struck, and their bodies were recovered only last week.

The tsunami knocked out generators and pumps needed to cool the plant's three operating reactors following the magnitude 9 earthquake, leaving engineers struggling to prevent a bigger disaster as those units radioactive cores overheated. In response to the quake, Japanese regulators issued tougher standards for emergency power at nuclear plants Saturday.

Thousands without electricity after aftershock

Power stations will be required to have two diesel generators as backup power for each reactor unit, said Hidehiko Nishiyama, the chief spokesman for Japan's Nuclear and Industrial Safety Agency. Current regulations require only one generator per unit.

At the plant, workers are beginning to lay ground-level pipes between the reactor units and the radioactive waste treatment facility where engineers hope to pump the contaminated water that has been building up, Sakae Muto, the head of the utility's nuclear power division, said Saturday.

Workers have been pouring hundreds of tons of water a day into the reactors in an effort to keep them cool until normal circulation systems can be restored. The No. 2 reactor is believed to be leaking highly radioactive water, some of which had been spilling into the Pacific until Wednesday, while flooded basements in the turbine plants of all three units are making it impossible to restore power, company officials said.

And engineers have been adding nitrogen into the primary containment shell around reactor No. 1, a move aimed at countering a buildup of flammable hydrogen in the unit. The inert nitrogen displaces oxygen that could fuel an explosion, like the hydrogen blast that blew apart the buildings surrounding units 1 and 3 in the days following the earthquake.

Hydrogen buildup is a symptom of damaged fuel rods in the cores of the reactors. But Tokyo Electric has called the chances of another explosion "extremely low." And new equipment allowed engineers to raise the concentration of nitrogen from 98 percent to 99 percent Saturday, Nishiyama said.

Workers returned to the plant Friday following a magnitude 7.1 aftershock late Thursday night that forced them to evacuate for about eight hours, Japanese authorities said. The aftershock is not believed to have inflicted any further damage to the plant, Tokyo Electric and the safety agency reported Friday.

Hiroo Saso and Gen Shimada contributed to this report for CNN.
###

From: Vargo, George <gvargo@state.pa.us>
Sent: Monday, April 11, 2011 11:59 AM
To: Tosh Ushino (b)(6) Dan Strom (b)(6) Dan Strom (strom@pnl.gov); George J. Vargo (vargo@physicist.net); Mike Stabin (michael.g.stabin@vanderbilt.edu); Reeves, Glen I. CONTRACTOR; Hasselberg, Rick; 'Ronald E Goans, MD, PhD'; Whitehead, Jeffrey; Allard, David; Barnhart, James; Chippo, John (DEP); Easton, Randolph; Gallagher, Dennis (DEP); Gilcrist, Tara; Handley, Lu-Ann; Janati, Rich; Kutchman, Randy; Melnic, Joseph; Seiber, Benjamin; Skelton, Donielle; Tamanini, Henry; Wagner, William
Cc: 'Susan E. Vargo'; 'Vargo Susan'; 'Karen Barcal'
Subject: Fukushima Daiichi NPP Status Report #32 - 4/11/11
Attachments: Fukushima_Daiichi_NPP_Status_Report#0032-041111-1200.doc

Please note that there was no report issued on 4/10.

DJ/71

Fukushima Daiichi NPP Status Report #32 April 11, 2011 – 1200
(4/12/11 0100 JST)

Note: Report #31 was incorrectly dated 4/8/11 and should have been 4/9/11. Apologies, there was no report issued 4/10/11.

From **IAEA** (http://www.iaea.org/newscenter/news/tsunamiupdate01.html) accessed 4/11/11 0811:

IAEA Update: New earthquake in Japan (11 April, 11:30 UTC)

The IAEA confirms that an earthquake occurred in Japan on 11 April at 08:16 UTC. The IAEA International Seismic Safety Centre has rated it as a 6.6 magnitude, revised from an initial 7.1 magnitude. The epicenter of the earthquake is 68 kilometres from the Fukushima Daiichi nuclear power plant, 60 kilometres from the Fukushima Daini nuclear power plant, 61 kilometres from Tokai Daini nuclear power plant, 173 kilometres from Kashiwazaki-Kariwa nuclear power plant, and 179 kilometres from Onagawa nuclear power plant. The epicenter was in land (37.01 N/ 140.48 E) at a depth of 13.1 km.

The IAEA has been in contact with Japan's Nuclear and Industrial Safety Agency (NISA) and can confirm the status of the following nuclear facilities:

Fukushima Daiichi NPP

Based on a report by the Tokyo Electric Power Company (TEPCO), NISA confirms that no changes have been observed on the readings at the on-site radiation monitoring posts. Workers have been evacuated to the seismic evacuation shelter. Off-site power was lost and water injection pumps for Units 1, 2 and 3 stopped.

NISA confirms later that off-site power was restored and water injection resumed 50 minutes after the earthquake.

Fukushima Daini NPP

NISA confirms that no changes have been observed on the readings at the on-site radiation monitoring posts and that off-site power remained available.

Onagawa NPP

The five off-site power lines remain available. No changes have been observed on the readings at the on-site radiation monitoring posts.

Tokai Daini NPP

Tokai Daini nuclear power plant remains in cold shutdown since the 11 March earthquake. No abnormality has been observed.

IAEA Briefing on Fukushima Nuclear Accident (10 April 2011, 15:00 UTC)

Presentation
→ Summary of Reactor Status

On Sunday, 10 April 2011, the IAEA provided the following information on the current status of nuclear safety in Japan:

1. Current Situation

Earthquake of 7th April

External power has been restored at all sites affected by the 7th April earthquake. The 3 litres of water that were spilled at Onagawa NPP have been cleaned up.

Changes to Fukushima Daiichi Plant Status

Overall, the situation at the Fukushima Daiichi plant remains very serious but there are early signs of recovery in some functions such as electrical power and instrumentation.

In **Units 1, 2 and 3**, 60,000 tons of contaminated water need to be removed from the turbine buildings and trenches. This water will be transferred to the condensers of each unit and the Radioactive Waste Treatment facility. In addition, temporary storage tanks have been ordered to provide additional capacity for the water and will be located adjacent to the Radioactive Waste Treatment facility. In **Unit 2** water transfer from the condenser to the condensate storage tank was completed on 9th April.

Nitrogen gas is being injected into the **Unit 1** containment vessel to reduce the possibility of hydrogen combustion within the containment vessel. The pressure in this containment vessel is increasing due to the addition of nitrogen.

In **Unit 1** fresh water is being continuously injected into the reactor pressure vessel through feed-water line at an indicated flow rate of 6 m^3/h using a temporary electric pump with off-site power. In **Units 2 and 3** fresh water is being continuously injected through the fire extinguisher lines at indicated rates of 7 m^3/h and 7 m^3/h respectively using temporary electric pumps with off-site power.

In **Unit 1** the pressure in the RPV is increasing as indicated on both channels of instrumentation. NISA has indicated that some instruments in the reactor vessel may not be working properly. In **Units 2 and 3** Reactor Pressure Vessel and Drywell pressures remain at atmospheric pressure.

RPV temperatures remain above cold shutdown conditions, typically less than 95°C. In **Unit 1** temperature at the feed water nozzle of the RPV is 235°C and at the bottom of the RPV is 120°C. In **Unit 2** the temperature at the feed water nozzle of the RPV is 145°C. The temperature at the

bottom of the RPV was not reported. In **Unit 3** the temperature at the feed water nozzle of the RPV is 97°C and at the bottom of the RPV is 109°C.

The concrete pump vehicle sprayed fresh water (90 T) to the spent fuel pool in **Unit 4** on 9th April.

There has been no change in status in **Units 4, 5 and 6** and the Common Spent Fuel Storage Facility

2. Radiation monitoring

On 9th April, deposition of both iodine-131 and cesium-137 was detected in 5 and 6 prefectures respectively. The values reported for iodine-131 ranged from 7.8 to 650 becquerel per square metre and for cesium-137 from 3.3 to 370 becquerel per square metre. The highest deposition was reported for both, iodine-131 and cesium-137, in the prefecture of Ibaraki.

Gamma dose rates are measured daily in all 47 prefectures, the values tend to decrease. Dose rates are also reported daily for the Eastern part of the Fukushima prefecture, these values are decreasing as well. As of 9th April, the gamma dose rates, reported for distances of more than 30 km to Fukushima-Daiichi, ranged from 0.2 to 26 μSv/h.

In an additional monitoring programme, set up by MEXT in cooperation with local universities, measurements are made in 27 cities in 14 prefectures. As of 9th April, in 19 cities, the gamma dose rates were below 0.1 μSv/h. In 7 cities, gamma dose rates range from 0.13 to 0.21 μSv/h. In Fukushima City, a value of 0.46 μSv/h was observed. Typical normal background levels are in the range of 0.05 to 0.10 μSv/hr.

As of 7th April, iodine-131 and cesium-137 was detectable in drinking water in a few prefectures at levels far below those that would trigger recommendations for restrictions of drinking water. As of 7th April, one restriction for infants related to I-131 (100 Bq/l) is in place as a precautionary measure in only one village of the Fukushima prefecture.

On 9th April, the IAEA Team made measurements at 8 different locations in the Fukushima area at distances of 32 to 62 km, North and North West from the Fukushima nuclear power plant. At these locations, the dose rates ranged from 0.4 to 3.7 microsievert per hour. At the same locations, results of beta-gamma contamination measurements ranged from 0.03 to 0.19 Megabecquerel per square metre.

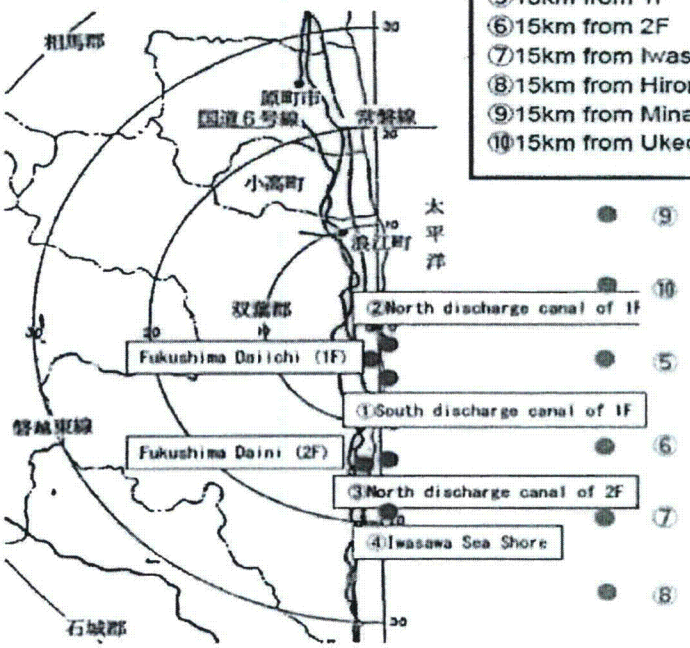
3. Marine Monitoring

As reported in the brief of 8th April TEPCO is conducting a programme for seawater (surface sampling) at a number of near-shore and off-shore monitoring locations as illustrated in Map 1

Map 1: TEPCO Seawater Sampling Locations

Sampling 1-2 times a day at points below
①Around south discharge canal of 1F
(approx. 330m from Unit1-4 canal)
②Around north discharge canal of 1F
(approx. 30m from Unit 5&6 canal)
③Around north discharge canal of 2F
(approx. 10km from 1F)
④Around Iwasawa Sea Shore
(approx.16km from 1F)
⑤15km from 1F
⑥15km from 2F
⑦15km from Iwasawa Sea Shore
⑧15km from Hirono Town
⑨15km from Minami-Soma City
⑩15km from Ukedogawa River

Sampling Point



Until 3rd April a general decreasing trend was observed at the sampling points TEPCO 1 to TEPCO 4. After the discharge of contaminated water on 4th April, a temporary increase has been reported. On 10th April new data (7th April sampling day) for all TEPCO sampling points have been reported. At the near-shore sampling points TEPCO 1, TEPCO 3 and TEPCO 4 a further decrease with respect to the results for the sampling day 5th April, in the concentration of I-131 and Cs-137 have been reported. At the sampling point TEPCO 2 a further increase in the concentration of I-131 (from about 40 kBq/l on 6 April to about 150 kBq/l) and Cs-137 (from about 25 kBq/l on 6th April to about 65 kBq/l) was observed.

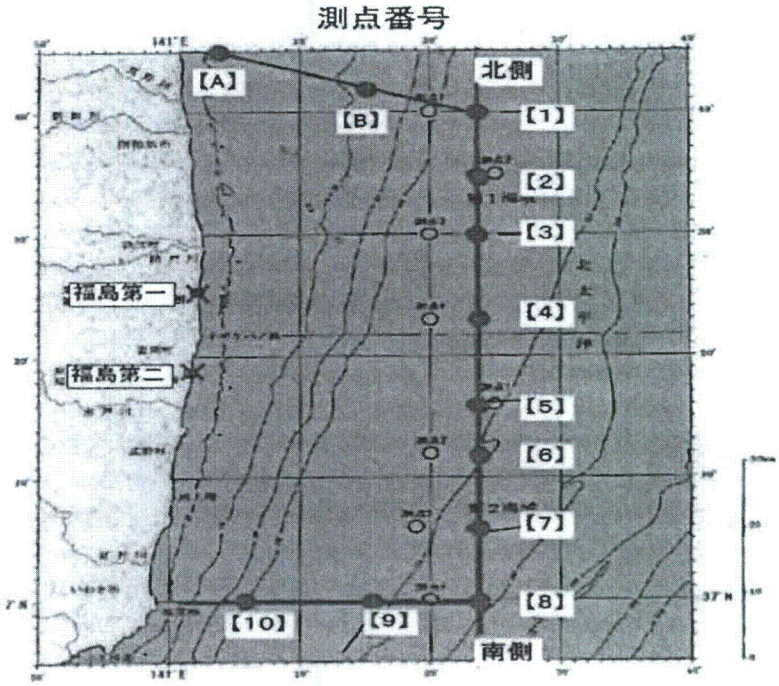
For the six sampling points TEPCO 5 to TEPCO 10th on April 7th the following has been reported: as TEPCO 5, TEPCO6 and TEPCO10 a further decrease of the levels of I-131 below 0.2 kBq/l and of Cs-137 below 0.1 kBq/l were measured.

At TEPCO7 an increase of the level of I-131 has been recorded. At TEPCO8 and TEPCO9 an increase in the levels of both I-131 and Cs-137 has been measured. The reading at TEPCO 9 is from about 0.07 kBq/l (6th April) to about 0.37 kBq/l for I-131 and from about 0.05 kBq/l to about 0.21 kBq/l for Cs-137.

MEXT Off-shore Monitoring Programme

As reported in the brief of 8th April MEXT initiated the off-shore monitoring program on 23rd March and subsequently points 9 and 10 added to the off-shore sampling scheme. On 4th April, MEXT added two sampling points to the north and west of sampling point 1. These are referred to as points A and B on the map below.

Map 2: MEXT Seawater Sampling Locations



On 10th April new data have been reported (7th April sampling day) for the sampling points MEXT6 and MEXT10. At MEXT6 sampling point an increase in I-131 (from about 18 Bq/l on 3rd April to about 57Bq/l) and Cs-137 (from about 10Bq/l on 3rd April to about 20 Bq/l) has been measured. At MEXT10 the level of I-131 remains about 35 Bq/l as on the 3rd of April; Cs-137 is no longer detectable.

No new data for the other sampling points have been reported at the date of 10th April.

4. IAEA Activities

The team of three agency experts in BWR technology will conclude their mission on Monday with meetings with NISA, MOFA(Ministry of Foreign Affairs), MEXT, Atomic Energy Commission (AEC), and Nuclear Safety Commission (NSC).

In addition to those reported in previous briefs the following countries have submitted monitoring data and/or links to national websites where data is available: USA, Czech Republic and Latvia.

###

From **NEI** (http://www.nei.org/newsandevents/information-on-the-japanese-earthquake-and-reactors-in-that-region/) accessed 4/10/11 1620:

UPDATE AS OF 11:30 A.M. EDT, SUNDAY, APRIL 10:
Management of water continues to be a top priority at Tokyo Electric Power Co.'s Fukushima Daiichi nuclear power plant.

TEPCO has begun to install steel sheets and a silt barrier at the intake structure for reactor 2 to prevent further spreading of radioactive water that is leaking from the power plant, Kyodo news service has reported. Plans are under way to install similar barriers at other locations near the plant in an effort to contain contaminated water within the plant's bay. Last week, TEPCO used a sealant to block a leak from a concrete enclosure near reactor 2.

Meanwhile, 60,000 tons of contaminated water must be removed from the reactor 1, 2, and 3 turbine buildings and nearby underground enclosures, the International Atomic Energy Agency reported. The water will be pumped into the condensers of each reactor and into a radioactive water storage tank. TEPCO made room in the tank by discharging low-level radioactive water into the Pacific Ocean. TEPCO also has ordered temporary storage tanks for the site.

Injection of cooling water into reactors 1, 2 and 3 continues. Workers are spraying water into the spent fuel pools for reactors 1-4 as needed. TEPCO also continues to inject nitrogen gas into the primary containment of reactor 1. The nitrogen will prevent possible ignition of hydrogen that may be accumulating in the containment.

The utility is now using remote-controlled bulldozers and power shovels to remove radioactive rubble from around the plant. Operators are using cameras on the equipment and elsewhere on the site to control the equipment from hundreds of yards away. The rubble will be stored at the plant site.

The Japan education ministry is expected this week to release radiation exposure safety guidelines for school children in areas outside the evacuation zone surrounding the power plant, the Japan Atomic Industrial Forum reported. The guidelines will require schools to suspend classes, stop outdoor lessons, or ensure students wear face masks if radiation surpasses certain levels.
###

From **NHK** (http://www3.nhk.or.jp/daily/english/society.html) accessed 4/11/11 0745:

M 7.0 quake hits northeastern Japan

A strong earthquake struck north-eastern Japan at 5:16 PM, local time, on Monday. The Meteorological Agency at one time issued tsunami warnings for the coastal areas of Ibaraki

Prefecture.

The agency said the earthquake's magnitude was 7.0, and that its focus was in Fukushima Prefecture at a depth of 10 kilometers.

Intensities of 6 minus on the Japanese scale of 0 to 7 were registered in some areas of Fukushima and Ibaraki prefectures, including Furudono Town, Nakajima Village and Hokota City. An intensity of 5 plus was registered in many areas in the southern Tohoku and northern Kanto regions.

The Meteorological Agency lifted the tsunami warnings about fifty minutes later. A tsunami advisory for the coastal areas of neighboring prefectures was also lifted.

Several minor quakes occurred following the major quake at 5:16. The agency is also warning of possible aftershocks with intensities of 6 plus or 6 minus.

The operator of the crippled Fukushima Daiichi nuclear power plant, Tokyo Electric Power Company, says radiation figures at monitoring posts around the plant remain unchanged. The utility firm also says outdoor workers had been ordered to temporarily evacuate.
Monday, April 11, 2011 18:46 +0900 (JST)
###

From **NHK** (http://www3.nhk.or.jp/daily/english/10_05.html) accessed 4/9/11 1850:

Govt to release radiation guidelines for schools

Japan's education ministry will release radiation exposure safety guidelines for school children in the coming week.

The ministry is drawing up the guidelines in response to a request from the Fukushima prefectural government, which hosts the disaster-stricken nuclear power plant.

Officials say the guidelines are based on data collected through radiation level surveys at schools and soil samples taken from schoolyards.

The guidelines will mandate that schools suspend classes, stop outdoor lessons, and ensure students wear face masks if radiation surpasses certain levels.

The education ministry says it will seek technical advice from the Nuclear Safety Commission before finalizing the guidelines.

The commission told reporters on Saturday that given the high radioactive readings registered in various locations, many schools in the affected areas would be asked to meet certain conditions before resuming lessons.

Sunday, April 10, 2011 06:52 +0900 (JST)

###
From **NHK** (http://www3.nhk.or.jp/daily/english/11_32.html) accessed 4/11/11 0750:

Water injection resumed at Fukushima Daiichi plant

The operator of Fukushima Daiichi nuclear power plant says water injection into the crippled reactors was briefly suspended after outside power lines were shut down by a magnitude 7.0 earthquake on Monday evening.

Tokyo Electric Power Company said that outside power was restored for reactors No.1, 2 and 3. Water injection was resumed for these reactors after a suspension of about 50 minutes.

Monday, April 11, 2011 18:34 +0900 (JST)
###

From **NHK** (http://www3.nhk.or.jp/daily/english/11_18.html) accessed 4/11/11 0755:

Some dairy farms in Fukushima resume milk shipment

Some dairy farms in Fukushima Prefecture have resumed shipping milk after radiation levels in the milk cleared the government's safety standards.

The shipments are the first since the Japanese government lifted a ban last Friday on milk from 7 cities and towns in the prefecture.

The restriction was imposed by the health ministry last month after unsafe levels of radioactive substances were detected in milk from areas around the quake-damaged Fukushima nuclear plant.

A farmer who owns about 100 cows shipped 1.5 tons of milk on Monday. The farmer says he is glad because the milk he produces doesn't have to go to waste anymore.

He says he will do what he can to help other farmers who remain unable to ship their milk due to radiation contamination.

The prefecture will conduct follow-up radiation measurements once a week on milk shipped from the prefecture.

Monday, April 11, 2011 13:06 +0900 (JST)
###

From **NHK** (http://www3.nhk.or.jp/daily/english/11_22.html) accessed 4/11/11 0800:

55% of Fukushima evacuees worry radiation: survey

More than half of respondents of a survey of evacuees from Fukushima Prefecture, say their biggest future concern is the impact of radiation from the troubled nuclear power plant in the prefecture.

NHK interviewed evacuees last week, originally from Fukushima Prefecture, who are staying at shelters within the prefecture and nearby. 251 people responded.

When asked what is most troubling to them now, 55 percent of respondents said they are frustrated with the lack of accurate information about the nuclear plant, and their future housing prospects. This was followed by 36 percent who said they have to stay at shelters without privacy and 11 percent who said they cannot move easily without their own cars or gasoline.

In terms of the future, 55 percent said they are most concerned about the impact of radiation leaks from the Fukushima Daiichi nuclear plant, which has been out of control since the March 11 massive quake and tsunami.

43 percent said they are concerned about future jobs and their livelihood, and 28 percent said they are wondering how to secure a place to live.

One respondent said he has no idea how to stick it out, although everybody tells him to do so. Another person is worried about how he will manage because has lost both his house and land.

For evacuees, anxiety over their future appears to be growing as life at the shelters is dragging on.

Monday, April 11, 2011 15:51 +0900 (JST)
###

From **NHK** (http://www3.nhk.or.jp/daily/english/11_12.html) accessed 4/11/11 0805:

One month since disaster hits nuclear plant

One month after the Fukushima Daiichi nuclear plant was crippled by the quake and tsunami that devastated Japan's northeastern coast, the plant's operator is still struggling to regain control.

Tokyo Electric Power Company has been striving to restore reactor cooling systems since the March 11th disaster knocked out electricity at the plant. The power station continues to release radioactive substances into the air and sea.

Heavily contaminated water in turbine buildings and a concrete tunnel has been hampering restoration efforts and preventing workers from even inspecting the pumping systems.

On Sunday, TEPCO began removing debris from the plant using unmanned heavy machinery.

It plans to start moving highly radioactive water from the concrete tunnel to another storage facility on Monday.

At a news conference on Sunday, TEPCO said it is studying using air instead of seawater for cooling. It said cooling the reactors' containment vessels with water is also under consideration.

But a TEPCO executive said that at this point, the company is still examining viable options and cannot say when it will be able to achieve stable cooling and control the radiation.

Monday, April 11, 2011 10:22 +0900 (JST)
###

From **NHK** (http://www3.nhk.or.jp/daily/english/11_24.html) accessed 4/11/11 0803:

Nuclear safety regrets its response to Fukushima

The government's Nuclear and Industrial Safety Agency admitted that it has sometimes failed to properly manage the accidents at the Fukushima Daiichi nuclear power plant.

Senior agency official Hidehiko Nishiyama made the statement to reporters on Monday, one month following the quake and tsunami that severely damaged the power plant in northeastern Japan.

Nishiyama said the agency failed to clearly address the problems at the plant, as one emergency followed another.

He said the agency will thoroughly review what it has done so far, so that it can restore the cooling functions of the reactors while preserving the safety of the Japanese people.
The agency is playing a central role in gathering information and overseeing the power plant as the government's nuclear safety regulator. They have dispatched officials to monitor progress at the plant.

But it has been regularly criticized for failing to coordinate media briefings with the power company. They have also been under fire for not providing enough information to the Nuclear Safety Commission, which offers technical advice to the government.

Monday, April 11, 2011 16:22 +0900 (JST)
###

]From **NHK** (http://www3.nhk.or.jp/daily/english/11_26.html) accessed 4/11/11 0807:

TEPCO president apologizes, one month later

The president of the operator of Japan's quake-damaged nuclear plant has visited Fukushima and apologized for the nuclear accident overwhelming the area.

Masataka Shimizu, the head of Tokyo Electric Power Company, visited the Fukushima government on Monday, exactly one month after the March 11 earthquake and tsunami crippled the company's Fukushima Daiichi nuclear power plant.

Shimizu apologized to people in and outside Fukushima Prefecture, saying his company has added to their physical and mental burdens with the nuclear crisis.

He also said he regrets not meeting local residents first of all to offer an apology. He said he failed to do so because he was overwhelmed by handing the accident from Tokyo.
He also said he was sorry that Fukushima Governor Yuhei Sato had refused his request to meet and receive an apology directly.

Turning to reparations, Shimizu said he is well aware that a large number of people have suffered damage over a wide area. He said his company will do its utmost to compensate them based on the government's guidelines, when they are compiled.

Shimizu declined to comment on how he himself would take responsibility for the problems, saying he must now concentrate on overcoming the company's worst-ever crisis.

He added that he expects to see the ruined No. 1 through No.4 reactors at the power plant to be decommissioned.

Monday, April 11, 2011 18:02 +0900 (JST)
###

From **MarketWatch** (http://www.marketwatch.com/story/tepco-uses-steel-wall-to-contain-radioactive-water-2011-04-09?amp%3Bsiteid=rss&amp%3Brss=1) accesed 4/11/11 1130:

April 9, 2011, 2:14 p.m. EDT
Tepco uses steel wall to contain radioactive water

By Andria Cheng , MarketWatch
NEW YORK (MarketWatch) — Tokyo Electric Power Co., the operator of the crippled Fukushima nuclear power station, began on Saturday to install a steel wall and fence to prevent more radioactive contaminated water from flowing into the Pacific Ocean, according to media reports.

The company (TKECY **8.20**, +1.75, +27.13%) (JP:9501 **500.00**, +80.00, +19.05%) plans to plug a seawater intake connected to the No. 2 reactor at the Fukushima Daiichi complex with seven steel sheets and a 120-meter-wide curtain-like fence near the intake and two other locations nearby, according to Japan's Kyodo news, which added that radioactive iodine reading was 63,000 times the legal limit in seawater near the intake a day after contaminated water stopped leaking into the sea.

As Japan's neighboring countries China and Korea expressed worries about the discharge of contaminated water from the Fukushima Daiichi plant, an executive at Tepco apologized for spreading radiation into the air and sea as regulators said the pumping of radioactive water into waters off Japan would stop on Sunday, one day later than planned, Reuters reported.

Meanwhile, as radiation fears spread, the Japanese government banned the cultivation of rice in contaminated soil, after vegetables and milk were the first foods that raised concerns about the safety of Japanese agriculture following the March 11 earthquake and tsunami that flooded the nuclear plant, cutting power to the primary and secondary systems cooling the reactors.

Much of the surrounding area has been evacuated as Tepco and the government continue to fight radiation leaks into the atmosphere and through contaminated water.

Tepco has said it will permanently close the plant once the leaks are sealed. Areas around the plant have been evacuated.

The loss of electricity generated by Japan's fourth-largest power plant — and the world's 14th-largest — has led to rolling power shortages across much of Japan. The plant was capable of generating 4,700 megawatts when all six reactors were running at capacity.

Andria Cheng is a MarketWatch reporter based in New York.
###

From **The Japan Times** (http://search.japantimes.co.jp/cgi-bin/nn20110411a3.html) accessed 4/11/11 0825:

Crews to pump water in trench to storage area
Transfer critical to securing No. 2 reactor
Kyodo News

Repair crews at the Fukushima No. 1 power plant Sunday prepared to pump highly radioactive water from a trench under the No. 2 reactor to a storage spot secured in its turbine building, the nuclear safety agency said.

Toxic water being produced from emergency cooling operations has flooded the basements of the turbine buildings of reactors 1, 2 and 3, as well as trenches connected to them.

Transferring the 60,000 tons of water to other containment facilities is crucial to restoring their critical cooling systems because its lethal radioactivity is keeping workers at bay.

The water level in the trench started rising after workers successfully plugged up the area around a cracked pit where it was leaking into the Pacific Ocean, the Nuclear and Industrial Safety Agency said.

Hidehiko Nishiyama, a NISA spokesman, said that removing the water from the trench must be done "in haste" because it has been edging up since workers injected "water glass" last week to clog up gravel near the pit.

"As contaminated water with high concentration (of radioactivity) will be moved, we would like to confirm the safety of the process," Nishiyama said at a morning news conference.

Also in the morning, a worker in his 30s who installed a hose pipe for the pump work at 9:30 a.m. was taken to a hospital after complaining of feeling sick at around 11:10 a.m.

The worker is conscious and was found uncontaminated by radioactive materials, plant operator Tokyo Electric Power Co. said. He was later diagnosed with fatigue, Tepco said.

The worker, who was wearing a full-face mask, protective outerwear, rubber gloves and high boots, was exposed to 4.84 millisieverts of radiation, which is below the designated limit of 5 millisieverts that was set for Sunday's work, Tepco said.

The spokesman said the worker, who has not been identified, was one of 30 who had been laying a water exhaust hoses outside the turbine building at the No. 2 reactor.

The highly contaminated water in No. 2's turbine building and trench has been a big problem because it is believed to be originating from the reactor core, where the fuel rods have partially melted, and poses a danger to anyone who gets near it. The water is expected to be transferred to the turbine building's condenser.

Condensers normally convert superheated steam created by the reactor back into water. The condenser in No. 2 has a storage capacity of 3,000 tons, and work to empty it of less dangerous water was completed Saturday.

Workers are also trying to free up a nearby facility used for nuclear waste disposal by continuing to dump the less-contaminated water inside into the ocean. About 8,900 tons of the water had been sucked out of the facility as of Sunday morning, and Tepco planned to finish releasing the remaining 200 tons during the day.

Tepco also flew a tiny unmanned drone over the plant Sunday to survey damage in places workers were unable to access, Nishiyama said.

In related news, Prime Minister Naoto Kan said Sunday he regrets that Japan failed to provide notification overseas of last week's release of water containing radioactive materials into the Pacific Ocean from the power station.

"We released low-level radioactive water into the sea in a bid to contain higher-level radioactive water. We should have explained that matter more thoroughly," Kan said.
###

From **The Japan Times** (http://search.japantimes.co.jp/cgi-bin/nn20110411a2.html) accessed 4/11/11 0840:

Evac area to soon be declared 'off-limits'
Kyodo News

The 20-km evacuation zone around the crisis-hit Fukushima No. 1 nuclear power plant will soon be turned into a legally binding off-limits zone, senior officials said Sunday.

The step is aimed at increasing government control over the area. Desperate residents have been braving radiation fears for quick return trips to pick up essential belongings. Officials suggested Sunday that they will now be able to force anyone out of the evacuation zone who refuses to leave.

The Fukushima Prefectural Government has been urging Tokyo to impose such a zone and Chief Cabinet Secretary Yukio Edano said Sunday that final arrangements are being made to take the step.

Under the law on nuclear disaster countermeasures, the government can order heads of cities, towns and villages to designate legally binding "caution areas" where people other than those engaged in disaster relief are prohibited from entering and can ordered to leave under threat of punishment.

After the March 11 earthquake and tsunami crippled the power station 220 km northeast of Tokyo and triggered Japan's worst nuclear crisis, the government directed people within 20 km of the plant to evacuate and those between 20 and 30 km away to stay indoors or voluntarily leave. The directive, however, was not legally binding.

In a separate development, a ban imposed March 23 on shipments of raw milk from Ibaraki Prefecture was lifted after three consecutive weeks of tests showed it is no longer contaminated with radioactive materials above the designated limit for consumption.

According to the latest government data available, radiation readings have generally fallen in northeastern and eastern parts of the country, with Gunma Prefecture returning to levels seen before the crisis. But the Fukushima government said Sunday it will measure radiation levels at more locations next week outside the 20-km zone to comply with residents' demands.

"We recognize that it's necessary to talk with municipalities and set the area as a caution zone as a step before" allowing affected residents to temporarily return home, Deputy Chief Cabinet Secretary Tetsuro Fukuyama said earlier in the day on Fuji TV.

Fukuyama said the government aims to allow residents to visit their homes "for an hour or two" soon and that necessary measures, such as screening and removal of radioactive substances, will be taken.

As for the 20- to 30-km band where residents have been told to stay indoors, Fukuyama said the government is considering expanding the zone because "some areas outside of the 30-km zone have seen the cumulative amount of radiation rise, depending on the wind."
###

From **MSNBC** (http://www.msnbc.msn.com/id/42529167/ns/world_news-asiapacific/) accessed 4/11/11 1015:

One month on, Japan rattled by big aftershock
Separately, high radiation levels force expansion of the nuclear evacuation zone

Japan on Monday expanded the evacuation zone around its crippled nuclear plant because of high levels of accumulated radiation, as a strong aftershock rattled the area one month after a quake and tsunami sparked the worst nuclear crisis since Chernobyl.

A magnitude 6.6 tremor shook buildings in Tokyo and a wide swathe of eastern Japan on Monday evening, killing one man, knocking out power to 220,000 households and causing a brief halt to water pumping to cool three damaged nuclear reactors.

The epicentre of quake, the biggest of several sizable aftershocks on Monday, was 56 miles east of the Fukushima Daiichi nuclear complex at the centre of the crisis.

The biggest tremor forced engineers to postpone plans to remove highly contaminated water from one reactor, but nuclear safety officials said work had resumed by nightfall.

The government announced earlier that because of accumulated radiation contamination, it would encourage people to leave certain areas beyond its 12-mile exclusion zone around the plant.

Children, pregnant women, and hospitalised patients should stay out of some areas 12-19 miles from the nuclear complex, Chief Cabinet Secretary Yukio Edano told reporters.

"These new evacuation plans are meant to ensure safety against risks of living there for half a year or one year," he said. There was no need to evacuate immediately, he added.

The move comes amid international concern over radiation spreading from the six damaged reactors at Fukushima, which engineers are still struggling to bring under control after they were wrecked by the 15-meter tsunami on March 11.

TEPCO President Masataka Shimizu visited the area on Monday for the first time the disaster. He had all but vanished from public view apart from a brief apology shortly after the crisis began and has spent some of the time since in hospital.

"I would like to deeply apologise again for causing physical and psychological hardships to people of Fukushima prefecture and near the nuclear plant," said a grim-faced Shimizu.

Dressed in a blue work jacket, he bowed his head for a moment of silence with other TEPCO officials at 2:46 p.m., exactly a calendar month after the earthquake hit.

Fukushima Governor Yuhei Sato refused to meet him, but the TEPCO boss left a business card at the government office.

Engineers at the damaged Daiichi plant north of Tokyo said they were no closer to restoring the plant's cooling system, which is critical to bring down the temperature of overheated fuel rods and to bringing the six reactors under control.

Partial meltdown

In a desperate move to cool the highly radioactive fuel rods, operator Tokyo Electric Power Co (TEPCO) has pumped water onto reactors, some of which have experienced partial meltdown.

But the strategy has hindered moves to restore the plant's internal cooling system as engineers have had to focus on how to store 60,000 tonnes of contaminated water.

They have been forced to pump low-level radioactive water, left by the tsunami, back into the sea in order to free up storage capacity for highly contaminated water from the reactors.

China and South Korea have both criticised Japan for pumping radioactive water into the sea, with Seoul calling it incompetent, reflecting growing international unease over the month-long atomic disaster and the spread of radiation.

TEPCO was in the final stage of pumping radioactive water into the ocean, Nuclear and Industrial Safety Agency's deputy director-general Hidehiko Nishiyama said.

Engineers are also pumping nitrogen into reactors to counter a build-up of hydrogen and prevent another explosion sending more radiation into the air, but they say the risk of such a dramatic event has lowered significantly since March 11.

The triple disaster is the worst to hit Japan since World War Two, with the 9.0 magnitude earthquake and a huge tsunami battering its northeast coast, leaving nearly 28,000 dead or missing and rocking the world's third-largest economy.

Concern at Japan's inability to contain its nuclear crisis is mounting, with Prime Minister Naoto Kan's ruling party suffering embarrassing losses in local elections on Sunday.

Voters vented their anger at the government's handling of the nuclear and humanitarian crisis, with Kan's ruling Democratic Party of Japan losing nearly 70 seats in local election.

There is talk of forming a grand coalition of mainstream parties to tackle the massive task of recovery from the disaster. But the leader of one potential coalition partner said Sunday's polls made Kan's party unattractive.

"The people are saying the government has been handling the disaster badly. Joining hands with such a party ... is not what the people are hoping for," New Komeito head Natsuo Yamaguchi told Reuters in an interview.

The unpopular Kan was already under pressure to step down before March 11, but analysts say he is unlikely to be forced out during the crisis, set to drag on for months.

NBC News, Reuters and The Associated Press contributed to this report.
###

From **The New York Times**
(http://www.nytimes.com/2011/04/10/world/asia/10workers.html?_r=1&hp=&adxnnl=1&adxnnlx=1302390014-/xnmdJgib9DDQJ38fFM7CA) accessed 4/9/11 1850:

Japanese Workers Braved Radiation for a Temp Job
By HIROKO TABUCHI
Published: April 9, 2011

KAZO, Japan — The ground started to buck at the Fukushima Daiichi nuclear power plant, and Masayuki Ishizawa could scarcely stay on his feet. Helmet in hand, he ran from a workers' standby room outside the plant's No. 3 reactor, near where he and a group of workers had been doing repair work. He saw a chimney and crane swaying like weeds. Everybody was shouting in a panic, he recalled.

Mr. Ishizawa, 55, raced to the plant's central gate. But a security guard would not let him out of the complex. A long line of cars had formed at the gate, and some drivers were blaring their horns. "Show me your IDs," Mr. Ishizawa remembered the guard saying, insisting that he follow the correct sign-out procedure. And where, the guard demanded, were his supervisors?

"What are you saying?" Mr. Ishizawa said he shouted at the guard. He looked over his shoulder and saw a dark shadow on the horizon, out at sea, he said. He shouted again: "Don't you know a tsunami is coming?"

Mr. Ishizawa, who was finally allowed to leave, is not a nuclear specialist; he is not even an employee of the Tokyo Electric Power Company, the operator of the crippled plant. He is one of thousands of untrained, itinerant, temporary laborers who handle the bulk of the dangerous work at nuclear power plants here and in other countries, lured by the higher wages offered for working with radiation. Collectively, these contractors were exposed to levels of radiation about 16 times as high as the levels faced by Tokyo Electric employees last year, according to Japan's Nuclear and Industrial Safety Agency, which regulates the industry. These workers remain vital to efforts to contain the nuclear crisis at the Fukushima nuclear plants.

They are emblematic of Japan's two-tiered work force, with an elite class of highly paid employees at top companies and a subclass of laborers who work for less pay, have less job security and receive fewer benefits. Such labor practices have both endangered the health of these workers and undermined safety at Japan's 55 nuclear reactors, critics charge.

"This is the hidden world of nuclear power," said Yuko Fujita, a former physics professor at Keio University in Tokyo and a longtime campaigner for improved labor conditions in the nuclear industry. "Wherever there are hazardous conditions, these laborers are told to go. It is dangerous for them, and it is dangerous for nuclear safety."

Of roughly 83,000 workers at Japan's 18 commercial nuclear power plants, 88 percent were contract workers in the year that ended in March 2010, the nuclear agency said. At the Fukushima Daiichi plant, 89 percent of the 10,303 workers during that period were contractors. In Japan's nuclear industry, the elite are operators like Tokyo Electric and the manufacturers that build and help maintain the plants like Toshiba and Hitachi. But under those companies are contractors, subcontractors and sub-subcontractors — with wages, benefits and protection against radiation dwindling with each step down the ladder.

Interviews with about a half-dozen past and current workers at Fukushima Daiichi and other plants paint a bleak picture of workers on the nuclear circuit: battling intense heat as they clean off radiation from the reactors' drywells and spent-fuel pools using mops and rags, clearing the way for inspectors, technicians and Tokyo Electric employees, and working in the cold to fill drums with contaminated waste.

Some workers are hired from construction sites, and some are local farmers looking for extra income. Yet others are hired by local gangsters, according to a number of workers who did not want to give their names.

They spoke of the constant fear of getting fired, trying to hide injuries to avoid trouble for their employers, carrying skin-colored adhesive bandages to cover up cuts and bruises.

In the most dangerous places, current and former workers said, radiation levels would be so high that workers would take turns approaching a valve just to open it, turning it for a few seconds before a supervisor with a stopwatch ordered the job to be handed off to the next person. Similar work would be required at the Fukushima Daiichi plant now, where the three reactors in operation at the time of the earthquake shut down automatically, workers say.

"Your first priority is to avoid pan-ku," said one current worker at the Fukushima Daini plant, using a Japanese expression based on the English word puncture. Workers use the term to describe their dosimeter, which measures radiation exposure, from reaching the daily cumulative limit of 50 millisieverts. "Once you reach the limit, there is no more work," said the worker, who did not want to give his name for fear of being fired by his employer.

Takeshi Kawakami, 64, remembers climbing into the spent-fuel pool of the No. 1 reactor at the Fukushima Daiichi plant during an annual maintenance shutdown in the 1980s to scrub the walls clean of radiation with brushes and rags. All workers carried dosimeters set to sound an alarm if exposure levels hit a cumulative dose limit; Mr. Kawakami said he usually did not last 20 minutes.

"It was unbearable, and you had your mask on, and it was so tight," Mr. Kawakami said. "I started feeling dizzy. I could not even see what I was doing. I thought I would drown in my own sweat."

Since the mid-1970s, about 50 former workers have received workers' compensation after developing leukemia and other forms of cancer. Health experts say that though many former workers are experiencing health problems that may be a result of their nuclear work, it is often difficult to prove a direct link. Mr. Kawakami has received a diagnosis of stomach and intestinal cancer.

News of workers' mishaps turns up periodically in safety reports: one submitted by Tokyo Electric to the government of Fukushima Prefecture in October 2010 outlines an accident during which a contract worker who had been wiping down a turbine building was exposed to harmful levels of radiation after accidentally using one of the towels on his face. In response, the company said in the report that it would provide special towels for workers to wipe their sweat.

Most day workers were evacuated from Fukushima Daiichi after the March 11 earthquake and tsunami, which knocked out the plant's power and pushed some of the reactors to the brink of a partial meltdown. Since then, those who have returned have been strictly shielded from the news media; many of them are housed at a staging ground for workers that is off limits to reporters. But there have been signs that such laborers continue to play a big role at the crippled power plant.

The two workers who were injured two weeks ago when they stepped in radioactive water were subcontractor employees. As of Thursday, 21 workers at the plant had each been exposed to cumulative radiation levels of more than 100 millisieverts, or the usual limit set for nuclear plant workers during an emergency, according to Tokyo Electric. (That limit was raised to 250 millisieverts last month.)

The company refused to say how many contract workers had been exposed to radiation. Of roughly 300 workers left at the plant on Thursday, 45 were employed by contractors, the company said.

Day laborers are being lured back to the plant by wages that have increased along with the risks of working there. Mr. Ishizawa, whose home is about a mile from the plant and who evacuated with the town's other residents the day after the quake, said he had been called last week by a former employer who offered daily wages of about $350 for just two hours of work at the Fukushima Daiichi plant — more than twice his previous pay. Some of the former members of his team have been offered nearly $1,000 a day. Offers have fluctuated depending on the progress at the plant and the perceived radiation risks that day. So far, Mr. Ishizawa has refused to return.

Working conditions have improved over the years, experts say. While exposure per worker dropped in the 1990s as safety standards improved, government statistics show, the rates have been rising since 2000, partly because there have been more accidents as reactors age. Moreover, the number of workers in the industry has risen, as the same tasks are carried out by more employees to reduce individual exposure levels.

Tetsuen Nakajima, chief priest of the 1,200-year-old Myotsuji Temple in the city of Obama near the Sea of Japan, has campaigned for workers' rights since the 1970s, when the local utility

started building reactors along the coast; today there are 15 of them. In the early 1980s, he helped found the country's first union for day workers at nuclear plants.

The union, he said, made 19 demands of plant operators, including urging operators not to forge radiation exposure records and not to force workers to lie to government inspectors about safety procedures. Although more than 180 workers belonged to the union at its peak, its leaders were soon visited by thugs who kicked down their doors and threatened to harm their families, he said.

"They were not allowed to speak up," Mr. Nakajima said. "Once you enter a nuclear power plant, everything's a secret."

Last week, conversations among Fukushima Daiichi workers at a smoking area at the evacuees' center focused on whether to stay or go back to the plant. Some said construction jobs still seemed safer, if they could be found. "You can see a hole in the ground, but you can't see radiation," one worker said.

Mr. Ishizawa, the only one who allowed his name to be used, said, "I might go back to a nuclear plant one day, but I'd have to be starving." In addition to his jobs at Daiichi, he has worked at thermal power plants and on highway construction sites in the region. For now, he said, he will stay away from the nuclear industry.

"I need a job," he said, "but I need a safe job."
###

From **The New York Times**
(http://www.nytimes.com/2011/04/10/world/asia/10japan.html?src=un&feedurl=http%3A%2F%2Fjson8.nytimes.com%2Fpages%2Fworld%2Fasia%2Findex.jsonp) accessed 4/9/11 1905:

Japan Orders Nuclear Plant Operators to Obtain More Emergency Generators
By ANDREW POLLACK
Published: April 9, 2011

TOKYO — The Japanese government on Saturday ordered the nation's nuclear power plant operators to secure more emergency generators after a series of malfunctions at two such plants raised concerns about whether Japan was vulnerable to a second nuclear accident.

The government also moved to ban the planting of rice in soil containing too much radioactive material. While sales of some milk, vegetables and fish have already been prohibited because of contamination, the new measures affect the nation's staple crop, a foundation of its culture as well as its diet.

The new nuclear malfunctions followed an aftershock of magnitude 7.1 that ripped through northeastern Japan late Thursday night, knocking out power to more than four million households and businesses.

The already crippled Fukushima Daiichi plant, which has been spreading radioactive materials into the air and water for nearly a month, came through the aftershock relatively unscathed, officials say, although there was a sharp spike in radiation levels inside one part of reactor No. 1.

That could indicate that some radioactive material could have escaped from the steel reactor pressure vessel and fallen into the containment structure, a potentially dangerous development. However, the operator of the Fukushima plant, the Tokyo Electric Power Company, dismissed the high radiation reading as erroneous.

But the impetus for the new government order on diesel generators came from some problems at two other nuclear power plants, both run by the Tohoku Electric Power Company. Both suffered temporary losses of cooling to spent fuel pools, electricity cutoffs and problems with backup diesel generators after Thursday's aftershock.

The Higashidori plant lost all outside power. While it had three backup diesel generators, two were out of service for periodic maintenance. The remaining one worked for a while, but later, after some outside power was restored, it stopped because of a spill of oil.

At the Onagawa plant, three out of four outside power lines went down, but the plant continued to operate on the fourth line. While diesel backup was not needed, one of the plant's two diesel generators had been out of order since April 1.

"There was no problem this time," said Hidehiko Nishiyama, deputy director general of the Nuclear and Industrial Safety Agency, which regulates the atomic energy industry, at a news conference. However, he said, nuclear plant operators will now be required to have more backup diesel generators available and working.

Mr. Nishiyama said his agency was also trying to find the causes for the loss of cooling to spent fuel pools. The Higashidori cooling system stopped for 21 minutes. At Onagawa, which has three reactors, the cooling was out for up to 80 minutes. The cause of one stoppage seemed to be essentially a blown fuse, Mr. Nishiyama said.

Loss of cooling can allow spent fuel to heat up, which can lead to the release of radioactive materials.

The new policy on rice will ban planting of the crop in soil that has more than 5,000 becquerels of cesium-137 per kilogram of soil.

So far, only two spots in Japan, both in the town of Iitate, 25 miles northwest of the Fukushima plant, have had cesium levels that high. But the national and prefectural governments are now hurriedly performing soil surveys to identify which areas would be off limits to planting.

With planting about to begin, "we don't have so much time," said Sumito Yasuoka, an official in the Ministry of Agriculture, Forestry and Fisheries, who said farmers pressed the government to let them know if they could plant their crop. The government also wants to assure consumers that the rice they eat will be safe.

"Rice is Japan's main staple, and it is a very important food," Mr. Yasuoka said. "It's very important to maintain the safety of rice as well."

The level of 5,000 becquerels per kilogram was chosen because rice grown in such soil would be expected to end up with about 500 becquerels of cesium 137 in the rice itself. That is the existing limit for vegetables and some other foods, Mr. Yasuoka said.

Fukushima Prefecture is the nation's fourth-largest rice producer, and rice is its biggest crop, so any ban on planting would cause financial hardship.

"It hurts terribly," said Yoshinori Sato, an official of an agricultural cooperative in Fukushima Prefecture with 13,000 households as members. Mr. Sato said that about half the rice acres his co-op's members hoped to plant this year might be off limits, either because of radiation or because of damage from the tsunami.

Mindful of the sensitivities, Michihiko Kano, the minister of agriculture, visited Iitate on Saturday and promised that farmers who were not allowed to grow rice because of soil contamination would be compensated.

Thursday's aftershock, which occurred off the northeastern coast of Japan, was the largest since March 11, the day of the 9.0-magnitude earthquake that set off a giant tsunami and the crisis at the Fukushima Daiichi plant. More than four million households or stores lost power Thursday night, but by Saturday, only about 160,000 were without power.

The fire and disaster management agency said that two people had died in the aftershock, but news reports cited more.

Yasuko Kamiizumi, Ken Ijichi and Kantaro Suzuki contributed reporting.
###

From **ABC**
(http://www.cnn.com/2011/WORLD/asiapcf/04/09/japan.nuclear.reactors/index.html?hpt=T1)
accessed 4/9/11 1715:

Video shows tsunami crashing into Fukushima nuclear site
By Brian Walker and Matt Smith, CNN
April 9, 2011 4:02 p.m. EDT

Tokyo (CNN) -- A brief video clip released Saturday captures the massive tsunami that crippled Japan's Fukushima Daiichi power plant, showing the wall of water that slammed into the facility and created an ongoing crisis.

The video shows the giant wave generated by the historic March 11 earthquake crashing over the plant's seawall and engulfing the facility, with one sheet of spray rising higher than the buildings that house the plant's six reactors. Tokyo Electric Power, the plant's owner, told reporters the wall of water was likely 14 to 15 meters (45 to 48 feet) higher than normal sea levels -- easily overwhelming the plant's 5-meter seawall.

The footage was was shot from high ground about 900 meters south of the plant by a worker who evacuated before the tsunami hit, the Tokyo Electric Power Company said in releasing the six-second clip.

Photos released by the company showed shattered windows, scattered papers and dangling ceiling tiles throughout the plant's now-empty office annex. Two workers were killed in the basement of the No. 4 reactor's turbine plant when the tsunami struck, and their bodies were recovered only last week.

The tsunami knocked out generators and pumps needed to cool the plant's three operating reactors following the magnitude 9 earthquake, leaving engineers struggling to prevent a bigger disaster as those units radioactive cores overheated. In response to the quake, Japanese regulators issued tougher standards for emergency power at nuclear plants Saturday.

Thousands without electricity after aftershock

Power stations will be required to have two diesel generators as backup power for each reactor unit, said Hidehiko Nishiyama, the chief spokesman for Japan's Nuclear and Industrial Safety Agency. Current regulations require only one generator per unit.

At the plant, workers are beginning to lay ground-level pipes between the reactor units and the radioactive waste treatment facility where engineers hope to pump the contaminated water that has been building up, Sakae Muto, the head of the utility's nuclear power division, said Saturday.

Workers have been pouring hundreds of tons of water a day into the reactors in an effort to keep them cool until normal circulation systems can be restored. The No. 2 reactor is believed to be leaking highly radioactive water, some of which had been spilling into the Pacific until Wednesday, while flooded basements in the turbine plants of all three units are making it impossible to restore power, company officials said.

And engineers have been adding nitrogen into the primary containment shell around reactor No. 1, a move aimed at countering a buildup of flammable hydrogen in the unit. The inert nitrogen displaces oxygen that could fuel an explosion, like the hydrogen blast that blew apart the buildings surrounding units 1 and 3 in the days following the earthquake.

Hydrogen buildup is a symptom of damaged fuel rods in the cores of the reactors. But Tokyo Electric has called the chances of another explosion "extremely low." And new equipment allowed engineers to raise the concentration of nitrogen from 98 percent to 99 percent Saturday, Nishiyama said.

Workers returned to the plant Friday following a magnitude 7.1 aftershock late Thursday night that forced them to evacuate for about eight hours, Japanese authorities said. The aftershock is not believed to have inflicted any further damage to the plant, Tokyo Electric and the safety agency reported Friday.

Hiroo Saso and Gen Shimada contributed to this report for CNN.
###

From: Vargo, George <gvargo@state.pa.us>
Sent: Tuesday, April 12, 2011 12:05 PM
To: Tosh Ushino (b)(6) Dan Strom (b)(6) Dan Strom (strom@pnl.gov); George J. Vargo (vargo@physicist.net); Mike Stabin (michael.g.stabin@vanderbilt.edu); Reeves, Glen I. CONTRACTOR; Hasselberg, Rick; 'Ronald E Goans, MD, PhD'; Whitehead, Jeffrey; Allard, David; Barnhart, James; Chippo, John (DEP); Easton, Randolph; Gallagher, Dennis (DEP); Gilcrist, Tara; Handley, Lu-Ann; Janati, Rich; Kutchman, Randy; Melnic, Joseph; Seiber, Benjamin; Skelton, Donielle; Tamanini, Henry; Wagner, William
Cc: 'Susan E. Vargo'; 'Vargo Susan'; George J Vargo; 'Karen Barcal'
Subject: Fukushima Daiichi NPP Status Report #33 - 4/12/11
Attachments: Fukushima_Daiichi_NPP_Status_Report#0033-041211-1200.doc

DJ/72

Fukushima Daiichi NPP Status Report #33 April 12, 2011 – 1200
(4/13/11 0100 JST)

Ed. Note: Today's major development is the reclassification of the accident from INES Level 5 to Level 7, the most severe classification on the IAEA scale. While this is still a serious reactor accident it is important to note that the major transport mechanism in the Chernobyl – a large thermal column resulting from the graphite fire – is not present in this event.

From **IAEA** (http://www.iaea.org/newscenter/news/tsunamiupdate01.html) accessed 4/12/11 0730:

Fukushima Nuclear Accident Update (12 April 2011, 04:45 UTC)
The Japanese Nuclear and Industrial Safety Agency (NISA) today issued a new provisional rating for the accident at the Fukushima Daiichi nuclear power plant on the IAEA International Nuclear and Radiological Event Scale (INES).

The nuclear accident at Fukushima Daiichi is now rated as a level 7 "Major Accident" on INES. Level 7 is the most serious level on INES and is used to describe an event comprised of "A major release of radioactive material with widespread health and environmental effects requiring implementation of planned and extended countermeasures". Japanese authorities notified the IAEA in advance of the public announcement and the formal submission of the new provisional rating.

The new provisional rating considers the accidents that occurred at Units 1, 2 and 3 as a single event on INES. Previously, separate INES Level 5 ratings had been applied for Units 1, 2 and 3.

The provisional INES Level 3 rating assigned for Unit 4 still applies.

The re-evaluation of the Fukushima Daiichi provisional INES rating resulted from an estimate of the total amount of radioactivity released to the environment from the nuclear plant. NISA estimates that the amount of radioactive material released to the atmosphere is approximately 10% of the 1986 Chernobyl accident, which is the only other nuclear accident to have been rated a Level 7 event.

Earlier ratings of the nuclear accident at Fukushima Daiichi were assessed as follows:
On 18 March, Japanese authorities rated the core damage at the Fukushima Daiichi 1, 2 and 3 reactor Units caused by loss of all cooling function to have been at Level 5 on the INES scale.

They further assessed that the loss of cooling and water supplying functions in the spent fuel pool of the Unit 4 reactor to have been rated at Level 3.
Japanese authorities may revise the INES rating at the Fukushima Daiichi nuclear power plant as further information becomes available.

INES is used to promptly and consistently communicate to the public the safety significance of events associated with sources of radiation. The scale runs from 0 (deviation) to 7 (major accident).

Further information on the INES scale: http://www-ns.iaea.org/tech-areas/emergency/ines.asp. Further details regarding this development can be found in the NISA Press Release [pdf].
###

From **NEI** (http://www.nei.org/newsandevents/information-on-the-japanese-earthquake-and-reactors-in-that-region/) accessed 4/12/11 0900:

UPDATE AS OF 8:30 A.M. EDT, TUESDAY, APRIL 12:
Japan's nuclear safety agency has raised the crisis level of the Fukushima Daiichi accident from 5 to 7 on the seven-level International Nuclear and Radiological Event Scale. The new rating puts the Japanese incident on the same level as the 1986 Chernobyl accident—even though Japanese authorities estimate that radiation released at Fukushima is only 10 percent of the amount released from the Ukrainian plant.

The new level designates Fukushima as a "major accident," up from an "accident with wider consequences." Level 7, the highest on the scale, describes an event with "a major release of radioactive material with widespread health and environmental effects requiring implementation of planned and extended countermeasures," according to the International Atomic Energy Agency, which sponsors the ratings.

For the new rating, the Japan Nuclear and Industrial Safety Agency combined the accidents at reactors 1, 2 and 3 as a single event. Previously, separate level 5 ratings had been applied to each reactor. The earlier level 3 rating ("serious incident") still applies to reactor 4.

Japanese authorities may revise the INES rating at the power plant as more information becomes available.

UPDATE AS OF 2:30 P.M. EDT, MONDAY, APRIL 11:
NEI has uploaded a new video to its YouTube channel. The video, "Plutonium's Role in a Nuclear Reactor," features NEI's Everett Redmond, director of nonproliferation and fuel cycle policy, who discusses where plutonium comes from and how it is used in a nuclear reactor.

UPDATE AS OF 11:30 A.M. EDT, MONDAY, APRIL 11:
No damage to Japan's nuclear power plants was reported today after another strong aftershock hit the northeast coast. The temblor, measured at magnitude 6.6 by the U.S. Geological Survey, rocked the country one month after the magnitude 9.0 earthquake and tsunami struck March 11, damaging the Fukushima Daiichi nuclear power plant. A magnitude 7.1 aftershock rattled Japan April 7.

The Monday earthquake prompted the temporary evacuation of workers at the plant and interrupted the offsite electric power supply for less than an hour. Injection of cooling water to reactors 1, 2, and 3 resumed within an hour. Officials reported no new damage or increased radiation levels. Workers continued to spray water into the spent fuel pools of reactors 1-4 as

needed.

As an additional safety measure, Tokyo Electric Power Co. (TEPCO) has brought additional diesel generators to the site as a backup in case offsite power is disabled.

Preparations are being made to transfer highly radioactive water from reactor 2 to a water storage tank. Workers are inspecting the tank to ensure there will be no leaks.

TEPCO is injecting nitrogen gas into the reactor 1 containment vessel to reduce the possibility of a hydrogen explosion. TEPCO plans to inject nitrogen into the containment vessels of reactors 2 and 3, the Japan Atomic Industrial Forum reported.

TEPCO used a drone helicopter to take aerial pictures of reactor buildings that are highly contaminated. TEPCO also is using remote-controlled heavy equipment to remove radioactive debris.

Japanese authorities announced that residents of some municipalities outside the 12.5-mile radius evacuation zone will be relocated to reduce long-term radiation exposure. Radiation can accumulate in some places based on weather and geographical factors. The relocation orders will apply to areas where there is a possibility of residents receiving a dose of 2,000 rem over the course of a year.
###

From **NHK** (http://www3.nhk.or.jp/daily/english/12_19.html) accessed 4/12/11 0750:

Nuclear accident level raised to maximum

Japan's nuclear safety agency has raised the crisis level at the stricken Fukushima Daiichi nuclear power plant to 7, from the current 5.

The agency told reporters on Tuesday that large volumes of radioactive substances that could affect human health and the environment are being released in a wide area.

Level 7 is the highest rank on an international standard and equivalent to the severity recorded after the Chernobyl disaster in 1986.

But the agency said the volume of radiation from Fukushima is one-tenth that at Chernobyl.

The agency said its calculations show that 370-thousand terabecquerels of radioactive iodine 131 and cesium 137 have been released from the plant.

The nuclear safety commission, in a joint press conference with the agency, put the estimated leak at 630-thousand terabecquerels of both substances.

One terabecquerel is equivalent to one trillion becquerels. Both organizations say the leak constitutes a level-7 crisis.

Senior agency official Hidehiko Nishiyama said 29 people died of acute radiation exposure at Chernobyl but there are no fatal radiation casualties at Fukushima.

He added that at Chernobyl the nuclear reactor itself exploded in contrast to the Fukushima plant, which was damaged by hydrogen explosions. He said the reactors themselves retain their shape.

Nishiyama also said the upgrade does not affect the existing evacuation plan, which was made on the basis of the same radiation evaluation.

The agency is required to announce the severity of a crisis at a nuclear facility based on the international standard from zero up to 7 set by the International Nuclear Event Scale.

Tuesday, April 12, 2011 13:09 +0900 (JST)
###

From **NHK** (http://www3.nhk.or.jp/daily/english/12_24.html) accessed 4/12/11 0752:

Fukushima radiation measurement program

The Fukushima prefectural government has begun a program to measure radiation levels at more than 2700 locations across the region.

In response to residents' concerns, on Tuesday officials began examining radiation levels at 2,757 sites in 55 municipalities around the prefecture.

However, they plan to exclude the area within a 20-kilometer radius of the Fukushima Daiichi nuclear power plant, where residents have been instructed to evacuate.

In front of the Iwaki railway station, officials measured radiation levels at 1 centimeter and 1 meter above the ground.

A local resident said he is concerned about the level of radiation where he lives and wants the authorities to provide the public with accurate information.

The prefectural survey will continue through Friday and include levels of iodine and cesium in the soil.

Tuesday, April 12, 2011 15:11 +0900 (JST)
###

From **NHK** (http://www3.nhk.or.jp/daily/english/12_18.html) accessed 4/12/11 0755:

TEPCO to resume removing contaminated water

The operator of the crippled Fukushima Daiichi nuclear plant expects to resume the removal of highly radioactive water as early as Tuesday, after a one-day delay due to a strong aftershock.

Tokyo Electric Power Company will begin pumping contaminated water from the Number 2 reactor and transferring it to a condenser, after checking the safety of equipment.

The radioactive water has been hampering work to restore cooling functions in the damaged reactors.

TEPCO says it also resumed injecting nitrogen into the containment vessel of the No.1 reactor late on Monday night.

The work is aimed at preventing further hydrogen explosions. It was suspended because of the strong quake earlier in the day.

TEPCO now suspects a possible leakage of gas from the containment vessel, as its internal pressure has barely risen over the past few days despite the injection of nitrogen.

Radiation levels around in the area have not changed, however, and the utility plans to continue the injection while monitoring the situation closely.

Tuesday, April 12, 2011 13:12 +0900 (JST)
###
From **NHK** (http://www3.nhk.or.jp/daily/english/11_35.html) accessed 4/12/11 0757:

Radiation levels exceed permissible limit

The science ministry says the amount of radiation accumulated over about half a month in some areas of Fukushima Prefecture has exceeded the permissible level for a whole year.

Since March 23rd, the ministry has been measuring radiation levels in 15 locations more than 20 kilometers away from the crippled Fukushima Daiichi nuclear power plant.

At one location, in Namie Town about 30 kilometers northwest of the plant, 14,480 microsieverts of radiation had accumulated over the 17-day period to Sunday.
8,440 microsieverts of radiation were observed in Iitate Village.

In another location in Namie, the amount reached 6,430 microsieverts.
People would be exposed to this accumulated amount of radiation if they had stayed outdoors throughout the entire period.

The level at one location was more than 14 times the 1,000 microsieverts that the International Commission on Radiological Protection recommends as the long-term annual reference level for people. The recommended level of 1,000 microsieverts excludes radiation from the natural environment and medical devices.

Hiroshima University Professor Kiyoshi Shizuma says most of the radiation observed in Fukushima is believed to be radioactive cesium that has fallen to the ground.

Shizuma advises residents to wear masks to avoid inhaling radioactive substances mixed with dust.
He points to the need to take samples both from the air and the ground for detailed analyses in order to assess any possible impact on human health.

Monday, April 11, 2011 21:20 +0900 (JST)
###

From **NHK** (http://www3.nhk.or.jp/daily/english/12_23.html) accessed 4/12/11 0800:

Much of radiation leaked on Mar.15,16

Japan's Nuclear Safety Commission says that abnormalities in a reactor suppression pool were to blame for the release of large amounts of radioactive substances at the Fukushima nuclear power plant.

It said much of the radiation was released during the 2 days after the suppression pool, connected to the No. 2 reactor, began showing problems at 6 AM on March 15.

The commission said that radiation is still escaping and the amount is rising marginally, but that the volume has dropped considerably since the crisis began.

Tuesday, April 12, 2011 14:39 +0900 (JST)
###

From **NHK** (http://www3.nhk.or.jp/daily/english/11_36.html) accessed 4/12/11 0805:

Water radiation levels down

The operator of the troubled Fukushima Daiichi nuclear power plant says radiation levels in the seawater near the plant have dropped.

Tokyo Electric Power Company said it detected 200 becquerels of radioactive iodine-131 per cubic centimeter in seawater samples taken around the water intake of the No.2 reactor on Sunday.

The figure is 5,000 times the maximum allowed under government standards, but much lower than the 7.5 million times the standard that was detected at the same spot on April 2nd.

On Wednesday of last week, the company stopped a leak of radioactive water from a concrete pit outside the No.2 reactor after pouring a hardening agent into a layer of gravel around the pit.

In another effort to contain the nuclear trouble at the plant, the utility released 1,320 tons of relatively low-level radioactive water from the plant into the Pacific Ocean outside reactors No.5 and 6 between Monday and Saturday of last week.

TEPCO on Sunday detected 11 becquerels of iodine-131 per cubic centimeter in seawater samples collected 30 meters from outlets in the northern part of the complex. The figure was 280 times the government standard.

Measurements at the same spot were 2,800 times the standard last Thursday.

Monday, April 11, 2011 21:55 +0900 (JST)
###

From **The Japan Times** (http://search.japantimes.co.jp/cgi-bin/nn20110412x1.html) accessed 4/12/11 0810:

UPDATE: Japan raises Fukushima accident severity level to highest level

Japan on Tuesday raised the severity level of the accident at the crippled Fukushima Daiichi nuclear plant to the maximum 7 on an international scale, up from the current 5 and matching that of the 1986 Chernobyl catastrophe.

The previous evaluation of 5 on the International Nuclear Event Scale provisionally set by the Nuclear and Industrial Safety Agency, a body under the Ministry of Economy, Trade and Industry, was at the same level as the Three Mile Island accident in the United States in 1979.

While raising the level for the accident, the agency said, however, that the amount of radioactive materials released into the external environment from the nuke plant is estimated to be about 10 percent of the amount released in the Chernobyl catastrophe.

The decision comes after the release of a preliminary calculation Monday by the Nuclear Safety Commission of Japan, which said the crippled nuclear plant was releasing up to 10,000 terabecquerels of radioactive materials per hour at one point after a magnitude 9.0 earthquake and subsequent tsunami hit northeastern Japan on March 11.

Level 7 accidents on the INES correspond to the release into the external environment of radioactive materials equal to more than tens of thousands of terabecquerels of radioactive iodine 131. One terabecquerel equals 1 trillion becquerels.

The agency estimated that up to 370,000 terabecquerels of radioactive materials had been released in the air while the commission said it estimated 630,000 terabecquerels, both far exceeding the criteria for level 7.

Haruki Madarame, chairman of the commission, said earlier it estimates the release of 10,000 terabecquerels of radioactive materials per hour continued for several hours.

The commission says the release has since come down to under 1 terabecquerel per hour and that it is still examining the total amount of radioactive materials released.

It also released a preliminary calculation for the cumulative amount of external exposure to radiation, saying it exceeded the yearly limit of 1 millisievert in areas extending more than 60 kilometers northwest of the plant and about 40 km south-southwest of the plant.

The areas encompass the cities of Fukushima, Date, Soma, Minamisoma and Iwaki and part of the town of Hirono, all in Fukushima Prefecture.

Within a 20-km exclusion zone set by the government, the amount varied from under 1 millisievert to 100 millisieverts or more, and in the 20-30 km ring where residents are asked to stay indoors, it came to under 50 millisieverts.

The commission used the System for Prediction of Environmental Emergency Dose Information to calculate the spread of radiation.
###

From **The Japan Times** (http://search.japantimes.co.jp/cgi-bin/nn20110412a3.html) accessed 4/12/11 0820:

Evac zone to widen as exposure fears grow
Compiled from Kyodo, Staff report

The government will expand the 20-km evacuation zone around the crippled Fukushima No. 1 nuclear plant because concerns are rising about cumulative, long-term radiation exposure, Chief Cabinet Secretary Yukio Edano said Monday.

Under the nuclear disaster law, residents in parts of certain municipalities outside the zone will be "instructed" to leave in about a month. These areas include parts of Minamisoma, Katsurao, Namie, Iitate and Kawamata. All are in Fukushima Prefecture.

People "do not need to evacuate immediately" but will be told to in about a month, given rising concerns over long-term radiation exposure, Edano said.

As for the hot zone's outer ring between 20 km and 30 km from the plant, Edano said it would be designated as an "emergency evacuation preparation zone," meaning that residents could be told to leave at any time.

So far, only residents within a 20-km radius of the radiation-emitting plant have been told to evacuate. Those in the wider 20- to 30-km ring were initially told to stay indoors, and later urged to leave.

The step is being taken despite government assurances that the risk of being irradiated by high-level emissions from the plant is much lower than when the crisis began.

"The risk that the situation will worsen and that there may be new massive emissions of radioactive materials is becoming considerably lower," Edano said earlier Monday. "Even if there are no new emissions of radioactive substances, radiation may come out from the soil . . . and this could affect health if one stays in the affected area for a long time."

After the March 11 earthquake and tsunami crippled the power station, the government told people within 20 km of it to evacuate and those between 20 km and 30 km away to stay indoors.

The latter were later asked to "voluntarily leave" because everyday life would be difficult due to the lack of goods and services.
###

From **The Japan Times** (http://search.japantimes.co.jp/cgi-bin/nn20110412f2.html) accessed 4/12/11 0825:

High radiation well past no-go zone: Greenpeace
By Jun Hongo
Staff writer

Radiology experts from Greenpeace urged the government to revise their evacuation protocol Monday after they found high levels of radiation around the greater Fukushima area and in the region's fresh produce.

A team of radiologists and safety advisers of the nongovernmental organization said a survey conducted from April 4 through Sunday detected radiation levels of 4 microsieverts per hour at a playground in the city of Fukushima. That would translate into a potential annual exposure of 5 millisieverts, Greenpeace expert Rianne Teule said, explaining that the level was the threshold for evacuation at Chernobyl.

The group also said that all 11 samples of local vegetables from gardens and small farms within the prefecture contained radioactivity exceeding the legal limit of 2,000 becquerels per kilogram set by the farm ministry. For example, 152,340 becquerels were found in spinach from a small patch on the outskirts of the city of Fukushima, the group said.

"This is 75 times higher than the limit by the government," Teule told a news conference at the Foreign Correspondents' Club of Japan in Tokyo.

Most leafy vegetables from Fukushima Prefecture have been banned from circulation since March 21, but some are being sold directly to consumers from local farmers. The government should provide more information to local residents, the NGO warned.

Radiologist Jan van de Putte told the same news conference that areas with high levels of radioactivity were concentrated in northwestern Fukushima Prefecture, especially in areas between the villages of Iitate and Tsushima, which registered 48 microsieverts per hour.

"This is really dangerous and a very high level," van de Putte said.

Considering the 4 microsieverts detected at a playground in the heart of the city of Fukushima — which has a population of 300,000 — van de Putte and Greenpeace urged the government postpone the start of the school year until decontamination is complete and safety is confirmed.

Greenpeace began surveying areas affected by the Fukushima No. 1 nuclear plant crisis and revealed late last month that a sample taken on a road between the villages of Iitate and Tsushima had a radiation level of 100 microsieverts per hour, despite being outside the evacuation area.

That survey, however, was downplayed last month by the Nuclear and Industrial Safety Agency, which claimed the results "could not be considered reliable." Chief Cabinet Secretary Yukio Edano said separately he will ask Greenpeace to provide more details.

"We've been very cooperative (with the government) and have been providing all the data that we gathered," Junichi Sato, executive director of Greenpeace Japan, said Monday.

"But although we have been handing everything to the prime minister's office, they are not giving us any response."
###

From **The Japan Times** (http://search.japantimes.co.jp/cgi-bin/nn20110412a5.html) accessed 4/12/11 0806:

Experts urge external cooling system
By Kazuaki Nagata
Staff writer

The Fukushima No. 1 nuclear crisis has been raging for a month, shattering Japan's reputation as a safe, advanced nation and attractive tourist destination.

The situation is so bad that experts and government officials aren't even sure how many months it will take to bring the plant under control.

Tokyo Electric Power Co. urgently needs to repair the plant's damaged cooling systems or even construct a whole new external plant to lower the temperature of the reactors to less than 100 degrees to stabilize the blazing fuel rods inside.
It must also keep the spent-fuel pools above them cool.

But highly radioactive water believed to be leaking from somewhere deep inside the troubled reactors has flooded the basements of their turbine buildings, hindering any attempts to repair the damage.

Experts agree that plugging the leaks and removing the toxic water are currently the top priorities as they embark on the long and unpredictable path to ending the crisis.

"The leakage (from the reactors) has to be stopped. Leaking means the water inside the reactors is decreasing. So the water has to be replenished, and then it leaks again. This cycle has to be stopped," said Hisashi Ninokata, professor of nuclear reactor engineering at the Tokyo Institute of Technology.

The water that came into contact with the fuel rods has been leaking into the turbine buildings.

The basement floor of reactor No. 2's turbine building is especially contaminated.

About 60,000 tons of contaminated water is estimated to have flooded the turbine buildings of reactors 1, 2, 3 and 4, as well as some trenches beneath them. Tepco has been attempting to pump the water out and transfer it to other tanks and containment facilities, but progress has been slow and safe places to put it are hard to find.

Workers are desperately trying to remove the water because it is blocking repairs to the residual heat removal system — the permanent cooling system knocked out by the March 11 tsunami.

Some experts, including Ninokata, have started floating the idea of temporarily building a brand new external cooling system for the reactors, given the daunting task of removing the deadly water in the building housing the RHRS.

"It will probably take half a year or a year to restart the RHRS, so the external cooling system needs to be used during that period of time," he said, adding that the work to set one up could be finished in a few weeks once the decision is made.

But Ninokata also proposed another step. Since there is a chance the existing RHRS was severely damaged by the tsunami, it might even be better, in addition to an external cooling system, to set up a brand new RHRS right outside the turbine building. This could be completed in a couple of months, he said.

Akio Koyama, professor at Kyoto University's Research Reactor Institute and an expert on managing radioactive waste, said Japan has no experience removing or processing such a large amount of extremely contaminated water, so the work will be challenging.

Once the toxic water has all been pumped out, it might be transported to other plants around the country for processing. But existing facilities are not designed for such high-level radioactive water and are probably unable to handle it, Koyama said. A new facility will be needed to decontaminate and safely dispose of it, he said.

The scope of the disaster has grabbed the world's attention.

Countries sensitive to radiation have banned sales of Japanese products, particularly seafood and vegetables, over health fears. South Korea and Russia blamed Japan for dumping thousands of tons of radioactive water directly into the sea without advance consultation. And Japan has been late disclosing rising levels of cesium in the ocean.

Ninokata said it is true the Fukushima accident has proven that the industry's tsunami safeguards failed. But he also said it would not be a repeat of Chernobyl.

The chances of a hydrogen explosion are low because Tepco has taken measures, including injecting nitrogen into the reactors to purge them of hydrogen, to avoid further explosions of the type that blew the roofs of some of the reactor buildings sky high.

But even if another explosion occurs, the containment vessel will not explode, although it might be damaged, he said.

What's more, unlike Chernobyl, where the graphite moderators burned and released massive amounts of radioactive material into the air, there are no flammable materials inside the Fukushima reactors.
###

From **The Las Vegas Sun** (http://www.lasvegassun.com/news/2011/apr/11/us-nrc-chairman-interview/) accessed 4/12/11 1030:

NRC: Japan nuke crisis 'static' but not yet stable
The Associated Press
Monday, April 11, 2011 | 4:02 p.m.

The top U.S. nuclear regulator said Monday he will not change a recommendation that U.S. citizens stay at least 50 miles away from Japan's crippled nuclear power plant, even as he declared that the crisis in that country remains "static."

Gregory Jaczko, the chairman of the Nuclear Regulatory Commission, acknowledged in an interview with The Associated Press that the month-old crisis in Japan has not yet stabilized. But he said conditions at the Fukushima Dai-ichi plant have not changed significantly for several days.

"We describe the situation as static but not yet stable," Jaczko said.

"It hasn't really changed too much in the last few days," he added, but it will be weeks or even months before the plant is stabilized.

The March 11 earthquake and tsunami knocked out power at the Fukushima plant and reactors have been overheating ever since. In Japan on Tuesday, the Nuclear Safety Commission of Japan raised the severity rating of the crisis from 5 to 7, the highest level and on par with the 1986 Chernobyl disaster.

Progress in stabilizing the complex comes slowly most days, or not at all, as new tremors and radiation repeatedly halt work. A new aftershock Monday briefly cut electricity to the plant and halted work while technicians took cover, but did not endanger operations, according to Japanese officials.

The Japanese government, meanwhile, added five communities Monday to a list of places people should leave to avoid long-term radiation exposure. A 12-mile radius has been cleared around the plant already.

Jaczko said the most important job at the plant still is keeping water in the spent fuel pools to cool the highly radioactive fuel rods, reducing the threat of a meltdown and a catastrophic release of radiation.

Jaczko, who traveled to Japan last month, said the NRC has begun a two-pronged approach to review the safety of the 104 commercial U.S. nuclear reactors in the wake of the Japanese crisis. A 90-day review should be completed in June, with another report expected by the end of the year.

"We want this to be a very systematic and methodical review and make sure we identify all the important issues, and that we work with a sense of urgency and speed to address those issues in the appropriate way," he said, adding that he expects the reviews to result in recommendations for significant regulatory changes.

"Fundamentally, I expect that there will be some things we will want to change and need to change as a result of what comes out of this 90-day review and longer-term review, based on events in Japan," he said.

A task force made up of high-ranking NRC staff is conducting the two reviews, and the five-member commission will act quickly once the reports are released, Jaczko said.

On the 50-mile evacuation zone for U.S. citizens in Japan, Jaczko called his March 16 recommendation "prudent" and said it was based on projections for continued deterioration at the plant. The Japanese government had set a 12-mile evacuation zone, and the U.S. decision raised questions about U.S. officials' confidence in Tokyo's risk assessments.

"I'm still very comfortable" with the decision, Jaczko said.

Asked whether he set up a double standard _ one for nuclear plants in foreign countries and another for U.S. plants, where a 10-mile evacuation zone is the current standard _ Jaczko said no.

"I wouldn't say that's a contradiction," he said, noting that the 10-mile U.S. evacuation zone refers to emergency planning prior to a nuclear disaster. If events warrant, a larger evacuation zone can be created.

"Ultimately, decisions about protective actions (in the event of a nuclear disaster) are made by state and local authorities," he said, not the NRC.

On another topic, Jaczko said he believes spent fuel can be stored safely either in pools or in dry cask storage. Sen. Dianne Feinstein, D-Calif., sent Jaczko a letter Monday urging the NRC to establish regulations that would encourage plant operators to move more quickly to store spent fuel in dry casks, rather than in pools that must be kept cooled.

Feinstein cited a 2006 study by the National Research Council indicating that dry cask storage systems have inherent safety advantages over spent fuel pools.

Jaczko disputed that, saying both methods are safe.

The United States has not had an accident involving spent fuel in decades, and spent fuel at commercial U.S. reactors "continues to be safe and secure," even without a designated site to store nuclear waste, Jaczko said. The Obama administration has abandoned plans for a nuclear waste dump in Nevada, prompting sharp criticism from some lawmakers in both parties.

Jaczko declined to speculate on whether the Japanese crisis would cause a slowdown in a planned expansion of U.S. nuclear reactors backed by President Barack Obama. Jaczko said the NRC has "a very robust system" to license reactors that takes into account a wide range of factors.

"Ultimately safety rests with the (plant operator)," he said. "It's our job to make sure they get there."

If the NRC considers plants unsafe, it will take corrective action, up to and including shutting down plants if necessary, Jaczko said.

Three U.S. nuclear power plants _ in South Carolina, Kansas and Nebraska _ need increased oversight from federal regulators because of safety problems or unplanned shutdowns. But Jaczko said all 65 U.S. nuclear plants in 31 states are operating safely.
###

From: RST09 Hoc
Sent: Monday, April 18, 2011 10:45 AM
To: Fuller, Edward; Hasselberg, Rick
Subject: GEH document
Attachments: Q466 NRC_Postulated_Core_breach_1F2 - FINAL.pdf

DJ/73

(b)(4)

(b)(4)

(b)(4)

(b)(4)

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	.	GOJ Action Office & POC	USG Action Office & POC	Training Needed?	Cost / Reimbursement
	High Priority Requests - Equipment & Supplies							
4a	HPGe for MHLW	Hi		MHLW Food Safety Dept.	T. Tokiwa tokiwa-takeshi@mhlw.go.jp 03-3595-2368	DOE Cherry	Yes	
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
4c	HPGe for TEPCO	Hi		TEPCO	Takenaka takenaka.keisuke@tepco.co.jp 03-6373-4958	DOE Cherry	Yes	

DJ/74

4d	HPGe for NISA	Hi		NISA	NISA: Y. SAKUMA sakuma-yasuhiro@meti.go.jp 03-3501-1087	DOE Cherry	Yes	none to GOJ
13a	Request for the following: 2,100 units-Rad Survey Meters, 2,600 units-Personal Dosimetery	Hi		NISA, MOD		DART		
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 Akihiro@tepco.co.jp 03-6373-6044	DOE Cherry, Duncan	No	

	High Priority Requests - Information Requests/Inquiries							
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		
38	TEPCO request for information		4/22	TEPCO		DOE Cherry CherryRC@state.gov,		
	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		

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, quantity set 3/26	METI, NISA, TEPCO	METI: Hatada hatada-hiroyuki@meti.go.jp 03-3501-1512 x 75167; NISA: SAKUMA sakuma-yasuhiro@meti.go.jp 03-3501-1087; TEPCO: YOSHINO	DOE Cherry, Duncan	yes-DOE providing training	DOE to pay for equipment and experts
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		
24	Medical triage re: exposure to radiation (decontamination capability)		3/25 list	MHLW,NSC, NISA,MEXT, MOD-Col. Towne		DOD; DOE; USAID; NIH Coleman		
	Other Open Requests - Information Requests/Inquiries							
33	Clarify for RST the indications that can be used to assess RPV integrity and location of core. (RST request)			NISA		NRC		
34	List alternative flowpaths that can be used for purging, given accessibility challenges. (RST request)			NISA		NRC		
35	Confirm RST recommendation that RPV injection can be maximized once containment has been purged and vented (RST)			NISA		NRC		

	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		
2b	Loaning friskers --hand /foot monitors		3/28 Cab mtng	MEXT, NSC, NISA, MOFA	TEPCO: TAKENAKA takenaka.keisuke@tepco.co.jp 03-6373-4958	NRC Blamey; INPO		
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
3	Conduct simulation by radiation diffusion model (compare with SPEEDI data)			NSC, MEXT		DOE Cherry, Duncan		
5a	Information on Radiation shielding materials for vehicles.		3/26 cabinet meeting; 3/29 list	METI, NISA		DOE Cherry		
5c	Westinghouse working on the UAV request and coordinating with Texas A&M expert			TEPCO				
5d	GOJ request for shielding			INPO				

US-Japan Nuclear-Related Assistance Tracker

6	Robotic debris clearing machines		3/25 list, quantity set 3/26	METI, NISA		DOE Cherry, Duncan	N/A	
7	Provision of data obtained from UAVs		3/25 list	MOD, MOFA		DOD		
8	Unmanned helicopter - GOJ is looking for helicopter to spray nondispersant.		3/25 list	MOD, NISA, MOFA		DOD DAO		
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.
9a	Water barges			MOD, NISA		J4, PACOM		PACOM gave to GOJ. (Need to confirm.)
9b	Fresh water supply pumps from Bechtel			NISA				PACOM paid $3m for #9, 9b, 10, 11.
10	High quality pumps and hoses.		3/26 meeting and previous discussion	TEPCO		NRC		PACOM paid $3m for #9, 9b, 10, 11.
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.
12	Protective body armor	Hi	3/25 list	NISA - Sakuna, MOD	NISA, MOD	NRC - Blamey		

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		
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		
19	Bottled water for infant formula		3/25 list	MHLW		USAID/OFDA		
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 (Al Hochevar, (b)(6) (cell)		
21a	Assistance in dealing with accumulated radioactive water in turbine buildings	Hi	3/27 meeting	NISA		DOE Cherry, Duncan; NRC		
21c	Information on "evaporation technologies"	Hi	3/28 - DCCS Fukuyama	NISA		DOE Cherry, Duncan		
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				

21e	Direct request from GOJ to Pacific Northwest Labs for technical assistance with water decontamination and storage issues.	Hi		NISA		DOE Cherry, Duncan		
21f	Determine whether tempoary radwaste porcessing skids are available or would be a good idea (for removing contaminated water)	Hi		NISA		INPO		
21g	Temporary holding tanks (for removing contaminated water)	Hi		NISA		DOE; DOD; INPO		
21h	Tanker trucks as a temporary holding area (for removing high-level contaminated water)	Hi		NISA		DOE; DOD; INPO		
21i	Investigate whether there is a technology that would absorb contaminated materials from water (for removing contaminated water)	Hi		NISA		DOE		
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							
23b	Health cooperation in three areas: environmental monitoring; KI policy; risk communication			CAS	Dr. Akashi	USAID, State, NIH Coleman, CDC, USDA, DOD		

25	INFO: Extinguishant/coolant		3/25 list	NISA				
26	Incorporate PNNL into crisis mgmt dialogue/Spent Fuel WG		3/26, 3/28 - DCCS Fukuyama	NISA		DOE Cherry; NRC		
27	U.S. cooperation in bringing private sector engineers into Shielding WG		3/26 meeting - Nagashima	NISA		NRC		
28	Assessment of possible fuel damage in units 1, 2, 3		3/27 - Hosono	NISA		NRC		
29	Assessment of structural stability of spent fuel pools		3/27 - Naga-shima ; 3/28 - Fukuyama	NISA		NRC reactor Safety Team		
29a	Information on shielding for individual rooms and for the facility in general			NISA				
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		
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			
31	SAMG Technical Document			TEPCO				

32	GEH is following up on the Nitrogen purge issue analysis			NISA, TEPCO				
36	Requests for military air transport			MOD		J4, PACOM		
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		

Status of Response	Open/ Closed	Comments (for USG use)
		Consortium Call info: Tuesday & Friday 0900 JST/2000 EDT (301) 816-5120, passcode: (b) alternate number 800-772-3842, passcode: (b)(6)
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.	O	~~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.
MAFF has requested 2 HPGe's to test agricultural samples from potentially affected areas.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.	O	~~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.
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.	O	DOE is looking for surplus detectors for donation to GOJ. As of 4/20, DOE has not identified any surplus HPGe detectors within DOE.

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.	O	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 NIPH 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?). 4additional detectors were shipped from Naval Research Laboratory (NRL) and will be received in Yokota AB on 4/11. (Please confirm) Per PACOM J4, required liquid N2 is available at Yokota AB.~~
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. The 4/22 working group discussed potentially closing this item, but it is being retained on the open list until receipt of the 2,000 dosimeters is confirmed.	C	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.
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.	O	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.

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	
TEPCO requested information following a prior phone conversation between DOE Asst. Secretary Lyons and JAEA Chairman Kondo on 1) Long term passive cooling; 2) Water treatment methods; 3) Control and management of criticality in reactor vessels.		
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 30 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.

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/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. 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.
MOFA said 3/30 it would accept the 1 million bottles (17 doses each) of liquid KI offered; requested via note vebale 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.
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.
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.
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.
Technical: Ongoing project, comments that shift focus are received during 1100 status call 3/29	0	4/19: Ongoing

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
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. Receipt of items confirmed, additional 18 detectors not suitable for use, item closed 4/22.	O	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 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.
Six sets of Teletectors 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 is was a separate request and is now fulfilled.
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.
~~NRC provided information on tungsten materials.~~ DOE provided response to TEPCO questionnaire on 4/12. GOJ to confirm this is closed. Further questions might be asked as necessary	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.
Westinghouse working with Texas A&M University expert.	C	
This has been closed out. (Confirm how and by whom?)	C	

US-Japan Nuclear-Related Assistance Tracker

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.
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.
4 T-Hawks on-site. MOD looking into DOD options (KS); repeated by Mr. Nagashima on 3/27 as unmanned helicoper 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.
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
Per J4 the barges have been outfitted and tested. Barges are in Fukushima and pumping.	C	
First train in Japan	C	
CLOSED: NRC rec'd info 3/26 on possible hose and said would investigate further; request withdrawn at 3/29 Cab meeting.	C	
Hose delivered as part of Australia/Bechtel equipment; in J-Village.	C	
INPO provided info on commercial sources. Body Armor Closed.	C	

The GOJ revised its evacuation plan on 4/11 and GOJ is requesting up to 500 personal dosimeters if they could be provided free of charge and pre-calibrated. Closed at the 4/22 working group, no request pending.	C	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.
Survey meters have been broken out from the request for personal dosimeters (13b). METI will inform USG on number of survey meters needed. Closed at the 4/22 working group, no request pending.	C	NRC to follow up on number that may be available at no charge, if any.
USAID and USFJ responsed 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
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.	O	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 persuing purchase.~~ NEXT STEPS: NRC to resendINPO report to NISA, TEPCO and ask if they have any further information needs.
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	
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	
Contacts developed and provided through INPO-Al Hochevar	C	

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.
Closed by GOJ on 4/12/11.	C	Private to Private transfer. Close after passing to TEPCO.
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.
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.
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.
	C	
Both sides agreed to the recommendations in these three areas.	C	

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
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.
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 deterimine what is meant by shielding.
NRC provided brief response at meeting.	C	
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
Provided to GOJ through INPO-Al Hochevar.	C	
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
Provided to GOJ through INPO-Al Hochevar on 3/30.	C	
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.

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 analyis for review.
PACOM is involved in review and approval of all requests for miltary 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	
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."	C	

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			No USG costs or support provided	Japan accepted in principle; Japan to identify approriate ministry
200-300 pieces of radiation measurement equipment		INPO through NRC			Industry to industry support	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		Implied to be at-no-cost, no reimbursement per C3	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		USFJ is confirming what costs, if any, will be involved

Subject:	Long-Term Ops Center Staffing - Conference Call
Location:	Teleconference
Start:	Tue 3/15/2011 4:00 PM
End:	Tue 3/15/2011 5:00 PM
Recurrence:	(none)
Meeting Status:	Accepted
Organizer:	Evans, Michele
Required Attendees:	Hackett, Edwin; Brenner, Eliot; Schmidt, Rebecca; Powell, Amy; Droggitis, Spiros; Doane, Margaret; Mamish, Nader; Dyer, Jim; Brown, Milton; Greene, Kathryn; Stewart, Sharon; Howard, Patrick; Miller, Charles; Moore, Scott; Cohen, Miriam; Tracy, Glenn; Haney, Catherine; Dorman, Dan; Johnson, Michael; Holahan, Gary; Leeds, Eric; Boger, Bruce; Grobe, Jack; Zimmerman, Roy; Campbell, Andy; Sheron, Brian; Uhle, Jennifer; Dean, Bill; Lew, David; McCree, Victor; Wert, Leonard; Casto, Chuck; Satorius, Mark; Pederson, Cynthia; Collins, Elmo; Howell, Art; Muessle, Mary; Andersen, James; Higginbotham, Tina; Ross, Brenda; Boyce, Thomas (OIS); Schaeffer, James
Optional Attendees:	Akstulewicz, Brenda; Belmore, Nancy; Quesenberry, Jeannette; Kreuter, Jane; Armstrong, Janine; Hudson, Sharon; Ellis, Marv; Hasan, Nasreen; Ronewicz, Lynn; Schumann, Stacy; Daniels, Stanley; Casby, Marcia; Thomas, Loretta; Walker, Dwight; Sprogeris, Patricia; Schwarz, Sherry; Ross, Robin; Cohen, Shari; Riddick, Nicole; Flory, Shirley; Veltri, Debra; Matakas, Gina; ODaniell, Cynthia; Miles, Patricia; Lee, Pamela; Dubose, Sheila; Buckley, Patricia; Tomczak, Tammy; Owen, Lucy; Tannenbaum, Anita; Gusack, Barbara; Harrington, Holly; Ricketts, Paul; Howell, Linda

When: Tuesday, March 15, 2011 4:00 PM-5:00 PM (GMT-05:00) Eastern Time (US & Canada).
Where: Teleconference

Note: The GMT offset above does not reflect daylight saving time adjustments.

~~*~*~*~*~*~*~*~*~*

Update: Please find attached background for 4:00 pm EST Conference Call.

Requested by: Michele Evans, NSIR Acting Deputy Director

Purpose: To discuss long-term staffing of the HQ Ops Center

***Bridge Line Information:

Passcodes/Pin codes:

Participant passcode:	(b)(6)

For security reasons, the passcode will be required to join the call.

DJ/75

Dial in numbers:

Country		Toll Numbers	Freephone/ Toll Free Number
USA			800-779-4364

Restrictions may exist when accessing freephone/toll free numbers using a mobile telephone.

In-Conference Features:

All participants must use a touch-tone phone to participate in an Audio Conference. The following features are available for you to use on your phone during an active conference:

- Press *0 operator assistance (small fee may apply)
- Press *6 mute/unmute individual line

OD/RA Conference Call to Discuss
Long Term Staffing of the Operations Center to Respond to Japanese Events
March 15, 2011, 4 pm

Purpose: To communicate to OD/RAs plans for longer term staffing of the Ops Center and provide additional support on the ground in Japan.

1. Per EDO direction we plan to staff the Ops Center 24/7 while we have staff dispatched in Japan. Staffing will remain at the current levels for potentially another week. Possibly we will be able to scale back somewhat at the point. Intent is to develop a schedule for the next month, through April 15.

    - Request Office Directors support staffing of the Ops Center as a high priority. Get word out to their staffs **ASAP.**

    - Request ODs identify any additional staff that could fill Ops Center Positions (**By COB March 16**) (These would be staff who are not officially current Response Team Members.)

2. NSIR also has lead to identify a second team of staff to replace the 11 staff we've sent to Japan, if we determine that is needed. Current target for dispatching a replacement team is in approximately 2 weeks (March 28).

    - Request OD to review and update the list of available staff that was generated on March 14 **by COB March 17**.

3. HR to provide any update on compensation for staff working in Ops Center.

Subject:	**NOTE** New Time for the Daily Consortium Call
Start:	Wed 3/30/2011 8:00 PM
End:	Wed 3/30/2011 9:00 PM
Recurrence:	(none)
Meeting Status:	Accepted
Organizer:	LIA01 Hoc
Required Attendees:	Aoki Steven; Blamey, Alan; Blount, Tom; Boger Bruce; Casto, Chuck; Dorman, Dan; ET05 Hoc; ET07 Hoc; FOIA Response; Giitter, Joseph; Golub Sal; Golub Sal; Good Charles; Hochevar Al; HOO Hoc; INPO; LIA01 Hoc; LIA06 Hoc; LIA08 Hoc; LIA11 Hoc; Lyons Peter; McDermott, Brian; McGinty, Tim; Miller, Chris; Monninger, John; Morris, Scott; NRC Liaison functional account at USAID; OST02 HOC; Pentagon Japan Crisis Team J-4 Desk; PMT12; Ross-Lee, MaryJane; RST01 Hoc; RST01B Hoc; Vavoso Tom; Virgilio, Martin; Weber, Michael; Webster William; Wiggins, Jim; Zimmerman, Roy

When: Wednesday, March 30, 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.

~~~~*~~*~~*~~*~~*~~*

Please note that the standing time for the daily Consortium Call is now at **2000hrs. EDT** to better accommodate the Site Team's participation in Japan.

The Call In number is 800-772-3842 (Passcode: (b)(6))

Attached please find:

- Meeting Minutes for the 3/29 Call
- Agenda for the 3/30 Call
- DRAFT of a consolidated action item list ***(Japanese Government Action Items and Material Request List)***

Thank you for your support-

Lisa Gibney Wright
Federal Liaison Desk Officer
US Nuclear Regulatory Commission
Desk Ph: 301-816-5816

DJ/76

Agenda for Daily Industry Consortium Teleconference Meeting

March 30, 2011 20:00 EDT* (please note new time)**

800-772-3842 (Passcode: (b)(6))

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/Protocols
  - US Agency Roles and Leads
  - US Industry Support Structure and Roles
  - Protocol for communicating and addressing Action Items
- 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 Matrix (See ***"Japanese Government Action Items and Material Request List")***
- New Actions
  - DOD query about existing technologies for decontaminating water

~~**DRAFT**~~ Japanese Government Action Items and Material Request List

Item #	Action Item Description	Coordinating Agency/POC	Current Status and Expected timing	Open / Closed	Comments
1	Radiation Monitors; 10,000 Dosimeters; Shielding	INPO	Being worked	Open	(question as to funding source for materiel)
2	Gamma Camera – Info has been sent to INPO POC in Japan	INPO			
3	Hydraulic Hoses (300-500 meters)	INPO	Request has been canceled by Govt of Japan	Closed	
4	Remediation Options	INPO	researching portable reactor water processing equipment		
5	Tools / Equipment for Moving Fuel	INPO	researching industry equipment		
6	Shielding for individual rooms and for the facility in general	INPO			
7	Need for personnel experienced in NPP clean-up (TMI experience)	INPO			
8	Follow up on request for commercial heat exchanger for the SFP	INPO			
9	Westinghouse working on the UAV request and coordinating with Texas A & M expert	INPO			
10	SAMG Technical Document	INPO	guidance has been sent to INPO contact in Japan and is being updated (Rev 1) and will be discussed at 1100 hrs call today; will include injection rate and best assessment to plant conditions; (***need to confirm that INPO has received)***		
11	GEH is following up on the Nitrogen purge issue	INPO			
12	GoJ request for shielding	INPO	This action has been closed out *(Confirm how and by whom?)*	Closed	

~~**DRAFT**~~ Japanese Government Action Items and Material Request List

Item #	Action Item Description	Coordinating Agency/POC	Current Status and Expected timing	Open / Closed	Comments
13	INPO is coordinating an industry effort to provide Japan with a quantity of used survey meters that may require military airlift due to inclusion of calibration sources	INPO			
14	There has been a request from ***GoJ directly*** to Pacific Northwest Labs for technical assistance with water decontamination and storage issues (this request is not being coordinated through the NRC. For further information please contact the PNNL Point of Contacts)	Tom Michener PNNL – DOE Laboratories in WA 509-375-2162 Wayne Johnson, Division Director PNNL – DOE Laboratories in WA 509-372-4791			
15	Water Barges	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***		

~~**DRAFT**~~ Japanese Government Action Items and Material Request List

Item #	Action Item Description	Coordinating Agency/POC	Current Status and Expected timing	Open / Closed	Comments
16	Requests for military air transport	J4/PACOM	PACOM is involved in the review and approval of all requests for military airlift to Japan. Requests should include weight and dimensions of the cargo		First choice should be commercial carrier for timely delivery; should limit requests to materiel that is difficult for commercial carriers to deliver.
17	Conduct of aerial survey (for AMS measurements) (sharing of the data and its analysis)	DOE with NNSA and NARAC support	NRC with NARAC conducted a plausible dose assessment which will be forwarded to Japan after going through the approval chain		
18	Use of radiation monitoring devices on the ground (mobile and stationary type)	DOE with industry support			
19	Conduct of the simulation by the radiation diffusion model (comparison with the SPEEDI simulation by the Japan side)	DOE & NRC PMT			
20	Use of the germanium semiconductor detectors (for measuring the extent to which water and foods are exposed to radiation)	DOE			

DRAFT Japanese Government Action Items and Material Request List

Item #	Action Item Description	Coordinating Agency/POC	Current Status and Expected timing	Open / Closed	Comments
21	Use of robotic devices (for monitoring)	DOE; DOD; INPO	I		INPO discussed in conference call they are in contact with Dr Robin Murphy, Texas A&M, a Disaster Assessment Expert in Robotics and has offered her services
22	Use of robotic devices (for rubble removal)	DOE; DOD; INPO	See above		
23	Use of the data (image, level of radiation) obtained by UAVs	DOE; DOD			
24	Use of unmanned helicopter (K-MAX)	J4 ??	A Lockheed Martin asset ($25M cost). Will not be shipped until Senior Defense Leads agree to do so. Discussion ongoing at the Pentagon between attorneys and comptrollers. If request approved, preparations being made to ship this resource via military air		
25	Fresh water supply pumps from Bechtel	INPO ??	First train in Japan		
26	Rad survey meters; individual dosimeters, radioactive measuring instruments, masks for iodine adsorption, and separation materials (quantity specification to be discussed later)	INPO			
27	Protective body armor	??			

~~**DRAFT**~~ Japanese Government Action Items and Material Request List

Item #	Action Item Description	Coordinating Agency/POC	Current Status and Expected timing	Open / Closed	Comments
28	Use of iodine preparation (iodide of potash) (quantity specification to be discussed later with due consideration of US offer of 1 million bottles)	USAID??			
29	Use of extinguishant / coolant (Nitrogen?)	??			
30	Plastic bottles of drinkable water for the infant / baby use	USAID??			
31	Determine whether termporary radwaste processing skids are available or would be a good idea (for removing contaminated water)	INPO			Develop recommendations for removal of water in basements of Units 1,2 and 3 per Task Traker #3235
32	Temporary holding tanks (for removing contaminated water)	DOE; DOD; INPO			Develop recommendations for removal of water in basements of Units 1,2 and 3 per Task Traker #3235
33	Tanker trucks to a temporary holding area (for removing contaminated water)	DOE; DOD; INPO			Develop recommendations for removal of water in basements of Units 1,2 and 3 per Task Traker #3235
34	Investigate whether there is a technology that would absorb contaminated materials from water (for removing contaminated water)	DOE;			(Secretary Chu reportedly told this to the Japanese)

DRAFT Japanese Government Action Items and Material Request List

Item #	Action Item Description	Coordinating Agency/POC	Current Status and Expected timing	Open / Closed	Comments
35	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	NRC			From Cabinet Office Crisis Management Team Meeting notes, 3/28/11
36					
37					
38					

March 29, 2011

1000 hrs

Daily Consortium Call on the Japanese Earthquake/Tsunami

Participants:

NRC ET Director
NRC Region II
NRC LT Director
NRC Team (Japan)
CDR Chuck Good, Joint Staff
LTC Craig Gaddis, J4
GE Hitachi
Sal Golub, DOE, Office of Nuclear Energy
NRC Liaison USAID
Naval Reactors
INPO

Acronyms:

GOJ: Government of Japan
MOD: Ministry of Defense
NISA: Nuclear and Industrial Safety Agency
MEXT: Ministry of Education, Culture, Sports, Science and Technology
NSC: Nuclear Safety Commission of Japan
METI: Ministry of Economy, Trade and Industry
MOFA: Ministry of Foreign Affairs
MHLW: Ministry of Health, Labor and Welfare

Minutes:

NRC opened the meeting and briefly discussed the issue of a need for an overall lead. Guidance may be forthcoming from the Chairman. Currently the NRC is the point of contact with NISA and the Government of Japan.

INPO stated they have a representative in Japan to validate requests for industry materiel and assistance. All requests that are forwarded to INPO will be validated through their person in Japan prior to action being taken. DOE requested a single NRC Japan Team point of contact.

INPO briefly discussed the following materiel requests being worked by INPO:

1) Radiation Monitors; Dosimeters; Shielding (question as to funding source for materiel)
2) Gamma Camera – Info has been sent to INPO POC in Japan
3) Hydraulic Hoses – Request has been canceled by GoJ
4) Remediation Options – researching portable reactor water processing equipment
5) Tools / Equipment for Moving Fuel – researching industry equipment
6) Shielding for individual rooms and for the facility in general
7) Need for personnel experienced in NPP clean-up (TMI experience)
8) Following up on request for commercial heat exchanger for the SFP

9) Westinghouse working on the UAV request and coordinating with Texas A & M expert.
10) SAMG Technical Document – guidance has been sent to INPO contact in Japan and is being updated (Rev 1) and will be discussed at 1100 hrs call today; will include injection rate and best assessment to plant conditions
11) GEH is following up on the Nitrogen purge issue
12) GoJ request for shielding has been closed out per INPO contact
13) INPO is coordinating an industry effort to provide Japan with a quantity of used survey meters that may require military airlift due to inclusion of calibration sources.

Discussed request from GoJ to Pacific Northwest Labs for technical assistance with water decontamination and storage issues.

J4 discussed status of water barges – they have been outfitted and tested and are 10 hrs from the NPP site and should arrive Weds. ***Need ETA***.

J4 discussed requests for military air transport – first choice should be commercial carrier for timely delivery; PACOM is involved in the review and approval of all requests for military airlift to Japan. Should limit requests to materiel that is difficult for commercial carriers to deliver. Requests should include weight and dimensions of the cargo.

J4 discussed that PACOM is deploying a military Nuclear-Chemical-Biological Incident Response Team to Japan.

Discussed DOE technical POC for INPO. Should be handled on a subject-by-subject basis with coordination through Sal Golub, DOE.

NRC discussed the need for a consolidated Action Item list that would include both materiel and technical requests. This list should be vetted through the NRC in Japan. An Excel spreadsheet ***(**UPDATE: File name: Japanese Government Action Items and Material Request List)*** has been developed by the LT Federal Liaison, but needs to be updated as to status of many action items.

Discussion of merits of moving this conference call to 1900 hrs daily to facilitate participation by team members in Japan. *****Update: Consortium Call has been moved to 2000 hrs daily.***

Subject: Agenda for Industry Consortium Daily Call (NOTE TIME CHANGE to 2000 HRS DAILY)
Location: Ops Center

Start: Fri 4/1/2011 8:00 PM
End: Fri 4/1/2011 9:00 PM

Recurrence: (none)

Meeting Status: Accepted

Organizer: LIA01 Hoc
Required Attendees: Al Hochevar; Alice Caponiti; Blamey, Alan (Alan.Blamey@nrc.gov); Blount, Tom (Tom.Blount@nrc.gov); Bruce Boger; Casto, Chuck (Chuck.Casto@nrc.gov); Christensen, Harold (Harold.Christensen@nrc.gov); Craig Gaddis; 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; Giitter, Joseph (Joseph.Giitter@nrc.gov); Glenn Southern; HOO Hoc (HOO.Hoc@nrc.gov); INPO; INPO; INPO; INPO; INPO; INPO; INPO; INPO; LIA01 Hoc (LIA01.Hoc@nrc.gov); LIA06 Hoc (LIA06.Hoc@nrc.gov); 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; OST02 HOC (OST02.HOC@nrc.gov); PACOM Watch Officer; Pentagon Japan Crisis Team J-4 Desk; Peter Lyons; PMT12; Rick Nielsen; Robert Gambone; Robert Mercer; Ross-Lee, MaryJane (MaryJane.Ross-Lee@nrc.gov); RST01 Hoc (RST01.Hoc@nrc.gov); RST01B Hoc (RST01B.Hoc@nrc.gov); Sal Golub; Sal Golub; Steve Aoki; Tom Vavoso; Virgilio, Martin (Martin.Virgilio@nrc.gov); Weber, Michael (Michael.Weber@nrc.gov); Wiggins, Jim (Jim.Wiggins@nrc.gov); William Webster; Zimmerman, Roy (Roy.Zimmerman@nrc.gov)

When: Friday, April 01, 2011 8:00 PM-9:00 PM (GMT-05:00) Eastern Time (US & Canada).
Where: Ops Center

Note: The GMT offset above does not reflect daylight saving time adjustments.

~~*~*~*~*~*~*~*~*~*

Attached please find the proposed agenda for the daily Consortium Call to be held at 2000hrs EDT on 04/01/11.

The matrix (Japanese Government Action Items and Material Request List) was sent earlier today. Please call Jeff Temple at 301-816-5185 with any additions or corrections to the Action Items and Material Request List.

The call in number is: **800-772-3842 (Passcode: (b)(6)**

Thanks,
Beth Reed
Federal Liaison Desk Officer

DJ/77

Agenda for Daily Industry Consortium Teleconference Meeting

April 1, 2011 10:00 EDT

800-772-3842 (Passcode: (b)(6)

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
- Review Current Action Items
- New Actions
  - Rework matrix to eliminate deleted (duplicated) items and put highest priority items at the top of the list.