

Weber, Michael

From: Weber, Michael
Sent: Friday, March 11, 2011 7:37 PM
To: Breskovic, Clarence
Cc: LIA05 Hoc
Subject: Response - NHK news reports TEPCO started to release air from Fukushima 1 reactor

Thanks, Cal

From: Breskovic, Clarence
To: Breskovic, Clarence
Sent: Fri Mar 11 19:33:57 2011
Subject: NHK news reports TEPCO started to release air from Fukushima 1 reactor

This will be my last report for the time being as the regular media outlets seem to be on top of things. If you get NHK TV (Japan Broadcasting Corp.) on your cable TV service I recommend watching it.

Thanks,
Clarence

Weber, Michael

From: Weber, Michael
Sent: Friday, March 11, 2011 7:35 PM
To: LIA05 Hoc
Subject: FYI - Tokyo Electric Power To Release Reactor Pressure

From: Breskovic, Clarence
To: Breskovic, Clarence
Sent: Fri Mar 11 19:27:56 2011
Subject: Tokyo Electric Power To Release Reactor Pressure

Tokyo Electric Power To Release Reactor Pressure

Tokyo, March 12 (Jiji Press) -- Tokyo Electric Power Co. has decided to release the pressure from reactors of a quake-hit nuclear power plant in Fukushima Prefecture, northern Japan, to prevent them from breaking down, company sources said Saturday.

Releasing the pressure from the company's Fukushima No. 1 nuclear power plant by opening their valves may let a small amount of radioactive substances leak out into the atmosphere, according to Tokyo Electric Power.

The safety of nearby residents will be ensured as all the residents in a 10-kilometer radius from the power plant have been evacuated or instructed by the government to stay at home, according to the sources.

Immediately after the 8.8-magnitude quake hit northeastern Japan, all the three operating reactors at the power plant stopped automatically.

Internal pressure is feared to have risen at all the reactors. The pressure in the No. 1 reactor increased to 600 kilopascals from the normal level of 400 kilopascals.

Meantime, Tokyo Electric Power is striving to restore the No. 2 reactor's cooling system, which stopped working because the quake caused a power outage and emergency diesel power generation equipment broke down.

While the reactor's cooling water levels are still kept at about 3.5 meters above the top of its nuclear fuel rods, the level's decline would force the fuel rods exposed to air to generate radiation.

Radiation Could Already Have Leaked at Nuke Plant

Tokyo, March 12 Kyodo -- Radioactive substances could already have leaked at the Fukushima No. 1 nuclear power plant after a magnitude 8.8 earthquake hit northern Japan, the operator Tokyo Electric Power Co. said Saturday.

The amount of radiation reached around 1,000 times the normal level in the control room of the No. 1 reactor of the plant, the Nuclear and Industrial Safety Agency also said. The discovery suggests radioactive steam could spread around the facility.

The agency also said radiation has been more than eight times the normal level at a monitoring post near the main gate of the plant.

The authorities expanded the evacuation area for residents in the vicinity of the plant from a 3-kilometer radius to 10 km on the orders of Prime Minister Naoto Kan, who plans to visit the facility later Saturday.

NR

From: Cullingford, Michael
To: Leeds, Eric; Grobe, Jack; Boger, Bruce
Cc: Regan, Christopher; Astwood, Heather; Hopkins, Jon; Quinones, Lauren
Subject: FW: OECD/NEA - WGPC Secretariat - FW: Japan Situation update (Friday 11 March 11:45 UTC - 19:45 Japan time)
Date: Friday, March 11, 2011 7:42:39 AM
Attachments: NPP Japan map2011.pdf

fyi

REL

From: Jean.GAUVAIN@oecd.org [mailto:Jean.GAUVAIN@oecd.org]
Sent: Friday, March 11, 2011 7:34 AM
To: klaus.kotthoff@grs.de; yves.vandenberghe@belv.be; imj@csn.es; tanaka-nobuo@jnes.go.jp; petteri.tiippana@stuk.fi; benoit.deboeck@belv.be; Thorp, John; greg.rzentkowski@cnscccsn.gc.ca; jean-christophe.niel@asn.fr; bogdan@secnrs.ru; alexander.duchac@ec.europa.eu; utenkov@gosnadzor.ru; vc@aerb.gov.in; x.bernard-bruls@iaea.org; christian.kirchsteiger@ec.europa.eu; nakamura-koichiro1@meti.go.jp; olivier.veyret@asn.fr; adeline.clos@asn.fr; lauriane.giroud-giacomel@asn.fr; diane.jackson@oecd.org; toshihiko.kamada@mofa.go.jp; pierre.barras@belv.be; Cullingford, Michael; hklonk@bfs.de; jukka.laaksonen@stuk.fi; leedh@kins.re.kr; maciej.jurkowski@paa.gov.pl; michel.bieth@ec.europa.eu; silviu.pop@cncan.ro; roberto.ranieri@isprambiente.it; steve.nsd.lewis@hse.gsi.gov.uk; andrej.stritar@gov.si; ozawa-yoshihiro@jnes.go.jp; akosoroukov@yahoo.com; marli.vogels@minvrom.nl; mcasero@unesa.es; mikulas.bencat@ujd.gov.sk; jukka.kupila@stuk.fi; christine.wassilew@bmu.bund.de; wolfgang.breyer@kerntext.de; per.bystedt@ssm.se; ryh@kins.re.kr; kees.desbouvrie@minvrom.nl; ismael.yabda@tractebel.com; tlm3@wanadoo.fr; thomas.sigrist@ensi.ch; Astwood, Heather; mike.weightman@hse.gsi.gov.uk; sidorchuk@secnrs.ru; rafal.frac@oecd-poland.org; lgutierrez@cnsns.gob.mx; manfred.schrauben@fanc.fgov.be; evr@csn.es; jouko.turpeinen@fortum.com; vmgonzalez@cnsns.gob.mx; k400kmc@kins.re.kr; acm@csn.es; leekw@kins.re.kr; andreas.wielenberg@grs.de; walter.gloeckle@um.bwl.de; a.nicic@iaea.org; leopold.vrankar@gov.si; francescopaolo.michetti@isprambiente.it; watanabe.norio@jaea.go.jp; remy.bertrand@irsn.fr; jcb@csn.es; franco.malerba@esteri.it; zdenek.tipek@sujb.cz; klas.idehaag@ssm.se; pavel.bobaly@ujd.gov.sk; Holahan, Gary; nnn@gan.ru; rob.campbell@hse.gsi.gov.uk; Kobetz, Timothy; g.caruso@iaea.org; dwchung@kins.re.kr; petr.brandejs@sujb.cz; benoit.poulet@cnscccsn.gc.ca; hans.wanner@ensi.ch; benjamin.stanford@oecd.org; sabhardwaj@npcil.co.in; michael.hertrich@bmu.bund.de; jiri.vesely@sujb.cz; didier.wattrellos@irsn.fr; juergen.wolf@bm u.bund.de; giorgio.grimaldi@apat.it; ktkim@kins.re.kr; Dudes, Laura; Tabatabai, Omid; rhonda.evans@arpana.gov.au; masayuki.yoneya@cao.go.jp; vince.fisher@awe.co.uk; irga@csn.es; grigoras.benescu@cncan.ro; dgawande@npcil.co.in; derek.lacey@hse.gsi.gov.uk; lux@haea.gov.hu; soda.kunihisa@jaea.go.jp; ales.janezic@gov.si; len.creswell@hse.gsi.gov.uk; kanno-masanori@jnes.go.jp; georg.schwarz@ensi.ch; marta.ziakova@ujd.gov.sk; lennart.carlsson@ssm.se; i.sokolova@gosnadzor.ru; safety@gan.ru; hans-rudolf.fierz@ensi.ch; marc.noel@ec.europa.eu; burton.valpy@cnscccsn.gc.ca; julien.husse@asn.fr; Lukes, Robert; timo.vanttola@vtt.fi; swaller@cnsns.gob.mx; juhasz@haea.gov.hu; michael.maqua@grs.de; seija.suksi@stuk.fi; m.schneider@bfs.de; yhhah@kins.re.kr; dana.drabova@sujb.cz; kirsi.alm-lytz@stuk.fi; kenneth.broman@ssm.se; niina.yliknuussi@ec.europa.eu; wolfgang.hilden@ec.europa.eu; yang@kins.re.kr; Leeds, Eric; michel.lemay@cnscccsn.gc.ca; peter.corcoran@cnscccsn.gc.ca; aspeskov@mnr.gov.ru; noguchi-y.asunori@meti.go.jp; m. Kearney@iaea.org; kutin@gosnadzor.ru; lankin@secnrs.ru; yamamoto-yoshihiro@jnes.go.jp; mlgs@csn.es; snrao@aerb.gov.in; fred.vaniddekinge@minvrom.nl; karol.janko@ujd.gov.sk; pyw@kins.re.kr; fichtinger@haea.gov.hu; akasaka@mext.go.jp; Johnson, Michael; tamao-shigeo@jnes.go.jp; ralph.schulz@ensi.ch; je@cnsns.gob.mx; soaresjc@cii.fc.ul.pt; takahashi-masakazu@meti.go.jp; kawaguchi-ken@jnes.go.jp; motokuni.eto@cao.go.jp; kozlov-vv@atomenergoprom.ru; alexandra.brasat@amb-roumanie.fr
Subject: OECD/NEA - WGPC Secretariat - FW: Japan Situation update (Friday 11 March 11:45 UTC - 19:45 Japan time)

Dear CNRA and WGOE and WGIP Members,

Cc Other WG Chairs

Please find hereafter information about the earthquake in Japan received from our former NEA

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colleague that was sent earlier today by the NEA secretariat to the WGPC Flashnews network
Update of Japan NPP situation Friday 11 March at 11:45 UTC time.

Jean Gauvain - NEA/NSD – CNRA/WGPC Secretariat

From: Akihiro YAMAMOTO [mailto:a-yamamoto@houshasen.tsuruga.fukui.jp]
Sent: Friday, March 11, 2011 12:00
Subject: [Yama] Situation update (19:45 Japan time)

NISA is now holding a press conference.

Fukushima 1-1 (ECCS mode)
Fukushima 1-2 (ECCS mode) - Call off the emergency
Fukushima 1-3 (ECCS mode)
Fukushima 2-1 (ECCS mode)

The problem is that they can't monitor water injection (ECCS).
It might be a problem of the monitoring system.

In fact, TEPCO called off the emergency of unit 1-2 a while ago because they are able to monitoring the water level in the reactor now.

Yama

++++
Akihiro YAMAMOTO
++++

From: Akihiro YAMAMOTO [mailto:a-yamamoto@houshasen.tsuruga.fukui.jp]
Sent: Friday, March 11, 2011 7:30 PM
Subject: [Yama] Situation now - ECCS mode

Dear all,

TEPCO (Tokyo Electric Power Company) declared the state of emergency of following NPPs:

Fukushima 1-1
Fukushima 1-2
Fukushima 1-3
Fukushima 2-1 (ECCS mode now)

I am trying to get information why DG can't start up (problem of intake sea water for the cooling DG system?)

There is a fire from turbine building (B1 floor) at Onagawa NPP unit 1 but the fire fighting was completely succeeded.

<http://www.yomiuri.co.jp/dy/national/20110311dy01.htm>

A while ago, Fukui (my office located) had also earthquake (M4.1). We have 15 NPPs but no damage to the NPPs.

Yama

++++
Akihiro YAMAMOTO
Ageing Management Specialist,
Nuclear Safety Measurement Division

Fukui Prefectural Government

Telephone: +81 (0) 776 20 0314

E-mail: a-yamamoto@houshasen.tsuruga.fukui.jp
+++++

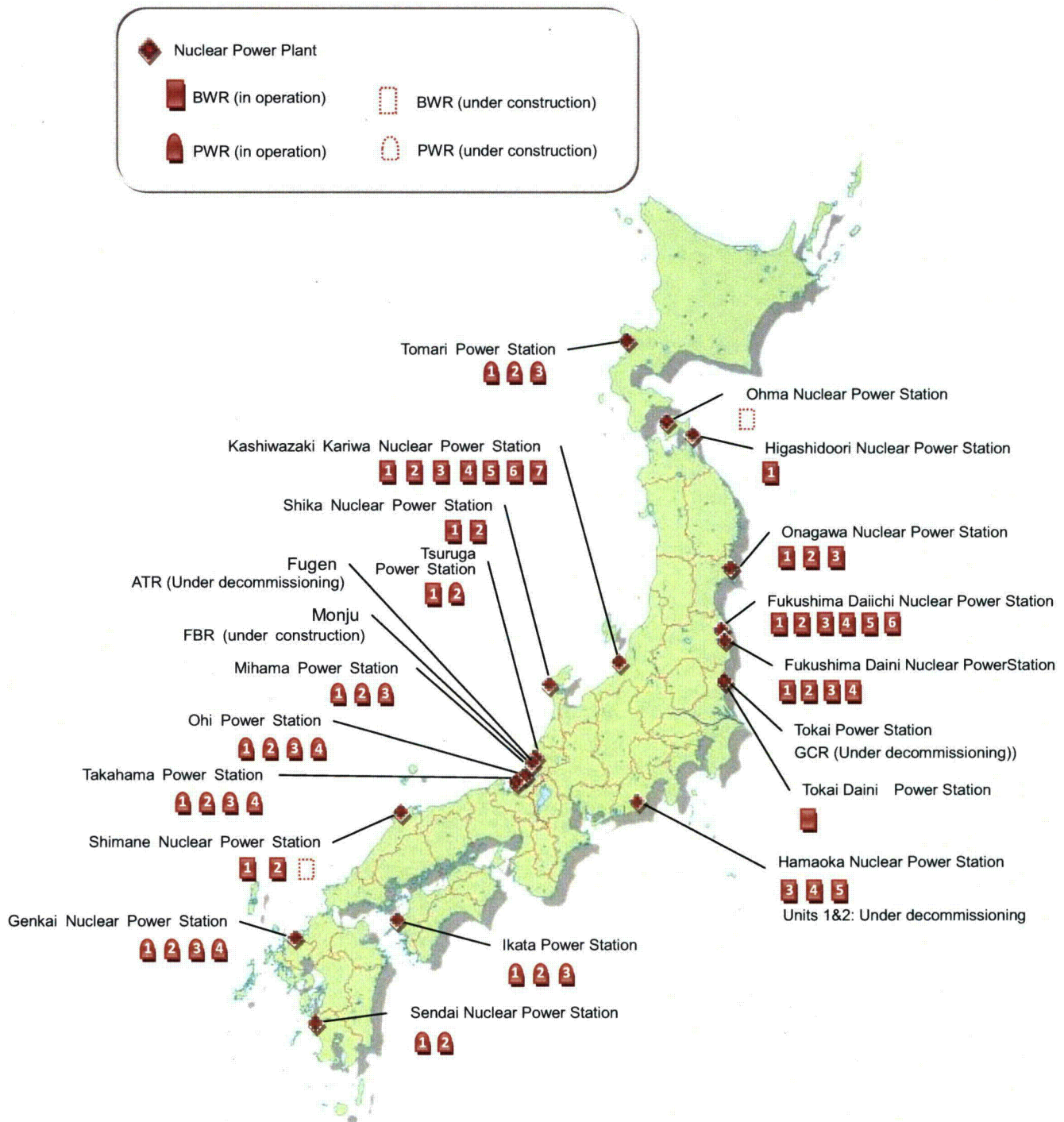


Fig. A-2 Locations of Nuclear Installations

Caponiti, Kathleen

From: NEWS Automated Mailer [ContactPointNEWS@iaea.org]
Sent: Friday, March 11, 2011 6:43 PM
To: NEWS.Contact-Point@iaea.org
Subject: New Event on NEWS, Japan, Power Reactor

Dear NEWS User,

This is to notify you as a registered user of the NEWS Web site that a new Event with the title:

"Effect to the Nuclear Facilities from the earthquake on east area of Japan"

has as of today, Saturday, 12 March 2011, 00:41:25 UTC, been added to the NEWS Web site. Additional information regarding the new Event is as follows:

Sender Country: Japan

Date of Event: 2011-03-11

Facility/Place: FUKUSHIMA-DAIIC1-1,2 FUKUSHIMA-DAINI-1, Japan

For more detailed information about the Event including related documents, press releases and on-site participation in forum discussions, please visit the NEWS Web site at:

<http://www-news.iaea.org/news/>

NEWS Administration

Hansell, Samuel

From: Hinson, Felicia
Sent: Friday, March 11, 2011 11:20 AM
To: Hansell, Samuel
Subject: RE: Agency in Monitoing in Response to Tsunami Warnings and 8.9 Magnitude Earthquake in Japan

No problem Sam.

From: Hansell, Samuel
Sent: Friday, March 11, 2011 11:19 AM
To: Hinson, Felicia
Subject: RE: Agency in Monitoing in Response to Tsunami Warnings and 8.9 Magnitude Earthquake in Japan

Thanks for the update Felicia.

Sam

From: Hinson, Felicia
Sent: Friday, March 11, 2011 10:29 AM
To: Hansell, Samuel
Cc: McKinley, Raymond
Subject: FYI: Agency in Monitoing in Response to Tsunami Warnings and 8.9 Magniture Earthquake in Japan

Sam,

FYI.

Pete Wilson was notified and made informed the font office.

--Felicia

From: R4 IRC
Sent: Friday, March 11, 2011 9:05 AM
To: R4
Subject: Agency in Monitoing in Response to Tsunami Warnings and 8.9 Magniture Earthquake in Japan

The NRC entered Monitoring at 09:46AM Eastern in response to the 8.9 magnitude earthquake in Japan and subsequent tsunami warnings. NRC Region IV is monitoring the impact on materials licensees in Alaska, Hawaii, and materials licensees and reactors on the Pacific Coast. NRC Headquarters is monitoring Japan's response to the current situation.

If you are not responding to the event, please stay clear of the incident response center. Thank you for your support.

Emergency Response Coordinator
NRC – Region IV

Kulp, Jeffrey

From: R1 IRC
Sent: Friday, March 11, 2011 3:39 PM
To: All R1 Users
Subject: FW: ***NRC IS RESPONDING TO AN EMERGENCY OUTSIDE OF THE UNITED STATES**
Importance: High

FYI.

From: Operations Center Bulletin
Sent: Friday, March 11, 2011 3:04 PM
To: Operations Center Bulletin
Subject: ***NRC IS RESPONDING TO AN EMERGENCY OUTSIDE OF THE UNITED STATES**
Importance: High

THIS IS NOT A DRILL.

The NRC and other Federal agencies are closely following an emergency occurring outside of the United States. Press releases about NRC actions are posted on www.nrc.gov. Information is also available on the NRC External Blog at: <http://public-blog.nrc-gateway.gov>. Employees contacted by the media are asked to refer the calls to the Office of Public Affairs at 301-415-8200

Two important reminders:

It is possible that some of us will be requested by colleagues in another country to provide technical advice and assistance during this emergency. It is essential that all such communications be handled through the NRC Operations Center. Any assistance to a foreign government or entity must be coordinated through the NRC Operations Center and the U.S. Department of State (DOS). If you receive such a request, contact the NRC Operations Officer (301-816-5100 or via the NRC Operator) immediately.

If you receive information regarding this or any emergency (foreign or domestic) and you are not certain that the NRC's Incident Response Operations Officer is already aware of that information, you should contact the NRC Operations Officer (301-816-5100 or via the NRC Operator) and provide that information.

No response to this message is required.

THIS IS NOT A DRILL

RIV

From: Collins, Elmo
To: Virgilio, Martin
Cc: Howell, Art; Weber, Michael; Borchardt, Bill; Leeds, Eric; Boger, Bruce; Dricks, Victor; Uselding, Lara; Doane, Margaret; Wiggins, Jim; Evans, Michele; Weil, Jenny; Powell, Amy; Kennedy, Kriss; Maier, Bill; Miller, Charles; Dean, Bill; McCree, Victor; Satorius, Mark; Howell, Linda
Subject: Addl info: HOO HIGHLIGHT - DIABLO CANYON UNUSUAL EVENT
Date: Friday, March 11, 2011 5:45:41 AM

Marty

We do plan an update phone call at 8 am EST on a HOO bridge to review collected information about progress across Pacific. Region IV plans to lead the brief regarding potential impact on RIV licensees.

For material licensees, we have a couple of portable gage licensees in Guam and American Samoa. A number of licensees in Hawaii.

News reports show earthquake/tsunami impacts in Japan including a nuclear power plant.

Diablo has design features for a tsunami wave. We'll discuss site design features and licensee actions on the call.

Elmo

From: HOO Hoc
To: HOO Hoc
Sent: Fri Mar 11 05:09:33 2011
Subject: HOO HIGHLIGHT - DIABLO CANYON UNUSUAL EVENT

Diablo Canyon declared a Notice of Unusual Event at 0123 PST due to a Tsunami Warning for the coastal areas of California as a result of a 8.9 magnitude earthquake off the coast of Japan. The Agency remains in the NORMAL response mode as of 0452 EST.

Joe O'Hara
Headquarters Operations Officer
U.S. Nuclear Regulatory Commission
Phone: 301-816-5100
Fax: 301-816-5151
email: hoo.hoc@nrc.gov
secure e-mail: hoo1@nrc.sgov.gov

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United States Nuclear Regulatory Commission
Protecting People and the Environment

4/7

NEC

From: Leeds, Eric *NR*
To: Boger, Bruce; Grobe, Jack; Brown, Frederick; McGinty, Tim; Hiland, Patrick; Skeen, David; Ruland, William; Giitter, Joseph; Thorp, John; Virgilio, Martin; Wittick, Brian
Subject: RE: HOO HIGHLIGHT - DIABLO CANYON UNUSUAL EVENT
Date: Friday, March 11, 2011 7:42:59 AM

Great idea Bruce – thank you. And thanks for taking the call!!!!

NEC

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

From: Boger, Bruce *NR*
Sent: Friday, March 11, 2011 5:32 AM
To: Leeds, Eric; Grobe, Jack; Brown, Frederick; McGinty, Tim; Hiland, Patrick; Skeen, David; Ruland, William; Giitter, Joseph; Thorp, John; Virgilio, Martin; Wittick, Brian
Subject: Fw: HOO HIGHLIGHT - DIABLO CANYON UNUSUAL EVENT

West coast landfall estimated to be around 11:00 am EST. An update call will take place at 8:00 am EST. NRR should call into the Ops Center at that time, perhaps as group from O-13D20?

From: HOO Hoc *NSIR*
To: HOO Hoc
Sent: Fri Mar 11 05:09:33 2011
Subject: HOO HIGHLIGHT - DIABLO CANYON UNUSUAL EVENT

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United States Nuclear Regulatory Commission
Protecting People and the Environment

4/8

From: Grobe, Jack
To: Boger, Bruce
Cc: Leeds, Eric
Subject: Re: HOO HIGHLIGHT - DIABLO CANYON UNUSUAL EVENT
Date: Friday, March 11, 2011 6:19:52 AM

Thanks for taking this one Bruce.
Jack Grobe, Deputy Director, NRR

From: Boger, Bruce
To: Leeds, Eric; Grobe, Jack; Brown, Frederick; McGinty, Tim; Hiland, Patrick; Skeen, David; Ruland, William; Giitter, Joseph; Thorp, John; Virgilio, Martin; Wittick, Brian
Sent: Fri Mar 11 05:32:16 2011
Subject: Fw: HOO HIGHLIGHT - DIABLO CANYON UNUSUAL EVENT

West coast landfall estimated to be around 11:00 am EST. An update call will take place at 8:00 am EST. NRR should call into the Ops Center at that time, perhaps as group from O-13D20?

From: HOO Hoc
To: HOO Hoc
Sent: Fri Mar 11 05:09:33 2011
Subject: HOO HIGHLIGHT - DIABLO CANYON UNUSUAL EVENT

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Joe O'Hara
Headquarters Operations Officer
U.S. Nuclear Regulatory Commission
Phone: 301-816-5100
Fax: 301-816-5151
email: hoo.hoc@nrc.gov
secure e-mail: hoo1@nrc.sgov.gov



4/9

nan

From: Ruland, William
To: Boger, Bruce
Subject: RE: HOO HIGHLIGHT - DIABLO CANYON UNUSUAL EVENT
Date: Friday, March 11, 2011 7:38:52 AM

See you at 7:45. I'm acting for Jack.

nan

From: Boger, Bruce
Sent: Friday, March 11, 2011 5:32 AM
To: Leeds, Eric; Grobe, Jack; Brown, Frederick; McGinty, Tim; Hiland, Patrick; Skeen, David; Ruland, William; Giitter, Joseph; Thorp, John; Virgilio, Martin; Wittick, Brian
Subject: Fw: HOO HIGHLIGHT - DIABLO CANYON UNUSUAL EVENT

REL

West coast landfall estimated to be around 11:00 am EST. An update call will take place at 8:00 am EST. NRR should call into the Ops Center at that time, perhaps as group from O-13D20?

NSIR

From: HOO Hoc
To: HOO Hoc
Sent: Fri Mar 11 05:09:33 2011
Subject: HOO HIGHLIGHT - DIABLO CANYON UNUSUAL EVENT

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Joe O'Hara
Headquarters Operations Officer
U.S. Nuclear Regulatory Commission
Phone: 301-816-5100
Fax: 301-816-5151
email: hoo.hoc@nrc.gov
secure e-mail: hoo1@nrc.sgov.gov

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REL

From: HOO Hoc | NSIR
To: HOO Hoc
Subject: HOO Highlight - NOUE Termination at Diablo Canyon
Date: Friday, March 11, 2011 7:49:54 PM

1528 PST - Diablo Canyon has terminated their Unusual Event because the tsunami warning has been reduced to a tsunami advisory. No damage occurred during this event.

Headquarters Operations Officer
U.S. Nuclear Regulatory Commission
Phone: 301-816-5100
Fax: 301-816-5151
email: hoo.hoc@nrc.gov
secure e-mail: hoo1@nrc.sgov.gov



4/11

REL

1 NSIR

From: HOO Hoc
To: HOO Hoc
Subject: HOO HIGHLIGHT - NRC IN MONITORING MODE AT 0946
Date: Friday, March 11, 2011 10:08:43 AM

The NRC is in the Monitoring Response Mode as of 0946 on 3/11/11. Region IV will take the lead for U.S. sites and HQ for international sites to provide assistance in response to the earthquake in Japan and any adverse affects from a tsunami. This response mode change is NOT associated with event number 46668.

Joe O'Hara
Headquarters Operations Officer
U.S. Nuclear Regulatory Commission
Phone: 301-816-5100
Fax: 301-816-5151
email: hoo.hoc@nrc.gov
secure e-mail: hoo1@nrc.sgov.gov



4/12

From: Operations Center Bulletin
To: OST02 HOC
Subject: NRC IS RESPONDING TO AN EMERGENCY OUTSIDE of the United States
Date: Saturday, March 12, 2011 4:23:32 PM

THIS IS NOT A DRILL.

REC The NRC and other Federal agencies are continuing to follow an emergency occurring outside of the United States. Press releases about NRC actions are posted on www.nrc.gov. Information is also available on the NRC External Blog at: <http://public-blog.nrc-gateway.gov>. Employees contacted by the media are asked to refer the calls to the Office of Public Affairs at 301-415-8200

Two important reminders:

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No response to this message is required.

THIS IS NOT A DRILL

4/13

Hansell, Samuel

From: Lew, David
Sent: Saturday, March 12, 2011 3:55 PM
To: Dean, Bill; Roberts, Darrell; Wilson, Peter; Clifford, James; Weerakkody, Sunil; Miller, Chris; Lorson, Raymond; Collins, Daniel; Baker, Pamela; Walker, Tracy
Cc: Dapas, Marc; Sheehan, Neil; Screnci, Diane; Tifft, Doug; McNamara, Nancy; Hansell, Samuel
Subject: Summary of 3:30 pm TA Briefing

Borchardt provided update

- Still operating on limited information.
- Deputies Meeting at the White House with significant focus on the nuclear event.
- Two NRC staff dispatched: one USAID and other on commercial flight
- NRC is minding its role and allow the White House to carry the messages
- NRC has for objectives
 1. Continue monitoring to the situation best that we can, given limited information.
 2. Outreach to IAEA and proposing IAEA as the point of contact for Japan.
 3. Further development of NRC questions and answers (one set is associated with what we know about Japan – will need to be very factual and not speculate; second set of questions and answers will focus will be on the domestic industry. Expect the public/media focus to turn toward domestic in the next day or so.
 4. Interaction with DHS and federal agencies, including plume plot, possible exposure models, and monitoring on the west coast.
- FEMA has stood down and operating under normal weekend staffing.

New plant updates

- Most attention is on Unit 1
- Unit 2 appears to be shut down safely
- Tsunami interrupted diesel fuel flow or diesel cooling flow which was above ground.
- For some time, the core was uncovered and some fuel damage occurred.
- Believed that the explosion was either a steam explosion or hydrogen explosion.
- Seawater is being used in two ways. Borated seawater to inject into the reactor vessel and seawater to fill basement to cool the torus.
- Not getting indications of a degrading situation.

From: Lew, David
Sent: Saturday, March 12, 2011 12:52 PM
To: Dean, Bill; Roberts, Darrell; Wilson, Peter; Clifford, James; Weerakkody, Sunil; Miller, Chris; Lorson, Raymond; Collins, Daniel; Baker, Pamela; Walker, Tracy
Cc: Dapas, Marc; Sheehan, Neil; Screnci, Diane; Tifft, Doug; McNamara, Nancy
Subject: OEDO/OD/RA conference call

Noon today, the Executive Team held a conference call with the Office Directors and the Regional Administrators. Bill, Neil Sheehan and I participated in the call. (Bill/Neil, please add anything I missed or correct/clarify as needed). There will be a TA call at 3:30 pm.

- Limited information from our Japanese counterparts (need to be respectful of ongoing event response)
- Much information is second hand via IAEA, industry (via INPO/WANO), TEPCO website information
- NRC external communications will be via the HQs Liaison Team and OPA. Filter requests through the HOO.
- NRC remains in the monitoring mode.
- Chairman attended a meeting with White House. Marty Virgilio participated by VTC.
- Assistance offer to Japanese regulators, but do not currently need NRC support.

- US team deployed consisting of 60-70 people to assess the disaster (not limited to nuclear). NRC has supplied one team member who will be a technical consultant. A second staffed is trying to get on a flight to Japan to support the team and the US embassy.
- Parts of the industry mustering to offer industry support.
- GE is working with Exelon to run some simulator scenarios, Dresden unit most similar to the site.

Unconfirmed information about plants

- Eleven (11) reactor units in the area, but Fukushima Daiichi was hit the hardest. That site has six units. The concerns are currently focused on Units 1 and 2 (Unit 3 is in cold shutdown and the other three were in refueling).
- The Tsunami result is an extended loss of AC. Generators have been delivered to the site but no information that it is connected. Additional DC power has been to support operation of various valves and instruments.
- Fukushima Unit 1 explosion in the reactor building (metal siding taken off the of the reactor building).
- RCS and primary containment are both intact.
- Possible hydrogen detonation but no confirmation.
- Prior to this, venting of the primary containment which was successful in reducing pressure by half.
- Reactor water level was below top of active fuel
- Cs and Iodine detected outside facility indicating that core damage was likely
- Rad levels at the site boundary had been at 100 mrem/hr but now has decreased to 7 mrem per hour
- The licensee was filling containment with borated seawater
- Some workers injured at Unit 1 at the time of the video
- Unit 2 continuing to work through SBO, suppression pool at saturation temperature

Dave

Caponiti, Kathleen

From: NEWS Automated Mailer [ContactPointNEWS@iaea.org]
Sent: Saturday, March 12, 2011 11:04 AM
To: NEWS.Contact-Point@iaea.org
Subject: New ERF on NEWS, INES Rating: 4, Japan, Power Reactor

Dear NEWS User,

This is to notify you as a registered user of the NEWS Web site that an Event Rating Form (ERF) for the Event titled:

"Abnormal rise of radioactive dosage value at site boundary (INES Level 4)"

has as of today, Saturday, 12 March 2011, 17:03:19 UTC, been added to the NEWS Web site. Additional information regarding the ERF is as follows:

Country: Japan
Location/Facility: FUKUSHIMA-DAIICHI-1
Event Type: Power Reactor
Event Date: 2011.03.12

Rating Date: 2011.03.12
ERF Version: Provisional
INES Rating Level: 4

For more detailed information about the ERF, including the related Event and press releases as well as on-site participation in forum discussions, please visit the NEWS Web site at:

<http://www-news.iaea.org/news/>

NEWS Administration

Caponiti, Kathleen

From: NEWS Automated Mailer [ContactPointNEWS@iaea.org]
Sent: Saturday, March 12, 2011 9:07 AM
To: NEWS.Contact-Point@iaea.org
Subject: New Event on NEWS, Japan, Power Reactor

Dear NEWS User,

This is to notify you as a registered user of the NEWS Web site that a new Event with the title:

"Abnormal rise of radioactive dosage value at site boundary (INES Level 4)"

has as of today, Saturday, 12 March 2011, 15:05:47 UTC, been added to the NEWS Web site. Additional information regarding the new Event is as follows:

Sender Country: Japan
Date of Event: 2011-03-12
Facility/Place: FUKUSHIMA-DAIICHI-1

For more detailed information about the Event including related documents, press releases and on-site participation in forum discussions, please visit the NEWS Web site at:

<http://www-news.iaea.org/news/>

NEWS Administration

Franovich, Mike

From: Franovich, Mike
Sent: Saturday, March 12, 2011 12:05 AM
To: Ostendorff, William; Nieh, Ho; Warnick, Greg
Subject: 23:15 Telecon Fukushima

Sir,

- NRC still in MONITORING mode; Staff relying on media, TEPCO and NISA press releases. Information is spotty. 35 NRC folks on the call. Scott Morris led the call with Weber.
- Update on Fukushima Daiichi is no new news on status of units. It appears a 35 ft wave of water hit the site and knocked the emergency diesel generators fuel oil tanks out. These tanks are on supports above ground. This explains why the EDGs stopped working after about an 30 minutes to an hour after the first quake.
- NRC has been in contact with General Electric and Exelon. GE has asked Exelon to run some scenarios on the Dresden and Quad Cities simulator to estimate time to certain effects on the Daiichi units 1 and 2. Unit 1 has an isolation condenser (passive heat sink, DC operated valves to open). Unit 2 has a RCIC pump (low flow, steam driven pump). The NRC's reactor safety team is looking at the event as a station blackout (no different than what we said this morning).
- Containment pressure on Unit 2 may have been as high as 85 psig (almost double of design pressure. Venting to prevent gross failure would be appropriate. I should note that the accuracy of the 85 psig report is suspect.
- Japanese government has asked for some engineering tech assistance. NRC working with USAID who is coordinating sending US Fed personnel on USAF transport. NRC will have a tech person on the flight or commercial flight in the morning.
- Japanese have NOT asked for aerial rad sample support.
- I brought to their attention that TEPCO is reporting that Fukushima Daini Nuclear Power Station has vented containments on Daini Unit 1 thru 4 to reduce the pressure of the reactor containment vessel (partial discharge of air containing radioactive materials) in order to fully secure safety.
- As an aside it looks like residents within 3km of the Daini site have been evacuated. For Daiichi it was report that the evacuation was extended to 10 km.

Note that there is a video of the wave hitting Daiichi and an aerial of the Damage to the site (type Fukushima nuclear plant in google and you will get the hits).

Tracking:

Franovich, Mike

From: Franovich, Mike
Sent: Saturday, March 12, 2011 2:51 AM
To: Zorn, Jason; Kock, Andrea
Subject: FW: RESEND: 23:15 Telecon Fukushima

Thought you might be interested. Five reactors are having trouble with core cooling. Rad levels in at one unit at Fukushima Daiichi show rad level 1000 times above background (most likely measured at the vent stack but that is unconfirmed).

From: Franovich, Mike
Sent: Saturday, March 12, 2011 2:47 AM
To: Ostendorff, William; Nieh, Ho; Warnick, Greg
Subject: RESEND: 23:15 Telecon Fukushima

RESENT with CORECTIONS (lack of MDO and violating the 54 hour sleep rule)

Sir,

- NRC still in MONITORING mode; Staff relying on media, TEPCO and NISA press releases. Information is spotty. 35 NRC folks on the call. Scott Morris led the call with Weber.
- Update on Fukushima Daiichi is no new news on status of units. It appears a 35 ft wall of water hit the site and knocked the emergency diesel generators fuel oil tanks out. These tanks are on supports above ground. This explains why the EDGs stopped working after about an hour after the first quake.
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- Containment pressure on Unit 2 may have been as high as 85 psig (almost double of design pressure). Venting to prevent gross failure would be appropriate. I should note that the accuracy of the 85 psig report is suspect.
- Japanese government has asked for some engineering tech assistance. NRC working with USAID who is coordinating sending US Fed personnel on USAF transport. NRC will have a tech person (thermal hydraulic expert) on the flight or commercial flight in the morning.
- Japanese have NOT asked for aerial rad sample support.
- I brought to their attention that TEPCO is reporting that Fukushima **Daini** Nuclear Power Station has vented containments on Daini Units 1 thru 4 to reduce the pressure of the reactor containment vessel (partial discharge of air containing radioactive materials) in order to fully secure safe pressure levels.

- As an aside it looks like residents within 3 km of the Daini site have been evacuated. For Daiichi it was report that the evacuation was extended to 10 km.

Note that there is a video of the wave hitting Daiichi and an aerial of the damage to the site (type Fukushima nuclear plant in Google and you will get the hits).

Kock, Andrea

From: Franovich, Mike
Sent: Saturday, March 12, 2011 12:18 AM
To: Ostendorff, William
Cc: Nieh, Ho; Warnick, Greg
Subject: Youtube video - Fukushima

Youtube has a Japanese video of the waves hitting the plant. It is about 60 percent into the video where they have footage that appears to be date 3/11/11. Yep you will need to forward to your home account to see this video.

<http://www.youtube.com/watch?v=8Ea7hTMIw9U>

4/19

Ostendorff, William

From: Ostendorff, William
Sent: Saturday, March 12, 2011 4:38 PM
To: Franovich, Mike
Cc: Nieh, Ho; Warnick, Greg; Kock, Andrea; Zorn, Jason
Subject: Re: UPDATE on Fukushima Daiichi - 15:30 telecon

Mike- thanks I did participate in a 3 pm call with other Commissioners. WCO

From: Franovich, Mike
To: Ostendorff, William
Cc: Nieh, Ho; Warnick, Greg; Kock, Andrea; Zorn, Jason
Sent: Sat Mar 12 16:33:48 2011
Subject: UPDATE on Fukushima Daiichi - 15:30 telecon

Borchardt led the call. (44 folks on the call)

- Focus on Fukushima Daiichi Unit 1. The belief is the explosion occurred in the reactor building (secondary containment) either from a steam or hydrogen explosion. Possible the operators choose to depressurize the containment through the standby gas treatment system (in secondary containment). Steam or hydrogen may have accumulated in the upper part of the reactor building and blew off a thin roof. Seawater possibly being used in two ways and that the reactor is now stable:
 - 1. Borated seawater being injected into the reactor vessel and/or
 - 2. Seawater is pumped to flood the lower part of the reactor building (secondary containment) around the outside of the torus/suppression pool. This would be done to provide external cooling to the torus and lower primary containment.
- There was a Deputy Principals meeting today and focus of discussion was on nuclear event. The USAID Disaster Assistance Response Team (DART) is on its way to Japan. NRC sending two experts to support.
- NRC posture continues to be White House is lead for U.S. response. NRC available to support.
- On media front, Eliot said the strategy is to follow the above hierarchy in communications. Regarding NRC, he noted that news cycle is slow (weekend) now but will pickup with respect to wanting more NRC visibility by Monday.
- Former Chairman Diaz and Klein to make media circuit and essentially carrying NRC key messages as private citizens.
- Borchardt noted that the Chairman has spoken to each Commissioner regarding comm.. strategies and other matters.
- U.S. Industry/NEI had a telecom/meeting this afternoon to discuss any needs to support Japanese.
- Ops center had no info on Daiichi than the media reports.

NRC actions:

1. Continue to monitor events in Japan

2. Reach out to IAEA (again) and get IAEA to be the central lead in response. NRC unsuccessful so far. Attempting to get Denis Flory at IAEA. Looking to not burden Japanese with multiple nation support that is not coordinated.
3. Further develop Q&A as the attention will start to turn to US plants and our level of preparedness/protection from seismic and floods.
4. Keep interacting with DHS on potential plume plots and modeling capability, etc...

NEXT Telcon updates will be at 23:30 and 07:30.

Weber, Michael

From: Weber, Michael
Sent: Saturday, March 12, 2011 2:13 PM
To: LIA05 Hoc
Cc: Virgilio, Martin; Brenner, Eliot
Subject: FYI - Good Photos on AOL Photo Form

Good afternoon. You probably know, but AOL Photo Forum has some good photos of the explosion and damaged reactor building at Fukushima Daiichi-Unit 1.

4/21

From: Taylor, Robert *mrk*
To: McIntyre, David
Cc: Taylor, Robert
Subject: Questions and Answers for Chairman Jaczko 03-13-11.docx
Date: Sunday, March 13, 2011 10:55:06 AM
Attachments: Questions and Answers for Chairman Jaczko 03-13-11.docx

FYI. Still waiting on edits to #15

4/22

Questions and Answers for Chairman Jaczko

March 11, 2011 Japan Earthquake/Tsunami Aftermath
As of 3 p.m., 3/13/2011

1. What is the NRC doing about the emergencies at the nuclear power plants in Japan? Are you sending staff over there?

Public Answer: We are closely following events in Japan, working with other agencies of the federal government, and have been in direct contact with our counterparts in that country. We are ready to provide assistance if there is a specific request. Two NRC staff members knowledgeable about boiling water reactors is participating in the USAID team that has departed for Japan.

Additional technical, non-public information:

We are taking the knowledge that the staff has about the design of the US nuclear plants and we are applying this knowledge to the Japan situation. For example, this includes calculations of severe accident mitigation that have been performed. Tony Ulises has been dispatched to Japan and should arrive Early Sunday. David Jim Trapp left 1600 Saturday should arrive in 20 hours

2. What's going to happen following the steam explosion everyone's seen from the video footage?

Public Answer: If a similar event occurred at a U.S. nuclear power plant, the NRC would be seeking information to answer several questions, including: What's the status of the reactor core, the reactor vessel and the containment building? What radiation measurement equipment is available and what measurements are being reported? What efforts are being taken to keep the public safe? How did the explosion affect efforts to keep the nearby reactors in a safe condition? And most importantly – What can the NRC do to help?

Additional technical, non-public information:

The explosion affected the secondary containment of the reactor plant. The primary containment was not affected by the explosion. This does expose the spent fuel pools to atmosphere but should not affect the integrity of the spent fuel pool. With the integrity of the Secondary Containment breached it is more essential to maintain Primary Containment intact.

To provide additional protection to Primary Containment, US reactors of the containment type similar to Fukushima Unit 1 installed a hardened vent line from primary containment directly to the vent stack. A hardened vent provides a release path which would prevent an overpressurization of containment as experienced at Fukushima Unit One. Venting from the hardened vent is typically a manual operation that is controlled by the Emergency Operating Procedures as a last resort to protect the containment from failure. This vent path can be directly from the upper containment or from the torus (the preferred vent path due to scrubbing effect of the torus water).

3. What should done to protect people in Alaska, Hawaii and the West Coast do from radioactive fallout?

Public Answer: The available evidence shows the United States can be expected to avoid any impacts from radioactive material, so no public action is necessary. We believe there is very low risk to the US considering the long distance from the US and the type of event.

Additional technical, non-public information: NRC is working with DHS, EPA and other federal partners to ensure monitoring equipment is properly positioned, based on meteorological and other relevant information.

4. Can this happen here i.e. an earthquake that significantly damages a nuclear power plant? Are the Japanese plants similar to U.S. plants?

Public Answer: All U.S. nuclear power plants are built to withstand environmental hazards, including earthquakes and tsunamis. Even those plants that are located outside of areas with low and moderate seismic activity are designed for safety in the event of such a natural disaster. The NRC requires that safety-significant structures, systems, and components be designed to take into account even very rare and extreme seismic and tsunami events.

The Japanese facilities are similar in design to several US facilities.

Additional technical, non-public information:

Currently operating reactors were designed using a "deterministic" or "maximum credible earthquake" approach. Seismic hazard for the new plants is determined using a much more robust probabilistic seismic hazard assessment approach that explicitly addresses uncertainty, as described in RG1.208. The NRC requires that adequate margin beyond the design basis ground shaking levels is assured. The NRC further enhances seismic safety for beyond-design-basis events through the use of a defense-in-depth approach.

In addition, the NRC periodically reviews the seismic risk at operating reactors when information may have changed. Over the last few years the NRC has undertaken a program called Generic Issue 199, which is focused on assessing hazard for plants in the central and eastern US using the latest techniques and determining the possible risk implications of any increase in the anticipated ground shaking levels. This program will help us assure that the plants are safe under exceptionally rare and extreme ground motions that represent beyond-design-basis events.

5. What would U.S. plants do in this situation?

Public Answer: The NRC requires plant designs to include multiple and diverse safety systems, and plants must test their emergency preparedness capabilities on a regular basis. Plant operators are very capable of responding to significant events. In addition, NRC regulations require plants to have plans in place that would allow them to mitigate even "worst case scenarios".

Since 9/11, we have implemented requirements for licensees to have additional response capabilities for extreme situations.

Additional technical, non-public information:

U.S. nuclear plants have procedures in place to address a variety of accident scenarios, including abnormal operating procedures, emergency operating procedures, severe accident management guidelines and emergency plans. Additionally, the NRC activates Incident Response centers in

Headquarters and individual Regions as necessary for the event to provide technical monitoring and support.

The NRC is capable of providing access to many external agencies (i.e., FEMA, Homeland Security, Military, etc.) to provide any additional help that individual plant sites may need. Additionally, the NRC has access to real-time plant information through the ERDS System for each site in the US and can monitor the status anytime.

6. Are U.S. power plants designed to withstand tsunamis?

Public Answer: Yes. Plants are built to withstand a variety of environmental hazards and those plants that might face a threat from tsunami are required to withstand large waves and the maximum wave height at the intake structure (which varies by plant.)

Additional, technical, non-public information:

Tsunami have been considered in the design of US nuclear plants since the publication of Regulatory Guide 1.59 in 1977, although the approaches that were used for design of the existing plants varied significantly. Nuclear plants are designed to withstand flooding from not only tsunami, but also hurricane and storm surge; therefore there is often significant margin against tsunami flooding. However, it should be noted that Japanese experience has shown that drawdown can be a significant problem. Drawdown was not generally analyzed in the past. The particular

Currently the US NRC has a tsunami research program that is focused on developing modern hazard assessment techniques and additional guidance through cooperation with the National Oceanic and Atmospheric Administration and the United States Geological Survey. This has already lead to several technical reports and an update to NUREG 0-800. The NOAA and USGS contractors are also assisting with NRO reviews of tsunami hazard. A new regulatory guide on tsunami hazard assessment is currently planned in the office of research, although it is not expected to be available in draft form until 2012.

7. What happens when/if a plant “melts down”?

Public Answer: In short, nuclear power plants in the United States are designed to be safe. To prevent the release of radioactive material, there are multiple barriers between the radioactive material and the environment, including the fuel cladding, the heavy steel reactor vessel itself and the containment building, usually a heavily reinforced structure of concrete and steel several feet thick.

Additional, technical, non-public information:

The melted core may melt through the bottom of the vessel and flow onto the concrete containment floor. The core may melt through the containment liner and release radioactive material to the environment.

8. Why is KI administered during nuclear emergencies?

Public Answer: KI – potassium iodide – is one of the protective measures that might be taken in a radiological emergency in this country. A KI tablet will saturate the thyroid with non radioactive iodine and

prevent the absorption of radioactive iodine that could be part of the radioactive material mix of radionuclides in a release. KI does not prevent exposure from these other radionuclides.

Additional, technical non-public information:

There are a range of protective measures that we use ... the most effective is evacuation. Local government officials are responsible for determining the best means to protect their public. KI is another means for protection but evacuation and sheltering are the primary means that are used.

9. Was there any damage to U.S. reactors from either the earthquake or the resulting tsunami?

Public Answer: No

Additional, technical non-public information:

Diablo Canyon Units 1 and 2 declared an "unusual event" based on tsunami warning following the Japanese earthquake. They have since exited the "unusual event" declaration, based on a downgrade to a tsunami advisory.

10. Has this incident changed the NRC perception about earthquake risk?

Public Answer: There has been no change in the NRC's perception of earthquake hazard (i.e. ground shaking levels) for US nuclear plants. As is prudent, the NRC will certainly be looking closely at this incident and the effects on the Japanese nuclear power plant in the future to see if any changes are necessary to NRC regulations.

Additional, technical, non-public information.

We expect that there would be lessons learned, etc.

11. Will this incident affect new reactor licensing?

Public Answer: It is not appropriate to hypothesize on such a future scenario at this point.

Additional, technical non-public information:

This event could potentially call into question the NRC's seismic requirements which could require the staff to re-evaluate the staff's approval of the AP1000 and ESBWR design and certifications.

12. What magnitude earthquake are US plants designed to?

Public Answer: Each plant is designed to a ground-shaking level that is appropriate for its location, given the possible earthquake sources that may affect the site and its tectonic environment. Ground shaking is a function of both the magnitude of and earthquake and the distance from the fault plane to the site. The probabilistic approaches account for a large number of different magnitudes.

Additional, technical non-public information:

In the past, "deterministic" or "scenario based" analyses were used to determine ground shaking (seismic hazard) levels. Now a probabilistic method is used that accounts for all possible earthquakes coming from

all possible sources (including background seismicity) and the likelihood that each particular hypothetical earthquake occurs.

13. How many US reactors are located in active earthquake zones (and which reactors)?

Public Answer: Although we often think of the US as having "active" and "non-active" earthquake zones, earthquakes can actually happen almost anywhere. Seismologists typically separate the US into low, moderate, and high seismicity zones. The NRC requires that every plant is designed for site-specific ground motions that are appropriate for their location. In addition, the NRC has specified a minimum ground shaking level to which the plants must be designed.

Additional, technical non-public information: No additional.

14. How many reactors are along coastal areas that could be affected by a tsunami (and which ones)?

Public Answer: Many plants are located in coastal areas that could theoretically be affected by tsunami. Two plants, Diablo Canyon and San Onofre, are on the Pacific Coast, which is known to have tsunami hazard. There are also two plants on the Gulf Coast, South Texas and Crystal River. There are many plants on the Atlantic Coast or on rivers that may be affected by a tidal bore. These include St. Lucie, Turkey Point, Brunswick, Oyster Creek, Millstone, Pilgrim, Seabrook, Calvert Cliffs, Salem/Hope Creek, and Surry. Tsunami on the Gulf and Atlantic Coasts occur, but are very rare. Generally the flooding anticipated from hurricane storm surge exceeds the flooding expected from a tsunami for plants on the Atlantic and Gulf Coast.

Additional, technical non-public information: None

15. How many U.S. plants have designs similar to the affected Japanese reactors (and which ones)

Public Answer: Six of the 104 US reactors are General Electric BWR 3 with Mark 1 containments similar to the design used at Fukushima Unit One.

Additional Information:

The units are: Dresden Units 2 and 3, Monticello unit 1, Pilgrim unit 1, Quad Cities Units 1 and 2.

Sheehan, Neil

From: Sheehan, Neil
Sent: Sunday, March 13, 2011 3:15 PM
To: 'bdaley@bostonglobe.com'
Subject: Fw: NRC Sees No Radiation at Harmful Levels Reaching U.S. From Damaged Japanese Nuclear Power Plants
Attachments: 11-046.pdf

Beth,

FYI.

Neil
NRC Public Affairs
(610) 337-5331

Neil Sheehan
NRC Public Affairs Officer
Sent from NRC Blackberry

From: opa administrators <opa@nrc.gov>
To: Sheehan, Neil
Sent: Sun Mar 13 15:33:38 2011
Subject: NRC Sees No Radiation at Harmful Levels Reaching U.S. From Damaged Japanese Nuclear Power Plants

4/23



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. 11-046

March 13, 2011

NRC SEES NO RADIATION AT HARMFUL LEVELS REACHING U.S. FROM DAMAGED JAPANESE NUCLEAR POWER PLANTS

The Nuclear Regulatory Commission is coordinating with the Department of Energy and other federal agencies in providing whatever assistance the Japanese government requests as they respond to conditions at several nuclear power plant sites following the March 11 earthquake and tsunami. The NRC has sent two boiling-water reactor experts to Japan as part of a U.S. Agency for International Development team.

In response to nuclear emergencies, the NRC works with other U.S. agencies to monitor radioactive releases and predict their path. All the available information indicates weather conditions have taken the small releases from the Fukushima reactors out to sea away from the population. Given the thousands of miles between the two countries, Hawaii, Alaska, the U.S. Territories and the U.S. West Coast are not expected to experience any harmful levels of radioactivity.

During a nuclear event the NRC has requirements to protect populations around reactors. For instance, the U.S. evacuation standard at 10 miles is roughly equivalent to the 20-kilometer distance recommended in some instances in Japan. The United States also uses sheltering in place and potassium iodide, protective measures also available in Japan.

The NRC will not comment on hour-to-hour developments at the Japanese reactors. This is an ongoing crisis for the Japanese who have primary responsibility.

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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.

Hansell, Samuel

From: Hansell, Samuel
Sent: Sunday, March 13, 2011 7:21 AM
To: Dean, Bill; Lew, David; Roberts, Darrell; Wilson, Peter; Clifford, James; Weerakkody, Sunil; Miller, Chris; Lorson, Raymond; Collins, Daniel; Baker, Pamela; Walker, Tracy
Cc: Sheehan, Neil; Screnci, Diane; Tift, Doug; McNamara, Nancy
Subject: RE: Summary of 11:30 PM Briefing on japan event.

Everyone,

I will cover the 7:30a call this morning and provide a summary afterwards.

Thanks,
Sam H

From: Dean, Bill
Sent: Sunday, March 13, 2011 12:05 AM
To: Lew, David; Roberts, Darrell; Wilson, Peter; Clifford, James; Weerakkody, Sunil; Miller, Chris; Lorson, Raymond; Collins, Daniel; Baker, Pamela; Walker, Tracy
Cc: Sheehan, Neil; Screnci, Diane; Tift, Doug; McNamara, Nancy; Hansell, Samuel
Subject: Re: Summary of 11:30 PM Briefing on japan event.

Not much new to report wrt Fukushima Daiichi as info flow is still patchy. Unit 1 status is same as at 3:30 call. Unit 2 seems ok but may need to vent containment at some point due to slowly increasing pressure as no containment cooling.

Unit 3 has had reports of possible core uncover since Pressure has dropped below high pressure injection setpoints and no low pressure cooling yet. But these are sketchy details at best.

There is a concurrent call at deputies level as different govt agencies are misconstruing the situation or getting conflicting info, so a need to get our govt aligned.

The german govt gave direction to its embassy to evacuate its citizens (with no basis it admitted) creating excitement with all the embassies including our own. In fact, Jim Trapp is en route to Japan to likely serve as nuclear expert to the embassy. Tony Ulses of RES is there now as part of a USAID team that we sent.

Talking points are being developed for RSLO use tomorrow for outreach to States. Also, Q and A associated with a US focus are currently with Chmn to be released tomorrow.

Chmn has encouraged white house to take a role in providing official govt spokesperson(s) so that the current ilk on networks like CNN, etc, who are tossing out a lot of disinformation, can be negated.

Next call is at 0730 tomorrow which Sam Hansell as RDO will cover.

Bill Dean
Regional Administrator
Region I, USNRC
Sent from NRC BlackBerry

From: Lew, David
To: Dean, Bill; Roberts, Darrell; Wilson, Peter; Clifford, James; Weerakkody, Sunil; Miller, Chris; Lorson, Raymond; Collins, Daniel; Baker, Pamela; Walker, Tracy
Cc: Dapas, Marc; Sheehan, Neil; Screnci, Diane; Tift, Doug; McNamara, Nancy; Hansell, Samuel
Sent: Sat Mar 12 15:54:35 2011
Subject: Summary of 3:30 pm TA Briefing

Borchardt provided update

- Still operating on limited information.
- Deputies Meeting at the White House with significant focus on the nuclear event.
- Two NRC staff dispatched: one USAID and other on commercial flight
- NRC is minding its role and allow the White House to carry the messages
- NRC has for objectives
 1. Continue monitoring to the situation best that we can, given limited information.
 2. Outreach to IAEA and proposing IAEA as the point of contact for Japan.
 3. Further development of NRC questions and answers (one set is associated with what we know about Japan – will need to be very factual and not speculate; second set of questions and answers will focus will be on the domestic industry. Expect the public/media focus to turn toward domestic in the next day or so.
 4. Interaction with DHS and federal agencies, including plume plot, possible exposure models, and monitoring on the west coast.
- FEMA has stood down and operating under normal weekend staffing.

New plant updates

- Most attention is on Unit 1
- Unit 2 appears to be shut down safely
- Tsunami interrupted diesel fuel flow or diesel cooling flow which was above ground.
- For some time, the core was uncovered and some fuel damage occurred.
- Believed that the explosion was either a steam explosion or hydrogen explosion.
- Seawater is being used in two ways. Borated seawater to inject into the reactor vessel and seawater to fill basement to cool the torus.
- Not getting indications of a degrading situation.

From: Lew, David

Sent: Saturday, March 12, 2011 12:52 PM

To: Dean, Bill; Roberts, Darrell; Wilson, Peter; Clifford, James; Weerakkody, Sunil; Miller, Chris; Lorson, Raymond; Collins, Daniel; Baker, Pamela; Walker, Tracy

Cc: Dapas, Marc; Sheehan, Neil; Screnci, Diane; Tiff, Doug; McNamara, Nancy

Subject: OEDO/OD/RA conference call

Noon today, the Executive Team held a conference call with the Office Directors and the Regional Administrators. Bill, Neil Sheehan and I participated in the call. (Bill/Neil, please add anything I missed or correct/clarify as needed). There will be a TA call at 3:30 pm.

- Limited information from our Japanese counterparts (need to be respectful of ongoing event response)
- Much information is second hand via IAEA, industry (via INPO/WANO), TEPCO website information
- NRC external communications will be via the HQs Liaison Team and OPA. Filter requests through the HOO.
- NRC remains in the monitoring mode.
- Chairman attended a meeting with White House. Marty Virgilio participated by VTC.
- Assistance offer to Japanese regulators, but do not currently need NRC support.
- US team deployed consisting of 60-70 people to assess the disaster (not limited to nuclear). NRC has supplied one team member who will be a technical consultant. A second staffed is trying to get on a flight to Japan to support the team and the US embassy.
- Parts of the industry mustering to offer industry support.
- GE is working with Exelon to run some simulator scenarios, Dresden unit most similar to the site.

Unconfirmed information about plants

- Eleven (11) reactor units in the area, but Fukushima Daiichi was hit the hardest. That site has six units. The concerns are currently focused on Units 1 and 2 (Unit 3 is in cold shutdown and the other three were in refueling).

- The Tsunami result is an extended loss of AC. Generators have been delivered to the site but no information that it is connected. Additional DC power has been to support operation of various valves and instruments.
- Fukushima Unit 1 explosion in the reactor building (metal siding taken off the of the reactor building).
- RCS and primary containment are both intact.
- Possible hydrogen detonation but no confirmation.
- Prior to this, venting of the primary containment which was successful in reducing pressure by half.
- Reactor water level was below top of active fuel
- Cs and Iodine detected outside facility indicating that core damage was likely
- Rad levels at the site boundary had been at 100 mrem/hr but now has decreased to 7 mrem per hour
- The licensee was filling containment with borated seawater
- Some workers injured at Unit 1 at the time of the video
- Unit 2 continuing to work through SBO, suppression pool at saturation temperature

Dave

Hansell, Samuel

From: Hinson, Felicia
Sent: Sunday, March 13, 2011 2:14 PM
To: All R1 Users
Subject: FW: NRC IS RESPONDING TO AN EMERGENCY OUTSIDE of the United States

The attached Operations Center Bulletin is being sent to All Region I employees for awareness.

The Bulletin provides information regarding NRC/Federal efforts underway in support of our international partners.

From: Operations Center Bulletin
Sent: Sunday, March 13, 2011 11:11 AM
To: OST02 HOC
Subject: FW: NRC IS RESPONDING TO AN EMERGENCY OUTSIDE of the United States

THIS IS NOT A DRILL

The NRC is coordinating its actions with other Federal agencies as part of the U.S. government response to the events in Japan. The NRC is examining all available information as part of the effort to analyze the event and understand its implications both for Japan and the United States. The NRC's Headquarters Operations Center in Rockville, MD has been stood up since the beginning of the emergency in Japan and is operating on a 24-hour basis.

NRC Incident Responders at Headquarters have spoken with the agency's counterpart in Japan and offered the assistance of U.S. technical experts. Two officials from the NRC with expertise on boiling water nuclear reactors have deployed to Japan as part of a U.S. International Agency for International Development (USAID) team. USAID is the Federal government agency primarily responsible for providing assistance to countries recovering from disasters.

U.S. nuclear power plants are built to withstand environmental hazards, including earthquakes and tsunamis. Even those plants that are located outside of areas with extensive seismic activity are designed for safety in the event of such a natural disaster. The NRC requires that safety significant structures, systems, and components be designed to take in account the most severe natural phenomena historically estimated for the site and surrounding area.

The NRC will not provide information on the status of Japan's nuclear power plants. For the latest information on NRC actions see the NRC's web site at www.nrc.gov<<http://www.nrc.gov>> or blog at <http://public-blog.nrc-gateway.gov>.

Two important reminders:

It is possible that some of us will be requested by colleagues in another country to provide technical advice and assistance during this emergency. It is essential that all such communications be handled through the NRC Operations Center. Any assistance to a foreign government or entity must be coordinated through the NRC Operations Center and the U.S. Department of State (DOS). If you receive such a request, contact the NRC Operations Officer (301-816-5100 or via the NRC Operator) immediately.

If you receive information regarding this or any emergency (foreign or domestic) and you are not certain that the NRC's Incident Response Operations Officer is already aware of that information, you should contact the NRC Operations Officer (301-816-5100 or via the NRC Operator) and provide that information.

Other Sources of Information:

USAID – www.usaid.gov<<http://www.usaid.gov>>

U.S. Department of State – www.state.gov<<http://www.state.gov>>

FEMA – www.fema.gov<<http://www.fema.gov>> White House –

www.whitehouse.gov<<http://www.whitehouse.gov>>

Nuclear Energy Institute – www.nei.org<<http://www.nei.org>> International Atomic Energy Agency –
www.iaea.org/press<<http://www.iaea.org/press>>

No response to this message is required.

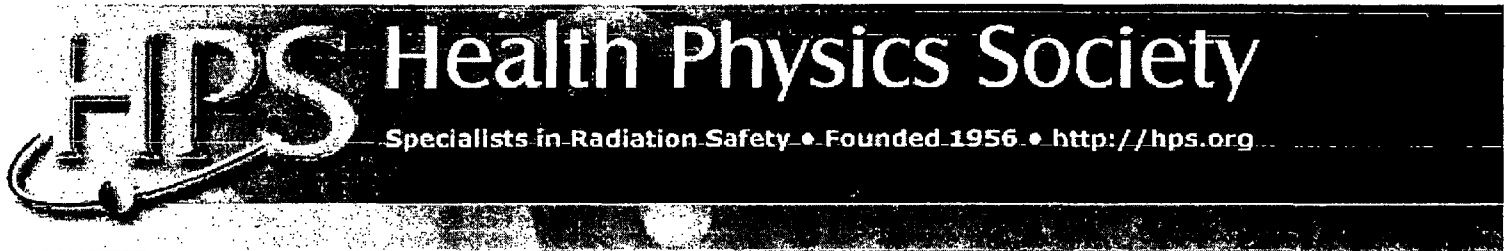
THIS IS NOT A DRILL

Weber, Michael

From: Weber, Michael
Sent: Sunday, March 13, 2011 7:44 PM
To: LIA05 Hoc
Subject: FYI - Japanese Nuclear Plant Problems Continue

Email from the Health Physics Society to its members regarding the situation at Fukushima-Daiichi.

From: HPS Headquarters <HPS@BurkInc.com>
To: Weber, Michael
Sent: Sun Mar 13 17:49:29 2011
Subject: Japanese Nuclear Plant Problems Continue



Japanese Nuclear Plant Problems Continue

Current News (<http://hps.org/newsandevents/societynews.html>)

13 March 2011

Japanese Nuclear Plant Problems Continue

As you are well aware the Japanese experienced the worst earthquake in their history, followed by a devastating tsunami. These natural disasters have had a serious impact on several Japanese nuclear reactors, principally those at the Fukushima Daiichi site. Although the Health Physics Society has little expertise in nuclear power plant safety, we are concerned about radiation exposures associated with these reactor problems and desire to keep our members and the concerned public advised on current events associated with the Japanese nuclear plants. Consequently, we are recommending that the following sources of useful information. Although we cannot verify the accuracy of all the information that you may find, we believe these sources are generally reliable and trustworthy. As events unfold and the potential radiation exposures become better known, we hope to be able to share additional information with you regarding radiation safety.

- Nuclear Regulatory Commission (<http://www.nrc.gov/>),

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- International Atomic Energy Agency (<http://www.iaea.org/>),
- World Health Organization (<http://www.who.int/en/>),
- American Nuclear Society (<http://www.new.ans.org/>),
- International Radiation Protection Association (<http://www.irpa.net/>),
- National Academy of Sciences (<http://www.nationalacademies.org/>),
- Nuclear Energy Agency (<http://www.oecd-neo.org/>) and
- Environmental Protection Agency (<http://www.epa.gov/>)

Additionally, you will find a Facebook icon on our home page that will direct you to the Health Physics Society News Café where we try to post the latest breaking news items, including ones pertinent to the Japanese nuclear situation.

Taylor, Renee

From: Borchardt, Bill
Sent: Sunday, March 13, 2011 9:48 PM
To: Jaczko, Gregory
Subject: JNES mtg

The meeting with JNES originally scheduled for 8:30am (Japan time) has been postponed to an undetermined time. Both Tony and Jim are at the embassy.

There have been no recent developments of interest. Unless the JNES meeting is conducted, or there is a significant development, we'll plan to brief you Monday morning.

Bill Borchardt

Via blackberry

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Taylor, Renee

From: Borchardt, Bill
Sent: Sunday, March 13, 2011 9:50 PM
To: Leeds, Eric
Subject: Re: Coverage in the Ops Center

Thanks
Bill Borchardt
Via blackberry

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

From: Leeds, Eric
To: Borchardt, Bill
Cc: Virgilio, Martin
Sent: Sun Mar 13 18:25:41 2011
Subject: Fw: Coverage in the Ops Center

I hope you got the message

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

From: Grobe, Jack
To: Cohen, Shari; Schwarz, Sherry
Cc: Leeds, Eric; Boger, Bruce; Ruland, William; Lubinski, John; Cheok, Michael; Hiland, Patrick; Giitter, Joseph; McGinty, Tim; Brown, Frederick; Givvines, Mary; Holian, Brian
Sent: Sun Mar 13 18:04:57 2011
Subject: Coverage in the Ops Center

Shari and Sherry

I will be covering the 3pm to 11pm shift in the Ops Center at least early this week. I will likely not be in early tomorrow, but will be a little later. Thanks.
Jack Grobe, Deputy Director, NRR

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Ostendorff, William

From: Ostendorff, William
Sent: Sunday, March 13, 2011 9:03 AM
To: Franovich, Mike
Cc: Nieh, Ho; Warnick, Greg; Kock, Andrea; Zorn, Jason
Subject: Re: UPDATE from 07:30 telecon

Mike- I deeply appreciate your close monitoring of these events. WCO

From: Franovich, Mike
To: Ostendorff, William
Cc: Nieh, Ho; Warnick, Greg; Kock, Andrea; Zorn, Jason
Sent: Sun Mar 13 08:03:38 2011
Subject: UPDATE from 07:30 telecon

Marty Virgilio led the call

Fukushima Sites Status

Daiichi

Unit 1

- No new news for the Daiichi unit1.
- Staff believe there was core damage.
- There was some level of release from the hydrogen explosion in the reactor building but the primary containment remains intact.

Unit 2 no fuel damage, core being cooled by RCIC, containment intact.

Unit 3

- believe there is core damage.
- sea water and boric acid into the reactor core.
- Primary containment intact

Daini

Unit 1 venting primary containment. All other three units no change in status (stable).

Other

Tony Ulses (NRC) arrived in Tokyo. Will assist U. S. Ambassador
Jim Trapp (NRC) still enroute but will also assist the U.S. Ambassador

White House plans to issue press release. Key message that U.S. government is support/assisting, continues to monitor, no risk to U.S.

NRC will issue PR only if needed to supplement the WH PR.

NEI/Marv Fertel may make the morning news shows.

NRC in contact with DOE/Naval Reactors. USS Ronald Reagan is 100 miles from Fukushima sites. They are picking up airborne through aerial sampling. Helicopters also show contamination. NRC getting info to confirm if amounts consistent with our models/predicted levels.

Net telecon at 15:30.

Kock, Andrea

From: Franovich, Mike
Sent: Sunday, March 13, 2011 4:03 PM
To: Ostendorff, William
Cc: Nieh, Ho; Warnick, Greg; Kock, Andrea; Zorn, Jason
Subject: UPDATE from 15:30 telecon

Borchardt led the call

- Unit 3 at Daiichi is the unit of concern. Still do not have clear confirmation that borate seawater is making it to the core. Belief that core was at least 50 percent uncovered during the event.
- the units do have DC alternate power available (some roll out carts) to provide instrumentation and control. Info from Jim Trapp who spoke with someone on Tokyo who is technically knowledgeable of the status.
- USS Ronald Reagan readings at 0.6 mREM which we belief are consistent with a venting operation for two units. A Japanese helo landed on USS Reagan and was contaminated
- NRC issued press releases and now other agencies are following us.
- Will issue a revised PR to support US Ambassador issue about advising US citizens in Japan. Our guidance is to follow Japanese officials instructions.
- Jim Trapp will meet with IAEA counterparts in Japan in four hours.
- Ulises still en route; stuck in Northern Japan.
- The HEARINGS on the Hill next Wednesday will now be on Japan event. So far we have had low congressional inquiry, Markey's office called.
- NOTE that there is an INTERNET SPOOF with a map showing does in the US. Someone said it had NRC logo on it, but when asked to repeat it again that person did not speak up.
- NEXT telcon at 23:30

Kock, Andrea

From: Franovich, Mike
Sent: Monday, March 14, 2011 11:30 PM
To: Ostendorff, William
Cc: Nieh, Ho; Warnick, Greg; Kock, Andrea; Zorn, Jason
Subject: FW: 2200 EDT (March 14 2011) USNRC Earthquake/Tsunami SitRep
Attachments: NRC Status Update 3-14 10.10pm.pdf

Commissioner,

Looks like the HOO missed you this time on the distribution for this update.

Mike

From: LIA07 Hoc
Sent: Monday, March 14, 2011 10:34 PM
To: Holdren, John P.; maceck@state.gov; Al Coons; Andersen, James; Anderson, Joseph; Barker, Allan; Batkin, Joshua; Bill King; Bill King 2; Brenner, Eliot; Bubar, Patrice; Castleman, Patrick; Coggins, Angela; Collins, Elmo; Conrad Burnside; D Feighert; D Hammons; Dean, Bill; Decker, David; DIA; DIA2; Dorman, Dan; DOT; Droggitis, Spiros; DTRA; Dudek; EOP; EPA2; EPA; Franovich, Mike; Haney, Catherine; Harrington, Holly; Harry Sherwood; HHS; Hipschman, Thomas; HOO Hoc; Howell, Linda; J H-L; Jaczko, Gregory; Jim Kish; Johanna Berkey; Johnson, Michael; Kahler, Robert; L Hammond; Leeds, Eric; Logaras, Harral; Loyd, Susan; Maier, Bill; Marshall, Michael; McCree, Victor; McDermott, Brian; McNamara, Nancy; Michelle Ralston; Miller, Charles; Miller, Chris; Monninger, John; Nan Calhoun; Navy; Nieh, Ho; Orders, William; Pace, Patti; Pearson, Laura; Peter Lyons; Peter.Lyons@Nuclear.Energy.gov; R McCabe; R Thomson; S Horwitz; Satorius, Mark; Schmidt, Rebecca; Seamus O'Boyle; Sharkey, Jeffry; Sheron, Brian; Snodderly, Michael; Sosa, Belkys; Steve Colman; Thomas Zerr; Tifft, Doug; Timothy Greten; Trapp, James; Trojanowski, Robert; Vanessa Quinn; W Webb; Warren, Roberta; Wiggins, Jim; Williams, Kevin; Wittick, Brian; Woodruff, Gena; taskforce-1@state.gov; NOC; Charles Donnell; nuclearssa@hq.dhs.gov; RMTFACTSU_ELNRC; Bradford, Anna; Gibbs, Catina; Speiser, Herald; Holdren, John P.; maceck@state.gov; jszymanski@ostp.eop.gov
Subject: 2200 EDT (March 14 2011) USNRC Earthquake/Tsunami SitRep

Attached, please find a 2200 EDT situation report from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami on March 14, 2011. This Update includes information related to NRC's evaluation of radiation measurements from the USS Ronald Reagan.

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
Office of Nuclear Security & Incident Response
US Nuclear Regulatory Commission
Sara.mroz@nrc.gov
Lia07.HOC@nrc.gov (Operations Center)

From: [Harrington, Holly](#)
To: [Taylor, Robert](#)
Subject: FW: Per eliot
Date: Monday, March 14, 2011 5:28:31 PM
Attachments: [Chairman Jaczko QA5 earthquake031111.docx](#)
[Additional Chairman QAs.docx](#)

From: Harrington, Holly
Sent: Monday, March 14, 2011 4:40 PM
To: Chandrathil, Prema; Dricks, Victor; Hannah, Roger; Ledford, Joey; Mitlyng, Viktoria; Screnci, Diane; Sheehan, Neil; Uselding, Lara; Brenner, Eliot; Burnell, Scott; Couret, Ivonne; Hayden, Elizabeth; McIntyre, David
Subject: Per eliot

You can talk from these Q&As (prepared for the Chairman), but do not disseminate them.

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Questions and Answers for Chairman Jaczko

Note: Talk from but do not distribute

March 11, 2011 Japan Earthquake/Tsunami Aftermath

As of 8 p.m., 3/12/2011

1. What is the NRC doing about the emergencies at the nuclear power plants in Japan? Are you sending staff over there?

Public Answer: We are closely following events in Japan, working with other agencies of the federal government, and have been in direct contact with our counterparts in that country. We are ready to provide assistance if there is a specific request. Two NRC staff members knowledgeable about boiling water reactors are participating in the USAID team that has departed for Japan.

Additional technical, non-public information:

We are taking the knowledge that the staff has about the design of the US nuclear plants and we are applying this knowledge to the Japan situation. For example, this includes calculations of severe accident mitigation that have been performed. Tony Ulises has been dispatched to Japan and should arrive Early Sunday. David Jim Trapp left 1600 Saturday should arrive in 20 hours

2. What's going to happen following the hydrogen explosion everyone's seen from the video footage?

Public Answer: If a similar event occurred at a U.S. nuclear power plant, the NRC would be seeking information to answer several questions, including: What's the status of the reactor core, the reactor vessel and the containment building? What radiation measurement equipment is available and what measurements are being reported? What efforts are being taken to keep the public safe? How did the explosion affect efforts to keep the nearby reactors in a safe condition? And most importantly – What can the NRC do to help?

Additional technical, non-public information:

The explosion affected the secondary containment of the reactor plant. The primary containment was not affected by the explosion. The Japanese are taking actions to preserve the primary containment, cool the reactor core, maintain the reactor shut down and limit the spread of radioactive contamination.

The NRC required a back fit to US reactors of the type similar to Fukushima Unit 1 to install a hardened vent line. A hardened vent provides a release path which would prevent an explosion as experienced at Fukushima Unit One.

3. What should done to protect people in Alaska, Hawaii and the West Coast do from radioactive fallout?

Public Answer: The available evidence shows the United States can be expected to avoid any impacts from radioactive material, so no public action is necessary. We believe there is very low risk to the US considering the long distance from the US and the type of event.

Additional technical, non-public information: NRC is working with DHS, EPA and other federal partners to ensure monitoring equipment is properly positioned, based on meteorological and other relevant information.

4. Can this happen here i.e. an earthquake that significantly damages a nuclear power plant? Are the Japanese plants similar to U.S. plants?

Public Answer: All U.S. nuclear power plants are built to withstand environmental hazards, including earthquakes and tsunamis. Even those plants that are located outside of areas with low and moderate seismic activity are designed for safety in the event of such a natural disaster. The NRC requires that safety-significant structures, systems, and components be designed to take into account even very rare and extreme seismic and tsunami events.

The Japanese facilities are similar in design to several US facilities.

Additional technical, non-public information:

Currently operating reactors were designed using a "deterministic" or "maximum credible earthquake" approach. Seismic hazard for the new plants is determined using a much more robust probabilistic seismic hazard assessment approach that explicitly addresses uncertainty, as described in RG1.208. The NRC requires that adequate margin beyond the design basis ground shaking levels is assured. The NRC further enhances seismic safety for beyond-design-basis events through the use of a defense-in-depth approach.

In addition, the NRC periodically reviews the seismic risk at operating reactors when information may have changed. Over the last few years the NRC has undertaken a program called Generic Issue 199, which is focused on assessing hazard for plants in the central and eastern US using the latest techniques and determining the possible risk implications of any increase in the anticipated ground shaking levels. This program will help us assure that the plants are safe under exceptionally rare and extreme ground motions that represent beyond-design-basis events.

5. What would U.S. plants do in this situation?

Public Answer: The NRC requires plant designs to include multiple and diverse safety systems, and plants must test their emergency preparedness capabilities on a regular basis. Plant operators are very capable of responding to significant events. In addition, NRC regulations require plants to have plans in place that would allow them to mitigate even "worst case scenarios".

Since 9/11, we have implemented requirements for licensees to have additional response capabilities for extreme situations.

Additional technical, non-public information:

Our nuclear plants have procedures in place to address a variety of accident scenarios, including abnormal operating procedures, emergency operating procedures, severe accident guidelines and emergency plans.

6. Are U.S. power plants designed to withstand tsunamis?

Public Answer: Yes. Plants are built to withstand a variety of environmental hazards and those plants that might face a threat from tsunami are required to withstand large waves and the maximum wave height at the intake structure (which varies by plant.)

Additional, technical, non-public information:

Tsunami have been considered in the design of US nuclear plants since the publication of Regulatory Guide 1.59 in 1977, although the approaches that were used for design of the existing plants varied significantly. Nuclear plants are designed to withstand flooding from not only tsunami, but also hurricane and storm surge; therefore there is often significant margin against tsunami flooding. However, it should be noted that Japanese experience has shown that drawdown can be a significant problem. Drawdown was not generally analyzed in the past. The particular

Currently the US NRC has a tsunami research program that is focused on developing modern hazard assessment techniques and additional guidance through cooperation with the National Oceanic and Atmospheric Administration and the United States Geological Survey. This has already lead to several technical reports and an update to NUREG 0-800. The NOAA and USGS contractors are also assisting with NRO reviews of tsunami hazard. A new regulatory guide on tsunami hazard assessment is currently planned in the office of research, although it is not expected to be available in draft form until 2012.

7. What happens when/if a plant "melts down"?

Public Answer: To prevent the release of radioactive material, there are multiple barriers between the radioactive material and the environment, including the fuel cladding, the heavy steel reactor vessel itself and the containment building, usually a heavily reinforced structure of concrete and steel several feet thick. In a so-called "meltdown," some of the nuclear fuel has melted because of extremely high temperatures caused by a lack of adequate cooling. This does not necessarily mean that radiation is released to the environment. But it could be if other barriers fail.

Additional, technical, non-public information: None.

8. Why is KI administered during nuclear emergencies?

Public Answer: KI – potassium iodide – is one of the protective measures that might be taken in a radiological emergency in this country. A KI tablet will saturate the thyroid with non radioactive iodine and prevent the absorption of radioactive iodine that could be part of the radioactive material mix of radionuclides in a release. KI does not prevent exposure from these other radionuclides.

Additional, technical non-public information.

There are a range of protective measures that we use ... the most effective is evacuation. Local government officials are responsible for determining the best means to protect their public. KI is another means for protection but evacuation and sheltering are the primary means that are used.

9. Was there any damage to U.S. reactors from either the earthquake or the resulting tsunami?

Public Answer: No

Additional, technical non-public information:

Diablo Canyon Units 1 and 2 declared an “unusual event” based on tsunami warning following the Japanese earthquake. They have since exited the “unusual event” declaration, based on a downgrade to a tsunami advisory.

10. Has this incident changed the NRC perception about earthquake risk?

Public Answer: There has been no change in the NRC’s perception of earthquake hazard (i.e. ground shaking levels) for US nuclear plants. As is prudent, the NRC will certainly be looking closely at this incident and the effects on the Japanese nuclear power plant in the future to see if any changes are necessary to NRC regulations.

Additional, technical, non-public information.

We expect that there would be lessons learned, etc.

11. Will this incident affect new reactor licensing?

Public Answer: It is not appropriate to hypothesize on such a future scenario at this point.

12. What magnitude earthquake are US plants designed to?

Public Answer: Each plant is designed to a ground-shaking level that is appropriate for its location, given the possible earthquake sources that may affect the site and its tectonic environment. Ground shaking is a function of both the magnitude of an earthquake and the distance from the fault plane to the site. The probabilistic approaches account for a large number of different magnitudes.

Additional, technical non-public information:

In the past, “deterministic” or “scenario based” analyses were used to determine ground shaking (seismic hazard) levels. Now a probabilistic method is used that accounts for all possible earthquakes coming from all possible sources (including background seismicity) and the likelihood that each particular hypothetical earthquake occurs.

13. How many US reactors are located in active earthquake zones (and which reactors)?

Public Answer: Although we often think of the US as having “active” and “non-active” earthquake zones, earthquakes can actually happen almost anywhere. Seismologists typically separate the US into low, moderate, and high seismicity zones. The NRC requires that every plant is designed for site-specific ground motions that are appropriate for their location. In addition, the NRC has specified a minimum ground shaking level to which the plants must be designed.

Additional, technical non-public information: No additional.

14. How many reactors are along coastal areas that could be affected by a tsunami (and which ones)?

Public Answer: Many plants are located in coastal areas that could theoretically be affected by tsunami. Two plants, Diablo Canyon and San Onofre, are on the Pacific Coast, which is known to have tsunami hazard. There are also two plants on the Gulf Coast, South Texas and Crystal River. There are many plants on the Atlantic Coast or on rivers that may be affected by a tidal bore. These include St. Lucie, Turkey Point, Brunswick, Oyster Creek, Millstone, Pilgrim, Seabrook, Calvert Cliffs, Salem/Hope Creek, and Surry. Tsunami on the Gulf and Atlantic Coasts occur, but are very rare. Generally the flooding anticipated from hurricane storm surge exceeds the flooding expected from a tsunami for plants on the Atlantic and Gulf Coast.

Additional, technical non-public information: None

15. How many U.S. plants have designs similar to the affected Japanese reactors (and which ones)

Public Answer: Six of the 104 US reactors are General Electric BWR 3 with Mark 1 containments similar to the design used at Fukushima Unit One.

Additional Information:

The units are: Dresden Units 2 and 3, Monticello unit 1, Pilgrim unit 1, Quad Cities Units 1 and 2.

POTENTIAL ADDITIONAL QUESTIONS FOR THE CHAIRMAN

1. Can this happen here?

The events that have occurred in Japan are the result of a combination of highly unlikely natural disasters. It is extremely unlikely that a similar event could occur in the United States.

2. I live near a nuclear power plant similar to the ones having trouble in Japan. How can we now be confident that this plant won't experience a similar problem?

U.S. nuclear power plants are built to withstand environmental hazards, including earthquakes and tsunamis. Even those plants that are located outside of areas with extensive seismic activity are designed for safety in the event of such a natural disaster. The NRC requires that safety-significant structures, systems, and components be designed to take into account the most severe natural phenomena historically reported for the site and surrounding area. The NRC is confident that the robust design of these plants makes it extremely unlikely that a similar event could occur in the U.S.

3. Has this crisis changed your opinion about the safety of US nuclear power plants?

No. The NRC remains confident that the design of U.S. nuclear power plants ensure the continued protection of public health and safety.

4. With all this happening, how can the NRC continue to approve new nuclear power plants?

It is premature to speculate what, if any, effect the events in Japan will have on the licensing of new nuclear power plants.

5. What is the NRC doing in response to the situation in Japan?

The NRC has taken a number of actions:

- a. Since the beginning of the event, the NRC has continuously manned its Operations Center in Rockville, MD in order to gather and examine all available information as part of the effort to analyze the event and understand its implications both for Japan and the United States.
- b. A team of officials from the U.S. Nuclear Regulatory Commission with expertise in boiling water nuclear reactors have deployed to Japan as part of a U.S. International Agency for International Development (USAID) team.
- c. The Nuclear Regulatory Commission has spoken with its counterpart agency in Japan, offering the assistance of U.S. technical experts.
- d. The NRC is coordinating its actions with other Federal agencies as part of the U.S. government response.

6. What other US agencies are involved, and what are they doing?

The entire federal family is responding to this event. The NRC is closely coordinating its efforts with the White House, DOE, DOD, USAID, and others. The U.S. government is providing whatever support requested by the Japanese government.

7. What else can go wrong?

The NRC is continuously monitoring the developments at the nuclear power plants in Japan. Circumstances are constantly evolving and it would be inappropriate to speculate on how this situation might develop over the coming days.

8. What is the worst-case scenario?

In a nuclear emergency, the most important action is ensure the core is covered with water to provide cooling to remove any heat from the fuel rods. Without adequate cooling, the fuel rods will melt.

9. The US has troops in Japan and has sent ships to help the relief effort – are they in danger from the radiation?

The NRC is not the appropriate federal agency to answer this question. DOD is better suited to provide information regarding its personnel.

10. Is there a danger of radiation making it to the United States?

In response to nuclear emergencies, the NRC works with other U.S. agencies to monitor radioactive releases and predict their path. All the available information indicates weather conditions have taken the small releases from the Fukushima reactors out to sea away from the population. Given the thousands of miles between the two countries, Hawaii, Alaska, the U.S. Territories and the U.S. West Coast are not expected to experience any harmful levels of radioactivity.

11. Is the US Government tracking the radiation released from the Japanese plants?

See response to Question 10.

12. Has the government set up radiation monitoring stations to track the release?

All U.S. nuclear power plants have existing monitoring stations with the ability to measure and track external radiation sources. However, should the federal government decide that additional monitoring stations are needed, the NRC will support that effort.

13. The radiation “plume” seems to be going out to sea – what is the danger of it reaching Alaska? Hawaii? The west coast?

See response to Question 10.

14. I live in the Western United States – should I be taking potassium iodide (KI)?

No protective measures are necessary in the United States. We do not expect any U.S. states or territories to experience harmful levels of radioactivity.

15. Are there other protective measures I should be taking?

The NRC supports the states with making protective measure recommendations for their residents. The NRC is not recommending any protective measures to the states as a result of the events in Japan. United States citizens in Japan are encouraged to follow the protective measures recommended by the Japanese government. These measures appear to be consistent with steps the United States would take.

16. What are the risks to my children?

See response to Question 15.

17. My family has planned a vacation to Hawaii/Alaska/Seattle next week – is it safe to go, or should we cancel our plans?

The NRC does not believe that the events in Japan warrant any travel restrictions within the United States or its territories.

18. What are the short-term and long-term effects of exposure to radiation?

The NRC does not expect that residents of the United States or its territories are at any risk of exposure to harmful levels of radiation resulting from the events in Japan.

On a daily basis, people are exposed to naturally occurring sources of radiation, such as from the sun or medical X-rays. The resulting effects are dependent on the strength and type of radiation as well as the duration of exposure.

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From: Taylor, Robert INRR
To: Taylor, Robert
Subject: FW: Emailing: Chairman Jaczko_QA5_earthquake031111.docx, Questions for EOC Meetings.docx, Additional Chairman Q&As.docx
Date: Monday, March 14, 2011 7:04:00 PM
Attachments: Chairman Jaczko_QA5_earthquake031111.docx
Questions for EOC Meetings.docx
Additional Chairman Q&As.docx

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

From: Taylor, Robert
Sent: Monday, March 14, 2011 6:57 PM
To: Harrington, Holly
Cc: McIntyre, David
Subject: Emailing: Chairman Jaczko_QA5_earthquake031111.docx, Questions for EOC Meetings.docx, Additional Chairman Q&As.docx

Holly,

As discussed, attached are three sets of Q&As under development. Ultimately, we will need to merge these together.

Rob

4/33

Questions and Answers for Chairman Jaczko

Note: Talk from but do not distribute

March 11, 2011 Japan Earthquake/Tsunami Aftermath

As of 8 p.m., 3/12/2011

1. What is the NRC doing about the emergencies at the nuclear power plants in Japan? Are you sending staff over there?

Public Answer: We are closely following events in Japan, working with other agencies of the federal government, and have been in direct contact with our counterparts in that country. We are ready to provide assistance if there is a specific request. Two NRC staff members knowledgeable about boiling water reactors are participating in the USAID team that has departed for Japan.

Additional technical, non-public information:

We are taking the knowledge that the staff has about the design of the US nuclear plants and we are applying this knowledge to the Japan situation. For example, this includes calculations of severe accident mitigation that have been performed. Tony Ulises has been dispatched to Japan and should arrive Early Sunday. David Jim Trapp left 1600 Saturday should arrive in 20 hours

2. What's going to happen following the hydrogen explosion everyone's seen from the video footage?

Public Answer: If a similar event occurred at a U.S. nuclear power plant, the NRC would be seeking information to answer several questions, including: What's the status of the reactor core, the reactor vessel and the containment building? What radiation measurement equipment is available and what measurements are being reported? What efforts are being taken to keep the public safe? How did the explosion affect efforts to keep the nearby reactors in a safe condition? And most importantly – What can the NRC do to help?

Additional technical, non-public information:

The explosion affected the secondary containment of the reactor plant. The primary containment was not affected by the explosion. The Japanese are taking actions to preserve the primary containment, cool the reactor core, maintain the reactor shut down and limit the spread of radioactive contamination.

The NRC required a back fit to US reactors of the type similar to Fukushima Unit 1 to install a hardened vent line. A hardened vent provides a release path which would prevent an explosion as experienced at Fukushima Unit One.

3. What should done to protect people in Alaska, Hawaii and the West Coast do from radioactive fallout?

Public Answer: The available evidence shows the United States can be expected to avoid any impacts from radioactive material, so no public action is necessary. We believe there is very low risk to the US considering the long distance from the US and the type of event.

Additional technical, non-public information: NRC is working with DHS, EPA and other federal partners to ensure monitoring equipment is properly positioned, based on meteorological and other relevant information.

4. Can this happen here i.e. an earthquake that significantly damages a nuclear power plant? Are the Japanese plants similar to U.S. plants?

Public Answer: All U.S. nuclear power plants are built to withstand environmental hazards, including earthquakes and tsunamis. Even those plants that are located outside of areas with low and moderate seismic activity are designed for safety in the event of such a natural disaster. The NRC requires that safety-significant structures, systems, and components be designed to take into account even very rare and extreme seismic and tsunami events.

The Japanese facilities are similar in design to several US facilities.

Additional technical, non-public information:

Currently operating reactors were designed using a "deterministic" or "maximum credible earthquake" approach. Seismic hazard for the new plants is determined using a much more robust probabilistic seismic hazard assessment approach that explicitly addresses uncertainty, as described in RG1.208. The NRC requires that adequate margin beyond the design basis ground shaking levels is assured. The NRC further enhances seismic safety for beyond-design-basis events through the use of a defense-in-depth approach.

In addition, the NRC periodically reviews the seismic risk at operating reactors when information may have changed. Over the last few years the NRC has undertaken a program called Generic Issue 199, which is focused on assessing hazard for plants in the central and eastern US using the latest techniques and determining the possible risk implications of any increase in the anticipated ground shaking levels. This program will help us assure that the plants are safe under exceptionally rare and extreme ground motions that represent beyond-design-basis events.

5. What would U.S. plants do in this situation?

Public Answer: The NRC requires plant designs to include multiple and diverse safety systems, and plants must test their emergency preparedness capabilities on a regular basis. Plant operators are very capable of responding to significant events. In addition, NRC regulations require plants to have plans in place that would allow them to mitigate even "worst case scenarios".

Since 9/11, we have implemented requirements for licensees to have additional response capabilities for extreme situations.

Additional technical, non-public information:

Our nuclear plants have procedures in place to address a variety of accident scenarios, including abnormal operating procedures, emergency operating procedures, severe accident guidelines and emergency plans.

6. Are U.S. power plants designed to withstand tsunamis?

Public Answer: Yes. Plants are built to withstand a variety of environmental hazards and those plants that might face a threat from tsunami are required to withstand large waves and the maximum wave height at the intake structure (which varies by plant.)

Additional, technical, non-public information:

Tsunami have been considered in the design of US nuclear plants since the publication of Regulatory Guide 1.59 in 1977, although the approaches that were used for design of the existing plants varied significantly. Nuclear plants are designed to withstand flooding from not only tsunami, but also hurricane and storm surge; therefore there is often significant margin against tsunami flooding. However, it should be noted that Japanese experience has shown that drawdown can be a significant problem. Drawdown was not generally analyzed in the past. The particular

Currently the US NRC has a tsunami research program that is focused on developing modern hazard assessment techniques and additional guidance through cooperation with the National Oceanic and Atmospheric Administration and the United States Geological Survey. This has already lead to several technical reports and an update to NUREG 0-800. The NOAA and USGS contractors are also assisting with NRO reviews of tsunami hazard. A new regulatory guide on tsunami hazard assessment is currently planned in the office of research, although it is not expected to be available in draft form until 2012.

7. What happens when/if a plant “melts down”?

Public Answer: To prevent the release of radioactive material, there are multiple barriers between the radioactive material and the environment, including the fuel cladding, the heavy steel reactor vessel itself and the containment building, usually a heavily reinforced structure of concrete and steel several feet thick. In a so-called “meltdown,” some of the nuclear fuel has melted because of extremely high temperatures caused by a lack of adequate cooling. This does not necessarily mean that radiation is released to the environment. But it could be if other barriers fail.

Additional, technical, non-public information: None.

8. Why is KI administered during nuclear emergencies?

Public Answer: KI – potassium iodide – is one of the protective measures that might be taken in a radiological emergency in this country. A KI tablet will saturate the thyroid with non radioactive iodine and prevent the absorption of radioactive iodine that could be part of the radioactive material mix of radionuclides in a release. KI does not prevent exposure from these other radionuclides.

Additional, technical non-public information.

There are a range of protective measures that we use ... the most effective is evacuation. Local government officials are responsible for determining the best means to protect their public. KI is another means for protection but evacuation and sheltering are the primary means that are used.

9. Was there any damage to U.S. reactors from either the earthquake or the resulting tsunami?

Public Answer: No

Additional, technical non-public information:

Diablo Canyon Units 1 and 2 declared an “unusual event” based on tsunami warning following the Japanese earthquake. They have since exited the “unusual event” declaration, based on a downgrade to a tsunami advisory.

10. Has this incident changed the NRC perception about earthquake risk?

Public Answer: There has been no change in the NRC’s perception of earthquake hazard (i.e. ground shaking levels) for US nuclear plants. As is prudent, the NRC will certainly be looking closely at this incident and the effects on the Japanese nuclear power plant in the future to see if any changes are necessary to NRC regulations.

Additional, technical, non-public information.

We expect that there would be lessons learned, etc.

11. Will this incident affect new reactor licensing?

Public Answer: It is not appropriate to hypothesize on such a future scenario at this point.

12. What magnitude earthquake are US plants designed to?

Public Answer: Each plant is designed to a ground-shaking level that is appropriate for its location, given the possible earthquake sources that may affect the site and its tectonic environment. Ground shaking is a function of both the magnitude of an earthquake and the distance from the fault plane to the site. The probabilistic approaches account for a large number of different magnitudes.

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13. How many US reactors are located in active earthquake zones (and which reactors)?

Public Answer: Although we often think of the US as having "active" and "non-active" earthquake zones, earthquakes can actually happen almost anywhere. Seismologists typically separate the US into low, moderate, and high seismicity zones. The NRC requires that every plant is designed for site-specific ground motions that are appropriate for their location. In addition, the NRC has specified a minimum ground shaking level to which the plants must be designed.

Additional, technical non-public information: No additional.

14. How many reactors are along coastal areas that could be affected by a tsunami (and which ones)?

Public Answer: Many plants are located in coastal areas that could theoretically be affected by tsunami. Two plants, Diablo Canyon and San Onofre, are on the Pacific Coast, which is known to have tsunami hazard. There are also two plants on the Gulf Coast, South Texas and Crystal River. There are many plants on the Atlantic Coast or on rivers that may be affected by a tidal bore. These include St. Lucie, Turkey Point, Brunswick, Oyster Creek, Millstone, Pilgrim, Seabrook, Calvert Cliffs, Salem/Hope Creek, and Surry. Tsunami on the Gulf and Atlantic Coasts occur, but are very rare. Generally the flooding anticipated from hurricane storm surge exceeds the flooding expected from a tsunami for plants on the Atlantic and Gulf Coast.

Additional, technical non-public information: None

15. How many U.S. plants have designs similar to the affected Japanese reactors (and which ones)

Public Answer: Six of the 104 US reactors are General Electric BWR 3 with Mark 1 containments similar to the design used at Fukushima Unit One.

Additional Information:

The units are: Dresden Units 2 and 3, Monticello unit 1, Pilgrim unit 1, Quad Cities Units 1 and 2.

16. What resources are the Japanese asking for?

The Japanese have formally requested equipment needed to cool the reactor fuel. This includes such things as pumps, fire hoses, portable generators, and diesel fuel. The NRC is coordinating with General Electric, which has plant design specifications, to ensure any equipment provided will be capable of meeting the needs of the Japanese.

17. What should the American public know about the incident in Japan?

The events unfolding in Japan are the result of a catastrophic series of natural disasters. These include the fifth largest earthquake in recorded history and the resulting devastating tsunami. Despite these unique circumstances, the Japanese appear to have taken reasonable actions to mitigate the event and protect the surrounding population. Since the beginning of the event, the NRC has continuously manned its Operations Center in Rockville, MD in order to gather and examine all available information as part of the effort to analyze the event and understand its implications both for Japan and the United States.

18. What could you say about the dangers to the American public from our nuclear plants?

As the events in Japan continue to unfold, the NRC is focused on supporting the Japanese government and people in bringing this crisis to closure in the safest manner possible. The NRC remains convinced that U.S. nuclear power plants are designed and operated in a manner that protects public health and safety. The time will come, after this crisis is behind us, to evaluate what, if any, changes are needed at U.S. nuclear power plants. We will assess all the available information and, as we have done with previous natural disasters, such as the 2007 earthquake in the Sea of Japan and the 2004 tsunami in the Indian Ocean, evaluate whether enhancements to U.S. nuclear power plants are warranted.

19. What happens next in Japan? How long will it take to assess the damage to the reactors?

The current focus is ensuring that adequate cooling of the reactor fuel at each of the affected Japanese reactors is established and maintained. In the days, weeks, and months that follow, there will be adequate time to assess the damage and determine next steps.

20. Compare this incident to the Three Mile Island. What are the similarities?

The events at Three Mile Island in 1979 were the result of an equipment malfunction that resulted in the loss of cooling water to the reactor fuel. Subsequent operator actions compounded the malfunction ultimately resulting in the partial core meltdown. While details are still developing, the events in Japan appear to be the result of an earthquake and subsequent tsunami that knocked out electrical power to emergency safety systems designed to cool the reactor fuel. In both events the final safety barrier, the containment building, contained the majority of the radioactivity preventing its release to the environment.

21. Why did the seawater fail to cool the reactor?

Based on information available to the NRC, it appears that the seawater has been effective at providing some cooling for the reactor. While it appears that some fuel damage has occurred, there will be plenty of time once this crisis is resolved to determine the effectiveness of the measures taken in response to this event.

22. If Chernobyl was a 7 and Three Mile Island was a 5, when does this event move from the 4 level?

The International Atomic Energy Agency (IAEA) rates nuclear events in accordance with its International Nuclear and Radiological Event Scale (INES). IAEA has assigned the events in Japan an INES rating of 4, "Accident with Local Consequences." This rating is subject to change as events unfold and additional information becomes available. INES classifies nuclear accidents based on the radiological effects on people and the environment and the status of barriers to the release of radiation. IAEA determinations regarding the INES rating of events are made independently.

Three Mile Island was assigned an INES rating of 5, "Accident with Wider Consequences," due to the severed damage to the reactor core.

23. Are any Americans in danger – armed forces, citizens in Tokyo?

The NRC, in consultation with the White House and U.S. Embassy, has advised United States citizens in Japan to follow the protective measures recommended by the Japanese government. These measures appear to be consistent with steps the United States would take. The Department of Defense has personnel trained in radiation protective measures and is responsible for providing guidance to U.S. armed forces

24. What is the worst case scenario for the plant?

In a nuclear emergency, the most important action is ensure the core is covered with water to provide cooling to remove any heat from the fuel rods. Without adequate cooling, the fuel rods will melt. Should the final containment structure fail, radiation from these melting fuel rods would be released to the atmosphere and additional protective measures may be necessary, depending on factors such as prevailing wind patterns.

25. As time goes on, does the chance for a meltdown increase?

Not necessarily. Each passing hour the fuel rods will become cooler. If adequate cooling can be established and maintained, the risk of a meltdown will be mitigated.

26. Is our battery backup power less effective than the Japanese?

Talk to NRR/EE experts.

27. Are we providing additional KI to the Japanese?

Talk to LT

Questions for EOC Meetings

1. Do US nuclear plants have better capabilities to respond to natural disasters than the plants in Japan?

All U.S. nuclear power plants are built to withstand environmental hazards, including earthquakes and tsunamis. Even those plants that are located outside of areas with low and moderate seismic activity are designed for safety in the event of such a natural disaster. The NRC requires that safety-significant structures, systems, and components be designed to take into account even very rare and extreme seismic and tsunami events.

As with past natural and man-made events, such as the 2007 earthquake in the Sea of Japan, the 2004 tsunami in the Indian Ocean, and the events of 9/11, the NRC routinely reassess its safety programs to ensure that U.S. nuclear power plants are designed to protect public health and safety

2. Did the NRC share the post 9/11 enhancements to the U.S. facilities with the Japanese?

The NRC routinely communicates and shares information with its international counterparts to the maximum extent possible.

3. Could there be core damage and radiation release at a US plant if a natural disaster exceeding the plant design were to occur?

All U.S. nuclear power plants are built to withstand environmental hazards, including earthquakes and tsunamis. The NRC

- 4. Could explosions like those that occurred in Japan happen at a U.S facility?**
- 5. How would the U.S. have responded to the events of March 11?**
- 6. How are US BWRs similar and/or different from the plants experience problems in Japan?**
- 7. Why are US plants safe to operate considering the events in Japan?**
- 8. How big an earthquake is plant X designed to handle (for each plant)?**
- 9. Is plant X designed to withstand a tsunami (for each coastal plant)?**
- 10. What is the NRC doing to ensure this (Japan event) doesn't happen at US plants?**
- 11. How will the U.S. learn from the failures at the Japanese reactors?**
- 12. Is the NRC relooking at seismic analysis for US plants?**
- 13. Is the event in Japan worse than TMI and Chernobyl?**
- 14. What is the longer term prognosis for keeping the reactors cooled at the Japanese facilities?**
- 15. Does the NRC participate in inspection of the Japanese facilities?**
- 16. Given low probability events do occur, how does the U.S. ensure that U.S. plant designs are not significantly degraded by risk-informed changes?**
- 17. How does the NRC ensure people can escape if an accident occurs from a natural disaster when the infrastructure is also affected or destroyed in an area around a plant?**

POTENTIAL ADDITIONAL QUESTIONS FOR THE CHAIRMAN

1. Can this happen here?

The events that have occurred in Japan are the result of a combination of highly unlikely natural disasters. It is extremely unlikely that a similar event could occur in the United States.

2. I live near a nuclear power plant similar to the ones having trouble in Japan. How can we now be confident that this plant won't experience a similar problem?

U.S. nuclear power plants are built to withstand environmental hazards, including earthquakes and tsunamis. Even those plants that are located outside of areas with extensive seismic activity are designed for safety in the event of such a natural disaster. The NRC requires that safety-significant structures, systems, and components be designed to take into account the most severe natural phenomena historically reported for the site and surrounding area. The NRC is confident that the robust design of these plants makes it extremely unlikely that a similar event could occur it then U.S.

3. Has this crisis changed your opinion about the safety of US nuclear power plants?

No. The NRC remains confident that the design of U.S. nuclear power plants ensure the continued protection of public health and safety.

4. With all this happening, how can the NRC continue to approve new nuclear power plants?

It is premature to speculate what, if any, effect the events in Japan will have on the licensing of new nuclear power plants.

5. What is the NRC doing in response to the situation in Japan?

The NRC has taken a number of actions:

- a. Since the beginning of the event, the NRC has continuously manned its Operations Center in Rockville, MD in order to gather and examine all available information as part of the effort to analyze the event and understand its implications both for Japan and the United States.
- b. A team of officials from the U.S. Nuclear Regulatory Commission with expertise in boiling water nuclear reactors have deployed to Japan as part of a U.S. International Agency for International Development (USAID) team.
- c. The Nuclear Regulatory Commission has spoken with its counterpart agency in Japan, offering the assistance of U.S. technical experts.
- d. The NRC is coordinating its actions with other Federal agencies as part of the U.S. government response.

6. What other US agencies are involved, and what are they doing?

The entire federal family is responding to this event. The NRC is closely coordinating its efforts with the White House, DOE, DOD, USAID, and others. The U.S. government is providing whatever support requested by the Japanese government.

7. What else can go wrong?

The NRC is continuously monitoring the developments at the nuclear power plants in Japan. Circumstances are constantly evolving and it would be inappropriate to speculate on how this situation might develop over the coming days.

8. What is the worst-case scenario?

In a nuclear emergency, the most important action is ensure the core is covered with water to provide cooling to remove any heat from the fuel rods. Without adequate cooling, the fuel rods will melt. Should the final containment structure fail, radiation from these melting fuel rods would be released to the atmosphere and additional protective measures may be necessary depending on factors such as prevailing wind patterns.

9. The US has troops in Japan and has sent ships to help the relief effort – are they in danger from the radiation?

The NRC is not the appropriate federal agency to answer this question. DOD is better suited to provide information regarding its personnel.

10. Is there a danger of radiation making it to the United States?

In response to nuclear emergencies, the NRC works with other U.S. agencies to monitor radioactive releases and predict their path. All the available information indicates weather conditions have taken the small releases from the Fukushima reactors out to sea away from the population. Given the thousands of miles between the two countries, Hawaii, Alaska, the U.S. Territories and the U.S. West Coast are not expected to experience any harmful levels of radioactivity.

11. Is the US Government tracking the radiation released from the Japanese plants?

See response to Question 10.

12. Has the government set up radiation monitoring stations to track the release?

All U.S. nuclear power plants have existing monitoring stations with the ability to measure and track external radiation sources. However, should the federal government decide that additional monitoring stations are needed, the NRC will support that effort.

13. The radiation “plume” seems to be going out to sea – what is the danger of it reaching Alaska? Hawaii? The west coast?

See response to Question 10.

14. I live in the Western United States – should I be taking potassium iodide (KI)?

No protective measures are necessary in the United States. We do not expect any U.S. states or territories to experience harmful levels of radioactivity.

15. Are there other protective measures I should be taking?

The NRC supports the states with making protective measure recommendations for their residents. The NRC is not recommending any protective measures to the states as a result of the events in Japan. United States citizens in Japan are encouraged to follow the protective measures recommended by the Japanese government. These measures appear to be consistent with steps the United States would take.

16. What are the risks to my children?

See response to Question 15.

17. My family has planned a vacation to Hawaii/Alaska/Seattle next week – is it safe to go, or should we cancel our plans?

The NRC does not believe that the events in Japan warrant any travel restrictions within the United States or its territories.

18. What are the short-term and long-term effects of exposure to radiation?

The NRC does not expect that residents of the United States or its territories are at any risk of exposure to harmful levels of radiation resulting from the events in Japan.

On a daily basis, people are exposed to naturally occurring sources of radiation, such as from the sun or medical X-rays. The resulting effects are dependent on the strength and type of radiation as well as the duration of exposure.

From: [Taylor, Robert](#)
To: [Taylor, Robert](#)
Subject: FW: Emailing: Chairman Jaczko_QA5_earthquake031111.docx, Questions for EOC Meetings.docx, Additional Chairman Q&As.docx
Date: Monday, March 14, 2011 7:04:16 PM
Attachments: [Chairman Jaczko_QA5_earthquake031111.docx](#)
[Questions for EOC Meetings.docx](#)
[Additional Chairman Q&As.docx](#)

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

From: Taylor, Robert
Sent: Monday, March 14, 2011 6:57 PM
To: Harrington, Holly
Cc: McIntyre, David
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Additional, technical, non-public information: None.

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Additional, technical non-public information: No additional.

14. How many reactors are along coastal areas that could be affected by a tsunami (and which ones)?

Public Answer: Many plants are located in coastal areas that could theoretically be affected by tsunami. Two plants, Diablo Canyon and San Onofre, are on the Pacific Coast, which is known to have tsunami hazard. There are also two plants on the Gulf Coast, South Texas and Crystal River. There are many plants on the Atlantic Coast or on rivers that may be affected by a tidal bore. These include St. Lucie, Turkey Point, Brunswick, Oyster Creek, Millstone, Pilgrim, Seabrook, Calvert Cliffs, Salem/Hope Creek, and Surry. Tsunami on the Gulf and Atlantic Coasts occur, but are very rare. Generally the flooding anticipated from hurricane storm surge exceeds the flooding expected from a tsunami for plants on the Atlantic and Gulf Coast.

Additional, technical non-public information: None

15. How many U.S. plants have designs similar to the affected Japanese reactors (and which ones)

Public Answer: Six of the 104 US reactors are General Electric BWR 3 with Mark 1 containments similar to the design used at Fukushima Unit One.

Additional Information:

The units are: Dresden Units 2 and 3, Monticello unit 1, Pilgrim unit 1, Quad Cities Units 1 and 2.

16. What resources are the Japanese asking for?

The Japanese have formally requested equipment needed to cool the reactor fuel. This includes such things as pumps, fire hoses, portable generators, and diesel fuel. The NRC is coordinating with General Electric, which has plant design specifications, to ensure any equipment provided will be capable of meeting the needs of the Japanese.

17. What should the American public know about the incident in Japan?

The events unfolding in Japan are the result of a catastrophic series of natural disasters. These include the fifth largest earthquake in recorded history and the resulting devastating tsunami. Despite these unique circumstances, the Japanese appear to have taken reasonable actions to mitigate the event and protect the surrounding population. Since the beginning of the event, the NRC has continuously manned its Operations Center in Rockville, MD in order to gather and examine all available information as part of the effort to analyze the event and understand its implications both for Japan and the United States.

18. What could you say about the dangers to the American public from our nuclear plants?

As the events in Japan continue to unfold, the NRC is focused on supporting the Japanese government and people in bringing this crisis to closure in the safest manner possible. The NRC remains convinced that U.S. nuclear power plants are designed and operated in a manner that protects public health and safety. The time will come, after this crisis is behind us, to evaluate what, if any, changes are needed at U.S. nuclear power plants. We will assess all the available information and, as we have done with previous natural disasters, such as the 2007 earthquake in the Sea of Japan and the 2004 tsunami in the Indian Ocean, evaluate whether enhancements to U.S. nuclear power plants are warranted.

19. What happens next in Japan? How long will it take to assess the damage to the reactors?

The current focus is ensuring that adequate cooling of the reactor fuel at each of the affected Japanese reactors is established and maintained. In the days, weeks, and months that follow, there will be adequate time to assess the damage and determine next steps.

20. Compare this incident to the Three Mile Island. What are the similarities?

The events at Three Mile Island in 1979 were the result of an equipment malfunction that resulted in the loss of cooling water to the reactor fuel. Subsequent operator actions compounded the malfunction ultimately resulting in the partial core meltdown. While details are still developing, the events in Japan appear to be the result of an earthquake and subsequent tsunami that knocked out electrical power to emergency safety systems designed to cool the reactor fuel. In both events the final safety barrier, the containment building, contained the majority of the radioactivity preventing its release to the environment.

21. Why did the seawater fail to cool the reactor?

Based on information available to the NRC, it appears that the seawater has been effective at providing some cooling for the reactor. While it appears that some fuel damage has occurred, there will be plenty of time once this crisis is resolved to determine the effectiveness of the measures taken in response to this event.

22. If Chernobyl was a 7 and Three Mile Island was a 5, when does this event move from the 4 level?

The International Atomic Energy Agency (IAEA) rates nuclear events in accordance with its International Nuclear and Radiological Event Scale (INES). IAEA has assigned the events in Japan an INES rating of 4, "Accident with Local Consequences." This rating is subject to change as events unfold and additional information becomes available. INES classifies nuclear accidents based on the radiological effects on people and the environment and the status of barriers to the release of radiation. IAEA determinations regarding the INES rating of events are made independently.

Three Mile Island was assigned an INES rating of 5, "Accident with Wider Consequences," due to the severed damage to the reactor core.

23. Are any Americans in danger – armed forces, citizens in Tokyo?

The NRC, in consultation with the White House and U.S. Embassy, has advised United States citizens in Japan to follow the protective measures recommended by the Japanese government. These measures appear to be consistent with steps the United States would take. The Department of Defense has personnel trained in radiation protective measures and is responsible for providing guidance to U.S. armed forces

24. What is the worst case scenario for the plant?

In a nuclear emergency, the most important action is ensure the core is covered with water to provide cooling to remove any heat from the fuel rods. Without adequate cooling, the fuel rods will melt. Should the final containment structure fail, radiation from these melting fuel rods would be released to the atmosphere and additional protective measures may be necessary, depending on factors such as prevailing wind patterns.

25. As time goes on, does the chance for a meltdown increase?

Not necessarily. Each passing hour the fuel rods will become cooler. If adequate cooling can be established and maintained, the risk of a meltdown will be mitigated.

26. Is our battery backup power less effective than the Japanese?

Talk to NRR/EE experts.

27. Are we providing additional KI to the Japanese?

Talk to LT

Questions for EOC Meetings

- 1. Do US nuclear plants have better capabilities to respond to natural disasters than the plants in Japan?**

All U.S. nuclear power plants are built to withstand environmental hazards, including earthquakes and tsunamis. Even those plants that are located outside of areas with low and moderate seismic activity are designed for safety in the event of such a natural disaster. The NRC requires that safety-significant structures, systems, and components be designed to take into account even very rare and extreme seismic and tsunami events.

As with past natural and man-made events, such as the 2007 earthquake in the Sea of Japan, the 2004 tsunami in the Indian Ocean, and the events of 9/11, the NRC routinely reassess its safety programs to ensure that U.S. nuclear power plants are designed to protect public health and safety

- 2. Did the NRC share the post 9/11 enhancements to the U.S. facilities with the Japanese?**

The NRC routinely communicates and shares information with its international counterparts to the maximum extent possible.

- 3. Could there be core damage and radiation release at a US plant if a natural disaster exceeding the plant design were to occur?**

All U.S. nuclear power plants are built to withstand environmental hazards, including earthquakes and tsunamis. The NRC

- 4. Could explosions like those that occurred in Japan happen at a U.S facility?**
- 5. How would the U.S. have responded to the events of March 11?**
- 6. How are US BWRs similar and/or different from the plants experience problems in Japan?**
- 7. Why are US plants safe to operate considering the events in Japan?**
- 8. How big an earthquake is plant X designed to handle (for each plant)?**
- 9. Is plant X designed to withstand a tsunami (for each coastal plant)?**
- 10. What is the NRC doing to ensure this (Japan event) doesn't happen at US plants?**
- 11. How will the U.S. learn from the failures at the Japanese reactors?**
- 12. Is the NRC relooking at seismic analysis for US plants?**
- 13. Is the event in Japan worse than TMI and Chernobyl?**
- 14. What is the longer term prognosis for keeping the reactors cooled at the Japanese facilities?**
- 15. Does the NRC participate in inspection of the Japanese facilities?**
- 16. Given low probability events do occur, how does the U.S. ensure that U.S. plant designs are not significantly degraded by risk-informed changes?**
- 17. How does the NRC ensure people can escape if an accident occurs from a natural disaster when the infrastructure is also affected or destroyed in an area around a plant?**

POTENTIAL ADDITIONAL QUESTIONS FOR THE CHAIRMAN

1. Can this happen here?

The events that have occurred in Japan are the result of a combination of highly unlikely natural disasters. It is extremely unlikely that a similar event could occur in the United States.

2. I live near a nuclear power plant similar to the ones having trouble in Japan. How can we now be confident that this plant won't experience a similar problem?

U.S. nuclear power plants are built to withstand environmental hazards, including earthquakes and tsunamis. Even those plants that are located outside of areas with extensive seismic activity are designed for safety in the event of such a natural disaster. The NRC requires that safety-significant structures, systems, and components be designed to take into account the most severe natural phenomena historically reported for the site and surrounding area. The NRC is confident that the robust design of these plants makes it extremely unlikely that a similar event could occur it then U.S.

3. Has this crisis changed your opinion about the safety of US nuclear power plants?

No. The NRC remains confident that the design of U.S. nuclear power plants ensure the continued protection of public health and safety.

4. With all this happening, how can the NRC continue to approve new nuclear power plants?

It is premature to speculate what, if any, effect the events in Japan will have on the licensing of new nuclear power plants.

5. What is the NRC doing in response to the situation in Japan?

The NRC has taken a number of actions:

- a. Since the beginning of the event, the NRC has continuously manned its Operations Center in Rockville, MD in order to gather and examine all available information as part of the effort to analyze the event and understand its implications both for Japan and the United States.
- b. A team of officials from the U.S. Nuclear Regulatory Commission with expertise in boiling water nuclear reactors have deployed to Japan as part of a U.S. International Agency for International Development (USAID) team.
- c. The Nuclear Regulatory Commission has spoken with its counterpart agency in Japan, offering the assistance of U.S. technical experts.
- d. The NRC is coordinating its actions with other Federal agencies as part of the U.S. government response.

6. What other US agencies are involved, and what are they doing?

The entire federal family is responding to this event. The NRC is closely coordinating its efforts with the White House, DOE, DOD, USAID, and others. The U.S. government is providing whatever support requested by the Japanese government.

7. What else can go wrong?

The NRC is continuously monitoring the developments at the nuclear power plants in Japan. Circumstances are constantly evolving and it would be inappropriate to speculate on how this situation might develop over the coming days.

8. What is the worst-case scenario?

In a nuclear emergency, the most important action is ensure the core is covered with water to provide cooling to remove any heat from the fuel rods. Without adequate cooling, the fuel rods will melt. Should the final containment structure fail, radiation from these melting fuel rods would be released to the atmosphere and additional protective measures may be necessary depending on factors such as prevailing wind patterns.

9. The US has troops in Japan and has sent ships to help the relief effort – are they in danger from the radiation?

The NRC is not the appropriate federal agency to answer this question. DOD is better suited to provide information regarding its personnel.

10. Is there a danger of radiation making it to the United States?

In response to nuclear emergencies, the NRC works with other U.S. agencies to monitor radioactive releases and predict their path. All the available information indicates weather conditions have taken the small releases from the Fukushima reactors out to sea away from the population. Given the thousands of miles between the two countries, Hawaii, Alaska, the U.S. Territories and the U.S. West Coast are not expected to experience any harmful levels of radioactivity.

11. Is the US Government tracking the radiation released from the Japanese plants?

See response to Question 10.

12. Has the government set up radiation monitoring stations to track the release?

All U.S. nuclear power plants have existing monitoring stations with the ability to measure and track external radiation sources. However, should the federal government decide that additional monitoring stations are needed, the NRC will support that effort.

13. The radiation “plume” seems to be going out to sea – what is the danger of it reaching Alaska? Hawaii? The west coast?

See response to Question 10.

14. I live in the Western United States – should I be taking potassium iodide (KI)?

No protective measures are necessary in the United States. We do not expect any U.S. states or territories to experience harmful levels of radioactivity.

15. Are there other protective measures I should be taking?

The NRC supports the states with making protective measure recommendations for their residents. The NRC is not recommending any protective measures to the states as a result of the events in Japan. United States citizens in Japan are encouraged to follow the protective measures recommended by the Japanese government. These measures appear to be consistent with steps the United States would take.

16. What are the risks to my children?

See response to Question 15.

17. My family has planned a vacation to Hawaii/Alaska/Seattle next week – is it safe to go, or should we cancel our plans?

The NRC does not believe that the events in Japan warrant any travel restrictions within the United States or its territories.

18. What are the short-term and long-term effects of exposure to radiation?

The NRC does not expect that residents of the United States or its territories are at any risk of exposure to harmful levels of radiation resulting from the events in Japan.

On a daily basis, people are exposed to naturally occurring sources of radiation, such as from the sun or medical X-rays. The resulting effects are dependent on the strength and type of radiation as well as the duration of exposure.

Kulp, Jeffrey

From: Kulp, Jeffrey
Sent: Monday, March 14, 2011 3:24 PM
To: Smith, Stacy
Subject: RE: ANY FORMER BWR OPERATORS

I'm on the list, but pretty damn close to the bottom of the barrel. How's things been?

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

From: Smith, Stacy
Sent: Monday, March 14, 2011 1:22 PM
To: Kulp, Jeffrey
Subject: FW: ANY FORMER BWR OPERATORS

Not sure if you already got hit up for this...

From: Green, Thomas
Sent: Monday, March 14, 2011 1:10 PM
To: NRO_DCIP_CQVB Distribution
Subject: FW: ANY FORMER BWR OPERATORS

From: Rasmussen, Richard
Sent: Monday, March 14, 2011 12:16 PM
To: Green, Thomas
Subject: Fw: ANY FORMER BWR OPERATORS

Thomas, please forward to the branch.

Thanks,
Rick

From: Shuaibi, Mohammed
To: Roach, Edward; Junge, Michael; Kowal, Mark; Frye, Timothy; Beardsley, James; Peralta, Juan; Rasmussen, Richard; Desaulniers, David
Cc: Tappert, John; Dudes, Laura; Rivera-Varona, Aida
Sent: Mon Mar 14 10:22:19 2011
Subject: ANY FORMER BWR OPERATORS
All,

The Agency may be sending additional experts to Japan to assist with the response to the nuclear plant events.

At this morning's management meeting, Mike requested that we think about (and identify) any BWR experts/Former BWR operators that we could offer to help with the response.

If we decide to send staff, I expect we'll need to identify them quickly. Please let us know ASAP if you have any former BWR operators, especially those with experience at older BWRs.

Thanks,
Mohammed

Kern, Ludwig

From: Powell, Raymond
Sent: Monday, March 14, 2011 6:27 PM
To: Bickett, Carey; Khan, Cheryl; Ayala, Juan; Rao, Ami; Montgomery, Richard; DeBoer, Joseph; Kern, Ludwig; Floyd, Niklas; Ziev, Tracey; Dunham, Katrina
Subject: Commenting on Japan
Importance: High

all received inquires are to be referred to PAO. that's really the end of my message, but i am always available to discuss further.

4/36

Dentel, Glenn

From: Clifford, James
Sent: Monday, March 14, 2011 5:25 PM
To: Bellamy, Ronald; Burritt, Arthur; Dentel, Glenn; Gray, Mel; Jackson, Donald; Krohn, Paul; Powell, Raymond
Cc: Roberts, Darrell
Subject: FW: Potential questions for EOC meetings

We should brain-storm these, and see if there are other questions we should develop answers for ahead of time. Looks like a good set of questions!

Jim Clifford

Deputy Director
Division of Reactor Projects
Region I

From: Dean, Bill
Sent: Monday, March 14, 2011 4:59 PM
To: Screnci, Diane; Sheehan, Neil; Roberts, Darrell; Wilson, Peter; Clifford, James; Weerakkody, Sunil; Lew, David
Subject: FW: Potential questions for EOC meetings

FYI. Does this cover the landscape for us do you think?

Bill

From: McCree, Victor
Sent: Monday, March 14, 2011 4:46 PM
To: Hannah, Roger; Ledford, Joey
Cc: Collins, Elmo; Dean, Bill; Satorius, Mark; Wert, Leonard; Casto, Chuck
Subject: FW: Potential questions for EOC meetings

Here are questions that OPA, et.al., are asked to consider in developing the agency Q&As for the Japanese earthquake/tsunami...and that can be referenced by NRC managers in preparation for the ROP end-of-cycle and other near term public meetings.

Vic

From: Croteau, Rick
Sent: Monday, March 14, 2011 4:35 PM
To: McCree, Victor
Cc: Wert, Leonard; Jones, William
Subject: Potential questions for EOC meetings

Vic,
Not sure how you wanted these, but here are some of the questions we could see being asked at EOCs:

1. Do US nuclear plants have better capabilities to respond to natural disasters than the plants in Japan?
2. Did the NRC share the post 9/11 enhancements to the U.S. facilities with the Japanese?
3. Could there be core damage and radiation release at a US plant if a natural disaster exceeding the plant design were to occur?
4. Could explosions like those that occurred in Japan happen at a U.S facility?

5. How would the U.S. have responded to the events of March 11?
6. How are US BWRs similar and/or different from the plants experience problems in Japan?
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17. How does the NRC ensure people can escape if an accident occurs from a natural disaster when the infrastructure is also affected or destroyed in an area around a plant?

Rick

Doerflein, Lawrence

From: Doerflein, Lawrence
Sent: Monday, March 14, 2011 9:51 AM
To: Schoppy, Joseph; Pindale, Stephen; Mangan, Kevin; Balazik, Michael; Orr, Michael; Williams, Christopher; Brand, Javier; Burket, Elise; Arner, Frank
Subject: Update on Japan - FYI
Importance: High

Being inquisitive and resourceful, you guys may have already researched the web and know this, but the big picture info passed out at the morning meeting was:

One caution – none of this is to be released outside the NRC.

Fukushima Daiichi Nuclear Power Station has six units. Units 4, 5 & 6 were shutdown for maintenance at the time of the earthquake. Unit 1 is a BWR 2 (aka NMP1/OC) and Units 2 and 3 are BWR 3/4s (aka Pilgrim / VY).

The earthquake took out offsite power and caused the 3 units to scram as designed. The 35 ft Tsunami swept away the EDG fuel oil tanks (apparently the design is elevated tanks, not buried) so the site was without power. The isolation condensers cooled U1 for a while until they ran out of water (I guess no makeup available w/o power) and RCIC ran on Units 2&3. RCIC was lost on both units in about five hours; however, a backup battery was obtained / used to keep RCIC running on U2 a while longer (don't know current status).

Without cooling, there was some core damage in all three units (U2 if not already damaged, will be). The Zircaloy reaction generated hydrogen which passed through the SRVs to the torus. The primary containment was vented to relieve pressure, and the H2 accumulated in the secondary containment. Again, without power, there was no way to get rid of the H2. Eventually, the H2 ignited on Unit 1 and 3 and took out secondary containment (refuel floor sheet metal structure). I think it is a matter of time before we see the same thing happen on U2.

All three units have (or will have) core damage (amount unknown), and efforts are geared towards putting water into the reactor vessels. A temporary pit was dug and filled with seawater and boric acid and pumped to the reactor vessels (at least Units 1&3) using a fire truck. Unfortunately, that source was also lost. Haven't heard of backup plan.

Last known, the reactor vessels and primary containments were intact on all three units.

Jim Trapp was sent to Japan to follow.

When I hear more, I will pass it on.

REL

From: Shoop, Undine (*WRR*)
To: Brown, Frederick; Boger, Bruce
Cc: Westreich, Barry; Pedersen, Roger; Garry, Steven
Subject: RE: FOOD FOR THOUGHT As you make the lists MEDICAL SCREEN???
Date: Monday, March 14, 2011 1:56:14 PM

According to our RSO, KI for incident response is the prevue of NSIR. Roger said that they used to have it at the incident response center but he wasn't sure if they still had it since NSIR owns the program for preparing NRC responders for incidents (it may have expired and depending on the budget decision may not have been replaced.) Trish Milligan was responsible for it but I have not been able to get a hold of her. Someone from NSIR is helping me look for her.

If we need dosimeters, Steve Garry is the deputy RSO in NRR.

WRR

From: Brown, Frederick
Sent: Monday, March 14, 2011 1:37 PM
To: Boger, Bruce
Cc: Westreich, Barry; Pedersen, Roger; Shoop, Undine
Subject: RE: FOOD FOR THOUGHT As you make the lists MEDICAL SCREEN???

Roger is the RSO, but he is out for two weeks. We'll check on the deputy RSO.

WRR

From: Boger, Bruce
Sent: Monday, March 14, 2011 1:29 PM
To: Pedersen, Roger
Cc: Brown, Frederick; Westreich, Barry
Subject: FW: FOOD FOR THOUGHT As you make the lists MEDICAL SCREEN???

Roger, Are you still the RSO? Is there an NRC policy on providing KI to NRC staff?
Thanks, Bruce

WRR

From: Tracy, Glenn
Sent: Monday, March 14, 2011 1:26 PM
To: Boger, Bruce; Leeds, Eric; Billings, Sally; McDermott, Brian; Buchholz, Jeri
Cc: Cohen, Miriam; Virgilio, Martin
Subject: RE: FOOD FOR THOUGHT As you make the lists MEDICAL SCREEN???

Off of the top of my head, I would think our medical officer and perhaps the RSO for NRR?
I think we should have it available for our folks going over. Would you pursue from the RSO end of things? Thanks.

Jeri, please discuss with health center. (KI is the drug that protects the thyroid from radioactive iodine, as you may know.)

WRR

From: Boger, Bruce
Sent: Monday, March 14, 2011 1:11 PM
To: Tracy, Glenn; Leeds, Eric; Billings, Sally; McDermott, Brian
Cc: Cohen, Miriam; Virgilio, Martin
Subject: RE: FOOD FOR THOUGHT As you make the lists MEDICAL SCREEN???

4/39

Glenn, Who at the NRC would make the call as to whether these folks should be administered KI?

From: Tracy, Glenn 

Sent: Monday, March 14, 2011 11:37 AM

To: Leeds, Eric; Boger, Bruce; Billings, Sally; McDermott, Brian

Cc: Cohen, Miriam

Subject: FOOD FOR THOUGHT As you make the lists MEDICAL SCREEN???

Importance: High

FOOD FOR THOUGHT Do not forget that we need to ensure the folks we are choosing are medically/physically up to the task that is to be assigned to them as they potentially enter areas that will be of hardship wrt food, water, electricity, medicines, etc.

I would think that we should consider adding a medical screen before simply sending someone into the zone. They also NEED ALL of the their shots...cholera, etc, it would seem. I would not assume that someone is just ready to go...

I have already been having staff looking into the aspects of hazardous duty and other HR-related items as we had ginned up since the TTX for NLE. Also, contact with spouses at home, etc. Remember that DoD spends time to ensure someone is actually fit and ready before sending them into such a type of zone, if we are not sure of exactly how long or for what duration.

REL

From: Buchholz, Jeri
To: Billings, Sally; Tracy, Glenn; Boger, Bruce; Leeds, Eric; McDermott, Brian
Cc: Cohen, Miriam; Virgilio, Martin
Subject: RE: FOOD FOR THOUGHT As you make the lists MEDICAL SCREEN???
Date: Monday, March 14, 2011 2:19:00 PM

The Health Unit is not stocked with KI. Do we know who administered the KI to the employees who have already departed.

From: Billings, Sally
Sent: Monday, March 14, 2011 2:07 PM
To: Buchholz, Jeri; Tracy, Glenn; Boger, Bruce; Leeds, Eric; McDermott, Brian
Cc: Cohen, Miriam; Virgilio, Martin
Subject: RE: FOOD FOR THOUGHT As you make the lists MEDICAL SCREEN???

The 2 individuals already deployed were administered KI.

From: Buchholz, Jeri
Sent: Monday, March 14, 2011 1:28 PM
To: Tracy, Glenn; Boger, Bruce; Leeds, Eric; Billings, Sally; McDermott, Brian
Cc: Cohen, Miriam; Virgilio, Martin
Subject: RE: FOOD FOR THOUGHT As you make the lists MEDICAL SCREEN???

Dr. Cadoux has developed a plan. I will touch base with him to find out if KI is included in that plan and what his recommendation is on this issue.

From: Tracy, Glenn
Sent: Monday, March 14, 2011 1:26 PM
To: Boger, Bruce; Leeds, Eric; Billings, Sally; McDermott, Brian; Buchholz, Jeri
Cc: Cohen, Miriam; Virgilio, Martin
Subject: RE: FOOD FOR THOUGHT As you make the lists MEDICAL SCREEN???

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Subject: RE: FOOD FOR THOUGHT As you make the lists MEDICAL SCREEN???

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From: Tracy, Glenn
Sent: Monday, March 14, 2011 11:37 AM
To: Leeds, Eric; Boger, Bruce; Billings, Sally; McDermott, Brian
Cc: Cohen, Miriam
Subject: FOOD FOR THOUGHT As you make the lists MEDICAL SCREEN???

4/40

Importance: High

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REL

From: Shoop, Undine *NRR*
To: Boger, Bruce; Brown, Frederick
Cc: Westreich, Barry; Pedersen, Roger; Garry, Steven
Subject: RE: FOOD FOR THOUGHT As you make the lists MEDICAL SCREEN???
Date: Monday, March 14, 2011 3:17:22 PM

I have talked to Annette in NSIR (she helps Trish with the KI contract) and they gave the last of the KI tablets to Jim and Tony this past weekend. However, because of less reliance on the thyroid as you age and a sensitivity to KI with age, it is not recommended that individuals over 40 take KI unless they are exposed to levels above 500 rem.

FDA recommends:

Finally, anyone over 40 should be treated with KI only if the predicted exposure is high enough to destroy the thyroid and induce lifelong hypothyroidism (thyroid deficiency).

Therefore, we need to be clear to NRC responders about when to use KI.

Undine

From: Boger, Bruce *NRR*
Sent: Monday, March 14, 2011 1:51 PM
To: Brown, Frederick
Cc: Westreich, Barry; Pedersen, Roger; Shoop, Undine
Subject: RE: FOOD FOR THOUGHT As you make the lists MEDICAL SCREEN???

Thanks. The NRC doctor wants the NRC to make the call. Trish Milligan might also have some insights.

From: Brown, Frederick *NRR*
Sent: Monday, March 14, 2011 1:37 PM
To: Boger, Bruce
Cc: Westreich, Barry; Pedersen, Roger; Shoop, Undine
Subject: RE: FOOD FOR THOUGHT As you make the lists MEDICAL SCREEN???

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From: Boger, Bruce *NRR*
Sent: Monday, March 14, 2011 1:29 PM
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Cc: Brown, Frederick; Westreich, Barry
Subject: FW: FOOD FOR THOUGHT As you make the lists MEDICAL SCREEN???

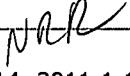
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Thanks, Bruce

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To: Boger, Bruce; Leeds, Eric; Billings, Sally; McDermott, Brian; Buchholz, Jeri
Cc: Cohen, Miriam; Virgilio, Martin
Subject: RE: FOOD FOR THOUGHT As you make the lists MEDICAL SCREEN???


4/4/11

Off of the top of my head, I would think our medical officer and perhaps the RSO for NRR?
I think we should have it available for our folks going over. Would you pursue from the RSO end of things? Thanks.

Jeri, please discuss with health center. (KI is the drug that protects the thyroid from radioactive iodine, as you may know.)

From: Boger, Bruce, 
Sent: Monday, March 14, 2011 1:11 PM
To: Tracy, Glenn; Leeds, Eric; Billings, Sally; McDermott, Brian
Cc: Cohen, Miriam; Virgilio, Martin
Subject: RE: FOOD FOR THOUGHT As you make the lists MEDICAL SCREEN???

Glenn, Who at the NRC would make the call as to whether these folks should be administered KI?

From: Tracy, Glenn, 
Sent: Monday, March 14, 2011 11:37 AM
To: Leeds, Eric; Boger, Bruce; Billings, Sally; McDermott, Brian
Cc: Cohen, Miriam
Subject: FOOD FOR THOUGHT As you make the lists MEDICAL SCREEN???
Importance: High

FOOD FOR THOUGHT Do not forget that we need to ensure the folks we are choosing are medically/physically up to the task that is to be assigned to them as they potentially enter areas that will be of hardship wrt food, water, electricity, medicines, etc.

I would think that we should consider adding a medical screen before simply sending someone into the zone. They also NEED ALL of the their shots...cholera, etc, it would seem. I would not assume that someone is just ready to go...

I have already been having staff looking into the aspects of hazardous duty and other HR-related items as we had ginned up since the TTX for NLE. Also, contact with spouses at home, etc. Remember that DoD spends time to ensure someone is actually fit and ready before sending them into such a type of zone, if we are not sure of exactly how long or for what duration.

REL

From: Buchholz, Jeri
To: Tracy, Glenn; Boger, Bruce; Leeds, Eric; Billings, Sally; McDermott, Brian; Wiggins, Jim
Cc: Cohen, Miriam; Meighan, Sean
Subject: RE: FOOD FOR THOUGHT As you make the lists MEDICAL SCREEN???
Date: Monday, March 14, 2011 1:05:51 PM

Please be sure to keep Jeanne Dempsey in the loop as she is the program manager for Health Services and is responsible for any programmatic or contracting issues that may arise to support this effort.

From: Tracy, Glenn
Sent: Monday, March 14, 2011 1:04 PM
To: Boger, Bruce; Leeds, Eric; Billings, Sally; McDermott, Brian; Wiggins, Jim
Cc: Cohen, Miriam; Buchholz, Jeri; Meighan, Sean
Subject: Re: FOOD FOR THOUGHT As you make the lists MEDICAL SCREEN???

Thanks. When complete, request you send list to OHR as there are a few other items to consider for these folks re support and potential benefits. Thanks so much.

From: Boger, Bruce
To: Tracy, Glenn; Leeds, Eric; Billings, Sally; McDermott, Brian; Wiggins, Jim
Cc: Cohen, Miriam; Buchholz, Jeri; Meighan, Sean
Sent: Mon Mar 14 12:53:16 2011
Subject: RE: FOOD FOR THOUGHT As you make the lists MEDICAL SCREEN???

Good thinking. Sean Meighan is coordinating this effort and has contacted the health unit. The Doctor has the necessary shots, but needs to assess on an individual basis. Sean will follow-up after I have the final list of names.

From: Tracy, Glenn
Sent: Monday, March 14, 2011 12:18 PM
To: Tracy, Glenn; Leeds, Eric; Boger, Bruce; Billings, Sally; McDermott, Brian; Wiggins, Jim
Cc: Cohen, Miriam; Buchholz, Jeri
Subject: RE: FOOD FOR THOUGHT As you make the lists MEDICAL SCREEN???

We are alerting the health center to support those you have chosen for the mission we envision to the best of their ability. Thanks

From: Tracy, Glenn
Sent: Monday, March 14, 2011 11:37 AM
To: Leeds, Eric; Boger, Bruce; Billings, Sally; McDermott, Brian
Cc: Cohen, Miriam
Subject: FOOD FOR THOUGHT As you make the lists MEDICAL SCREEN???
Importance: High

FOOD FOR THOUGHT Do not forget that we need to ensure the folks we are choosing are medically/physically up to the task that is to be assigned to them as they potentially enter areas that will be of hardship wrt food, water, electricity, medicines, etc.

I would think that we should consider adding a medical screen before simply sending

4/42

someone into the zone. They also NEED ALL of the their shots...cholera, etc, it would seem. I would not assume that someone is just ready to go...

I have already been having staff looking into the aspects of hazardous duty and other HR-related items as we had ginned up since the TTX for NLE. Also, contact with spouses at home, etc. Remember that DoD spends time to ensure someone is actually fit and ready before sending them into such a type of zone, if we are not sure of exactly how long or for what duration.

NAN

From: Nguyen, Quynh
To: Stone, Rebecca
Cc: McDermott, Brian; Brenner, Eliot; Leeds, Eric; Boger, Bruce; Grobe, Jack; Couret, Ivonne; Azeem, Almas; Cartwright, William; Cusumano, Victor; Heida, Bruce; Mahoney, Michael; Meighan, Sean; Nguyen, Quynh; Roquecruz, Carla; Susco, Jeremy; Titus, Brett; Valentine, Nicholee; Wertz, Trent
Subject: FW: (Action) Tsunami Fact Sheet - NUREG issued in March 2009 Link
Date: Monday, March 14, 2011 5:34:31 PM

Rebecca,

I understand Eliot's requirements. Ivonne can attest to how quickly we can modify the SharePoint site to fulfill needs.

REU
Per Eric Leeds' direction, I have set up the SharePoint Portal (It resides in its current location so I can serve as Site Administrator. Later on, we can set up links to point to it at appropriate locations.)

It is a document library. I have given you Contributor rights (let me know who else in NSIR/OPA needs it).

I can change descriptions, columns (heading names, add/subtract), and will prepare how to "search" guidance.

"FAQ Related to Events Occurring in Japan"

<http://portal.nrc.gov/edo/nrr/NRR%20TA/FAQ%20Related%20to%20Events%20Occuring%20in%20Japan/Forms/AllItems.aspx>

Again, Eric wants to go "live" by the end-of-the-week so Regions and other internal stakeholders can access the information. Any idea when we will start populating?

Thanks,
Quynh

NSIR

From: Stone, Rebecca
Sent: Monday, March 14, 2011 4:25 PM
To: Nguyen, Quynh
Cc: Meighan, Sean
Subject: FW: (Action) Tsunami Fact Sheet - NUREG issued in March 2009 Link

Quynh,

I have been coordinating with Brian McDermott and Eliot Brenner and here is what we have come up with. You are to go ahead and begin building the site. It should be READ ONLY (this is very important because OPA doesn't want anybody to change what they have approved) and have search capabilities. When Eliot or his team approve a Q&A or Talking Points document, they will send it to an Ops Center email address. Only a few specified people will be able to access this address. These same people (and only these people) will have the capability to upload to the SharePoint site. That way, anyone can see our internal information as it becomes available without changing it.

It is important to note that Eliot has tentatively approved this plan. He is going to check with some people to make sure this is a acceptable course of action. I will get back to you with an update tomorrow.

Rebecca Stone

Response Program
Office of Nuclear Security and Incident Response
U.S. Nuclear Regulatory Commission
301-415-5634 (Office)
e-mail: Rebecca.Stone@nrc.gov

NAN

From: Nguyen, Quynh
Sent: Monday, March 14, 2011 4:02 PM
To: Stone, Rebecca
Subject: FW: (Action) Tsunami Fact Sheet - NUREG issued in March 2009 Link

Rebecca,

OK, here's the official tasking... Sorry for putting you on the spot – Eric Leeds (NRR Office Director) was in my office. Jack Grobe is my direct supervisor.

Sean Meighan is my equivalent so keep him in the loop as you gather the requested documents.

I will set up the SharePoint and give you Contributor Rights.

I'll be out on Thursday as I'll be celebrating St. Patty's Day and March Madness (I'm gonna be at the opening rounds at Verizon – I hope there is a team I dislike so I can distract them at the foul line!).

Given recent events, I'll have to be good so I can come back to the office on Friday!

release
4/43

Quynh

From: Leeds, Eric
Sent: Monday, March 14, 2011 3:39 PM
To: Grobe, Jack; Virgilio, Martin; Weber, Michael
Cc: Nguyen, Quynh; Ruland, William; Skeen, David; Brown, Frederick; Brenner, Eliot; Collins, Elmo; Dean, Bill; Satorius, Mark; McCree, Victor; Schmidt, Rebecca; Boger, Bruce
Subject: FW: (Action) Tsunami Fact Sheet - NUREG issued in March 2009 Link

FYI – I've asked Quynh Nguyen to work with the Ops Center to create a share-point site to house our Q&As from the Japanese quake and tsunami. Attached is a list of Q&As we created during the last tsunami, which we should consider. The regions requested Q&As to support their EOC meetings next week with members of the public. I'd like to have something completed by the end of the week for the regions.

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

From: Boger, Bruce
Sent: Monday, March 14, 2011 9:21 AM
To: Leeds, Eric
Subject: FW: (Action) Tsunami Fact Sheet - NUREG issued in March 2009 Link

FYI—this is a knowledge management challenge. We've collected information in the past, but we have to drag it out and it's not available in the Ops center.

From: King, Mark
Sent: Monday, March 14, 2011 7:23 AM
To: Boger, Bruce; Brown, Frederick; Thorp, John
Cc: Thomas, Eric
Subject: RE: (Action) Tsunami Fact Sheet - NUREG issued in March 2009 Link

I think the attached is what Bruce is referring to – a natural phenomena limitations document. See attached.

From: Boger, Bruce
Sent: Monday, March 14, 2011 7:20 AM
To: Brown, Frederick; King, Mark; Thorp, John
Cc: Thomas, Eric
Subject: RE: (Action) Tsunami Fact Sheet - NUREG issued in March 2009 Link

Great. Thanks. This is a start. I still remember something that was created to provide some plant-specific protection information. (e.g., Diablo Canyon has some tsunami protection). I believe we explored west coast plants for tsunamis and east coast plants for hurricane flooding protection. If you can't find it easily (or if Bruce's gray matter failed again), please reach out to the west coast plant PMs to see what tsunami protection they have. I suspect we'll receive some cards and letters. Thanks again.

From: Brown, Frederick
Sent: Monday, March 14, 2011 7:10 AM
To: King, Mark; Thorp, John
Cc: Thomas, Eric; Boger, Bruce
Subject: RE: (Action) Tsunami Fact Sheet - NUREG issued in March 2009 Link

Thanks Mark

From: King, Mark
Sent: Monday, March 14, 2011 7:08 AM
To: Thorp, John; Boger, Bruce
Cc: Brown, Frederick; Thomas, Eric
Subject: RE: (Action) Tsunami Fact Sheet - NUREG issued in March 2009 Link

We had a NUREG issued on this subject back in March 2009.

TSUNAMI HAZARD ASSESSMENT AT NUCLEAR POWER PLANT SITES IN THE UNITED STATES OF AMERICA
Click link to view: [\[NUREG/CR-6966\]](#)

<http://pbadupws.nrc.gov/docs/ML0915/ML091590193.pdf>

From: Thorp, John
Sent: Monday, March 14, 2011 6:57 AM
To: Boger, Bruce
Cc: Brown, Frederick; King, Mark; Thomas, Eric
Subject: RE: (Action) Tsunami Fact Sheet

We'll look for it; If we don't find it quickly, we'll start producing one. (Mark King, please start looking)

I take it we would define & describe the tsunami phenomena, then address which nuclear stations in the U.S. are located in areas subject to tsunami waves, and describe what we can regarding the design of plants to withstand tsunami impacts?

Thanks,

John

From: Boger, Bruce
Sent: Monday, March 14, 2011 6:48 AM
To: Thorp, John
Cc: Brown, Frederick
Subject: Tsunami Fact Sheet

I seem to recall that OpE developed a tsunami fact sheet? Should we dust it off?

REL

From: Sheron, Brian
To: Johnson, Michael; Holahan, Gary
Cc: Leeds, Eric; Virgilio, Martin; Borchardt, Bill; Grobe, Jack; Boger, Bruce; Williams, Donna; Wiggins, Jim
Subject: RE: Recommendation for proactive action by NRC in light of Japan events
Date: Monday, March 14, 2011 2:07:47 PM

It would be nice if the industry was even more proactive, by having NEI send us a letter says something to the effect that in the wake of the Japanese disaster here is a list of all the things the commercial U.S. nuclear licensees are doing. Hopefully this would be the kind of stuff Gary mentioned, and maybe other stuff as well.

REL

From: Johnson, Michael
Sent: Monday, March 14, 2011 2:02 PM
To: Holahan, Gary
Cc: Leeds, Eric; Virgilio, Martin; Borchardt, Bill; Grobe, Jack; Boger, Bruce; Sheron, Brian; Williams, Donna; Wiggins, Jim
Subject: RE: Recommendation for proactive action by NRC in light of Japan events

Thanks Gary. NRR's lead of course. I like the idea using this as an opportunity to highlight the importance of previous requirements/actions as a proactive step. We will need to think about the correct vehicle. I also like having industry involved up front in whatever we decide to do.

INDO-

From: Holahan, Gary
Sent: Monday, March 14, 2011 1:55 PM
To: Johnson, Michael
Cc: Leeds, Eric; Virgilio, Martin; Borchardt, Bill; Grobe, Jack; Boger, Bruce; Sheron, Brian; Williams, Donna; Wiggins, Jim
Subject: Recommendation for proactive action by NRC in light of Japan events

Mike,

The events in Japan reinforce the importance of preparedness for the unexpected. In that light, I suggest that NRC take some form of proactive step to reinforce both the Severe Accident Management Guidelines and the 50.54 (hh) (formerly B.5.b) protection for "Loss of Large Area of the plant from fires and explosions".

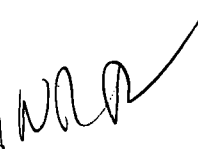
50.54 (hh) seems particularly relevant, stating "Each licensee shall develop and implement guidance and strategies intended to maintain or restore core cooling, containment, and spent fuel pool cooling capabilities under the circumstances associated with loss of large areas of the plant due to explosions or fire..."

The NRC could issue Orders, Bulletins, or letters on an expedited basis (in the next few days) to require or encourage licensees to confirm their readiness to implement the severe accident management guidance and strategies under 50.54 (hh). This would not involve any new requirements, but would simply reinforce the existing requirements.

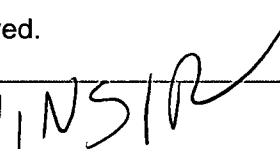
I recommend that we coordinate this activity with the industry to ensure their full and early cooperation. This would be similar to the level of cooperation we undertook for the security bulletins following 9/11.

4/24/11

Gary

From: Boger, Bruce 
To: Meighan, Sean
Subject: FW: ACTION: *URGENT CHANGE* Provide Japan Input to Eric Leeds By 1100 EDT L
Date: Monday, March 14, 2011 10:54:00 AM

REL Here's the email version of the call I just received.

From: ANS.HOC@nrc.gov [mailto:ANS.HOC@nrc.gov] 
Sent: Monday, March 14, 2011 10:50 AM
Subject: ACTION: *URGENT CHANGE* Provide Japan Input to Eric Leeds By 1100 EDT L

****URGENT CHANGE**** Please provide input to Sean Meighan by 1100 EDT today, 3/14/11, concerning the trip to Japan. Call 301-816-5100 if you have questions. Sean may be reached at 301-415-1020. 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.

4/45

NS/R

From: Evans, Michele
To: Ruland, William; Leeds, Eric; Boger, Bruce
Cc: Schwarz, Sherry
Subject: RE: Confirmation of names for Japan
Date: Monday, March 14, 2011 2:18:23 PM

Bruce,

If there is an additional person going, please provide that name to the IRC Liaison team at these email addresses.

REL
LIA02 HOC and

LIA03 HOC

Thanks

Michele

NR

From: Ruland, William
Sent: Monday, March 14, 2011 2:11 PM
To: Evans, Michele; Christensen, Harold
Subject: FW: Confirmation of names for Japan

NR

From: Leeds, Eric
Sent: Monday, March 14, 2011 1:11 PM
To: Collins, Elmo; Satorius, Mark; McCree, Victor; Dean, Bill; Sheron, Brian; Tracy, Glenn; Hudson, Jody; Johnson, Michael; Miller, Charles; Haney, Catherine; Zimmerman, Roy; Stewart, Sharon; Virgilio, Martin; Weber, Michael; Borchardt, Bill; Mamish, Nader; Doane, Margaret; Muesle, Mary
Cc: Boger, Bruce; Grobe, Jack; Ruland, William; Meighan, Sean
Subject: Confirmation of names for Japan

Folks –

Thanks so much for your help – we have a strong database of names/expertise to support the Japanese. For this first wave, we are sending Chuck Casto, John Monninger, Tony Nakanishi, Tim Kolb, Jack Foster and Richard Devercelly. I believe that Bruce Boger has contacted all those going to join Tony Ulsis and Jim Trapp in Japan.

I imagine that at some point we may need to send a second wave of responders to relieve our first wave. We will let you know as soon as we know if this needs to be done. We are also sensitive not to over-burden any one office.

Thanks again for your support!

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

re/keep &

4/46

DIP

From: Mamish, Nader
To: Meighan, Sean; Leeds, Eric; Boger, Bruce
Cc: Foggie, Kirk; Smith, Brooke
Subject: RE: KI for Japan deployment
Date: Monday, March 14, 2011 2:46:09 PM

If we had a disaster at a US plant, the NRC's policy is to follow the lead of the States (US States). In this case, we suggest that the team follow the Japanese Government policy.

Brooke/Kirk: Could you please communicate to the rest of the team?

Thanks

REL

From: Meighan, Sean
Sent: Monday, March 14, 2011 2:09 PM
To: Mamish, Nader; Leeds, Eric; Boger, Bruce
Subject: KI for Japan deployment

Nader:

Dr. Cadoux asked the question "what will we do with respect to Potassium Iodide for those who will be going to Japan?" We currently do not have a stance on this. What is your suggestion/direction?

Very Respectfully
Sean Meighan
415-1020

4/47

From: Weber, Michael , EDO
To: Dorman, Dan; Haney, Catherine
Cc: Kinneman, John; Leeds, Eric; Boger, Bruce; Frazier, Alan; McIntyre, David; Burnell, Scott
Subject: FYI - MOX Alert - TVA, Energy Northwest & Exploding Japanese MOX Reactor
Date: Monday, March 14, 2011 3:14:52 PM

REL
From: tomclements329@cs.com <tomclements329@cs.com>
To: tomclements329@cs.com <tomclements329@cs.com>
Sent: Mon Mar 14 10:48:46 2011
Subject: MOX Alert - TVA, Energy Northwest & Exploding Japanese MOX Reactor

MOX Alert - Energy Northwest and TVA MOX Plans & Exploding Japanese MOX Reactor

Energy Northwest, TVA and DOE officials have remained virtually silent about secret plans to use experimental weapons-grade plutonium fuel (MOX) in the Columbia Generating Station. It is noted that the Fukushima Daiichi Unit 3 exploding reactor is partially loaded with a first batch of reactor-grade MOX, thus making radioactive release potentially worse. Weapons-grade MOX has never even been tested in a boiling water reactor (BWR) and DOE is planning to use it in the GE Mark I design (Browns Ferry and Fukushima Daiichi 1-3 reactors) and GE Mark II (CGS). We will continue efforts to reveal information about this program to the US public.

Tom Clements
Friends of the Earth

top of homepage - Salem, OR

<http://salem-news.com/>

<http://salem-news.com/articles/march142011/nuke-reactor-wash.php>

Mar-14-2011 03:05

Secret Plan Exposed to Use Surplus Weapons Plutonium in Washington State Nuclear Reactor

Salem-News.com

FOIA Documents Reveal Energy Northwest Plans Plutonium Fuel (MOX) Experiments While Seeking to Control Information Leaks to the Media.

See original Feb. 3, 2011 news release on Friends of the Earth website:

Secret Plan Exposed to Use Surplus Weapons Plutonium in Washington State Nuclear Reactor

<http://www.foe.org/secret-plan-exposed-use-surplus-weapons-plutonium-washington-state-nuclear-reactor>

###

distributed nationally:

from Experts Comment on U.S. Implications of Japanese Reactor Crisis

March 14, 2011

4/48

<http://www.foe.org/experts-comment-us-implications-japanese-reactor-crisis>

MOX section:

As in Japan's Fukushima Unit 3, the use of plutonium fuel (MOX) in U.S. reactors poses special radiation and safety risks. One of the Japanese reactors under risk of continued fuel melting or explosion is now operating for the first time with part of the core being plutonium fuel. This plutonium mixed oxide (MOX) fuel, shipped from Europe and inserted in Fukushima Unit 3 in September 2010, poses greater risks than traditional uranium fuel. MOX, made from plutonium which is capable of being used in nuclear weapons, is harder to control during reactor operation and results in a more serious radiation release in the event of an accident. The plutonium in the MOX is a result of the reprocessing of Japanese spent fuel and that reprocessing program. MOX use has long been opposed by public interest groups due to safety, cost and non-proliferation concerns.

Tom Clements, Southeastern nuclear campaign coordinator, Friends of the Earth, said: "In the U.S., the Department of Energy is considering use of MOX fuel in the Tennessee Valley Authority's Browns Ferry reactors, of the same aging Mark I boiling water reactor design as Fukushima Unit 3. Analysis by the Tennessee Valley Authority of unsafe MOX fuel made from surplus weapons plutonium must be halted and the \$850 million request related to this in President Obama's FY2012 must be rejected. The cost of the MOX plant now under construction at the Department of Energy's Savannah River Site has skyrocketed from \$1.4 billion in FY 2004 to \$4.9 billion in FY 2009 and has become a program driven by special interests that profit from it."

See http://www.fissilematerials.org/blog/2011/03/us_plutonium_disposition_.html and <http://www.foe.org/secret-plan-exposed-use-surplus-weapons-plutonium-washington-state-nuclear-reactor>.

Contact Tom Clements at 803-834-3084 (landline).

Taylor, Renee

From: Borchardt, Bill
Sent: Monday, March 14, 2011 12:21 PM
To: Ellmers, Glenn
Subject: RE: Chairman's earthquake message

I think you can send the Chairman's draft over.

From: Ellmers, Glenn
Sent: Monday, March 14, 2011 12:13 PM
To: Borchardt, Bill
Subject: RE: Chairman's earthquake message

Not yet. Mindy wanted you to see it first. Am drafting your Update now.

From: Borchardt, Bill
Sent: Monday, March 14, 2011 12:05 PM
To: Ellmers, Glenn
Subject: RE: Chairman's earthquake message

Thanks. I assume that you have given it to the Chairman's office.

From: Ellmers, Glenn
Sent: Monday, March 14, 2011 11:08 AM
To: Borchardt, Bill
Subject: Chairman's earthquake message

Bill,
A draft for the Chairman. We thought the Update from you would talk about robustness and design bases in U.S. plants.

--

All of us are aware of the tragic earthquake and tsunami that struck northern Japan last week, killing thousands of people, destroying massive amounts of infrastructure, and knocking out large portions of the electricity grid. In addition, a very serious situation has developed at the Fukushima nuclear reactor site. Of the six reactors at Fukushima, three were operating at the time the earthquake struck, while the other three were undergoing refueling shutdowns. Two of the reactors that were operating have since experienced explosions in the reactor buildings and continue to face challenges to cool the cores. It is not for the NRC to speak for the Japanese or United States governments, so I won't comment on the situation in any greater detail. Additional information can be obtained from the International Atomic Energy Agency and the USAID, a part of the State Department that is coordinating the U.S. response and assistance efforts. I will add, however, that the tsunami did not affect any nuclear power plants on the West Coast, and the radiation release at Fukushima does not pose any danger to any part of the United States, including Alaska and Hawaii.

Rest assured that the NRC is closely monitoring the situation. Senior agency managers have been staffing in the Operations Center in rotations on a 24-hour basis since Friday. Over the weekend, we sent two experts on boiling water reactors (the types of reactors at Fukushima) to Japan to provide technical assistance. We are currently in the process of selecting an additional team to provide more help.

It is possible that some of you will be requested by colleagues in another country to provide technical advice and assistance during this emergency. It is essential that all such communications be handled through the NRC Operations

Center. If you receive such a request, contact the NRC Operations Officer (301-816-5100 or via the NRC Operator) immediately. All media calls should be forwarded to the Office of Public Affairs (301-415-8200).

If you receive information regarding this or any emergency (foreign or domestic) and you are not certain that the NRC's Incident Response Operations Officer is already aware of that information, you should contact the NRC Operations Officer (301-816-5100 or via the NRC Operator) and provide that information.

We will keep you informed if there are any significant new developments.

Glenn Ellmers
Senior Communications Specialist, OEDO
301-415-0442
OWFN - 17F03
Mail stop: 016E15

Ellmers, Glenn

From: Ellmers, Glenn
Sent: Monday, March 14, 2011 1:46 PM
To: Loyd, Susan; Batkin, Joshua; Coggins, Angela
Subject: Draft Chairman message on Japan

Draft EDO Update to follow...

--

All of us are aware of the tragic earthquake and tsunami that struck northern Japan last week, killing thousands of people, destroying massive amounts of infrastructure, and knocking out large portions of the electricity grid. In addition, a very serious situation has developed at the Fukushima nuclear reactor site. Of the six reactors at Fukushima, three were operating at the time the earthquake struck, while the other three were undergoing refueling shutdowns. Two of the reactors that were operating have since experienced explosions in the reactor buildings and continue to face challenges to cool the cores. It is not for the NRC to speak for the Japanese or United States governments, so I won't comment on the situation in any greater detail. Additional information can be obtained from the International Atomic Energy Agency and the USAID, a part of the State Department that is coordinating the U.S. response and assistance efforts. I will add, however, that the tsunami did not affect any nuclear power plants on the West Coast, and the radiation release at Fukushima does not pose any danger to any part of the United States, including Alaska and Hawaii.

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We will keep you informed if there are any significant new developments.

Glenn Ellmers
Senior Communications Specialist, OEDO
301-415-0442
OWFN - 17F03
Mail stop: 016E15

Taylor, Renee

From: Borchardt, Bill
Sent: Monday, March 14, 2011 3:28 PM
To: Ellmers, Glenn
Cc: Muessle, Mary
Subject: RE: draft EDO Update
Attachments: EDO draft 2 update March 14 2011 .docx

Please see the attached. I'd still like to get the DEDO's comments.

From: Ellmers, Glenn
Sent: Monday, March 14, 2011 1:49 PM
To: Borchardt, Bill
Cc: Muessle, Mary
Subject: draft EDO Update

I believe that everyone at the agency shares my deep condolences to the enormous number of people in Japan killed or suffering from the effects the earthquake and tsunami. As the Chairman said in his message earlier today, we are closely monitoring the situation and providing whatever assistance is being asked. We have already sent to Japan two staff members who are experts in the reactor technology used at the Fukushima site. We are now preparing to send a larger team of technical assistants to the American embassy in Tokyo to coordinate with the Japanese regulators. Not surprisingly, the Congressional hearing scheduled for this Wednesday, which was originally to focus on our Fiscal Year 2012 budget, will now be primarily focused on the events in Japan.

Notwithstanding the significance of what is occurring in Japan, we still have our mission to carry out, and with the exception of the small number of people who have been directly called upon to respond to this situation we should all proceed with previously planned activities. We will continue to process licensing actions, conduct inspections, and fulfill our regulatory responsibilities.

Since the question is being raised frequently in the media and elsewhere, let me say a word about what this situation means for nuclear power plants in the United States. In accordance with NRC regulations, every American nuclear power plant is designed with multiple, redundant safety systems to be robust enough to withstand the risks associated with its specific location. In other words, the NRC analyzes every reactor site for own specific features and potential hazards, and requires the plant to be designed and operated accordingly. But in calculating risks, a certain level of uncertainty is always present. To compensate for these uncertainties, the NRC enforces "defense in depth"—an approach to safety where multiple and redundant layers of protection are used to prevent accidents, mitigate consequences, and reduce uncertainty. While it is impossible to say what would happen to an American nuclear power plant under similar circumstances, we do know that these facilities are among the most robust and well-protected civilian structures in the country.

Let me express my thanks to the staff in the Operations Center who have stayed on top of the situation 24 hours a day since the earthquake hit. I'd also like to thank those who have had to compensate for their colleagues who have been called away from their regular duties.

We will keep you informed of any breaking developments.

Glenn Ellmers
Senior Communications Specialist, OEDO
301-415-0442
OWFN - 17F03

Mail stop: 016E15

Ellmers, Glenn

From: Ellmers, Glenn
Sent: Monday, March 14, 2011 3:32 PM
To: Weber, Michael; Virgilio, Martin; Ash, Darren; Batkin, Joshua; Coggins, Angela; Loyd, Susan; Landau, Mindy
Subject: EDO Update with Bill's edits

Comments welcome:

--

We are all saddened about the tragic events in Japan. Our thoughts and prayers go out to all of those affected by the earthquake and tsunami. The serious nuclear power plant issues have obviously been a special focus of the NRC. As the Chairman said in his message earlier today, we are closely monitoring the situation and providing requested assistance. We have already sent two staff members to Japan who are BWR experts (the technology used at the Fukushima site). We are now sending a larger team of NRC staff to help the American embassy in Tokyo and to coordinate with the Japanese regulators. Not surprisingly, the Congressional hearing scheduled for this Wednesday, which was originally to focus on our Fiscal Year 2012 budget, will now be primarily focused on the events in Japan.

Notwithstanding the significance of what is occurring in Japan, we still have our domestic mission to carry out, and with the exception of the small number of people who have been directly called upon to respond to this situation we should all proceed with previously planned activities. We will continue to process licensing actions, conduct inspections, and fulfill our regulatory responsibilities.

In accordance with NRC regulations, every American nuclear power plant is designed with multiple, redundant safety systems to be robust enough to withstand the seismic and natural event risks associated with its specific location. In other words, the NRC analyzes every reactor site for own specific features and potential hazards, and requires the plant to be designed and operated accordingly. But in calculating risks, a certain level of uncertainty is always present. To compensate for these uncertainties, the NRC utilizes the concept of "defense in depth"—an approach to safety where multiple, diverse and redundant layers of protection are used to prevent accidents and mitigate consequences. While it is inappropriate to speculate on what would happen to an American nuclear power plant under similar circumstances to the Japan event, we do know that US nuclear facilities are among the most robust and well-protected civilian structures in the country.

Let me express my thanks to the staff in the Operations Center who have stayed on top of the situation 24 hours a day since the earthquake hit. I'd also like to thank those who have had to compensate for their colleagues who have been called away from their regular duties.

I'll keep you informed of ongoing developments.

Glenn Ellmers
Senior Communications Specialist, OEDO
301-415-0442
OWFN - 17F03
Mail stop: 016E15

From: Boger, Bruce
To: Brown, Frederick
Cc: Westreich, Barry; Ashley, MaryAnn; Cartwright, William; Elliott, Robert; Franovich, Rani; Kobetz, Timothy; McHale, John; Shoop, Undine; Thorp, John
Subject: RE: Protracted RST Watch Bill - Extended to Friday March 18th
Date: Monday, March 14, 2011 7:22:00 AM

OK, thanks.

From: Brown, Frederick
Sent: Monday, March 14, 2011 7:19 AM
To: Boger, Bruce
Cc: Westreich, Barry; Ashley, MaryAnn; Cartwright, William; Elliott, Robert; Franovich, Rani; Kobetz, Timothy; McHale, John; Shoop, Undine; Thorp, John
Subject: FW: Protracted RST Watch Bill - Extended to Friday March 18th

Bruce,

I'll probably not come in on Tuesday or Thursday morning, but will come in early enough in the afternoon to be able to answer questions. Barry will get an opportunity to jump right in ☺

Fred

From: RST01 Hoc
Sent: Sunday, March 13, 2011 9:47 PM
To: Case, Michael; Skeen, David; Ruland, William; Hiland, Patrick; Brown, Frederick; Dudes, Laura; Rini, Brett; Alter, Peter; Hasselberg, Rick; Morlang, Gary; Collins, Frank; Thomas, Eric; Cheok, Michael; Circle, Jeff; Dube, Donald; Brown, Eva; Circle, Jeff; Esmaili, Hossein; Dube, Donald; Laur, Steven; Schaperow, Jason; Fuller, Edward; Salay, Michael; Kolb, Timothy; Shea, James; Isom, James; Bloom, Steven; Padovan, Mark; Williams, Joseph; Williams, Donna; Hart, Ken; Dozier, Jerry
Subject: Protracted RST Watch Bill - Extended to Friday March 18th

RST Members...

We have been instructed to expand the list of RST responders that we are pulling into shift work. The shifts have been extended until Friday night. Here is the proposed watch bill. PLEASE DROP BY THE RST ROOM OR CALL THE RST ON-DUTY COORDINATOR AT 301-816-5100 WITH ISSUES AND CONCERNS. Don't call Rick - He'll be sleeping!!!!

Reactor Safety Team Protracted Event Staffing for Japanese Earthquake Response

Team Position	RST Director	RST Coordinator	Accident Analyst	BWR Expert	RST Communicator
03/13/11 Day 0700 - 1500	Pat Hiland	Peter Alter	Jeff Circle	Tim Kolb	Joe Williams
03/13/11 Swing 1500 - 2300	Fred Brown	R. Hasselberg	Hossein Esmaili	C. Norton	Ken Hart
03/13/11 Mid 2300 - 0700	Dave Skeen	Mike Morlang	Mike Cheok	Eva Brown	none
03/14/11 Day 0700 - 1500	Laura Dudes	Peter Alter	Jeff Circle	Tim Kolb	Steve Bloom
03/14/11 Swing 1500 - 2300	Bill Ruland	R. Hasselberg	Don Dube	C. Norton	Mark Padovan
03/14/11 Mid 2300 - 0700	Mike Case	Brett Rini	Steve Laur	Eva Brown	Jerry Dozier
03/15/11 Day 0700 - 1500	Dave Skeen	Peter Alter	Jeff Circle	Jim Shea	Donna Williams
03/15/11 Swing	Fred Brown	Frank Collins	Hossein	C. Norton	Jim Isom

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1500 - 2300			Esmaili		
03/15/11 Mid 2300 - 0700	Pat Hiland	Mike Morlang	J. Schaperow	Eva Brown	Ken Hart
03/16/11 Day 0700 - 1500	Laura Dudes	R. Hasselberg	Ed Fuller	Tim Kolb	Joe Williams
03/16/11 Swing 1500 - 2300	Bill Ruland	Eric Thomas	Mike Salay	C. Norton	Steve Bloom
03/16/11 Mid 2300 - 0700	Mike Case	Brett Rini	Mike Cheok	Eva Brown	Mark Padovan
03/17/11 Day 0700 - 1500	Dave Skeen	Frank Collins	Don Dube	Jim Shea	Donna Williams
03/17/11 Swing 1500 - 2300	Fred Brown	Mike Morlang	Steve Laur	C. Norton	Jerry Dozier
03/17/11 Mid 2300 - 0700	Pat Hiland	Eric Thomas	Jeff Circle	Eva Brown	Ken Hart
03/18/11 Day 0700 - 1500	Laura Dudes	Peter Alter	Hossein Esmaili	Tim Kolb	Jim Isom
03/18/11 Swing 1500 - 2300	Bill Ruland	Brett Rini	J. Schaperow	C. Norton	Steve Bloom

Rihm, Roger

From: Rihm, Roger
Sent: Monday, March 14, 2011 3:58 PM
To: Hiland, Patrick
Subject: I've got OCA checking with Chmn staff for any addtl info on graphics to guide search EOM

4/54

From: Hiland, Patrick
Sent: Monday, March 14, 2011 4:03 PM
To: Thomas, Eric
Subject: FW: I've got OCA checking with Chmn staff for any addtl info on graphics to guide search EOM

fyi

From: Rihm, Roger
Sent: Monday, March 14, 2011 3:58 PM
To: Hiland, Patrick
Subject: I've got OCA checking with Chmn staff for any addtl info on graphics to guide search EOM

Weber, Michael

From: Weber, Michael
Sent: Monday, March 14, 2011 2:59 PM
To: Cianci, Sandra
Subject: Response - Marty/Mike's Schedule

Thanks

From: Cianci, Sandra
To: Taylor, Renee; Garland, Stephanie; Hasan, Nasreen
Cc: Virgilio, Martin; Weber, Michael
Sent: Mon Mar 14 13:47:42 2011
Subject: Marty/Mike's Schedule

Marty's trip to Vienna is canceled.

Ops Center Coverage as follows (Noted on calendars)

Mike - Tuesday and Thursday (Day shift)

Marty - Wednesday and Friday (Day Shift)

Sandy Cianci

*Administrative Assistant to Marty Virgilio, DEDR
Office of the Executive Director for Operations
O-17 H13
301-415-1714
sandra.cianci@nrc.gov*

Weber, Michael

From: Weber, Michael
Sent: Monday, March 14, 2011 3:24 PM
To: LIA05 Hoc
Cc: Burnell, Scott
Subject: FYI - Nuke plant owner in Japan didn't plan for an 8.9 magnitude earthquake

From: GSN Homeland Security Insider <gsn@gsnmagazine.ccsend.com>
To: Weber, Michael
Sent: Mon Mar 14 08:40:39 2011
Subject: Nuke plant owner in Japan didn't plan for an 8.9 magnitude earthquake

GSN's
Daily

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TRAFFICKING



WEAPONS



DRUG
TRAFFICKING

Nuke plant owner in Japan didn't plan for an 8.9 magnitude earthquake

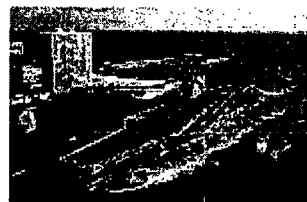
The possibility that an earthquake could cause cataclysmic damage to a nearby nuclear power plant is certainly not a new idea to top execs at the Tokyo Electric Power Company (TEPCO), which operates the Daiichi and Daini power stations located in the region hit by the devastating earthquake and tsunami on March 11.



In fact, ever since the major Niigata-Chuetsu-Oki earthquake struck Japan on July 16, 2007, TEPCO began implementing a series of measures to strength the Kashiwazaki-Kariwa power station (located 16 kilometers from that earlier earthquake's epicenter), and started a program to apply the same safety initiatives to the Fukushima Daiichi and Fukushima Daini plants as well.

[More](#)

DoD prepares earthquake response



Although the Japanese government hasn't officially asked for assistance in dealing with the aftermath of the 8.9 magnitude earthquake and tsunami on March 11, the Department of Defense said U.S. assistance is currently being readied in case such a request comes.

"We are assessing the situation and positioning forces so that they are ready to respond and provide disaster relief if directed," Navy Commander Leslie Hull-Ryde said in a statement issued by the Defense Department the morning of March 11. The DoD said U.S. ships -- including an aircraft carrier strike group -- were preparing to depart for the stricken area.

The request for assistance from Japan would come through the U.S. State Department. [More](#)

Pentax Pair 2 lenses now see clearly through heat, haze and shimmering



Pentax lenses with the company's PAIR (Pentax Atmospheric Interference Reduction) technology were created for difficult security applications such as desert military operations, border security, seaports and other homeland security applications. In a

major 2011 breakthrough, the PAIR 2 technology now enables the lens to see through heat, haze and shimmering -- a huge boon when you want to "see the threat before it sees you".

[See the video featuring Pentax sales engineer Luis Aguilar](#)

**New Video
Interviews on
GSNMagazine.com
from the 2011
RSA CONFERENCE**

Mike Armistead

VP HP Solutions
Co-Founder, Fortify

Rick Caccia

VP Product Marketing
ArcSight/HP Solutions

Pan Kamal

VP Marketing
Alert Enterprise

Peter Schlamm

VP Product Management
Solera Networks

Ashar Aziz

Founder, CEO, CTO
FireEye

Dr. Hugh Thompson

Program Committee Chair
RSA

Dr. Laura Mather

Founder/Product Manager
Silver Tail Systems

Todd Freyman

Director, Global Marketing
Solutions, ActivIdentity

Carl Herberger

VP Security Solutions
Radware U.S.

F. William Conner

President/CEO
Entrust, Inc.



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Washington offers earthquake assistance, FEMA warns on approaching tsunami

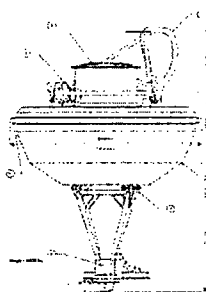
As government officials in Washington scrambled to help Japan in the aftermath of one of the most powerful earthquakes in history, the Federal Emergency Management Administration (FEMA) warned U.S. states and territories in and along the Pacific Ocean to brace for possible tsunamis.



The earthquake, centered off the east coast of Japan under the sea unleashed a 30 foot tsunami that swept inland along the Japanese coast. Early reports said as many as 300 bodies had been found along the coast. The death toll is expected to rise, possibly significantly.

The White House sent out a statement early on March 11 offering condolences and assistance to Japan, while U.S. emergency agencies prepared warnings and readied response for tsunamis generated by the massive temblor. [More](#)

Federal government spending funds to ready itself for another tsunami



The U.S. Government has been trying to prepare itself in recent months for another destructive tsunami by hiring a firm to deploy a tsunami measuring buoy off the coast of Chile, by awarding a contract to the University of Washington's Pacific Marine Environmental Laboratory to model tsunami hazards in the United States, and by getting ready to upgrade facilities maintained by the National Oceanic and Atmospheric Administration (NOAA) in Hawaii and the Pacific area.

Of course, none of those actions allowed the federal government to predict the earthquake that struck Japan on the morning of March 11, or fully anticipate the damages that the resulting tsunami could inflict in Hawaii, the Pacific islands, or the West Coast of the United States. [More](#)

Detecting tsunamis 20,000 feet below the sea

The first word the U.S. Government heard about the tsunami that was formed when an earthquake struck Japan on the morning on March 11 came when a pressure sensor sitting in about 20,000 feet of water on the bottom of the Pacific Ocean sent an acoustic signal to a tsunami buoy floating directly above it, on the surface of the water, which then transmitted an alert signal, via satellite, to the National Data Buoy Center (NDBC) located in Mississippi.



That tsunami buoy, one of 39 maintained around the world by the NDBC, simultaneously sent the same alert to two U.S. Tsunami Warning Centers -- one based in Hawaii and the other located in Alaska. Those warning centers are actually responsible for assessing the size and the potential impact of the tsunamis they monitor, Helmut Portmann, the director of the National Data Buoy Center told *Government Security News* on March 11. [More](#)



Army officers disciplined over Ft. Hood shootings

The U.S. Army has ordered disciplinary actions against nine unnamed officers for failing to do anything about the radicalization of accused Ft. Hood shooter Maj. Nidal Hasan that led to a mass shooting in 2009 at the Texas installation that killed 13.

Special Correspondent for IT and Cyber-security

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Army Secretary John McHugh "initiated adverse administrative action against nine officers for administrative and leadership failures relating to the career" of Hasan, according to an Army statement on March 10.

The Army didn't identify the officers, but said the degree of discipline would vary depending on each officer. [More](#)

Company News

Paradigm lands \$49 million DR deal with DoD

A blanket purchase agreement that could be worth as much as \$49 million was awarded by the U.S. Department of Defense on March 10 to Paradigm Holdings, of Rockville, MD, a provider of IT and cyber security solutions to federal agencies.



While there is no guaranteed minimum on the agreement, the company will be competing on delivery orders capped in the aggregate at \$49 million.

Under the deal, Paradigm will provide disaster recovery software solutions throughout the department including the defense secretary's office, all military departments, unified commands, inspector general's office, office of the chairman of the joint chiefs of staff, the Coast Guard, NATO and the intelligence community. [More](#)

Anti-virus software maker looking for testers



One of the oldest names in anti-virus software, G Data, will be launching a new version of its Internet security software in April but before it does, it's looking for computer jockeys to [download a free version](#) of the program and give the company some feedback about it.

New features in the offering for Windows-based PCs include performance of system scans when a computer is idle, a backup and recovery module and a cloud-based checksum database.

G Data, which has offices around the world and is sold in more than 80 countries, was founded in Germany in 1985. The previous version of its Internet security software received the [gold seal](#) of approval from independent testing firm AV-Comparatives for on-demand and proactive malware recognition. [More](#)

TSA chooses HMS to support its Entrust encryption certificates

TSA has awarded a contract worth \$117,508 to HMS Technologies, Inc., of Martinsburg, WV, a service-disabled veteran-owned small business, to provide service and support to maintain more than 230 Entrust Certificates that encrypt communications between TSA's servers and Web browsers.

TSA decided to stick with the Entrust Certificates it already owns, rather than run a new competitive procurement and shift to a different encryption provider.



"Selecting another brand other than Entrust will require extensive re-engineering, implementation, training, Certification and Accreditation (C&A), testing, and

documentation that would result in an additional cost of \$506,188 to the Government," said TSA, in a document explaining its procurement strategy. [More](#)

HSDBC issues monograph on 'Preparedness' and launches conversation series



The Homeland Security & Defense Business Council launched on March 10 its "National Conversation Series on the State of Homeland Security," and released its seventh monograph in its 9/10/11 Project, focusing on how far the public and private sectors have come in preparing for all hazard events.

"Preparedness," when considered in the context of national security, was pretty simple at one time, said the Council in a news release it issued on March 10. We protect our borders and we maintain a military as a deterrent or a force against foreign aggression. Today, preparedness extends to all manner of natural and man-made disasters, wherever they may occur, and virtually everything is now a matter of national as well as local concern. [More](#)

Guest Contributors

King hearings: A polarized flop

By David Schanzer



The biggest problem with the King hearings into domestic radicalization is that from the beginning their purpose has not been clear. Is there anyone in the Muslim community or the government in denial that radicalization of some Muslim Americans is a security problem? No.

Are there any rational people who believe that disparaging the Muslim American community and blaming it collectively for the acts of a few will improve this problem? No again.

There would have been nothing wrong if King had accurately defined the radicalization problem as a dangerous ideology that, thankfully, affects relatively few Muslim Americans, and called hearings to explore ways Muslim Americans, non-Muslim Americans and law enforcement could work together to address this problem. Had he done this, the hearings could have been a productive exercise, as were prior hearings run by Senator Joe Lieberman and former U.S. Representative Jane Harman. [More](#)

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Landau, Mindy

From: Landau, Mindy
Sent: Monday, March 14, 2011 4:08 PM
To: Brown, Frederick
Subject: Blog Messages

Fred,

It wouldn't be a bad idea for the staff who are leading the meetings, to check the NRC Blog for some of the postings, which will occur continuously. They are written in a more casual style and all the posts can give them some good pointers about what we discuss vs. what we don't discuss. For instance, here's the latest one:

We are working with other U.S. government agencies to monitor the situation in Japan — and to monitor for radioactive releases and to be prepared to predict their path. Fortunately, all the available information at this time indicates weather conditions have taken the small releases from the Fukushima reactors out to sea away from the population.

And, importantly, given the thousands of miles between Japan and us — including Hawaii, Alaska, the U.S. territories and the U.S. West Coast — we are not expecting to experience any harmful levels of radioactivity here. We would like to repeat — we are not expecting to experience any harmful levels of radioactivity here.

As expected, we are getting a lot of questions from people who are seeking information about developments at Japanese reactors. We understand the need for information, but we are not able to comment on the situation. It is an ongoing crisis for the Japanese and they have primary responsibility for handling it and communicating about it. But please stay tuned to this blog for the latest information we can provide.

Mindy

Mindy S. Landau
Deputy Assistant for Operations
Communication and Performance Improvement
Office of the Executive Director for Operations
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555
301-415-8703
mindy.landau@nrc.gov

Rihm, Roger

From: Rihm, Roger
Sent: Monday, March 14, 2011 4:47 PM
To: Hiland, Patrick
Cc: Thomas, Eric
Subject: FW: Need a table

Importance: High

Tried calling, but no answer @ x3298.

So the 2 things I need from you/NRR are:

1. Whether you have that Mark 1 graphic we can simplify
2. A table as discussed below

(I'm dealing with RES on some earthquake graphics, etc)

From: Rihm, Roger
Sent: Monday, March 14, 2011 4:42 PM
To: Hiland, Patrick
Subject: Need a table
Importance: High

Is it you or maybe Joe Gitter?

For all Rx sites:

Name
Safe shutdown earthquake
Reference level earthquake
(for coastal sites) probably max tsunami OR max tsunami water level

4/58

Rihm, Roger

From: Rihm, Roger
Sent: Monday, March 14, 2011 5:30 PM
To: Gitter, Joseph; Thomas, Eric
Subject: FW: Need a table

Importance: High

Please confirm that DORL can produce tomorrow. (Hearing is Weds). Note that, for coastal sites, "probably" should read "probable."

Let me know if any questions. thanks

Roger S. Rihm

Communications and Performance Improvement Staff
Office of the Executive Director for Operations

US NRC

301.415.1717

roger.rihm@nrc.gov

From: Hiland, Patrick
Sent: Monday, March 14, 2011 4:48 PM
To: Rihm, Roger
Cc: Gitter, Joseph; Thomas, Eric
Subject: RE: Need a table
Importance: High

The below is needed by Roger for Chairman's Wednesday hill meeting. Believe DORL can collect.

From: Rihm, Roger
Sent: Monday, March 14, 2011 4:42 PM
To: Hiland, Patrick
Subject: Need a table
Importance: High

Is it you or maybe Joe Gitter?

For all Rx sites:

Name
Safe shutdown earthquake
Reference level earthquake
(for coastal sites) probably max tsunami OR max tsunami water level

Taylor, Renee

From: Borchardt, Bill
Sent: Monday, March 14, 2011 5:07 PM
To: Ash, Darren
Subject: RE: Support for those travelling to Japan

Impressive!

From: Ash, Darren
Sent: Monday, March 14, 2011 5:03 PM
To: Borchardt, Bill; Monninger, John
Subject: FW: Support for those travelling to Japan

For your awareness – no reply requested

From: Paradiso, Karen
Sent: Monday, March 14, 2011 4:51 PM
To: Ash, Darren
Cc: Rich, Thomas; Boyce, Thomas (OIS); Schaeffer, James
Subject: Support for those travelling to Japan

Hi Darren,

We have been working today to respond to the needs of those staff members travelling to Japan. This afternoon OIS provided to the Agency Operations Center –

7 new Blackberry's with International Service and in addition International Service was provided for one existing Blackberry;

5 international laptops were provided,
5 international air cards were provided – one for each laptop;

8 mxi thumb drives were provided;

8 mci calling cards were provided – we wanted to provide GETS cards however, it takes 3 days to order this service.

We will continue to coordinate with the Operations Center and provide support as needed.

Please let me know if any questions.

Thanks!
Karen

Taylor, Renee

From: Borchardt, Bill
Sent: Tuesday, March 15, 2011 7:16 AM
To: Virgilio, Martin; Cianci, Sandra; Taylor, Renee
Cc: Ash, Darren; Weber, Michael
Subject: RE: Late Arrival

Marty,
Don't rush back to work. Please give me a call before you come in so we can align on plans for coverage.

Darren: can you do the all-supervisor meeting or should we postpone?

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

From: Virgilio, Martin
Sent: Tuesday, March 15, 2011 3:30 AM
To: Cianci, Sandra; Taylor, Renee
Cc: Borchardt, Bill
Subject: Late Arrival

Sandy

I went back to the ops center last night. It is now about 330 am and I am going home to get some sleep. I should be in around noonish. Call if I am needed sooner.

Marty

Ellmers, Glenn

From: Ellmers, Glenn
Sent: Tuesday, March 15, 2011 8:45 AM
To: Barkley, Richard
Subject: EDO draft 2 update March 14 2011 .docx
Attachments: EDO draft 2 update March 14 2011 .docx

Rich,
Everyone here is drowning. Could you eyeball this for release later this morning?
Thanks!

4/6/2

We are all saddened about the tragic events in Japan. Our thoughts and prayers go out to all of those affected by the earthquake and tsunami. The serious nuclear power plant issues have obviously been a special focus of the NRC. Rest assured, we are closely monitoring the situation and providing requested assistance. Senior managers and staff have been manning the Operations Center in rotations 24 hours a day since the earthquake. We have already sent two staff members to Japan who are BWR experts (the technology used at the Fukushima site). At the Japanese government's request, we have sent nine additional NRC staff to help the American embassy in Tokyo and to support the Japanese regulators. Not surprisingly, the Congressional hearing scheduled for this Wednesday, which was originally to focus on our Fiscal Year 2012 budget, will now be primarily focused on the events in Japan.

It is not for the NRC to speak for the Japanese or United States governments, so I won't comment on the situation in any greater detail. Additional information can be obtained from the International Atomic Energy Agency and the USAID, a part of the State Department that is coordinating the U.S. response and assistance efforts.

It is possible that some of you will be requested by colleagues in another country to provide technical advice and assistance during this emergency. It is essential that all such communications be handled through the NRC Operations Center. If you receive such a request, contact the NRC Operations Officer (301-816-5100 or via the NRC Operator) immediately. All media calls should be forwarded to the Office of Public Affairs (301-415-8200). If you receive information regarding this or any emergency (foreign or domestic) and you are not certain that the NRC's Incident Response Operations Officer is already aware of that information, you should contact the NRC Operations Officer (301-816-5100 or via the NRC Operator) and provide that information.

Notwithstanding the significance of what is occurring in Japan, we still have our domestic mission to carry out, and with the exception of the small number of people who have been directly called upon to respond to this situation we should all proceed with previously planned activities. We will continue to process licensing actions, conduct inspections, and fulfill our regulatory responsibilities.

In accordance with NRC regulations, every American nuclear power plant is designed with multiple, redundant safety systems to be robust enough to withstand the seismic and natural event risks associated with its specific location. In other words, the NRC analyzes every reactor site for own specific features and potential hazards, and requires the plant to be designed and operated accordingly. But in calculating risks, a certain level of uncertainty is always present. To compensate for these uncertainties, the NRC utilizes the concept of "defense in depth"—an approach to safety where multiple, diverse and redundant layers of protection are used to prevent accidents and mitigate consequences. While it is inappropriate to speculate on what would happen to an American nuclear power plant under similar circumstances to the Japan event, we do know that US nuclear facilities are among the most robust and well-protected civilian structures in the country.

Let me express my thanks to the NRC staff who have served in or supported the Operations Center since the earthquake hit. I'd also like to thank those who have had to compensate for their colleagues who have been called away from their regular duties.

I'll keep you informed of ongoing developments.

Ellmers, Glenn

From: Ellmers, Glenn
Sent: Tuesday, March 15, 2011 9:27 AM
To: Taylor, Renee
Cc: Wyatt, Melissa
Subject: EDO draft 2 update March 14 2011 .docx
Attachments: EDO draft 2 update March 14 2011 .docx

Please queue up to send. Just waiting for Chairman's message to come out.

4/63

We are all saddened about the tragic events in Japan. Our thoughts and prayers go out to all of those affected by the earthquake and tsunami. The serious nuclear power plant issues have obviously been a special focus of the NRC. Rest assured, we are closely monitoring the situation and providing requested assistance. Senior managers and staff have been manning the Operations Center in rotations 24 hours a day since the earthquake. Over the weekend, we sent two staff members to Japan who are BWR experts (the technology used at the Fukushima site). At the Japanese government's request, we have also sent nine additional NRC staff to help the American embassy in Tokyo and to support the Japanese regulators. Not surprisingly, the Congressional hearing scheduled for this Wednesday, which was originally to focus on our Fiscal Year 2012 budget, will now be primarily focused on the events in Japan.

It is not for the NRC to speak for the Japanese or United States governments, so I won't comment on the situation in any greater detail. Additional information can be obtained from the International Atomic Energy Agency and the USAID, a part of the State Department that is coordinating the U.S. response and assistance efforts.

It is possible that some of you will be requested by colleagues in another country to provide technical advice and assistance during this emergency. It is essential that all such communications be handled through the NRC Operations Center. If you receive such a request, contact the NRC Operations Officer (301-816-5100 or via the NRC Operator) immediately. All media calls should be forwarded to the Office of Public Affairs (301-415-8200). If you receive information regarding this or any emergency (foreign or domestic) and you are not certain that the NRC's Incident Response Operations Officer is already aware of that information, you should contact the NRC Operations Officer (301-816-5100 or via the NRC Operator) and provide that information.

Notwithstanding the significance of what is occurring in Japan, we still have our domestic mission to carry out, and with the exception of the small number of people who have been directly called upon to respond to this situation we should all proceed with previously planned activities. We will continue to process licensing actions, conduct inspections, and fulfill our regulatory responsibilities.

In accordance with NRC regulations, every American nuclear power plant is designed with multiple, redundant safety systems to be robust enough to withstand the seismic and natural event risks associated with its specific location. In other words, the NRC analyzes every reactor site for own specific features and potential hazards, and requires the plant to be designed and operated accordingly. But in calculating risks, a certain level of uncertainty is always present. To compensate for these uncertainties, the NRC utilizes the concept of "defense in depth"—an approach to safety where multiple, diverse, and redundant layers of protection are used to prevent accidents and mitigate consequences. While it is inappropriate to speculate on what would happen to an American nuclear power plant under similar circumstances to the Japan event, we do know that US nuclear facilities are among the most robust and well-protected civilian structures in the country.

Let me express my thanks to the NRC staff who have served in or supported the Operations Center since the earthquake hit. I'd also like to thank those who have had to compensate for their colleagues who have been called away from their regular duties.

I will keep you informed of ongoing developments.

Arildsen, Jesse

From: Arildsen, Jesse
Sent: Tuesday, March 15, 2011 9:40 AM
To: Prinaris, Andrew
Subject: RE: Spent Fuel Pool Explosion!

I'll be by.

From: Prinaris, Andrew
Sent: Tuesday, March 15, 2011 9:12 AM
To: Arildsen, Jesse
Subject: RE: Spent Fuel Pool Explosion!

Let me know if you need past documents

From: Arildsen, Jesse
Sent: Tuesday, March 15, 2011 7:58 AM
To: Prinaris, Andrew
Subject: Spent Fuel Pool Explosion!
Importance: High

Tokyo (CNN) -- Spent fuel rods containing radioactive material may have burned in Tuesday's fire at the Fukushima Daiichi nuclear plant -- causing a spike in radiation levels, the plant's owner said.

The blaze started Tuesday morning but was later extinguished, Tokyo Electric Power Company said. It was unclear how much radioactive material may have been emitted, or what kind of health threat that could pose.

Chief Cabinet Secretary Yukio Edano said Tuesday afternoon that radiation readings at the plant's front gate had returned to a level that would not cause "harm to human health."

Japanese officials earlier told the International Atomic Energy Agency that radioactivity was "being released directly into the atmosphere" during the fire, according to a statement from the UN watchdog organization.

CLOSE X





Japan nuclear crisis continues

CLOSE X



Radiation risks rise in Japan

CLOSE X



Radiation and human health

CLOSE X





'Very high' risk of radioactive material

CLOSE X



Navigating a radiation cloud in Japan

High temperatures inside the building that houses the plant's No. 4 reactor may have caused fuel rods sitting in a pool to ignite or explode, the plant's owner said.

By Tuesday afternoon, Edano said radiation readings -- which had reached dangerously high levels at the plant earlier -- had decreased.

"We have to monitor the situation closely, but the high concentration of radioactive material is not emitting constantly from the No. 4 reactor right now," he said.

Edano said readings at the gate at 3:30 p.m. Tuesday (2:30 a.m. ET) were 596.4 microsieverts per hour -- compared to a high reading of 11,930 microsieverts per hour at 9 a.m. (8 p.m. ET Monday).

Analysts also have their eyes on reactors No. 5 and 6 at the plant, Edano said, where cooling systems were "not functioning well" and the temperature had dropped slightly Tuesday.

Earlier Tuesday, for the first time since Friday's quake crippled cooling systems at three of the plant's reactors, Edano said radiation levels at the plant had increased to "levels that can impact human health."

The plant's owners evacuated all but about 50 workers from the facility. Anyone within 30 kilometers (18.6 miles) of the plant were urged to remain indoors.

And the government imposed a no-fly zone over the 30-kilometer radius "because of detected radiation after explosions" there, the country's transportation ministry said.

Edano said levels at the plant were between 100 and 400 millisieverts, or as much as 160 times higher than the average dose of radiation a typical person receives from natural sources in a year. A microsievert is an internationally recognized unit measuring radiation dosage, with people typically exposed during an entire year to a total of about 1,000 microsieverts.

"Radiation has come out from these reactors and the reading of the levels seems very high. There is still a very high risk of further radioactive material coming out," Prime Minister Naoto Kan said, asking people to remain calm.

The officials briefed reporters several hours after an explosion at the No. 2 reactor -- the third blast at the plant in four days. As they spoke, firefighters were battling the blaze at the No. 4 reactor.

The extent of damage at the troubled plant remained unclear.

The announcement from officials Tuesday "points to something different, something more serious" after the explosion at the No. 2 reactor, CNN analyst James Walsh said. "But we don't have the definitive evidence yet."

CLOSE X




New blast heard at Japan's number 2 reactor

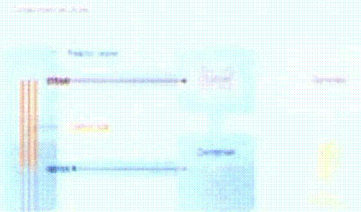
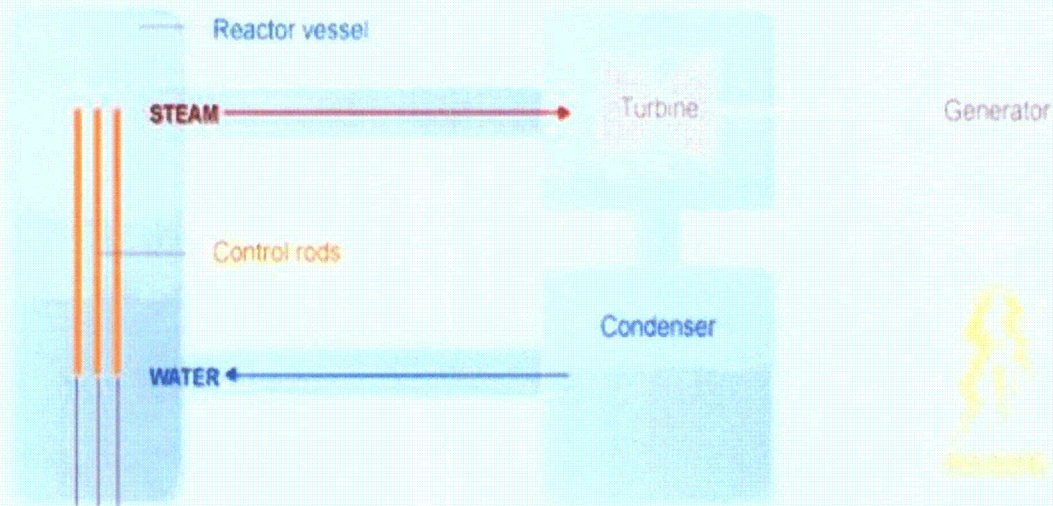
CLOSE X



Gallery: Japan reeling after massive quake

CLOSE 

Containment structure



Explainer: Producing nuclear energy

There is still a very high risk of further radioactive material coming out

--Japanese Prime Minister Naoto Kan

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Edano said earlier that he could not rule out the possibility of a meltdown at all three troubled reactors at the plant. If fuel rods inside the reactors are melting, Walsh said a key detail is whether the melted material stays inside the reactor.

"The Japanese plants and all modern plants have a containment vessel. Essentially the reactor is inside of a vault. And that vault is made of thick concrete and steel," Walsh said. "The million-dollar question is whether that melting will be contained... We'll know within 24 hours. That's the key thing people should be paying attention to."

There are six reactors at Fukushima Daiichi, located in northeastern Japan about 40 miles (65 kilometers) south of Sendai, one of the areas worst hit by Friday's 9.0-magnitude earthquake and the resulting tsunami.

Workers have been scrambling to stave off a meltdown as a series of significant problems popped up at the plant since Friday:

- The earthquake and tsunami Friday knocked out regular and backup cooling systems at the plant's No. 1 and No. 3 reactors. Workers began injecting seawater and boron into the reactors in what experts have called a last-ditch attempt to prevent a meltdown after the cooling systems failed.
- A blast caused by hydrogen buildup Saturday blew the roof off the No. 1 reactor's containment structure and injured four workers.
- An explosion Monday caused by hydrogen buildup blew away the roof and walls of the building housing the plant's No. 3 reactor and injured 11 people. The plant's No. 2 reactor lost its cooling capabilities Monday afternoon after the explosion, and workers began injecting seawater and boron into that reactor.
- An explosion hit the No. 2 reactor Tuesday morning. Readings indicate some damage to the No. 2 reactor's suppression pool, a donut-shaped reservoir at the base of the reactor's containment vessel.
- A fire ignited in the No. 4 reactor building later Tuesday.

The government has evacuated more than 200,000 residents from homes within a 20-kilometer (12.4-mile) radius of the plant and tested 160 people for radiation exposure, authorities said Sunday.

If the effort to cool the nuclear fuel inside the reactor fails completely -- a scenario that experts who have spoken to CNN say is unlikely -- the resulting release of radiation could cause enormous damage to the plant, and possibly release radiation into the atmosphere or water. That could lead to widespread cancer and other health problems, experts say.

Concerns about the risk of radiation release spread as the situation at the plant appeared to worsen Tuesday.

U.S. Navy personnel began limiting outdoor activities and securing external ventilation systems after instruments aboard an aircraft carrier docked in Japan detected low levels of radioactivity from the Fukushima Daiichi nuclear plant, the Navy said.

The USS George Washington was docked for maintenance in Yokosuka, about 175 miles (280 kilometers) from the plant, when instruments detected the radiation at 7 a.m. Tuesday (6 p.m. ET Monday), the Navy said in a statement.

"These measures are strictly precautionary in nature. We do not expect that any United States federal radiation exposure limits will be exceeded even if no precautionary measures are taken," the Navy said.

Radiation levels in Tokyo were twice the usual level on Tuesday but was too negligible to pose a health threat -- 0.809 microsieverts per hour, the Tokyo Metropolitan Government said.

Rihm, Roger

From: Rihm, Roger
Sent: Tuesday, March 15, 2011 10:14 AM
To: Giitter, Joseph
Cc: Marshall, Michael
Subject: RE: Chairman questions re OBE & SSE (RAW DATA).xlsx

Michael is looking at this, but seems to think it is what he wants.

From: Giitter, Joseph
Sent: Tuesday, March 15, 2011 10:07 AM
To: Rihm, Roger
Subject: FW: Chairman questions re OBE & SSE (RAW DATA).xlsx

Here it is. Still a work in progress.

From: Meighan, Sean
Sent: Tuesday, March 15, 2011 10:03 AM
To: Giitter, Joseph
Subject: Chairman questions re OBE & SSE (RAW DATA).xlsx

Andersen, James

From: Landau, Mindy
Sent: Tuesday, March 15, 2011 11:24 AM
To: Rihm, Roger
Cc: Andersen, James
Subject: Bullets for Darren on Japan.docx
Attachments: Bullets for Darren on Japan.docx

Looks good, just some minor edits

4/66

Information for All-Supervisors Meeting – Japanese Event

NRC is closely monitoring the situation and providing requested assistance, staff has been manning the Operations Center in rotations 24 hours a day since the earthquake. We are immensely appreciative of the staff's commitment to our safety mission, and the dedication and energy they have shown over the past few days.

Most of what you hear on CNN, maybe 75% or so, is accurate. I would say that the commentary by a variety of "talking heads" is less accurate.

Over the weekend, the NRC sent two staff members to Japan who are boiling-water reactor experts (the technology used at the Fukushima site).

At the Japanese government's request, we have also recently sent nine additional NRC staff to help the American embassy in Tokyo and to support the Japanese regulators

As you may know, there is a Congressional hearing scheduled for this Wednesday, which was originally to focus on our Fiscal Year 2012 budget, but will now be primarily focused on the events in Japan

It is possible that some of you will be requested by colleagues in another country to provide technical advice and assistance during this emergency. It is essential that all such communications be handled through the NRC Operations Center

Please note that it is not for the NRC to speak for the Japanese or United States governments on the event, or on nuclear policy or the future of nuclear power in the US.

Notwithstanding the significance of what is occurring in Japan, we still have our domestic mission to carry out, and with the exception of the small number of people who have been directly called upon to respond to this situation we should all proceed with previously planned activities such as licensing, inspection, enforcement, etc.

Taylor, Renee

From: Borchardt, Bill
Sent: Tuesday, March 15, 2011 11:58 AM
To: Leeds, Eric
Cc: Taylor, Renee; Weber, Michael; Sheron, Brian; Uhle, Jennifer; Boger, Bruce; Ruland, William
Subject: Re: Charlie Tinkler will support the Chairman

Thanks Eric. I will already be downtown. I suggest that Charlie take metro today since the meeting will be next to union station.

Bill Borchardt
Via blackberry

From: Leeds, Eric
To: Borchardt, Bill
Cc: Taylor, Renee; Weber, Michael; Sheron, Brian; Uhle, Jennifer; Boger, Bruce; Ruland, William
Sent: Tue Mar 15 11:36:07 2011
Subject: Charlie Tinkler will support the Chairman

Bill –

RES will supply Charlie Tinkler for this afternoon's activities with the Chairman and tomorrow's briefings on the hill. We'll have him contact Rene to get travel info – so he will travel with you this afternoon. Big thanks to Jennifer for making this happen!

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

Weber, Michael

From: Weber, Michael
Sent: Tuesday, March 15, 2011 12:30 PM
To: Borchardt, Bill
Subject: Response - status update

Verified that you are now on the distribution list.

From: Borchardt, Bill
To: HOO Hoc
Cc: Weber, Michael
Sent: Tue Mar 15 07:43:33 2011
Subject: status update

Please email me the latest status update. I must have been dropped from the distribution list.
Thanks
Bill

4/1/08

Weber, Michael

From: Weber, Michael
Sent: Tuesday, March 15, 2011 9:55 PM
To: Virgilio, Martin
Subject: Response - Assistant Secretary Level SVTC on Japan Earthquake - March 16, 2011 - 8:00-9:00am

Thanks, Marty. I plan to brief from that paper. I should get what I need during turnover and then use this to support the call.

From: Virgilio, Martin
To: Weber, Michael; ET01 Hoc
Cc: LIA05 Hoc; Dorman, Dan; Grobe, Jack
Sent: Tue Mar 15 21:23:03 2011
Subject: Re: FYI - Assistant Secretary Level SVTC on Japan Earthquake - March 16, 2011 - 8:00-9:00am

Mike

How can we help/support you beyond the paper we are already grinding out

Marty

From: Weber, Michael
To: ET01 Hoc
Cc: LIA05 Hoc; Virgilio, Martin; Dorman, Dan
Sent: Tue Mar 15 18:39:53 2011
Subject: FYI - Assistant Secretary Level SVTC on Japan Earthquake - March 16, 2011 - 8:00-9:00am

Here is the agenda for tomorrow morning's call at 0800, which I have been asked to attend.

Weber, Michael

From: Weber, Michael
Sent: Tuesday, March 15, 2011 5:32 PM
To: Cianci, Sandra
Subject: RESPONSE - Ops Center Schedule- Coverage AM/PM

I'll be working day shift through Thursday (arrive for turnover at 0630; complete shift at 3:30) and then return to my office until the end of the day. Friday I will be in the office. This is my schedule as of now, subject to change, of course. I'm not certain about next week's schedule.

From: Cianci, Sandra
Sent: Tuesday, March 15, 2011 2:21 PM
To: Weber, Michael
Subject: Ops Center Schedule- Coverage AM/PM

Mike,

What is your schedule for the remainder of the week?

Sandy Cianci

Administrative Assistant to Marty Virgilio, DEDR

Office of the Executive Director for Operations

O-17 H13

301-415-1714

sandra.cianci@nrc.gov

4/70

From: Franovich, Mike
To: Ostendorff, William
Cc: Nieh, Ho; Warnick, Greg; Kock, Andrea; Zorn, Jason
Subject: FW: 0600 EDT (March 15 2011) USNRC Earthquake/Tsunami SitRep
Date: Tuesday, March 15, 2011 6:26:00 AM
Attachments: NRC Status Update 3-15,11--0600am.pdf

Dorman led the call:

- Daiichi 1-3 are stable
- Unit 2 no changes and not known if water is being injected in building
- Unit 4 fire is out (zirc fire not confirmed)
- Doses around unit 2 at 3-4 R/hr
- Unit 4 doses at 10R/hr
- At site gate/entrance at 60 mR/hr
- Evacuation done for up to 20 km; sheltering 20-30 km
- No fly zone for 30 km
- Winds are blowing toward Tokyo but will shift westward out to sea
- Talking points/Q&A will be circulated shortly
- US Ambassador to issue press release advising US citizens in Japan (follow Japanese PARs); NRC to issue PR after US Ambassador's

From: LIA07 Hoc

Sent: Tuesday, March 15, 2011 6:02 AM

To: Al Coons; Appleman Binkert; Bill King; Bill King 2; Charles Burrows; Charles Donnell; Conrad Burnside; Dan Feighert; Darrell Hammons; DOE NIT; DOT; DTRA; dudek; Elmer Naples; EOP; EPA; EPA2; Eric Sinibaldi; Gregory Simonson; Harry Sherwood; HHS; J Szymanski; Jim Kish; Johanna Berkey; John Holdren; K Donald; Karyn Keller; Lisa Hammond; Lukas McMichael; Maceck; Michelle Ralston; Nan Calhoun; Navy; NOC; NOC Duty Director; Nuclear SSA; Peter Lyons; Rebecca Thomson; RMT; Ron McCabe; Seamus O'Boyle; State; Stephen Trautman; Steve Colman; Steve Horwitz; Thomas Conran; Thomas Zerr; Tim Greten; Vanessa Quinn; William Webb; Andersen, James; Anderson, Joseph; Barker, Allan; Batkin, Joshua; Bradford, Anna; Brenner, Eliot; Bubar, Patrice; Castleman, Patrick; Coggins, Angela; Collins, Brendan; Collins, Elmo; Dean, Bill; Decker, David; Dorman, Dan; Droggitis, Spiros; Franovich, Mike; Gibbs, Catina; Hahn, Matthew; Haney, Catherine; Harrington, Holly; Hipschman, Thomas; HOO Hoc; Howell, Art; Howell, Linda; Jaczko, Gregory; Johnson, Andrea; Johnson, Michael; Kahler, Robert; Leeds, Eric; Logaras, Haral; Loyd, Susan; Maier, Bill; Marshall, Michael; McCree, Victor; McDermott, Brian; McNamara, Nancy; Miller, Charles; Miller, Chris; Monninger, John; Nieh, Ho; NSIR_DDSP_ILTAB_Distribution; Orders, William; Ostendorff, William; Pace, Patti; Pearson, Laura; Satorius, Mark; Schmidt, Rebecca; Sharkey, Jeffery; Sheron, Brian; Snodderly, Michael; Sosa, Belkys; Speiser, Herald; Tifft, Doug; Trapp, James; Trojanowski, Robert; Warren, Roberta; Wiggins, Jim; Williams, Kevin; Wittick, Brian; Woodruff, Gena

Subject: 0600 EDT (March 15 2011) USNRC Earthquake/Tsunami SitRep

4/7/11

Attached, please find a March 15, 2011, 0600 EDT situation report from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami. This Update includes information related to NRC's evaluation of radiation measurements from the USS Ronald Reagan.

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.

-Rebecca

Rebecca Stone
Office of Nuclear Security & Incident Response
US Nuclear Regulatory Commission
Lia07.HOC@nrc.gov (Operations Center)
Rebecca.Stone@nrc.gov

Kock, Andrea

From: Franovich, Mike
Sent: Tuesday, March 15, 2011 8:51 PM
To: Ostendorff, William
Cc: Nieh, Ho; Warnick, Greg; Kock, Andrea; Zorn, Jason
Subject: UPDATE: 2000 EDT Telecon on Fukushima Daiichi

Grobe led the discussion.

- NRC team led by Chuck Casto have not all arrived yet.
- INPO took action to get industry response (see latest LIA report. I asked Grobe if NRC was contemplating a similar action. None immediately planned but looking at generic com. that could come out in a few weeks.
- NRC looking to DOE for data stream from aerial sampling.
- No change in status of units 1, 2, and 3. Caveats about the IAEA data/table which is old info. NRC is working with NRC personnel in Tokyo to get similar data stream. RST working on a standard info set. I asked him to have the RST provide the next update in units that we use (I did the conversion in the spreadsheet below if you are metric intolerant).
- On Unit 2, asked Jack what gives us a better feeling that Unit 2 primary containment is functional. No answer other than the primary seems to be holding pressure, but he didn't know if it was based on the IAEA data. RST believes that a vacuum breaker may have opened temporarily to relieve differential pressure between the drywell and torus and may have had a hydrogen burn.
- Unit 4 remains problematic. A new fire has broken out. Doses are stable in the area of Unit 4 around 30R/hr. Fire fighting and pool cooling strategy still being worked out.
- Units 5 and 6 have spent fuel pool temperature at approximately 80 degrees C.
- I asked Grobe (yep lots of questions from me tonight), if TEPCO was cycling operators in and out of the site to relieve personnel. No info on that other than TEPCO did evacuate non-essential personnel. Five individuals may have received a lethal dose.
- Chairman joined the bridge late asking for status on new fire for Unit 4. ET will give him an update before tomorrow am.

Parameter	unit	Fukushima Daiichi		
		Unit 1	Unit 2	Unit 3
RPV Pressure	psig	10	46	35
		27		35
Drywell Pressure	psig	46	22	60

Reactor Water Level	inches (zero is top of active fuel)	-70	15	-71
		-70	n/a	-91
Suppression Pool Temperature	°F	-	-	-
Suppression Pool Pressure	psig	-	-	-

Mike Franovich
Technical Assistant for Reactors
Office of Commissioner Ostendorff
301-415-1784

11/11/11
From: [Taylor, Robert](#)
To: [Harrington, Holly](#)
Bcc: [Taylor, Robert](#)
Subject: Chairman JaczkoQA8_031511.docx
Date: Tuesday, March 15, 2011 8:20:00 PM
Attachments: [Chairman JaczkoQA8_031511.docx](#)

As promised.

4/13

Questions and Answers for Chairman Jaczko

March 11, 2011 Japan Earthquake/Tsunami Aftermath
As of XXXX x.m. 3/15/2011

Current Status of Events in Japan

1. What damage was caused by the earthquake and/or tsunami at each of the Japanese plants?

On March 31st at approximately 2:46pm local time, a magnitude 8.9 earthquake occurred off the coast of Honshu, Japan. The earthquake knocked out offsite power to the three operating Fukushima Daiichi nuclear power plants (Units 1, 2 and 3). As designed, the nuclear reactors shutdown and on-site emergency diesel generators started up to power emergency safety systems that cool the reactor fuel. Subsequently, at approximately 3:41pm, a tsunami, resulting from the underwater earthquake, struck the site knocking out the emergency diesel generators. After depleting its battery power, the nuclear power plants lost the ability to provide cooling water to the reactor fuel. The best information currently available indicates that fuel damage has occurred Units 1, 2, and 3 but that the primary containment structures have remained intact and only limited releases of radiation have occurred.

2. What's going to happen following the hydrogen explosions everyone's seen from the video footage?

The NRC is monitoring the Japanese efforts to stabilize conditions at the affected reactors, and those actions are in line with what would be done in the United States. The NRC continues to monitor information on the status of the reactor core, the reactor vessel and the containment structure – all three areas are important to controlling the situation and protecting the public.

Additional technical information:

The explosions affected the secondary containment buildings for Units 1 and 3 of the reactor plant. The primary containment was unaffected by the explosion. This does expose the spent fuel pools to atmosphere but should not affect the integrity of the spent fuel pool. With the integrity of the Secondary Containment breached it is more essential to maintain Primary Containment intact.

To provide additional protection to Primary Containment, US reactors of the containment type similar to Fukushima Unit 1 installed a hardened vent line from primary containment directly to the vent stack. A hardened vent provides a release path which would prevent an overpressurization of containment as experienced at Fukushima Unit One. Venting from the hardened vent is typically a manual operation that is controlled by the Emergency Operating Procedures as a last resort to protect the containment from failure. This vent path can be directly from the upper containment or from the torus (the preferred vent path due to scrubbing effect of the torus water).

3. What happens when/if a plant "melts down"?

In short, nuclear power plants are designed to be safe. To prevent the release of radioactive material, there are multiple barriers between the radioactive material and the environment, including the fuel cladding, the heavy steel reactor vessel itself and the containment building, usually a heavily reinforced structure of concrete and steel several feet thick.

Additional technical information:

The melted core may melt through the bottom of the vessel and flow onto the concrete containment floor. The core may melt through the containment liner and release radioactive material to the environment.

4. What should the American public know about the incident in Japan?

The events unfolding in Japan are the result of a catastrophic series of natural disasters. These include the fifth largest earthquake in recorded history and the resulting devastating tsunami. Despite these unique circumstances, the Japanese appear to have taken reasonable actions to mitigate the event and protect the surrounding population. Since the beginning of the event, the NRC has continuously manned its Operations Center in Rockville, MD in order to gather and examine all available information as part of the effort to analyze the event and understand its implications both for Japan and the United States.

5. What happens next in Japan? How long will it take to assess the damage to the reactors?

The current focus is ensuring that adequate cooling of the reactor fuel at each of the affected Japanese reactors is established and maintained. In the days, weeks, and months that follow, there will be adequate time to assess the damage and determine next steps.

6. Why did the seawater fail to cool the reactor?

Based on information available to the NRC, it appears that the seawater has been effective at providing some cooling for the reactor. While it appears that some fuel damage has occurred, there will be plenty of time once this crisis is resolved to determine the effectiveness of the measures taken in response to this event.

7. If Chernobyl was a 7 and Three Mile Island was a 5, when does this event move from the 4 level?

The International Atomic Energy Agency (IAEA) rates nuclear events in accordance with its International Nuclear and Radiological Event Scale (INES). IAEA has assigned the events in Japan an INES rating of 4, "Accident with Local Consequences." This rating is subject to change as events unfold and additional information becomes available. INES classifies nuclear accidents based on the radiological effects on people and the environment and the status of barriers to the release of radiation. IAEA determinations regarding the INES rating of events are made independently.

Three Mile Island was assigned an INES rating of 5, "Accident with Wider Consequences," due to the severe damage to the reactor core.

8. What is the worst case scenario for the plant?

In a nuclear emergency, the most important action is to ensure the core is covered with water to provide cooling to remove any heat from the fuel rods. Without adequate cooling, the fuel rods will melt. Should the final containment structure fail, radiation from these melting fuel rods would be released to the atmosphere and additional protective measures may be necessary, depending on factors such as prevailing wind patterns.

9. As time goes on, does the chance for a meltdown increase?

Not necessarily. Each passing hour the fuel rods will become cooler. If adequate cooling can be established and maintained, the risk of a meltdown will be mitigated.

NRC Support/Response to the Events in Japan

10. What is the NRC doing about the emergencies at the nuclear power plants in Japan? Are you sending staff over there?

We are closely following events in Japan, working with other agencies of the federal government, and have been in direct contact with our counterparts in that country. We have sent a total of 11 staff to Tokyo

in response to the Japanese government's request for assistance. Two of those NRC staff members, knowledgeable about boiling water reactors, are already in Japan participating in the USAID team.

Additional technical information:

We are taking the knowledge that the staff has about the design of the US nuclear plants and we are applying this knowledge to the Japan situation. For example, this includes calculations of severe accident mitigation that have been performed. Tony Ulses and Jim Trapp are in-country. Team led by Chuck Casto enroute from various locations.

11. What resources are the Japanese asking for?

The Japanese have formally requested equipment needed to cool the reactor fuel. This includes such things as pumps, fire hoses, portable generators, and diesel fuel. The NRC is coordinating with General Electric, which has plant design specifications, to ensure any equipment provided will be capable of meeting the needs of the Japanese.

12. Are we providing additional KI to the Japanese?

The Japanese government has requested KI from the United States. The NRC is working with our federal partners to support any requests of assistance.

Similarities/Impact on U.S. Nuclear Power Plants

**13. Can this happen here, i.e. an earthquake that significantly damages a nuclear power plant?
Are the Japanese plants similar to U.S. plants?**

All U.S. nuclear power plants are built to withstand environmental hazards, including earthquakes and tsunamis. Even those plants that are located in areas with low and moderate seismic activity are designed for safety in the event of such a natural disaster. The NRC requires that safety-significant structures, systems, and components be designed to take into account even very rare and extreme seismic and tsunami events.

The Japanese facilities are similar in design to several US facilities.

Additional technical information:

Currently, operating reactors were designed using a "deterministic" or "maximum credible earthquake" approach. Seismic hazard for the new plants is determined using a much more robust probabilistic seismic hazard assessment approach that explicitly addresses uncertainty and very rare events, as described in RG1.208. The NRC requires that adequate margin beyond the design basis ground shaking levels is assured. The NRC further enhances seismic safety for beyond-design-basis events through the use of a defense-in-depth approach.

In addition, the NRC periodically reviews the seismic risk at operating reactors when information may have changed. Over the last few years the NRC has undertaken a program called Generic Issue 199, which is focused on assessing hazard for plants in the central and eastern US using the latest techniques (developed in part during reviews of Western U.S. plants) and determining the possible risk implications of any increase in the anticipated ground shaking levels. This program will help us assure that the plants are safe under exceptionally rare and extreme ground motions that represent beyond-design-basis events.

14. What would U.S. plants do in this situation?

The NRC requires plant designs to include multiple and diverse safety systems, and plants must test their emergency preparedness capabilities on a regular basis. Plant operators are very capable of responding to significant events. In addition, NRC regulations require plants to have plans in place that would allow them to mitigate even "worst case scenarios".

Since 9/11, we have implemented requirements for licensees to have additional response capabilities for extreme situations.

Additional technical information:

U.S. nuclear plants have procedures in place to address a variety of accident scenarios, including abnormal operating procedures, emergency operating procedures, severe accident management guidelines and emergency plans. Additionally, the NRC activates Incident Response centers in Headquarters and individual Regions as necessary for the event to provide technical monitoring and support.

The NRC is capable of providing access to many external agencies (i.e., FEMA, Homeland Security, Military, etc.) to provide any additional help that individual plant sites may need. Additionally, the NRC has access to real-time plant information through the ERDS System for each site in the US and can monitor the status anytime.

15. Are U.S. power plants designed to withstand tsunamis?

Yes. Plants are built to withstand a variety of environmental hazards. Those plants that might face a threat from tsunami are required to withstand large waves and the maximum and minimum wave heights at the intake structure (which varies by plant.)

Additional technical information:

Tsunami have been considered in the design of US nuclear plants since the publication of Regulatory Guide 1.59 in 1977, although the approaches that were used for design of the existing plants varied significantly. Nuclear plants are designed to withstand flooding from not only tsunami, but also hurricane and storm surge; therefore there is often significant margin against tsunami flooding. However, it should be noted that Japanese experience has shown that drawdown can be a significant problem. Drawdown was not generally analyzed in the past.

Currently the US NRC has a tsunami research program that is focused on developing modern hazard assessment techniques and additional guidance through cooperation with the National Oceanic and Atmospheric Administration and the United States Geological Survey. This has already lead to several technical reports and an update to NUREG 0-800. The NOAA and USGS contractors are also assisting with NRO reviews of tsunami hazard. A new regulatory guide on tsunami hazard assessment is currently planned in the office of research, although it is not expected to be available in draft form until 2012.

16. Was there any damage to U.S. reactors from either the earthquake or the resulting tsunami?

No.

Additional technical information:

Diablo Canyon Units 1 and 2 were the only US plants to declare any type of an emergency classification. The site entered an "unusual event" based on a tsunami warning from the State, NOAA, NWS, Coast Guard or System Dispatcher following the Japanese earthquake. They have since exited the "unusual event" declaration, based on a downgrade to a tsunami advisory.

17. What magnitude earthquake are US plants designed to?

Each plant is designed to a ground-shaking level that is appropriate for its location, given the possible earthquake sources that may affect the site and its tectonic environment. Ground shaking is a function of both the magnitude of the earthquake and the distance from the fault plane to the site. The probabilistic approaches currently used by the NRC account for a large number of different magnitudes.

Additional technical information:

In the past, "deterministic" or "scenario based" analyses were used to determine ground shaking (seismic hazard) levels. Now a probabilistic method is used that accounts for all possible earthquakes coming from all possible sources (including background seismicity) and the likelihood that each particular hypothetical earthquake occurs.

18. How many US reactors are located in active earthquake zones (and which reactors)?

Although we often think of the US as having "active" and "non-active" earthquake zones, earthquakes can actually happen almost anywhere. Seismologists typically separate the US into low, moderate, and high seismicity zones. The NRC requires that every plant is designed for site-specific ground motions that are appropriate for their location. In addition, the NRC has specified a minimum ground shaking level to which the plants must be designed.

19. How many reactors are along coastal areas that could be affected by a tsunami (and which ones)?

Many plants are located in coastal areas that could theoretically be affected by tsunami. Two plants, Diablo Canyon and San Onofre, are on the Pacific Coast, which is known to have a tsunami hazard. There are also two plants on the Gulf Coast, South Texas and Crystal River. There are many plants on the Atlantic Coast or on rivers that may be affected by a tidal bore. These include St. Lucie, Turkey Point, Brunswick, Oyster Creek, Millstone, Pilgrim, Seabrook, Calvert Cliffs, Salem/Hope Creek, and Surry. Tsunami on the Gulf and Atlantic Coasts occur, but are very rare. Generally the flooding anticipated from hurricane storm surge exceeds the flooding expected from a tsunami for plants on the Atlantic and Gulf Coast.

20. How many U.S. plants have designs similar to the affected Japanese reactors (and which ones)?

Thirty-five of the 104 operating nuclear power plants in the U.S. are boiling water reactors (BWRs), as are the reactors at Fukushima. Twenty-three of the U.S. BWRs have the same Mark I containment as the Fukushima reactors.

Four of the U.S. BWRs are early designs which are similar to Fukushima Unit 1.

Nineteen U.S. BWRs are similar to Fukushima Unit 3.

Additional technical information:

Fukushima Unit 1 is a BWR-3 with a Mark 1 containment similar to Oyster Creek, Nine Mile Point Unit 1, and Dresden Units 2 and 3.

Fukushima Unit 3 is a BWR-4 with a Mark 1 containment and a Reactor Core Isolation Cooling (RCIC) system. The remaining 31 U.S. BWRs use a Reactor Core Isolation Cooling (RCIC) system instead of an isolation condenser. Nineteen of those 31 reactors have a Mark 1 containment, while the remainder are more recent designs.

21. What could you say about the dangers to the American public from our nuclear plants?

As the events in Japan continue to unfold, the NRC is focused on supporting the Japanese government and people in bringing this crisis to closure in the safest manner possible. The NRC remains convinced that U.S. nuclear power plants are designed and operated in a manner that protects public health and safety. The time will come, after this crisis is behind us, to evaluate what, if any, changes are needed at U.S. nuclear power plants. We will assess all the available information and, as we have done with previous natural disasters, such as the 2007 earthquake in the Sea of Japan and the 2004 tsunami in the Indian Ocean, evaluate whether enhancements to U.S. nuclear power plants are warranted.

22. Compare this incident to the Three Mile Island. What are the similarities?

The events at Three Mile Island in 1979 were the result of an equipment malfunction that resulted in the loss of cooling water to the reactor fuel. Subsequent operator actions compounded the malfunction ultimately resulting in the partial core meltdown. While details are still developing, the events in Japan appear to be the result of an earthquake and subsequent tsunami that knocked out electrical power to emergency safety systems designed to cool the reactor fuel. In both events the final safety barrier, the containment building, contained the majority of the radioactivity preventing its release to the environment.

23. Is our battery backup power less effective than the Japanese?

We currently do not have sufficient information to compare the differences in design requirements and performance characteristics of nuclear-grade batteries in the U.S. and Japanese nuclear power plants. However, in the U.S., nuclear power plants utilize redundant nuclear-grade (i.e., Class 1E, safety-related) batteries that are designed and constructed using rigorous standards and are routinely tested in accordance to ensure adequate capacity and capability exists to perform their intended safety functions. These batteries are located in structures that can withstand natural phenomena such as earthquakes, tornadoes, tsunami, and floods in accordance with NRC regulations. For U.S. nuclear power plants, the typical design duty cycles for safety grade batteries range from 1-8 hrs.

24. What are US plants required to have for backup power? More than what the Japanese reactors did?

The NRC requires U.S. nuclear power plants need to have 2 independent power supplies. All US (except Oconee) plants have diesels and battery backup systems. Most of the U.S. plants with diesels have two diesels per unit and those that have only one dedicated diesel have a swing diesel available. The regulations do not specify the length of time that you need to have the diesels and batteries operate following a loss of offsite power (most sites plan to run the diesels for multiple days and have battery backup capability for 8 hours). Instead the amount of time is dependent on the site recovery strategy and is based on providing sufficient capacity to assure that the core is cooled and containment integrity and other vital functions are maintained in the event of postulated accidents.

[[[Japanese regulations to follow from OIP.]]]

25. Some in the media and in Hill briefings are suggesting that Mark 1 containment is flawed. What are the concerns about this type of containment? Are the US plants with this safe?

The NRC considers BWRs with Mark I containment designs to be safe. BWR Mark I containments have smaller volumes than PWR containments. This makes the BWR Mark I containment more susceptible to containment failure given a core meltdown severe enough to (1) fail the reactor vessel and also (2) severe enough so that the core melt reaches the containment boundary. However, BWRs have more ways of adding water to the core than PWRs. This includes 2 water injection sources which do not rely on AC electric power. These systems include Reactor Core Isolation Cooling (RCIC) and High pressure coolant injection (HPCI).

26. Any quick-hit info about how the Southeast Reactors performed during Katrina? What damage did the flood water do? Any power loss?

The reactors performed as designed.

Additional technical information:

Waterford 3 (near New Orleans, LA) did not have damage to any safety equipment during, or shortly after Katrina. They shut down on August 28, 2005, in advance of the hurricane strike. The flooding did affect local infrastructure, including communications and power distribution. However, the plant successfully used their emergency diesel generators to furnish plant power. Access was maintained to the plant throughout the event. On September 9, 2005, after a comprehensive review by FEMA and the NRC, the plant was authorized to restart.

River Bend Station (30 miles north of Baton Rouge, LA) did not experience damage to any safety related equipment and only minimal damage to emergency planning equipment (one siren) during and after Hurricane Katrina. The station reduced power to 70 percent core thermal power on August 28, 2005, due to reduced electrical grid loads. Access was maintained to the plant throughout the event. On September 2, 2005, the plant returned to 100% power.

Also, in 1992 the eye of Hurricane Andrew, a category 5 hurricane, passed directly over the Turkey Point nuclear plant. The plant was shut down prior to the hurricane making landfall and an assessment of the plant following the hurricane demonstrated that the plant sustained very little damage and all of the safety equipment was intact. (Most of the damage was to the security fences being blown down).

Protecting U.S. Citizens

27. What should be done to protect people in Alaska, Hawaii and the West Coast from radioactive fallout?

The NRC continues to believe that the type and design of the Japanese reactors, combined with how events have unfolded, will prevent radiation at harmful levels from reaching U.S. territory.

Additional technical information:

NRC is working with DHS, EPA and other federal partners to ensure monitoring equipment for confirmatory readings is properly positioned, based on meteorological and other relevant information.

28. Why is KI administered during nuclear emergencies?

KI – potassium iodide – is one of the protective measures that might be taken in a radiological emergency in this country. A KI tablet will saturate the thyroid with non-radioactive iodine and prevent the absorption of radioactive iodine that could be part of the radioactive material mix of radionuclides in a release. KI does not prevent exposure from other radionuclides.

Additional technical information:

There are a range of protective measures that we use ... the most effective is evacuation. Local government officials are responsible for determining the best means to protect their public. KI is another means for protection but evacuation and sheltering are the primary means that are used.

29. Are any Americans in danger – armed forces, citizens in Tokyo?

The NRC, in consultation with the White House and U.S. Embassy, has advised United States citizens in Japan to follow the protective measures recommended by the Japanese government. These measures appear to be consistent with steps the United States would take. The Department of Defense has

personnel trained in radiation protective measures and is responsible for providing guidance to U.S. armed forces. Inquiries regarding U.S. citizens in Japan should be directed to the State Department, Consular Services at 202-647-7004.

30. Has the government set up radiation monitoring stations to track the release?

The NRC understands that EPA is utilizing its existing nationwide radiation monitoring system, RadNet, to monitor continuously the nation's air and regularly monitors drinking water, milk and precipitation for environmental radiation. EPA has publicly stated its agreement with the NRC's assessment that we do not expect to see radiation at harmful levels reaching the U.S. from damaged Japanese nuclear power plants. Nevertheless, EPA has stated that it plans to work with its federal partners to deploy additional monitoring capabilities to parts of the western U.S. and U.S. territories.

31. It has been reported that the Japanese have expanded their protective actions out to 30km (~19 miles). Does the Japanese decision to expand their protective actions call into question NRC requirements for Emergency Planning Zones out to 10 miles?

The NRC remains confident that the EPZs around U.S. nuclear reactor plants are adequate to protect public health and safety during a nuclear accident. Nevertheless, the NRC will certainly be looking closely at this incident and the effects on the Japanese nuclear power plant in the future to see if any changes are necessary to NRC regulations.

Future NRC Actions/Evaluations

32. Has this incident changed the NRC perception about earthquake risk?

There has been no change in the NRC's perception of earthquake hazard (i.e. ground shaking levels) for U.S. nuclear power plants. As is prudent, the NRC will certainly be looking closely at this incident and the effects on the Japanese nuclear power plant in the future to see if any changes are necessary to NRC regulations.

Additional technical information:

We expect that there would be lessons learned, etc. It appears that the sites did not have any critical damage due to the earthquake from the fact that the emergency diesel generators initially responded to provide power to the site. The tsunami and consequential site flooding was responsible for the complete loss of power to the site, including the diesel generators which resulted in a Station Blackout.

33. Will this incident affect new reactor licensing?

It is not appropriate to hypothesize on such a future scenario at this point.

Additional technical information:

This event could potentially call into question the NRC's seismic requirements which could require the staff to re-evaluate the staff's approval of the AP1000 and ESBWR design and certifications.

34. How will the events in Japan impact ongoing NRC licensing actions such as power uprates and license renewals and NRC inspections at operating reactors?

The NRC remains committed to its mission to protect public health and safety. The NRC staff is dedicated to that mission and applies a strong safety and security focus to each of our licensing action reviews. The time will come, after this crisis is behind us, to evaluate what, if any, changes are needed. We will assess all the available information from this event and, as we have done with previous natural disasters, such as the 2007 earthquake in the Sea of Japan and the 2004 tsunami in the Indian Ocean,

evaluate whether enhancements to our licensing processes or U.S. nuclear power plants are warranted. In the meantime, we will continue to implement our rigorous inspection and oversight activities at operating U.S. nuclear power plants. It would be premature to speculate about any potential changes to our inspection, licensing or oversight activities.

35. With NRC moving to design certification, at what point is seismic capability tested – during design or modified to be site-specific? If in design, what strength seismic event must these be built to withstand?

The regulations related to seismic requirements are contained in 10 CFR 50 Appendix A criterion 2.

During design certification, vendors propose a seismic design in terms of a ground motion spectrum for their nuclear facility. This spectrum is called a standard design response spectrum and is developed so that the proposed nuclear facility can be sited at most locations in the central and eastern United States.

The vendors show that this design ground motion is suitable for a variety of different subsurface conditions such as hard rock, deep soil, or shallow soil over rock. Combined License and Early Site Permits applicants are required to develop a site specific ground motion response spectrum that takes into account all of the earthquakes in the region surrounding their site as well as the local site geologic conditions. Applicants estimate the ground motion from these postulated earthquakes to develop seismic hazard curves. These seismic hazard curves are then used to determine a site specific ground motion response spectrum that has a maximum annual likelihood of 1×10^{-4} of being exceeded. This can be thought of as a ground motion with a 10,000 year return period. This site specific ground motion response spectrum is then compared to the standard design response spectrum for the proposed design. If the standard design ground motion spectrum envelopes the site specific ground motion spectrum then the site is considered to be suitable for the proposed design. If the standard design spectrum does not completely envelope the site specific ground motion spectrum, then the COL applicant must do further detailed structural analysis to show that the design capacity is adequate. Margin beyond the standard design and site specific ground motions must also be demonstrated before fuel loading can begin.

in R
From: Taylor, Robert
To: Decker, David; Drogitis, Spiros
Cc: Burnell, Scott
Subject: Chairman JaczkoQA7_031511.docx
Date: Tuesday, March 15, 2011 12:27:00 PM
Attachments: Chairman JaczkoQA7_031511.docx

As requested. Scott can confirm that these were blessed by the Ops Center ET.

4/7/14

Questions and Answers for Chairman Jaczko

March 11, 2011 Japan Earthquake/Tsunami Aftermath
As of 11:30 a.m. 3/15/2011

1. What is the NRC doing about the emergencies at the nuclear power plants in Japan? Are you sending staff over there?

Public Answer: We are closely following events in Japan, working with other agencies of the federal government, and have been in direct contact with our counterparts in that country. We have sent a total of 11 staff to Tokyo in response to the Japanese government's request for assistance. Two of those NRC staff members, knowledgeable about boiling water reactors, are already in Japan participating in the USAID team.

Additional technical, non-public information:

We are taking the knowledge that the staff has about the design of the US nuclear plants and we are applying this knowledge to the Japan situation. For example, this includes calculations of severe accident mitigation that have been performed. Tony Ulises and Jim Trapp are in-country. Team led by Chuck Casto enroute from various locations.

2. What's going to happen following the hydrogen explosions everyone's seen from the video footage?

Public Answer: The NRC is aware of the Japanese efforts to stabilize conditions at the affected reactors, and those actions are in line with what would be done in the United States. The NRC continues to monitor information on the status of the reactor core, the reactor vessel and the containment structure – all three areas are important to controlling the situation and protecting the public.

Additional technical, non-public information:

The explosions affected the secondary containment buildings for Units 1 and 3 of the reactor plant. The primary containment was unaffected by the explosion. This does expose the spent fuel pools to atmosphere but should not affect the integrity of the spent fuel pool. With the integrity of the Secondary Containment breached it is more essential to maintain Primary Containment intact.

To provide additional protection to Primary Containment, US reactors of the containment type similar to Fukushima Unit 1 installed a hardened vent line from primary containment directly to the vent stack. A hardened vent provides a release path which would prevent an overpressurization of containment as experienced at Fukushima Unit One. Venting from the hardened vent is typically a manual operation that is controlled by the Emergency Operating Procedures as a last resort to protect the containment from failure. This vent path can be directly from the upper containment or from the torus (the preferred vent path due to scrubbing effect of the torus water).

3. What should be done to protect people in Alaska, Hawaii and the West Coast from radioactive fallout?

Public Answer: The NRC continues to believe that the type and design of the Japanese reactors, combined with how events have unfolded, will prevent radiation at harmful levels from reaching U.S. territory.

Additional technical, non-public information: NRC is working with DHS, EPA and other federal partners to ensure monitoring equipment for confirmatory readings is properly positioned, based on meteorological and other relevant information.

Questions and Answers developed by Rob Taylor

4. Can this happen here i.e. an earthquake that significantly damages a nuclear power plant? Are the Japanese plants similar to U.S. plants?

Public Answer: All U.S. nuclear power plants are built to withstand environmental hazards, including earthquakes and tsunamis. Even those plants that are located in areas with low and moderate seismic activity are designed for safety in the event of such a natural disaster. The NRC requires that safety-significant structures, systems, and components be designed to take into account even very rare and extreme seismic and tsunami events.

The Japanese facilities are similar in design to several US facilities.

Additional technical, non-public information:

Currently operating reactors were designed using a "deterministic" or "maximum credible earthquake" approach. Seismic hazard for the new plants is determined using a much more robust probabilistic seismic hazard assessment approach that explicitly addresses uncertainty and very rare events, as described in RG1.208. The NRC requires that adequate margin beyond the design basis ground shaking levels is assured. The NRC further enhances seismic safety for beyond-design-basis events through the use of a defense-in-depth approach.

In addition, the NRC periodically reviews the seismic risk at operating reactors when information may have changed. Over the last few years the NRC has undertaken a program called Generic Issue 199, which is focused on assessing hazard for plants in the central and eastern US using the latest techniques (developed in part during reviews of Western U.S. plants) and determining the possible risk implications of any increase in the anticipated ground shaking levels. This program will help us assure that the plants are safe under exceptionally rare and extreme ground motions that represent beyond-design-basis events.

5. What would U.S. plants do in this situation?

Public Answer: The NRC requires plant designs to include multiple and diverse safety systems, and plants must test their emergency preparedness capabilities on a regular basis. Plant operators are very capable of responding to significant events. In addition, NRC regulations require plants to have plans in place that would allow them to mitigate even "worst case scenarios".

Since 9/11, we have implemented requirements for licensees to have additional response capabilities for extreme situations.

Additional technical, non-public information:

U.S. nuclear plants have procedures in place to address a variety of accident scenarios, including abnormal operating procedures, emergency operating procedures, severe accident management guidelines and emergency plans. Additionally, the NRC activates Incident Response centers in Headquarters and individual Regions as necessary for the event to provide technical monitoring and support.

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Public Answer: Yes. Plants are built to withstand a variety of environmental hazards. Those plants that might face a threat from tsunami are required to withstand large waves and the maximum and minimum wave heights at the intake structure (which varies by plant.)

Additional, technical, non-public information:

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7. What happens when/if a plant “melts down”?

Public Answer: In short, nuclear power plants in the United States are designed to be safe. To prevent the release of radioactive material, there are multiple barriers between the radioactive material and the environment, including the fuel cladding, the heavy steel reactor vessel itself and the containment building, usually a heavily reinforced structure of concrete and steel several feet thick.

Additional, technical, non-public information:

The melted core may melt through the bottom of the vessel and flow onto the concrete containment floor. The core may melt through the containment liner and release radioactive material to the environment.

8. Why is KI administered during nuclear emergencies?

Public Answer: KI – potassium iodide – is one of the protective measures that might be taken in a radiological emergency in this country. A KI tablet will saturate the thyroid with non radioactive iodine and prevent the absorption of radioactive iodine that could be part of the radioactive material mix of radionuclides in a release. KI does not prevent exposure from these other radionuclides.

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There are a range of protective measures that we use ... the most effective is evacuation. Local government officials are responsible for determining the best means to protect their public. KI is another means for protection but evacuation and sheltering are the primary means that are used.

9. Was there any damage to U.S. reactors from either the earthquake or the resulting tsunami?

Public Answer: No

Additional, technical non-public information: Diablo Canyon Units 1 and 2 were the only US plants to declare any type of an emergency classification. The site entered an "unusual event" based on a tsunami warning from the State, NOAA, NWS, Coast Guard or System Dispatcher following the Japanese earthquake. They have since exited the "unusual event" declaration, based on a downgrade to a tsunami advisory.

10. Has this incident changed the NRC perception about earthquake risk?

Public Answer: There has been no change in the NRC's perception of earthquake hazard (i.e. ground shaking levels) for US nuclear plants. As is prudent, the NRC will certainly be looking closely at this incident and the effects on the Japanese nuclear power plant in the future to see if any changes are necessary to NRC regulations.

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11. Will this incident affect new reactor licensing?

Public Answer: It is not appropriate to hypothesize on such a future scenario at this point.

Additional, technical non-public information:

This event could potentially call into question the NRC's seismic requirements which could require the staff to re-evaluate the staff's approval of the AP1000 and ESBWR design and certifications.

12. What magnitude earthquake are US plants designed to?

Public Answer: Each plant is designed to a ground-shaking level that is appropriate for its location, given the possible earthquake sources that may affect the site and its tectonic environment. Ground shaking is a function of both the magnitude of and earthquake and the distance from the fault plane to the site. The probabilistic approaches currently used by the NRC account for a large number of different magnitudes.

Additional, technical non-public information:

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Public Answer: Although we often think of the US as having "active" and "non-active" earthquake zones, earthquakes can actually happen almost anywhere. Seismologists typically separate the US into low, moderate, and high seismicity zones. The NRC requires that every plant is designed for site-specific ground motions that are appropriate for their location. In addition, the NRC has specified a minimum ground shaking level to which the plants must be designed.

Additional, technical non-public information: No additional.

14. How many reactors are along coastal areas that could be affected by a tsunami (and which ones)?

Public Answer: Many plants are located in coastal areas that could theoretically be affected by tsunami. Two plants, Diablo Canyon and San Onofre, are on the Pacific Coast, which is known to have tsunami hazard. There are also two plants on the Gulf Coast, South Texas and Crystal River. There are many plants on the Atlantic Coast or on rivers that may be affected by a tidal bore. These include St. Lucie, Turkey Point, Brunswick, Oyster Creek, Millstone, Pilgrim, Seabrook, Calvert Cliffs, Salem/Hope Creek, and Surry. Tsunami on the Gulf and Atlantic Coasts occur, but are very rare. Generally the flooding anticipated from hurricane storm surge exceeds the flooding expected from a tsunami for plants on the Atlantic and Gulf Coast.

Additional, technical non-public information: None

15. How many U.S. plants have designs similar to the affected Japanese reactors (and which ones)?

Public answer: Thirty-five of the 104 operating nuclear power plants in the U.S. are boiling water reactors (BWRs), as are the reactors at Fukushima. Twenty-three of the U.S. BWRs have the same Mark I containment as the Fukushima reactors.

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Nineteen U.S. BWRs are similar to Fukushima Unit 3.

Additional Information

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Fukushima Unit 3 is a BWR-4 with a Mark 1 containment and a Reactor Core Isolation Cooling (RCIC) system. The remaining 31 U.S. BWRs use a Reactor Core Isolation Cooling (RCIC) system instead of an isolation condenser. Nineteen of those 31 reactors have a Mark 1 containment, while the remainder are more recent designs.

16. What resources are the Japanese asking for?

The Japanese have formally requested equipment needed to cool the reactor fuel. This includes such things as pumps, fire hoses, portable generators, and diesel fuel. The NRC is coordinating with General Electric, which has plant design specifications, to ensure any equipment provided will be capable of meeting the needs of the Japanese.

17. What should the American public know about the incident in Japan?

The events unfolding in Japan are the result of a catastrophic series of natural disasters. These include the fifth largest earthquake in recorded history and the resulting devastating tsunami. Despite these unique circumstances, the Japanese appear to have taken reasonable actions to mitigate the event and protect the surrounding population. Since the beginning of the event, the NRC has continuously manned its Operations Center in Rockville, MD in order to gather and examine all available information as part of the effort to analyze the event and understand its implications both for Japan and the United States.

18. What could you say about the dangers to the American public from our nuclear plants?

As the events in Japan continue to unfold, the NRC is focused on supporting the Japanese government and people in bringing this crisis to closure in the safest manner possible. The NRC remains convinced that U.S. nuclear power plants are designed and operated in a manner that protects public health and safety. The time will come, after this crisis is behind us, to evaluate what, if any, changes are needed at U.S. nuclear power plants. We will assess all the available information and, as we have done with previous natural disasters, such as the 2007 earthquake in the Sea of Japan and the 2004 tsunami in the Indian Ocean, evaluate whether enhancements to U.S. nuclear power plants are warranted.

19. What happens next in Japan? How long will it take to assess the damage to the reactors?

The current focus is ensuring that adequate cooling of the reactor fuel at each of the affected Japanese reactors is established and maintained. In the days, weeks, and months that follow, there will be adequate time to assess the damage and determine next steps.

20. Compare this incident to the Three Mile Island. What are the similarities?

The events at Three Mile Island in 1979 were the result of an equipment malfunction that resulted in the loss of cooling water to the reactor fuel. Subsequent operator actions compounded the malfunction ultimately resulting in the partial core meltdown. While details are still developing, the events in Japan appear to be the result of an earthquake and subsequent tsunami that knocked out electrical power to emergency safety systems designed to cool the reactor fuel. In both events the final safety barrier, the containment building, contained the majority of the radioactivity preventing its release to the environment.

21. Why did the seawater fail to cool the reactor?

Based on information available to the NRC, it appears that the seawater has been effective at providing some cooling for the reactor. While it appears that some fuel damage has occurred, there will be plenty of time once this crisis is resolved to determine the effectiveness of the measures taken in response to this event.

22. If Chernobyl was a 7 and Three Mile Island was a 5, when does this event move from the 4 level?

The International Atomic Energy Agency (IAEA) rates nuclear events in accordance with its International Nuclear and Radiological Event Scale (INES). IAEA has assigned the events in Japan an INES rating of 4, "Accident with Local Consequences." This rating is subject to change as events unfold and additional information becomes available. INES classifies nuclear accidents based on the radiological effects on people and the environment and the status of barriers to the release of radiation. IAEA determinations regarding the INES rating of events are made independently.

Three Mile Island was assigned an INES rating of 5, "Accident with Wider Consequences," due to the severed damage to the reactor core.

23. Are any Americans in danger – armed forces, citizens in Tokyo?

The NRC, in consultation with the White House and U.S. Embassy, has advised United States citizens in Japan to follow the protective measures recommended by the Japanese government. These measures appear to be consistent with steps the United States would take. The Department of Defense has personnel trained in radiation protective measures and is responsible for providing guidance to U.S. armed forces. Inquiries regarding U.S. citizens in Japan should be directed to the State Department, Consular Services at 202-647-7004.

24. What is the worst case scenario for the plant?

In a nuclear emergency, the most important action is ensure the core is covered with water to provide cooling to remove any heat from the fuel rods. Without adequate cooling, the fuel rods will melt. Should the final containment structure fail, radiation from these melting fuel rods would be released to the atmosphere and additional protective measures may be necessary, depending on factors such as prevailing wind patterns.

25. As time goes on, does the chance for a meltdown increase?

Not necessarily. Each passing hour the fuel rods will become cooler. If adequate cooling can be established and maintained, the risk of a meltdown will be mitigated.

26. Is our battery backup power less effective than the Japanese?

No. US regulations do not specify the length of time that you need to have the batteries operate following a loss of offsite power (most sites plan to have battery backup capability for 8 hours). Instead, the amount of time is dependent on the site recovery strategy and is based on

providing sufficient capacity to assure that the core is cooled and containment integrity and other vital functions are maintained in the event of postulated accidents.

27. Are we providing additional KI to the Japanese?

We have not been asked to provide KI.

28. What are US plants required to have for backup power? More than what the Japanese reactors did?

US plants need to meet 10 CFR 50 Appendix A criterion 17. Reactor units must have 2 independent power supplies. All US (except Oconee) plants have diesels and battery backup systems. Most of the US plants with diesels have two diesels per unit and those that have only one dedicated diesel have a swing diesel available. The regulations do not specify the length of time that you need to have the diesels and batteries operate following a loss of offsite power (most sites plan to run the diesels for multiple days and have battery backup capability for 8 hours). Instead the amount of time is dependent on the site recovery strategy and is based on providing sufficient capacity to assure that the core is cooled and containment integrity and other vital functions are maintained in the event of postulated accidents.

[[[Japanese regulations to follow from OIP.]]]

29. Some in the media and in Hill briefings are suggesting that Mark 1 containment is flawed. What are the concerns about this type of containment? Are the US plants with this safe?

BWR Mark I containments have relatively small volumes in comparison with PWR containments. This makes the BWR Mark I containment relatively more susceptible to containment failure given a core meltdown severe enough to (1) fail the reactor vessel and also (2) severe enough so that the core melt reaches the containment boundary. On the positive side, BWRs have more ways of adding water to the core than PWRs. This includes 2 water injection sources which do not rely on AC electric power. These systems include Reactor Core Isolation Cooling (RCIC) and High pressure coolant injection (HPCI).

The NRC considers BWRs with Mark I containment designs to be safe.

30. Any quick-hit info about how the Southeast Reactors performed during Katrina? What damage did the flood water do? Any power loss?

The reactors performed as designed. Waterford was the most impacted while River Bend also experienced some effects.

Waterford 3 (near New Orleans, LA) did not have damage to any safety equipment during, or shortly after Katrina. They shut down on August 28, 2005, in advance of the hurricane strike. The flooding did affect local infrastructure, including communications and power distribution. However, the plant successfully used their emergency diesel generators to furnish plant power. Access was maintained to the plant throughout the event. On September 9, 2005, after a comprehensive review by FEMA and the NRC, the plant was authorized to restart.

River Bend Station (30 miles north of Baton Rouge, LA) did not experience damage to any safety related equipment and only minimal damage to emergency planning equipment (one siren) during and after Hurricane Katrina. The station reduced power to 70 percent core thermal power on August 28, 2005, due to reduced electrical grid loads. Access was maintained to the plant throughout the event. On September 2, 2005, the plant returned to 100% power.

Also, in 1992 the eye of Hurricane Andrew, a category 5 hurricane, passed directly over the Turkey Point nuclear plant. The plant was shut down prior to the hurricane making landfall and an assessment of the plant following the hurricane demonstrated that the plant sustained very little damage and all of the safety equipment was intact. (Most of the damage was to the security fences being blown down).

31. With NRC moving to design certification, at what point is seismic capability tested – during design or modified to be site-specific? If in design, what strength seismic event must these be built to withstand?

The regulations related to seismic requirements are contained in 10 CFR 50 Appendix A criterion 2.

During design certification, vendors propose a seismic design in terms of a ground motion spectrum for their nuclear facility. This spectrum is called a standard design response spectrum and is developed so that the proposed nuclear facility can be sited at most locations in the central and eastern United States. The vendors show that this design ground motion is suitable for a variety of different subsurface conditions such as hard rock, deep soil, or shallow soil over rock. Combined License and Early Site Permits applicants are required to develop a site specific ground motion response spectrum that takes into account all of the earthquakes in the region surrounding their site as well as the local site geologic conditions. Applicants estimate the ground motion from these postulated earthquakes to develop seismic hazard curves. These seismic hazard curves are then used to determine a site specific ground motion response spectrum that has a maximum annual likelihood of 1×10^{-4} of being exceeded. This can be thought of as a ground motion with a 10,000 year return period. This site specific ground motion response spectrum is then compared to the standard design response spectrum for the proposed design. If the standard design ground motion spectrum envelopes the site specific ground motion spectrum then the site is considered to be suitable for the proposed design. If the standard design spectrum does not completely envelope the site specific ground motion spectrum, then the COL applicant must do further detailed structural analysis to show that the design capacity is adequate. Margin beyond the standard design and site specific ground motions must also be demonstrated before fuel loading can begin.

10PA

From: Harrington, Holly
To: Harrington, Holly; Brenner, Eliot; Burnell, Scott; Couret, Ivonne; Hayden, Elizabeth; McIntyre, David; Chandrathil, Prema; Dricks, Victor; Hannah, Roger; Ledford, Joey; Mitlyng, Viktoria; Screnci, Diane; Sheehan, Neil; Uselding, Lara; Tobin, Jennifer; Wittick, Susan
Cc: Landau, Mindy; Janbergs, Holly; Akstulewicz, Brenda; Shannon, Valerie; Taylor, Robert
Subject: RE: Senate Hearing on Thursday
Date: Tuesday, March 15, 2011 8:39:37 PM
Attachments: Q&AforRespondingtothePublic.docx

These Q&As for use in responding to the public have been approved for verbal use. We will also consider posting them. Hopefully, these will help.

From: Harrington, Holly
Sent: Tuesday, March 15, 2011 5:47 PM
To: Brenner, Eliot; Burnell, Scott; Couret, Ivonne; Hayden, Elizabeth; McIntyre, David; Chandrathil, Prema; Dricks, Victor; Hannah, Roger; Ledford, Joey; Mitlyng, Viktoria; Screnci, Diane; Sheehan, Neil; Uselding, Lara
Cc: Landau, Mindy
Subject: Senate Hearing on Thursday

New: **Nuclear Crisis in Japan**

Senate Environment and Public Works Committee (Chairwoman Boxer, D-Calif.) will hold a briefing on the ongoing crisis associated with nuclear power facilities in Japan, including potential ramifications for the United States. 3:30 p.m., 406 Dirksen

4/75

Questions and Answers for OPA:

1. Can this happen here?

The events that have occurred in Japan are the result of a combination of highly unlikely natural disasters. These include the fifth largest earthquake in recorded history and the resulting devastating tsunami. It is highly unlikely that a similar event could occur in the United States.

2. I live near a nuclear power plant similar to the ones having trouble in Japan. How can we now be confident that this plant won't experience a similar problem?

U.S. nuclear power plants are built to withstand environmental hazards, including earthquakes and tsunamis. Even those plants that are located outside of areas with extensive seismic activity are designed for safety in the event of such a natural disaster. The NRC requires that safety-significant structures, systems, and components be designed to take into account the most severe natural phenomena historically reported for the site and surrounding area. The NRC is confident that the robust design of these plants makes it highly unlikely that a similar event could occur in the United States.

3. Has this crisis changed your opinion about the safety of U.S. nuclear power plants?

No. The NRC remains confident that the design of U.S. nuclear power plants ensures the continued protection of public health and safety and the environment.

4. With all this happening, how can the NRC continue to approve new nuclear power plants?

It is premature to speculate what, if any, effect the events in Japan will have on the licensing of new nuclear power plants.

5. What is the NRC doing in response to the situation in Japan?

The NRC has taken a number of actions:

- a. Since the beginning of the event, the NRC has continuously manned its Operations Center in Rockville, MD in order to gather and examine all available information as part of the effort to analyze the event and understand its implications both for Japan and the United States.
- b. A team of 11 officials from the NRC with expertise in boiling water nuclear reactors have deployed to Japan as part of a U.S. International Agency for International Development (USAID) team.
- c. The NRC has spoken with its counterpart agency in Japan, offering the assistance of U.S. technical experts.

- d. The NRC is coordinating its actions with other Federal agencies as part of the U.S. government response.

6. What other U.S. agencies are involved, and what are they doing?

The entire federal family is responding to this event. The NRC is closely coordinating its efforts with the White House, DOE, DOD, USAID, and others. The U.S. government is providing whatever support requested by the Japanese government.

7. What else can go wrong?

The NRC is continuously monitoring the developments at the nuclear power plants in Japan. Circumstances are constantly evolving and it would be inappropriate to speculate on how this situation might develop over the coming days.

8. What is the worst-case scenario?

In a nuclear emergency, the most important action is to ensure the core is covered with water to provide cooling to remove any heat from the fuel rods. Without adequate cooling, the fuel rods will melt. Should the final containment structure fail, radiation from these melting fuel rods would be released to the atmosphere and additional protective measures may be necessary depending on factors such as prevailing wind patterns.

9. The United States has troops in Japan and has sent ships to help the relief effort – are they in danger from the radiation?

The NRC is not the appropriate federal agency to answer this question. DOD is better suited to provide information regarding its personnel.

10. Is there a danger of radiation making it to the United States?

In response to nuclear emergencies, the NRC works with other U.S. agencies to monitor radioactive releases and predict their path. The NRC continues to monitor information regarding wind patterns near the Japanese nuclear power plants. Nevertheless, given the thousands of miles between the two countries, Hawaii, Alaska, the U.S. Territories and the U.S. West Coast are not expected to experience any harmful levels of radioactivity.

11. Is the U.S. government tracking the radiation released from the Japanese plants?

Yes, a number of U.S. agencies are involved in monitoring and assessing radiation including EPA, DOE, and NRC. The best source of additional information is the Environmental Protection Agency.

12. Has the government set up radiation monitoring stations to track the release?

The NRC understands that EPA is utilizing its existing nationwide radiation monitoring system, RadNet, to monitor continuously the nation's air and regularly monitors drinking water, milk and precipitation for environmental radiation. EPA has publicly stated its agreement with the NRC's assessment that we do not expect to see radiation at harmful levels reaching the U.S. from damaged Japanese nuclear power plants. Nevertheless, EPA has stated that it plans to work with its federal partners to deploy additional monitoring capabilities to parts of the western U.S. and U.S. territories.

13. The radiation "plume" seems to be going out to sea – what is the danger of it reaching Alaska? Hawaii? The west coast?

See response to Question 10.

14. I live in the Western United States – should I be taking potassium iodide (KI)?

At this time, the NRC does not believe that protective measures are necessary in the United States. We do not expect any U.S. states or territories to experience harmful levels of radioactivity. In the unlikely event that circumstances change, U.S. residents should listen to the protective action decisions of their states and counties. These protective action decisions could include actions such as sheltering, evacuation, or taking potassium iodide. The NRC will provide technical assistance to the states should they request it.

15. Are there other protective measures I should be taking?

At this time, the NRC does not believe that protective measures are necessary in the United States. We do not expect any U.S. states or territories to experience harmful levels of radioactivity. In the unlikely event that circumstances change, U.S. residents should listen to the protective action decisions of their states and counties. These protective action decisions could include actions such as sheltering, evacuation, or taking potassium iodide. The NRC will provide technical assistance to the states should they request it. United States citizens in Japan are encouraged to follow the protective measures recommended by the Japanese government. These measures appear to be consistent with steps the United States would take.

16. What are the risks to my children?

See response to Question 15.

17. My family has planned a vacation to Hawaii/Alaska/Seattle next week – is it safe to go, or should we cancel our plans?

The NRC does not expect that residents of the United States or its territories are at any risk of exposure to harmful levels of radiation resulting from the events in Japan. Any changes to travel are a personal decision. The NRC is unaware of any travel restrictions within the United States or its territories.

18. What are the short-term and long-term effects of exposure to radiation?

The NRC does not expect that residents of the United States or its territories are at any risk of exposure to harmful levels of radiation resulting from the events in Japan.

On a daily basis, people are exposed to naturally occurring sources of radiation, such as from the sun or medical X-rays. The resulting effects are dependent on the strength and type of radiation as well as the duration of exposure.

19. I am traveling to Asia (not Japan). Should I adjust my travel plans to avoid flying through plume or being contaminated once on the ground?

The NRC is not the responsible federal agency to advise U.S. citizens on foreign travel restrictions. That responsibility belongs to the Department of State.

20. What is the official agency to report radiation numbers and what is the public contact?

NRC regulations require nuclear power plants to report any radiation doses detected at the plant that could be harmful to the public. This would include doses that are generated by the plant or by an external source. During an event in the U.S., it is the state's responsibility to provide protective action decisions for public health and safety. For this incident, the Japanese are responsible for reporting the public dose; nevertheless, should radiation doses be detected within the U.S., it would still be the state's responsibility to provide protective action decisions for public health and safety.

21. How many plants are located in seismic areas?

Although we often think of the US as having "active" and "non-active" earthquake zones, earthquakes can actually happen almost anywhere. Seismologists typically separate the US into low, moderate, and high seismicity zones. The NRC requires that every plant be designed for site-specific ground motions that are appropriate for their location. In addition, the NRC has specified a minimum ground shaking level to which the plants must be designed.

22. Where would I get IOSAT Potassium Iodide if my city should experience fallout from the Japanese nuclear disaster? Is this the right precaution or is there anything else that can be done to protect myself?

We do not expect any U.S. states or territories to experience harmful levels of radioactivity. As such, we do not believe that there is any need for residents of the United States to take potassium iodide. U.S. residents should listen to the protective action decisions by their states and counties. If necessary, protective action decisions could include actions such as sheltering, evacuating, or taking potassium iodide.

Additional information regarding the use of potassium iodide can be found on NRC's webpage at the following link:

<http://www.nrc.gov/about-nrc/emerg-preparedness/about-emerg-preparedness/potassium-iodide-use.html>

Since Potassium Iodide is classified as a drug. Additional information is on the Food and Drug Administration's web site. www.fda.gov

23. My loved one is overseas, how do I find out if they are ok?

We are directing public inquiries with regard to concern for loved ones overseas to the State Department, Consular Services at 202-647-7004.

108A
From: Harrington, Holly
To: Coggins, Angela; Taylor, Robert
Cc: McIntyre, David; Schmidt, Rebecca; Powell, Amy
Subject: RE: Japanese-Rx-Incident addtl questions - March-14-2011 doc.docx
Date: Tuesday, March 15, 2011 9:51:05 PM
Attachments: Chairman JaczkoQA8_031511.docx

Angela, Amy, Becki – These are fully approved by relevant folks in the Op Center. For your use. I have not added to WebEOC yet as it's not clear these should also be used by others
...

10CM
From: Coggins, Angela
Sent: Tuesday, March 15, 2011 8:36 PM
To: Taylor, Robert
Cc: Harrington, Holly; McIntyre, David; Schmidt, Rebecca; Powell, Amy
Subject: Re: Japanese-Rx-Incident addtl questions - March-14-2011 doc.docx

Thanks so much!! I appreciate all the effort!
Angela Coggins
Policy Director
Office of Chairman Gregory B Jaczko
US Nuclear Regulatory Commission
angela.coggins@nrc.gov/301-415-1828

11NR
From: Taylor, Robert
To: Coggins, Angela
Cc: Harrington, Holly; McIntyre, David; Schmidt, Rebecca; Powell, Amy
Sent: Tue Mar 15 20:29:17 2011
Subject: Japanese-Rx-Incident addtl questions - March-14-2011 doc.docx

Angela,

We have done our best to incorporate your questions into the Chairman's Q&As that were developed earlier today and provided to OCA. The updated set of Q&As is undergoing ET review and we will hopefully have it to you in the near future. The attached provides a roadmap of where we believe the responses can be found. A few questions fell into the broader "After this event is over, we will determine what changes need to be made in the US" message. I did not directly incorporate them, but you can see a draft response in the attached.

Regarding the third question about past events, I did not try to evaluate all of the events you listed. I would propose sticking to the party line, in that, "The NRC routinely reassess its regulatory requirements in light of new operating experience and plant events."

Regards,
Rob

4/76

Questions and Answers for Chairman Jaczko

Japan Earthquake/Tsunami Aftermath
As of 10 p.m. 3/15/2011

Current Status of Events in Japan

1. What damage was caused by the earthquake and/or tsunami at each of the Japanese plants?

On March 31st at approximately 2:46pm local time, a magnitude 8.9 earthquake occurred off the coast of Honshu, Japan. The earthquake knocked out offsite power to the three operating Fukushima Daiichi nuclear power plants (Units 1, 2 and 3). As designed, the nuclear reactors shutdown and on-site emergency diesel generators started up to power emergency safety systems that cool the reactor fuel. Subsequently, at approximately 3:41pm, a tsunami, resulting from the underwater earthquake, struck the site knocking out the emergency diesel generators. After depleting its battery power, the nuclear power plants lost the ability to provide cooling water to the reactor fuel. The best information currently available indicates that fuel damage has occurred Units 1, 2, and 3 but that the primary containment structures have remained intact and only limited releases of radiation have occurred.

2. What's going to happen following the hydrogen explosions everyone's seen from the video footage?

The NRC is monitoring the Japanese efforts to stabilize conditions at the affected reactors, and those actions are in line with what would be done in the United States. The NRC continues to monitor information on the status of the reactor core, the reactor vessel and the containment structure – all three areas are important to controlling the situation and protecting the public.

Additional technical information:

The explosions affected the secondary containment buildings for Units 1 and 3 of the reactor plant. The primary containment was unaffected by the explosion. This does expose the spent fuel pools to atmosphere but should not affect the integrity of the spent fuel pool. With the integrity of the Secondary Containment breached it is more essential to maintain Primary Containment intact.

To provide additional protection to Primary Containment, US reactors of the containment type similar to Fukushima Unit 1 installed a hardened vent line from primary containment directly to the vent stack. A hardened vent provides a release path which would prevent an overpressurization of containment as experienced at Fukushima Unit One. Venting from the hardened vent is typically a manual operation that is controlled by the Emergency Operating Procedures as a last resort to protect the containment from failure. This vent path can be directly from the upper containment or from the torus (the preferred vent path due to scrubbing effect of the torus water).

3. What happens when/if a plant "melts down"?

In short, nuclear power plants are designed to be safe. To prevent the release of radioactive material, there are multiple barriers between the radioactive material and the environment, including the fuel cladding, the heavy steel reactor vessel itself and the containment building, usually a heavily reinforced structure of concrete and steel several feet thick.

Additional technical information:

The melted core may melt through the bottom of the vessel and flow onto the concrete containment floor. The core may melt through the containment liner and release radioactive material to the environment.

4. What should the American public know about the incident in Japan?

The events unfolding in Japan are the result of a catastrophic series of natural disasters. These include the fifth largest earthquake in recorded history and the resulting devastating tsunami. Despite these unique circumstances, the Japanese appear to have taken reasonable actions to mitigate the event and protect the surrounding population. Since the beginning of the event, the NRC has continuously manned its Operations Center in Rockville, MD in order to gather and examine all available information as part of the effort to analyze the event and understand its implications both for Japan and the United States.

5. What happens next in Japan? How long will it take to assess the damage to the reactors?

The current focus is ensuring that adequate cooling of the reactor fuel at each of the affected Japanese reactors is established and maintained. In the days, weeks, and months that follow, there will be adequate time to assess the damage and determine next steps.

6. Why did the seawater fail to cool the reactor?

Based on information available to the NRC, it appears that the seawater has been effective at providing some cooling for the reactor. While it appears that some fuel damage has occurred, there will be plenty of time once this crisis is resolved to determine the effectiveness of the measures taken in response to this event.

7. If Chernobyl was a 7 and Three Mile Island was a 5, when does this event move from the 4 level?

The International Atomic Energy Agency (IAEA) rates nuclear events in accordance with its International Nuclear and Radiological Event Scale (INES). IAEA has assigned the events in Japan an INES rating of 4, "Accident with Local Consequences." This rating is subject to change as events unfold and additional information becomes available. INES classifies nuclear accidents based on the radiological effects on people and the environment and the status of barriers to the release of radiation. IAEA determinations regarding the INES rating of events are made independently.

Three Mile Island was assigned an INES rating of 5, "Accident with Wider Consequences," due to the severe damage to the reactor core.

8. What is the worst case scenario for the plant?

In a nuclear emergency, the most important action is to ensure the core is covered with water to provide cooling to remove any heat from the fuel rods. Without adequate cooling, the fuel rods will melt. Should the final containment structure fail, radiation from these melting fuel rods would be released to the atmosphere and additional protective measures may be necessary, depending on factors such as prevailing wind patterns.

9. As time goes on, does the chance for a meltdown increase?

Not necessarily. Each passing hour the fuel rods will become cooler. If adequate cooling can be established and maintained, the risk of a meltdown will be mitigated.

NRC Support/Response to the Events in Japan

10. What is the NRC doing about the emergencies at the nuclear power plants in Japan? Are you sending staff over there?

We are closely following events in Japan, working with other agencies of the federal government, and have been in direct contact with our counterparts in that country. We have sent a total of 11 staff to Tokyo

in response to the Japanese government's request for assistance. Two of those NRC staff members, knowledgeable about boiling water reactors, are already in Japan participating in the USAID team.

Additional technical information:

We are taking the knowledge that the staff has about the design of the US nuclear plants and we are applying this knowledge to the Japan situation. For example, this includes calculations of severe accident mitigation that have been performed. Tony Ulses and Jim Trapp are in-country. Team led by Chuck Casto is enroute from various locations.

11. What resources are the Japanese asking for?

The Japanese have formally requested equipment needed to cool the reactor fuel. This includes such things as pumps, fire hoses, portable generators, and diesel fuel. The NRC is coordinating with General Electric, which has plant design specifications, to ensure any equipment provided will be capable of meeting the needs of the Japanese.

12. Are we providing additional KI to the Japanese?

The Japanese government has requested KI from the United States. The NRC is working with our federal partners to support any requests of assistance.

Similarities/Impact on U.S. Nuclear Power Plants

**13. Can this happen here, i.e. an earthquake that significantly damages a nuclear power plant?
Are the Japanese plants similar to U.S. plants?**

All U.S. nuclear power plants are built to withstand environmental hazards, including earthquakes and tsunamis. Even those plants that are located in areas with low and moderate seismic activity are designed for safety in the event of such a natural disaster. The NRC requires that safety-significant structures, systems, and components be designed to take into account even very rare and extreme seismic and tsunami events.

The Japanese facilities are similar in design to several US facilities.

Additional technical information:

Currently, operating reactors were designed using a "deterministic" or "maximum credible earthquake" approach. Seismic hazard for the new plants is determined using a much more robust probabilistic seismic hazard assessment approach that explicitly addresses uncertainty and very rare events, as described in RG1.208. The NRC requires that adequate margin beyond the design basis ground shaking levels is assured. The NRC further enhances seismic safety for beyond-design-basis events through the use of a defense-in-depth approach.

In addition, the NRC periodically reviews the seismic risk at operating reactors when information may have changed. Over the last few years the NRC has undertaken a program called Generic Issue 199, which is focused on assessing hazard for plants in the central and eastern US using the latest techniques (developed in part during reviews of Western U.S. plants) and determining the possible risk implications of any increase in the anticipated ground shaking levels. This program will help us assure that the plants are safe under exceptionally rare and extreme ground motions that represent beyond-design-basis events.

14. What would U.S. plants do in this situation?

The NRC requires plant designs to include multiple and diverse safety systems, and plants must test their emergency preparedness capabilities on a regular basis. Plant operators are very capable of responding to significant events. In addition, NRC regulations require plants to have plans in place that would allow them to mitigate even "worst case scenarios".

Since 9/11, we have implemented requirements for licensees to have additional response capabilities for extreme situations.

Additional technical information:

U.S. nuclear plants have procedures in place to address a variety of accident scenarios, including abnormal operating procedures, emergency operating procedures, severe accident management guidelines and emergency plans. Additionally, the NRC activates Incident Response centers in Headquarters and individual Regions as necessary for the event to provide technical monitoring and support.

The NRC is capable of providing access to many external agencies (i.e., FEMA, Homeland Security, Military, etc.) to provide any additional help that individual plant sites may need. Additionally, the NRC has access to real-time plant information through the ERDS System for each site in the US and can monitor the status anytime.

15. Are U.S. power plants designed to withstand tsunamis?

Yes. Plants are built to withstand a variety of environmental hazards. Those plants that might face a threat from tsunami are required to withstand large waves and the maximum and minimum wave heights at the intake structure (which varies by plant.)

Additional technical information:

Tsunami have been considered in the design of US nuclear plants since the publication of Regulatory Guide 1.59 in 1977, although the approaches that were used for design of the existing plants varied significantly. Nuclear plants are designed to withstand flooding from not only tsunami, but also hurricane and storm surge; therefore there is often significant margin against tsunami flooding. However, it should be noted that Japanese experience has shown that drawdown can be a significant problem. Drawdown was not generally analyzed in the past.

Currently the US NRC has a tsunami research program that is focused on developing modern hazard assessment techniques and additional guidance through cooperation with the National Oceanic and Atmospheric Administration and the United States Geological Survey. This has already lead to several technical reports and an update to NUREG 0-800. The NOAA and USGS contractors are also assisting with NRO reviews of tsunami hazard. A new regulatory guide on tsunami hazard assessment is currently planned in the office of research, although it is not expected to be available in draft form until 2012.

16. Was there any damage to U.S. reactors from either the earthquake or the resulting tsunami?

No.

Additional technical information:

Diablo Canyon Units 1 and 2 were the only US plants to declare any type of an emergency classification. The site entered an "unusual event" based on a tsunami warning from the State, NOAA, NWS, Coast

Guard or System Dispatcher following the Japanese earthquake. They have since exited the "unusual event" declaration, based on a downgrade to a tsunami advisory.

17. What magnitude earthquake are US plants designed to?

Each plant is designed to a ground-shaking level that is appropriate for its location, given the possible earthquake sources that may affect the site and its tectonic environment. Ground shaking is a function of both the magnitude of the earthquake and the distance from the fault plane to the site. The probabilistic approaches currently used by the NRC account for a large number of different magnitudes.

Additional technical information:

In the past, "deterministic" or "scenario based" analyses were used to determine ground shaking (seismic hazard) levels. Now a probabilistic method is used that accounts for all possible earthquakes coming from all possible sources (including background seismicity) and the likelihood that each particular hypothetical earthquake occurs.

18. How many US reactors are located in active earthquake zones (and which reactors)?

Although we often think of the US as having "active" and "non-active" earthquake zones, earthquakes can actually happen almost anywhere. Seismologists typically separate the US into low, moderate, and high seismicity zones. The NRC requires that every plant is designed for site-specific ground motions that are appropriate for their location. In addition, the NRC has specified a minimum ground shaking level to which the plants must be designed.

19. How many reactors are along coastal areas that could be affected by a tsunami (and which ones)?

Many plants are located in coastal areas that could theoretically be affected by tsunami. Two plants, Diablo Canyon and San Onofre, are on the Pacific Coast, which is known to have a tsunami hazard. There are also two plants on the Gulf Coast, South Texas and Crystal River. There are many plants on the Atlantic Coast or on rivers that may be affected by a tidal bore. These include St. Lucie, Turkey Point, Brunswick, Oyster Creek, Millstone, Pilgrim, Seabrook, Calvert Cliffs, Salem/Hope Creek, and Surry. Tsunami on the Gulf and Atlantic Coasts occur, but are very rare. Generally the flooding anticipated from hurricane storm surge exceeds the flooding expected from a tsunami for plants on the Atlantic and Gulf Coast.

20. How many U.S. plants have designs similar to the affected Japanese reactors (and which ones)?

Thirty-five of the 104 operating nuclear power plants in the U.S. are boiling water reactors (BWRs), as are the reactors at Fukushima. Twenty-three of the U.S. BWRs have the same Mark I containment as the Fukushima reactors.

Four of the U.S. BWRs are early designs which are similar to Fukushima Unit 1.

Nineteen U.S. BWRs are similar to Fukushima Unit 3.

Additional technical information:

Fukushima Unit 1 is a BWR-3 with a Mark 1 containment similar to Oyster Creek, Nine Mile Point Unit 1, and Dresden Units 2 and 3.

Fukushima Unit 3 is a BWR-4 with a Mark 1 containment and a Reactor Core Isolation Cooling (RCIC) system. The remaining 31 U.S. BWRs use a Reactor Core Isolation Cooling (RCIC) system instead of an isolation condenser. Nineteen of those 31 reactors have a Mark 1 containment, while the remainder are more recent designs.

21. What could you say about the dangers to the American public from our nuclear plants?

As the events in Japan continue to unfold, the NRC is focused on supporting the Japanese government and people in bringing this crisis to closure in the safest manner possible. The NRC remains convinced that U.S. nuclear power plants are designed and operated in a manner that protects public health and safety. The time will come, after this crisis is behind us, to evaluate what, if any, changes are needed at U.S. nuclear power plants. We will assess all the available information and, as we have done with previous natural disasters, such as the 2007 earthquake in the Sea of Japan and the 2004 tsunami in the Indian Ocean, evaluate whether enhancements to U.S. nuclear power plants are warranted.

22. Compare this incident to the Three Mile Island. What are the similarities?

The events at Three Mile Island in 1979 were the result of an equipment malfunction that resulted in the loss of cooling water to the reactor fuel. Subsequent operator actions compounded the malfunction ultimately resulting in the partial core meltdown. While details are still developing, the events in Japan appear to be the result of an earthquake and subsequent tsunami that knocked out electrical power to emergency safety systems designed to cool the reactor fuel. In both events the final safety barrier, the containment building, contained the majority of the radioactivity preventing its release to the environment.

23. Is our battery backup power less effective than the Japanese?

We currently do not have sufficient information to compare the differences in design requirements and performance characteristics of nuclear-grade batteries in the U.S. and Japanese nuclear power plants. However, in the U.S., nuclear power plants utilize redundant nuclear-grade (i.e., Class 1E, safety-related) batteries that are designed and constructed using rigorous standards and are routinely tested in accordance to ensure adequate capacity and capability exists to perform their intended safety functions. These batteries are located in structures that can withstand natural phenomena such as earthquakes, tornadoes, tsunami, and floods in accordance with NRC regulations. For U.S. nuclear power plants, the typical design duty cycles for safety grade batteries range from 1-8 hrs.

24. What are US plants required to have for backup power? More than what the Japanese reactors did?

The NRC requires U.S. nuclear power plants need to have 2 independent power supplies. All US (except Oconee) plants have diesels and battery backup systems. Most of the U.S. plants with diesels have two diesels per unit and those that have only one dedicated diesel have a swing diesel available. The regulations do not specify the length of time that you need to have the diesels and batteries operate following a loss of offsite power (most sites plan to run the diesels for multiple days and have battery backup capability for 8 hours). Instead the amount of time is dependent on the site recovery strategy and is based on providing sufficient capacity to assure that the core is cooled and containment integrity and other vital functions are maintained in the event of postulated accidents.

25. Some in the media and in Hill briefings are suggesting that Mark 1 containment is flawed. What are the concerns about this type of containment? Are the US plants with this safe?

The NRC considers BWRs with Mark I containment designs to be safe. BWR Mark I containments have smaller volumes than PWR containments. This makes the BWR Mark I containment more susceptible to containment failure given a core meltdown severe enough to (1) fail the reactor vessel and also (2) severe enough so that the core melt reaches the containment boundary. However, BWRs have more

ways of adding water to the core than PWRs. This includes 2 water injection sources which do not rely on AC electric power. These systems include Reactor Core Isolation Cooling (RCIC) and High pressure coolant injection (HPCI).

26. Any quick-hit info about how the Southeast Reactors performed during Katrina? What damage did the flood water do? Any power loss?

The reactors performed as designed.

Additional technical information:

Waterford 3 (near New Orleans, LA) did not have damage to any safety equipment during, or shortly after Katrina. They shut down on August 28, 2005, in advance of the hurricane strike. The flooding did affect local infrastructure, including communications and power distribution. However, the plant successfully used their emergency diesel generators to furnish plant power. Access was maintained to the plant throughout the event. On September 9, 2005, after a comprehensive review by FEMA and the NRC, the plant was authorized to restart.

River Bend Station (30 miles north of Baton Rouge, LA) did not experience damage to any safety related equipment and only minimal damage to emergency planning equipment (one siren) during and after Hurricane Katrina. The station reduced power to 70 percent core thermal power on August 28, 2005, due to reduced electrical grid loads. Access was maintained to the plant throughout the event. On September 2, 2005, the plant returned to 100% power.

Also, in 1992 the eye of Hurricane Andrew, a category 5 hurricane, passed directly over the Turkey Point nuclear plant. The plant was shut down prior to the hurricane making landfall and an assessment of the plant following the hurricane demonstrated that the plant sustained very little damage and all of the safety equipment was intact. (Most of the damage was to the security fences being blown down).

Protecting U.S. Citizens

27. What should be done to protect people in Alaska, Hawaii and the West Coast from radioactive fallout?

The NRC continues to believe that the type and design of the Japanese reactors, combined with how events have unfolded, will prevent radiation at harmful levels from reaching U.S. territory.

Additional technical information:

NRC is working with DHS, EPA and other federal partners to ensure monitoring equipment for confirmatory readings is properly positioned, based on meteorological and other relevant information.

28. Why is KI administered during nuclear emergencies?

KI – potassium iodide – is one of the protective measures that might be taken in a radiological emergency in this country. A KI tablet will saturate the thyroid with non-radioactive iodine and prevent the absorption of radioactive iodine that could be part of the radioactive material mix of radionuclides in a release. KI does not prevent exposure from other radionuclides.

Additional technical information:

There are a range of protective measures that we use ... the most effective is evacuation. Local government officials are responsible for determining the best means to protect their public. KI is another means for protection but evacuation and sheltering are the primary means that are used.

29. Are any Americans in danger – armed forces, citizens in Tokyo?

The NRC, in consultation with the White House and U.S. Embassy, has advised United States citizens in Japan to follow the protective measures recommended by the Japanese government. These measures appear to be consistent with steps the United States would take. The Department of Defense has personnel trained in radiation protective measures and is responsible for providing guidance to U.S. armed forces. Inquiries regarding U.S. citizens in Japan should be directed to the State Department, Consular Services at 202-647-7004.

30. Has the government set up radiation monitoring stations to track the release?

The NRC understands that EPA is utilizing its existing nationwide radiation monitoring system, RadNet, to monitor continuously the nation's air and regularly monitors drinking water, milk and precipitation for environmental radiation. EPA has publicly stated its agreement with the NRC's assessment that we do not expect to see radiation at harmful levels reaching the U.S. from damaged Japanese nuclear power plants. Nevertheless, EPA has stated that it plans to work with its federal partners to deploy additional monitoring capabilities to parts of the western U.S. and U.S. territories.

31. It has been reported that the Japanese have expanded their protective actions out to 30km (~19 miles). Does the Japanese decision to expand their protective actions call into question NRC requirements for Emergency Planning Zones out to 10 miles?

The NRC remains confident that the EPZs around U.S. nuclear reactor plants are adequate to protect public health and safety during a nuclear accident. Nevertheless, the NRC will certainly be looking closely at this incident and the effects on the Japanese nuclear power plant in the future to see if any changes are necessary to NRC regulations.

Future NRC Actions/Evaluations

32. Has this incident changed the NRC perception about earthquake risk?

There has been no change in the NRC's perception of earthquake hazard (i.e. ground shaking levels) for U.S. nuclear power plants. As is prudent, the NRC will certainly be looking closely at this incident and the effects on the Japanese nuclear power plant in the future to see if any changes are necessary to NRC regulations.

Additional technical information:

We expect that there would be lessons learned, etc. It appears that the sites did not have any critical damage due to the earthquake from the fact that the emergency diesel generators initially responded to provide power to the site. The tsunami and consequential site flooding was responsible for the complete loss of power to the site, including the diesel generators which resulted in a Station Blackout.

33. Will this incident affect new reactor licensing?

It is not appropriate to hypothesize on such a future scenario at this point.

Additional technical information:

This event could potentially call into question the NRC's seismic requirements which could require the staff to re-evaluate the staff's approval of the AP1000 and ESBWR design and certifications.

34. How will the events in Japan impact ongoing NRC licensing actions such as power uprates and license renewals and NRC inspections at operating reactors?

The NRC remains committed to its mission to protect public health and safety. The NRC staff is dedicated to that mission and applies a strong safety and security focus to each of our licensing action reviews. The time will come, after this crisis is behind us, to evaluate what, if any, changes are needed. We will assess all the available information from this event and, as we have done with previous natural disasters, such as the 2007 earthquake in the Sea of Japan and the 2004 tsunami in the Indian Ocean, evaluate whether enhancements to our licensing processes or U.S. nuclear power plants are warranted. In the meantime, we will continue to implement our rigorous inspection and oversight activities at operating U.S. nuclear power plants. It would be premature to speculate about any potential changes to our inspection, licensing or oversight activities.

35. With NRC moving to design certification, at what point is seismic capability tested – during design or modified to be site-specific? If in design, what strength seismic event must these be built to withstand?

The regulations related to seismic requirements are contained in 10 CFR 50 Appendix A criterion 2.

During design certification, vendors propose a seismic design in terms of a ground motion spectrum for their nuclear facility. This spectrum is called a standard design response spectrum and is developed so that the proposed nuclear facility can be sited at most locations in the central and eastern United States.

The vendors show that this design ground motion is suitable for a variety of different subsurface conditions such as hard rock, deep soil, or shallow soil over rock. Combined License and Early Site Permits applicants are required to develop a site specific ground motion response spectrum that takes into account all of the earthquakes in the region surrounding their site as well as the local site geologic conditions. Applicants estimate the ground motion from these postulated earthquakes to develop seismic hazard curves. These seismic hazard curves are then used to determine a site specific ground motion response spectrum that has a maximum annual likelihood of 1×10^{-4} of being exceeded. This can be thought of as a ground motion with a 10,000 year return period. This site specific ground motion response spectrum is then compared to the standard design response spectrum for the proposed design. If the standard design ground motion spectrum envelopes the site specific ground motion spectrum then the site is considered to be suitable for the proposed design. If the standard design spectrum does not completely envelope the site specific ground motion spectrum, then the COL applicant must do further detailed structural analysis to show that the design capacity is adequate. Margin beyond the standard design and site specific ground motions must also be demonstrated before fuel loading can begin.

From: Harrington, Holly
To: Taylor, Robert
Subject: RE: a favor...
Date: Tuesday, March 15, 2011 2:42:02 PM
Attachments: Japanese-Rx-Incident addtl questions - March-14-2011 doc.docx

From: Taylor, Robert *NR*
Sent: Tuesday, March 15, 2011 2:38 PM
To: Harrington, Holly; Coggins, Angela; Brenner, Eliot
Cc: Powell, Amy
Subject: RE: a favor...

Attachment didn't come through. Please send and I will update.

From: Harrington, Holly *ORA*
Sent: Tuesday, March 15, 2011 2:37 PM
To: Coggins, Angela; Brenner, Eliot; Taylor, Robert
Cc: Powell, Amy
Subject: RE: a favor...

Rob is our current "keeper of the Q&As." I will ask him to pursue for you.

From: Coggins, Angela *OCM*
Sent: Tuesday, March 15, 2011 2:26 PM
To: Brenner, Eliot; Harrington, Holly
Cc: Powell, Amy
Subject: a favor...

I have a big favor to ask... Can you check to see if these attached questions are already included in the questions and answers, and if not, add them to the list and prepare some responses for us? Thanks so much!!

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

Y177

(3/14/11)

1. With respect to the Japanese BWR reactors:

- a) what damage was caused by the earthquake and/or tsunami at each of the units?
- b) was that damage anticipated in the design basis? If yes, were these results forecast? If not, should they have been?
- c) what are the gaps between modeling and simulation tool projections and what actually happened at each of the sites?
- d) what technical differences exist between the Japanese units with expected core damage and comparable units in the US?
- e) other

2. With respect to US plants:

- a) for BWR's, what are technical safety areas that should be explored for US reactors?
- b) what seismic/tsunami/flooding related design aspects should be reviewed/investigated for US plants?
- c) what station blackout type concerns should be explored for US plants given the experience (as we understand it) in Japan?
- d) other

3. What process is the NRC staff in with respect to reviewing safety of existing US reactors?

4. With respect to licensing actions under review (new and operating), what considerations should be given to the Japanese reactor events and through what process?

5. What process is the Commission in with respect to providing direction to the staff on any inspections of existing US reactors (including their design basis) and any direction on new reactor license applications?

6. What does history tell us about how the Commission may consider proceeding going forward:

- a. Three Mile Island
- b. Chernobyl
- c. Browns Ferry fire
- d. Davis Besse
- e. 9/11
- f. Other?

Keefe, Molly

From: Forsyth, Daniel
Sent: Tuesday, March 15, 2011 12:28 PM
To: Keefe, Molly
Subject: RE: latest

Unit 2 has probably breached containment. There was a loud bang/explosion and the containment pressure dropped from 3 atm to 1 atm. Radiation immediately afterwards spiked to 800 mrem/hr outside the building.

From: Keefe, Molly *mk*
Sent: Tuesday, March 15, 2011 12:26 PM
To: Forsyth, Daniel
Subject: RE: latest

☹ this is very bleak outlook-

Bill was in Ops center from 7PM Sunday night to 7AM Monday AM- and said things are not good.

Molly J. Keefe
Human Factors Specialist
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
(301) 415-5717
Molly.Keefe@nrc.gov

From: Forsyth, Daniel
Sent: Tuesday, March 15, 2011 11:23 AM
To: Keefe, Molly
Subject: RE: latest

11.9 mSv is 1,190 mrem/hour. That spike of 400 mSv/hr is 40,000 mrem/hr. At least the iodine would have decayed before the spent fuel caught fire.

I swear if it weren't for bad luck, these plant workers would have no luck at all.

From: Keefe, Molly
Sent: Tuesday, March 15, 2011 11:18 AM
To: Forsyth, Daniel
Subject: latest

<http://www.iaea.org/newscenter/news/tsunamiupdate01.html>

Molly J. Keefe
Human Factors Specialist
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
(301) 415-5717
Molly.Keefe@nrc.gov

Dunham, Katrina

From: Jackson, Donald
Sent: Tuesday, March 15, 2011 5:49 AM
To: Dentel, Glenn
Subject: Re: March 14, 2011, 11:30pm Japan Nuclear Facility Updates

I should be back by 2pm for turnover...this sure is a dire situation.
Don Jackson Sent Via Blackberry

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

From: Dentel, Glenn
To: Powell, Raymond; Gray, Mel; Jackson, Donald; Krohn, Paul; Bellamy, Ronald; Burritt, Arthur
Sent: Tue Mar 15 00:12:41 2011
Subject: FW: March 14, 2011, 11:30pm Japan Nuclear Facility Updates

FYI tentative information do not forward.

From: Dentel, Glenn
Sent: Tuesday, March 15, 2011 12:12 AM
To: Dean, Bill; Lew, David; Wilson, Peter; Roberts, Darrell; Collins, Daniel; Lorson, Raymond; Baker, Pamela; Walker, Tracy; Sunil.Weerakoddy@nrc.gov; Clifford, James; Miller, Chris
Cc: Screnci, Diane; Sheehan, Neil; Trapp, James; McNamara, Nancy; Tifft, Doug; Hansell, Samuel; Hinson, Felicia; raymond.McKinely@nrc.gov; Dentel, Glenn
Subject: March 14, 2011, 11:30pm Japan Nuclear Facility Updates

Update regarding Japan from 1130 pm TA briefing,

Conditions have substantially changed

Fukushima Daiichi

Unit 1 has stable core cooling and intact containment with no SFP issues

Unit 2 has not had core cooling for some time, apparently the pumps were deadheaded. Containment is no longer believed to be intact (They heard a loud explosion in containment and containment pressure reduced to atmospheric pressure). There is possibility of ex vessel fuel damage.

Unit 3 has stable core cooling, there is substantial debris in the SFP from earlier hydrogen explosion

Unit 4 SFP is dry. Potential fuel pool zirconium fire.

20 km evacuation has been issued by Japan and 30 km shelter in place.

Site Boundary dose rates at Units 1/2 is 3 to 4 R/hr
at Units 3/4 is 10 R/hr

NRC has dispatched 9 individuals to Japan lead by Chuck Casto DOE WRAP team is 7 hours out from arrival in Japan.

Next Update is at 0730.

Dunham, Katrina

From: Jackson, Donald
Sent: Tuesday, March 15, 2011 6:39 AM
To: Dentel, Glenn
Subject: Re: March 14, 2011, 11:30pm Japan Nuclear Facility Updates

Thx
Don Jackson Sent Via Blackberry

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

From: Dentel, Glenn
To: Jackson, Donald
Sent: Tue Mar 15 06:32:58 2011
Subject: RE: March 14, 2011, 11:30pm Japan Nuclear Facility Updates

I believe so, but I would state that this is very tentative information. I will have an update shortly; however, some of the information is sketchy.

Glenn

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

From: Jackson, Donald
Sent: Tuesday, March 15, 2011 6:32 AM
To: Dentel, Glenn
Subject: Re: March 14, 2011, 11:30pm Japan Nuclear Facility Updates

Can we share verbally with our staff at 0730?
Don Jackson Sent Via Blackberry

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

From: Dentel, Glenn
To: Powell, Raymond; Gray, Mel; Jackson, Donald; Krohn, Paul; Bellamy, Ronald; Burritt, Arthur
Sent: Tue Mar 15 00:12:41 2011
Subject: FW: March 14, 2011, 11:30pm Japan Nuclear Facility Updates

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To: Dean, Bill; Lew, David; Wilson, Peter; Roberts, Darrell; Collins, Daniel; Lorson, Raymond; Baker, Pamela; Walker, Tracy; Sunil.Weerakoddy@nrc.gov; Clifford, James; Miller, Chris
Cc: Screnci, Diane; Sheehan, Neil; Trapp, James; McNamara, Nancy; Tifft, Doug; Hansell, Samuel; Hinson, Felicia; raymond.McKinely@nrc.gov; Dentel, Glenn
Subject: March 14, 2011, 11:30pm Japan Nuclear Facility Updates

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Next Update is at 0730.

Dunham, Katrina

From: Bower, Fred
Sent: Tuesday, March 15, 2011 3:09 PM
To: Ziedonis, Adam
Subject: FW: Japan before/after website

fyi

Fred Bower

Senior Resident Inspector
Peach Bottom Atomic Power Station

From: Brown, Michael
Sent: Tuesday, March 15, 2011 2:19 PM
To: Bower, Fred
Subject: FW: Japan before/after website

Here's a pretty good link.

Mike

From: Egli, Richard
Sent: Tuesday, March 15, 2011 1:58 PM
To: Brown, Michael
Subject: FW: Japan before/after website

This link is pretty good, the level destruction is unbelievable. Anyway it does show a couple of the nuke sites including the one with the most issues.

Subject: Japan before/after website

<http://www.abc.net.au/news/events/japan-quake-2011/beforeafter.htm>

Be sure to let it load, and you can hover your mouse over the images for the before and after images.

Gray, Mel

From: Krohn, Paul
Sent: Tuesday, March 15, 2011 8:42 AM
To: Clifford, James; Bellamy, Ronald; Burritt, Arthur; Dentel, Glenn; Gray, Mel; Jackson, Donald; Powell, Raymond
Cc: Roberts, Darrell; Screnci, Diane; Sheehan, Neil; Wilson, Peter
Subject: RE: Potential questions for EOC meetings

All,

Another question to add to the mix:

18. Some news outlets have reported that the Japanese plants did not have sufficient battery backup power following the tsunami and the subsequent loss of the emergency diesel generators. Does this vulnerability exist at US plants?

This gets to SBO rule, coping times, and possible NRC regulatory changes in the future.

Paul Krohn

From: Clifford, James
Sent: Monday, March 14, 2011 5:25 PM
To: Bellamy, Ronald; Burritt, Arthur; Dentel, Glenn; Gray, Mel; Jackson, Donald; Krohn, Paul; Powell, Raymond
Cc: Roberts, Darrell
Subject: FW: Potential questions for EOC meetings

We should brain-storm these, and see if there are other questions we should develop answers for ahead of time. Looks like a good set of questions!

Jim Clifford

Deputy Director
Division of Reactor Projects
Region I

From: Dean, Bill
Sent: Monday, March 14, 2011 4:59 PM
To: Screnci, Diane; Sheehan, Neil; Roberts, Darrell; Wilson, Peter; Clifford, James; Weerakkody, Sunil; Lew, David
Subject: FW: Potential questions for EOC meetings

FYI. Does this cover the landscape for us do you think?

Bill

From: McCree, Victor
Sent: Monday, March 14, 2011 4:46 PM
To: Hannah, Roger; Ledford, Joey
Cc: Collins, Elmo; Dean, Bill; Satorius, Mark; Wert, Leonard; Casto, Chuck
Subject: FW: Potential questions for EOC meetings

Here are questions that OPA, et al., are asked to consider in developing the agency Q&As for the Japanese earthquake/tsunami...and that can be referenced by NRC managers in preparation for the ROP end-of-cycle and other near term public meetings.

Vic

From: Croteau, Rick
Sent: Monday, March 14, 2011 4:35 PM
To: McCree, Victor
Cc: Wert, Leonard; Jones, William
Subject: Potential questions for EOC meetings

Vic,

Not sure how you wanted these, but here are some of the questions we could see being asked at EOCs:

1. Do US nuclear plants have better capabilities to respond to natural disasters than the plants in Japan?
2. Did the NRC share the post 9/11 enhancements to the U.S. facilities with the Japanese?
3. Could there be core damage and radiation release at a US plant if a natural disaster exceeding the plant design were to occur?
4. Could explosions like those that occurred in Japan happen at a U.S facility?
5. How would the U.S. have responded to the events of March 11?
6. How are US BWRs similar and/or different from the plants experience problems in Japan?
7. Why are US plants safe to operate considering the events in Japan?
8. How big an earthquake is plant X designed to handle (for each plant)?
9. Is plant X designed to withstand a tsunami (for each coastal plant)?
10. What is the NRC doing to ensure this (Japan event) doesn't happen at US plants?
11. How will the U.S. learn from the failures at the Japanese reactors?
12. Is the NRC relooking at seismic analysis for US plants?
13. Is the event in Japan worse than TMI and Chernobyl?
14. What is the longer term prognosis for keeping the reactors cooled at the Japanese facilities?
15. Does the NRC participate in inspection of the Japanese facilities?
16. Given low probability events do occur, how does the U.S. ensure that U.S. plant designs are not significantly degraded by risk-informed changes?
17. How does the NRC ensure people can escape if an accident occurs from a natural disaster when the infrastructure is also affected or destroyed in an area around a plant?

Rick

Doerflein, Lawrence

From: Doerflein, Lawrence
Sent: Tuesday, March 15, 2011 7:51 AM
To: Arner, Frank; Brand, Javier; Burket, Elise; Balazik, Michael; Schoppy, Joseph; Pindale, Stephen; Mangan, Kevin; Orr, Michael; Williams, Christopher
Subject: FW: March 15, 2011, 6:00 am Japan Nuclear Facility Updates

FYI

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

From: Wilson, Peter
Sent: Tuesday, March 15, 2011 6:40 AM
To: Rogge, John; Doerflein, Lawrence; Conte, Richard; Hansell, Samuel; Kennedy, Silas; Henderson, Pamela; Cahill, Christopher; Schmidt, Wayne
Subject: FW: March 15, 2011, 6:00 am Japan Nuclear Facility Updates

FYI, the latest from Japan. For those who do not know, Bill Cook is heading to Japan this morning.

Pete

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

From: Dentel, Glenn
Sent: Tuesday, March 15, 2011 6:37 AM
To: Dentel, Glenn; Dean, Bill; Lew, David; Wilson, Peter; Roberts, Darrell; Collins, Daniel; Lorson, Raymond; Baker, Pamela; Walker, Tracy; Clifford, James; Miller, Chris; Weerakkody, Sunil
Cc: Screnci, Diane; Sheehan, Neil; Trapp, James; McNamara, Nancy; Tifft, Doug; Hansell, Samuel; Hinson, Felicia; McKinley, Raymond
Subject: March 15, 2011, 6:00 am Japan Nuclear Facility Updates

Update regarding Japan from 6:00 am TA briefing.

Fukushima Daiichi

Unit 1 & 3 has stable core cooling and intact containment with no SFP issues

Unit 2 - no update on core cooling (previous this unit has not had core cooling for some time, apparently the pumps were deadheaded). Containment is no longer believed to be intact (They heard a loud noise in containment and containment pressure reduced to atmospheric pressure). There is possibility of ex vessel fuel damage.

Unit 4 Fire was extinguished in a short time at Unit 4. This does not make sense if it was zirconium fire, no significantly new information on the SFP conditions. (previous information was SFP is dry. Potential fuel pool zirconium fire).

20 km evalucuation has been issue by Japan and 30 km shelter in place.

We are conducting our own dose projections and PARs. We are potentially evacuating US personnel out to 50 miles. Winds are shifting away from Toyko and are expected out to sea within a day.

Dose update: dose at the front gate is 60 mR/hr. (previous dose information: Site Boundary dose rates at Units 1/2 is 3 to 4 R/hr at Units 3/4 is 10 R/hr)

NRC has dispatched 9 individuals to Japan lead by Chuck Casto DOE WRAP team sent to Japan

4 diesel pumps being delivered to the site.

Dentel, Glenn

From: Dentel, Glenn
Sent: Tuesday, March 15, 2011 3:16 PM
To: Jackson, Donald
Subject: FW: ACTION: Commissioners Assistants Briefing Notification

From: ANS.HOC@nrc.gov [<mailto:ANS.HOC@nrc.gov>]
Sent: Tuesday, March 15, 2011 2:53 PM
Subject: ACTION: Commissioners Assistants Briefing Notification

The Commissioners Assistants Briefing schedule concerning the Reactor Events in Japan has been changed. The briefings will now be held twice daily at 08:00, and again at 20:00 EDT. As before, you will be notified prior to the Commissioners Assistants Briefing as to the time of the brief, the call in number, and related security code.

Turilin, Andrey

From: Burritt, Arthur
Sent: Tuesday, March 15, 2011 4:03 PM
To: Clifford, James
Subject: RE: Potential questions for EOC meetings

Follow Up Flag: Follow up
Flag Status: Flagged

I can't think of anything additional

From: Clifford, James
Sent: Monday, March 14, 2011 5:25 PM
To: Bellamy, Ronald; Burritt, Arthur; Dentel, Glenn; Gray, Mel; Jackson, Donald; Krohn, Paul; Powell, Raymond
Cc: Roberts, Darrell
Subject: FW: Potential questions for EOC meetings

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Jim Clifford

Deputy Director
Division of Reactor Projects
Region I

From: Dean, Bill
Sent: Monday, March 14, 2011 4:59 PM
To: Screnci, Diane; Sheehan, Neil; Roberts, Darrell; Wilson, Peter; Clifford, James; Weerakkody, Sunil; Lew, David
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Sent: Monday, March 14, 2011 4:46 PM
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Rick

Turilin, Andrey

From: Burritt, Arthur
Sent: Tuesday, March 15, 2011 4:18 PM
To: Cline, Leonard; DeBoer, Joseph; Douglas, Christopher; Johnson, Jonathan; Kern, Ludwig; McKenna, Philip; Patel, Amar; Raymond, William; Schroeder, Daniel; Turilin, Andrey; Welling, Blake
Subject: FW: OPA Talking Points
Attachments: OPA Talking Points.docx

Please review and internalize

From: Clifford, James
Sent: Monday, March 14, 2011 5:34 PM
To: Bellamy, Ronald; Burritt, Arthur; Dentel, Glenn; Gray, Mel; Jackson, Donald; Krohn, Paul; Powell, Raymond
Cc: Roberts, Darrell
Subject: FW: OPA Talking Points

Provided for your information. Even with this, we need to refer any questions to the regional PA officers

Jim Clifford

Deputy Director
Division of Reactor Projects
Region I

From: Dean, Bill
Sent: Monday, March 14, 2011 5:05 PM
To: Screnci, Diane; Sheehan, Neil; Roberts, Darrell; Wilson, Peter; Lorson, Raymond; Collins, Daniel; Weerakkody, Sunil; Clifford, James; Lew, David
Subject: FW: OPA Talking Points

Bill

From: LIA04 Hoc
Sent: Monday, March 14, 2011 5:02 PM
To: Tift, Doug; McNamara, Nancy; Woodruff, Gena; Barker, Allan; Logaras, Harral; Maier, Bill; Dean, Bill; McCree, Victor; Collins, Elmo; Heck, Jared; Trojanowski, Robert; Browder, Rachel; Erickson, Randy
Cc: Turtill, Richard; Virgilio, Rosetta; Rautzen, William; Ryan, Michelle; Rivera, Alison; Lukes, Kim; Flannery, Cindy
Subject: OPA Talking Points

Please see the attached for your information and use.

Amanda Noonan
State Liaison – Liaison Team
Incident Response Center

OPA

TALKING POINTS

JAPAN NUCLEAR SITUATION

As of 3/14/2011 3 P.M. EST

In a White House briefing this morning, Chairman Jaczko said the type and design of the Japanese reactors and the way events have unfolded give us confidence in saying radiation at harmful levels will not reach the U.S.

Jaczko also said today that we believe the protective steps the Japanese are taking are comparable to ones we would use here and that we advise Americans in Japan to follow the guidance of Japanese officials.

According to Chairman Jaczko, the NRC is always looking to learn information that can be applied to the U.S. reactors and we will certainly be looking at the information that comes from this incident.

The Japanese government has formally asked for assistance from the United States as it continues to respond to nuclear power plant cooling issues triggered by an earthquake and tsunami on March 11. The NRC is assembling a team to send over in response to the request for help.

The NRC already has two experts in boiling-water reactors (BWR) in Tokyo offering technical assistance. They are part of a USAID team.

The NRC is working with other U.S. agencies to monitor radioactive releases from Japan and to predict their path. All the available information indicates weather conditions have taken the small releases from the Fukushima reactors out to sea away from the population.

Given the results of the monitoring and distance between Japan and Hawaii, Alaska, the U.S. Territories and the U.S. West Coast, the NRC does NOT expect the U.S. to experience any harmful levels of radioactivity.

Nuclear power plants are built to withstand environmental hazards, including earthquakes. Even those plants that are located outside of areas with extensive seismic activity are designed for safety in the event of such a natural disaster.

The NRC requires that safety-significant structures, systems, and components be designed to take into account the most severe natural phenomena historically reported for the site and surrounding area. The NRC then adds a margin for error to account for the historical data's limited accuracy. In other words, U.S. nuclear power plants are designed to be safe based on historical data from the area's maximum credible earthquake.

The NRC is coordinating its actions with other federal agencies as part of the U.S. government response. The NRC's headquarters Operations Center is activated and monitoring the situation on a 24-hour basis.

Dunham, Katrina

From: Matakas, Gina
Sent: Tuesday, March 15, 2011 5:41 PM
To: All R1 Users
Subject: All Employee Meeting - Wednesday, March 16 - 3:30-4:00 Subj: Recent Events in Japan

On Behalf of Bill Dean -

An all employee meeting has been scheduled for Wednesday, March 16 from 3:30 – 4:30, to discuss the recent events in Japan. The meeting will be held in the main conference room and a bridge line will be set-up for employees who are not in the office, but would like to call-in.

Thank You.

Gina Matakas

Y187

Dentel, Glenn

From: Jackson, Donald
Sent: Tuesday, March 15, 2011 4:34 PM
To: Lew, David; Dean, Bill; Wilson, Peter; Weerakkody, Sunil; Roberts, Darrell; Clifford, James; Lorson, Raymond; Collins, Daniel
Cc: Dentel, Glenn
Subject: 4pm Phone Call Concerning 24 Hour Headquarters Incident Response Coverage
Importance: High

As Region I Duty Officer I participated in a call to brainstorm agency coverage for the Japan Reactor Accident(s). Michelle Evans led the call. Key Points:

- Headquarters Incidence Response will probably continue through April 15, 2011.
- The coverage will be 24/7, with 4 days on and 4 days off, with three shift coverage.
- The plan is to have a watch bill in place and active before this Saturday.
- Michelle Evans will send out a staffing plan this evening, but would include Executive Team, Protective Measures Team, Reactor Safety Team, Public Affairs, International Programs, Liason Team, Others.
- Looking hard for agency leaders that are already qualified, or are leaders that can step in with minimal training. (Pete Wilson, and Monica Orendi were mentioned by name).
- A relief team is being put together to transit to Japan by March 28.
- The Incident Response 24/7 coverage will be staffed while we have folks on the ground in Japan.
- Talked about sending NRC Dosimetry and KI with next team.
- More to follow.....sounds like lots of needs and still working on the exact scope.

Very Respectfully,

Don Jackson

Chief- Region I DRP PB5
(610) 337-5306

Dunham, Katrina

From: Jackson, Donald
Sent: Tuesday, March 15, 2011 10:56 PM
To: Dean, Bill
Subject: Re: 2000 CA Briefing and Attached Situation Report

BTW, when I was at Millstone yesterday...Dominion was ahead of INPO developing a true plan of actions to address this.
Don Jackson Sent Via Blackberry

From: Dean, Bill
To: Jackson, Donald; Dentel, Glenn; Lew, David; Wilson, Peter; Roberts, Darrell; Collins, Daniel; Lorson, Raymond; Baker, Pamela; Walker, Tracy; Clifford, James; Miller, Chris; Weerakkody, Sunil
Cc: Screnci, Diane; Sheehan, Neil; Trapp, James; McNamara, Nancy; Tifft, Doug; Hansell, Samuel; Hinson, Felicia; McKinley, Raymond
Sent: Tue Mar 15 22:06:15 2011
Subject: Re: 2000 CA Briefing and Attached Situation Report

Don, what was the discussion re: IPO's actions. Seems like NRC could have been in lead to request industry to do similar things.

Bill Dean
Regional Administrator
Region I, USNRC
Sent from NRC BlackBerry

From: Jackson, Donald
To: Dentel, Glenn; Dean, Bill; Lew, David; Wilson, Peter; Roberts, Darrell; Collins, Daniel; Lorson, Raymond; Baker, Pamela; Walker, Tracy; Clifford, James; Miller, Chris; Weerakkody, Sunil
Cc: Screnci, Diane; Sheehan, Neil; Trapp, James; McNamara, Nancy; Tifft, Doug; Hansell, Samuel; Hinson, Felicia; McKinley, Raymond
Sent: Tue Mar 15 20:59:12 2011
Subject: 2000 CA Briefing and Attached Situation Report

I have attached the 1930 Situation Report Update provided to the Commission TAs. The Chairman joined the phone call at around 2015 to confirm reports of an ongoing Unit 4 fire that was reported on CNN. I have summarized key changes to the previous email from Glenn Dentel in bulletized fashion below. The attachment is a concise comprehensive report of current status.

Unit 1-

- Little Change
- Some Fuel Damage
- SW Injection Working
- Loss of Sec Ctmt

Unit 2-

- **New Report That Primary Containment Appears Intact**
- **Loss of Secondary Containment- TEPCO made a hole in roof to positively vent H2 Gas**
- Some Fuel Damage
- **Less Stable SW Injection**

Unit 3-

- Little Change
- Some Fuel Damage

- SW Injection Working
- Loss of Sec Ctmt

Unit 4-

- Previous Fire determined to be a lube oil fire
- **New fire reported in vicinity of refueling deck, believed to be H2 fire**
- **SFP Level reported to be very low, radiation levels 30 R/hr due to shine**
- **No fire fighting actively due to high rad levels**
- **Fire began 4-5 hours ago**
- **TEPCO plans to remove secondary containment roof or wall section to fight fire externally**

Units 5 and 6-

- **SFPs heating up, approximately 80 degrees C**

Other Items:

- **INPO has issued its highest level event notification requiring plants to assess and report on 4 items including B.5.b, SAMG, SBO, Flooding and Fire readiness.**
- Additional NRC Team arrives this evening
- NRC has determined that Japanese PARs currently adequate
- Japanese government is accepting US Government help from Military, DOE, and other specialties
- **It was reported that TEPCO currently has around 50 staff on site, and that 5 individuals may have received fatal radiation doses during emergency actions.**

Please refer to the attachment, it has really good information.

Very Respectfully,
Don Jackson

Dunham, Katrina

From: Jackson, Donald
Sent: Tuesday, March 15, 2011 10:52 PM
To: Dean, Bill
Subject: Re: 2000 CA Briefing and Attached Situation Report

That was brought up by one of the comm ca's...no short term agency actions currently being developed. Actions several weeks away per Jack Grobe. This is a sad mess...let me know how I can help...bags packed for DC or Tokyo.
Don Jackson Sent Via Blackberry

From: Dean, Bill
To: Jackson, Donald; Dentel, Glenn; Lew, David; Wilson, Peter; Roberts, Darrell; Collins, Daniel; Lorson, Raymond; Baker, Pamela; Walker, Tracy; Clifford, James; Miller, Chris; Weerakkody, Sunil
Cc: Screnci, Diane; Sheehan, Neil; Trapp, James; McNamara, Nancy; Tifft, Doug; Hansell, Samuel; Hinson, Felicia; McKinley, Raymond
Sent: Tue Mar 15 22:06:15 2011
Subject: Re: 2000 CA Briefing and Attached Situation Report

Don, what was the discussion re: IPO's actions. Seems like NRC could have been in lead to request industry to do similar things.
Bill Dean
Regional Administrator
Region I, USNRC
Sent from NRC BlackBerry

From: Jackson, Donald
To: Dentel, Glenn; Dean, Bill; Lew, David; Wilson, Peter; Roberts, Darrell; Collins, Daniel; Lorson, Raymond; Baker, Pamela; Walker, Tracy; Clifford, James; Miller, Chris; Weerakkody, Sunil
Cc: Screnci, Diane; Sheehan, Neil; Trapp, James; McNamara, Nancy; Tifft, Doug; Hansell, Samuel; Hinson, Felicia; McKinley, Raymond
Sent: Tue Mar 15 20:59:12 2011
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- **It was reported that TEPCO currently has around 50 staff on site, and that 5 individuals may have received fatal radiation doses during emergency actions.**

Please refer to the attachment, it has really good information.

Very Respectfully,
Don Jackson

Bickett, Carey

From: Nuclear Plant Journal [anu@goinfo.com]
Sent: Tuesday, March 15, 2011 5:47 PM
To: Bickett, Carey
Subject: E-News from Nuclear Plant Journal

Having trouble viewing this email? [Click here](#)

Nuclear Plant Journal

An International Publication
Published in the United States

Nuclear Plant Journal E-News

**Japan Update
March 15, 2011**

Dear CAREY,

Nuclear Plant Journal brings you a special E-edition of the Journal with the latest information from events related to the Miyagiken-Oki Earthquake and ensuing tsunami on March 11, 2011, in northern Japan.

All Fukushima Daiichi Nuclear Power Plants have an INES Radiation Alert Level 4. Please see this [IAEA link](#) for an explanation of the levels.

The following two links provides updates as of March 15, 2011:

- On the JAIF website, there is a [complete summary PDF](#) that includes status updates of all units at the Fukushima plant.
- The Prime Minister's office [update](#).

Organizations which are currently providing the current status of the Japanese affected nuclear power stations are listed below.

TEPCO News Releases

Tokyo Electric Power Company provides the [latest updates](#) from the utility that owns the Fukushima Daiichi Nuclear Power Station.



TOKYO ELECTRIC POWER COMPANY

Japan Atomic Industrial Forum

Please see [this link](#) for the most current from the Japan Atomic Industrial Forum.

Dentel, Glenn

From: Trapp, James
Sent: Tuesday, March 15, 2011 7:08 AM
To: Dentel, Glenn
Subject: RE: March 15, 2011, 6:00 am Japan Nuclear Facility Updates
Attachments: Fukushima Units 2 & 4 Reactor Status.docx

SFP not so good at Fukushima 4.

From: Dentel, Glenn
Sent: Tuesday, March 15, 2011 6:37 AM
To: Dentel, Glenn; Dean, Bill; Lew, David; Wilson, Peter; Roberts, Darrell; Collins, Daniel; Lorson, Raymond; Baker, Pamela; Walker, Tracy; Clifford, James; Miller, Chris; Weerakkody, Sunil
Cc: Screnci, Diane; Sheehan, Neil; Trapp, James; McNamara, Nancy; Tifft, Doug; Hansell, Samuel; Hinson, Felicia; McKinley, Raymond
Subject: March 15, 2011, 6:00 am Japan Nuclear Facility Updates

Update regarding Japan from 6:00 am TA briefing.

Fukushima Daiichi
Unit 1 & 3 has stable core cooling and intact containment with no SFP issues

Unit 2 - no update on core cooling (previous this unit has not had core cooling for some time, apparently the pumps were deadheaded). Containment is no longer believed to be intact (They heard a loud noise in containment and containment pressure reduced to atmospheric pressure). There is possibility of ex vessel fuel damage.

Unit 4 Fire was extinguished in a short time at Unit 4. This does not make sense if it was zirconium fire, no significantly new information on the SFP conditions. (previous information was SFP is dry. Potential fuel pool zirconium fire).

20 km evalucuation has been issue by Japan and 30 km shelter in place.

We are conducting our own dose projections and PARs. We are potentially evacuating US personnel out to 50 miles. Winds are shifting away from Toyko and are expected out to sea within a day.

Dose update: dose at the front gate is 60 mR/hr. (previous dose information: Site Boundary dose rates at Units 1/2 is 3 to 4 R/hr at Units 3/4 is 10 R/hr)

NRC has dispatched 9 individuals to Japan lead by Chuck Casto DOE WRAP team sent to Japan

4 diesel pumps being delivered to the site.

SENSITIVE BUT UNCLASSIFIED

Fukushima One Reactor Status

Bottom Line:

Based on an interview with a NISA engineer this morning, the NRC team incorrectly concluded that Unit 2, three fissions barriers were compromised and core cooling was lost. As a result of further discussions with NISA engineers and review of additional radiological data, it is currently believed that this is not the case and the reactor core is being cooled.

Based on an interview with Japanese this morning, the NRC team incorrectly concluded that the Unit 4 spent fuel pool was not being adequately cooled and had experienced a fire. Upon further review throughout the day, NISA's position is that the fire was not a fuel fire.

Based on this new information, and the information provided by the DOE/NRC dose protections, the team has concluded that the protected actions recommended by the Japanese around the Fukushima are appropriate for American citizens at this time.

Details:

Unit 2 - Over the course of the day seawater injection has been reinstated at Unit 2. Upon further discussions, it is now believed that the reported explosion in Unit 2 may have occurred at Unit 4. By re-establishing core cooling and by providing additional information regarding the source of the explosion, the teams' initial assumption that the cause was potentially a breach of the vessel was no longer valid. The clarification on the explosion location and the conflicting drywell pressure and wet-well pressure indications are still a discrepancy of concern but are not a clear indication of a loss of containment integrity. Furthermore, there is a possibility that SRV could malfunction.

Unit 4 SFP - Regarding the spent fuel pool fire, this was later explained to us to be an oil fire in the Unit 4 reactor building. This information was not clearly understood by the team (or NISA at the time of the briefing). We were told that the level in the SFP is low (exact level undetermined). NISA indicated that the SFP pool is not being adequately cooled. They told us that the 40 R/nr reading was taken in the radiation fields between the Unit 3/4 reactors building. The fields near the SFP would be high. NISA believes there was a hydrogen explosion at Unit 4.

JimTrapp/Tony Ulses – United States Nuclear Regulatory Commission

SENSITIVE BUT UNCLASSIFIED

1.

From: Manoly, Kamal, *NR*
To: Nguyen, Quynh
Cc: Martin, Robert; Thomas, Eric; Meighan, Sean; Boger, Bruce; Grobe, Jack
Subject: RE: Earthquake
Date: Tuesday, March 15, 2011 1:29:15 PM

Quynh,

I am not sure what you mean by "How" the plants are built? Are you referring to boilers vs. pressurized reactors in terms of structural configuration?

Kamal

REL

From: Nguyen, Quynh, *NR*
Sent: Tuesday, March 15, 2011 12:05 PM
To: Manoly, Kamal
Cc: Martin, Robert; Thomas, Eric; Meighan, Sean; Boger, Bruce; Grobe, Jack
Subject: FW: Earthquake

Kamal,

We are working on earthquake question responses. Maybe you want to start thinking about responding with how the plants are built?

release

From: Kammerer, Annie, *RES*
Sent: Tuesday, March 15, 2011 11:04 AM
To: Ake, Jon; Munson, Clifford
Cc: Meighan, Sean; Nguyen, Quynh
Subject: RE: Earthquake

Jon/Cliff: another request, but something we can do later today. Quynh and Sean preparing a response to the questions, "what if an 8.9 happened at one of our plants." This is an obvious question from the public who doesn't understand tectonics and one that we are going to be asked over and over.

I'm suggesting the approach to developing the response:

- 1) Explain that an 8.9 can't happen at the plants
- 2) Explain that plants are designed to ground motions and not magnitudes
- 3) Figure out the distance from the plane to the plants in Japan. Try to determine rough estimates of the ground motions at the plants (note, we have some numbers on the shakemap, but they are too low based on the recording of 0.58g at onagawa) (Jon do you have a subduction model at your fingertips?)
- 4) use that estimate to compare to the ground motions and to say "this ground motion is only expected every XX years on average at this plant. However an 8.9 can't occur because it requires a subduction zone...."

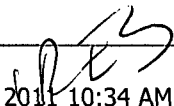
This needs to be written up so that the public can understand.

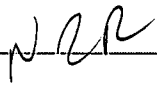
Again, this is not the top of the list, but something to do today when we get a breather.

Sean/Quynh: we'll do our best.

4/19/11

Annie

From: Kammerer, Annie 
Sent: Tuesday, March 15, 2011 10:34 AM
To: Nguyen, Quynh
Cc: Meighan, Sean
Subject: RE: Earthquake

From: Nguyen, Quynh 
Sent: Tuesday, March 15, 2011 10:33 AM
To: Kammerer, Annie
Cc: Meighan, Sean
Subject: Earthquake

From: EDO Update
To: Taylor, Renee
Subject: EDO Update
Date: Tuesday, March 15, 2011 10:16:02 AM

EDO Banner

EDO Banner



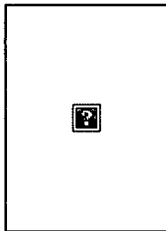
EDO Update



EDO



Tuesday, March 15, 2011



We are all saddened about the tragic events in Japan. Our thoughts and prayers go out to all of those affected by the earthquake and tsunami. The serious nuclear power plant issues have obviously been a special focus of the NRC. Rest assured, we are closely monitoring the situation and providing requested assistance. Senior managers and staff have been manning the Operations Center in rotations 24 hours a day since the earthquake. Over the weekend, we sent two staff members to Japan who are boiling-water reactor experts (the technology used at the Fukushima site). At the Japanese government's request, we have also sent nine additional NRC staff to help the American embassy in Tokyo and to support the Japanese regulators. Not surprisingly, the Congressional hearing scheduled for this Wednesday, which was originally to focus on our Fiscal Year 2012 budget, will now be primarily focused on the events in Japan.

It is not for the NRC to speak for the Japanese or United States governments, so I won't comment on the situation in any greater detail. Additional information can be obtained from the International Atomic Energy Agency and the U.S. Agency for International Development, a part of the State Department that is coordinating the U.S. response and assistance efforts.

It is possible that some of you will be requested by colleagues in another country to provide technical advice and assistance during this emergency. It is essential that all such communications be handled through the NRC Operations Center. If you receive such a request, contact the NRC Operations Officer (301-816-5100 or via the NRC Operator) immediately. All media calls should be forwarded to the Office of Public Affairs (301-415-8200). If you receive information regarding this or any emergency (foreign or domestic) and you are not certain that the NRC's Incident Response Operations Officer is already aware of that information, you should contact the NRC Operations Officer (301-816-5100 or via the NRC Operator) and provide that information.

4194

Notwithstanding the significance of what is occurring in Japan, we still have our domestic mission to carry out, and with the exception of the small number of people who have been directly called upon to respond to this situation we should all proceed with previously planned activities. We will continue to process licensing actions, conduct inspections, and fulfill our regulatory responsibilities.

In accordance with NRC regulations, every American nuclear power plant is designed with multiple, redundant safety systems to be robust enough to withstand the seismic and natural event risks associated with its specific location. In other words, the NRC analyzes every reactor site for own specific features and potential hazards, and requires the plant to be designed and operated accordingly. But in calculating risks, a certain level of uncertainty is always present. To compensate for these uncertainties, the NRC utilizes the concept of "defense in depth"—an approach to safety where multiple, diverse, and redundant layers of protection are used to prevent accidents and mitigate consequences. While it is inappropriate to speculate on what would happen to an American nuclear power plant under similar circumstances to the Japan event, we do know that U.S. nuclear facilities are among the most robust and well-protected civilian structures in the country.

Let me express my thanks to the NRC staff that have served in or supported the Operations Center since the earthquake hit. I'd also like to thank those who have had to compensate for their colleagues who have been called away from their regular duties.

I will keep you informed of ongoing developments.



Bill Borchardt, EDO

NAR
From: Givvines, Mary
To: Leeds, Eric; Grobe, Jack; Boger, Bruce
Subject: Fw: Scheduling Call Summary - March 14, 2011
Date: Tuesday, March 15, 2011 4:30:35 PM
Attachments: Scheduling Call Summary for 3-14-11.docx

Fyi

REL
EDU
From: Taylor, Renee
To: Abraham, Susan; Akstulewicz, Brenda; Andersen, James; Ash, Darren; Baker, Pamela; Belmore, Nancy; Bettis, Ashley; Boger, Bruce; Borchardt, Bill; Boyce, Thomas (OIS); Boyd, Lena; Brenner, Eliot; Brown, Milton; Buckley, Patricia; Campbell, Andy; Casby, Marcia; Casto, Chuck; Ciani, Sandra; Cohen, Miriam; Collins, Elmo; Crawford, Carrie; Crouch, Nicole; Cullison, David; Dambly, Jan; Dapas, Marc; Darby, Krystal; Deegan, George; Delligatti, Mark; Dembek, Stephen; Doolittle, Elizabeth; Dorman, Dan; Dubose, Sheila; EDO Distribution; Ficks, Ben; Flory, Shirley; Garland, Stephanie; Givvines, Mary; Golder, Jennifer; Grobe, Jack; Gusack, Barbara; Harris, Natasha; Hasan, Nasreen; Hayden, Elizabeth; Higginbotham, Tina; Holahan, Gary; Holahan, Patricia; Hopkins, Rhonda; Howard, Patrick; Howell, Art; Jaegers, Cathy; Kaplan, Michele; Kelley, Corenthis; Krupnick, David; Landau, Mindy; Lee, Pamela; Lew, David; Mamish, Nader; Matakas, Gina; McCrary, Cheryl; Miles, Patricia; Mitchell, Reggie; Moore, Scott; Muessle, Mary; ODaniell, Cynthia; Owen, Lucy; Pederson, Cynthia; Poland, Catherine; Powell, Amy; Pulliam, Timothy; Quesenberry, Jeannette; Raynor, Kathleen; Reynolds, Steven; Rheaume, Cynthia; Riddick, Nicole; Ronewicz, Lynn; Ross, Brenda; Ross, Robin; Salus, Amy; Santiago, Patricia; Satorius, Mark; Schaeffer, James; Schmidt, Rebecca; Schum, Constance; Schumann, Stacy; Schwarz, Sherry; Shah, Maria; Shay, Jason; Smith, Beverly; Somerville, Glenda; Sprogeris, Patricia; Stewart, Sharon; Tannenbaum, Anita; Taylor, Renee; Tomczak, Tammy; Tracy, Glenn; Uhle, Jennifer; Veltri, Debra; Virgilio, Martin; Walker, Dwight; Weber, Michael; Wert, Leonard; West, Steven; Williams, Barbara; Wyatt, Melissa; Zimmerman, Roy; Seltzer, Rickie; Arildsen, Jesse
Sent: Tue Mar 15 16:20:36 2011
Subject: Scheduling Call Summary - March 14, 2011

Please find attached the notes from the March 14th scheduling call with the AO.

Thank you,

Renee Taylor

Administrative Assistant to the Executive Director for Operations
U.S. Nuclear Regulatory Commission
(301) 415-1701

Y195

Scheduling Call Summary for March 14, 2011

Agenda/Action Items:

- 1) OEDO discussed issues associated with NRC's support of recovery efforts in Japan. It was noted that all requests for support from the NRC Operations Center have first priority. Two NRC personnel were deployed to the American Embassy in Tokyo and nine additional (six program office and three OIP) personnel are being deployed to help support the Japanese regulators. Staff not directly supporting the response efforts should continue to focus on work in progress. It was also noted that the upcoming Congressional briefings will shift focus from budget issues to issues associated with the Japanese nuclear incidents.
- 2) NSIR stated that the Headquarters Operations Center staffing is expected to continue at current levels through Friday, and at possible reduced levels through the weekend.
- 3) OEDO discussed the Strategic Acquisition Transformation Plan. The SRM was issued on February 28th, and both major recommendations were accepted by the Commission. It was noted that contractual authority will reside with the EDO, to be further delegated, and that the process for generating Chairman papers has been terminated. It was also noted that new procurement templates will be promulgated in the near future.
- 4) OEDO discussed profiling of OIG reports and emphasized that, after a final report is published it will be made public and posted in ADAMS. Following this, all subsequent correspondence should be made public (with the exception of items that are classified, OOU, etc).
- 5) OEDO discussed feedback from the recent Commission Agenda Planning Meeting. It was noted that the Commissioners were very pleased with recent meetings. Notable points included good eye contact from speakers (i.e., not reading from a script), good presentation of technical detail, and use of pictures to illustrate salient points. The need for revisions to guidance for Commission meeting preparation is being evaluated.
- 6) CFO requested survey feedback concerning implementation of FAIMIS by March 25.

RES

From: Sheron, Brian
To: Holahan, Gary; Ramsey, Jack; Evans, Michele; Boger, Bruce; Grobe, Jack; Uhle, Jennifer; Dorman, Dan; Moore, Scott
Cc: Johnson, Michael; Rosales-Cooper, Cindy; Wiggins, Jim; Diec, David; Leeds, Eric; Cullingford, Michael; Astwood, Heather; Sangimino, Donna-Marie; Dehn, Jeff; Haney, Catherine; Smith, Shawn; Miller, Charles; Cool, Donald; Tracy, Glenn; Doane, Margaret; Mamish, Nader; Dembek, Stephen; Abrams, Charlotte; Owens, Janice; McDevitt, Joan; Virgilio, Martin; Williams, Shawn; Weber, Michael; Muessle, Mary; Anderson, James
Subject: RE: Action Request - Potential Temporary Assignees to OIP
Date: Tuesday, March 15, 2011 2:11:27 PM

I agree with Gary. This request should be directed to the EDO, not the program offices.

REC -----Original Message----- NRD

From: Holahan, Gary
Sent: Tuesday, March 15, 2011 1:19 PM
To: Ramsey, Jack; Evans, Michele; Boger, Bruce; Grobe, Jack; Uhle, Jennifer; Dorman, Dan; Moore, Scott
Cc: Johnson, Michael; Rosales-Cooper, Cindy; Wiggins, Jim; Diec, David; Leeds, Eric; Cullingford, Michael; Astwood, Heather; Sheron, Brian; Sangimino, Donna-Marie; Dehn, Jeff; Haney, Catherine; Smith, Shawn; Miller, Charles; Cool, Donald; Tracy, Glenn; Doane, Margaret; Mamish, Nader; Dembek, Stephen; Abrams, Charlotte; Owens, Janice; McDevitt, Joan; Virgilio, Martin; Williams, Shawn; Weber, Michael; Muessle, Mary; Anderson, James
Subject: RE: Action Request - Potential Temporary Assignees to OIP

Jack,

I think that requests like this need to go to OEDO not to program offices.

Gary

-----Original Message----- OIP

From: Ramsey, Jack
Sent: Tuesday, March 15, 2011 11:26 AM
To: Holahan, Gary; Evans, Michele; Boger, Bruce; Grobe, Jack; Uhle, Jennifer; Dorman, Dan; Moore, Scott
Cc: Johnson, Michael; Rosales-Cooper, Cindy; Wiggins, Jim; Diec, David; Leeds, Eric; Cullingford, Michael; Astwood, Heather; Sheron, Brian; Sangimino, Donna-Marie; Dehn, Jeff; Haney, Catherine; Smith, Shawn; Miller, Charles; Cool, Donald; Tracy, Glenn; Doane, Margaret; Mamish, Nader; Dembek, Stephen; Abrams, Charlotte; Owens, Janice; McDevitt, Joan; Virgilio, Martin; Williams, Shawn; Weber, Michael
Subject: Action Request - Potential Temporary Assignees to OIP
Importance: High

All,

Activities involving the evolving situation in Japan are having, and are projected to continue to have, a significant impact upon OIP resources. With this, OIP would like to ask if each of the program offices could identify whether they have staff (preferably staff with international experience) that could be detailed to OIP for a period of, at least initially, 3 to 6 months. Any staff considered for possible rotation to OIP should be aware that they could potentially travel to Japan and be exposed to ionizing radiation. Please note that such identified staff may, or may not, actually be needed. Instead, OIP is hoping to have a list of individuals, with program office blessing, that could be utilized (including with very little or no notice).

If possible, feedback by late this week (Friday morning) would be extremely helpful. Within OIP, Joan McDevitt will be the principal point of contact for this.

Thanks in advance to everyone for their understanding during this challenging time.

Y196

Jack

From: Leeds, Eric *NRR*
To: Grobe, Jack; Ruland, William
Cc: Boger, Bruce
Subject: RE: Action Request - Potential Temporary Assignees to OIP
Date: Tuesday, March 15, 2011 12:31:17 PM

We need to be sensitive to staffing the Ops Center, which I just heard will go for another month, potentially. It would be helpful to get more info from OIP on the type of expertise they are looking for, besides international experience.

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

REL
-----Original Message----- *NRR*

From: Grobe, Jack
Sent: Tuesday, March 15, 2011 12:11 PM
To: Ruland, William
Cc: Leeds, Eric; Boger, Bruce
Subject: Fw: Action Request - Potential Temporary Assignees to OIP
Importance: High

Bill could you respond for NRR from the LT
Jack Grobe, Deputy Director, NRR

----- Original Message ----- *OIP*

From: Ramsey, Jack
To: Holahan, Gary; Evans, Michele; Boger, Bruce; Grobe, Jack; Uhle, Jennifer; Dorman, Dan; Moore, Scott
Cc: Johnson, Michael; Rosales-Cooper, Cindy; Wiggins, Jim; Diec, David; Leeds, Eric; Cullingford, Michael; Astwood, Heather; Sheron, Brian; Sangimino, Donna-Marie; Dehn, Jeff; Haney, Catherine; Smith, Shawn; Miller, Charles; Cool, Donald; Tracy, Glenn; Doane, Margaret; Mamish, Nader; Dembek, Stephen; Abrams, Charlotte; Owens, Janice; McDevitt, Joan; Virgilio, Martin; Williams, Shawn; Weber, Michael
Sent: Tue Mar 15 11:25:49 2011
Subject: Action Request - Potential Temporary Assignees to OIP

All,

Activities involving the evolving situation in Japan are having, and are projected to continue to have, a significant impact upon OIP resources. With this, OIP would like to ask if each of the program offices could identify whether they have staff (preferably staff with international experience) that could be detailed to OIP for a period of, at least initially, 3 to 6 months. Any staff considered for possible rotation to OIP should be aware that they could potentially travel to Japan and be exposed to ionizing radiation. Please note that such identified staff may, or may not, actually be needed. Instead, OIP is hoping to have a list of individuals, with program office blessing, that could be utilized (including with very little or no notice).

If possible, feedback by late this week (Friday morning) would be extremely helpful. Within OIP, Joan McDevitt will be the principal point of contact for this.

Thanks in advance to everyone for their understanding during this challenging time.

Jack

4197

From: Boger, Bruce *NRR*
To: Quay, Theodore; Rosenberg, Stacey
Cc: McGinty, Tim; Blount, Tom
Subject: FW: Recommendation for proactive action by NRC in light of Japan events
Date: Tuesday, March 15, 2011 7:57:00 AM

REL
Please take a look at the email string below. It appears that Eric is in support of a GC that could serve as a reminder to reactor licensees on their obligations for preparedness. Let me know what vehicle we should use—RIS, IN, ...? Thanks.

From: Leeds, Eric, *NRR*
Sent: Monday, March 14, 2011 5:53 PM
To: Johnson, Michael
Cc: Holahan, Gary; Grobe, Jack; Boger, Bruce; Ruland, William
Subject: RE: Recommendation for proactive action by NRC in light of Japan events

I like Gary's thought also. Now's the time. NRR's lead.

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

From: Johnson, Michael, *NRR*
Sent: Monday, March 14, 2011 2:02 PM
To: Holahan, Gary
Cc: Leeds, Eric; Virgilio, Martin; Borchardt, Bill; Grobe, Jack; Boger, Bruce; Sheron, Brian; Williams, Donna; Wiggins, Jim
Subject: RE: Recommendation for proactive action by NRC in light of Japan events

Thanks Gary. NRR's lead of course. I like the idea using this as an opportunity to highlight the importance of previous requirements/actions as a proactive step. We will need to think about the correct vehicle. I also like having industry involved up front in whatever we decide to do.

From: Holahan, Gary, *NRR*
Sent: Monday, March 14, 2011 1:55 PM
To: Johnson, Michael
Cc: Leeds, Eric; Virgilio, Martin; Borchardt, Bill; Grobe, Jack; Boger, Bruce; Sheron, Brian; Williams, Donna; Wiggins, Jim
Subject: Recommendation for proactive action by NRC in light of Japan events

Mike,

The events in Japan reinforce the importance of preparedness for the unexpected. In that light, I suggest that NRC take some form of proactive step to reinforce both the Severe Accident Management Guidelines and the 50.54 (hh) (formerly B.5.b) protection for "Loss of Large Area of the plant from fires and explosions".

4198

50.54 (hh) seems particularly relevant, stating "Each licensee shall develop and implement guidance and strategies intended to maintain or restore core cooling, containment, and spent fuel pool cooling capabilities under the circumstances associated with loss of large areas of the plant due to explosions or fire..."

The NRC could issue Orders, Bulletins, or letters on an expedited basis (in the next few days) to require or encourage licensees to confirm their readiness to implement the severe accident management guidance and strategies under 50.54 (hh). This would not involve any new requirements, but would simply reinforce the existing requirements.

I recommend that we coordinate this activity with the industry to ensure their full and early cooperation. This would be similar to the level of cooperation we undertook for the security bulletins following 9/11.

Gary

Kock, Andrea

From: Franovich, Mike
Sent: Tuesday, March 15, 2011 12:06 AM
To: Nieh, Ho
Cc: Warnick, Greg; Warnick, Greg; Kock, Andrea; Zorn, Jason
Subject: Fukushima Daiichi Units Degrading

Ho,

- I called WCO to give him a heads-up and details. The Chairman is in the Ops center on the line with the US Ambassador in Tokyo.
- Unit 2 appears to have gone into a possible reactor vessel breach situation. The fuel was not cooled for hours. The primary containment is likely breached after an explosion near the torus. We may have had an ex-vessel core reaction.
- Unit 4 has a dry spent fuel pool. This unit was in a refueling outage with a hot core offloaded to the pool. It appears a zirconium fire may be in progress.
- DOE has dispatch its rad assessment (RAP) team and will in Japan in seven hours.
- Suggested WCO get with the Chairman to discuss where he may help the Chairman in a divide and conquer approach. The Chairman has no relief where our other operations are being handled by shift/rotation for the ET.

Mike

4/99

Weber, Michael

From: Weber, Michael
Sent: Tuesday, March 15, 2011 5:38 PM
To: LIA03 Hoc; LIA05 Hoc; HOO Hoc
Subject: FYI - HOMELAND SECURITY NEWSWIRE ARTICLE ON JAPAN RESPONSE AND RAD THREAT TO THE US

Good coverage for the NRC regarding the ongoing response to the nuclear emergencies in Japan....

Disaster in Japan

Official: U.S. safe from Japanese radiation

Published 15 March 2011

U.S. nuclear officials said that there was very little chance that harmful levels of radiation from Japan's nuclear reactors would reach Hawaii or the west coast of the United States; the head of the Nuclear Regulatory Commission (NRC) also said nuclear plants in the United States were designed to withstand natural disasters like earthquakes and tsunamis; readings from radiation sensors placed on the west coast have not detected any increases in radiation levels and experts do not expect any increases; Japanese utilities have flooded two nuclear reactors with sea water in a desperate attempt to cool them down and prevent a meltdown; the NRC has dispatched two nuclear experts to Japan to assist with efforts to keep three damaged reactors from melting down.



Flood and the Fukushima nuclear plant in the distance // Source: aljazeera.net

The head of the U.S. Nuclear Regulatory Commission (NRC), Gregory B. Jaczko, said there was very little chance that harmful levels of radiation from Japan's nuclear reactors would reach Hawaii or the west coast of the United States.

"Based on the type of reactor design and the nature of the accident, we see a very low likelihood — really, a very low probability — that there's any possibility of harmful radiation levels in the United States or in Hawaii or any other U.S. territories," Jaczko said. Jaczko also sought to allay concerns about nuclear plants in the United States, saying that plants are "designed to withstand significant phenomena," like earthquakes and tsunamis.

Readings from radiation sensors placed on the west coast confirm these statements.

According to Christine Stone, a spokesperson for the Oregon Public Health Division, "Readings do not show any increase in radiation, and no increases are expected."

Stone said that radiation monitoring equipment in Oregon, Washington, Idaho, Alaska, as well as Canada have shown normal levels of radiation on Saturday and Sunday morning.

In a statement released on Sunday, the NRC said, "All the available information indicates weather conditions have taken the small releases from the Fukushima reactors out to sea away from the population. Given the thousands of miles between the two countries, Hawaii, Alaska, the U.S. Territories and the U.S. West Coast are not expected to experience any harmful levels of radioactivity."

The NRC has dispatched two nuclear experts to Japan to assist with efforts to keep three damaged reactors from melting down.

Officials in Japan have flooded two nuclear reactors with sea water in a desperate attempt to cool them down and prevent a meltdown, after a powerful 8.9 magnitude earthquake destroyed electrical infrastructure that powered critical cooling systems.

Following a reactor explosion on Saturday, a second reactor exploded on Monday while a third exploded early Tuesday morning. Officials report that the containment units, which prevent catastrophic amounts of radiation from leaking out, are still intact.

Officials at the World Health Organization (WHO) said that there is minimal public health risk from the radiation leaks coming from Japan's beleaguered reactors.

Gregory Hartl, a spokesman for the WHO, said, "From what we know at the moment on the radiation levels, the public health risk is minimal for Japan."

He added, "That means that if someone is affected, there is no great risk."

Nearly 200 Japanese residents were taken to the hospital with radiation exposure, but were only subjected to "low levels of radiation."

According to Dr. David J. Brenner, the director of the Center for Radiological Research at Columbia University, the incident in Japan resembles the partial core meltdown of the nuclear reactor at Pennsylvania's Three Mile Island reactor in 1979.

"At least as of now, what we're looking at is rather more like Three Mile Island than Chernobyl," said Dr. Brenner.

The accident at Three Mile Island released roughly a million times less radiation than the explosion at Chernobyl, where the entire reactor exploded and vaporized its radioactive fuel, leading to a dramatic increase in cases of thyroid cancer and leukemia.

The Three Mile Island reactor only suffered from a partial meltdown and did not have any noticeable impact on cancer rates.

Dr. Brenner said, "There is no evidence that anybody at all got sick, even decades later," from the accident at Three Mile Island.

Mike

Michael Weber

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

301-415-1705

Mail Stop O16E15

Weber, Michael

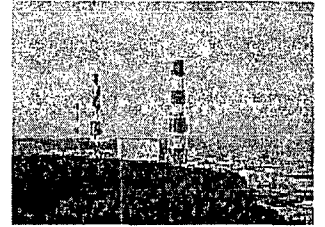
From: Weber, Michael
Sent: Tuesday, March 15, 2011 5:46 PM
To: LIA03 Hoc; LIA05 Hoc; HOO Hoc
Subject: FYI - GOVERNMENT SECURITY NEWS ARTICLE ON JAPAN RESPONSE AND RAD THREAT TO THE US
Attachments: FYI - GOVERNMENT SECURITY NEWS ARTICLE ON JAPAN RESPONSE AND RAD THREAT TO THE US; FYI - GOVERNMENT SECURITY NEWS ARTICLE ON JAPAN RESPONSE AND RAD THREAT TO THE US

More good coverage for the NRC regarding the ongoing response to the nuclear emergencies in Japan....

NRC monitoring post-earthquake nuclear plant releases

Mon, 2011-03-14 10:14 AM
By: [Mark Rockwell](#)

The Nuclear Regulatory Commission (NRC) doesn't believe the radiation released by crippled reactors at nuclear power plants in earthquake and tsunami-stricken Japan pose a threat to the U.S., and believes Japan is taking correct precautionary measures in the wake of the disaster.



Fukushima nuclear plant

The White House quoted the NRC in a March 13 statement that said U.S. states on the Pacific Rim were safe from the initial releases of radiation on Saturday when the Fukushima nuclear plant vented radiation-tainted gas from overheating reactors. "With regards to the United States, the NRC has released information stating that Hawaii, Alaska, the U.S. Territories and the U.S. West Coast are not expected to experience any harmful levels of radioactivity," said White House Press Secretary Jay Carney in a statement.

Carney also said the U.S. is working through the U.S. Agency for International Development (USAID) to coordinate overall U.S. government support efforts for the Japanese government's response to the earthquakes and subsequent tsunami. He said individual donations to the cause could be made through the USAID Web site.

USAID's Office of Foreign Disaster Assistance set up a Response Management Team in DC and sent a Disaster Assistance Response Team to Tokyo, which includes people with nuclear expertise from the Departments of Energy and Health and Human Services as well the Nuclear Regulatory Commission (NRC), said Carney. The NRC members are experts in boiling water nuclear reactors and are available to assist their Japanese counterparts, he said.

The U.S. Ambassador declared an emergency which opened up an immediate funding of \$100K from USAID's Office of Foreign Disaster Assistance, said Carney. USAID set up a Response Management Team in Washington D.C. and sent a Disaster Assistance Response Team to Tokyo, which includes people with nuclear expertise from the Departments of Energy and Health and Human Services as well the Nuclear Regulatory Commission (NRC), he said.

Additionally, two Urban Search and Rescue Teams from Los Angeles and Fairfax County, VA with a total of 144 members plus 12 search and rescue canines and up to 45 metric tons of rescue equipment are also on the ground in Misawa, Japan. They were slated to begin searching at first light March 14, he said.

Also according to Carney, the Department of Defense has the USS Reagan on station off the coast of Japan and the USS Essex en route, and is currently using an air facility in Misawa as a forward operating base. The

American Red Cross (ARC) International Services team is supporting the Japanese Red Cross Society (JRCS) to assess the impact, determine response efforts, and assist the people of Japan.

Mike

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

301-415-1705
Mail Stop O16E15

Taylor, Renee

From: Borchardt, Bill
Sent: Wednesday, March 16, 2011 1:31 PM
To: Taylor, Renee
Subject: Re: White House Access

Auto pen is fine.
Bill Borchardt
Via blackberry

From: Taylor, Renee
To: Borchardt, Bill
Sent: Wed Mar 16 13:23:55 2011
Subject: White House Access

Bill,

Need to fill out some forms so you can have frequent access to the White House. General info, name, SS, date of birth, etc., I was going to use the auto pin so these can get faxed down today. Let me know if you prefer to sign.

Renee

Rihm, Roger

From: Rihm, Roger
Sent: Wednesday, March 16, 2011 2:29 PM
To: Scales, Kerby
Subject: RE: G20110177

We've been getting a bunch of letters as a result of the Japan earthquake. (this one is down the queue a bit!) I'll be looking at it in the next day or two. Are you my POC for your office?

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

From: Scales, Kerby
Sent: Wednesday, March 16, 2011 1:34 PM
To: Rihm, Roger
Subject: FW: G20110177

Roger,
Is this green ticket for response based on the events in Japan? I see a due date of 3/29/2011.

Regards,

kerby

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

From: RidsNrrMailCenter Resource
Sent: Wednesday, March 16, 2011 1:26 PM
To: RidsNrrDe Resource
Cc: Scales, Kerby
Subject: G20110177

Green ticket assigned to EDO on Seismic Safety Features in United States Operational Nuclear Reactor. EDO to coordinate with NRR, NSIR and OGC.

Thanks,
Patti

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

From: Jaegers, Cathy
Sent: Wednesday, March 16, 2011 10:39 AM
To: Rihm, Roger
Cc: RidsNrrMailCenter Resource; RidsNsirMailCenter Resource; Wimbush, Andrea; RidsOgcMailCenter Resource; Remsburg, Kristy; RidsOcaMailCenter Resource; Belmore, Nancy
Subject: ACTION: G20110177

Attached is the action green ticket for OEDO (Rihm) to coordinate with NRR and NSIR, if required. The ADAMS version will be sent after DPC processes.

Y/1103

Rihm, Roger

From: Rihm, Roger
Sent: Wednesday, March 16, 2011 4:21 PM
To: Nguyen, Quynh; Wittick, Brian
Cc: Meighan, Sean; Nelson, Robert
Subject: RE: REPLY REQUESTED: GTs for Congressional Correspondence

I think you now have received that GT (I got it today and it indicates it went to NRR as well). I'm going to try to push these all along to meet due dates (I have 9 letters on my desk right now – some pre-Japan and unrelated), but whether we meet those due dates is another question. Some of them (such as Markey March 11) request information about Japan that we just don't have. Unusual circumstances, but I'm going to try to proceed as normally as possible.

From: Nguyen, Quynh
Sent: Wednesday, March 16, 2011 4:17 PM
To: Wittick, Brian; Rihm, Roger
Cc: Meighan, Sean; Nelson, Robert
Subject: REPLY REQUESTED: GTs for Congressional Correspondence
Importance: High

Brian and Roger,

Even with heightened Congressional attention, it is right to assume that the normal process for Green Tickets is still in effect? For example, NRR has not received formal tasking for March 11, 2011 Markey letter?

Please confirm and/or thoughts.

Thanks,
Quynh

Weber, Michael

From: Weber, Michael
Sent: Wednesday, March 16, 2011 6:07 PM
To: Carpenter, Cynthia
Cc: Evans, Michele
Subject: Response - NRC Operations Center

Thanks, Cindi. We'll work you into the rotation. Michele, here's another volunteer!

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

From: Carpenter, Cynthia
To: Weber, Michael
Sent: Wed Mar 16 16:46:03 2011
Subject: NRC Operations Center

Mike

I am out of the country this week and therefore, unable to assist as an ET member in events at the Operations Center. However, I will be back in Washington late on Saturday evening, and available whenever you all need me to assist.

Weber, Michael

From: Weber, Michael
Sent: Wednesday, March 16, 2011 6:26 PM
To: LIA05 Hoc
Cc: Leeds, Eric; McDermott, Brian; Wiggins, Jim; Evans, Michele; Virgilio, Martin; Burnell, Scott; McIntyre, David
Subject: FYI - GOVERNMENT EXECUTIVE ARTICLE ON GOVERNMENT LIABILITY FOR A LARGE-SCALE NUCLEAR EMERGENCY

This article takes NRC to task for being a weak regulator.

A Japan-reactor repeat in the United States could cost the government dearly

By Jim Tankersley *National Journal* March 15, 2011

An American nuclear power-plant accident similar to the ongoing disaster in Japan would leave taxpayers on the hook for billions, and perhaps hundreds of billions, of dollars in health and economic damage claims, risk experts estimate.

Federal law puts most nuclear-accident liability on the shoulders of taxpayers, but regulators have not enforced safety standards vigorously enough to fully safeguard against those risks, economists Geoffrey Heal and Howard Kunreuther wrote in a 2009 paper that warned of excessive taxpayer exposure to the risks of nuclear catastrophe.

Heal, a professor at Columbia University, and Kunreuther, of the Risk Management and Decision Processes Center at the University of Pennsylvania's Wharton School of Business, acknowledge that the risks and costs of a nuclear accident in the United States are difficult to quantify. But they say that the upper-end damage estimates of a full core meltdown are almost "unimaginable."

The prospect of such an accident, while low, suddenly seems more imaginable in the wake of the simultaneous failures of three reactors at Japan's Fukushima Daiichi Nuclear Power Station, following the 8.9-scale earthquake and massive tsunami that struck the country on Friday.

Heal and Kunreuther sketch a deadly and expensive example of how bad a U.S. nuclear accident might be: A meltdown at the Indian Point nuclear-power station 25 miles north of New York City, they write, could eventually kill some 64,000 people - damage that they calculate at \$384 billion - and inflict \$50 billion to \$100 billion in economic costs. Nightmare scenarios involving lost nuclear material that ends up in terrorists' hands, or the long-term evacuation of New York City, would dramatically increase the costs.

The Price-Anderson act limits private liability for those costs to \$375 million for an individual company, plus \$12.6 billion from an industry liability pool, leaving taxpayers on the hook for the rest. That transfer of liability creates conditions for moral hazard - an incentive for an electric utility, in this case, to take on too much risk because the utility would not bear the full costs of a catastrophic event.

The Nuclear Regulatory Commission is supposed to be taxpayers' guard against that risk. But, Heal and Kunreuther write, it's far from clear that regulators have done the job adequately: "There is empirical evidence that the NRC does not aggressively pursue and penalize mismanagement of nuclear-power stations, and that the federal authorities are not sensitive to the increase in potential costs associated with siting near densely populated areas."

X1106

In a phone interview on Monday, Heal gave the NRC a "5 out of 10" on a regulatory rating scale and raised concerns over whether the agency had adequately prepared for the possibility of a large American earthquake shaking a nuclear facility. In California, home to two working nuclear plants, Heal said that a massive radiation release would inflict damage "in the billions and billions of dollars."

U.S. regulators must quickly learn the still-unfolding lessons from the Japanese plant failures, he said, including whether plant operators there took any safety shortcuts.

"The priority in this country now is to focus very heavily on reactors that are in a seismic zone," Heal said, adding, "The NRC is supposed to be our guarantee against moral hazard. But if the NRC isn't keeping its game up to scratch, the risk from moral hazard is tremendous."

Mike

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

301-415-1705
Mail Stop O16E15

Weber, Michael

From: Weber, Michael
Sent: Wednesday, March 16, 2011 7:06 PM
To: LIA05 Hoc; RST01 Hoc
Cc: ET01 Hoc
Subject: FYI - **Update 1:15pm March 16** Information on the Japanese Earthquake and Reactors in that Region

From: NEIGA@nei.org [mailto:NEIGA@nei.org]
Sent: Wednesday, March 16, 2011 2:01 PM
To: Weber, Michael
Subject: **Update 1:15pm March 16** Information on the Japanese Earthquake and Reactors in that Region



UPDATE AS OF 1:15 P.M. EDT, WEDNESDAY, MARCH 16:

NEI has posted an updated version of the fact sheet [Used Nuclear Fuel Storage at the Fukushima Daiichi Nuclear Power Plant](#). Also available is a new fact sheet called [Industry Taking Action to Ensure Continued Safety at U.S. Nuclear Energy Plants](#).

As always, please go to <http://resources.nei.org/japan> for the latest updates.

Click [here](#) to unsubscribe

Y/107

Clayton, Kathleen

From: Weber, Michael
Sent: Wednesday, March 16, 2011 7:24 PM
To: Borchardt, Bill
Subject: RESPONSE -- READY TO DEPLOY

You even earned some "Senate time" this afternoon. Hope all is well with you. We continue to receive conflicting information regarding our response. Although we continue to progress, I did not observe much, if any, progress across the Pacific today.

From: Borchardt, Bill
Sent: Wednesday, March 16, 2011 7:22 PM
To: Weber, Michael
Subject: Re: FYI - READY TO DEPLOY

Hanks Mike. Great job.
Bill Borchardt
Via blackberry

From: Weber, Michael
To: Powell, Amy; Schmidt, Rebecca
Cc: Borchardt, Bill; Virgilio, Martin; McDermott, Brian; Evans, Michele; Sheron, Brian; Leeds, Eric; Haney, Catherine; Johnson, Michael; LIA05 Hoc; ET01 Hoc
Sent: Wed Mar 16 19:15:40 2011
Subject: FYI - READY TO DEPLOY

As requested by Bill Borchardt, we have arranged for Brian Sheron, Cathy Haney, Eric Leeds, and Mike Johnson to be prepared to conduct briefings for Congressional members and staffs on the NRC's ongoing response to the nuclear emergency in Japan. NSIR/OPS Center has a few additional action items to support, such as distributing additional information (including the Chairman's short statement, testimony, and Q&As from today's hearing/meeting) and preparing a standard slide deck (8-10 slides) that could be used to communicate our key messages in a clear and consistent manner.

Mike

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

301-415-1705
Mail Stop O16E15

Y1108

From: Taylor, Robert
To: Harrington, Holly; Burnell, Scott; McIntyre, David
Bcc: Taylor, Robert
Subject: Talking Points w/SFP info
Date: Wednesday, March 16, 2011 7:24:00 PM
Attachments: QUAKE TP 3 16 .docx

All,

The ET has blessed a new talking point regarding the status of the Japanese SFPs. Note that this talking point has a date stamp due to the potential that the event can evolve.

Will post the attached to WebEOC.

Regards,
Rob

Y1109

OPA

TALKING POINTS

JAPAN NUCLEAR SITUATION

As of 3/16/2011 7:15 p.m. EDT

Update: Addition of bullet on status of SFPs

- Based on calculations performed by NRC experts, we now believe that it is appropriate for U.S. residents within 50 miles of the Fukushima reactors to evacuate. Our recommendation is based on NRC guidelines for public safety that would be used in the United States under similar circumstances.
- Given the results of the monitoring and distance between Japan and Hawaii, Alaska, U.S. Pacific Territories and the U.S. West Coast, the NRC expects the U.S. to avoid any harmful levels of radioactivity. The NRC is aware of various internet postings depicting modeled radiation plumes for the ongoing events at the nuclear power plants in Japan. All of the models the NRC has seen are based on generic assumptions regarding the potential radiation release from the plants and as such are unable to predict actual radiation levels away from the site. The NRC is working closely with our federal partners to monitor radiation releases from the Japanese nuclear power plants.
- The NRC continues to believe, based on all available information, that the type and design of the Japanese reactors, combined with how events have unfolded, will prevent radiation at harmful levels from reaching U.S. territory.

- [Status as of 7:00pm on 3/16] The NRC is closely monitoring the condition of the spent fuel pools at the Japanese nuclear power plants. Our current understanding, which is based on the best available information provided to NRC reactor experts in Japan, is the following:
 - Unit 4 – The SFP is likely dry and the integrity of the spent fuel pool is in question.
 - Units 2 & 3 – Steam is escaping which indicates that boiling is likely occurring in the spent fuel pool. The current water level of the pool is uncertain.
 - Unit 1 – The status of the SFP is unknown.
- In accordance with established protocols, U.S. Customs and Border Protection (CBP) employs several types of radiation detection equipment in its operations at both air and sea ports, and uses this equipment, along with specific operational protocols, to resolve any security or safety risks that are identified with inbound travelers and cargo. Out of an abundance of caution, CBP has issued field guidance reiterating its operational protocols and directing field personnel to specifically monitor maritime and air traffic from Japan. CBP will continue to evaluate the potential risks posed by radiation contamination on inbound travelers and cargo and will adjust its detection and response protocols, in coordination with its interagency partners, as developments warrant.
- The Japanese government has formally asked for U.S. assistance in responding to nuclear power plant cooling issues triggered by an earthquake and tsunami on March 11. The NRC has eleven staff on the ground in Japan as part of the USAID team.
- The NRC is coordinating its actions with other federal agencies as part of the U.S. government response. The NRC's headquarters Operations Center was activated at the beginning of the event and has been monitoring the situation on a 24-hour basis ever since.

- The NRC is always looking to learn information that can be applied to U.S. reactors and we will analyze the information that comes from this incident.
- The NRC is working with other U.S. agencies to monitor radioactive releases from Japan and to predict their path.
- U.S. nuclear power plants are built to withstand environmental hazards, including earthquakes. Even those plants that are located outside of areas with extensive seismic activity are designed for safety in the event of such a natural disaster.
- The NRC requires that safety-significant structures, systems, and components be designed to take into account the most severe natural phenomena historically reported for the site and surrounding area. The NRC then adds a margin for error to account for the limitations on historical data. In other words, U.S. nuclear power plants are designed to be safe based on historical data to predict the area's maximum credible earthquake.

From: Harrington, Holly
To: Taylor, Robert
Subject: talking points
Date: Wednesday, March 16, 2011 12:12:08 PM
Attachments: QUAKE TP 3 16.docx

First bullet is new to reflect press release, which is not quite out yet

Y/1110

OPA

TALKING POINTS

JAPAN NUCLEAR SITUATION

As of 3/16/2011 12:30 p.m. EDT

- The NRC no longer concurs with the existing protective action measures recommended by the Japanese government for evacuation to 20 miles and sheltering out to 30 miles from Fukushima. Under the guidelines for public safety that would be used in the United States under similar circumstances, the NRC would recommend that residents within 50 miles of the affected site evacuate.
- The NRC continues to believe that the type and design of the Japanese reactors, combined with how events have unfolded, will prevent radiation at harmful levels from reaching U.S. territory.
- The Japanese government has formally asked for U.S. assistance in responding to nuclear power plant cooling issues triggered by an earthquake and tsunami on March 11. The NRC has two staff on the ground in Japan as part of the USAID team and 10 other NRC personnel are enroute.
- The NRC is coordinating its actions with other federal agencies as part of the U.S. government response. The NRC's headquarters Operations Center is activated and monitoring the situation on a 24-hour basis.

- The NRC is always looking to learn information that can be applied to U.S. reactors and we will analyze the information that comes from this incident.
- The NRC is working with other U.S. agencies to monitor radioactive releases from Japan and to predict their path.
- Given the results of the monitoring and distance between Japan and Hawaii, Alaska, U.S. Pacific Territories and the U.S. West Coast, the NRC expects the U.S. to AVOID any harmful levels of radioactivity.
- U.S. nuclear power plants are built to withstand environmental hazards, including earthquakes. Even those plants that are located outside of areas with extensive seismic activity are designed for safety in the event of such a natural disaster.
- The NRC requires that safety-significant structures, systems, and components be designed to take into account the most severe natural phenomena historically reported for the site and surrounding area. The NRC then adds a margin for error to account for the historical data's limited accuracy. In other words, U.S. nuclear power plants are designed to be safe based on historical data to predict the area's maximum credible earthquake.

From: Taylor, Robert *NR*
To: Brenner, Eliot
Cc: Harrington, Holly; McIntyre, David; Burnell, Scott; Coggins, Angela; Powell, Amy
Subject: Updated talking points
Date: Wednesday, March 16, 2011 6:51:55 PM
Attachments: QUAKE TP 3 16 .docx

Eliot,

We understand from Angela Coggins that the Chairman may be doing press soon. We have updated the attached talking points in response to new media inquiries (see bullets 2 and 4 regarding radiation plumes and CBP actions).

Regards,
Rob

Y/111

OPA

TALKING POINTS

JAPAN NUCLEAR SITUATION

As of 3/16/2011 6:45 p.m. EDT

- Based on calculations performed by NRC experts, we now believe that it is appropriate for U.S. residents within 50 miles of the Fukushima reactors to evacuate. Our recommendation is based on NRC guidelines for public safety that would be used in the United States under similar circumstances.
- Given the results of the monitoring and distance between Japan and Hawaii, Alaska, U.S. Pacific Territories and the U.S. West Coast, the NRC expects the U.S. to avoid any harmful levels of radioactivity. The NRC is aware of various internet postings depicting modeled radiation plumes for the ongoing events at the nuclear power plants in Japan. All of the models the NRC has seen are based on generic assumptions regarding the potential radiation release from the plants and as such are unable to predict actual radiation levels away from the site. The NRC is working closely with our federal partners to monitor radiation releases from the Japanese nuclear power plants.
- The NRC continues to believe, based on all available information, that the type and design of the Japanese reactors, combined with how events have unfolded, will prevent radiation at harmful levels from reaching U.S. territory.

- In accordance with established protocols, U.S. Customs and Border Protection (CBP) employs several types of radiation detection equipment in its operations at both air and sea ports, and uses this equipment, along with specific operational protocols, to resolve any security or safety risks that are identified with inbound travelers and cargo. Out of an abundance of caution, CBP has issued field guidance reiterating its operational protocols and directing field personnel to specifically monitor maritime and air traffic from Japan. CBP will continue to evaluate the potential risks posed by radiation contamination on inbound travelers and cargo and will adjust its detection and response protocols, in coordination with its interagency partners, as developments warrant.
- The Japanese government has formally asked for U.S. assistance in responding to nuclear power plant cooling issues triggered by an earthquake and tsunami on March 11. The NRC has eleven staff on the ground in Japan as part of the USAID team.
- The NRC is coordinating its actions with other federal agencies as part of the U.S. government response. The NRC's headquarters Operations Center was activated at the beginning of the event and has been monitoring the situation on a 24-hour basis ever since.
- The NRC is always looking to learn information that can be applied to U.S. reactors and we will analyze the information that comes from this incident.
- The NRC is working with other U.S. agencies to monitor radioactive releases from Japan and to predict their path.
- U.S. nuclear power plants are built to withstand environmental hazards, including earthquakes. Even those plants that are located outside of areas with extensive seismic activity are designed for safety in the event of such a natural disaster.

- The NRC requires that safety-significant structures, systems, and components be designed to take into account the most severe natural phenomena historically reported for the site and surrounding area. The NRC then adds a margin for error to account for the limitations on historical data. In other words, U.S. nuclear power plants are designed to be safe based on historical data to predict the area's maximum credible earthquake.

Wilson, Peter

From: Wilson, Peter
Sent: Wednesday, March 16, 2011 6:29 AM
To: R1DRSWORKFLOW RESOURCE
Subject: FW: All Employee Meeting - Wednesday, March 16 - 3:30-4:00 Subj: Recent Events in Japan

Please put this on the calendar

From: Matakas, Gina
Sent: Tuesday, March 15, 2011 5:41 PM
To: All R1 Users
Subject: All Employee Meeting - Wednesday, March 16 - 3:30-4:00 Subj: Recent Events in Japan

On Behalf of Bill Dean -

An all employee meeting has been scheduled for Wednesday, March 16 from 3:30 – 4:30, to discuss the recent events in Japan. The meeting will be held in the main conference room and a bridge line will be set-up for employees who are not in the office, but would like to call-in.

Thank You.

Gina Matakas

Hansell, Samuel

From: Hansell, Samuel
Sent: Wednesday, March 16, 2011 2:09 PM
To: Silk, David
Subject: FW: **Update 1:15pm March 16** Information on the Japanese Earthquake and Reactors in that Region

fyi...please distribute to our branch.

Thanks,
Sam

From: NEIGA@nei.org [NEIGA@nei.org]
Sent: Wednesday, March 16, 2011 2:01 PM
To: Hansell, Samuel
Subject: **Update 1:15pm March 16** Information on the Japanese Earthquake and Reactors in that Region



UPDATE AS OF 1:15 P.M. EDT, WEDNESDAY, MARCH 16:

NEI has posted an updated version of the fact sheet Used Nuclear Fuel Storage at the Fukushima Daiichi Nuclear Power Plant. Also available is a new fact sheet called Industry Taking Action to Ensure Continued Safety at U.S. Nuclear Energy Plants.

As always, please go to <http://resources.nei.org/japan> for the latest updates.

Click [here](#) to unsubscribe

Y1113

Dunham, Katrina

From: Screnci, Diane
Sent: Wednesday, March 16, 2011 11:12 AM
To: Haagensen, Brian
Subject: RE: UPDATE: NRC IS RESPONDING TO JAPANESE EVENTS

Brian,

Your understanding correct.

DIANE SCRENCI
SR. PUBLIC AFFAIRS OFFICER
USNRC, RI
610/337-5330

From: Haagensen, Brian
Sent: Wednesday, March 16, 2011 10:54 AM
To: Screnci, Diane
Subject: FW: UPDATE: NRC IS RESPONDING TO JAPANESE EVENTS

Diane,

I know you folks are pretty busy but I am still a little confused over the public affairs guidance that we are now operating under. Here is what I think is our present guidance should be:

1. Any questions from the media or general public that address the events in Japan are to be referred to Public Affairs in HQ – per the email below.
2. Any questions from the media or general public that address **site-specific issues** that could be relevant to the Japanese events such as earthquake / tsunami design capabilities, accident mitigation strategies, or similar issues should be referred to you or Neil.
3. Any questions from the media or general public that DO NOT address the above topics may still be answered by the resident staff provided the staff is comfortable addressing the question – i.e. the previous PAO guidance remains applicable from before the Japanese accident – inform you etc, etc.
4. If we have any doubt that the question may be related to the Japanese events in any way shape or form, default to option #2 above.

I recommend you provide guidance (when you get a moment) to address the non-Japanese event related questions. We are in the process of setting up our Annual Assessment Meetings and I would anticipate we will have to respond to type #3 questions soon.

As I understood your message from the other day, we (residents) are now to refer ALL questions from the media / general public to the regional PAOs until otherwise directed.

Brian

From: Operations Center Bulletin
Sent: Wednesday, March 16, 2011 10:40 AM
To: Operations Center Bulletin
Subject: UPDATE: NRC IS RESPONDING TO JAPANESE EVENTS

THIS IS NOT A DRILL

The Office of Public Affairs is expecting a large volume of calls from media and the general public regarding the latest statements from the State Department and the NRC regarding the situation in Japan. ALL CALLS from media or the general public on this topic must be referred to the 301-415-8200 number.

The NRC is coordinating its actions with other Federal agencies as part of the U.S. government response to the events in Japan. The NRC is examining all available information as part of the effort to analyze the event and understand its implications both for Japan and the United States. The NRC's Headquarters Operations Center in Rockville, MD has been stood up since the beginning of the emergency in Japan and is operating on a 24-hour basis.

NRC Incident Responders at Headquarters have spoken with the agency's counterpart in Japan and offered the assistance of U.S. technical experts. NRC representatives with expertise on boiling water nuclear reactors have deployed to Japan as part of a U.S. International Agency for International Development (USAID) team. USAID is the Federal government agency primarily responsible for providing assistance to countries recovering from disasters.

U.S. nuclear power plants are built to withstand environmental hazards, including earthquakes and tsunamis. Even those plants that are located outside of areas with extensive seismic activity are designed for safety in the event of such a natural disaster. The NRC requires that safety significant structures, systems, and components be designed to take in account the most severe natural phenomena historically estimated for the site and surrounding area.

The NRC will **not** provide information on the status of Japan's nuclear power plants. For the latest information on NRC actions see the NRC's web site at www.nrc.gov or blog at <http://public-blog.nrc-gateway.gov>.

Two important reminders:

It is possible that some of us will be requested by colleagues in another country to provide technical advice and assistance during this emergency. It is essential that all such communications be handled through the NRC Operations Center. Any assistance to a foreign government or entity must be coordinated through the NRC Operations Center and the U.S. Department of State (DOS). If you receive such a request, contact the NRC Operations Officer (301-816-5100 or via the NRC Operator) immediately.

If you receive information regarding this or any emergency (foreign or domestic) and you are not certain that the NRC's Incident Response Operations Officer is already aware of that information, you should contact the NRC Operations Officer (301-816-5100 or via the NRC Operator) and provide that information.

Other Sources of Information:

USAID – www.usaid.gov

U.S. Department 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

No response to this message is required.

THIS IS NOT A DRILL

Turilin, Andrey

From: Walker, Tracy
Sent: Wednesday, March 16, 2011 10:49 AM
To: All R1 Users
Subject: RE: All Employees Meeting regarding events in Japan and Chairman Jaczko testimony before Congress - Broadcast in IRC

The hearing broadcast has been set up in the DRP conference room and in the VTC room (1081A). If you are interested in observing the hearing, we encourage you to view from one of these common locations rather than from your desktop. We have had a number of reports of connectivity issues and the common viewing locations will limit issues with internet access. Thank you.

From: Walker, Tracy
Sent: Wednesday, March 16, 2011 9:55 AM
To: All R1 Users
Subject: RE: All Employees Meeting regarding events in Japan and Chairman Jaczko testimony before Congress - Broadcast in IRC

Due to technical difficulties, the broadcast of the hearing this morning is being broadcast in the IRC. No bridge line will be available for the morning session.

We will try to resolve the technical difficulties so that the broadcast this afternoon can be done in the Main Conference Room following the All Employee Meeting.

We apologize for any inconvenience.

From: R1BULLETIN RESOURCE
Sent: Wednesday, March 16, 2011 9:20 AM
To: All R1 Users
Subject: All Employees Meeting regarding events in Japan and Chairman Jaczko testimony before Congress

This morning at 9:30, C-SPAN will carry Chairman Jaczko's testimony before a Joint hearing of the Energy and Commerce Committee. We will show it in the Main Conference Room.

This afternoon following the All Employee Meeting regarding events in Japan we will switch to C-SPAN's coverage of the Senate Environment and Public Works Committee on the Japanese nuclear crisis and the assistance the U.S. is providing.

Bridges will be available for both sessions. Bridge information will be provided shortly.

Hansell, Samuel

From: Hansell, Samuel
Sent: Wednesday, March 16, 2011 2:15 PM
To: Silk, David
Subject: FW: 2000 CA Briefing and Attached Situation Report

Importance: High

fyi

From: Wilson, Peter
Sent: Wednesday, March 16, 2011 6:46 AM
To: Conte, Richard; Doerflein, Lawrence; Rogge, John; Hansell, Samuel; Kennedy, Silas; Henderson, Pamela; Cahill, Christopher; Cook, William; Schmidt, Wayne
Subject: FW: 2000 CA Briefing and Attached Situation Report

Here is the latest update from Japan.

From: Jackson, Donald
Sent: Tuesday, March 15, 2011 8:59 PM
To: Dentel, Glenn; Dean, Bill; Lew, David; Wilson, Peter; Roberts, Darrell; Collins, Daniel; Lorson, Raymond; Baker, Pamela; Walker, Tracy; Clifford, James; Miller, Chris; Weerakkody, Sunil
Cc: Screnci, Diane; Sheehan, Neil; Trapp, James; McNamara, Nancy; Tifft, Doug; Hansell, Samuel; Hinson, Felicia; McKinley, Raymond
Subject: 2000 CA Briefing and Attached Situation Report
Importance: High

I have attached the 1930 Situation Report Update provided to the Commission TAs. The Chairman joined the phone call at around 2015 to confirm reports of an ongoing Unit 4 fire that was reported on CNN. I have summarized key changes to the previous email from Glenn Dentel in bulletized fashion below. The attachment is a concise comprehensive report of current status.

Unit 1-

- Little Change
- Some Fuel Damage
- SW Injection Working
- Loss of Sec Ctmt

Unit 2-

- **New Report That Primary Containment Appears Intact**
- **Loss of Secondary Containment- TEPCO made a hole in roof to positively vent H2 Gas**
- Some Fuel Damage
- **Less Stable SW Injection**

Unit 3-

- Little Change
- Some Fuel Damage
- SW Injection Working
- Loss of Sec Ctmt

Unit 4-

- Previous Fire determined to be a lube oil fire

- **New fire reported in vicinity of refueling deck, believed to be H2 fire**
- **SFP Level reported to be very low, radiation levels 30 R/hr due to shine**
- **No fire fighting actively due to high rad levels**
- **Fire began 4-5 hours ago**
- **TEPCO plans to remove secondary containment roof or wall section to fight fire externally**

Units 5 and 6-

- **SFPs heating up, approximately 80 degrees C**

Other Items:

- **INPO has issued its highest level event notification requiring plants to assess and report on 4 items including B.5.b, SAMG, SBO, Flooding and Fire readiness.**
- Additional NRC Team arrives this evening
- NRC has determined that Japanese PARs currently adequate
- Japanese government is accepting US Government help from Military, DOE, and other specialties
- **It was reported that TEPCO currently has around 50 staff on site, and that 5 individuals may have received fatal radiation doses during emergency actions.**

Please refer to the attachment, it has really good information.

Very Respectfully,
Don Jackson

Kulp, Jeffrey

From: Kulp, Jeffrey
Sent: Wednesday, March 16, 2011 8:35 AM
To: Ambrosini, Josephine; Keighley, Elizabeth; Dugandzic, Aaron
Subject: FW: Status of Japanese reactors

FYI

From: Catts, Michelle
Sent: Wednesday, March 16, 2011 8:30 AM
To: Kulp, Jeffrey
Subject: FW: Status of Japanese reactors

From: Boska, John
Sent: Wednesday, March 16, 2011 8:10 AM
To: Bickett, Brice; McCarver, Sammy
Cc: Cataldo, Paul; Catts, Michelle; Knutson, Ed
Subject: Status of Japanese reactors

<http://www.jaif.or.jp/english/index.php>

The reactor status updates (in pdf) on this web page are the best source I have seen.

John Boska
Indian Point Project Manager, NRR/DORL
U.S. Nuclear Regulatory Commission
301-415-2901
email: john.boska@nrc.gov

REL

From: Operations Center Bulletin | NSIR
To: Operations Center Bulletin
Subject: UPDATE: NRC IS RESPONDING TO JAPANESE EVENTS
Date: Wednesday, March 16, 2011 12:53:00 PM

THIS IS NOT A DRILL

The Office of Public Affairs is expecting a large volume of calls from media and the general public regarding the latest statements from the State Department and the NRC regarding the situation in Japan. **ALL CALLS** from media or the general public on this topic must be referred to Regional Public Affairs or the 301-415-8200 number for HQ employees.

THIS IS NOT A DRILL

*****Event Information is Attached*****

The NRC is responding to an event.

Please contact the NRC Executive Support Team if necessary at 301-816-5100 or reply to this e-mail.

Y1117

NRR

From: Galloway, Melanie
To: Givvines, Mary; Bahadur, Sher; Blount, Tom; Brown, Frederick; Cheok, Michael; Cunningham, Mark; Evans, Michele; Giitter, Joseph; Hiland, Patrick; Holian, Brian; Howe, Allen; Lee, Samson; Lubinski, John; Lund, Louise; McGinty, Tim; Nelson, Robert; Quay, Theodore; Ruland, William; Skeen, David
Cc: Leeds, Eric; Grobe, Jack; Boger, Bruce
Subject: RE: Additional Staff requirements outside Ops Center Long Term Staffing
Date: Thursday, March 17, 2011 4:01:53 PM

You can add Jeremy Susco starting next week. I may have one or two more but will get back to you today if so.

REL

From: Givvines, Mary *NRR*
Sent: Thursday, March 17, 2011 3:48 PM
To: Givvines, Mary; Bahadur, Sher; Blount, Tom; Brown, Frederick; Cheok, Michael; Cunningham, Mark; Evans, Michele; Galloway, Melanie; Giitter, Joseph; Hiland, Patrick; Holian, Brian; Howe, Allen; Lee, Samson; Lubinski, John; Lund, Louise; McGinty, Tim; Nelson, Robert; Quay, Theodore; Ruland, William; Skeen, David
Cc: Leeds, Eric; Grobe, Jack; Boger, Bruce
Subject: RE: Additional Staff requirements outside Ops Center Long Term Staffing
Importance: High

All,

I only received 1 name from DPR and the rest are from PMDA. Any others as I need to respond today.

From: Givvines, Mary *NRR*
Sent: Wednesday, March 16, 2011 12:57 PM
To: Bahadur, Sher; Blount, Tom; Brown, Frederick; Cheok, Michael; 'Cunningham, Mark'; Evans, Michele; Galloway, Melanie; Giitter, Joseph; Givvines, Mary; Hiland, Patrick; Holian, Brian; Howe, Allen; Lee, Samson; Lubinski, John; Lund, Louise; McGinty, Tim; Nelson, Robert; Quay, Theodore; Ruland, William; Skeen, David
Cc: Leeds, Eric; Grobe, Jack; Boger, Bruce
Subject: FW: Additional Staff requirements outside Ops Center Long Term Staffing
Importance: High

All,

I will go ahead and lead this effort to obtain a list of potential staff. I know that Bill is super busy – can you provide me with names and I will forward to the EDO office? I would appreciate sending me names by noon tomorrow.

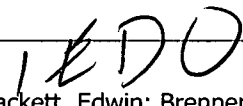
Thanks

From: Grobe, Jack *NRR*
Sent: Wednesday, March 16, 2011 11:18 AM
To: Givvines, Mary; Ruland, William
Cc: Leeds, Eric; Boger, Bruce
Subject: Fw: Additional Staff requirements outside Ops Center Long Term Staffing
Importance: High

Mary and Bill.

Y11118

Please take the lead and respond directly.
Jack Grobe, Deputy Director, NRR


From: Muesle, Mary 
To: Evans, Michele; 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; Andersen, James; 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; Higginbotham, Tina; Ross, Brenda; Boyce, Thomas (OIS); Schaeffer, James; Jackson, Donald
Cc: Williams, Shawn; Andersen, James; Ramsey, Jack
Sent: Wed Mar 16 09:31:40 2011
Subject: Additional Staff requirements outside Ops Center Long Term Staffing

OPA and OIP expect large call volumes today and in the next few weeks given expected news from Japan. OIP is looking for names of people who have desk officer or other OIP or international experience to assist them in the event that current staff cannot meet the work demands for call inquiries as well as ongoing international work. Please provide Shawn Williams and I a list of names that could serve to help OIP in this capacity and their general availability over the next week and month. It is difficult to determine the need level at this time, but as in the Op Center, it is anticipated OIP will have for an additional month. We would like the list of names by COB today.

Thanks

Mary

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

From: Evans, Michele 
Sent: Tuesday, March 15, 2011 5:53 PM
To: 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; Muesle, Mary; Andersen, James; 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; Higginbotham, Tina; Ross, Brenda; Boyce, Thomas (OIS); Schaeffer, James; Jackson, Donald

Subject: Follow-up from 4 pm teleconference on Ops Center Long Term Staffing

Everyone,

Please find attached 1) a list of current positions being staffed in the Ops Center and 2) the staff identified as available to support in Japan.

Regarding additional staff available to support in the ops center, the primary needs are for the specialized positions on the PMT and anyone with previous international experience in OIP.

Regarding support in Japan, please provide any updates/changes to the list by COB March 17. The target time frame for sending these staff members is March 27-April 9, so please consider that when considering staff to put on the list.

Thanks for your support.

Michele

From: Astwood, Heather, NRR
To: Azeem, Almas; Cartwright, William; Cusumano, Victor; Fields, Leslie; Heida, Bruce; Meighan, Sean; Nguyen, Quynh; Roquecruz, Carla; Susco, Jeremy; Titus, Brett; Valentine, Nicholee
Cc: Boger, Bruce
Subject: FW: Request for staff that can support OIP Additional Staff requirements outside Ops Center Long Term Staffing
Date: Wednesday, March 16, 2011 1:38:53 PM
Importance: High

REL
Dear NRR TAS

Please see the request below. EDO is asking that we support OIP. OIP is asking for names of people who would be interested in helping them with the Japan crisis. They are not sure exactly what the work would entail at this point. It could be doing shifts for OIP in the Ops Center, it could be fielding calls and questions from regulators from other countries or it could be helping with OIP's normal case load.

Eric Leeds would like to support this request. He specifically does not want us to hurt any of NRR's increasing workload but we should help if we can. The time spent assisting OIP could be broken down in a variety of ways. It is unlikely that anyone would be detailed to OIP for a long period of time (i.e. 2 months straight). More likely it would one day a week, or two weeks of one person, then two weeks of a different person. Whatever fits their needs and NRR's need to do our normal case work. The timing is negotiable.

OIP is specifically looking for people who have some international experience. Several members of the international team have already volunteered. Please let me know if there is anyone in your division that would also like to add their names to the list. Note they are asking for the names by COB today. However, I think tomorrow morning would also work.

Heather Astwood
International Team Leader
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
301-415-1075

schase

From: Muessle, Mary, EDO
Sent: Wednesday, March 16, 2011 9:32 AM
To: Evans, Michele; 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; Andersen, James; 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; Higginbotham, Tina; Ross, Brenda; Boyce, Thomas (OIS); Schaeffer, James; Jackson, Donald
Cc: Williams, Shawn; Andersen, James; Ramsey, Jack
Subject: Additional Staff requirements outside Ops Center Long Term Staffing
Importance: High

Y/119

OPA and OIP expect large call volumes today and in the next few weeks given expected news from Japan. OIP is looking for names of people who have desk officer or other OIP or international experience to assist them in the event that current staff cannot meet the work demands for call inquiries as well as ongoing international work. Please provide Shawn Williams and I a list of names that could serve to help OIP in this capacity and their general availability over the next week and month. It is difficult to determine the need level at this time, but as in the Op Center, it is anticipated OIP will have for an additional month. We would like the list of names by COB today.

Thanks

Mary

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

From: Evans, Michele

Sent: Tuesday, March 15, 2011 5:53 PM

To: 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; 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; Higginbotham, Tina; Ross, Brenda; Boyce, Thomas (OIS); Schaeffer, James; Jackson, Donald

Subject: Follow-up from 4 pm teleconference on Ops Center Long Term Staffing

Everyone,

Please find attached 1) a list of current positions being staffed in the Ops Center and 2) the staff identified as available to support in Japan.

Regarding additional staff available to support in the ops center, the primary needs are for the specialized positions on the PMT and anyone with previous international experience in OIP.

Regarding support in Japan, please provide any updates/changes to the list by COB March 17. The target time frame for sending these staff members is March 27-April 9, so please consider that when considering staff to put on the list.

Thanks for your support.

Michele

REL

NRR

From: Leeds, Eric
To: Virgilio, Martin
Cc: Borchardt, Bill; Weber, Michael; Boger, Bruce; Grobe, Jack
Subject: ACTION: NRR taking the lead for commission meeting
Date: Wednesday, March 16, 2011 9:56:24 AM

Marty –

NRR was asked to take the lead for this Commission meeting. In addition, we're also taking the following actions:

1. Establishing a media guru to help facilitate Q&As (beyond the current Share-point site) – Bob Nelson will lead the effort.
2. We've started work on a generic communication to NRC licensees based on the Japanese events. We're following the INPO work.

FYI.

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

EDO

From: Virgilio, Martin
Sent: Wednesday, March 16, 2011 3:29 AM
To: Borchardt, Bill
Cc: Weber, Michael; Leeds, Eric; Dorman, Dan; Miller, Chris; Lewis, Robert; Doane, Margaret; Powell, Amy; Wiggins, Jim; Casto, Chuck; Brenner, Eliot; Muessle, Mary; Andersen, James; Wittick, Brian; Grobe, Jack; Evans, Michele; Ash, Darren
Subject: FW: commission meeting outline.docx

Bill

Last night the Chairman briefed the Commissioners on the status of the events in Japan and NRC's response. During that meeting the Commissioners suggested NRC hold a Commission meeting either this week or next on the events and the Chairman agreed to the meeting.

Attached is a draft outline for that meeting. We believe this outline could also be used as a tool for organizing a presentation for Congressional Briefings and interactions with the media. We acknowledge the ambitious nature of the outline and the fact that we might not be ready to speak to each of the issues if the Commission meeting is held this week.

Marty

Y/120

Weber, Michael

From: Weber, Michael
Sent: Wednesday, March 16, 2011 9:41 PM
To: McDermott, Brian
Subject: Response - READY TO DEPLOY

Thanks. I think Sara added it to the list of actions.

From: McDermott, Brian
To: Weber, Michael
Sent: Wed Mar 16 21:17:18 2011
Subject: RE: FYI - READY TO DEPLOY

I have pushed this to the team again as an action, redundant to my verbal direction after your briefing for the managers earlier today.

Brian

From: Weber, Michael
Sent: Wednesday, March 16, 2011 7:16 PM
To: Powell, Amy; Schmidt, Rebecca
Cc: Borchardt, Bill; Virgilio, Martin; McDermott, Brian; Evans, Michele; Sheron, Brian; Leeds, Eric; Haney, Catherine; Johnson, Michael; LIA05 Hoc; ET01 Hoc
Subject: FYI - READY TO DEPLOY

As requested by Bill Borchardt, we have arranged for Brian Sheron, Cathy Haney, Eric Leeds, and Mike Johnson to be prepared to conduct briefings for Congressional members and staffs on the NRC's ongoing response to the nuclear emergency in Japan. NSIR/OPS Center has a few additional action items to support, such as distributing additional information (including the Chairman's short statement, testimony, and Q&As from today's hearing/meeting) and preparing a standard slide deck (8-10 slides) that could be used to communicate our key messages in a clear and consistent manner.

Mike

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

301-415-1705
Mail Stop O16E15

Landau, Mindy

From: Rania Zaydan [Zaydan.Rania@abc.net.au]
Sent: Wednesday, March 16, 2011 11:00 PM
To: Landau, Mindy
Subject: RE: Request for Chairman interview
Importance: High

Hi Mindy,

Thanks for getting in touch so promptly. If the NRC's position should change regarding interviews please let me know.

We would be interested in doing something next week either in Washington or anywhere that's suitable.

Kind regards,

Rania



Rania Zaydan
Producer Newsline, ABC News

P +61 3 9626 1318 E zaydan.rania@abc.net.au
M +61 412 322 107 F +61 3 9626 1918
A 120 Southbank Blvd, Southbank Vic 3006



From: Landau, Mindy [<mailto:Mindy.Landau@nrc.gov>]
Sent: Thursday, 17 March 2011 8:24 AM
To: Rania Zaydan
Subject: Request for Chairman interview

I'm sorry, but the NRC is not entertaining any requests for interviews at this time.

Thank you,
Mindy Landau (assisting Public Affairs)

Mindy S. Landau
Deputy Assistant for Operations
Communication and Performance Improvement
Office of the Executive Director for Operations
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555
301-415-8703
mindy.landau@nrc.gov

From: Cullingford, Michael, *mm*
To: Thomas, Eric
Cc: Boger, Bruce; Grobe, Jack
Subject: FW: TEPCO Earthquake Information Update as of March 14, 2300(JST) - Fukushima Daini Unit 1 in Cold Shutdown
Date: Wednesday, March 16, 2011 1:29:28 PM

fyi

REL

From: Aono Kenjiro [mailto:aono-kenjiro@jnes-usa.org]
Sent: Tuesday, March 15, 2011 5:08 PM
To: Emche, Danielle; Foggie, Kirk; Cullingford, Michael
Cc: 'Yamachika, Hidehiko'; 'Michael Chinworth'; Aono Kenji
Subject: RE: TEPCO Earthquake Information Update as of March 14, 2300(JST) - Fukushima Daini Unit 1 in Cold Shutdown

TEPCO announced at 4:07pm as follows.

Followings are current status of Fukushima-Daiichi/Daini NPS.

Highlits of this time are:

- Fukushima-Daiichi units 1,2 and 3 continues seawater injection as of 0:30 am on March 16.
- At Fukushima-Daini unit4 ,it was confirmed that the pressure at the outlet of the pumps of the Emergency Equipment Cooling Water System has been decreased, we stopped the Residual Heat Removal System (B) for the inspection at 8:05 pm

From: Yamachika, Hidehiko [mailto:yamachika-hidehiko@jnes-usa.org]
Sent: Tuesday, March 15, 2011 12:50 PM
To: 'Emche, Danielle'; 'Foggie, Kirk'; 'Cullingford, Michael'
Cc: Aono, Kenjiro; Michael Chinworth
Subject: RE: TEPCO Earthquake Information Update as of March 14, 2300(JST) - Fukushima Daini Unit 1 in Cold Shutdown

Sorry, I failed to identify who said the below. But NHK carries press release of NISA or TEPCO.

From: Emche, Danielle [mailto:Danielle.Emche@nrc.gov], *018*
Sent: Tuesday, March 15, 2011 12:43 PM
To: Yamachika, Hidehiko; Foggie, Kirk; Cullingford, Michael
Cc: Aono, Kenjiro; Michael Chinworth
Subject: RE: TEPCO Earthquake Information Update as of March 14, 2300(JST) - Fukushima Daini Unit 1 in Cold Shutdown

Thank you so much, out of curiosity, is this also confirmed by the government, i.e., NISA or other related agency?

From: Hidehiko Yamachika [mailto:yamachika-hidehiko@jnes-usa.org]
Sent: Tuesday, March 15, 2011 12:37 PM
To: Emche, Danielle; Foggie, Kirk; Cullingford, Michael
Cc: Aono, Kenjiro; Michael W. Chinworth
Subject: RE: TEPCO Earthquake Information Update as of March 14, 2300(JST) - Fukushima Daini Unit 1 in Cold Shutdown

Y/123

NHK said at 12:30pm in EDT:

Unit 4: There are 2 holes in the wall of the building. Investigation is still under way. Fuels had been moved from the reactor to the pool due to the periodic inspection.

Unit 5, 6: Temperature in the SF pools are gradually increasing, therefore the government and TEPCO are watching carefully.

From: Hidehiko Yamachika [mailto:yamachika-hidehiko@jnes-usa.org]
Sent: Monday, March 14, 2011 7:13 PM
To: 'Hidehiko Yamachika'; Emche, Danielle; Foggie, Kirk; Cullingford, Michael
Cc: Aono, Kenjiro; Michael W. Chinworth
Subject: RE: TEPCO Earthquake Information Update as of March 14, 2300(JST) - Fukushima Daini Unit 1 in Cold Shutdown

With regard to the mail below, NISA announced that there was explosion in the suppression room at 5:10 pm in Washington time, causing some damage to the suppression chamber.

The damage can be expected by the fact of pressure decrease at the suppression chamber from 3 atmospheric pressure in normal condition to 1 atmospheric pressure.

From: Hidehiko Yamachika [mailto:yamachika-hidehiko@jnes-usa.org]
Sent: Monday, March 14, 2011 6:49 PM
To: 'Hidehiko Yamachika'; Emche, Danielle; Foggie, Kirk; Cullingford, Michael
Cc: Aono, Kenjiro; Michael W. Chinworth
Subject: RE: TEPCO Earthquake Information Update as of March 14, 2300(JST) - Fukushima Daini Unit 1 in Cold Shutdown

A Chief Cabinet Secretary announced early in the morning of 15th March that defect was found in suppression pool.

*Unfortunately I have no idea which kind of defect is.

From: Hidehiko Yamachika [mailto:yamachika-hidehiko@jnes-usa.org]
Sent: Monday, March 14, 2011 4:54 PM
To: 'Hidehiko Yamachika'; Emche, Danielle; Foggie, Kirk; Cullingford, Michael
Cc: Aono, Kenjiro; Michael W. Chinworth
Subject: RE: TEPCO Earthquake Information Update as of March 14, 2300(JST) - Fukushima Daini Unit 1 in Cold Shutdown

A Chief Cabinet Secretary, Edano, announced at 4:40 pm in EDT that Government-TEPCO joint Head Quarter has been foamed to perform an integrated action.

HQ is placed in TEPCO HQ in Tokyo where Minister of METI and the CEO of TEPCO are to stay, exchange information and make decision.

A Chief Cabinet Secretary will play a role to instruct each government sectors and inform the public of their activities.

From: Hidehiko Yamachika [mailto:yamachika-hidehiko@jnes-usa.org]
Sent: Monday, March 14, 2011 3:31 PM
To: 'Hidehiko Yamachika'; Emche, Danielle; Foggie, Kirk; Cullingford, Michael
Cc: Aono, Kenjiro; Michael W. Chinworth
Subject: RE: TEPCO Earthquake Information Update as of March 14, 2300(JST) - Fukushima Daini Unit 1 in Cold Shutdown

TEPCO announced at 3:20pm in EDT that pressure in the reactor vessel is decreasing and injection of sea water is being carried out. However the gauge does not show that water level is coming up at

2:00pm in EDT.

From: Hidehiko Yamachika [mailto:yamachika-hidehiko@jnes-usa.org]
Sent: Monday, March 14, 2011 11:49 AM
To: Emche, Danielle; Foggie, Kirk; Cullingford, Michael
Cc: Aono, Kenjiro; Michael W. Chinworth
Subject: RE: TEPCO Earthquake Information Update as of March 14, 2300(JST) - Fukushima Daini Unit 1 in Cold Shutdown

TEPCO announced at 11:30 am in EDT that all of fuel became uncovered again at 10:20am in EDT because the closure of the valve prevented from flow of sea water.

TEPCO is trying to open another valve to release high pressure in the reactor vessel, which took place due to the lack of sea water supply, and keep condition in which sea water flow will be assured.

@yamachika

==

Landau, Mindy

From: Landau, Mindy
Sent: Thursday, March 17, 2011 7:21 AM
To: Burnell, Scott
Subject: FW: Media

Came in last night

From: Akstulewicz, Brenda
Sent: Wednesday, March 16, 2011 6:12 PM
To: Landau, Mindy
Subject: Media

Greg
CBS News
212 975 5485
gmmm@cbsnews.com

List of most vulnerable plants that came out today – is it from NRC, is it accurate

Brenda Akstulewicz
Administrative Assistant
Office of Public Affairs
301-415-8209
brenda.akstulewicz@nrc.gov



Y1124

Taylor, Renee

From: Borchardt, Bill
Sent: Thursday, March 17, 2011 7:37 AM
To: Sheron, Brian
Subject: FW: Assistance requested

Brian – FYI (since you'll see Pete Lyons at the DOE mtg)
Bill

From: Virgilio, Martin
Sent: Thursday, March 17, 2011 6:28 AM
To: Borchardt, Bill; Weber, Michael
Cc: Casto, Chuck; McDermott, Brian; Wiggins, Jim
Subject: Assistance requested

Bill/Mike

DOE engaged Chuck directly earlier today requesting he add a group of DOE staff (unspecified number and skills) on his team. Chuck views this as a burden and additional management challenge that he does not need at this time. I agree. Could one of you please follow up with Pete Lyons today to turn this off, for now. It may be tolerable at some time down the road.

We (including Chuck) are working with INPO to identify one individual that has knowledge and field experience in severe accident management strategies and procedures.

Marty

Weber, Michael

From: Weber, Michael
Sent: Thursday, March 17, 2011 5:44 PM
To: Virgilio, Martin; Borchardt, Bill
Cc: Casto, Chuck; McDermott, Brian; Wiggins, Jim; Leeds, Eric
Subject: RESPONSE - Assistance requested

Brian attempted to discuss this with Pete today at the meeting downtown, but could only get to John Kelly, who knew nothing about the idea. Brian shared with John that we appreciate the support, but thought that the team in Japan was working well and we did not want to disturb it by changing the team at this time. John noted that DOE already had a few experts in country. Brian offered to revisit this decision in the future (not specified). I suggested to Brian, if this topic comes up again, that we encourage DOE to participate in our operations center working with the RST to evaluate the feasibility and success expectations for the mitigating actions that we are engineering and coordinating to pump over to Chuck and his team.

You should also be aware that Laura Dudes (outgoing RST Director) and Fred Brown (incoming RST Director) raised a concern that the NRC people on the RST may not be well suited to conduct the detailed engineering and problem solving from an operational perspective – they are great regulators, but are not the sharpest operational engineers. We'll need to watch this in the ET and provide appropriate support and guidance. Laura and Fred plan to lean on INPO (as lead coordinator for the industry), and private sector colleagues to do the problem solving and operational planning. This is probably being discussed right now as the team is conducting a conference call with Chuck and other external participants on the mitigating strategies.

From: Virgilio, Martin
Sent: Thursday, March 17, 2011 6:28 AM
To: Borchardt, Bill; Weber, Michael
Cc: Casto, Chuck; McDermott, Brian; Wiggins, Jim
Subject: Assistance requested

Bill/Mike

DOE engaged Chuck directly earlier today requesting he add a group of DOE staff (unspecified number and skills) on his team. Chuck views this as a burden and additional management challenge that he does not need at this time. I agree. Could one of you please follow up with Pete Lyons today to turn this off, for now. It may be tolerable at some time down the road.

We (including Chuck) are working with INPO to identify one individual that has knowledge and field experience in severe accident management strategies and procedures.

Marty

Taylor, Renee

From: Borchardt, Bill
Sent: Thursday, March 17, 2011 7:50 AM
To: Virgilio, Martin; Weber, Michael
Cc: Casto, Chuck; McDermott, Brian; Wiggins, Jim
Subject: RE: Assistance requested

I've talked to Brian Sheron and he will engage Pete Lyons during this afternoon's meeting.

From: Virgilio, Martin
Sent: Thursday, March 17, 2011 6:28 AM
To: Borchardt, Bill; Weber, Michael
Cc: Casto, Chuck; McDermott, Brian; Wiggins, Jim
Subject: Assistance requested

Bill/Mike

DOE engaged Chuck directly earlier today requesting he add a group of DOE staff (unspecified number and skills) on his team. Chuck views this as a burden and additional management challenge that he does not need at this time. I agree. Could one of you please follow up with Pete Lyons today to turn this off, for now. It may be tolerable at some time down the road.

We (including Chuck) are working with INPO to identify one individual that has knowledge and field experience in severe accident management strategies and procedures.

Marty

Landau, Mindy

From: Steger (Tucci), Christine
Sent: Thursday, March 17, 2011 7:51 AM
To: Landau, Mindy
Subject: Interview Request - Fox National Business Network

Follow Up Flag: Follow up
Flag Status: Flagged

Call from: Eric Spineto
Organization: Fox National Business Network
Number: 212-601-2399

Would like to conduct interview today with Chairman or another NRC Expert

4/1/28

Landau, Mindy

From: Steger (Tucci), Christine
Sent: Thursday, March 17, 2011 7:52 AM
To: Landau, Mindy
Subject: Reuters - Question for publication (deadline- asap)

Follow Up Flag: Follow up
Flag Status: Flagged

Call from: David Morgan
Organization: Reuters
Number: 202-898-8322

Question – has a quote in his publication – low levels of radiation heading toward U.S.

** he called yesterday, received a call back from a number in Atlanta

Y/129

Landau, Mindy

From: Steger (Tucci), Christine
Sent: Thursday, March 17, 2011 7:57 AM
To: Landau, Mindy
Subject: Interview Request - Canadian Broadcasting Corporation

Call from: Alexandra Huntings
Organization: Canadian Broadcasting Corporation
Number: 416-205-3735

Request Interview with Chairman Jazcko

(this was a voicemail from yesterday, deadline was not mentioned)

Y/130

Landau, Mindy

From: Steger (Tucci), Christine
Sent: Thursday, March 17, 2011 8:10 AM
To: Landau, Mindy
Subject: Interview Request: Fox News Channel 4:00pm today

Call from: Michelle Moryc
Organization: Fox News Channel
Number: 212-301-5167
E-mail: michelle.moryc@foxnews.com

Request Interview: With Chairman or possibly NRC expert 4:00pm today

Y/121

Landau, Mindy

From: Landau, Mindy
Sent: Thursday, March 17, 2011 8:45 AM
To: Steger (Tucci), Christine; Couret, Ivonne
Subject: RE: I am sending all this AM requests to Ivonne

Importance: High

Ivonne – already took care of these! You can take them from here on out....

From: Steger (Tucci), Christine
Sent: Thursday, March 17, 2011 8:44 AM
To: Couret, Ivonne
Cc: Landau, Mindy
Subject: I am sending all this AM requests to Ivonne

Ivonne,

Attached are the requests from this AM.

Thanks,
Christine

Y/132

Ellmers, Glenn

From: Ellmers, Glenn
Sent: Thursday, March 17, 2011 9:08 AM
To: Decker, David; Harrington, Holly; Loyd, Susan
Subject: Chairmans' status report from yesterday's testimony

Could someone send me an electronic copy of the Chairman's House testimony appendix where he discussed our understanding of the current situation at Fukushima?

Glenn Ellmers
Senior Communications Specialist, OEDO
301-415-0442
OWFN - 17F03
Mail stop: 016E15

Landau, Mindy

From: Landau, Mindy
Sent: Thursday, March 17, 2011 10:32 AM
To: 'pcook6@bloomberg.net'
Subject: License Renewals

<http://www.nrc.gov/reactors/operating/licensing/renewal/applications.html>

Mindy S. Landau
Deputy Assistant for Operations
Communication and Performance Improvement
Office of the Executive Director for Operations
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555
301-415-8703
mindy.landau@nrc.gov

Y/124

Landau, Mindy

From: Landau, Mindy
Sent: Thursday, March 17, 2011 10:40 AM
To: Shannon, Valerie
Subject: RE: Media call

Ok, he got it a day late. Thanks for checking

From: Shannon, Valerie
Sent: Thursday, March 17, 2011 10:40 AM
To: Landau, Mindy
Subject: RE: Media call

I checked and he is on the list. We were having problems with the Listserve yesterday but it has been resolved.
Val

From: Landau, Mindy
Sent: Thursday, March 17, 2011 10:33 AM
To: Shannon, Valerie
Subject: FW: Media call

Please make sure he is on the list serve, he's been getting the prs a day late

From: Royer, Deanna
Sent: Thursday, March 17, 2011 8:54 AM
To: Landau, Mindy
Subject: Media call

Peter Cook
Bloomberg TV
Pcook6@bloomberg.net
202-624-1869
Re: Interview - ASAP

Deanna Royer
Contract Secretary
301-415-8200

McNamara, Nancy

From: Wilds, Edward [Edward.Wilds@ct.gov]
Sent: Thursday, March 17, 2011 8:07 PM
To: McNamara, Nancy; Tifft, Doug
Subject: Input Parameters for

I am watching a C-Span briefing of the Japanese Natural Disasters & Nuclear Plant Crisis that involved NRC Chairman Jaczko and a DOE official. One of the members of the press asked Chairman Jaczko if the NRC would release the data that was used to base the decision for evacuation of 50 miles in Japan. Chairman Jaczko stated that all the data was released. I request all input parameters used in the RASCAL runs attached to the yesterdays NRC press release. Since Chairman Jaczko has stated that the data used to base the decision was released to the public, it should be released to the states. If this information is not available, why is the Chairman stating to the press that all data has been released?

Dr. Wilds

Edward L. Wilds, Jr.; Ph.D.
Director, Radiation Division
Connecticut Department of Environmental Protection
79 Elm Street
Hartford, CT 06106
Ph.: 860-424-3029
Fax: 860-424-4065

X/136



IAEA
International Atomic Energy Agency

INCIDENT AND EMERGENCY CENTRE

EMERCON

EMERCON

EMERCON

FAX: +43 1 26007 29309

email: iec3@iaea.org

**Date: 2011-3-17
23:55 UTC**

Pages incl. cover sheet: 9

TO: All Contact points

cc: Permanent Missions

Subject: CORRECTION-Status of the Fukushima Daiichi nuclear power plant.

Please find attached the latest information on the current status and summary table of reactor and spent fuel pool status.

An electronic version, as well as latest NISA Press Release No. 28 in English and latest meteorological products, is available on ENAC (www-emergency.iaea.org).

The IAEA will issue further information as soon as it becomes available.

Rodolfo Cruz Suarez

**Emergency Response Manager
17-March-2011 23:55 UTC
IAEA Incident and Emergency Centre**

Y/137



Subject: Status of the Fukushima Daiichi nuclear power plant

The Incident and Emergency Centre (IEC) is continuing to monitor the status of the nuclear power plants in Japan following the earthquake.

Based on information received by 23:00 UTC on March 17, 2011 the following update for the reactor units at the Fukushima Daiichi Nuclear Power Plant is provided:

Radiation Monitoring Data

The IAEA has requested the Japanese authorities to provide information on the radionuclides identified in environmental samples.

Off-Site Environmental Radiation Measurements

Additional information on Off-site environmental radiation data was produced by Ministry of Education, Culture, Sports, Science and Technology (MEXT, competent authority) for the area between 20 km and 60 km. This new information, collected within the first 6 hours of March 17 (UTC), covers a wider region than the previous report with additional wind directions.

Dose rates in the direction to Fukushima City (North-West), were observed in the range 3 to 170 $\mu\text{Sv/h}$ (microsievert per hour). The maximum reported values are those at some 30 km from the plant in the direction of Fukushima. In some locations the dose rates incremented in the last 24 hours (e.g. in 2 locations in this zone the dose rates incremented from 80 to 170 $\mu\text{Sv/h}$, from 26 to 95 $\mu\text{Sv/h}$). This trend is not observed in all locations.

Dose rates in the other directions are in the range of 1 microSv/h to 5 microSv/h.

On-Site Environmental Radiation Measurements

Daiichi NPP:

The on-site environmental monitoring data from sampling locations MP5 and MP6 are presented in the attached graph. The data start at 20:00 UTC on Monday 14th March and run through to 06:30 UTC on Thursday 17th March. A significant increase in the gamma dose rate is associated with each of the major events taking place on the site. The ambient normal background level at the site is typically 0.05 microsievert per hour. The highest peak value observed is 12,000 $\mu\text{Sv/h}$ at 00:00 UTC on 15th March and would appear to be associated with events at units 2 and 4. It is also important to note that, while levels have fallen quickly from each peak value, they still remain of the order of 300 μSv .

The highest recorded value at the site was 400,000 $\mu\text{Sv/h}$ (400 mSv/h). This was recorded at a different on-site location and so is not included in this graph.

Daiini NPP:

Comparable data for the Daiini site are also presented in graphical form. Apart from one peak value of just over 100 μSv per hour at 01:00 UTC on 16th March, the ambient levels are predominantly between 10 and 30 $\mu\text{Sv/h}$, compared with levels of the order of 0.05 $\mu\text{Sv/h}$ before the earthquake and tsunami.

There is no record of any incidents or releases from the Daiini site. For that reason, the peak value observed and the present elevated ambient levels are attributed to events taking place at the Daiichi site.

Radiological screening of persons

From March 12th to 15th the radiological screening was carried out at the off-site Center in Okuma Town. 162 people were examined. For 49 people, the measured levels were in the range 6000 to 13000 counts per minute with 8 people being measured above 13000 counts per minute which is an established operational level by the local authorities. 5 out of the 162 people examined were transported to hospital after being decontaminated.

The Fukushima Prefecture carried out the evacuation of patients and personnel of the hospitals located within 10 km area. 3 persons with high level of counting rates were transported to a secondary medical institute.

As a result of the screening on 60 fire fighting personnel involved in the transportation activities, levels of activity higher than twice the background were detected on 3 people. All the 60 people were decontaminated.

Units 1, 2 and 3 Plant Status

The following data was verified on the status of Units 1, 2 and 3 as of 03:50 to 07:35 (UTC), March 17.

Parameter / Indications	Unit	Fukushima Daiichi		
		Unit 1	Unit 2	Unit 3
Reactor Pressure Vessel Pressure (overpressure)	MPag	0.173(A)	-0.029 (A)**	0.014 (A)
		0.144(B)	-0.047(B)**	0.023 (B)
	atm	1.71 (A)	-0.28 (A) **	0.13 (A)
		1.42 (B)	-0.46 (A) **	0.21 (B)
Reactor Pressure Vessel Level	mm (above the top of active fuel)	-1800(A)	-1800 (A)	-1950(A)
		-1800(B)	(B) not available	-2300(B)

Parameter / Indications	Unit	Fukushima Daiichi		
		Unit 1	Unit 2	Unit 3
Containment Vessel (Drywell) Pressure	kPa	Instrumentation not available	115	190
	atm		1.13	1.88
Suppression Pool Temperature	°C	No Data	No Data	No Data
Suppression Pool Pressure	kPa	No Data	Below the scale	Below the scale
Adding water to Reactor Pressure Vessel	<ul style="list-style-type: none"> • Adding • Not adding Unknown 	Sea water injection is continued using fire extinguish line into RPV	Sea water injection is continued using fire extinguish line into RPV	Sea water injection is continued using fire extinguish line into RPV

* All pressures are gauge pressure (pressure above normal atmospheric pressure)

*(A) and (B) refer to two measurement channels

**The negative values need to be confirmed by the counterparts

For Unit 1, Seawater is being injected as of 08:30 UTC March 16th.

For Unit 2, external grid power line is being layed and planned to be connected (to Unit 2) after water spray on Unit 3 is complete. Seawater is being injected as of 08:30 March 17.

For Unit 3, water sprayings by helicopter on the unit 3 from 00:48 to about 01:00 UTC on March 16 (4 times total) were performed. Police trucks equipped with water cannons have sprayed water on Unit 3 from 10:05 to 11:09 UTC of 17 March. Seawater is being injected to reactor pressure vessel as of 08:30 UTC March 17.

For Unit 4, No information is available regarding the spent fuel pool water level or temperature. 08:30 UTC the seawater injection was stopped into the spent fuel pool.

For Unit 5, at 15:00 UTC on March 16, the water level decreased to 1872 mm above the top of the fuel (at 08:00 UTC on March 17 the level was 1868 mm).

For Unit 6, at 15:00 UTC on March 16 the water level had decreased to 1773 mm above the top of the fuel (at 08:00 UTC on March 17 the level was 1697mm). Emergency Diesel Generator (1 unit) for Unit 6 is operable and supplying electricity to Units 5 and 6. Water injection to the Spent Fuel Pool through make up water system is progressing. It is scheduled to inject water to reactor pressure vessel (RPV) after the recovery of external power source.

Spent Fuel Ponds

The temperatures of the water in the spent fuel ponds in Units 4, 5 and 6 have been measured with the results below:

Unit 4	Unit 5	Unit 6
84°C at 19:08 14-Mar	59.7°C at 16:00 on 15-Mar	58.0°C at 16:00 on 15-Mar
-	60.4°C at 19:00 on 15-Mar	58.5°C at 19:00 on 15-Mar
-	62.7°C at 05:00 16-Mar	60.0°C at 05:00 on 16-Mar
-	64.5°C at 19:00 16-Mar	61.0 °C at 17:00 on 16-Mar
-	64.5°C at 08:00 17-Mar	64.0 °C at 08:00 on 17-Mar



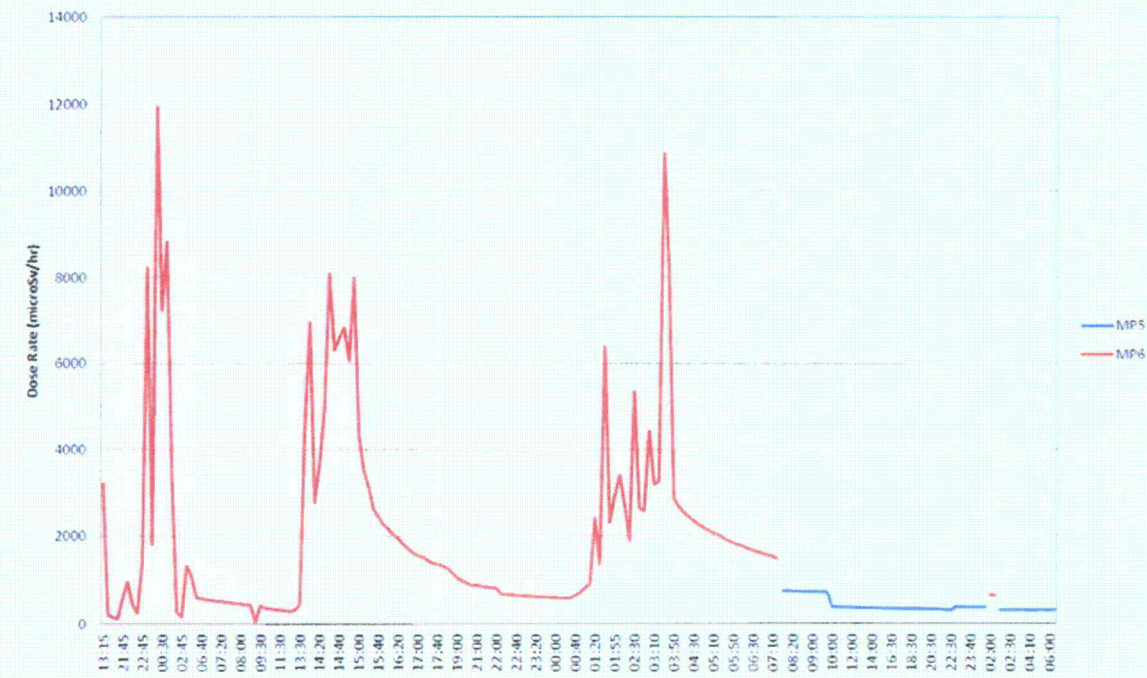
Emergency Response Manager

Rodolfo Cruz Suarez

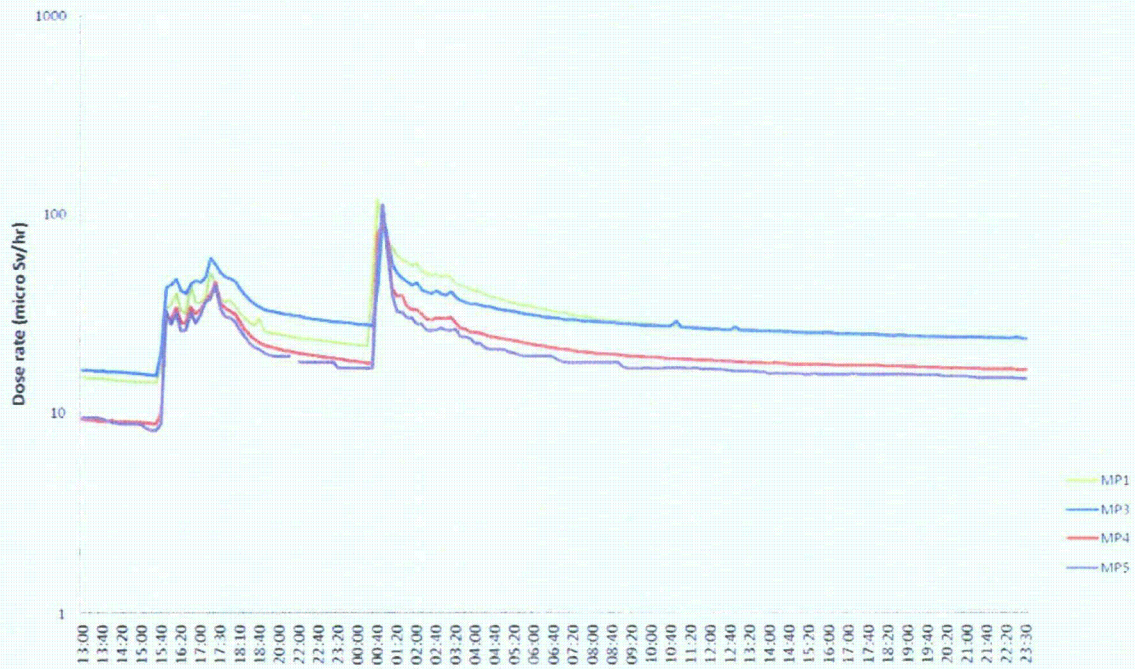
17-March-2011 23.00 UTC

IAEA Incident and Emergency Centre

**Fukushima Dai-ichi Dose Rate Measurements (microSv/hr) MP 5 and MP 6
from 14th March 2011 13:15 to 17th March 2011 06:00 UTC**



Fukushima Dai-ichi Dose Rate Measurements (microSv/hr)
MP 1, MP 3, MP 4 & MP 5 from 15 March 13:00 to 16 March 23:30 UTC



Unit	1	2	3	4
Power (MWe/th)	460/1380	784/2381	784/2381	784/2381
Type of Reactor	BWR-3	BWR-4	BWR-4	BWR-4
Status at time of event	In service – auto shutdown	In service – auto shutdown	In service – auto shutdown	Outage
Core	Damage suspected	Damage suspected at wet well	Damage suspected	No fuel rods
Containment integrity	No damage reported	Damage suspected	No information	NA / outage configuration
Off site power	Not available	Not available	Not available	Not available
Building	Severe damage	Slight damage	Severe damage	Severe damage
Water level of RPV	Around half of Fuel assembly	Around half of Fuel assembly	Around half of Fuel assembly	NA / outage configuration
Pressure of RPV	Stable	Unreliable data	Decreasing	
Containment Pressure Drywell	Unknown	Stable	Decreasing	
Water injection to RPV	Seawater	Seawater	Seawater	
Spent Fuel Pool	No information	No information	No information	No information

Unit	5	6
Power	784/2381	1100/3293
Type of Reactor	BWR-4	BWR-5
Status at the EQ occurred	Outage	Outage
Core and Fuel	No damage expected	No Damage expected
Containment int.	No damage expected	No damage expected
Off site power	Not available	Not available
Diesel generators	1 Emergency Diesel From unit 6	Emergency Diesel
Building	No damage reported	No damage reported
Water level of RPV	Above fuel	Above fuel
Pressure of RPV	No information	No information
Containment Pressure	No information	No information
Water injection to RPV	Not necessary	Not necessary
Water injection to CV	Not necessary	Not necessary
Spent Fuel Pool Temperature	Slightly increasing	Slightly increasing

Date : March 17
Time : 23:00 UTC

	Severe condition
	Concern
	No immediate concern

10
From: Boger, Bruce *mbx*
To: Nelson, Robert
Subject: FW: COMMISSION E-READER...THURSDAY, MARCH 17, 2011
Date: Thursday, March 17, 2011 12:12:00 PM
Attachments: Tab A 03-16-11 Rep. Blumenauer.pdf

FYI--I don't know who will be tasked with this one, but at least it also went to the EPA.

From: Champ, Billie *setu*
Sent: Thursday, March 17, 2011 12:11 PM
To: Commission E-Reader Distribution; E-Reader Distribution
Subject: COMMISSION E-READER...THURSDAY, MARCH 17, 2011

~~INTERNAL USE ONLY~~

~~Some of the information contained in the
Reader is not publicly available.~~

~~If there are any questions, please contact SECY.~~

READING FILE

INDEX

March 17, 2011

INCOMING CORRESPONDENCE

Tab "A" 03/16/11 -- Letter from Rep. Earl Blumenauer, concerns potential risk to U.S. West Coast communities from the explosions and release of radiation from the Fukushima Daiichi nuclear facility in Japan.

Y/1138

EARL BLUMENAUER
THIRD DISTRICT, OREGON

COMMITTEE ON WAYS AND MEANS

SUBCOMMITTEES:

TRADE

SELECT REVENUE MEASURES

COMMITTEE ON BUDGET



Congress of the United States
House of Representatives
Washington, DC 20515-3703

March 16, 2011

WASHINGTON OFFICE:
2267 RAYBURN BUILDING
WASHINGTON, DC 20515
(202) 225-4811
FAX: (202) 225-8941

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729 N.E. OREGON STREET
SUITE 115
PORTLAND, OR 97232
(503) 231-2300
FAX: (503) 230-5413

website: blumenauer.house.gov

Lisa Jackson
Administrator
Environmental Protection Agency
US EPA Ariel Rios Building
1200 Pennsylvania Ave, NW
Washington, DC 20004

Gregory Jaczko
Chairman
U.S. Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852

Dear Administrator Jackson and Chairman Jaczko,

I write to inquire about the potential risk to U.S. West Coast communities from the explosions and release of radiation from the Fukushima Daiichi nuclear facility in Japan. In a region that is already breathing air pollution from China, my constituents are concerned about radiation contamination from the facility reaching the West Coast.

While a number of experts have indicated that contamination in the U.S. as a result of the Japanese catastrophe is unlikely, I would like to better understand the agencies' contingency plans and your plan for disseminating information to concerned citizens. At your earliest convenience, please respond to me with the following information:

- What is the U.S. Government doing to monitor radiation levels over the Pacific?
- What steps is the Government taking to plan for a scenario in which radiation is elevated to unsafe levels?
- How does the Government plan to provide information about this potential risk to citizens?

Thank you for your attention to this request. I look forward to being able to assure my constituents that the U.S. Government has a plan and to be able to tell them where they can find more information about the situation.

Sincerely,

Earl Blumenauer
Member of Congress

From: Cullingford, Michael *mk*
To: Thomas, Eric
Cc: McGinty, Tim; Boger, Bruce; Astwood, Heather
Subject: FW: Some Seismic Safety Criteria of Japan Nuclear Safety Commission (NSC)
Date: Thursday, March 17, 2011 10:54:11 AM
Attachments: [JapanNSCSitingRGL-ST-I_0.pdf](#)
[JapanNSCSafetyClassRGL-DS-I_01.pdf](#)
[JapanNSCseismicDesignRGL-DS-I_02.pdf](#)

fyi

From: Bagchi, Goutam *mk*
Sent: Thursday, March 17, 2011 10:53 AM
To: NRO_DSER Distribution
Cc: Kammerer, Annie; Burnell, Scott; Cullingford, Michael; Ali, Syed; Hogan, Rosemary
Subject: Some Seismic Safety Criteria of Japan Nuclear Safety Commission (NSC)

~~This information is for Official Use Only~~

Dear Colleagues,

Those of you that are interested in getting more technical information may want to browse through some of the attached files of regulatory guides (RG) published by the Japan Nuclear Safety Commission (NSC). In this message I am trying to present what I gleaned from the RGs. Please note that the front pages of the RGs may show the original publication dates, such as 1978 etc., inside pages should show the latest revision dates – 2006, 2009 etc.

Siting Review Criteria:

Focuses on proximity to
population zone and potential
radiation impact, not site
suitability from natural
hazards (hydrology,
meteorology or Seismology
stand point)

Safety Classification:

Divided into classes 1, 2 and
3. Required function for
Class 3 are) Functions to
mitigate reactor pressure
increase

2) Functions to suppress reactor
power increase

3) Functions to make up reactor
coolant

Safety Class 3 design philosophy, "Class 3: Ensure and maintain reliability
equivalent to or higher than that of ordinary industrial facilities"

Seismic Design: Safety Class 3 SSCs are designed to static forces with
varying numbers of safety factors from 3 to 1.0

Y/129

Japan's seismic design of structures for resistance ground vibration is very robust - 2007 July event at Kashiwazaki shows this. Vibratory ground motion and tsunami from large earthquakes are relatively frequent events in Japan and they occur simultaneously. At this point I am not clear as to the extent to which the older vintage plants considered the combined effects. I do not know what back fits were implemented at the Fukushima like plants when the NSC upgraded its seismic criteria in 2006 (?)

Another factor seems to be qualification of electrical and mechanical equipment in mild and harsh environments, as is required under 10 CFR 50.49. At Fukushima the electrical safety systems (cables?) became wet and did not work even when the diesel generator worked for about an hour.

There are very significant differences in the way reactor oversight is conducted – review of maintenance and in-service inspection of safety related SSCs (10 CFR 50.55a imposes ASME Code criteria to ISI).

Please forgive me, I messed up the formatting in the bulleted portion of the text above. Regards,

*Thank you,
Goutam Bagchi*

Security settings or invalid file format do not permit using JapanNSCSitingRGL-ST-I_0.pdf (128206 Bytes).

Security settings or invalid file format do not permit using JapanNSCSafetyClassRGL-DS-I_01.pdf (270589 Bytes).

Security settings or invalid file format do not permit using JapanNSCseismicDesignRGL-DS-I_02.pdf (331230 Bytes).

NRR
From: Givvines, Mary
To: Leeds, Eric; Ferrell, Kimberly
Cc: Grobe, Jack; Boger, Bruce; Ruland, William
Subject: RE: Heads up - Work schedule and premium pay.
Date: Thursday, March 17, 2011 3:25:02 PM

Eric – fyi, I've already forwarded this to all NRR managers. I know how busy you are.

REL
NRR
From: Leeds, Eric
Sent: Thursday, March 17, 2011 3:24 PM
To: Givvines, Mary; Ferrell, Kimberly
Cc: Grobe, Jack; Boger, Bruce; Ruland, William
Subject: Heads up - Work schedule and premium pay.

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

OTHR
From: Davidson, Lawrence
Sent: Thursday, March 17, 2011 2:06 PM
To: Abraham, Susan; Abrams, Charlotte; Ader, Charles; Akstulewicz, Frank; Albert, Ronald; Allwein, Russell; Alston, Timothy; Andersen, James; Anderson, Joseph; Armentrout, Deborah; Ash, Darren; Ash, Melissa; Astwood, Heather; Auluck, Rajender; Austin, Joseph; Ayres, David; Bahadur, Sher; Bailey, Marissa; Bailey, Stewart; Baker, Pamela; Banas, Paul; Barss, Dan; Bartlett, Bruce; Bartley, Jonathan; Bartley, Malion; Batkin, Joshua; Baum, Robin; Bayliff, Shirley; Beardsley, James; Beasley, Benjamin; Bell, Hubert; Bell, Marvin; Bellamy, Ronald; Bellinger, Alesha; Benjamin, Jamie; Benner, Eric; Benney, Brian; Bergman, Thomas; Biggins, James; Bladey, Cindy; Blamey, Alan; Bloom, Steven; Bloomer, Tamara; Blount, Tom; Boger, Bruce; Boland, Anne; Bolduc, Angela; Bonser, Brian; Borchardt, Bill; Borden, William; Bouling, Ramona; Bower, Fred; Bower, Phyllis; Boyce, Tom (RES); Boyce, Thomas (OIS); Brady, Joseph; Brenner, Eliot; Brezovec, Michael; Broadus, Doug; Brooks, Kenneth; Brown, Frederick; Brown, Tony; Brown, Milton; Brown, Rohn; Bubar, Patrice; Buchholz, Jeri; Buckley, Michael; Bumpass, Sheila; Burns, Stephen; Burritt, Arthur; Burton, Stephen; Burton, William; Bush-Goddard, Stephanie; Cain, Chuck; Caldwell, Robert; Calle, Joselito; Cameron, Jamnes; Campbell, Andy; Campbell, Larry; Campbell, Stephen; Campbell, Vivian; Camper, Larry; Caniano, Roy; Cardenas, Daniel; Carlson, Robert; Carpenter, Cynthia; Case, Michael; Casto, Chuck; Casto, Greg; Cataldo, Paul; Catts, Michelle; Champion, Bryan; Chang, Helen; Chang, Lydia; Cheok, Michael; Chernoff, Harold; Chernoff, Margaret; Chokshi, Niles; Christensen, Harold; Clark, Jeff; Clay, Earnestine; Clayton, Brent; Clifford, James; Cobey, Eugene; Cochrum, Steven; Coe, Doug; Cohen, Miriam; Cohen, Ronald; Cohen, Stephen; Colaccino, Joseph; Coleman, Judy; Collins, Daniel; Collins, Elmo; Conte, Richard; Cook, Christopher; Corbett, James; Cordes, John; Correia, Richard; Costello, Ralph; Coyne, Kevin; Croteau, Rick; Crowe, Eddy; Cruz, Jeffrey; Csontos, Aladar; Cubbage, Amy; Cubellis, Louis; Cullison, David; Curtis, David; Daley, Robert; Daly, Jill; Dambly, Jan; Daniel, Susan; Danna, James; Dapas, Marc; Davis, Henry; Davis, Jack; Davis, Marlone; Dean, Michael; Dean, Bill; Dehn, Janine; Delligatti, Mark; Dembek, Stephen; Demoss, Gary; Dennig, Robert; Dentel, Glenn; Desai, Binoy; Dias, Antonio; Diaz-Toro, Diana; Dickson, Billy; Dingbaum, Stephen; DiPaolo, Eugene; Dixon, John; Dixon-Herrity, Jennifer; Doane, Margaret; Dodmead, James; Doerflein, Lawrence; Donaldson, Leslie; Donnell, Tremaine; Donoghue, Joseph; Doornbos, Roger; Dorman, Dan; Dorsey, Jeryll; Dosch, William; Dreisbach, Jason; Droggitis, Spiros; Dudes, Laura; Dumbacher, David; Duncan, Eric; Dwyer, James; Dyer, Jim; Eads, Johnny; Easson, Pamela; Egan, Dennis; Egli, Richard; Einberg, Christian; Elkins, Scott; Ellegood, John; Elliott, Robert; Ellsbury, Richard; Erlanger, Craig; Ernstes, Michael; Brown, Cris; Evans, Carolyn; Michele.ca@nrc.gov; Farnholtz, Thomas; Felts, Russell; Fenton, Darlene; Ferdas, Marc; Ferrell, Kimberly; Ficks, Ben; Fields, Leslie; Finney, Patrick; Fitch, Karen; Flanders, Scott; Flynn, Sean; Foster, Jack; Franke, Mark; Franovich, Rani; Fredericks, Carl; Freeman, Scott; Fretz, Robert; Frumkin, Daniel; Frye, Timothy; Fuller, Michael;

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Gaddy, Vincent; Gallo, Jenny; Galloway, Melanie; Gartman, Michael; Gavrilas, Mirela; Giantelli, Adelaide; Gibson, Kathy; Giessner, John; Glitter, Joseph; Givvines, Mary; Gody, Tony; Golder, Jennifer; Golshan, KG; Gorham, Tajuan; Gott, William; Graham, Thorne; Grancorvitz, Teresa; Grant, Jeffery; Graser, Dan; Gray, Mel; Greene, Kathryn; Grice, Thomas; Griffin, Steven; Grobe, Jack; Hawkins, Kimberly; Gusack, Barbara; Guthrie, Eugene; Guttmann, Jack; Haag, Robert; Habighorst, Peter; Hackett, Edwin; Haeg, Lucas; Haire, Mark; Hall, Donald; Hall, Patricia; Hamzehee, Hossein; Haney, Catherine; Hansell, Samuel; Harris, Tim; Harrison, Donnie; Hatchett, Gregory; Hawken, Roy; Hay, Michael; Hayden, Elizabeth; Hays, Myra; Heck, James; Heck, Jared; Helton, Shana; Henderson, Pamela; Hickey, James; Hiland, Patrick; Hills, David; Hilton, Nick; Hiltz, Thomas; Hirsch, Patricia; Hoeg, Tim; Hogan, Rosemary; Holahan, Gary; Holahan, Patricia; Holian, Brian; Holland, Crystal; Holody, Daniel; Holonich, Joseph; Holt, BJ; Hopper, George; Howard, Patrick; Howe, Allen; Howell, Art; Howell, Linda; Hoxie, Chris; Hsia, Anthony; Hsu, Caroline; Hsueh, Kevin; Huber, Deborah; Hudson, Jody; Humerick, David; Hunegs, Gordon; Hunter, James; Huth, Virginia; Hutto, Andy; Huyck, Doug; Imboden, Andy; Itzkowitz, Marvin; Jackson, Deborah; Jackson, Donald; Jackson, Terry; James, Lois; Jankovich, John; Janney, Margie; Jarvis, Rodney; Jenkins, Ronaldo; Jernell, Eleni; Johns, Nancy; Johnson, Michael; Johnson, Clay; Johnson, Robert; Jolicoeur, John; Jones, Bradley; Jones, Evan; Jones, William; Josey, Jeffrey; Joustra, Judith; Julian, Emile; Jung, Ian; Junge, Michael; Kahler, Robert; Kaplan, Michele; Karas, Rebecca; Kellar, Ray; Kelley, Corentis; Kemerer, Myron; Kemker, Brian; Kennedy, Kriss; Kennedy, Silas; Kerben, Valerie; Kern, David; Khanna, Meena; Kim, Yong; Kimble, Daniel; King, Donald; King, Michael; Kinneman, John; Kirkland, John; Kirkwood, Sara; Klein, Alex; Knutson, Ed; Kobetz, Timothy; Kokajko, Lawrence; Kolaczyk, Kenneth; Konzman, Carl; Koshy, Thomas; Kowal, Mark; Kramer, John; Krohn, Paul; Krsek, Robert; Krupnick, David; Kulesa, Gloria; Kulp, Jeffrey; Kunowski, Michael; Lam, Donna; Lambert, Kenneth; Landau, Mindy; Langan, Scott; Lankford, Jeffrey; Lantz, Ryan; Lara, Julio; Larkin, Grant; Laura, Richard; Layton, Michael; Le, Hong; Lee, Bert; Lee, David; Lee, Richard; Lee, Samson; Lee, Samuel; Leeds, Eric; Lennartz, Jay; Lesser, Mark; Lew, David; Lewis, Robert; Lipa, Christine; Lombard, Mark; Long, Chris; Lopez, Joseph; Lorson, Raymond; Loudon, Patrick; Lubinski, John; Luehman, James; Lui, Christiana; Lukes, Robert; Lund, Louise; Lupold, Timothy; Lyons-Burke, Kathy; Ma, May; Madden, Patrick; Madison, Wil; Magruder, Stewart; Mamish, Nader; Markley, Michael; Marshall, Jane; Marshfield, Mark; Martin, Gillian; Masnik, Michael; Masse, Todd; Matheson, Mary; Mathew, Roy; Matthews, David; Mattingley, Joel; Maxin, Mark; Mayfield, Michael; McCann, Carrie; McConnell, Keith; McCoppin, Michael; McCoy, Gerald; McCrary, Cheryl; McCree, Victor; McDermott, Brian; McGhee, James; McGill, Clinton; McGinty, Tim; McGowan, Anna; McHale, John; McKelvey, Harold; McKenna, Eileen; McKenney, Christopher; McKirgan, John; McMillan, Joseph; McMurtry, Anthony; Mendiola, Anthony; Meyer, David; Michalak, Paul; Miller, Charles; Miller, Chris; Miller, Geoffrey; Miller, Marie; Miller, Mark; Miller, Michael; Miotla, Sherri; Mitchell, Matthew; Mitchell, Reggie; Mohseni, Aby; Monk, Robert; Monninger, John; Montgomery, Jack; Moore, Scott; Moore, Thomas; Moorman, James; Morris, Eddie; Morris, James; Morris, R. Michael; Morris, Scott; Morrissey, Thomas; Moulding, Patrick; Moy, Romona; Mrowca, Lynn; Muessle, Mary; Munday, Joel; Murphy, Jerome; Murphy, Martin; Musser, Randy; Narick, Marianne; Nazario, Tomy; Nease, Rebecca; Neff, Deborah; Nelson, Robert; Nichols, Russell; Nieh, Ho; Norato, Michael; Norris, Michael; Nute-Blackshear, Lora; OBrien, Kenneth; OBryan, Phil; O'Donohue, Kathleen; Offutt, David; Ogle, Chuck; OKeefe, Neil; Okleson, Edward; Ordaz, Vonna; Orth, Steven; O'Sullivan, Kevin; Ott, William; Ousley, Elizabeth; Owens, Janice; Paradiso, Karen; Partlow, Benjamin; Pascarelli, Robert; Peck, Michael; Pederson, Cynthia; Pelke, Patricia; Pellet, John; Pelton, David; Peralta, Juan; Perry, Jamila; Perry, Neil; Persinko, Andrew; Peters, Sean; Peterson, Gordon; Peterson, Hironori; Pham, Bo; Phillips, Charles; Piccone, Josephine; Pool, Stephen; Poole, Brooke; Powell, Amy; Powell, Dawn; Powell, Raymond; Prescott, Peter; Pretzello, Andrew; Price, Georgette; Pruett, Troy; Pstrak, David; Pulliam, Timothy; Quay, Theodore; Quichocho, Jessie; Rabideau, Peter; Rahimi, Meraj; Raione, Richard; Rajnic, Cecilia; Ramirez, Frances; Rasmussen, Richard; Rasouli, Houman; Raspa, Rossana; Rayland, Andrew; Raymond, William; Reckley, William; Reddick, Darani; Reece, James; Regan, Christopher; Reis, Terrence; Remsburg, Kristy; Reynolds, Steven; Reynoso, John; Rheume, Cynthia; Ricci, John; Rich, Daniel; Rich, Thomas; Richards, Stuart; Ricketts, Paul; Riemer, Kenneth; Ring, Mark; Roach, Edward; Roach, Gregory; Roberts, Darrell; Rodgers, Felecia; Rogge, John; Rosenberg, Stacey; Ross, Thierry; Ross-Lee, MaryJane; Rothschild, Trip; Rough, Richard; Rowhani, Bahman; Royal, Judith; Rubenstone, James; Rubic, Mark; Ruiz, Robert; Ruland, William; Rule, David; Rutkowski, John; Rutledge, Steven; Rzepka, Robert; Sabisch, Andrew; Safford, Carrie; Salgado, Nancy; Salley, MarkHenry; Salter, Susan; Sanchez, Alba; Sanchez, Alfred; Sangimino, Donna-Marie; Santiago, Patricia; Santos, Cayetano; Sargent, Kimberly; Satorius, Mark; Schaaf, Robert; Schaeffer, James; Schmidt, Rebecca; Schneider, Max; Schnetzler, Bonnie; Schoenmann, Sandra; Schroeder, Daniel; Schum, Constance; Scott, Catherine; Scott, Michael; Sealing, Donna; Segala, John; Serepca, Beth; Seymour, Deborah; Shaeffer, Scott; Shaffer, Steve; Shannon, Mel; Shannon, Michael; Sharkey, Jeffery; Shay, Jason; Shear, Gary; Shehee, James;

Sheron, Brian; Shields, James; Shoop, Undine; Shuaibi, Mohammed; Silva, Patricia; Simms, Sophonia; Skeen, David; Skokowski, Richard; Smith, Arthur; Smith, Brian; Smith, Galen; Smith, Rich; Smith, Tuwanda; Solorio, Dave; Sosa, Belkys; Sotiropoulos, Dina; Spencer, Mary; Spindler, David; Spitzberg, Blair; StAmour, Norman; Stablein, King; Stapleton, Bernard; Stetson, Kathleen; Stewart, Scott; Stewart, Sharon; Stoedter, Karla; Stone, AnnMarie; Suber, Gregory; Subosits, Stephen; Sullivan, Allen; Swain, Karol; Sydnor, Russell; Sykes, Marvin; Szyperski, Bill; Tailleart, Don; Talley, Sandra; Tappert, John; Tate, Travis; Taylor, Robert; Tenaglia, Mickey; Terao, David; Terry, Leslie; Thaggard, Mark; Thomas, Brian; Thomas, Christopher; Thorp, John; Tonacci, Mark; Tracy, Glenn; Tran, Tu; Trapp, James; Travick, Vanette; Trent, Glenn; Tschiltz, Michael; Turner, Joseph; Turtill, Richard; Uhle, Jennifer; Ulses, Anthony; Usilton, William; Valentin, Andrea; Vogel, Anton; Vias, Steven; Vietti-Cook, Annette; Virgilio, Martin; VonTill, Bill; Voytko, Victoria; Walker, Tracy; Walker, Wayne; Wall, Scott; Warnick, Greg; Wastler, Sandra; Waters, Michael; Watson, Bruce; Weaver, Doug; Webber, Robert; Weber, Michael; Weerakkody, Sunil; Welling, Blake; Werkheiser, David; Werner, Greg; Wert, Leonard; West, Garmon; West, Steven; Westreich, Barry; Whetstine, Jack; White, Duncan; White, Darrell; Whited, Ryan; Whitten, Jack; Widdup, Joseph; Widmann, Malcolm; Wiggins, Jim; Williams, Barbara; Williams, Evelyn; Williams, Kevin; Williams, Michael; Williams, Mona; Williams-Johnson, Patrice; Williamson, Edward; Wilson, Ernest; Wilson, George; Wilson, Peter; Wood, Gene; Wood, Kent; Wright, Lisa (Gibney); Wrona, David; Wunder, George; Yerokun, Jimi; Young, Cale; Young, Mitzi; Zane, Steven; Zeiler, John; Zimmerman, Jacob; Zimmerman, Roy; Zabler, Marian

Cc: Scott, Tracy; Tallarico, Alison; Thoman, Raymond; Jones, Jackie; Blair, Tina; Chin, Allison; Dean, Vivian; Evans(HR), Marilyn; Himmelberg, Jude; Jackson, Briana; Jaigobind, Savi; Silberfeld, Dafna; Watson, Madonna; Williams, Michelle; Atkinson, Jeanne; Broadwater, Lynne; Brown, Keisa; Hicks, Beverly; Hicks, Valencia; Jonsson, Dawn; Lindsay, Sandy; Marziale, Riqueza; ORourke, Christine; Reeves, Gloria; Scott, Mary; Thomas-Richards, Karen; Todd, Colleen

Subject:

Managers, supervisors, team leaders, and T&L Coordinators,

Attached for your information is a document that addresses, in detail, work schedules and premium pay for individuals who serve in and support the NRC Operations Center or work in Japan, in response to the current, serious nuclear power plant issues in that country. NSIR and the NRC Japanese support team leader will provide the document to all participants.

T&L Coordinators, please note that participants in your organization may contact you to request a change in their HRMS workgroups for pay periods in which they perform emergency response work.

Participants should contact me if they have any questions on work schedules or premium pay.

Larry Davidson
Office of Human Resources
Nuclear Regulatory Commission
301-492-2286; lawrence.davidson@nrc.gov

WORK SCHEDULE AND PREMIUM PAY GUIDANCE FOR RESPONSE TO EVENTS IN JAPAN

Please first review this document and contact Larry Davidson of the Office of Human Resources (301-492-2286 or lawrence.davidson@nrc.gov) for any needed assistance.

Work Schedules

One or more types of work schedules may be appropriate during a pay period in which you serve in and support the NRC Operations Center or work in Japan, in response to the current, serious nuclear power plant issues in that country. You are authorized to select the type of work schedule you will work during the pay period depending on:

- Your specific workdays and work clock hours in the Operations Center or in Japan, as well as any flexibility you have to choose those workdays and clock hours;
- Your entitlement to premium pay for work in the Operations Center or Japan;
- Your performance, if any, of regular duties outside of the Operations Center/Japan during the pay period; and,
- Your loss of earned credit hours if you switch from NEWFlex to another type of work schedule.

Possible work schedules include:

- Compressed work schedule – Appropriate if, during the entire pay period, your workdays and work clock hours are fixed (i.e., you do not have any flexibility to choose either) and there are fewer than ten nonovertime workdays in the pay period (at least one nonovertime workday contains more than eight nonovertime hours). Note that restrictions on nonovertime work clock hours and weekend workdays have been lifted for the pay period. An Expanded-Compressed Work Schedule may be appropriate (see the Yellow Announcement at <http://www.internal.nrc.gov/announcements/yellow/2003/2003-032.html> and Article 6.10.3 of the Collective Bargaining Agreement).
- NEWFlex - Appropriate if, during at least a portion of the pay period, you have some discretion to select your workdays and/or work clock hours (for example, if/when performing regular duties outside of the Operations Center or Japan). Note that restrictions on nonovertime work clock hours and weekend workdays have been lifted for the pay period.
- First-40 – Appropriate if it is impracticable to prescribe a regular schedule of definite hours of duty for each workday of the workweek (likely not appropriate).

Note that you must advise your T&L coordinator to change your HRMS workgroup if you change the type of schedule you work, e.g., if you normally work CWS and change to NEWFlex for the pay period in which you serve in and support the NRC Operations Center or work in Japan. Also note that if you switch from NEWFlex to another type of work schedule, you will lose and will be paid for any accumulated credit hours.

Also note that if you work fewer than 80 hours serving in and supporting the NRC Operations Center or working in Japan, your "home" supervisor will allow you discretion, to the extent possible, to decide how/when to cover any missing time.

Premium Pay

Cap on Combined Salary Plus Premium Pay –The biweekly cap on premium pay has been lifted and will be applied on an annual basis during any pay period in which you serve in and support the NRC Operations Center or work in Japan (the annual cap will benefit you if you are paid a salary below the GG-15 step 10 salary rate). Your organization has been advised to contact CFO with employee names and dates of work.

Overtime pay or regular comp time – Overtime (limited to the higher of: your regular rate; or, 150% of GG-10 step 10) is paid for your work in excess of your full-time work schedule during the pay period. You may choose to be compensated via regular compensatory time off instead (limited to a 40-hour pay period carryover) if your overtime work was not scheduled in advance of the workweek, or regardless of when it was scheduled if you are on NEWFlex.

TRCs – Use "OT" for overtime pay and "COMPE" for regular comp time.

Night premium (10%) –This premium is paid for your *nonovertime* work between 6:00 p.m. and 6:00 a.m. the following morning, and for your *overtime* work during these clock hours if the work was scheduled in advance of the week in which you performed it. Also, this premium is paid for your periods of paid leave, if any, during night clock hours if, during the pay period, you have fewer than 8 hours of total paid leave inclusive of both night and day work.

TRC – NDIFF (hours must also be recorded under another TRC such as REG or OT).

Sunday premium (25%) – This premium is paid for your *nonovertime* work performed on a shift(s), any part(s) of which falls on a Sunday (e.g., a shift from Saturday at 6:00 p.m. to Sunday at 6:00 a.m.). Sunday premium is not payable for periods of nonwork, including leave, holidays not worked, and excused absence.

TRC – SUNP (hours must also be recorded under another TRC such as REG).

Standby status - You are eligible for special overtime pay if you are restricted by official order to a designated post of duty and assigned to be in a state of readiness to perform work, versus actually performing work, with limitations on your activities so substantial that you cannot use

your time effectively for your own purposes. We do not anticipate that any employee will be in a standby status.

Miscellaneous

Employee Assistance Program (EAP)

Free, confidential counseling is available to you and your family members to address emotional issues, work problems, substance abuse, stress, crisis, marital/family concerns, financial matters, legal issues, eldercare resources, and childcare referrals. Call 1-800-869-0276 or check www.eapconsultants.com.

Travel

If you travel to/from Japan:

- Keep a log of specific travel times and work clock hours to help NRC compute your entitlement to compensation.
- Consider enrolling in the Smart Traveler Enrollment Program or STEP) to make it easier for the Embassy/Consulates to contact you in case of an emergency. You may enroll at <https://travelregistration.state.gov>, or if you have no internet access, directly at the U.S. Embassy or U.S. Consulates.
- If you are paid a salary below the GG-15 step 10 salary rate, you are entitled to overtime pay (limited to higher of: your regular rate; or, 150% of GG-10 step 10) for travel to/from Japan, and if the travel is during night hours (6:00 p.m. to 6:00 a.m.) and scheduled in advance of the workweek, you are also entitled to night premium pay. You may substitute regular compensatory time off (limited to a 40-hour pay period carryover) for overtime pay if your travel was not scheduled in advance of the workweek, or regardless of when it was scheduled if you are on NEWFlex.

TRCs – Use “OT” for overtime pay, “COMPE” for regular comp time, and “NDIFF” for night premium pay.

From: Nelson, Robert
To: Boger, Bruce
Subject: RE: Psychological Support
Date: Thursday, March 17, 2011 2:32:51 PM

Sarah Linnerooth is a superb recent addition to the HR staff. She's ready & willing to help.

NELSON

REC
From: Boger, Bruce
Sent: Thursday, March 17, 2011 2:04 PM
To: Nelson, Robert
Subject: FW: Psychological Support

Nelson, I ran across this in my email backlog.

From: Grobe, Jack
Sent: Wednesday, March 16, 2011 7:12 PM
To: Tracy, Glenn
Cc: Ruland, William; Hilton, Nick; Giitter, Joseph; Cheok, Michael; Lubinski, John; McGinty, Tim; Givvines, Mary; Holian, Brian; Brown, Frederick; Boger, Bruce; Leeds, Eric; 'slinnerooth@vantagehrs.com'
Subject: Re: Psychological Support

Thanks Glenn. I am providing this information to my Division Directors for their awareness and encourage them to make their staff aware of this availability during their interactions with their staff.

Are there any preventive strategies that the EAP recommends that might be employed, e.g., best practices to minimize problems?

Jack
Jack Grobe, Deputy Director, NRR

From: Tracy, Glenn
To: Grobe, Jack; Leeds, Eric
Cc: Linnerooth, Sarah; Dosch, William; Buchholz, Jeri; Powell, Dawn; Cohen, Miriam; Evans, Michele; Wiggins, Jim; Cadoux, Claude
Sent: Wed Mar 16 14:21:48 2011
Subject: Psychological Support

Jack:

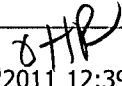
Thanks so much for your e-mail. I wanted to share with you that Sarah Linnerooth and Bill Dosch of HR are proactive in their preparedness and readiness to support you and those overseas (as you can see below your note to me). We thank you for your e-mail. Bill will be enhancing awareness of such access/support and I request you and the other managers ensure that you emphasize during your interactions with the staff.
Thank so much, Glenn

Glenn,

I spoke with Claude about processes for psychological support for our staff in this time of

Y1141

stress. I don't know what procedures we have for these types of situations but was hoping you guys are already ahead of me on this. Claude has experience in this area. I have become aware of challenging feelings that several staff are experiencing. Please keep us informed of what we can do to help in this area. Thanks for all you do.
Jack Grobe, Deputy Director, NRR

From: Linnerooth, Sarah 
Sent: Tuesday, March 15, 2011 12:39 PM
To: Cohen, Miriam; Tracy, Glenn; Buchholz, Jeri; Powell, Dawn
Cc: Dosch, William; Lobe, Jon
Subject: FW: NRC Team to Japan

Hi Miriam,

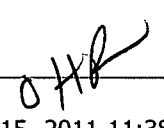
Please let Jon and I know how we (EAP) can support the employees being deployed to Japan. I was able to connect with some of the employees being deployed yesterday and ensured they had our EAP contact information and knew that it is available 24/7 to both them and their family members. I contacted our EAP contractor (EAP Consultants Inc.) and confirmed that employees will still have access to services and our 800 number from Japan. Dawn and I also spoke yesterday and believe she too reached out to the employees being deployed to provide them and their family members with our EAP information.

I have also connected with NSIR management and visited the Ops Center yesterday. I left our EAP pocket cards with the Ops Center management to distribute as needed to the many employees staffing the around the clock response at the Ops center. Please let us know if you feel we should reach out to any other offices or employees.

Another concern would be to ensure we provide the needed support to the deployed employees upon their return from Japan. One service that may be appropriate for us to arrange is a Critical Incident Stress Debriefing (CISD). Our EAP team has a lot of expertise in facilitating and/or supporting CISDs. We are here to support in any way we are needed.

Thanks,
Sarah

Sarah Linnerooth
EAP and Fitness Program Manager
Office of Human Resources - Work Life & Benefits Branch
U.S. Nuclear Regulatory Commission
Mailstop: T3 C4
Phone - (301) 415-7113
Sarah.Linnerooth@nrc.gov

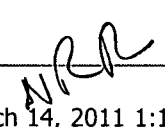


From: Hudson, Jody
Sent: Tuesday, March 15, 2011 11:38 AM
To: HR_EMPLOYEES_distribution
Subject: NRC Team to Japan

As an FYI, the following email from Eric Leeds identifies the NRC employees comprising the assistance team going to Japan. HRTD/TTC's Richard Devercelly is among them. We wish them all well on this important mission.

-
Jody Hudson

Chief Learning Officer
Human Resources Training & Development
U.S. Nuclear Regulatory Commission
Mailstop: GW-4A01
301-492-2215



From: Leeds, Eric
Sent: Monday, March 14, 2011 1:11 PM
To: Collins, Elmo; Satorius, Mark; McCree, Victor; Dean, Bill; Sheron, Brian; Tracy, Glenn; Hudson, Jody; Johnson, Michael; Miller, Charles; Haney, Catherine; Zimmerman, Roy; Stewart, Sharon; Virgilio, Martin; Weber, Michael; Borchardt, Bill; Mamish, Nader; Doane, Margaret; Muesle, Mary
Cc: Boger, Bruce; Grobe, Jack; Ruland, William; Meighan, Sean
Subject: Confirmation of names for Japan

Folks –

Thanks so much for your help – we have a strong database of names/expertise to support the Japanese. For this first wave, we are sending Chuck Casto, John Monninger, Tony Nakanishi, Tim Kolb, Jack Foster and Richard Devercelly. I believe that Bruce Boger has contacted all those going to join Tony Ulsis and Jim Trapp in Japan.

I imagine that at some point we may need to send a second wave of responders to relieve our first wave. We will let you know as soon as we know if this needs to be done. We are also sensitive not to over-burden any one office.

Thanks again for your support!

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

From: Schwarz, Sherry *NRP*
To: Boger, Bruce
Subject: RE: POSTPONED - Monthly Management Meeting - NOTE CHANGE IN DATE, TIME, LOCATION
Date: Thursday, March 17, 2011 1:44:26 PM

Yes, thanks Bruce for the update. I had phone Renee Taylor before lunch inquiring if this meeting was going forward, and she told me it was to be cancelled, and we would be advised later. I am not on this distribution, so I will inform Mr. Ellmers to add me.

REL
From: Boger, Bruce *NRP*
Sent: Thursday, March 17, 2011 1:41 PM
To: Schwarz, Sherry
Subject: FW: POSTPONED - Monthly Management Meeting - NOTE CHANGE IN DATE, TIME, LOCATION
Importance: High

Long list—are you in there somewhere? Eric may appreciate his calendar reflecting the schedule change below.

From: Ellmers, Glenn *EDO*
Sent: Thursday, March 17, 2011 1:18 PM
To: Ellmers, Glenn; Ash, Darren; Boger, Bruce; Boyce, Thomas (OIS); Brenner, Eliot; Brown, Milton; Burns, Stephen; Carpenter, Cynthia; Casto, Chuck; Cohen, Miriam; Collins, Elmo; Dapas, Marc; Dean, Bill; Doane, Margaret; Droggitis, Spiros; Dyer, Jim; Greene, Kathryn; Grobe, Jack; Hackett, Edwin; Haney, Catherine; Hayden, Elizabeth; Holahan, Gary; Howard, Patrick; Johnson, Michael; Kelley, Corenthis; Leeds, Eric; Mamish, Nader; McCrary, Cheryl; McCree, Victor; Miller, Charles; Moore, Scott; Pederson, Cynthia; Plisco, Loren; Poole, Brooke; Powell, Amy; Reyes, Luis; Satorius, Mark; Schaeffer, James; Schmidt, Rebecca; Sheron, Brian; Stewart, Sharon; Uhle, Jennifer; Virgilio, Martin; Weber, Michael; Wiggins, Jim; Williams, Barbara; Zimmerman, Roy; Campbell, Andy; Holahan, Patricia; Dorman, Dan; Muesle, Mary; Wert, Leonard; Tracy, Glenn; Taylor, Renee; Krupnick, David; Evans, Michele
Cc: Akstulewicz, Brenda; Andersen, James; Bellosi, Susan; Belmore, Nancy; Boyd, Lena; Buckley, Patricia; Casby, Marcia; Cianci, Sandra; Crawford, Carrie; Flory, Shirley; Garland, Stephanie; Higginbotham, Tina; Hudson, Sharon; Landau, Mindy; Matakas, Gina; Miles, Patricia; Pulley, Deborah; Rihm, Roger; Riner, Janet; Ronewicz, Lynn; Ross, Robin; Salus, Amy; Tannenbaum, Anita; Taylor, Renee; Thomas, Loretta; Walker, Dwight; Warner, MaryAnn; Wright, Darlene; Wyatt, Melissa; Cannady, Ashley; Lockhart, Denise; Perez-Ortiz, Aracelis; Riddick, Nicole; King, Shannon; Penny, Melissa; Sprogeris, Patricia; Banks, Eleasah; Nagel, Cheri; Hasan, Nasreen; Call, Michel; Thaggard, Mark; Young, Gary; Holonich, Joseph; Jaigobind, Avinash; Brown, Theron; Moore, Mary; Daniels, Stanley; Kreuter, Jane; Schumann, Stacy; Rihm, Roger
Subject: POSTPONED - Monthly Management Meeting - NOTE CHANGE IN DATE, TIME, LOCATION
Importance: High

Due to the events occurring this week, tomorrow's Monthly Management Meeting is being postponed to next Friday. It will take place just prior to the ERB meeting, from 9:00 to 10:00, in the OEDO conference room, 017B4. As of now, we have on the agenda:

Jun Lee, launch of new public website
Eric Leeds, RIC report
OGC, FOIA update
Miriam Cohen, Federal Employee Viewpoint Survey

Let me know if you have any other items to add.

From: Ellmers, Glenn *EDO*

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Sent: Friday, March 04, 2011 10:20 AM

To: Ellmers, Glenn; Ash, Darren; Boger, Bruce; Boyce, Thomas (OIS); Brenner, Eliot; Brown, Milton; Burns, Stephen; Carpenter, Cynthia; Casto, Chuck; Cohen, Miriam; Collins, Elmo; Dapas, Marc; Dean, Bill; Doane, Margaret; Droggitis, Spiros; Dyer, Jim; Greene, Kathryn; Grobe, Jack; Hackett, Edwin; Haney, Catherine; Hayden, Elizabeth; Holahan, Gary; Howard, Patrick; Johnson, Michael; Kelley, Corenthis; Leeds, Eric; Mamish, Nader; McCrary, Cheryl; McCree, Victor; Miller, Charles; Moore, Scott; Pederson, Cynthia; Plisco, Loren; Poole, Brooke; Powell, Amy; Reyes, Luis; Satorius, Mark; Schaeffer, James; Schmidt, Rebecca; Sheron, Brian; Stewart, Sharon; Uhle, Jennifer; Virgilio, Martin; Weber, Michael; Wiggins, Jim; Williams, Barbara; Zimmerman, Roy; Campbell, Andy; Holahan, Patricia; Dorman, Dan; Muessle, Mary; Wert, Leonard; Tracy, Glenn; Taylor, Renee; Krupnick, David; Evans, Michele
Cc: Akstulewicz, Brenda; Andersen, James; Bellosi, Susan; Belmore, Nancy; Boyd, Lena; Buckley, Patricia; Casby, Marcia; Cianci, Sandra; Crawford, Carrie; Flory, Shirley; Garland, Stephanie; Higginbotham, Tina; Hudson, Sharon; Landau, Mindy; Matakas, Gina; Miles, Patricia; Pulley, Deborah; Rihm, Roger; Riner, Janet; Ronewicz, Lynn; Ross, Robin; Salus, Amy; Tannenbaum, Anita; Taylor, Renee; Thomas, Loretta; Walker, Dwight; Warner, MaryAnn; Wright, Darlene; Wyatt, Melissa; Cannady, Ashley; Lockhart, Denise; Perez-Ortiz, Aracelis; Riddick, Nicole; King, Shannon; Penny, Melissa; Sprogeris, Patricia; Burroughs, Eleasah; Nagel, Cheri; Hasan, Nasreen; Call, Michel; Thaggard, Mark; Young, Gary; Holonich, Joseph; Jaigobind, Avinash; Brown, Theron; Moore, Mary; Daniels, Stanley; Kreuter, Jane; 'Stacy.Schumann@nrc.gov'; Rihm, Roger

Subject: Monthly Management Meeting - Solicitation for Topics

The next EDO Monthly Management Meeting is scheduled for Friday, March, 18, 2011 from 10:00 - 11:30 a.m. EST in T2B1 (Regions by VTC).

Please send me any discussion topics you would like to suggest, along with who you expect would lead the discussion, by COB Wednesday, March 9. (I already have Jun Lee on the agenda to discuss the public website.)

Send all materials for the meeting to me (with a cc: to Melissa Wyatt and Roger Rihm) by COB Wednesday, March 16, so we can post them to the [SharePoint site](#).

As always, let me know if you have any questions,

Glenn

NR
From: Boger, Bruce
To: Nelson, Robert
Subject: RE: Japan Situation
Date: Thursday, March 17, 2011 11:52:00 AM

REC I suspected some link beyond just your years of service. *release*

NR
From: Nelson, Robert
Sent: Thursday, March 17, 2011 10:17 AM
To: Boger, Bruce
Subject: RE: Japan Situation

As a Navy reservist, I was recalled to the Navy Casualty Assistance Office for Desert Storm and was XO of this unit. In this capacity, I became very sensitive to the concerns of Navy families with deployed family members. Communicating with a spouse of as KIA, MIA or WIA is a very sensitive manner.

NELSON *NR* *release*

From: Boger, Bruce
Sent: Thursday, March 17, 2011 9:57 AM
To: Nelson, Robert
Subject: RE: Japan Situation

Thanks for raising the concern. *NR*

From: Nelson, Robert
Sent: Thursday, March 17, 2011 9:51 AM
To: Boger, Bruce
Subject: FYI: Japan Situation

NELSON

NR
From: Linnerooth, Sarah
Sent: Thursday, March 17, 2011 9:30 AM
To: Nelson, Robert
Subject: RE: Japan Situation

Thanks! Yes, this email has been shared with me. We are getting ready to have an HR Management meeting to discuss further how we can continue to reach out to deployed employees and their families. Again, please let me know if I can be of any further assistance.

Thanks,
Sarah

Sarah Linnerooth
EAP and Fitness Program Manager
Office of Human Resources - Work Life & Benefits Branch

Y/1/43

U.S. Nuclear Regulatory Commission
Mailstop: T3 C4
Phone - (301) 415-7113
Sarah.Linnerooth@nrc.gov

From: Nelson, Robert *NRN*
Sent: Thursday, March 17, 2011 9:27 AM
To: Linnerooth, Sarah
Subject: FW: Japan Situation

See below regarding our earlier conversation. Looks like HR is involved.

NELSON

From: Tracy, Glenn *GTN*
Sent: Thursday, March 17, 2011 8:43 AM
To: Boger, Bruce
Cc: Leeds, Eric; Nelson, Robert; Wert, Leonard; Lew, David; Miller, Mark; Cohen, Miriam
Subject: RE: Japan Situation

Bruce, I am mulling with lead team and will get right back to you. My initial thoughts are:

- 1.) we should touch base with Chuck via email.
- 2.) We could contact each family and offer any support/information they may require
- 3.) I presume this could be done by HR or the member's manager.
- 4.) this is similar to how USN handles a reservist's mobilization to war zone

Will get back to you. Glenn

From: Boger, Bruce *WBL*
Sent: Thursday, March 17, 2011 8:31 AM
To: Tracy, Glenn
Cc: Leeds, Eric; Nelson, Robert; Wert, Leonard; Lew, David; Miller, Mark; Cohen, Miriam
Subject: Japan Situation

Glenn, Relative to the NRC folks in Japan, have folks been considering how to interact with their families to share information on what's going on in Japan? Perhaps the travelers have been able to achieve regular phone contact, but now with a voluntary evacuation a greater concern at home may exist. Your thoughts? Bruce

release

NRP
From: Boger, Bruce
To: Regan, Christopher; Hopkins, Jon
Subject: FW: NRR Actions: near-term
Date: Thursday, March 17, 2011 9:50:00 AM

RE L
FYI—nice catch by Marty.

EDO
From: Virgilio, Martin
Sent: Thursday, March 17, 2011 6:08 AM
To: Leeds, Eric; Weber, Michael; Brown, Frederick
Cc: Borchardt, Bill; Boger, Bruce; Grobe, Jack; Ruland, William; Johnson, Michael; Sheron, Brian; Evans, Michele
Subject: RE: NRR Actions: near-term

Eric

I recall we have 2 suggestions in the IRRS report related to severe accident management that should be considered in formulating our actions (see items S5 and S10). This could be an opportunity to address and close on the issue related to confirming the adequacy of operating training on severe management mitigation.

Marty

NRP
From: Leeds, Eric
Sent: Wednesday, March 16, 2011 1:14 PM
To: Virgilio, Martin; Weber, Michael
Cc: Borchardt, Bill; Boger, Bruce; Grobe, Jack; Ruland, William; Johnson, Michael; Sheron, Brian; Evans, Michele
Subject: NRR Actions: near-term
Importance: High

Please see below. NRR has assembled a team, led by an SES manager to evaluate near term actions for the agency's response to the Japanese event. At this time, we are considering inspection as well as a generic communication and a review of "sensitive" licensing actions". I will keep you informed as we go forward I have discussed the current situation in Japan with the RAs and our preliminary thoughts for regulatory actions going forward.

We have also prepared a scheduling note for the commission meeting for next week. We will send it to you.

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

NRP
From: Brown, Frederick
Sent: Wednesday, March 16, 2011 11:32 AM
To: Leeds, Eric; Boger, Bruce; Grobe, Jack
Subject: FW: Action: Consider potential on-site activities in near-term
Importance: High

re/leas

Y/144

FYI

NAR
From: Brown, Frederick

Sent: Wednesday, March 16, 2011 11:17 AM

To: Roberts, Darrell; Clifford, James; Croteau, Rick; Jones, William; Croteau, Rick; Darrell Roberts; James Clifford; Jones, William; Kennedy, Kriss; Shear, Gary; Troy Pruett; West, Steven

Cc: Vogel, Anton; Wilson, Peter; Miller, Chris; Weerakkody, Sunil; OBrien, Kenneth; Reynolds, Steven; Munday, Joel; Moorman, James; Christensen, Harold; Westreich, Barry

Subject: Action: Consider potential on-site activities in near-term

Importance: High

On the DRA call today, I'm going to float the potential for either a smart sample or a TI to look at the following areas:

- Licensee verification of 50.54(hh)(2) current status and readiness;
- Licensee verification of SBO current status and readiness consistent with their coping strategy;
- Licensee verification of Internal and External Flooding design features consistency with their licensing basis; and
- Licensee verification that their 50.54(hh)(2) equipment would survive a seismic event undamaged.

If you have thoughts, I'd like to hear them, and you may want to prep your DRAs.

Thanks,
Fred

Release

van
From: Howe, Allen
To: Leeds, Eric; Grobe, Jack; Boger, Bruce
Cc: Meighan, Sean; Ruland, William; Boska, John; Nelson, Robert; Glitter, Joseph
Subject: FW: Japan Event Commission Meeting
Date: Thursday, March 17, 2011 9:53:18 AM
Attachments: 110321 NRC Response to Events in Japan Scheduling Note.docx
110321 Closed Events in Japan and Commission Agenda Scheduling Note.docx

REC
From: Merzke, Daniel *EDD*
Sent: Thursday, March 17, 2011 7:50 AM
To: Howe, Allen
Subject: FW: Japan Event Commission Meeting

Allen, here are the scheduling notes that SECY sent to the Chairman's office.

SECY
From: Baval, Rochelle
Sent: Thursday, March 17, 2011 7:43 AM
To: Andersen, James; Merzke, Daniel
Cc: Laufer, Richard
Subject: RE: Japan Event Commission Meeting

Good Morning,

Attached are the two scheduling notes for meetings regarding the events in Japan that were sent to the Chairman's office yesterday. Both say the meetings are on Monday, but there has not been a decision when the meetings will be held. They could be Monday, Tuesday or Wednesday. I'm hoping that we can at least get this decision today.

The closed meeting is about NRC's strategy to address significant issues and the Commission's agenda (what meetings should the Commission have based on the events in Japan-ones already scheduled and new meetings; what meetings should be postponed and be replaced by different meetings; what papers should the Commission focus on; what papers could be delayed), all based on the events in Japan and how we may need to refocus, at least for the next six months.

Let me know if there are questions.

I'll let you know as we get decisions on these meetings.

Rochelle

6170
From: Andersen, James
Sent: Wednesday, March 16, 2011 12:07 PM
To: Baval, Rochelle
Cc: Merzke, Daniel
Subject: Japan Event Commission Meeting

Rochelle,

We are starting to get questions from the staff on this meeting. Can you please use Dan

Y/145

and myself as the OEDO contacts when you find out any information. I would like to try to keep this somewhat in process. Thanks.

Jim A.

SCHEDULING NOTE

Title: **BRIEFING ON NRC RESPONSE TO RECENT NUCLEAR EVENTS IN JAPAN (Public Meeting)**

Purpose: To provide the Commission a status on the recent events in Japan, NRC's response, and planned actions.

Scheduled: **March 21, 2011**
9:00 am

Duration: Approx. 2 hours

Location: Commissioners' Conference Room OWFN

Participants: **Presentation**

NRC Staff Panel **50 mins.***

Bill Borchardt, Executive Director for Operations **15 mins.***
Topic: Overview of Japanese event and U.S. response

Mike Weber, Deputy Executive Director Materials, Waste, Research, State, Tribal and Compliance Programs **10 mins.***
Topic: Potential Consequences; what will be seen in the U.S.

Marty Virgilio, Deputy Executive Director for Reactor and Preparedness Programs **10 mins.***
Topic: Situation assessment for U.S. reactors and applicants

Elliot Brenner, Director, Office of Public Affairs **5 mins.***
Topic: Communication challenges

Eric Leeds, Director, Office of Nuclear Reactor Regulation **10 mins.***
Topic: Path forward; near term and longer term

Commission Q & A **50 mins.**

Discussion – Wrap-up **5 mins.**

Documents:

Background materials due to SECY: prior to the briefing.

Slides due to SECY: prior to the briefing.

Draft: 3/16/11

SCHEDULING NOTE

Title: **DISCUSSION OF MANAGEMENT ISSUES (Closed – Ex. 9)**

Purpose: To provide the Commission an opportunity to discuss strategy for addressing issues of most interest for inquiry based on the recent events in Japan and discuss the focus of the Commission's agenda.

Scheduled: **March 21, 2011**
11:00 am

Duration: Approx. 1.5 hours

Location: Commissioners' Conference Room, 1st fl OWFN

NRC Staff

Presentation
20 mins.*

Topics:

- Strategy for Addressing Issues of Most Interest for Inquiry Based on the Recent Events in Japan
- Focus of the Commission's Agenda over the Next Six Months

Commission Q & A and Discussion

50 mins.

Discussion – Wrap-up

5 mins.

*For presentation only and does not include time for Commission Q & A's

Documents:

Background materials due to SECY: prior to the briefing.

Slides due to SECY: prior to the briefing.

NRR

From: Leeds, Eric
To: Virgilio, Martin
Cc: Grobe, Jack; Boger, Bruce; Howe, Allen; Milligan, Patricia
Subject: RE: NRR Actions: near-term
Date: Thursday, March 17, 2011 7:47:34 AM

REL

Thanks, Marty. A different thought – EP. When I was over in Japan a year ago in November, I took Trish Milligan with me because one of the areas that the Japanese were interested in discussing was EP. They were very proud that they had just completed their 9th EP exercise. Ever. I'm going to explore what we know about their EP program, maybe get some help from our folks in country, because we may want to address that at the upcoming Commission meeting.

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

H/Lease

From: Virgilio, Martin , EPO
Sent: Thursday, March 17, 2011 6:08 AM
To: Leeds, Eric; Weber, Michael; Brown, Frederick
Cc: Borchardt, Bill; Boger, Bruce; Grobe, Jack; Ruland, William; Johnson, Michael; Sheron, Brian; Evans, Michele
Subject: RE: NRR Actions: near-term

Eric

I recall we have 2 suggestions in the IRRS report related to severe accident management that should be considered in formulating our actions (see items S5 and S10). This could be an opportunity to address and close on the issue related to confirming the adequacy of operating training on severe management mitigation.

Marty

NRR

From: Leeds, Eric
Sent: Wednesday, March 16, 2011 1:14 PM
To: Virgilio, Martin; Weber, Michael
Cc: Borchardt, Bill; Boger, Bruce; Grobe, Jack; Ruland, William; Johnson, Michael; Sheron, Brian; Evans, Michele
Subject: NRR Actions: near-term
Importance: High

Please see below. NRR has assembled a team, led by an SES manager to evaluate near term actions for the agency's response to the Japanese event. At this time, we are considering inspection as well as a generic communication and a review of "sensitive" licensing actions". I will keep you informed as we go forward I have discussed the current situation in Japan with the RAs and our preliminary thoughts for regulatory actions going forward.

We have also prepared a scheduling note for the commission meeting for next week. We will send it to you.

H/Lease
Y/146

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

From: Brown, Frederick *nal*
Sent: Wednesday, March 16, 2011 11:32 AM
To: Leeds, Eric; Boger, Bruce; Grobe, Jack
Subject: FW: Action: Consider potential on-site activities in near-term
Importance: High

FYI

From: Brown, Frederick *nal*
Sent: Wednesday, March 16, 2011 11:17 AM
To: Roberts, Darrell; Clifford, James; Croteau, Rick; Jones, William; Croteau, Rick; Darrell Roberts; James Clifford; Jones, William; Kennedy, Kriss; Shear, Gary; Troy Pruett; West, Steven
Cc: Vogel, Anton; Wilson, Peter; Miller, Chris; Weerakkody, Sunil; OBrien, Kenneth; Reynolds, Steven; Munday, Joel; Moorman, James; Christensen, Harold; Westreich, Barry
Subject: Action: Consider potential on-site activities in near-term
Importance: High

On the DRA call today, I'm going to float the potential for either a smart sample or a TI to look at the following areas:

- Licensee verification of 50.54(hh)(2) current status and readiness;
- Licensee verification of SBO current status and readiness consistent with their coping strategy;
- Licensee verification of Internal and External Flooding design features consistency with their licensing basis; and
- Licensee verification that their 50.54(hh)(2) equipment would survive a seismic event undamaged.

If you have thoughts, I'd like to hear them, and you may want to prep your DRAs.

Thanks,
Fred

release

From: Givvines, Mary
To: Bahadur, Sher; Blount, Tom; Brown, Frederick; Cheek, Michael; Evans, Michele; Galloway, Melanie; Glitter, Joseph; Givvines, Mary; Hiland, Patrick; Holian, Brian; Howe, Allen; Lee, Samson; Lubinski, John; McGinty, Tim; Nelson, Robert; Quay, Theodore; Ruland, William; Skeen, David; Westreich, Barry
Cc: NRR BRANCH CHIEFS; Leeds, Eric; Grobe, Jack; Boger, Bruce; Gorham, Tajuan; Compton, Makeeka
Subject: FW: WAIVER OF WORK SCHEDULE AND PAY CAP RULES FOR WORK IN RESPONSE TO THE EVENTS IN JAPAN
Date: Thursday, March 17, 2011 9:33:05 AM
Attachments: Memo re- Waiver of Work Schedule and Pay Cap Rules for Work in Response to the Events in Japan..pdf

LT,

If the attached memo still doesn't address all your staff's work schedule flexibilities while supporting the Japan situation – please let me know.

Mary

From: Khan, Charline
Sent: Thursday, March 17, 2011 7:29 AM
To: RidsAcraAcnw_MailCTR Resource; RidsAslbpManagement Resource; RidsOgcMailCenter Resource; RidsOcaaMailCenter Resource; RidsOcofoMailCenter Resource; RidsOigMailCenter Resource; RidsOipMailCenter Resource; RidsOcaMailCenter Resource; RidsOpaMail Resource; RidsSecyMailCenter Resource; RidsSecyCorrespondenceMCTR Resource; RidsEdoMailCenter Resource; RidsAdmMailCenter Resource; RidsCsoMailCenter Resource; RidsOeMailCenter Resource; RidsFsmeOd Resource; RidsOiMailCenter Resource; RidsOIS Resource; RidsHrMailCenter Resource; RidsNroOd Resource; RidsNroMailCenter Resource; RidsNmssOd Resource; RidsNrrOd Resource; RidsNrrMailCenter Resource; RidsResOd Resource; RidsResPmdaMail Resource; RidsSbcrMailCenter Resource; RidsNsirOd Resource; RidsNsirMailCenter Resource; RidsRgn1MailCenter Resource; RidsRgn2MailCenter Resource; RidsRgn3MailCenter Resource; RidsRgn4MailCenter Resource
Cc: Davidson, Lawrence; Buchholz, Jeri; Johns, Nancy
Subject: WAIVER OF WORK SCHEDULE AND PAY CAP RULES FOR WORK IN RESPONSE TO THE EVENTS IN JAPAN

MEMORANDUM TO: Those on the Attached List

FROM: Miriam L. Cohen, Director/RA by J. Buchholz for/
Office of Human Resources

DATED: March 16, 2011

SUBJECT: WAIVER OF WORK SCHEDULE AND PAY CAP RULES FOR WORK IN RESPONSE TO THE EVENTS IN JAPAN

ADAMS Accession No. ML11075A003 refers

NOTE: Electronic distribution only

Charline Khan

Administrative Assistant (Rotation)
U.S. NUCLEAR REGULATORY COMMISSION
Office of Human Resources
P:301-492-2318

Y/147

Charline.Khan@nrc.gov

March 16, 2011

MEMORANDUM TO: Those on the Attached List

FROM: Miriam L. Cohen, Director/**RA by J. Buchholz for/**
Office of Human Resources

SUBJECT: WAIVER OF WORK SCHEDULE AND PAY CAP RULES FOR
WORK IN RESPONSE TO THE EVENTS IN JAPAN

I have approved a waiver of the U.S. Nuclear Regulatory Commission (NRC) work schedule rules, as well as a waiver of the biweekly cap on combined salary plus premium pay, for NRC employees serving in and supporting the NRC Operations Center, as well as NRC employees working in Japan, in response to the current, serious nuclear power plant issues in that country.

Work Schedule Limitations

NRC permits a variety of types of work schedules, including 5-4/9 compressed work schedules (CWS) and NEWFlex flexible work schedules that include limitations on permissible workdays and working clock hours. Other types of work schedules, including Expanded-Compressed work schedules (E-CWS) in emergency situations, and First-40 work schedules in unusual situations, do not contain such limitations. A summary of work schedule options may be found on the intranet at <http://www.internal.nrc.gov/HR/work-schedule.html>.

I have approved a waiver of limitations on permissible workdays and working clock hours for NRC employees working in response to these events. As a result, employees on 5-4/9 CWS may work weekends, employees on NEWFlex may work Sundays, and employees on both types of work schedules may work any clock hours, as appropriate (an exception to the 11.25 hour maximum limitation on NEWFlex workdays is not possible).

Biweekly Cap

As a matter of Federal-wide law and regulations, employees who are exempt from the Fair Labor Standards Act (most NRC employees are exempt) normally are subject to a biweekly cap on combined salary plus premium pay. This year, the cap is equal to the salary for GG-15 step 10. Premium pay includes the following categories: night premium pay, Sunday premium pay, holiday premium pay, overtime premium pay, and "regular" compensatory time off (not religious compensatory time off or Special Compensatory Time Off for Travel).

For further details, please see the February 3, 2011, NRC Announcement entitled "Employee Resources: 2011 Cap on Combined Salary Plus Premium Pay," available on the intranet at <http://www.internal.nrc.gov/announcements/items/7625.html>.

Annual Cap

Federal law and regulations permit agencies to waive the biweekly cap and to adopt an annual cap on combined salary plus premium pay when, among other reasons, an employee receives premium pay for work directly related to resolving or coping with an emergency (or its immediate aftermath) that involves a direct threat to life or property.

I have approved a waiver of the biweekly cap and adoption of an annual cap for NRC employees working in response to these events.

Procedures

Note that employees who are responding to these events will be provided a document summarizing their work schedule options as well as their entitlements to premium pay.

Employees should consult with their time and attendance officials about any necessary changes to their Human Resources Management System workgroups.

Management should advise Jackie Jones, Financial Services Branch, Office of the Chief Financial Officer, of the names of employees who perform emergency-related premium work as well as the dates of such work. Please submit this information to Ms. Jones via a memorandum mailed to T-9 E2, or via e-mail to Jackie.Jones@nrc.gov. It is important to provide Ms. Jones this information as soon as practicable after the work begins to avoid difficulties processing the appropriate payments as the annual cap will be made effective at the beginning of the pay period in which the work was performed.

Should you have any questions on this matter, please contact me or have a member of your staff contact Larry Davidson at (301) 492-2286 or Lawrence.davidson@nrc.gov.

MEMORANDUM TO THOSE ON THE ATTACHED LIST DATED: March 16, 2011

SUBJECT: WAIVER OF WORK SCHEDULE AND PAY CAP RULES FOR WORK
IN RESPONSE TO THE EVENTS IN JAPAN

Edwin M. Hackett, Executive Director, Advisory Committee on Reactor Safeguards	RidsAcrsAcnw_MailCTR Resource
E. Roy Hawkens, Chief Administrative Judge, Atomic Safety and Licensing Board Panel	RidsAslbpmManagement Resource
Stephen G. Burns, General Counsel	RidsOgcMailCenter Resource
Brooke D. Poole, Director, Office of Commission Appellate Adjudication	RidsOcaaMailCenter Resource
James E. Dyer, Chief Financial Officer	RidsOcfoMailCenter Resource
Hubert T. Bell, Inspector General	RidsOigMailCenter Resource
Margaret M. Doane, Director, Office of International Programs	RidsOipMailCenter Resource
Rebecca L. Schmidt, Director, Office of Congressional Affairs	RidsOcaMailCenter Resource
Eliot B. Brenner, Director, Office of Public Affairs	RidsOpaMail Resource
Annette Vietti-Cook, Secretary of the Commission	RidsSecyMailCenter Resource
	RidsSecyCorrespondenceMCTR Resource
R. William Borchardt, Executive Director for Operations	RidsEdoMailCenter Resource
Michael F. Weber, Deputy Executive Director for Materials, Waste, Research, State, Tribal, and Compliance Programs, OEDO	RidsEdoMailCenter Resource
Darren B. Ash, Deputy Executive Director for Corporate Management, OEDO	RidsEdoMailCenter Resource
Martin J. Virgilio, Deputy Executive Director for Reactor and Preparedness Programs, OEDO	RidsEdoMailCenter Resource
Mary C. Muessle, Acting Assistant for Operations, OEDO	RidsEdoMailCenter Resource
Kathryn O. Greene, Director, Office of Administration	RidsAdmMailCenter Resource
Patrick D. Howard, Director, Computer Security Office	RidsCsoMailCenter Resource
Roy P. Zimmerman, Director, Office of Enforcement	RidsOeMailCenter Resource
Charles L. Miller, Director, Office of Federal and State Materials and Environmental Management Programs	RidsFsmeOd Resource
Cheryl L. McCrary, Director, Office of Investigations	RidsOiMailCenter Resource
Thomas M. Boyce, Director, Office of Information Services	RidsOis Resource
Miriam L. Cohen, Director, Office of Human Resources	RidsHRMailCenter Resource
Michael R. Johnson, Director, Office of New Reactors	RidsNroOd Resource
	RidsNroMailCenter Resource
	RidsNmssOd Resource
Catherine Haney, Director, Office of Nuclear Material Safety and Safeguards	
Eric J. Leeds, Director, Office of Nuclear Reactor Regulation	RidsNrrOd Resource
	RidsNrrMailCenter Resource
Brian W. Sheron, Director, Office of Nuclear Regulatory Research	RidsResOd Resource
	RidsResPmdaMail Resource
Corenthis B. Kelley, Director, Office of Small Business and Civil Rights	RidsSbcrMailCenter Resource
James T. Wiggins, Director, Office of Nuclear Security and Incident Response	RidsNsirOd Resource
William M. Dean, Regional Administrator, Region I	RidsNsirMailCenter Resource
Victor M. McCree, Regional Administrator, Region II	RidsRgn1MailCenter Resource
Mark A. Satorius, Regional Administrator, Region III	RidsRgn2MailCenter Resource
Elmo E. Collins, Jr., Regional Administrator, Region IV	RidsRgn3MailCenter Resource
	RidsRgn4MailCenter Resource

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ADAMS ACCESSION NUMBER: ML11075A003

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OFFICE	HR/HRPP	HR/HRPP	HR/HROP	HR/ODD	HR/OD
NAME	LDavidson	NJohns LDavidson for	JBuchholz	GTracy JBuchholz for	MCohen JBuchholz for
DATE	3/16/2011	3/16/2011	3/16/2011	3/16/2011	3/16/2011

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Attachment NRC.joboptions (13738 Bytes) cannot be converted to PDF format.

From: EDO Update
To: Taylor, Renee
Subject: EDO Update
Date: Thursday, March 17, 2011 4:09:32 PM

EDO Banner



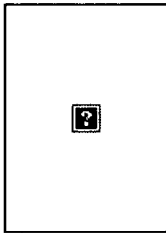
EDO Update



EDO



Thursday, March 17, 2011



The situation at the Fukushima reactor site in Japan continues to be very serious and dynamic. The NRC has responded quickly and effectively to an incredibly challenging situation. We have staffed the Operations Center 24/7 since last Friday and we have a team of 11 individuals who are in Japan to 1) provide support to the U.S. ambassador and the embassy, 2) interface with the Japanese regulator and licensee, and 3) help to facilitate coordination of the U.S. Government response. The Chairman was on Capitol Hill yesterday to brief committees of both the House and Senate on what is happening and how the NRC is responding. The quality of the work done by the NRC staff is clearly recognized and appreciated by all of our stakeholders.

Given the available information, we continue to be very concerned about the condition of three reactor cores and two spent fuel pools. Based on calculations performed by NRC experts for the situation as a whole, we now believe that it is appropriate for U.S. residents within 50 miles of the Fukushima reactors to evacuate. Our recommendation is based on NRC guidelines for public safety that would be used in the U.S. under similar circumstances. At the same time, however, we do not expect any part of the U.S. or its territories to experience any harmful levels of radioactivity, given the great distances involved. We continue to do analyses to verify our understanding of this issue. The NRC is working closely with our federal partners to monitor radiation releases from the Japanese nuclear power plants.

We will continue to place emphasis on communication activities. The agency is being flooded with phone calls from the media, stakeholders, and the general public. Once again, thank you to everyone who is pitching in to help deal with this volume of activity.

Given the dynamic situation, there will be an All-Hands meeting tomorrow at 2:00 p.m. in the One White Flint auditorium, with VTC to the regions, Technical Training Center, and headquarters satellite offices. Overflow seating will be available in

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the TWFN Exhibit Area as well as the Commission Hearing Room. (There will also be a bridge line: 888-820-8960; pass code: 8690842.) I will give you an update on what we know, and answer any questions to the best of my ability. In addition, we are expecting to have a Commission meeting early next week. We will provide a link to the briefing materials as soon as possible. Finally, you may find these documents prepared by the Office of Nuclear Reactor Regulation to be of interest:
<http://portal.nrc.gov/edo/nrr/default.aspx>.



Bill Borchardt, EDO

Rihm, Roger

From: Rihm, Roger
Sent: Thursday, March 17, 2011 11:11 AM
To: Powell, Amy
Cc: Landau, Mindy
Subject: Congressional Correspondence Following Events in Japan

Amy, so far we have seen 5 letters and presumably a number of others will be coming in over the next few weeks. Some of them are quite complex and detailed in what they are asking for. Mindy and I have discussed the need for a plan to ensure we address all this correspondence effectively and efficiently. We thought we should start with you to get OCA's expectations and advice, particularly with respect to response time frames. I'm sure you're very busy (and Mindy is out tomorrow); let us know when it would be convenient to discuss.

Thanks,

Roger

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Taylor, Renee

From: Borchardt, Bill
Sent: Thursday, March 17, 2011 11:36 AM
To: Doane, Margaret
Subject: RE: Lunch

Chmn is suppose to be coming up on the bridge in a minute. I'll call as soon as he's done.

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

From: Doane, Margaret
Sent: Thursday, March 17, 2011 11:31 AM
To: Borchardt, Bill
Subject: Lunch

I'm ready to go.

Sent from an NRC Blackberry
Margaret Doane

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