

McCann, Edward

From: McCann, Edward
Sent: Wednesday, March 16, 2011 11:32 AM
To: Qualls, Phil
Subject: Japan earthquake and tsunami: French claim full scale of nuclear disaster being hidden | Mail Online

<http://www.dailymail.co.uk/news/article-1366670/Japan-earthquake-tsunami-French-claim-scale-nuclear-disaster-hidden.html>

Raione, Richard

From: Raione, Richard
Sent: Wednesday, March 16, 2011 4:19 PM
To: Chokshi, Nilesh
Subject: FW: UPDATE: NRC IS RESPONDING TO JAPANESE EVENTS

Henry has already informed PNL and other RHEB contractors earlier today.

From: Jones, Henry
Sent: Wednesday, March 16, 2011 1:17 PM
To: Vail, Lance W; Prasad, Rajiv; Mayes, Melanie; glpatter@usgs.gov; watsondb@ornl.gov; Lee.D.Coker@usace.army.mil; Dennis.E.Mekkers@usace.army.mil; Thomas.Wood@inl.gov; Frances.Marshall@inl.gov; cbender@taylorengeering.com; Numark Email R Codell; gunther@bnl.gov; poepfel@anl.gov; avci@anl.gov; quinnj@anl.gov
Cc: Raione, Richard
Subject: FW: UPDATE: NRC IS RESPONDING TO JAPANESE EVENTS

Forwarded.

Henry

From: Operations Center Bulletin
Sent: Wednesday, March 16, 2011 12:51 PM
To: Operations Center Bulletin
Subject: UPDATE: NRC IS RESPONDING TO JAPANESE EVENTS

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.

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From: Mathew, Roy *MR*
To: Matharu, Gurcharan; Miller, Kenn; McConnell, Matthew; Goel, Vijay; Hiland, Patrick; Basturescu, Sergiu; Som, Swagata; Foli, Adakou
Cc: Koshy, Thomas; Jenkins, Ronaldo
Subject: IN Issued on Friday - Japanese Event
Date: Monday, March 21, 2011 8:43:36 AM

<http://www.nrc.gov/reading-rm/doc-collections/gen-comm/info-notices/2011/ML110760432.pdf>

C/80

Raione, Richard

From: Raione, Richard
Sent: Wednesday, March 16, 2011 2:59 PM
To: Munson, Clifford; Kammerer, Annie
Cc: Karas, Rebecca; Chokshi, Nilesh; Ake, Jon; Bauer, Laurel; Seber, Dogan; Jones, Henry
Subject: RE: peripheral assignments

Minor comment – RHEB indicated we would submit what we have *available* by cob today, we did not say we would complete the Q and A in its entirety.

We plan on continuing to provide tsunami support to Qs and As and will also be focusing some effort to the East Coast on Thursday.

From: Munson, Clifford
Sent: Wednesday, March 16, 2011 2:56 PM
To: Kammerer, Annie
Cc: Karas, Rebecca; Chokshi, Nilesh; Ake, Jon; Bauer, Laurel; Seber, Dogan; Raione, Richard; Jones, Henry
Subject: peripheral assignments

Annie,

Other stuff for you to track:

- 1) Dogan Seber is working on a fault/reactor map. This was requested by Ted Smith.
- 2) Gerry and Laurel are working on a response to the Ramapo fault issue for Indian Pt. I had them reach out to DORL so that we can coordinate this properly.
- 3) Raione and Jones are working on Tsunami Q&As and should be done by COB.

Thanks,
Cliff

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From: Grobe, Jack
To: Sheron, Brian; Uhle, Jennifer; Wiggins, Jim; Evans, Michele; Miller, Charles; Haney, Catherine; Dorman, Dan; Moore, Scott; Johnson, Michael; Holahan, Gary; Leeds, Eric; Boger, Bruce; Brenner, Eliot; Hayden, Elizabeth; Schmidt, Rebecca; Doane, Margaret; Mamish, Nader; Dyer, Jim; Brown, Milton; Hackett, Edwin; Piccone, Josephine; Wilson, George; Harrison, Donnie; Kammerer, Annie; Collins, Timothy; Milligan, Patricia; Salley, MarkHenry; Bowman, Eric
Cc: Borchardt, Bill; Weber, Michael; Virgilio, Martin; Ash, Darren; Burns, Stephen; Vietti-Cook, Annette; Andersen, James; Gitter, Joseph; Howe, Allen; Nelson, Robert; McGinty, Tim; Blount, Tom; Holian, Brian; Gallagher, Johanna; Cheok, Michael; Lee, Samson; Hiland, Patrick; Skeen, David; Ruland, William; Lubinski, John
Subject: Re: Support and Logistics for the Japan Commission Meeting
Date: Friday, March 18, 2011 6:17:35 PM

Oops - I made a mistake. Cathy Haney will be in France so Trish Milligan should also be expected to cover Radiological Consequence Assessment as well as Emergency Preparedness. Thanks.
Jack Grobe, Deputy Director, NRR

From: Grobe, Jack
To: Sheron, Brian; Uhle, Jennifer; Wiggins, Jim; Evans, Michele; Miller, Charles; Haney, Catherine; Dorman, Dan; Moore, Scott; Johnson, Michael; Holahan, Gary; Leeds, Eric; Grobe, Jack; Boger, Bruce; Brenner, Eliot; Hayden, Elizabeth; Schmidt, Rebecca; Doane, Margaret; Mamish, Nader; Dyer, Jim; Brown, Milton; Hackett, Edwin; Piccone, Josephine; Wilson, George; Harrison, Donnie; Kammerer, Annie; Collins, Timothy; Milligan, Patricia; Salley, MarkHenry; Bowman, Eric
Cc: Borchardt, Bill; Weber, Michael; Virgilio, Martin; Ash, Darren; Burns, Stephen; Vietti-Cook, Annette; Andersen, James; Gitter, Joseph; Howe, Allen; Nelson, Robert; McGinty, Tim; Blount, Tom; Holian, Brian; Gallagher, Johanna; Brown, Milton; Cheok, Michael; Lee, Samson; Hiland, Patrick; Skeen, David; Ruland, William; Sheron, Brian; Lubinski, John
Sent: Fri Mar 18 18:06:05 2011
Subject: Support and Logistics for the Japan Commission Meeting

Ladies and Gents,

We want to ask your support for several aspects of the Commission meeting on Monday morning regarding the situation in Japan.

First, the only staff at the Commission table will be Bill Borchardt.

In the well, we anticipate having the two available DEDOs (I understand that Mike Weber will be on shift) and one representative from the front office of each of the following offices (either the office director or deputy)

NRR, NRO, NSIR, RES, NMSS, FSME, OPA, OCA, OIP, CFO, ACRS

Annette Vietti-Cook has indicated that she will reserve the "quadrant" of seats nearest the microphone (on the left side of the room as the Commissioners would see it) for NRC staff. As I understand it, the right side will be for reporters and the central area will be open for general public.

In the area for NRC staff, there will be 39 seats.

From a staff perspective, we would like the highest priority available for the following individuals whom Bill will call upon to answer (on camera) any more detailed questions on the indicated subjects. Bill will have the list and ask for this person to respond to any question where he wants more detailed support. Some of these folks will likely already be in the well. The microphone has been moved to allow television camera access to any

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individual answering questions.

Protection Against Natural Disasters – Gary Holahan
Station Blackout – George Wilson
Severe Accident and Spent Fuel Pool Accident Progression – Jennifer Uhle
Radiological Consequence Analysis – Cathy Haney
Hydrogen Fires and Explosions – MarkHenry Salley
Public Stakeholder Outreach – Eliot Brenner
State Outreach – Josie Piccone
International Interactions – Margie Doane
10CFR50.54(hh)(2)/B.5.b – Eric Bowman
Seismic Issues, Tsunami Issues, GI-199 – Annie Kammerer
Mark I containment issues – Tim Collins
Emergency Preparedness – Trish Milligan
Emergency Operating procedures/SAMGs – Donnie Harrison

We understand that these people are available for the meeting. If not, please coordinate with Allen Howe to provide an equivalently capable individual.

That leaves 26 seats in the staff section for TAs and other Division Directors and above who should attend the meeting.

SECY is arranging for an e-mail to be sent out to the staff to indicate where televisions are available for other interested staff to observe the Commission meeting.

Thanks for your support.

Jack Grobe, Deputy Director
for Engineering and Corporate Support
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission

From: [Johnson, Michael](#)
To: [Holahan, Gary](#)
Cc: [Williams, Donna](#)
Subject: Re: ... for All-Hands
Date: Monday, March 21, 2011 9:50:08 PM

I agree completely.
From my blackberry.

From: Holahan, Gary
To: Johnson, Michael
Cc: Williams, Donna
Sent: Mon Mar 21 17:55:05 2011
Subject: ... for All-Hands

Mike,

It's becoming clear that the staff is concerned about their review/approvals with respect to Japan events ...

We should re-enforce the message that we (NRC) will do a comprehensive lessons learned But until then, we need to keep doing our jobs ... reviewing designs against current requirements and with current guidance ... re-visiting where necessary and to the extent necessary after the lessons learned effort points to what (if anything) we need to do differently ..

Gary

From: [Johnson, Michael](#)
To: [Holahan, Gary](#)
Subject: RE: Mandatory Hearing
Date: Monday, March 21, 2011 12:49:00 PM

Ok. Please do give me a copy of the mandatory hearing process.

From: Holahan, Gary
Sent: Monday, March 21, 2011 12:44 PM
To: Johnson, Michael
Subject: Mandatory Hearing

Mike,

On Friday, I concurred in the SECY paper template for the mandatory hearing process.

Today I concurred in the letter to ACRS responding to their Summer letter.

The Commission meeting on Japan went very well ... largely because of Bill's performance

See you tomorrow afternoon

Gary

C/84

From: [Applestein, Lisa](#)
To: [NRO_Distribution](#)
Subject: FYI: New Agency Wide TAC Number
Date: Wednesday, March 16, 2011 10:33:38 AM

Please be advised there is a new agency wide TAC number that is associated with the Japan Earthquake and Tsunami Drill. See guidance below. E-mail me and I will add you to this designated TAC number.

Thank you,

Lisa D. Applestein

T&L Coordinator
NRO/PMDA/ITMB
T-6F35
Phone #: 301-415-6175

From: HRMSBulletin Resource
Sent: Wednesday, March 16, 2011 9:52 AM
To: HRMSBulletin Resource
Cc: HRMSBulletin Resource
Subject: New Agency Wide TAC Number

All Employees,

Due to the most current event in Japan, the Agency has decided to establish a new Agency wide Activity Code. It is: ZG0061 - Japan Earthquake and Tsunami. The PA will be: 111180 - Response Program-Event/Response - Operating RX. Please be reminded that if you charged hours to D92374 in PP6, you will need to submit a corrected time card and use the new TAC number ZG0061 under PA 111180. Also please contact your T & L Coordinator to have that TAC established in your profile.

Thank you for your cooperation.

Time, Labor and Payroll Services

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From: [Mayfield, Michael](#)
To: [Murphy, Jerome](#); [NRO_Division_Directors](#); [NRO_Deputy_Division_Directors](#); [NRO_TA](#)
Cc: [Flanders, Rhea](#); [Johnson, Michael](#); [Holahan, Gary](#)
Subject: RE: Funding Needs for Japan Follow-up - Resent to provide Attachment
Date: Monday, March 21, 2011 7:50:53 PM

Jerome – beyond the couple of folks I have working in the Ops Cntr, I do not anticipate ARP being asked to participate in either the short or long term efforts. Thus, no funding needs for us.

From: Murphy, Jerome
Sent: Monday, March 21, 2011 5:55 PM
To: [NRO_Division_Directors](#); [NRO_Deputy_Division_Directors](#); [NRO_TA](#)
Cc: Flanders, Rhea
Subject: FW: Funding Needs for Japan Follow-up - Resent to provide Attachment

Divisions, I previously sent out an e-mail requesting that you provide any resource needs to support the Japan event. DSER provided the following: DSER is not aware of the details in the plan but given DSER's expertise in natural hazards and siting issues (especially seismology, hydrology and tsunami analyses), there is a high likelihood we may be asked to support future, near-term activities.

Now OCFO is requesting to take a look at Near Term Review (90 day effort) and Longer-Term Review (Following obtaining sufficient technical information from the Japan event). Please see below a more descriptive breakout for both. **OCFO would like our answer by noon on Tuesday, 3/22.** Please provide your comments to me.

VR,
Jerome

From: Golder, Jennifer
To: Schum, Constance
Sent: Mon Mar 21 16:24:18 2011
Subject: FW: Funding Needs for Japan Follow-up - Resent to provide Attachment

Jennifer Golder

Budget Director
Office of the Chief Financial Officer
United States Nuclear Regulatory Commission

From: Kasputys, Clare
Sent: Monday, March 21, 2011 4:18 PM
To: [RidsNroOd Resource](#); [RidsNrrOd Resource](#); [RidsNsirOd Resource](#); [RidsResOd Resource](#); [RidsFsmeOd Resource](#); [RidsNmssOd Resource](#); [RidsOgcMailCenter Resource](#); [RidsCsoMailCenter Resource](#);

C/86

RidsRgn1MailCenter Resource; RidsRgn2MailCenter Resource; RidsRgn3MailCenter Resource; RidsRgn4MailCenter Resource; RidsOipMailCenter Resource
Cc: RidsNrrPmda Resource; RidsNroPmda Resource; RidsNsirPmda Resource; RidsResPmdaMail Resource; RidsFsmePbpaFmb Resource; RidsNmssTa Resource; Golder, Jennifer; Smolik, George; Muesle, Mary; Andersen, James; Jacobs-Baynard, Elizabeth; Allwein, Russell; Peterson, Gordon; Peterson, Gordon; Virgilio, Martin; Virgilio, Martin; Weber, Michael; Weber, Michael; Ash, Darren; Ash, Darren

Subject: Funding Needs for Japan Follow-up - Resent to provide Attachment

Resent to provide the Attachment

All,

The Chairman has requested for the NRC to conduct a Near-term (90 day effort) and a longer-term review (as discussed by Bill B at the Commission meeting today) of regulatory issues affecting U.S. operating reactors based on the events in Japan. The Chairman is interested in seeking supplemental funding to support our efforts for the above effort, in addition to NRC's costs associated with emergency response and technical experts sent to Japan. OCFO is preparing cost data associated with emergency response and technical support to Japan.

On Friday, the OCFO requested some initial estimates to support the reviews (see attached). At this time, we are requesting the offices to review these initial estimates and include some information concerning the work that is envisioned to support these reviews. Listed below are some initial thoughts about the scope of the near-term and long-term reviews. Also, consider what on-going efforts related to the development of our regulatory program could benefit with supplemental funding. For example, it was mentioned in the Commission meeting that NRC is currently working on GSI-199. Should funding be accelerated for this effort and others of this nature.

Near Term Review (90 day effort):

- Evaluate currently available technical and operational information from the Japan event to identify near-term (or immediate) operational or regulatory issues affecting U.S. operating reactors of all designs in areas such as protection against earthquakes, tsunamis, flooding, hurricanes, station blackout and a degraded ability to restore power; severe accident mitigation and emergency preparedness
- Develop recommendations for generic communications, orders, changes to inspection procedures and licensing review guidance, etc.
- Possibly prepare a 30 day quick look report

Longer-Term Review (Following obtaining sufficient technical information from the Japan event)

- Evaluate all technical and policy issues related to the event to identify additional research, generic issues, changes to the reactor oversight process, rulemakings and adjustments to the regulatory framework that should be conducted by the NRC.
- Evaluate interagency issues such as emergency preparedness.
- Applicability of the lessons learned to non-operating reactor and non-reactor facilities.

It is recognized that the full scope of the reviews has yet to be determined or the

size of the group that will be conducting the analysis. Therefore, we are looking only for rough cost estimates. You are requested to send the level of funding (dollars and FTE) that is anticipated that could be obligated in FY 2011 for both the near-term and long-term efforts. We are asking the business line leads to coordinate with supporting offices and submit a response by business line and by office. Please send your responses to me and Liz Jacobs-Baynard and copy Jennifer Golder and George Smolik, OCFO NLT than Noon on Tuesday.

If you have any questions, please let me know.

Thank you for your support.

Rosales-Cooper, Cindy

From: Operations Center Bulletin
Sent: Wednesday, March 16, 2011 12:51 PM
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 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.

From: [Johnson, Michael](#)
To: [Leeds, Eric](#)
Subject: Re: NRR Actions: near-term
Date: Wednesday, March 16, 2011 1:20:26 PM

Thanks Eric. Commissioner Ostendorff has been thinking of questions as well. Did he share them? I can.
From my blackberry.

From: Leeds, Eric
To: Virgilio, Martin; Weber, Michael
Cc: Borchardt, Bill; Boger, Bruce; Grobe, Jack; Ruland, William; Johnson, Michael; Sheron, Brian; Evans, Michele
Sent: Wed Mar 16 13:13:48 2011
Subject: NRR Actions: near-term

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

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

FYI

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:

C/88

- 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

From: [Leeds, Eric](#)
To: [Johnson, Michael](#)
Subject: RE: NRR Actions: near-term
Date: Wednesday, March 16, 2011 1:24:14 PM

Haven't seen them – please share. Also, thank Gary for me. His email on 50.54hhii really planted a seed with me and we've been doing brainstorming since on near term and long term regulatory actions for the event.

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

From: Johnson, Michael
Sent: Wednesday, March 16, 2011 1:20 PM
To: Leeds, Eric
Subject: Re: NRR Actions: near-term

Thanks Eric. Commissioner Ostendorff has been thinking of questions as well. Did he share them? I can.
From my blackberry.

From: Leeds, Eric
To: Virgilio, Martin; Weber, Michael
Cc: Borchardt, Bill; Boger, Bruce; Grobe, Jack; Ruland, William; Johnson, Michael; Sheron, Brian; Evans, Michele
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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

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

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FYI

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; O'Brien, 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

From: [Schmidt, Rebecca](#)
To: [Weber, Michael](#); [Powell, Amy](#)
Cc: [Borchardt, Bill](#); [Virgilio, Martin](#); [McDermott, Brian](#); [Evans, Michele](#); [Sheron, Brian](#); [Leeds, Eric](#); [Haney, Catherine](#); [Johnson, Michael](#); [LIA05 Hoc](#); [ET01 Hoc](#)
Subject: Re: FYI - READY TO DEPLOY
Date: Wednesday, March 16, 2011 7:23:52 PM

Thanks. Maybe we can meet briefly tomorrow to see when we can deploy

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

C/90

Williams, Donna

From: Holahan, Gary
Sent: Wednesday, March 16, 2011 6:55 PM
To: Williams, Donna; NRO_SES Distribution
Cc: Araguas, Christian; Clark, Theresa; Erwin, Kenneth; Holmes, Beverly; Lauron, Carolyn; McGovern, Denise; Rivera-Varona, Aida; Rosales-Cooper, Cindy; Shams, Mohamed; Snyder, Amy
Subject: RE: Planning for upcoming, short notice Commission meeting
Attachments: New Reactor Slides 2011 03 16.doc

My thoughts (with Mike's help) for a New Reactor presentation at the Commission meeting on Fukushima.

This would be the New Reactor part of Marty's 10 minute presentation.

Gary

From: Williams, Donna
Sent: Wednesday, March 16, 2011 4:38 PM
To: NRO_SES Distribution
Cc: Araguas, Christian; Clark, Theresa; Erwin, Kenneth; Holmes, Beverly; Lauron, Carolyn; McGovern, Denise; Rivera-Varona, Aida; Rosales-Cooper, Cindy; Shams, Mohamed; Snyder, Amy; Williams, Donna
Subject: Planning for upcoming, short notice Commission meeting

FYI

NRO has been asked to provide support for a Commission meeting to be held Monday, March 21 on the Japanese event. While the focus will be on operating reactors, Marty Virgilio will briefly address the applicable requirements for new reactors. No input is required at this time from the divisions, but I may reach out to you over the next two days for specific information.

Donna

Enhanced Safety of New Reactors

- Current understanding of Fukushima event issues:

- Large Seismic Event and Tsunami**
- Long Term Station Blackout**
- Core Damage Event**
- Hydrogen Production**
- Containment Venting for Pressure Control**
- Loss of Spent Fuel Pool Cooling**
- Severe Accident Training and Procedures**

- Relevant New Reactor Activities:

- **Application of Probabilistic Seismic Hazard Analysis**
- **Application of PRA at the Design Stage**
- **Station Blackout Protection (designed in)**
- **Passive Safety Features or Increased Redundancy of Safety Systems**
- **Increased Bunkering of Safety Systems and Spent Fuel Pools**
- **Design Features for Mitigation of Severe Accidents involving:**
 - **Hydrogen Production**
 - **Containment Venting**
 - **In-vessel Retention**
 - **Ex-vessel Phenomena Including**
 - **Direct Containment Heating**
 - **Steam Explosion**
 - **Core Concrete Interaction**
 - **Ex-vessel Coolability**

Balarabe, Sarah

From: GovExec.com newsletters [news@get.govexec-media.com]
Sent: Wednesday, March 16, 2011 5:01 AM
To: Ruland, William
Subject: Govexec Today: Pentagon's furlough planning; CBO scores proposed pay caps; SBA begins reg review

GOVERNMENT
EXECUTIVE.COM Today

WEDNESDAY, MARCH 16, 2011

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2. **Defense outlines furlough policy**
3. **GSA's wiki platform is improving efficiency and performance, senior official says**
4. **House passes government funding bill for three more weeks**
5. **Administration backs delay of contractor tax withholding**
6. **From Nextgov: Defense blocks access to 13 websites to conserve bandwidth for Japan**
7. **Hiring managers should be agency brand ambassadors, says official**
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Check out Nextgov's cybersecurity blog delivering breaking news and insights on federal cybersecurity efforts. **Don't miss the latest cybersecurity updates – [click here!](#)**

1. **Government would save billions by capping pay, CBO says**

By Kellie Lunny

Latest report from the Congressional Budget Office explores potential savings of reducing annual military and civilian pay raises.

Full story: http://www.govexec.com/story_page.cfm?articleid=47337&dcn=e_gvet

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2. **Defense outlines furlough policy**

By Emily Long

Military personnel must report for duty without pay and complete any work left undone by furloughed civilian employees.

Full story: http://www.govexec.com/story_page.cfm?articleid=47336&dcn=e_gvet

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3. **GSA's wiki platform is improving efficiency and performance, senior official says**

By George A. Warner

Initiative is in keeping with White House efforts to link open government to improved operations.

Full story: http://www.govexec.com/story_page.cfm?articleid=47345&dcn=e_gvet

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4. **House passes government funding bill for three more weeks**

By Humberto Sanchez, National Journal

Measure now goes to the Senate for consideration later this week.

Full story: http://www.govexec.com/story_page.cfm?articleid=47339&dcn=e_gvet

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5. **Administration backs delay of contractor tax withholding**

By Robert Brodsky

Controversial provision would require the government to withhold 3 percent of its payments to industry firms.

Full story: http://www.govexec.com/story_page.cfm?articleid=47341&dcn=e_gvet

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6. **From Nextgov: Defense blocks access to 13 websites to conserve bandwidth for Japan**

By Bob Brewin

Employees and service members can continue to use Facebook.

Full story: http://www.govexec.com/story_page.cfm?articleid=47343&dcn=e_gvet

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7. **Hiring managers should be agency brand ambassadors, says official**

By Emily Long

OPM recruiting specialist recommends that search for new talent be done through formal activities; new online tools suggest how.

Full story: http://www.govexec.com/story_page.cfm?articleid=47340&dcn=e_gvet

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8. **SBA opens its review of small business regulations**

By Robert Brodsky

Agency wants public input on which rules should be streamlined, expanded or withdrawn.

Full story: http://www.govexec.com/story_page.cfm?articleid=47338&dcn=e_gvet

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9. **Five decades of the Peace Corps in photos**

By Emily Long

As the agency marks a landmark anniversary, a look back at some compelling images of its work.

Full story: http://www.govexec.com/story_page.cfm?articleid=47334&dcn=e_gvet

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10. **A Japan-reactor repeat in the United States could cost the government dearly**

By Jim Tankersley, National Journal

Taxpayers, not the utilities, would be liable for most of the bill.

Full story: http://www.govexec.com/story_page.cfm?articleid=47331&dcn=e_gvet

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11. **For Petraeus, apathy about Afghanistan may be the biggest challenge**

By Yochi J. Dreazen, National Journal

General's Hill visit will be less scrutinized this week.

Full story: http://www.govexec.com/story_page.cfm?articleid=47332&dcn=e_gvet

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12. **Fedblog: Union Pulls Out of Talks on DoD Pay System**

By Emily Long

Outside the bureaucracy, looking in.

Tuesday, March 15, 5:02 p.m. ET:

The American Federation of Government Employees has pulled out of talks around the Defense Department's personnel system overhaul, calling recent agency actions "nothing less than union busting."

Read blog: <http://blogs.govexec.com/fedblog/>

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13. **Executive Coach: Japan: What You Can Do**

By Scott Eblin

Taking your career to the next level.

Tuesday, March 15, 10:45 a.m. ET:

Like many other people around the world this past weekend, I was transfixed by the news of the epic disaster that hit Japan on March 11. I've noticed that almost all of the coverage so far has been straight news and very little commentary. In my own case, I find that I can't get my mind around the scale of the disaster and the impact on the people in the area.

Read blog: <http://blogs.govexec.com/executivecoach/>

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14. Today's column: Management Matters

Diamonds in the Rough

By identifying and grooming top talent, managers can play an important role in encouraging the next generation of leaders.

Full column: <http://www.govexec.com/dailyfed/0311/031611mm.htm>

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15. The Earlybird: Today's headlines

Get links to the top news of the day:

<http://www.govexec.com/dailyfed/ebird.htm>

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16. Quote of the Day

You chose to be a manager. This is your responsibility. You should be out there recruiting.

-- Carmen Andujar, OPM recruitment specialist, [talking](#) to federal managers.

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Government Executive * 600 New Hampshire Avenue, NW * Washington, DC 20037

Valentine, Nicholee

From: Bowman, Eric *NER*
Sent: Wednesday, March 16, 2011 8:15 AM
To: Quay, Theodore
Subject: RE: Recommendation for proactive action by NRC in light of Japan events

Thanks for that; I had planned on coming in for another meeting as well, and figured I'd get going on this too.

V/R E

release

From: Quay, Theodore *NER*
Sent: Wednesday, March 16, 2011 7:50 AM
To: Bowman, Eric
Subject: RE: Recommendation for proactive action by NRC in light of Japan events

release

Please don't come in just for the DPR Management meeting because we may not have it. Several Branch Chiefs are out today because of Incident Response activities, travel or even WAH>

From: Bowman, Eric *NER*
Sent: Wednesday, March 16, 2011 7:06 AM
To: Quay, Theodore
Cc: Rosenberg, Stacey
Subject: RE: Recommendation for proactive action by NRC in light of Japan events

release

Ted,

I'm working at home this morning, but will be coming in this afternoon for the DPR management meeting and would like to chat with you about this.

My initial thought is that the appropriate vehicle would be a RIS and that I would be the appropriate lead as the B5b/50.54(hh)(2) SME. The next LATF meeting is tomorrow morning, which would give us an early opportunity to bring this up with industry as the discussion of upcoming generic communications is already on the agenda.

V/R Eric

From: Rosenberg, Stacey *NER*
Sent: Tuesday, March 15, 2011 5:38 PM
To: Bowman, Eric
Subject: FW: Recommendation for proactive action by NRC in light of Japan events

release

Hi Eric,

Please see e-mail string below and consider appropriate actions. You may want to vet this with a couple of senior managers (get their thoughts). This should be a high priority for the branch.

Thanks,
Stacey

From: Boger, Bruce *NER*
Sent: Tuesday, March 15, 2011 7:58 AM
To: Quay, Theodore; Rosenberg, Stacey

0193

Cc: McGinty, Tim; Blount, Tom

Subject: FW: Recommendation for proactive action by NRC in light of Japan events

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 *MLE*

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

PLEASE

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 *MRJ*

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 *MRJ*

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.

Gary

From: [Johnson, Michael](#)
To: [Mayfield, Michael](#); [Holahan, Gary](#); [Tappert, John](#); [Dudes, Laura](#); [Shuaibi, Mohammed](#); [Williams, Donna](#)
Cc: [Coffin, Stephanie](#); [Magruder, Stewart](#); [Reckley, William](#); [Araguas, Christian](#)
Subject: RE: ITAAC and SMR Commission Meetings
Date: Monday, March 21, 2011 12:53:00 PM

Thanks!

From: Mayfield, Michael
Sent: Monday, March 21, 2011 12:39 PM
To: Johnson, Michael; Holahan, Gary; Tappert, John; Dudes, Laura; Shuaibi, Mohammed; Williams, Donna
Cc: Coffin, Stephanie; Magruder, Stewart; Reckley, William; Araguas, Christian
Subject: FW: ITAAC and SMR Commission Meetings

FYI. SMR is still on but ITAAC is postponed.

From: Andersen, James
Sent: Monday, March 21, 2011 12:38 PM
To: Mayfield, Michael
Cc: Muessle, Mary; Sanfilippo, Nathan
Subject: RE: ITAAC and SMR Commission Meetings

Mike, at the agenda planning meeting this morning, the Commission decided to keep the SMR meeting, but postpone the ITAAC meeting to a later time.

Jim A.

From: Mayfield, Michael
Sent: Monday, March 21, 2011 12:31 PM
To: Andersen, James; Muessle, Mary
Subject: FW: ITAAC and SMR Commission Meetings

Jim/Mary – Mike Johnson asked me to follow up regarding these two Commission meetings. Any decisions yet? For the SMR meeting, two of the presenters are coming from out of town (Jack Bailey from TVA and Paul Lorenzini from Nuscale), so it would be good to be able to let them know soon if that meeting is going to be moved or cancelled. Also, Lorenzini may pull out anyhow owing to financial problems for his company. However, they wanted to hold off until this week to make that decision.

Mike

From: Johnson, Michael
Sent: Saturday, March 19, 2011 11:59 PM
To: Andersen, James; Muessle, Mary; Holahan, Gary; Dudes, Laura; Mayfield, Michael
Cc: Virgilio, Martin
Subject: ITAAC and SMR Commission Meetings

Jim,

For your discussions regarding upcoming Commission meetings and finding time slots for the Commission to meet on the event in Japan, I suggest we can forego meetings on

2/94

ITAAC and SMR.

We have a paper in front of the Commission that provides the plan to risk-inform the licensing review of SMRs. It can stand alone without a meeting. No issues up in front of the Commission regarding ITAAC.

Mike

Howe, Allen

From: Howe, Allen
Sent: Wednesday, March 16, 2011 12:13 PM
To: Merzke, Daniel
Subject: RE: Japan Event Commission Meeting

Thanks Dan

I am working up a scheduling note

please

From: Merzke, Daniel, *EDO*
Sent: Wednesday, March 16, 2011 12:12 PM
To: Howe, Allen
Subject: FW: Japan Event Commission Meeting

Allen, this is preliminary information from SECY.

Dan

From: Baval, Rochelle, *SECY*
Sent: Wednesday, March 16, 2011 12:09 PM
To: Andersen, James
Cc: Merzke, Daniel; Laufer, Richard
Subject: RE: Japan Event Commission Meeting

Will do. We've called around to the Commission offices for availability (at this point most likely will be on Monday), and now we're trying to get confirmation from the Chairman's office so we can go to the other Commissioners offices. I put the "outline" you sent me into scheduling note format, and am about to give it to Annette to review. There would be two parts, a public session, then a closed session on strategy and agenda planning.

Rochelle

From: Andersen, James, *EDO*
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 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.

Cohen, Shari

From: Leeds, Eric *NRR*
Sent: Wednesday, March 16, 2011 1:24 PM
To: Johnson, Michael
Subject: RE: NRR Actions: near-term

Haven't seen them – please share. Also, thank Gary for me. His email on 50.54hhii really planted a seed with me and we've been doing brainstorming since on near term and long term regulatory actions for the event.

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

release

From: Johnson, Michael *NRO*
Sent: Wednesday, March 16, 2011 1:20 PM
To: Leeds, Eric
Subject: Re: NRR Actions: near-term

Thanks Eric. Commissioner Ostendorff has been thinking of questions as well. Did he share them? I can. From my blackberry.

From: Leeds, Eric
To: Virgilio, Martin; Weber, Michael
Cc: Borchardt, Bill; Boger, Bruce; Grobe, Jack; Ruland, William; Johnson, Michael; Sheron, Brian; Evans, Michele
Sent: Wed Mar 16 13:13:48 2011
Subject: NRR Actions: near-term

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

release

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

FYI

From: Brown, Frederick *NRR*
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

Valentine, Nicholee

From: Bowman, Eric *NRC*
Sent: Wednesday, March 16, 2011 4:48 PM
To: Rosenberg, Stacey
Subject: RE: Recommendation for proactive action by NRC in light of Japan events
Attachments: Bulletin-11-01.docx

Stacey,

My initial rough-cut on the bulletin is attached. I'll convert it to a RIS in the morning after we get a chance to discuss; it should be fairly simple to accomplish that. I chose not to address the SAMGs because they aren't regulatory requirements, although they may be helpful.

The one weakness I see with application of B5b/50.54(hh)(2) guidelines and strategies to natural phenomena is the use of the phrase "due to explosions or fire" in the Order and the Rule. There is probably quite a bit of overlap in what would be developed for mitigating strategies in any case (e.g., spraying the SFPs and pumping sea water into the RV as they're doing now), but there will be some sites that have potential beyond design-basis natural phenomena they could have to contend with that would be different (e.g., Jocassee Dam failure induced flooding at Oconee).

I also left out the SBO, fire fighting and flooding verifications that would parallel the INPO Event Report recommendations because I'm not sure what we could really accomplish with them.

Thanks!

Eric

From: Rosenberg, Stacey *NRC*
Sent: Tuesday, March 15, 2011 5:38 PM
To: Bowman, Eric
Subject: FW: Recommendation for proactive action by NRC in light of Japan events

Hi Eric,

Please see e-mail string below and consider appropriate actions. You may want to vet this with a couple of senior managers (get their thoughts). This should be a high priority for the branch.

Thanks,
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Cc: McGinty, Tim; Blount, Tom
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From: Leeds, Eric *NRC*
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

release

From: Johnson, Michael, *MJO*
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

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From: Holahan, Gary, *MJO*
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.

Gary

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION
WASHINGTON, D.C. 20555-0001

NRC BULLETIN 2011-01: APPLICABILITY OF MITIGATING STRATEGIES REQUIREMENTS
UNDER 10 CFR 50.54(HH)(2) TO NATURAL PHENOMENA SUCH
AS EARTHQUAKES

ADDRESSEES

All holders of operating licenses for nuclear power reactors, except those who have permanently ceased operations and have certified that fuel has been permanently removed from the reactor vessel.

INTENT or PURPOSE

The U.S. Nuclear Regulatory Commission (NRC) is issuing this bulletin to:

- (1) request licensees review the mitigating strategies and guidance developed for the loss of a large area of the plant due to fires and explosions in order to ensure it encompasses beyond-design basis natural phenomena as initiating events,
- (2) request licensees provide the NRC with information related to the interaction between their mitigating strategies and guidance and natural phenomena, and
- (3) require licensee to provide a written response to the NRC in accordance with the provisions of Section 50.54(f) of Title 10 of the *Code of Federal Regulations* (10 CFR 50.54(f)).

BACKGROUND

On March 11, 2011, the Tohoku-Taiheiyou-Oki Earthquake occurred near the east coast of Honshu, Japan. This magnitude 9.0 earthquake and the subsequent tsunami caused significant damage to the six units of the Fukushima Daiichi nuclear power station, including damage to the cooling water systems, a sustained loss of off-site power, and a loss of spent fuel pooling cooling. Efforts to restore power to emergency equipment have been impacted by damage to the surrounding areas due to the tsunami and earthquake.

Tokyo Electric Power Company (TEPCO), the operator of the plant, resorted to injecting sea water and boric acid into the reactor vessels Units One through Three, which had been operating at the time of the earthquake and subsequently scrambled, in an effort to cool the fuel and ensure they remained shutdown. Hydrogen explosions from overheated fuel-water reaction damaged the secondary containment, apparently leaving the primary containment functional in all three units. In addition, all three units suffered from decreasing spent fuel pool levels.

MLYYDDD####

release

Units Four through Six had been shutdown for refueling outages at the time of the earthquake, with the core for Unit Four offloaded to the spent fuel pool, which suffered a total loss of water along with an inability to retain water. The spent fuel pools for Units Five and Six appeared intact, but heating up.

The areas surrounding Fukushima Daiichi were evacuated under the instructions of the Government of Japan.

SUMMARY OF ISSUE

The damage to Fukushima Daiichi nuclear power station appears to have been caused by initiating events outside of the design basis for the facilities.

APPLICABLE REGULATORY REQUIREMENTS

Appendix A to 10 CFR Part 50, General design criteria (GDC) 2, "Design Bases for Protection against Natural Phenomena," or, as appropriate, similar requirements in the licensing basis for a reactor facility requires that structures, systems, and components (SSCs) important to safety be designed to withstand the effects of natural phenomena such as earthquakes, tornadoes, hurricanes, floods, tsunami, and seiches without loss of capability to perform their safety functions. The design bases for these SSCs reflects: (1) Appropriate consideration of the most severe of the natural phenomena that have been historically reported for the site and surrounding area, with sufficient margin for the limited accuracy, quantity, and period of time in which the historical data have been accumulated, (2) appropriate combinations of the effects of normal and accident conditions with the effects of the natural phenomena and (3) the importance of the safety functions to be performed.

As a result of the events of September 11, 2001, the NRC issued EA-02-026, "Order for Interim Safeguards and Security Compensatory Measures" (the ICM Order) dated February 25, 2002, which modified then-operating licenses for commercial power reactor facilities to require compliance with specified interim safeguards and security compensatory measures. Section B.5.b of the ICM Order requires licensees to adopt mitigation strategies using readily available resources to maintain or restore core cooling, containment, and SFP cooling capabilities to cope with the loss of large areas of the facility due to large fires and explosions from any cause, including beyond-design-basis aircraft impacts. By letter dated February 25, 2005 the NRC staff provided guidance for implementing Section B.5.b of the ICM Order. This guidance is designated Safeguards Information (SGI) and is commonly referred to as the B.5.b Phase 1 Guidance.

Following issuance of the B.5.b Phase 1 Guidance, the NRC staff conducted inspections at operating reactor sites using Temporary Instruction (TI) 2515/164 (SGI) to gather information on actions taken in response to the February 25, 2005 guidance. The NRC staff then convened assessment panels to evaluate the adequacy of licensee actions taken to date. These assessment panels developed acceptance criteria to determine the adequacy of licensee responses to each of the 34 expectations identified in Attachment B to the B.5.b Phase 1 Guidance. On January 18 and 26, 2006, the NRC staff met with industry representatives and provided further clarifying information, including staff acceptance criteria on how licensees could

meet Section B.5.b of the ICM Order. The NRC clarifying information for acceptance of each expectation was disseminated in Section 05.02.c and 05.02.d of TI 2515/168 (SGI). This clarifying information represents acceptable methods, along with staff acceptance criteria, for satisfying the expectations. The staff used this clarifying information in developing its safety evaluation and inspection of current reactor licensee's compliance with Section B.5.b of the ICM Order.

In December 2006, NEI issued NEI 06-12, Revision 2, "B.5.b Phase 2 & 3 Submittal Guideline." The NRC endorsed NEI 06-12, Revision 2, by letter dated December 22, 2006 as an acceptable means for developing and implementing the mitigation strategies requirement in Section B.5.b of the ICM Order. NEI 06-12, Revision 2 provides guidance for implementing a set of strategies intended to maintain or restore core cooling, containment, and SFP cooling capabilities under the circumstances associated with the loss of a large area of the plant due to explosions or fire, in the following areas:

- Adding make-up water to the SFP
- Spraying water on the spent fuel
- Enhanced initial command and control activities for challenges to core cooling and containment
- Enhanced response strategies for challenges to core cooling and containment

The specific strategies covered in NEI 06-12, Revision 2 were developed based on the results of assessments conducted at currently licensed power reactor facilities for the purpose of enhancing plant specific mitigation capability for damage conditions caused by a large explosion or fire. These assessments identified a wide spectrum of potential plant specific strategies. NEI 06-12, Revision 2 specifies one set of strategies applicable to all pressurized-water reactors (PWR) and another set applicable to all boiling-water reactors (BWR). Both sets are derived from the results of the plant specific assessments.

The B.5.b Phase 1 Guidance and NEI 06-12, Revision 2 were used by each licensee in preparing information submitted to the NRC that describes a plant specific approach to implementing mitigating strategies and supports each plant specific license condition. The NRC staff has completed its review of the information submitted by each licensee, as well as information obtained during prior NRC inspections, and has issued a safety evaluation (SE) that documents the bases for its approval of the license condition for each facility. The SE issued for each licensee includes regulatory guidance in Section 3.0 of Appendix A, "Phase 1 Assessment," that recites the generic B.5.b Phase 1 Guidance of Reference 3, as clarified in TI 2515/168, in a form that is designated Official Use Only – Security Related Information rather than SGI.

On March 27, 2009, the NRC amended 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities," Part 52, "Licenses, Certifications, and Approvals for Nuclear Power Plants," and Part 73, "Physical Protection of Plants and Materials," with new requirements published in the *Federal Register* dated March 27, 2009 (74 FR 13926). This rulemaking added paragraph (i) to 10 CFR 50.34, "Contents of applications; technical information," to require submittal of a "description and plans for implementation of the guidance and strategies intended to maintain or restore core cooling, containment, and spent fuel pool cooling capabilities under the circumstances associated with the loss of large areas of the plant due to explosions or fire as required by § 50.54(hh)(2) of this chapter." This rulemaking also added 10 CFR 50.54(hh)(2) in order to impose the same mitigating strategies requirements on new reactor applicants and

licensees as those imposed by the ICM Order and associated license conditions. The Statement of Considerations for this rulemaking specifically noted that the requirements described in Section 50.54(hh) are for addressing certain events that are the cause of large fires and explosions that affect a substantial portion of the nuclear power plant and are not limited or directly linked to an aircraft impact. In addition, the rule contemplates that the initiating event for such large fires and explosions could be any number of beyond-design basis events, including natural phenomena such as those described in GDC 2 (i.e., earthquakes, tornadoes, floods, tsunami, and seiches), without regard to the GDC 2 limitation in magnitude of the design bases for the natural phenomena.

REQUESTED ACTIONS

All licensees are requested to review the strategies and guidance developed to meet the requirements of the ICM Order, the subsequently imposed license conditions, and 10 CFR 50.54(hh)(2) to verify that they encompass losses of large areas of the plant caused by potential beyond-design basis events due to natural phenomena.

REQUESTED INFORMATION

All licensees are requested to provide the following information within 30 days of the date of this bulletin.

- (1) An evaluation of whether the strategies and guidance developed to meet the requirements of the ICM Order, the subsequently imposed license conditions, and/or 10 CFR 50.54(hh)(2) encompass losses of large areas of the plant caused by potential beyond-design basis events due to natural phenomena possible at the site of the licensed reactor. This evaluation should include the reasons why natural phenomena-induced beyond-design basis events would not be encompassed and a description of the phenomena. For example, if there is a potential for the loss of a large area of the plant due to beyond-design basis natural phenomena that do not involve fires or explosions, identify the phenomena and whether the currently implemented strategies and guidance would be effective.

REQUIRED RESPONSE

In accordance with 10 CFR 50.54(f), in order to determine whether a facility license should be modified, suspended, or revoked, or whether to take other actions, an addressee is required to respond as described below.

Within 15 days of the date of this bulletin, an addressee is required to submit a written response if they are unable to provide the information or they cannot meet the requested completion date. The addressee must address in its response any alternative course of action that it proposes to take, including the basis for the acceptability of the proposed alternative course of action.

Address the required written response to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, 11555 Rockville Pike, Rockville, MD 20852, under oath or affirmation under the provisions of Section 182a of the Atomic Energy Act of 1954, as amended, and 10 CFR 50.54(f). In addition, submit a copy of the response to the appropriate regional administrator.

REASONS FOR INFORMATION

NRC regulatory requirements specify that operating power reactor licensees shall implement and maintain strategies and guidance to address the loss of a large area of the plant due to fires or explosions, including those due to beyond-design basis natural phenomena. The strategies and guidance were developed in light of the events of September 11, 2001 and codified in the context of the Power Reactor Security Rulemaking of March 27, 2009. This information request is necessary to permit NRC staff to verify that strategies and guidance developed in response to these requirements is not unnecessarily limited to security-related initiating events.

The NRC staff will use the information to assess the acceptability of current licensee strategies and guidance to address beyond-design basis natural phenomena initiated damage, and to guide the development of any additional regulatory actions (e.g., generic communications, orders, or rulemaking).

BACKFIT DISCUSSION

Under the provisions of Section 182a of the Atomic Energy Act of 1954, as amended, and 10 CFR 50.54(f), this bulletin transmits an information request for the purpose of verifying compliance with existing applicable regulatory requirements (see the Applicable Regulatory Requirements section of this bulletin). Specifically, the required information will enable the NRC staff to determine whether current licensee developed mitigating strategies and guidance provide reasonable assurance of adequate protection against losses of large areas of the plant due to natural phenomena. No backfit is either intended or approved by the issuance of this bulletin, and the NRC staff has not performed a backfit analysis.

FEDERAL REGISTER NOTIFICATION

A notice of opportunity for public comment on this bulletin was not published in the Federal Register because the NRC staff is {for example, requesting information from power reactor licensees on an expedited basis for the purpose of assessing compliance with existing applicable regulatory requirements and the need for subsequent regulatory action}. This bulletin was prompted by {provide a succinct statement of the reason for issuing the bulletin}. As the resolution of this matter progresses, the opportunity for public involvement will be provided. Nevertheless, comments on the action(s) requested and the technical issues addressed by this bulletin may be sent to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001.

CONGRESSIONAL REVIEW ACT

The NRC has determined this bulletin is not a rule under the Congressional Review Act (5 U.S.C. 801-808) and therefore is not subject to the Act.

PAPERWORK REDUCTION ACT STATEMENT

This Bulletin contains emergency information collections that are covered by the Office of Management and Budget control number 3150-0012. This collection of information is

Mandatory (10 CFR 50.54(f)) and will be used to determine whether a facility license should be modified, suspended, or revoked, or whether to take other actions. Burden is estimated to average 120 hours per response.

Send comments regarding this burden estimate or any other aspect of these information collections, including suggestions for reducing the burden, to the Records and FOIA/Privacy Services Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by Internet electronic mail to Infocollects.Resource@NRC.gov; and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150- 0012), Office of Management and Budget, Washington, DC 20503.

Public Protection Notification

The NRC may not conduct or sponsor, and a person is not required to respond to, a request for information or an information collection requirement unless the requesting document displays a currently valid OMB control number.”

CONTACT

Please direct any questions about this matter to the technical contact listed below or to the appropriate Office of Nuclear Reactor Regulation (NRR) project manager.

Timothy J. McGinty, Director
Division of Policy and Rulemaking
Office of Nuclear Reactor Regulation

Technical Contact: Eric E. Bowman, NRR
301-415-2963
e-mail: Eric.Bowman@nrc.gov

Note: NRC generic communications may be found on the NRC public Web site, <http://www.nrc.gov>, under Electronic Reading Room/Document Collections.

Titus, Brett

From: Dennig, Robert *MRK*
Sent: Wednesday, March 16, 2011 2:44 PM
To: Titus, Brett
Subject: RE: Request for staff that can support OIP Additional Staff requirements outside Ops Center Long Term Staffing

None.

release

From: Titus, Brett *MRK*
Sent: Wednesday, March 16, 2011 1:43 PM
To: Miranda, Samuel; Purciarello, Gerard; Bailey, Stewart; Casto, Greg; Clifford, Paul; Collins, Timothy; Dennig, Robert; Mendiola, Anthony; Ulses, Anthony
Cc: Bahadur, Sher; Ruland, William
Subject: FW: Request for staff that can support OIP Additional Staff requirements outside Ops Center Long Term Staffing
Importance: High

For your consideration...please see the request below and let me know if there are people on your staff who fit the criteria. Also, please send a negative response if there are none.

Thanks,

Brett Titus
301-415-3075

release

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Sent: Wednesday, March 16, 2011 1:39 PM
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
Importance: High

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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.

release

C/98

Heather Astwood

International Team Leader
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
301-415-1075

From: Muessle, Mary *1900***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

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 *MSR***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

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Thanks for your support.

Michele

Balarabe, Sarah

From: Mendiola, Anthony *INR*
Sent: Wednesday, March 16, 2011 1:56 PM
To: Titus, Brett; Miranda, Samuel; Purciarello, Gerard; Bailey, Stewart; Casto, Greg; Clifford, Paul; Collins, Timothy; Dennig, Robert; Ulses, Anthony
Subject: RE: Request for staff that can support OIP Additional Staff requirements outside Ops Center Long Term Staffing

Brett,

Please see me before any DSS names are offered.

Thanks,
Tony

release

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Sent: Wednesday, March 16, 2011 1:43 PM
To: Miranda, Samuel; Purciarello, Gerard; Bailey, Stewart; Casto, Greg; Clifford, Paul; Collins, Timothy; Dennig, Robert; Mendiola, Anthony; Ulses, Anthony
Cc: Bahadur, Sher; Ruland, William
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301-415-3075

release

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release
C/99

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Heather Astwood

International Team Leader
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
301-415-1075

please

From: Muesle, Mary *MD*

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

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Mary Muesle
Assistant for Operations - Acting
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U.S. Nuclear Regulatory Commission
301-415-1703 office
301-415-2700 fax

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Michele

Titus, Brett

From: Ruland, William *NRK*
Sent: Wednesday, March 16, 2011 1:46 PM
To: Titus, Brett; Bahadur, Sher
Subject: Re: Request for staff that can support OIP Additional Staff requirements outside Ops Center Long Term Staffing

Let's discuss the list before it is submitted.
Bill Ruland, from
USNRC Blackberry

release

From: Titus, Brett
To: Miranda, Samuel; Purciarello, Gerard; Bailey, Stewart; Casto, Greg; Clifford, Paul; Collins, Timothy; Dennig, Robert; Mendiola, Anthony; Ulses, Anthony
Cc: Bahadur, Sher; Ruland, William
Sent: Wed Mar 16 13:43:13 2011
Subject: FW: Request for staff that can support OIP Additional Staff requirements outside Ops Center Long Term Staffing

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Michele

Balarabe, Sarah

From: Givvines, Mary *max*
Sent: Wednesday, March 16, 2011 12:57 PM
To: Bahadur, Sher; Blount, Tom; Brown, Frederick; Cheok, Michael; Cunningham, Mark; Evans, Michele; Galloway, Melanie; Gitter, 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

release

From: Grobe, Jack *max*
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.

Please take the lead and respond directly.
Jack Grobe, Deputy Director, NRR

release

From: Muessele, Mary *EDD*
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

c/101

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 *MSR*

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

Balarabe, Sarah

From: Bahadur, Sher *MR*
Sent: Wednesday, March 16, 2011 2:05 PM
To: Ruland, William
Cc: Titus, Brett
Subject: RE: Request for staff that can support OIP Additional Staff requirements outside Ops Center Long Term Staffing

Bill -

Several DSS folks are already supporting the agency during the Japanese crisis in several ways. List includes: Ruland, Casto, Ulses, Nakanishi, Collins, and many other staff members. Volunteering additional staff to OIP will seriously challenge the division in meeting its day-to-day obligations. I recommend we do not volunteer anyone at this time.

- Sher

SHER BHADUR; DEPUTY DIRECTOR, NRR/DSS
301-415-3283
sher.bhadur@nrc.gov

From: Ruland, William *MR*
Sent: Wednesday, March 16, 2011 1:46 PM
To: Titus, Brett; Bahadur, Sher
Subject: Re: Request for staff that can support OIP Additional Staff requirements outside Ops Center Long Term Staffing

Let's discuss the list before it is submitted.
Bill Ruland, from
USNRC Blackberry

From: Titus, Brett *MR*
To: Miranda, Samuel; Purciarello, Gerard; Bailey, Stewart; Casto, Greg; Clifford, Paul; Collins, Timothy; Dennig, Robert; Mendiola, Anthony; Ulses, Anthony
Cc: Bahadur, Sher; Ruland, William
Sent: Wed Mar 16 13:43:13 2011
Subject: FW: Request for staff that can support OIP Additional Staff requirements outside Ops Center Long Term Staffing

For your consideration...please see the request below and let me know if there are people on your staff who fit the criteria. Also, please send a negative response if there are none.

Thanks,

Brett Titus
301-415-3075

From: Astwood, Heather *MR*
Sent: Wednesday, March 16, 2011 1:39 PM
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

Importance: High

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

please

From: Muesse, Mary

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

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

MSR

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

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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

Balarabe, Sarah

From: Leeds, Eric *NRR*
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

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

FYI

From: Brown, Frederick *NRR*
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: Vegel, 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

Balarabe, Sarah

From: Leeds, Eric *MLR*
Sent: Wednesday, March 16, 2011 2:29 PM
To: Haney, Catherine
Cc: Ruland, William; Ordaz, Vonna; Howe, Allen
Subject: RE: Planning for upcoming, short notice Commission meeting

Thanks, Cathy. With the issues on Spent fuel pools, we should address the issue with the Commission – as well as the potential for dry cask storage. I know we did a bunch of work on airplanes hitting casks for the Goshute Indian facility – and the potential impact. Can we get that info?

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

From: Haney, Catherine *NMSS*
Sent: Wednesday, March 16, 2011 2:06 PM
To: Ruland, William; Williams, Donna; Uhle, Jennifer; Sheron, Brian; Moore, Scott; Miller, Charles; Brenner, Eliot; Dorman, Dan; Wiggins, Jim; Evans, Michele; Doane, Margaret; Mamish, Nader
Cc: Johnson, Michael; Holahan, Gary; Leeds, Eric; Grobe, Jack; Howe, Allen; Bajwa, Chris
Subject: RE: Planning for upcoming, short notice Commission meeting

NMSS POC is Chris Bajwa, SFST

From: Ruland, William *MLR*
Sent: Wednesday, March 16, 2011 1:19 PM
To: Williams, Donna; Uhle, Jennifer; Sheron, Brian; Moore, Scott; Miller, Charles; Brenner, Eliot; Haney, Catherine; Dorman, Dan; Wiggins, Jim; Evans, Michele; Doane, Margaret; Mamish, Nader
Cc: Johnson, Michael; Holahan, Gary; Leeds, Eric; Grobe, Jack; Howe, Allen
Subject: Planning for upcoming, short notice Commission meeting

Folks,

Attached find a early draft of a scheduling note for a Commission meeting that may be held as early as this coming Monday, March 21st. NRR has been assigned as the lead to pull the meeting together. As you could imagine, this will take some effort. To help with coordination, please provide me a contact so that we can draw on your expertise and help to make this happen. Alan Howe, currently deputy director of DORL, has the lead to pull this together.

I know you have many questions. I'd ask for your patience as we try to get this done. I'll keep you updated through the contact that you provide to us.

Thank you very much.

Bill Ruland

From: [Holahan, Gary](#)
To: [Johnson, Michael](#)
Subject: Mandatory Hearing
Date: Monday, March 21, 2011 12:44:29 PM

Mike,

On Friday, I concurred in the SECY paper template for the mandatory hearing process.

Today I concurred in the letter to ACRS responding to their Summer letter.

The Commission meeting on Japan went very well ... largely because of Bill's performance

See you tomorrow afternoon

Gary

c/105

Balarabe, Sarah

From: Grobe, Jack *HR*
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

release

From: Tracy, Glenn *HR*
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 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

release

From: Linnerooth, Sarah *HR*
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 *JHR*
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 *ERL*
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; Muessle, Mary
Cc: Boger, Bruce; Grobe, Jack; Ruland, William; Meighan, Sean
Subject: Confirmation of names for Japan

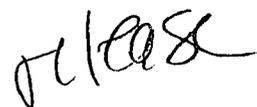
Folks –

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: [Ader, Charles](#)
To: [Holahan, Gary](#); [Johnson, Michael](#)
Subject: MESSAGE FOR ALL HANDS
Date: Monday, March 21, 2011 6:13:57 PM

Gary,

As we discussed, four of my BCs raised the issue at the DSRA staff meeting that, based on reaction to the events in Japan, members of the staff are starting to consider the need for additional RAIs prior to concurrence on AP1000, Vogtle, etc. to address "new issues." I had a discussion with one staff member that was starting to question the seismic fuel design for EPR and the need to expand the design requirements. Individually, we have been conveying a similar message, but it was suggested that this would be a good message for the NRO All Hands. It would help the BCs if staff heard a similar message from you or Mike.

Joe Donoghue came up with the following message (I tweaked a little) "We are continuing to conduct our reviews based on the regulations and guidance that we had in place before the March 11 events. The agency has stated that we have confidence in the continued operation of the existing plants based on those regulations and guidance and we have confidence in our conclusions for the reviews of new plants. As stated by the EDO at Monday's Commission meeting, the NRC will be taking actions over the short- and long-term to assess what can be learned from the event and its aftermath that requires us to change our requirements. If we do, we'll consider how we will handle such changes, including pursuing backfits for approved designs, if needed."

C/107

Akstulewicz, Frank

From: NEIGA@nei.org
Sent: Wednesday, March 16, 2011 2:01 PM
To: Akstulewicz, Frank
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

Broaddus, Doug

From: Broaddus, Doug
Sent: Wednesday, March 16, 2011 1:26 PM
To: Blechman, Paula; Clayton, Beverly; Gratton, Christopher; Lingam, Siva; Mozafari, Brenda; Orf, Tracy; Paige, Jason; Saba, Farideh; Sola, Clara; Thorpe, April
Subject: FW: Developments in Japan
Importance: High

Joe Giitter briefed the DORL management team on the current situation in Japan, and how it is/will impact our activities. The situation is getting worse, and the NRC response is continuing to increase. Below is a summary of the meeting prepared by John Boska. I will discuss further during our branch meeting tomorrow. In the meantime, please let me know ASAP if you are working on any actions in the following areas:

1. Containment design issues (e.g., containment peak pressure, primary/secondary ventilation and filtration, cooling, and leak rate testing).
2. Containment combustible gas control.
3. AC/DC power (e.g., emergency diesel generators, Station Blackout (SBO) and batteries)
4. Seismic issues
5. Flooding (tsunami, seiche, and river system)
6. Emergency core cooling systems
7. Ultimate heat sink
8. Fuel design (e.g., structural capacity and seismic design)
9. Spent fuel pool design (cooling, criticality, rack strength, and structural capacity)
10. Peak cladding temperature limits
11. Emergency planning

Please also indicate when the action is expected to be completed.

As indicated in the summary below, Harold Chernoff is developing a list of actions that may be considered sensitive given the events in Japan. Once we have the list, a determination will be made what action to take on the actions. At this time, we should continue to work on the actions until we hear otherwise. The one exception is that we may hold issuance of actions that are ready to be issued now.

As indicated in the summary, let me know if you are interested in assisting with the ops center activities.

Also, Allen will be working on a Commission briefing to be held next week concerning the Japan event, our response, and path forward. He may need assistance on that effort, if anyone is interested.

I will update you when I get any additional information.

Doug

From: Boska, John
Sent: Wednesday, March 16, 2011 11:31 AM
To: Guzman, Richard
Cc: Pickett, Douglas
Subject: Developments in Japan
Importance: High

Rich, please review and comment, for distribution to our branch.

In a briefing with Joe Giitter that just ended, we were informed that the situation is now much worse in Japan. The walls of the Unit 4 spent fuel pool have collapsed, and there is no water in there. There were a large number of fuel assemblies in the pool, and the fuel may no longer be intact. The radiation levels are increasing

so much that it may prove difficult to work on the other 5 reactors at the site, which could lead to more fuel damage and releases.

The NRC plans to man the Operation Center (OC) 24/7 for a long period of time, and other NRC task groups are being established. A generic communication is being prepared to go to our licensees. Joe Giitter will be working an 8 hour shift in the OC (3pm-11pm), but he will try to be in his office for a couple of hours each day before going to the OC. Allen Howe has been assigned to help prepare for a Commission meeting on reactor safety. Nelson has been assigned to lead a communications team for NRR.

If you have BWR or spent fuel expertise, and would like to volunteer for a shift in the OC, please let me know. They are trying to set up a rotation of working 4-5 days, 8 hours per shift, then a couple of days off. Also, as more of our technical experts get assignments, it may be difficult to complete licensing actions. Giitter and Nelson recognize this, and said that the Japanese response will take priority over the metrics. Also, Harold Chernoff is compiling a list of licensing actions (ready to be issued) that may be sensitive (spent fuel pool rerack, reduced containment testing, etc.) that will have to be approved by the NRR LT prior to issuance. Please let Harold know if you have anything that may meet the criteria.

John Boska
Indian Point Project Manager, NRR/DORL
U.S. Nuclear Regulatory Commission
301-415-2901
email: john.boska@nrc.gov

Jones, Henry

From: Jones, Henry
Sent: Friday, April 01, 2011 4:21 PM
To: Hatchett, Gregory
Subject: FW: Request for briefing to the Japan Near-Term Task force on tsunami and other flooding issues

FYI.

From: Jones, Henry
Sent: Friday, April 01, 2011 4:11 PM
To: Cabbage, Amy
Cc: Raione, Richard; Flanders, Scott; Chokshi, Niles; See, Kenneth
Subject: RE: Request for briefing to the Japan Near-Term Task force on tsunami and other flooding issues

Just read the invite (T6C1, Thursday, 7 April 9-11 am).

From: Cabbage, Amy
Sent: Friday, April 01, 2011 2:16 PM
To: Kammerer, Annie; See, Kenneth; Jones, Henry
Cc: Raione, Richard; Hogan, Rosemary; Case, Michael; Chokshi, Niles; Richards, Stuart; Flanders, Scott
Subject: Request for briefing to the Japan Near-Term Task force on tsunami and other flooding issues

Henry/Ken/Annie:

The Japan Near-Term Evaluation Task force is requesting an informal information briefing on the design basis for tsunami and other external flooding events. I spoke to Scott Flanders this afternoon and he recommended you as the experts in this area. Your support on this request is greatly appreciated. There is no need to develop any new presentation materials. You can speak from existing presentation materials and talking points. I will be sending you an outlook appointment for next week. If you have any presentation materials you plan to use please email them to me in advance and we can get copies made and display them on the computer/projector already setup in the room.

Please contact me if you have any questions,

Thanks,

Amy Cabbage
Japan Near-Term Evaluation Task Force

0110

See, Kenneth

From: Kanney, Joseph
Sent: Friday, March 18, 2011 4:46 PM
To: See, Kenneth; Nicholson, Thomas; Dion, Jeanne; Cook, Christopher
Cc: Randall, John; Ott, William; Chokshi, Nilesh; Raione, Richard
Subject: RE: Revision to PMP Narrative

A reasonable question that an observer of the tsunami in Japan might have goes something like this: I observed the tremendous amount of debris being carried along with the water. Are NPPs in the US sufficiently protected from flood-associated debris flow?

Joe

From: See, Kenneth
Sent: Friday, March 18, 2011 4:34 PM
To: Kanney, Joseph; Nicholson, Thomas; Dion, Jeanne; Cook, Christopher
Cc: Randall, John; Ott, William; Chokshi, Nilesh; Raione, Richard
Subject: RE: Revision to PMP Narrative

I agree. I think the term "most" of the existing plants were designed for the PMP/PMF is applicable, but not all.

Ken

From: Kanney, Joseph
Sent: Friday, March 18, 2011 4:26 PM
To: Nicholson, Thomas; See, Kenneth; Dion, Jeanne
Cc: Randall, John; Ott, William; Chokshi, Nilesh; Raione, Richard
Subject: RE: Revision to PMP Narrative

I think perhaps we are getting carried away with our focus on PMP. PMP is only one part of the flooding analysis and probably the not weakest link. Recall that the design basis floods for many of the existing plants were determined from area-discharge envelope curves, not from an analysis that routed the PMP through the basin and down to the site. I'm more comfortable with the level of conservatism in PMP than I am with the level of conservatism in the envelope curve approach.

-- Joe

Joseph Kanney, Ph.D.
Hydrogeologist
Office of Nuclear Regulatory Research
U.S. Nuclear Regulatory Commission
Mail Stop CSB-2A07M
11555 Rockville Pike
Rockville, MD 20852-2738

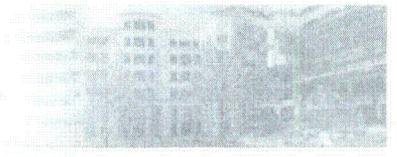
joseph.kanney@nrc.gov
Phone: 301-251-7600
Fax: 301-251-7422

Laur, Steven

From: EDO Update [nrc.announcement@nrc.gov] , EDO
Sent: Thursday, March 17, 2011 4:08 PM
To: Taylor, Renee
Subject: EDO Update



EDO Update



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 the TWFN Exhibit Area as

cl12

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

Bill Borchardt, EDO

-NRK

From: [Beckford, Kaydian](#)
To: [Taylor, Robert](#)
Cc: [Lubinski, John](#); [McMurtray, Anthony](#)
Subject: RE:
Date: Thursday, March 17, 2011 4:01:21 PM

Rob,

Yes, I can do that. Send me your list of hours. I will have to take care of it next week because I am off tomorrow.

Kaydian

-NRK

From: Taylor, Robert
Sent: Thursday, March 17, 2011 3:58 PM
To: Beckford, Kaydian
Cc: Lubinski, John; McMurtray, Anthony
Subject: FW:

Kaydian,

If I give you a list of hours worked during a pay period, can you decipher the attached for me and advise me regarding the best way to enter my time? I can understand everything going on in Japan, but am having an impossible time making heads or tails of guidance on pay. How sad...

Rob

-HR

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; Broaddus, 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, Nilesh; 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, Marlene; 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; Gaddy, Vincent; Gallo, Jenny; Galloway, Melanie; Gartman, Michael; Gavrilas, Mirela; Giantelli, Adelaide; Gibson, Kathy; Giessner, John; Giitter, 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; Hawkens, 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, Ronald; 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, Corenthis; 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; McMurtray, 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, Romena; 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; Oklesson, 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; Pruettt, 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; Rheaume, 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, Jeffrey; 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; Whetstone, 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; Zobler, 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

Laur, Steven

From: Cheok, Michael *INER*
Sent: Thursday, March 17, 2011 10:43 AM
To: Harrison, Donnie; Heida, Bruce; Klein, Alex; Laur, Steven; Rodriguez, Veronica; Tate, Travis
Cc: Lee, Samson
Subject: FW: **Update 1:15pm March 16** Information on the Japanese Earthquake and Reactors in that Region

FYI – see link to industry actions in response to events in Japan. These are similar to the INPO proposed actions.

From: NEIGA@nei.org [mailto:NEIGA@nei.org]
Sent: Wednesday, March 16, 2011 2:01 PM
To: Cheok, 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

C/114

From: [EDO Update](#)
To: [Taylor, Renee](#)
Subject: EDO Update
Date: Thursday, March 17, 2011 4:08:30 PM

EDO

EDO Banner

EDO Banner

EDO Update

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.

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9/115

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

From: [EDO Update](#)
To: [Taylor, Renee](#) , EDO
Subject: EDO Update
Date: Wednesday, March 23, 2011 4:21:44 PM

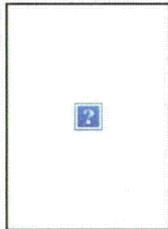
EDO Banner



EDO Update



Wednesday, March 23, 2011



The NRC (as well as many other parts of the U.S. government) is continuing to provide assistance to Japan. Nearly every NRC employee has been affected, in one way or another, by our response to the Japan tragedy. We are beginning to send replacement staff to Japan for our team of NRC experts and 24/7 staffing of the operations center continues. I thank you for your adaptability, flexibility and willingness to contribute your efforts to our important work. Despite the fact that so much public attention is being directed to our Japan efforts, we continue to meet our primary responsibility of ensuring U.S. public health and safety.

Fukushima Event and Normal NRC Operations

Although the situation is still dynamic, events at the Fukushima reactor site appear to be on the road to stabilizing. A wide range of complex technical challenges are being addressed in Japan including the restoration of "normal" electric power to the reactor plant equipment. I would like to reiterate my thanks and those of the Chairman and Commission both to those of you who are responding to the events in Japan and to those of you who continue to carry out our mission of ensuring the safe and secure civilian uses of nuclear materials in the U.S. I am impressed by the commitment and flexibility you have shown in challenging circumstances. Nearly everyone in the agency has had to step up with extra effort as many managers and staff have taken on additional duties. I would ask you all to continue demonstrating the same dedication for a bit longer, and to continue upholding the NRC Values and the principles of an Open, Collaborative Work Environment.

The Office of Human Resources has distributed information to supervisors and timekeepers to summarize the options and guidelines for determining work schedules and premium pay for employees serving in and supporting the Operations Center, or working in Japan. I ask supervisors to exercise flexibility and understanding as they

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accommodate responders' often unpredictable work schedule and premium pay needs.

For those who did not have a chance to watch last Friday's All Employees meeting, the video is available here:

<http://r2.nrc.gov/videoarchive/ViewVideo.cfm?vlink=275>

The video, as well as the PowerPoint files and transcript, of Monday's Commission meeting are available on this NRC public website page dedicated to the Fukushima events. I encourage the staff to periodically check this link for other updated information on the event.

<http://www.nrc.gov/japan/japan-info.html>

Continuing Resolution

Congress has passed, and the President signed, another Continuing Resolution, extending federal government funding through April 8th. We continue to be prepared for a variety of scenarios.

Ann Thomas Retirement

Ann Thomas, a long-time NRC employee known to many of you as the editor of the *NRC Reporter* (and before that, the *NR&C* newsletter) and a pillar of the Employees Welfare and Recreation Association, will be retiring at the end of this month. Please join me in extending to Ann our best wishes for an enjoyable retirement in her new home.



Bill Borchardt, EDO

From: [NRC Announcement](#)
To: [NRC Announcement](#)
Subject: Employee Resources: When Times Get Tough, Remember Your EAP
Date: Thursday, March 17, 2011 10:12:40 AM

NRC Daily Announcements



Highlighted Information and Messages



Thursday March 17, 2011 -- Headquarters Edition

[Employee Resources: When Times Get Tough, Remember Your EAP](#)

Employee Resources: When Times Get Tough, Remember Your EAP

NRC's Employee Assistance Program (EAP) supports employees and family members during these difficult times when NRC is responding to the tragic events in Japan. Free and confidential services are available include counseling, critical incident stress management (CISM), and more. CISM helps individuals and work groups return more readily to full productivity after traumatic events such as the recent catastrophe in Japan.

An EAP consultant is available to you 24/7 at 1-800-869-0276. You may also visit our contractor's [Website](#) to learn more about the services provided by your EAP; go to member access and click on EAP Employee Orientation: Your passcode is "nuclear".



(2011-03-17 00:00:00.0)

[View item in a new window](#)

The latest Announcements are always on the [NRC@WORK Home Page](#).

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cl/17

From: [HRMSBulletin Resource](#)
To: [HRMSBulletin Resource](#)
Cc: [HRMSBulletin Resource](#)
Subject: Clarification for use of the Tac ZG0061
Date: Thursday, March 17, 2011 9:25:53 AM

Clarification for use of the TAC (ZG0061) that was established for the events in JAPAN

This TAC (ZG0061) was established to track activity related to staff that are supporting the recent events in Japan. Managers that are performing managerial functions relating to the events in Japan should continue to use the TAC (ZM0000). In the situation where a manager is required to perform duties which would be considered different than managerial responsibilities should record their time under the new TAC ZG0061. Support staff that are performing Japan events should use TAC's that relate to their normal responsibilities. In the situation where administrative support staff is required to perform duties that would be considered different than routine administrative support responsibilities should record their time under the new TAC ZG0061.

If you have any additional questions please e-mail Jackie Jones Jackie.Jones@NRC.GOV or Mary Matheson at Mary.Matheson@NRC.GOV.

9/118

From: [Wilson, George](#)
To: [Hiland, Patrick](#); [Skeen, David](#); [Manoly, Kamal](#); [Khanna, Meena](#)
Subject: FW: OBE SSE question (3).xlsx
Date: Thursday, March 17, 2011 7:49:48 AM
Attachments: [OBE SSE question \(3\).xlsx](#)

fyi

From: Giitter, Joseph *MR*
Sent: Tuesday, March 15, 2011 2:45 PM
To: Marshall, Michael; Rihm, Roger
Cc: Mahoney, Michael; Wilson, George
Subject: OBE SSE question (3).xlsx

We're running up some hard copies as well.

C/119

Nuclear Plant Name	Safe Shutdown Earthquake (SSE)	Operating Basis Earthquake (OBE)	Probable Maximum Tsunami OR Maximum Tsunami Water Level
By State/Location	Peak Acceleration, g ³	Peak Acceleration, g ⁴	
Alabama			
Browns Ferry	0.200	0.100	N/A (Non-Coastal)
Farley	0.100	0.050	N/A (Non-Coastal)
Arkansas			
Arkansas Nuclear	0.200		N/A (Non-Coastal)
Arizona			
Palo Verde	0.200	0.100	N/A (Non-Coastal)
California			
Diablo Canyon	0.400	0.200	The design basis maximum combined wave runup is the greater of that determined for near-shore or distantly-generated tsunamis, and results from near-shore tsunamis. For distantly-generated tsunamis, the combined runup is 30 feet For near-shore tsunamis, the combined wave runup is 34.6 feet, as determined by hydraulic model testing. The safety-related equipment is installed in watertight compartments to protect it from adverse sea wave events to elevation +48 feet above MLLW.
San Onofre	0.670	0.340	The controlling tsunami occurs during simultaneous high tide and storm surge produces a maximum runup to elevation +15.6 feet mean lower low water line (mlw) at the Unit 2 and 3 seawall. When storm waves are superimposed, the predicted maximum runup is to
Connecticut			
Millstone	0.170	0.090	18 ft SWL
Florida			
Crystal River	0.050	0.025	N/A (Non-Coastal)
St. Lucie	0.100	0.050	No maximum tsunami level, bounded by PMH surge of +18 MLW wave runup, with plant openings at +19.5 MLW
Turkey Point	0.150	0.050	No maximum tsunami level, bounded by PMH surge of +18.3 MLW water level, site protected to +20 MLW with vital equipment protected to +22 MLW
Georgia			
Hatch	0.150	0.080	N/A (Non-Coastal)
Vogtle	0.200	0.120	N/A (Non-Coastal)
Illinois			
Braidwood	0.200	0.090	N/A (Non-Coastal)
Byron	0.200	0.090	N/A (Non-Coastal)
Clinton	0.250	0.100	N/A (Non-Coastal)
Dresden	0.200	0.100	N/A (Non-Coastal)
LaSalle	0.200	0.100	N/A (Non-Coastal)
Quad Cities	0.240	0.120	N/A (Non-Coastal)
Iowa			
Duane Arnold	0.120	0.060	N/A (Non-Coastal)
Kansas			
Wolf Creek	0.120	0.060	N/A (Non-Coastal)
Louisiana			
River Bend	0.100	0.050	
Waterford	0.100		Floods – 30 feet MSL
Maryland			

Calvert Cliffs	0.150	0.080	14 ft design wave
Massachusetts			
Pilgrim	0.150	0.080	*Storm flooding design basis - 18.3ft
Michigan			
D.C. Cook	0.200	0.100	N/A
Fermi	0.150	0.080	N/A
Palisades	0.200	0.100	N/A
Missouri			
Callaway	0.200		N/A (Non-Coastal)
Mississippi			
Grand Gulf	0.150	0.075	N/A
Minnesota			
Monticello	0.120	0.060	N/A (Non-Coastal)
Prarie Island	0.120	0.060	N/A (Non-Coastal)
Nebraska			
Cooper	0.200	0.100	N/A (Non-Coastal)
Fort Calhoun	0.170	0.080	N/A (Non-Coastal)
New York			
Fitzpatrick	0.150	0.080	N/A (Non-Coastal)
GINNA	0.200	0.080	N/A
Indian Point	0.150	0.100	15 ft msl
Nine Mile Point, Unit 1	0.110	0.060	N/A
Nine Mile Point, Unit 2	0.150	0.075	N/A
New Hampshire			
Seabrook	0.250	0.125	(+) 15.6' MSL Still Water Level (Tsunami Flooding - Such activity is extremely rare on the U.S. Atlantic coast and would result in only minor wave action inside the harbor.)
New Jersey			
Hope Creek	0.200	0.100	35.4 MSL The maximum probable tsunami produces relatively minor water level changes at the site. The maximum runup height reaches an elevation of 18.1 feet MSL with coincident 10 percent exceedance high tide)
Oyster Creek	0.184	0.092	(+) 23.5' MSL Still Water Level (Probable Maximum Tsunami - Tsunami events are not typical of the eastern coast of the United States and have not, therefore, been addressed.)
Salem	0.200	0.100	21.9 MSL (There is no evidence of surface rupture in East Coast earthquakes and no history of significant tsunami activity in the region)
North Carolina			
Brunswick	0.160	0.030	N/A
McGuire	0.150	0.080	N/A (Non-Coastal)
Shearon Harris	0.150		N/A (Non-Coastal)
Ohio			
Davis-Besse	0.150	0.080	N/A
Perry	0.150	0.080	N/A
Pennsylvania			
Beaver Valley	0.130	0.060	N/A (Non-Coastal)
Limerick	0.150	0.075	N/A (Non-Coastal)
Peach Bottom	0.120	0.050	N/A (Non-Coastal)
Three Mile Island	0.120	0.060	N/A (Non-Coastal)
Susquehanna	0.150	0.080	N/A (Non-Coastal)
South Carolina			
Catawba	0.150	0.080	N/A (Non-Coastal)
Oconee	0.150	0.050	N/A (Non-Coastal)
Robinson	0.200	0.100	N/A (Non-Coastal)
V.C. Summer	0.250	0.150	N/A (Non-Coastal)
Tennessee			
Sequoyah	0.180	0.090	N/A (Non-Coastal)
Watts Bar, Unit 1	0.180	0.090	N/A (Non-Coastal)

Texas			
Comanche Peak	0.120	0.060	N/A
South Texas Project	0.100	0.050	N/A
Vermont			
Vermont Yankee	0.140	0.070	N/A
Virginia			
North Anna	0.180		N/A
Surry	0.150	0.080	N/A
Washington			
Columbia	0.250		N/A (Non-Coastal)
Wisconsin			
Kewaunee	0.120	0.060	N/A
Point Beach	0.120		N/A

Definition of Safe Shutdown Earthquake

The safe-shutdown earthquake (SSE) for the site is the ground motion response spectra (GMRS), which also satisfies the minimum requirement of paragraph IV(a)(1)(i) of Appendix S, "Earthquake Engineering Criteria for Nuclear Power Plants," to Title 10, Part 50, "Domestic Licensing of Production and Utilization Facilities," of the Code of Federal Regulations (10 CFR Part 50).

Definition of Operating Basis Earthquake:

To satisfy the requirements of paragraph IV(a)(2)(A) of Appendix S to 10 CFR Part 50, the operating-basis earthquake (OBE) ground motion is defined as follows:

- (i) For the certified design portion of the plant, the OBE ground motion is one-third of the CSDRS.
- (ii) For the safety-related noncertified design portion of the plant, the OBE ground motion is one-third of the design motion response spectra, as stipulated in the design certification conditions specified in design control document (DCD).
- (iii) The spectrum ordinate criterion to be used in conjunction with Regulatory Guide 1.166, "Pre-Earthquake Planning and Immediate Nuclear Power Plant Operator Postearthquake Actions," issued March 1997, is the lowest of (i) and (ii).

Cruz, Zahira

From: Bagchi, Goutam
Sent: Monday, March 21, 2011 8:59 AM
To: NRO_DSER Distribution
Cc: Kammerer, Annie; Ake, Jon; Ali, Syed; Pires, Jose
Subject: Detailed Write-up in Wikipedia

Web link: http://en.wikipedia.org/wiki/2011_T%C5%8Dhoku_earthquake_and_tsunami

Dear colleagues,

I was amazed to see how quickly Wikipedia put together the massive amount of information. The information seemed to be quite accurate. In the beginning there is a lot of explanation of the geophysical attributes of the earthquake and it explains why the tsunami prediction was underestimated.

It has also good discussions of the nuclear plant details and status. Fukushima Unit 3 was using MOX fuel and had plutonium in the mix.

*Thank you,
Goutam*

2/120

MR

From: [Hiland, Patrick](#)
To: [Wilson, George](#); [Howe, Allen](#)
Cc: [Skeen, David](#); [Case, Michael](#); [Giitter, Joseph](#); [Chokshi, Nilesh](#); [Munson, Clifford](#); [Kammerer, Annie](#); [Raione, Richard](#); [See, Kenneth](#); [Cook, Christopher](#); [Flanders, Scott](#)
Subject: RE: Points of Contact
Date: Thursday, March 17, 2011 11:33:00 AM

Add Annie Kammerer to POC for Tsunami

MR

From: Wilson, George
Sent: Thursday, March 17, 2011 11:17 AM
To: Howe, Allen
Cc: Hiland, Patrick; Skeen, David; Case, Michael; Giitter, Joseph; Chokshi, Nilesh; Munson, Clifford; Kammerer, Annie; Raione, Richard; See, Kenneth; Cook, Christopher; Flanders, Scott
Subject: Points of Contact

External Events

Seismic – DE Point of Contact Meena Khanna – {We will need support from Res (Jon Ake, Marty Stutzke, and Anne Kammerer) and NRO (Cliff Munson, Nilesh Chokshi)}

Flood – DE Point of contact – George Wilson - {We will need support from NMSS (Rex Wescot) and NRO (Richard Raione, Ken See and Chris Cook)}

Tsunamis – DE Point of Contact – Meena Khanna - {We will need support form NRO (Cliff Munson, Nilesh Chokshi, and Richard Raione)}

Severe Accidents

SBO – DE point of contact – George Wilson

Long Term Actions

-
Resolution of GSI 199 - DE Point of Contact – Meena Khanna {We will need support from Res (Jon Ake and Marty Stutzke)}

George Wilson
USNRC
EICB Branch Chief, Division of Engineering
Mail Stop O12H2
301-415-1711

c/121

From: [Hiland, Patrick](#) *in*
To: [Wilson, George](#)
Cc: [Khanna, Meena](#); [Manoly, Kamal](#); [Skeen, David](#)
Subject: RE: Points of Contact
Date: Thursday, March 17, 2011 11:36:00 AM

Obviously, Meena is just a temporary POC as GI-199 involved myself and Kamal. Meena, I appreciate the support,

From: Wilson, George *in*
Sent: Thursday, March 17, 2011 11:17 AM
To: Howe, Allen
Cc: Hiland, Patrick; Skeen, David; Case, Michael; Giitter, Joseph; Chokshi, Nilesh; Munson, Clifford; Kammerer, Annie; Raione, Richard; See, Kenneth; Cook, Christopher; Flanders, Scott
Subject: Points of Contact

External Events

Seismic – DE Point of Contact Meena Khanna – {We will need support from Res (Jon Ake, Marty Stutzke, and Anne Kammerer) and NRO (Cliff Munson, Nilesh Chokshi)}

Flood – DE Point of contact – George Wilson - {We will need support from NMSS (Rex Wescot) and NRO (Richard Raione, Ken See and Chris Cook)}

Tsunamis – DE Point of Contact – Meena Khanna - {We will need support form NRO (Cliff Munson, Nilesh Chokshi, and Richard Raione)}

Severe Accidents

SBO – DE point of contact – George Wilson

Long Term Actions

- Resolution of GSI 199 - DE Point of Contact – Meena Khanna {We will need support from Res (Jon Ake and Marty Stutzke)}

George Wilson
USNRC
EICB Branch Chief, Division of Engineering
Mail Stop O12H2
301-415-1711

cliaa

max

From: [Hiland, Patrick](#)
To: [Gray, Kathy](#); [Dudes, Laura](#); [Skeen, David](#); [Uhle, Jennifer](#); [Brown, Frederick](#); [Ruland, William](#)
Cc: [Holian, Brian](#); [Thorp, John](#); [Thomas, Eric](#); [Cunningham, Liza](#); [Flory, Shirley](#)
Subject: RE: Confirmation is requested for RST Director Schedule - 3/18-3/25
Date: Thursday, March 17, 2011 3:48:00 PM

I'm good as indicated.

max

From: Gray, Kathy
Sent: Thursday, March 17, 2011 3:30 PM
To: Dudes, Laura; Skeen, David; Uhle, Jennifer; Brown, Frederick; Ruland, William
Cc: Holian, Brian; Hiland, Patrick; Thorp, John; Thomas, Eric; Cunningham, Liza; Flory, Shirley; Gray, Kathy
Subject: Confirmation is requested for RST Director Schedule - 3/18-3/25
Importance: High

Please confirm that you are able to provide coverage in the Ops Center, as the RST Director, as follows:

March 18 – March 25, 2011

Shift	3/18 (Fri)	3/19 (Sat)	3/20 (Sun)	3/21 (Mon)	3/22 (Tues)	3/23 (Wed)	3/24 (Thur)	3/25 (Fri)
7am– 3pm	(Laura Dudes)	Laura Dudes	Laura Dudes	Fred Brown	Fred Brown	Fred Brown	Fred Brown	Pat Hiland
3pm– 11pm	(Bill Ruland)	Dave Skeen	Dave Skeen	Dave Skeen	Dave Skeen	Bill Ruland	Bill Ruland	Bill Ruland
11pm– 7am	Jennifer Uhle	Jennifer Uhle	Jennifer Uhle	Jennifer Uhle	Brian Holian	Brian Holian	Brian Holian	Brian Holian

Pat Hiland and Brian Holian – already confirmed - no response needed.

Thanks very much.

Kathy A. Gray
Information Management Asst.
Operating Experience Branch, DIRS/NRR
Rm. O-7F04, Phone: 301-415-1166
Kathy.Gray@nrc.gov

C/123

To: [Leeds, Eric](#) *max*
Subject: Second Wave
Date: Thursday, March 17, 2011 3:54:55 PM

Eric, Steven Arndt has volunteered to assist Japan. I'll put something together next week on Steven

4/124

MRK
From: [Skeen, David](#)
To: [Gray, Kathy](#); [Dudes, Laura](#); [Uhle, Jennifer](#); [Brown, Frederick](#); [Ruland, William](#)
Cc: [Holian, Brian](#); [Hiland, Patrick](#); [Thorp, John](#); [Thomas, Eric](#); [Cunningham, Liza](#); [Flory, Shirley](#)
Subject: RE: Confirmation is requested for RST Director Schedule - 3/18-3/25
Date: Thursday, March 17, 2011 5:58:42 PM

Kathy,

Yes, I can cover the 3-11 shift Sat-Tue.

MRK
From: Gray, Kathy
Sent: Thursday, March 17, 2011 3:30 PM
To: Dudes, Laura; Skeen, David; Uhle, Jennifer; Brown, Frederick; Ruland, William
Cc: Holian, Brian; Hiland, Patrick; Thorp, John; Thomas, Eric; Cunningham, Liza; Flory, Shirley; Gray, Kathy
Subject: Confirmation is requested for RST Director Schedule - 3/18-3/25
Importance: High

Please confirm that you are able to provide coverage in the Ops Center, as the RST Director, as follows:

March 18 – March 25, 2011

Shift	3/18 (Fri)	3/19 (Sat)	3/20 (Sun)	3/21 (Mon)	3/22 (Tues)	3/23 (Wed)	3/24 (Thur)	3/25 (Fri)
7am–3pm	(Laura Dudes)	Laura Dudes	Laura Dudes	Fred Brown	Fred Brown	Fred Brown	Fred Brown	Pat Hiland
3pm–11pm	(Bill Ruland)	Dave Skeen	Dave Skeen	Dave Skeen	Dave Skeen	Bill Ruland	Bill Ruland	Bill Ruland
11pm–7am	Jennifer Uhle	Jennifer Uhle	Jennifer Uhle	Jennifer Uhle	Brian Holian	Brian Holian	Brian Holian	Brian Holian

Pat Hiland and Brian Holian – already confirmed - no response needed.

Thanks very much.

Kathy A. Gray
Information Management Asst.
Operating Experience Branch, DIRS/NRR
Rm. O-7F04, Phone: 301-415-1166
Kathy.Gray@nrc.gov

4/125

max
From: [Leeds, Eric](#)
To: [Khanna, Meena](#)
Cc: [Hiland, Patrick](#); [Skeen, David](#); [Wilson, George](#)
Subject: RE: Highlights of GI-199 and Communications Plan
Date: Thursday, March 17, 2011 6:05:11 PM

Great – thanks Meena!

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

max
From: Khanna, Meena
Sent: Thursday, March 17, 2011 3:25 PM
To: Leeds, Eric
Cc: Manoly, Kamal; Wilson, George; Chokshi, Nilesh; Hiland, Patrick; Skeen, David; Giitter, Joseph; Meighan, Sean; Nguyen, Quynh
Subject: Highlights of GI-199 and Communications Plan

Eric,

As requested, here are some highlights regarding GI-199, which includes the timeline for the issuance of the generic letter. Also attached to the email is the GI-199 Communication Plan.

Pls. contact either George or myself if you need any further information. Thanks.

GENERIC ISSUE 199, “IMPLICATIONS OF UPDATED PROBABILISTIC SEISMIC HAZARD ESTIMATES IN CENTRAL AND EASTERN UNITED STATES ON EXISTING PLANTS”

Objective of GI-199

The objective of the GI-199 Safety/Risk Assessment was to perform a conservative, screening-level assessment to evaluate if further investigations of seismic safety for operating reactors in the central and eastern U.S. (CEUS) are warranted consistent with NRC directives.

- The results of the GI-199 safety risk assessment should not be interpreted as definitive estimates of plant-specific seismic risk.
- The nature of the information used (both seismic hazard data and plant-level fragility information) make these estimates useful only as a screening tool. The NRC does not rank plants by seismic risk.

Key Messages from the GI-199 Communications Plan (slightly revised) are:

- (1) In August 2010, the Safety/Risk Assessment for GI-199 was completed. That assessment found that operating nuclear power plants are safe: Plants have adequate safety margin for seismic issues. The NRC's Safety/Risk Assessment confirmed that overall seismic risk estimates remain small and that adequate protection is maintained.

C/126

(2) Though still small, some seismic hazard estimates have increased: Updates to seismic data and models indicate increased seismic hazard estimates for some operating nuclear power plant sites in the Central and Eastern United States.

(3) Assessment of GI-199 will continue: Plants are safe (see key message 1), but the NRC has separate criteria for evaluating whether plant improvements may be imposed. The NRC's Safety/Risk Assessment used readily available information and found that for about one-quarter of the currently operating plants, the estimated core damage frequency change is large enough to warrant further attention. Action may include obtaining additional, updated information and developing methods to determine if plant improvements to reduce seismic risk are warranted.

Note: GI-199 Communication Plan is available in ADAMs: ML081850477.

Status of Operating Plants and Need of Additional Actions due to Japanese Event:

- Currently operating nuclear plants in the United States remain safe, with no need for immediate action.
- This determination is based on NRC staff reviews of updated seismic hazard information and the conclusions of the Generic Issue 199 Screening Panel.
- Existing plants were designed with considerable margin to be able to withstand the ground motions from the "deterministic" or "scenario earthquake" that accounted for the largest earthquake expected in the area around the plant.
- During the mid-to late-1990s, the NRC staff reassessed the margin beyond the design basis as part of the Individual Plant Examination of External Events (IPEEE) program.
- The results of the GI-199 assessment demonstrate that the probability of exceeding the design basis ground motion may have increased at some sites, but only by a relatively small amount. In addition, the Safety/Risk Assessment stage results indicate that the probabilities of seismic core damage are lower than the guidelines for taking immediate action.
- In summary, US plants are designed for appropriate earthquake levels and are safe. As addressed above, the NRC is conducting a program called Generic Issue 199, which is reviewing the adequacy of the earthquake design of US NPPs in central and eastern North America based on the latest data and analysis techniques. The NRC will look closely at all aspects of the response of the plants in Japan to the earthquake and tsunami to determine if any actions need to be taken in US plants and if any changes are necessary to NRC regulations.

Timeline for Preparation and Issuance of GI-199 Generic Letter:

- The NRC is working on developing a Generic Letter (GL) to request information of all affected plants (96 plants that are east of the Rockies).
- The GL is planned to be issued in draft form within the next 2 months to stimulate discussions with industry in a public meeting.
- Process will be followed, i.e., Committee to Review Generic Requirements, Advisory Committee on Reactor Safeguards Meeting and then GL will be issued as a draft for formal public comments (60 days), followed by a second meeting with ACRS.
- We expect to issue the GL by the end of this calendar year, as the new consensus seismic hazard estimates become available. (This effort is being coordinated with

US NRC, DOE, EPRI, and USGS).

The information from licensees will likely require 3 to 6 months to complete. Staff's review will commence after receiving licensees' responses. Based on staff's review, a determination can be made regarding cost beneficial backfits where it can be justified.

Cruz, Zahira

From: Lauron, Carolyn
Sent: Thursday, March 17, 2011 7:10 AM
To: Cruz, Zahira
Subject: RE: Confirmation Requested by noon, Thursday, 3/17: DSER Support Related to Japanese Event

Got it! Thanks!

From: Cruz, Zahira
Sent: Thursday, March 17, 2011 7:04 AM
To: Lauron, Carolyn
Subject: RE: Confirmation Requested by noon, Thursday, 3/17: DSER Support Related to Japanese Event

I worked from 6:30am to 11:00am on Tuesday 3/15, because I had to leave to the airport. There was no one in the previous shift (11pm-7am) for my Position.

From: Lauron, Carolyn
Sent: Thursday, March 17, 2011 6:20 AM
To: Cruz, Zahira
Subject: Confirmation Requested by noon, Thursday, 3/17: DSER Support Related to Japanese Event

Hi –

Your file indicated on 3/15 6:30 – 11am.

Is that 630am – 11am on 3/15? Were you working a shift at the Ops Center or responding to questions from the Ops Center. The shifts are typically 8 to 12 hours.

Or is it 630pm on 3/14 through 11am on 3/15? This would be more like a shift at the Ops Center.

Let me know.

Thanks,
Carolyn
2736

From: Cruz, Zahira
Sent: Wednesday, March 16, 2011 6:47 PM
To: Lauron, Carolyn
Subject: RE: Action Requested by noon, Thursday, 3/17: DSER Support Related to Japanese Event

From: Lauron, Carolyn
Sent: Wednesday, March 16, 2011 6:11 PM
To: Lauron, Carolyn
Subject: Action Requested by noon, Thursday, 3/17: DSER Support Related to Japanese Event
Importance: High

Hi –

We have been asked to provide a list of staff members who are supporting the Japanese event.

Please use the attached file and confirm/update the following:

- Ops Center Shift Work worksheet
 - Find/Add your name and indicate the hours you worked or are scheduled to work on each day at the Ops Center (see Michelle Hart's input)
 - Each column is a day starting on March 11.
- Responding to Requests
 - Find/Add your name to indicate that you have provided responses to questions from the Ops Center.

Please send the file back to me (for now – I'll try to get a SharePoint site put together on this).

Call me if you have questions/comments.

Thanks,
Carolyn
2376

Reeves, Rosemary

From: Reeves, Rosemary
Sent: Thursday, March 17, 2011 9:30 AM
To: 'webeditor@iaea.org'
Subject: Feedback on INES Rating for Japanese Event

Importance: High

Hello,

Can you please find out the answer to this question?

Has the IAEA upgraded the rating of the Fukushima nuclear reactor event yet? I had read a few days ago that IAEA had given the accident a level 4 rating on the International Nuclear and Radiological Event Scale.

Thanks,

Rosemary Reeves

Project Manager
FCSS, Advanced Fuel Cycle, Enrichment, & Uranium Conversion Branch
Office of Nuclear Materials Safety and Safeguards
US Nuclear Regulatory Commission
Washington, DC 20555
Phone: 301-492-3156
Mail Stop: E2-C40M

See, Kenneth

From: See, Kenneth
Sent: Thursday, March 17, 2011 8:07 PM
To: Khanna, Meena
Subject: RE: Tac ZG0061 for efforts associated with events in Japan

Thanks- still working on Q&A.

Ken

From: Khanna, Meena
Sent: Thursday, March 17, 2011 7:12 PM
To: Jones, Henry; See, Kenneth; Wescott, Rex; Uribe, Juan
Cc: Wilson, George
Subject: Tac ZG0061 for efforts associated with events in Japan

All, here is the tac no. for efforts associated with the Japanese event...thanks.
TAC No. ZG0061.

From: HRMSBulletin Resource
Sent: Thursday, March 17, 2011 9:25 AM
To: HRMSBulletin Resource
Cc: HRMSBulletin Resource
Subject: Clarification for use of the Tac ZG0061

Clarification for use of the TAC (ZG0061) that was established for the events in JAPAN

This TAC (ZG0061) was established to track activity related to staff that are supporting the recent events in Japan. Managers that are performing managerial functions relating to the events in Japan should continue to use the TAC (ZM0000). In the situation where a manager is required to perform duties which would be considered different than managerial responsibilities should record their time under the new TAC ZG0061. Support staff that are performing Japan events should use TAC's that relate to their normal responsibilities. In the situation where administrative support staff is required to perform duties that would be considered different than routine administrative support responsibilities should record their time under the new TAC ZG0061.

If you have any additional questions please e-mail Jackie Jones Jackie.Jones@NRC.GOV or Mary Matheson at Mary.Matheson@NRC.GOV.

See, Kenneth

From: See, Kenneth
Sent: Thursday, March 17, 2011 8:43 PM
To: Chokshi, Nilesh
Subject: Internal Flooding

Nilesh,

I put a copy of SRP 3.4.1 on your chair. My quick read tells me that the seismic analysis of internal piping dictates where the pipe breaks are postulated to occur. If no analysis is performed to demonstrate seismic resistance, then that system is assumed to be unavailable.

This section is outside our review area in RHEB, I will find out who can answer more questions tomorrow.

Ken

Kenneth R. See, P.E.
Senior Hydrologist
U.S. Nuclear Regulatory Commission
Division of Site and Environmental Reviews
Hydrologic Engineering Branch
(301)415-1508
kenneth.see@nrc.gov

From: [NRC Announcement](#)
To: [NRC Announcement](#)
Subject: Daily: 1 New Item from Monday, March 21, 2011
Date: Monday, March 21, 2011 10:01:37 PM

NRC Daily Announcements

Highlighted Information and Messages



Monday March 21, 2011 -- Headquarters Edition

[Event: NSPD Presentation Postponed](#)

Event: NSPD Presentation Postponed

The Office of Federal and State Materials and Environmental Management Programs (FSME) is postponing the Nuclear Safety Professional Development Program (NSPDP) Brown Bag Lunch & Meet and Greet scheduled for Monday, April 4, 2011, from 11:30 a.m. to 2:00 p.m. (Eastern Time), in the TWFN auditorium. Many FSME Managers have been assisting in monitoring the ongoing situation at the Fukushima Nuclear Reactor site in Japan, and will not be available for this presentation. You will be notified when a new date has been selected.



(2011-03-21 00:00:00.0)

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C/132

Lu, Shanlai

From: Lu, Shanlai
Sent: Thursday, March 17, 2011 12:03 PM
To: Ulses, Anthony; Nakanishi, Tony
Subject: Re-establish reactor cooling when offsite AC power is available - Do not rush to inject water quickly

Tony,

Hope that you see this e-mail as well.

Again, they are just my thoughts for your consideration.

With offsite AC power becoming available in the near future, there may be an urge for the plant operator to start the cooling immediately. A sudden injection of large amount of cold water into reactors with a molten core will cause devastating explosion and hydrogen fire because of violent steaming and Zr-water reaction. At this stage, any further explosion or fire will cause further damage on the reactor vessel and containment, and, more release of radiation. We need to minimize the risk of having this situation. Therefore, my recommendation is the following,

Once the AC power is available, pump the cold water into the reactor in a pulsing mode.

1. First pulse – 50 to 100 gallons. Then, stop the pump, wait to see the steam coming out from the containment and watch the vessel internal pressure for 20 minutes or more if instrumentation is still available. By then, these water should have been vaporized and hydrogen will be generated.
2. After 20 minutes, start another pulse of injection, repeat step one.
3. Repeat these steps for 4 hours.
4. Then, shorten the 20 minutes wait time to 10 minutes for another 3 hours.
5. Then, evaluate the situation and make the decision regarding continuous injection of water into the reactor.

Be safe.

Shanlai

From: Lu, Shanlai
Sent: Tuesday, March 15, 2011 10:59 AM
To: Ulses, Anthony
Cc: Donoghue, Joseph; Mendiola, Anthony; Ader, Charles; Lombard, Mark; Ruland, William; Bahadur, Sher
Subject: Japan Nuclear Power Plant Spent Fuel Pool Heat Up Mitigation Strategy

Tony,

Hope you can see this e-mail from Japan.

Based on CNN and news from internet, the spent fuel pools of Unit 1, 2 and 3 started to boil without cooling. The following are my own thoughts about what needs to be done before the situation becomes even worse.

1. Need to establish cooling with whatever means to prevent the dry out of stored fuel. This include, if not limited to, using fire hydrants to directly spray Boric Acid water on top of all three spent fuel pools. If the radiation level is too high to establish continuous water supply, use helicopters to dump boric acid water from the air as frequently as possible.
2. For Unit 4, if the spent fuel pool cooling is lost, we need to have an access to allow fire hydrant reaching the pool. It may be feasible to open the top of the reactor building right above the pool. In this way, if the operator can not introduce water supply from the ground, helicopters can still dump Boric Acid water from the air.
3. It would be nice that similar measures like these be established before the spent fuel dry out occurs. If the water is dumped on top of the pool with fuel dry out already occurred and the fuel surface temperature is already high enough, sever Zr-Water reaction will happen and cause fire and explosion. Before this happens, dump sand mixed with dry Boric acid right on top of the pools from the air. This will prevent the wide spread fire and explosion and provide the heat conduction to transfer the decay heat to the ground.

Hope these can be of help if they have not been considered.

We heard that radiation level has gone up even in Tokyo. We pray for your safety and safe return.

Take care.

Shanlai

Vettori, Robert

From: Lee, Samuel
Sent: Thursday, March 17, 2011 09:46
To: NRO_DSRA_SBPB Distribution; NRO_DSRA_SBPA
Subject: FW: Op Center Coverage
Attachments: Japan Exercise Position Title March 15 NRO-REV1.docx

Importance: High

I've talked with some of you already.... Please see email trail below and the attached. If you'd like to contribute and are qualified, please let me know ASAP, before Noon. Thanks.
sam

Samuel S. Lee, Chief
Balance of Plant Branch 2
Division of Safety Systems & Risk Assessment
Office of New Reactors
U.S. Nuclear Regulatory Commission
301-415-0155
samuel.lee@nrc.gov

From: Ader, Charles
Sent: Thursday, March 17, 2011 9:38 AM
To: NRO DSRA Branch Chiefs
Cc: Landry, Ralph; Dube, Donald; Clark, Theresa
Subject: FW: Op Center Coverage
Importance: High

Need no later than 1 pm.

Please look at the attached and let me know if have anyone that fits the categories and that can act somewhat independently and have confidence in their judgement.

From: Holahan, Gary
Sent: Wednesday, March 16, 2011 6:52 PM
To: NRO_SES Distribution
Cc: Williams, Donna; Rosales-Cooper, Cindy; Schum, Constance
Subject: Op Center Coverage

FO

All,

We (NRO) have been asked to help staff the Op Center for the next month ... 4 days on 4 days off with three shifts per day

I have filled in some suggested names (see attached) for the areas that the Op Center needs. Please review, add or subtract, check availability for this very high priority activity ... by COB Thursday

Gary.

All,

We (NRO) have been asked to help staff the Op Center for the next month ... 4 days on 4 days off with three shifts per day

I have filled in some suggested names (see attached) for the areas that the Op Center needs. Please review, add or subtract, check availability for this very high priority activity ... by COB Thursday

Gary.

Positions for the Operations Center

Liaison Team

Pravin Patel

Protective Measures Team

M Hart

Reactor Safety Team

RST Director:

G Holahan

L Dudes

C Ader

M Mayfield

RST Coordinator:

Severe Accident / PRA:

Don Dube

Ed Fuller

BWR Expert

RST Comm / ERDS Operator

Joe Williams

RST Support (Seismology Q&A)

N Chokshi

John Ma

Bret Tegeler

Vega, Frankie

From: Praveen Malhotra (StrongMotions Inc.) [praveen.malhotra@strongmotions.com]
Sent: Monday, March 21, 2011 12:08 PM
To: praveen.malhotra@strongmotions.com
Subject: Japan Earthquake Ground Motions
Attachments: Tohoku Japan Earthquake Response Spectra.pdf

Hello Everyone,

I thought of sharing with you some information regarding ground motions from magnitude Mw 9 Tohoku Japan Earthquake.

Attached PDF shows response spectra from 25 strongly shaken sites in Japan. All response spectra are for 5% of critical damping.

Speaker notes can be viewed by placing the cursor on the top left corner of each slide.

Note the following:

Very high accelerations at some stations, as would be expected since ground motions are highly random and some sites are bound to see very strong shaking during an earthquake.

Significant de-amplification of high-frequencies at depth.

Large deformations as would be expected from an earthquake of this size.

Very large number of response cycles which again is expected from a magnitude Mw 9 Earthquake.

Feel free to ask any questions or provide feedback.

Regards,

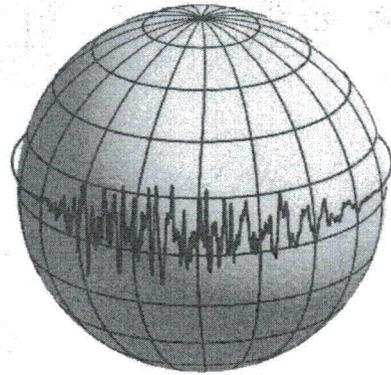
Praveen

Dr. Praveen K. Malhotra, P.E.

StrongMotions Inc.

www.StrongMotions.com

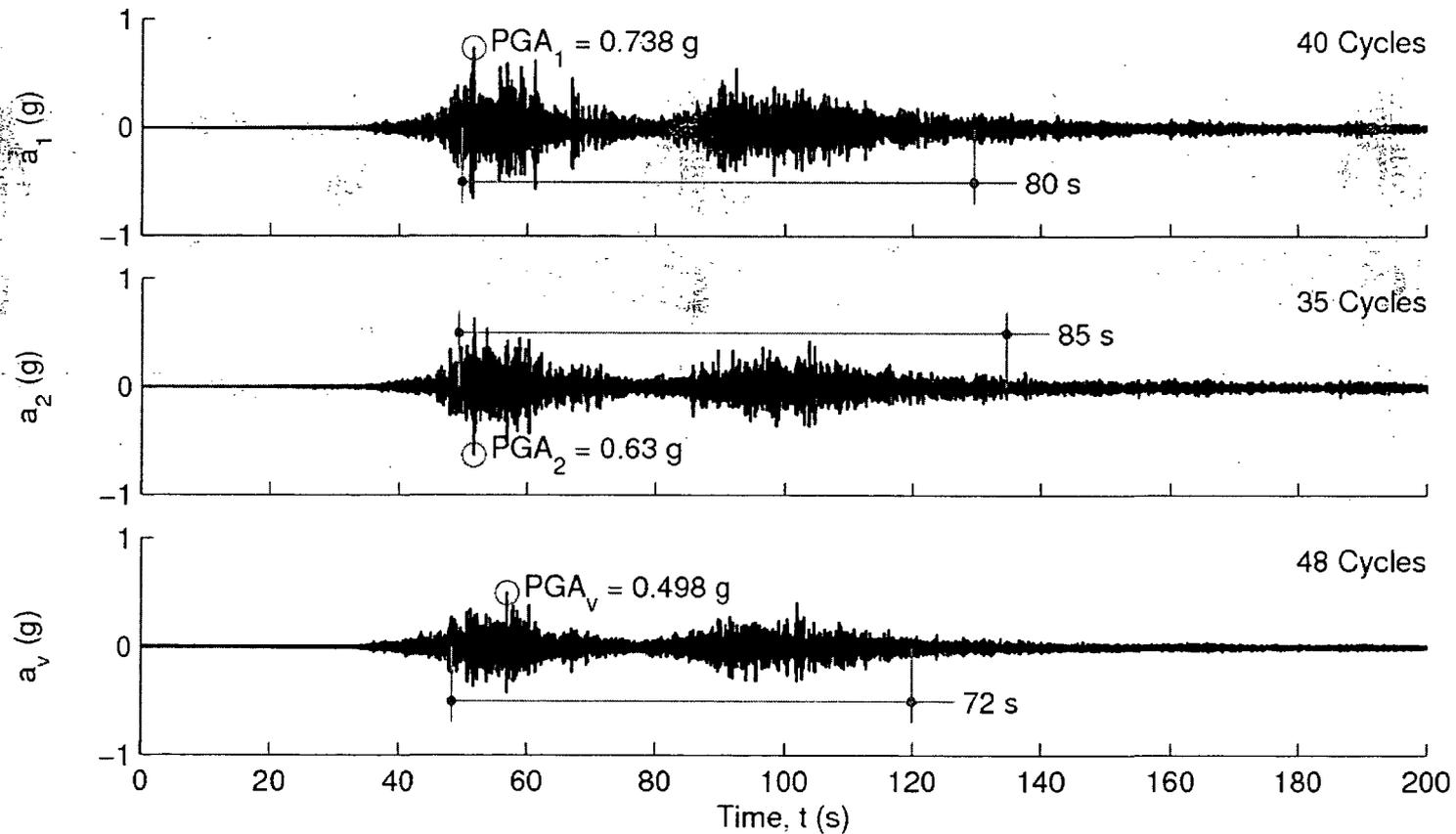
781-363-3003



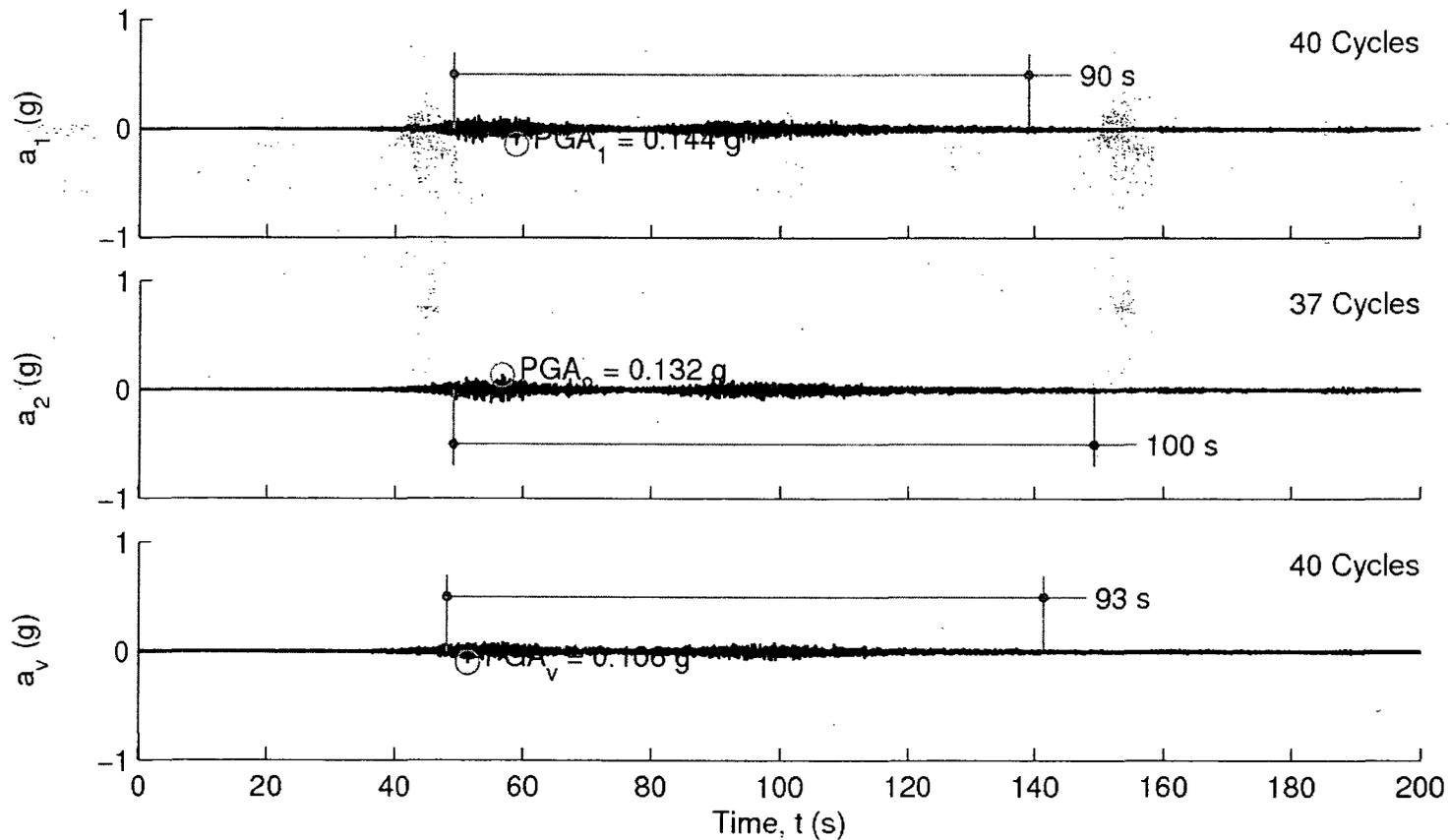
Strong Motions
Knowledge and Clarity Inc.

**Response Spectra of Ground Motions
from March 11, 2011 M_w 9.0 Tohoku,
Japan Earthquake**

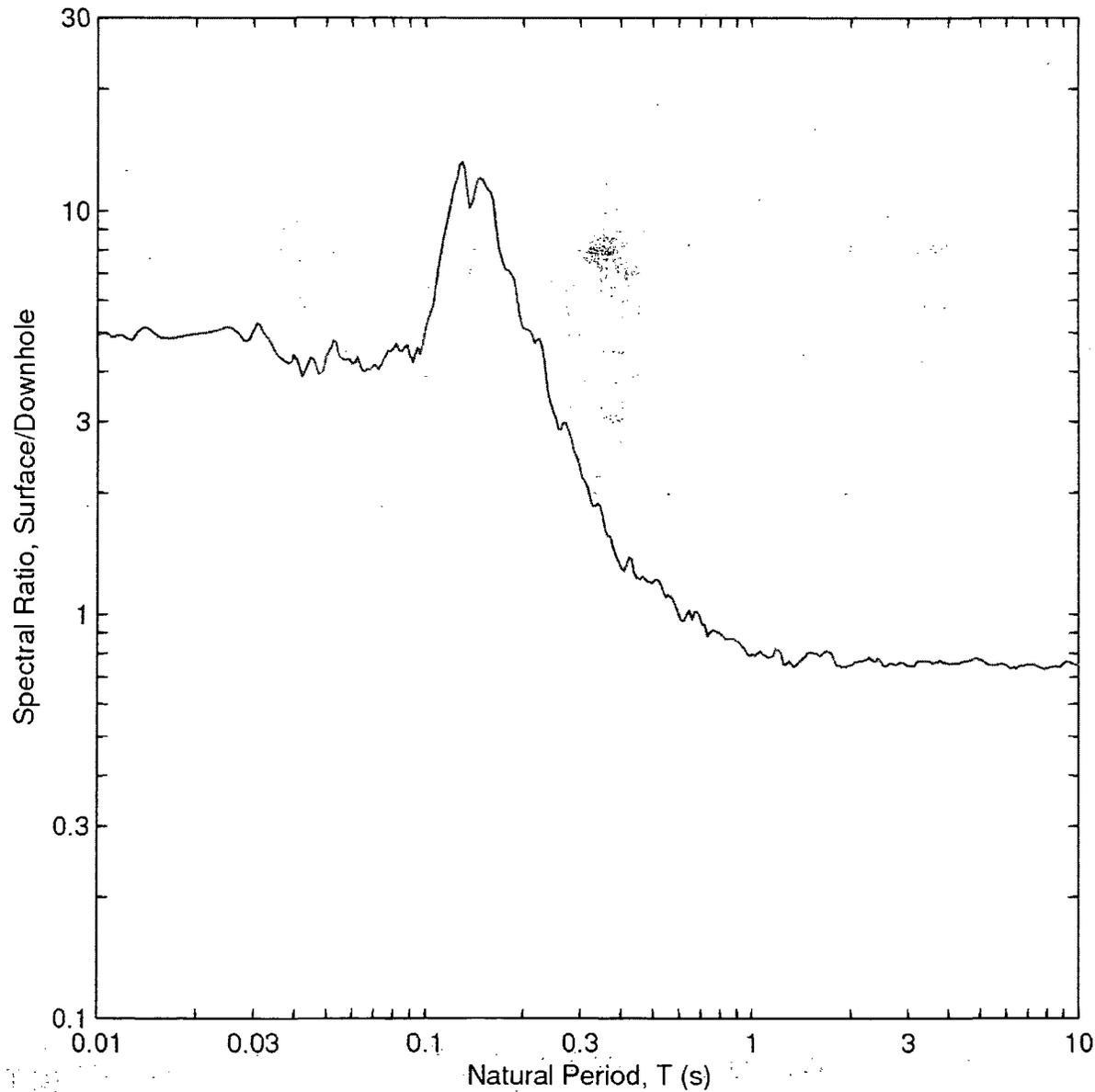
Accelerations in Two Horizontal and Vertical Directions at Ground Surface



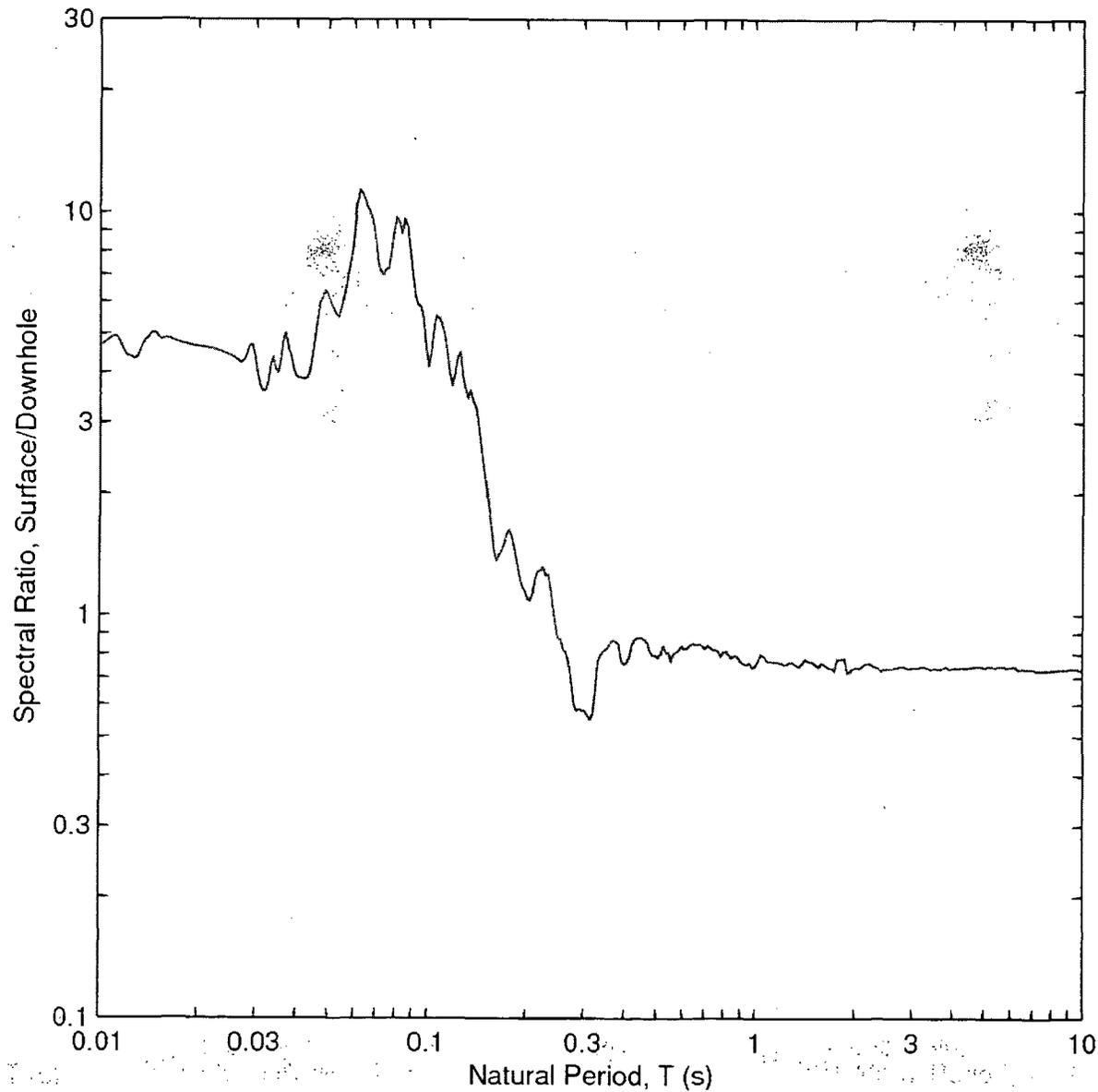
Accelerations in Two Horizontal and Vertical Directions at 100 m Depth



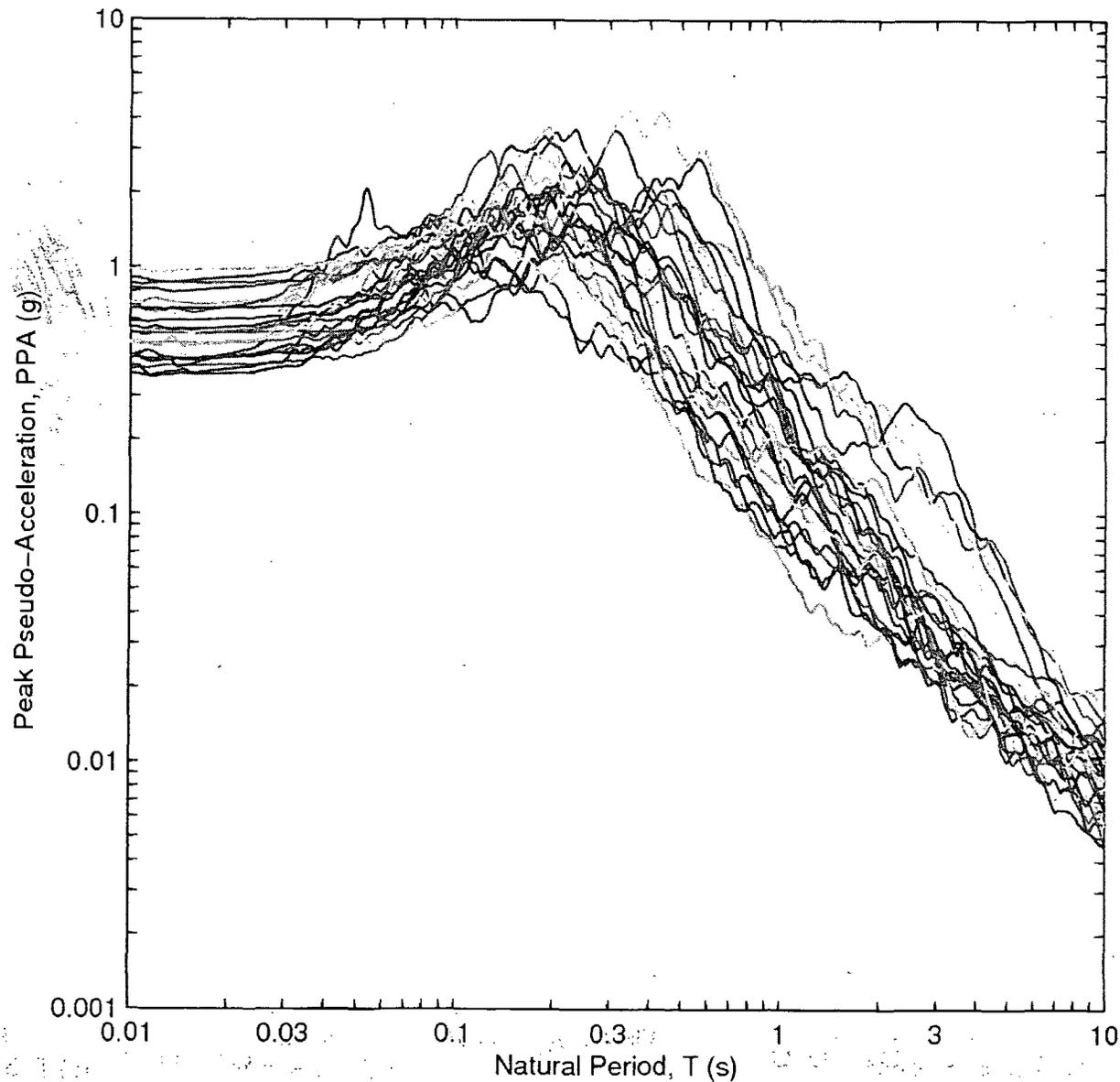
Surface/Downhole Spectral Ratio of Horizontal Motion



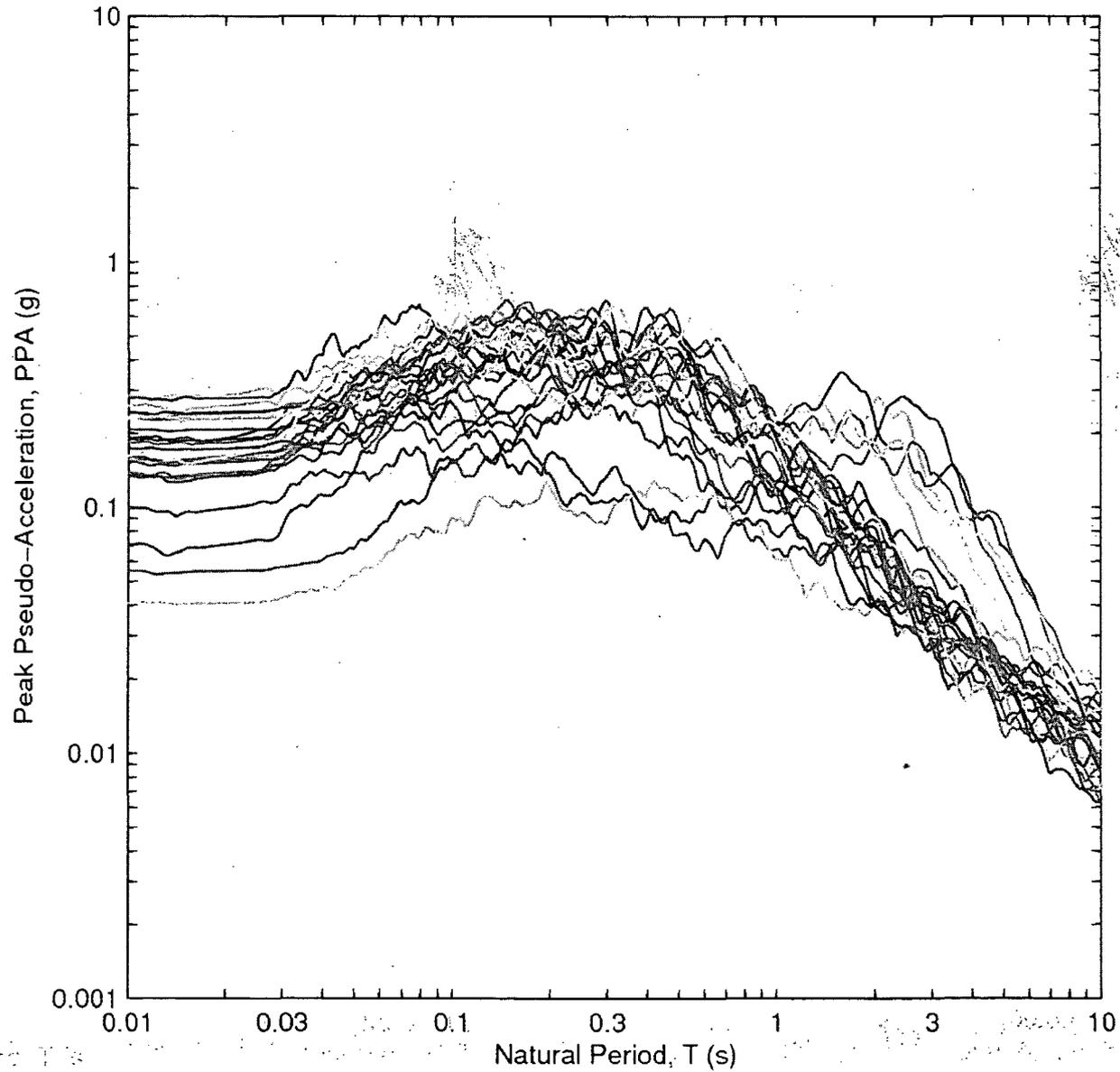
Surface/Downhole Spectral Ratio of Vertical Motion



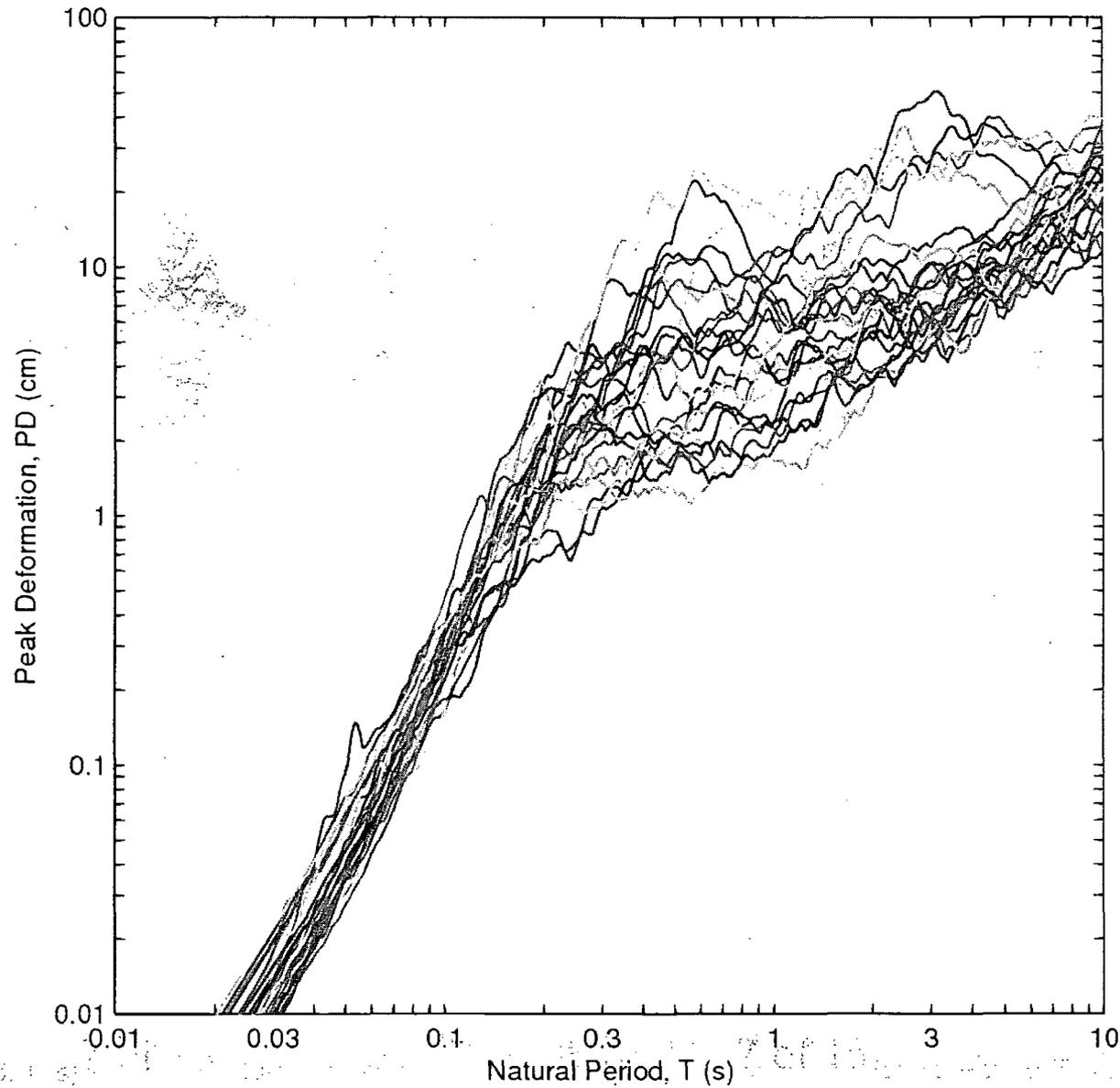
Acceleration Spectra of Horizontal Motion at Ground Surface



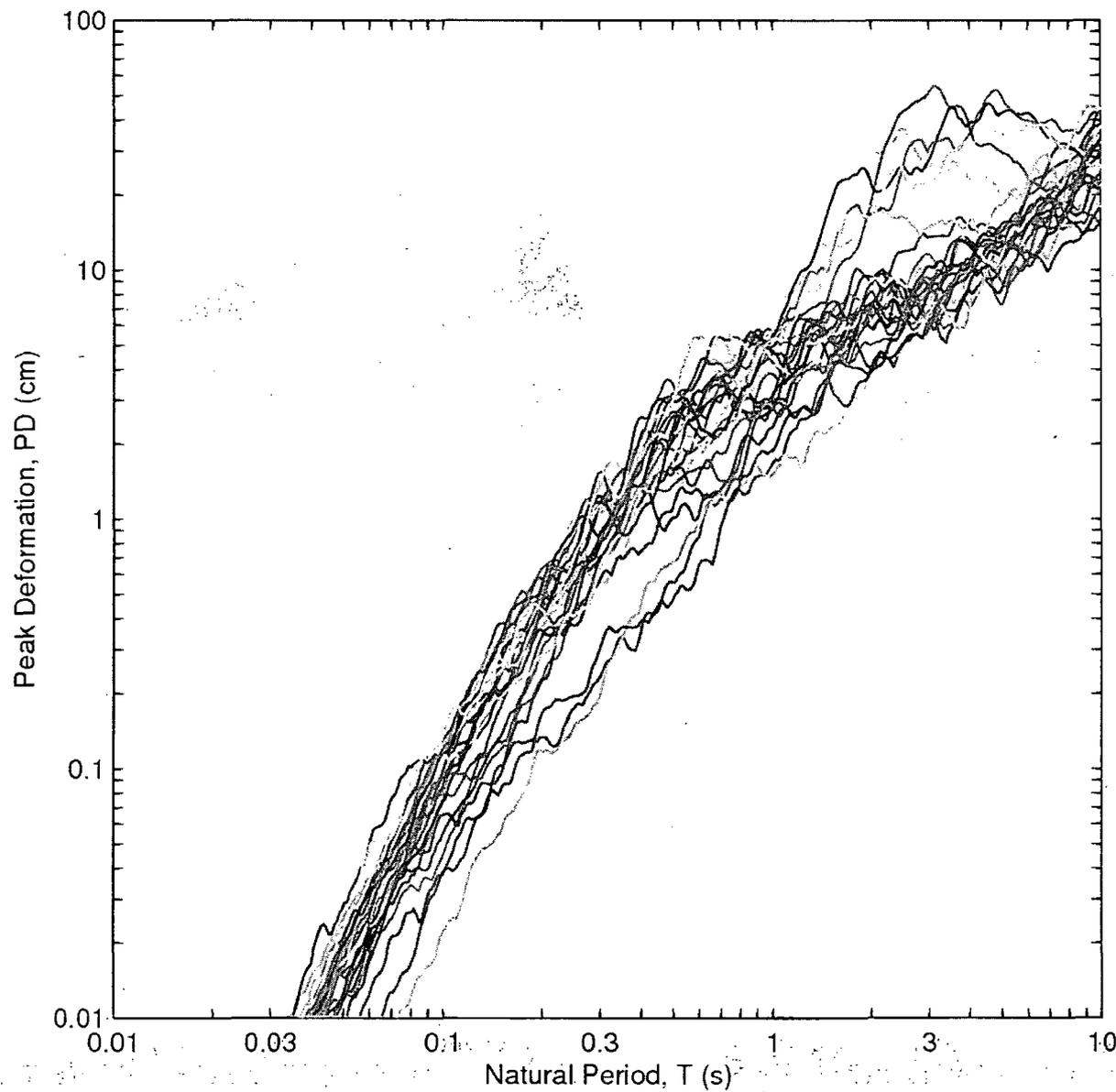
Acceleration Spectra of Horizontal Motion at 100 m Depth



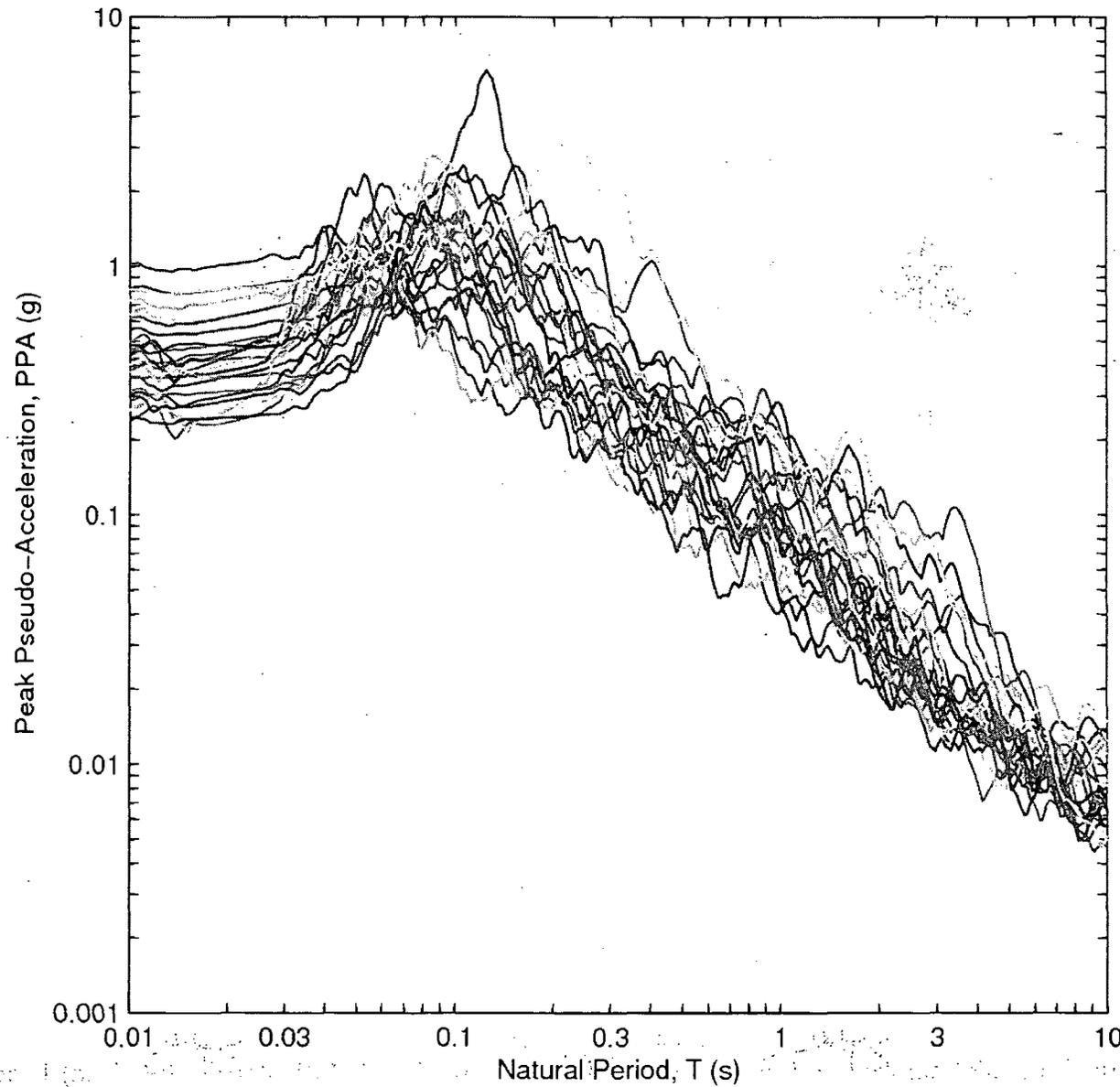
Deformation Spectra of Horizontal Motion at Ground Surface



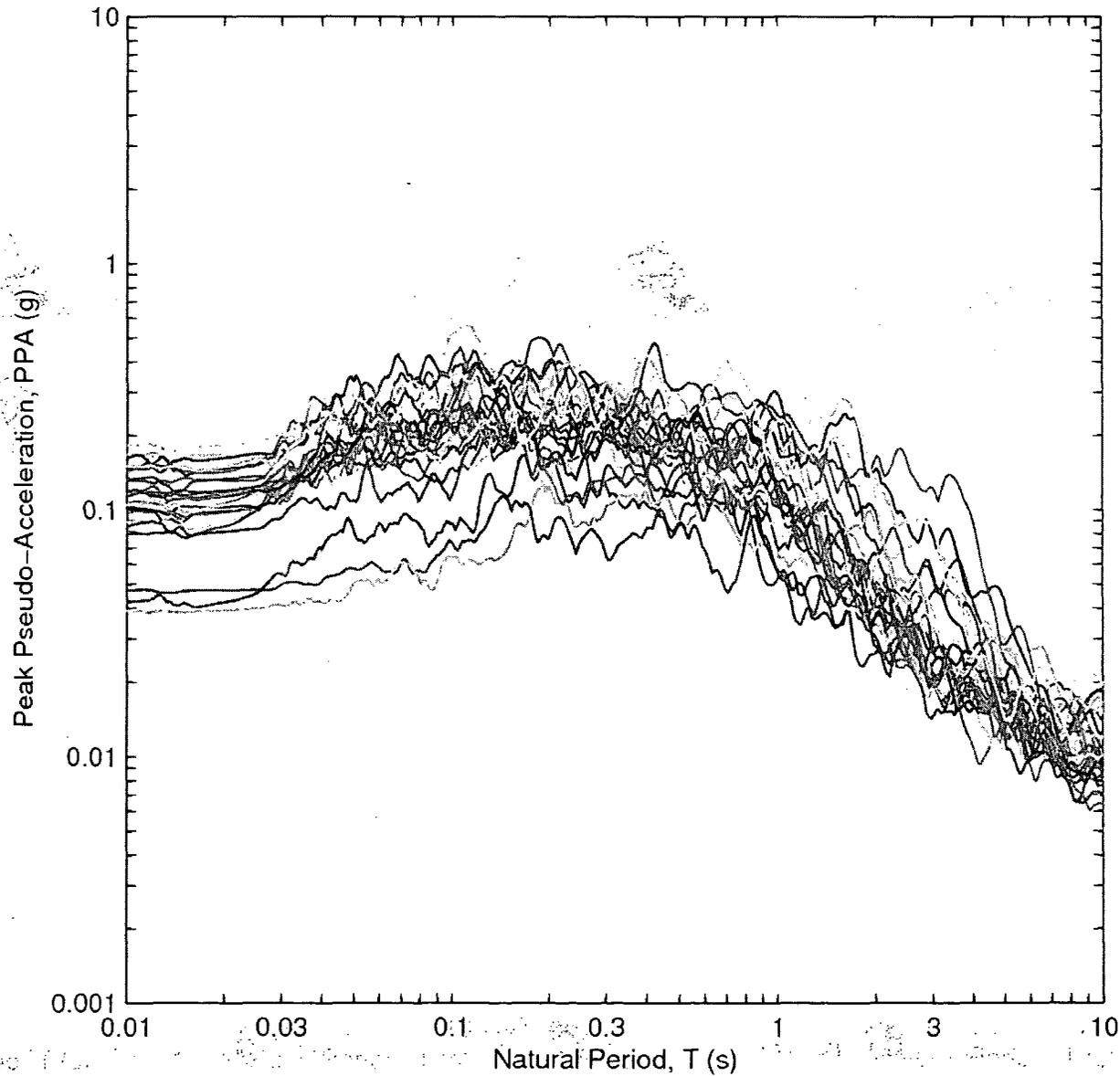
Deformation Spectra of Horizontal Motion at 100 m Depth



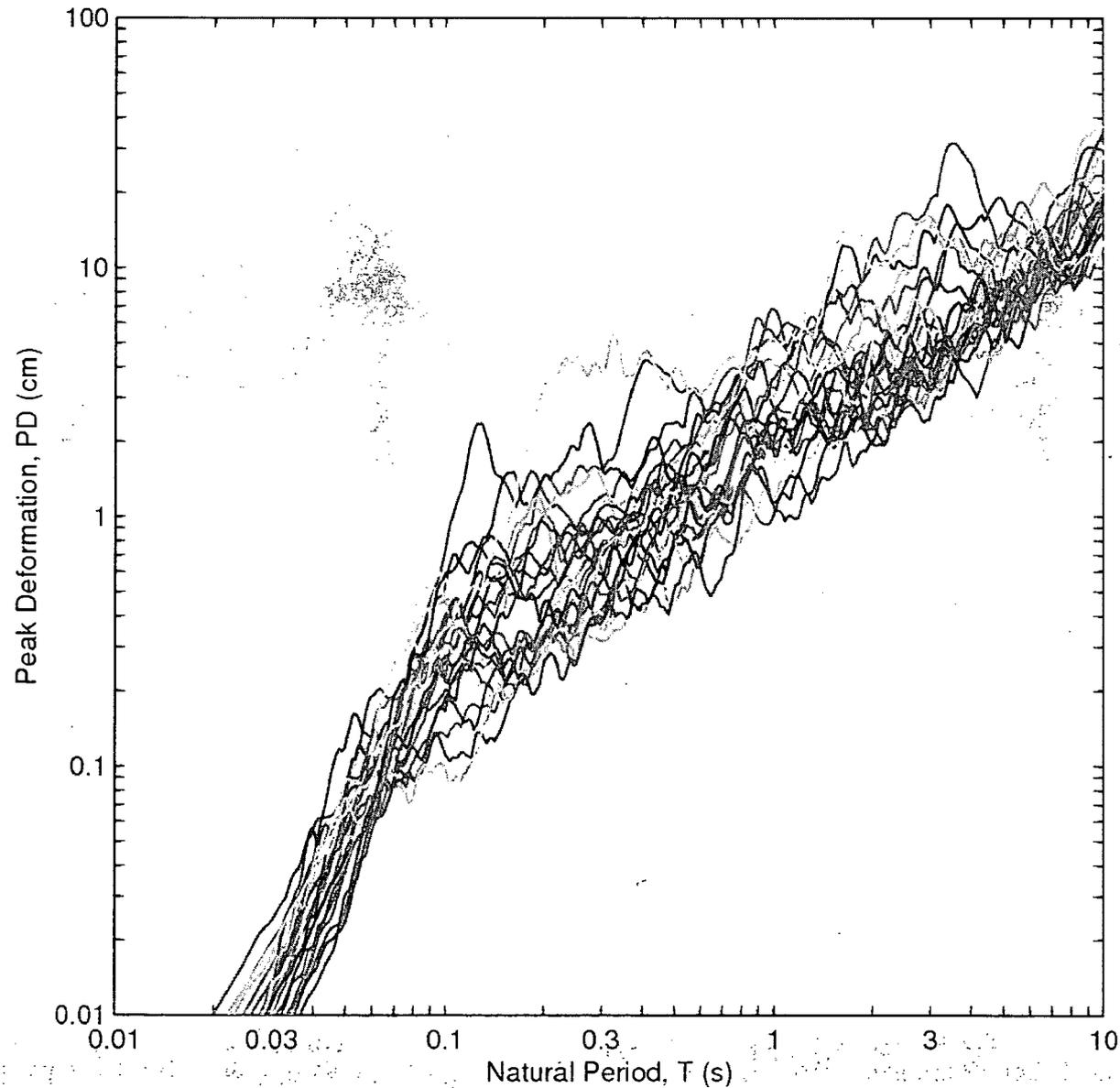
Acceleration Spectra of Vertical Motion at Ground Surface



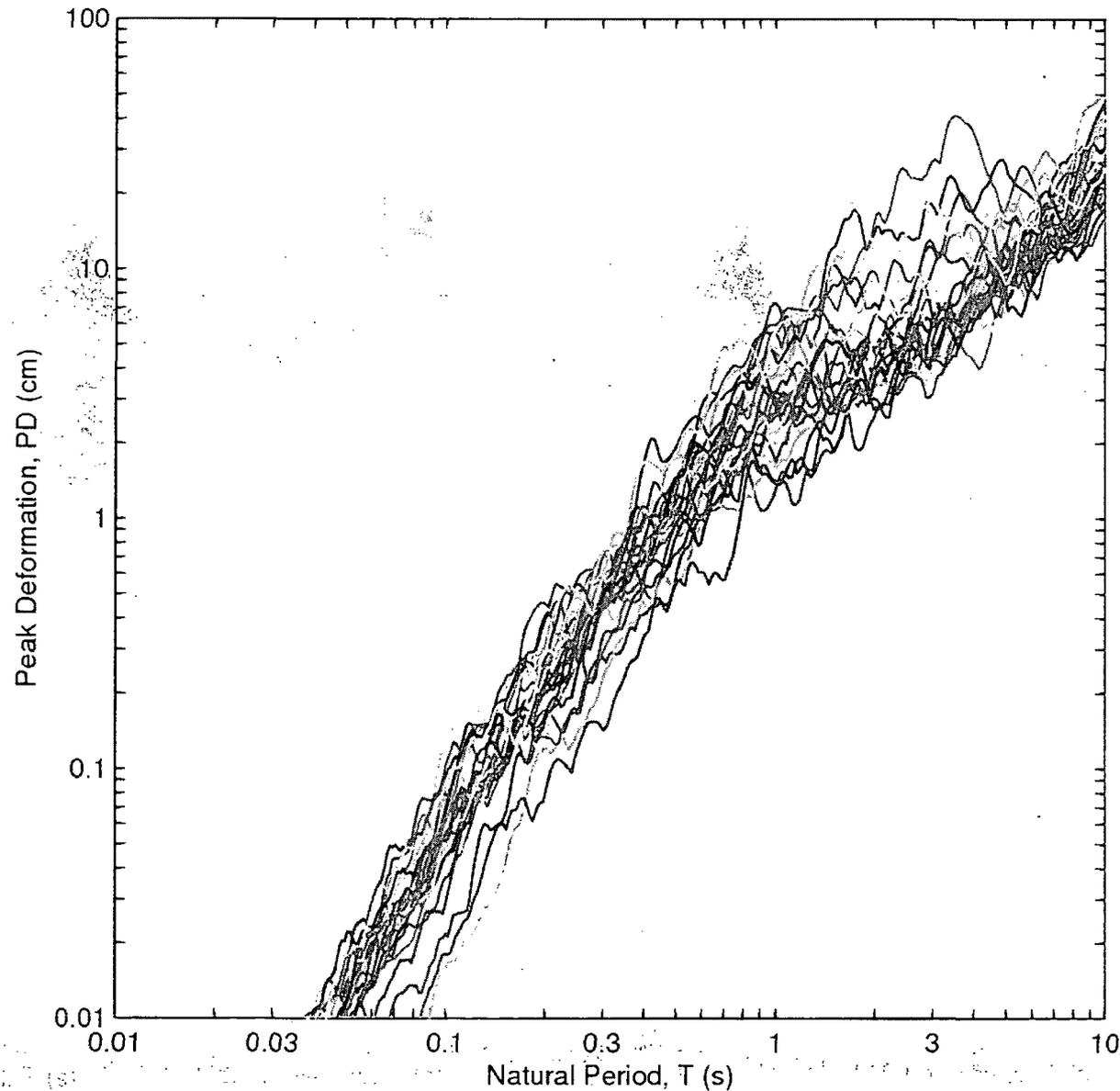
Acceleration Spectra of Vertical Motion at 100 m Depth



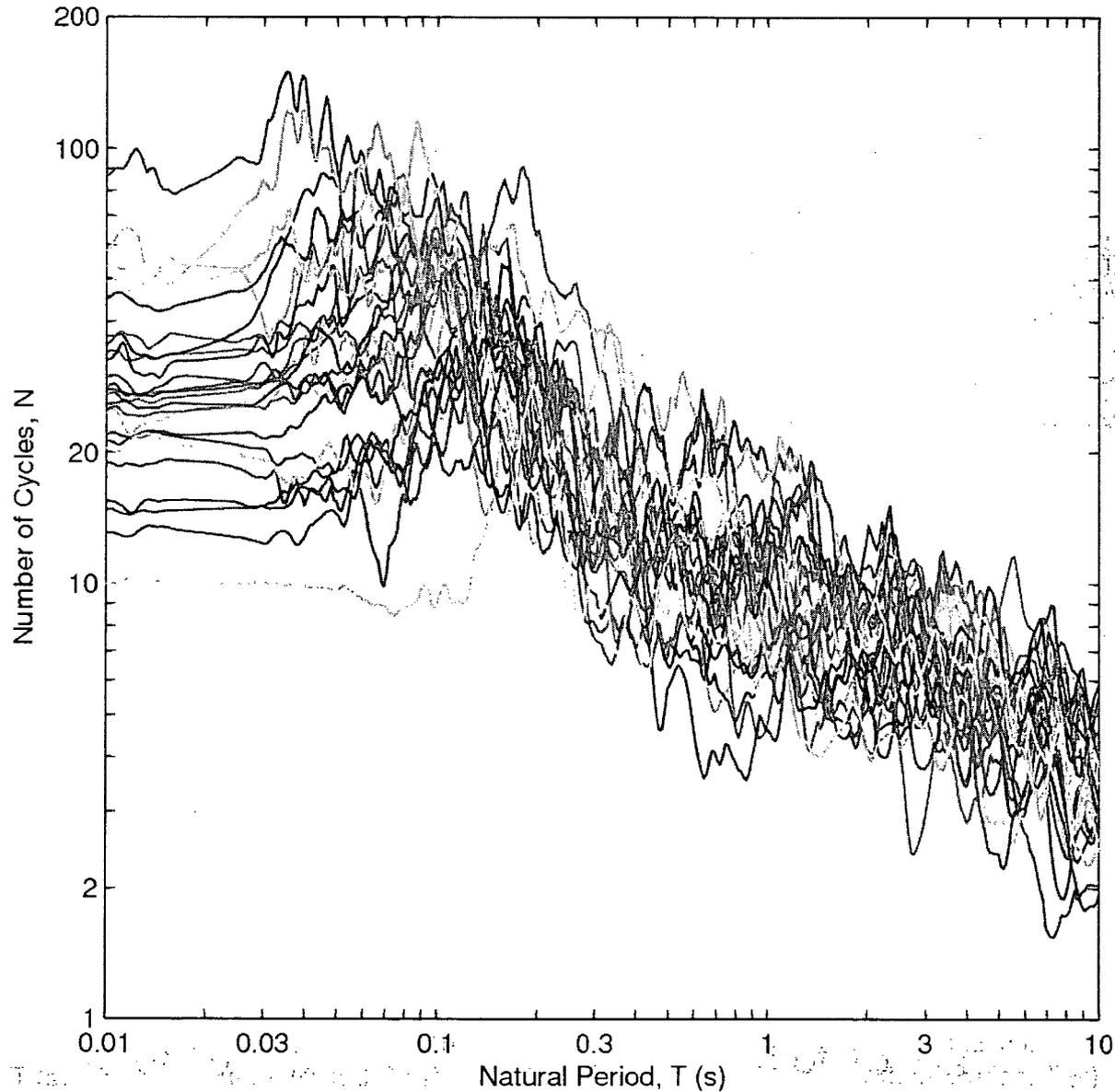
Deformation Spectra of Vertical Motion at Ground Surface



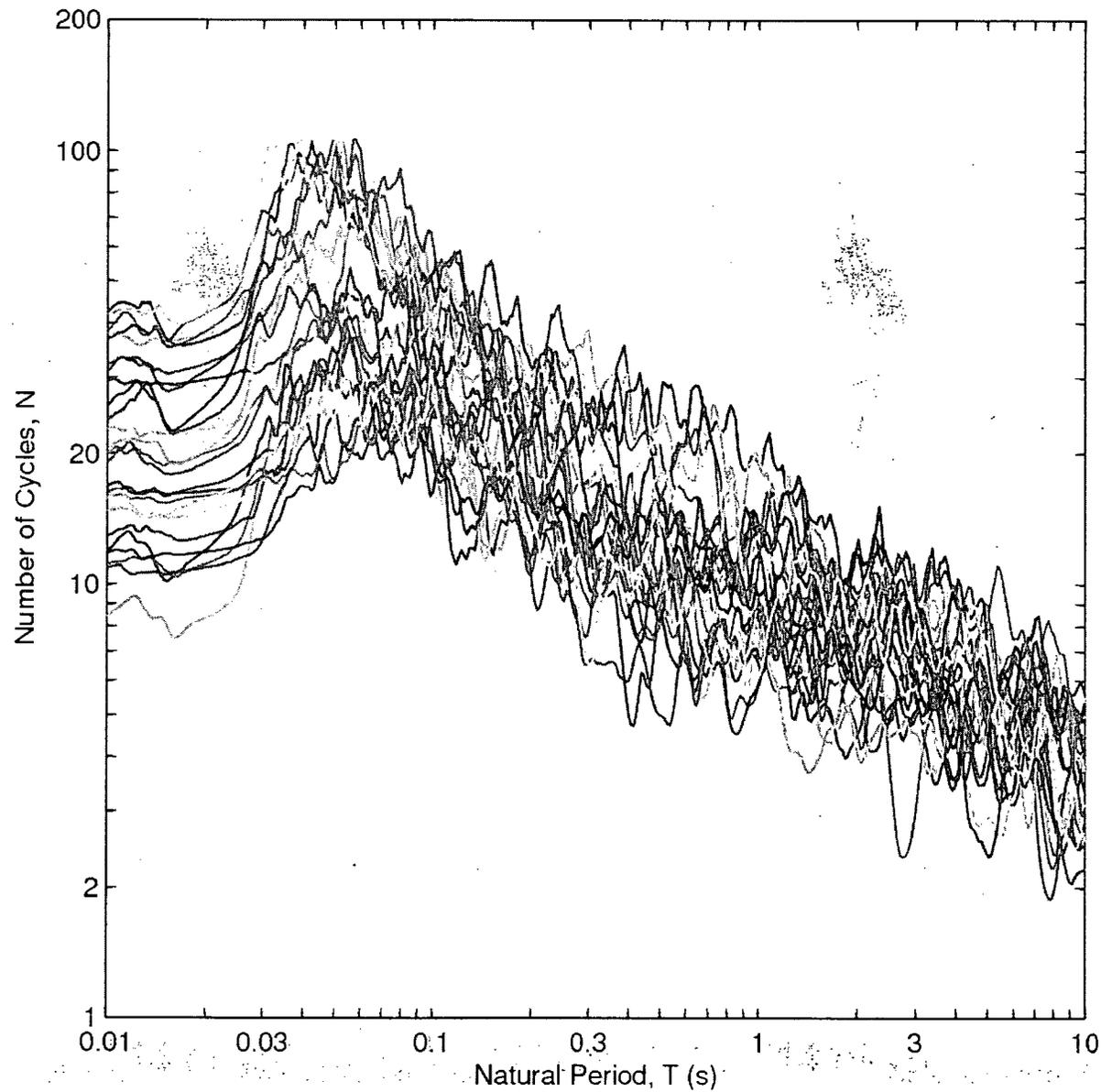
Deformation Spectra of Vertical Motion at 100 m Depth



Cyclic-Demand Spectra of Horizontal Motion at Ground Surface



Cyclic-Demand Spectra of Horizontal Motion at 100 m Depth



Rosales-Cooper, Cindy

From: Cheney, Valentina
Sent: Thursday, March 17, 2011 10:57 AM
To: Bouling, Ramona; NRO_Division_Directors; NRO_Deputy_Division_Directors
Cc: NRO_TA; Anderson, Patricia; Briggs, Christine; Feizollahi, Lisa; Sweeney, Beverly; Courts, Tonya; Ellis, Twana
Subject: RE: Request for Info - NRO Staff Support for the Japan crisis

Good Morning Ramona,

Here is a list of DCIP staff that have been contacted to support the Japan crisis:

Laura Dudes
John Tappert
Charlie Hinson
Jim Kellum
Richard Clement
Margaret Cervera (on rotation from NSIR)
Victor Hall.

Thank you.

Valentina Cheney
Management Analyst
Division of Construction Inspection
and Operational Programs
301-415-6204

From: Bouling, Ramona
Sent: Tuesday, March 15, 2011 3:11 PM
To: NRO_Division_Directors; NRO_Deputy_Division_Directors
Cc: NRO_TA; Anderson, Patricia; Briggs, Christine; Feizollahi, Lisa; Sweeney, Beverly; Courts, Tonya; Ellis, Twana; Cheney, Valentina
Subject: Request for Info - NRO Staff Support for the Japan crisis

All,

I'm contacting you to find out which of your staff has been called to support the Japan crisis in any capacity. Additionally, please also include the names of any staff who you anticipate may be called. HR is requesting this information to make contact as necessary and provide guidance on any special hours of work and time reporting requirements.

Please provide the names to me by **cob Thursday, March 17.**

Thanks

**Ramona Bouling, Branch Chief
Human Capital Management Branch
Program Management, Policy Development
and Analysis Staff
Office of New Reactors
Phone: 301-415-3039**

Name	Office	Shift
Gerry Stirewalt	DSER	
Vanice Perin	DNRL	Sat (3/11) PM/Sun AM
Donna Williams	NRO/FO	
Cindy Rosales-Cooper	NRO/FO	
Tom Scarbrough	DE	
Joseph Williams	ARP	Sunday (3/13) AM
Russell Chazell	DNRL	
Jerry Hale	DNRL	
Michelle Hart	DSER	
Michael Mazaika	DSER	
Steve Bloom	DNRL	Sat 10hrs.
Alice Stieve	DSER	
Dogan Seber	DSER	Monday PM/Tues AM
Rebecca Karas	DSER	
Cliff Munson	DSER	
Kevin Quinlan	DSER	
Dave Brown	DSER	
Stephanie Devlin	DSER	
Yong Li	DSER	
Dan Barnhurst	DSER	not called yet
Nebiyu Tiruneh	DSER	not called yet
Edward Fuller	DSRA	

From: [PMDAInfoNotice Resource](#)
To: [NRR Distribution](#)
Subject: COMMISSION MEETING TO ADDRESS EVENTS IN JAPAN - TODAY 9:00 AM
Date: Monday, March 21, 2011 8:57:22 AM

- PMDA INFORMATION NOTICE -
Monday, March 21, 2011

IN NUMBER: 11-032

On **Monday, March 21, 2011**, the NRC will hold a Commission Meeting to address the ongoing nuclear events at the Fukushima Nuclear Reactor site in Japan. The meeting is scheduled to convene at **9:00 a.m.** in the One White Flint North (OWFN) Commission Hearing Room. **Interested staff is encouraged to view the proceedings at one of the following locations:**

- Two White Flint North (TWFN) auditorium
- TWFN exhibit area
- Cable Channel 46 and 47 throughout the White Flint North Complex

In addition, NRR has set up viewing capabilities in the O13-D20 and O13-B4 conference rooms

Bryan Champion, Chief
Information Technology Branch
Program Management, Policy Development
and Analysis Staff
Office of Nuclear Reactor Regulation

137

-OTS

From: [NRC Announcement](#)
To: [NRC Announcement](#)
Subject: Event: NRC Viewing of the Commission Meeting on the Japan Event
Date: Friday, March 18, 2011 3:50:00 PM

NRC Daily Announcements

Highlighted Information and Messages



Friday March 18, 2011 -- Headquarters Edition

[Event: NRC Viewing of the Commission Meeting on the Japan Event](#)

Event: NRC Viewing of the Commission Meeting on the Japan Event

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- Cable Channel 46 and 47 throughout the White Flint North Complex
- TWFN Building O-2 B5
- OWFN Building - O-3 B4
- Executive Boulevard Building - 1B15
- Twinbrook Building - 5E01
- Church Street Building - 2C19
- Gateway Building - 04B2
- Region I*
- Region II*
- Region III*
- Region IV*
- Technical Training Center*

*Regional and TTC staff will be notified of the VTC viewing location by their VTC coordinator.

For more information about event viewing locations, contact Jason Wright at 415-5446 or Christine Kundrat at 415-6130.



(2011-03-18 00:00:00.0)

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[Frequently Asked Questions About the NRC Daily Announcements Email](#)

C/138

- NIKK
From: [Lupold, Timothy](#)
To: [Ruland, William](#); [Meighan, Sean](#)
Cc: [Thomas, Brian](#); [Taylor, Robert](#); [Lubinski, John](#)
Subject: Rob Taylor Availability
Date: Friday, March 18, 2011 11:56:09 AM

Bill/Sean. Rob Taylor is willing to go to Japan to serve in the capacity discussed at the standup LT meeting. He has a Q clearance and current passport.

This information has been cleared through DCI's acting Deputy Director, Brian Thomas.

Timothy Lupold, Chief
Piping & NDE Branch
Office of Nuclear Reactor Regulation
09H5
301-415-6448

e/139

NTK
From: [Taylor, Robert](#)
To: [Lupold, Timothy](#); [Ruland, William](#); [Meighan, Sean](#)
Cc: [Thomas, Brian](#); [Lubinski, John](#)
Subject: RE: Rob Taylor Availability
Date: Friday, March 18, 2011 11:58:13 AM

I also have significant spent fuel and SFP experience from my time in DSS/SRXB. I am also up to speed on the events due to my time in the Ops Center serving as the Technical Briefer for OPA.

Regards,
Rob

NTK
From: Lupold, Timothy
Sent: Friday, March 18, 2011 11:56 AM
To: Ruland, William; Meighan, Sean
Cc: Thomas, Brian; Taylor, Robert; Lubinski, John
Subject: Rob Taylor Availability

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Timothy Lupold, Chief
Piping & NDE Branch
Office of Nuclear Reactor Regulation
09H5
301-415-6448

C/140

From: Grobe, Jack - NRR
To: Sheron, Brian; Uhle, Jennifer; Wiggins, Jim; Evans, Michele; Miller, Charles; Haney, Catherine; Dorman, Dan; Moore, Scott; Johnson, Michael; Holahan, Gary; Leeds, Eric; Grobe, Jack; Boger, Bruce; Brenner, Eliot; Hayden, Elizabeth; Schmidt, Rebecca; Doane, Margaret; Mamish, Nader; Dyer, Jim; Brown, Milton; Hackett, Edwin; Piccone, Josephine; Wilson, George; Harrison, Donnie; Kammerer, Annie; Collins, Timothy; Milligan, Patricia; Salley, MarkHenry; Bowman, Eric
Cc: Borchardt, Bill; Weber, Michael; Virgilio, Martin; Ash, Darren; Burns, Stephen; Vietti-Cook, Annette; Andersen, James; Giitter, Joseph; Howe, Allen; Nelson, Robert; McGinty, Tim; Blount, Tom; Holian, Brian; Gallagher, Johanna; Brown, Milton; Cheok, Michael; Lee, Samson; Hiland, Patrick; Skeen, David; Ruland, William; Sheron, Brian; Lubinski, John
Subject: Support and Logistics for the Japan Commission Meeting
Date: Friday, March 18, 2011 6:06:07 PM

Ladies and Gents,

We want to ask your support for several aspects of the Commission meeting on Monday morning regarding the situation in Japan.

First, the only staff at the Commission table will be Bill Borchardt.

In the well, we anticipate having the two available DEDOs (I understand that Mike Weber will be on shift) and one representative from the front office of each of the following offices (either the office director or deputy)

NRR, NRO, NSIR, RES, NMSS, FSME, OPA, OCA, OIP, CFO, ACRS

Annette Vietti-Cook has indicated that she will reserve the "quadrant" of seats nearest the microphone (on the left side of the room as the Commissioners would see it) for NRC staff. As I understand it, the right side will be for reporters and the central area will be open for general public.

In the area for NRC staff, there will be 39 seats.

From a staff perspective, we would like the highest priority available for the following individuals whom Bill will call upon to answer (on camera) any more detailed questions on the indicated subjects. Bill will have the list and ask for this person to respond to any question where he wants more detailed support. Some of these folks will likely already be in the well. The microphone has been moved to allow television camera access to any individual answering questions.

Protection Against Natural Disasters – Gary Holahan
Station Blackout – George Wilson
Severe Accident and Spent Fuel Pool Accident Progression – Jennifer Uhle
Radiological Consequence Analysis – Cathy Haney
Hydrogen Fires and Explosions – MarkHenry Salley
Public Stakeholder Outreach – Eliot Brenner
State Outreach – Josie Piccone
International Interactions – Margie Doane
10CFR50.54(hh)(2)/B.5.b – Eric Bowman
Seismic Issues, Tsunami Issues, GI-199 – Annie Kammerer
Mark I containment issues – Tim Collins
Emergency Preparedness – Trish Milligan
Emergency Operating procedures/SAMGs – Donnie Harrison

C/141

We understand that these people are available for the meeting. If not, please coordinate with Allen Howe to provide an equivalently capable individual.

That leaves 26 seats in the staff section for TAs and other Division Directors and above who should attend the meeting.

SECY is arranging for an e-mail to be sent out to the staff to indicate where televisions are available for other interested staff to observe the Commission meeting.

Thanks for your support.

Jack Grobe, Deputy Director
for Engineering and Corporate Support
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission

WAP
From: [Stuchell, Sheldon](#)
To: [NRR DPR PLPB Distribution](#)
Subject: John's Status
Date: Monday, March 21, 2011 12:58:53 PM

All,

Just a quick update concerning John's availability.

Due to the continuing events in Japan, and the NRC's manning of the Operations Center in TWFN, John has been called upon to support the Ops Ctr. I'll be acting today and tomorrow, and Michelle will be acting on Wednesday.

If you need anything, just let us know.

Thanks,
Sheldon

Sheldon Stuchell
Sr. Project Manager
Division of Policy & Rulemaking
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission

301-415-1847 work

c/142

See, Kenneth

From: See, Kenneth
Sent: Friday, March 18, 2011 12:32 PM
To: McBride, Mark
Subject: RE: Groundwater Questions re Nuclear Power Plant Safety

Thanks Mark,

Ken

From: McBride, Mark
Sent: Friday, March 18, 2011 12:00 PM
To: See, Kenneth
Subject: Groundwater Questions re Nuclear Power Plant Safety

Ken – Here are some thoughts about the effects of groundwater levels on buoyancy issues during plant licensing. -- Mark

Mark McBride - Hydrologist
NRC - Hydrologic Engineering Branch (NRO/DSER/RHEB)
Office T7F32, Mail Stop T7E18
(301) 415-0670

See, Kenneth

From: Khanna, Meena
Sent: Friday, March 18, 2011 12:55 PM
To: Jones, Henry
Cc: Raione, Richard; Chokshi, Nilesh; See, Kenneth; Wilson, George
Subject: RE: QA and Messages Regarding tsunami.docx

Great thanks so much, Henry

From: Jones, Henry
Sent: Friday, March 18, 2011 12:53 PM
To: Khanna, Meena
Cc: Raione, Richard; Chokshi, Nilesh; See, Kenneth
Subject: RE: QA and Messages Regarding tsunami.docx

Meena,

Looks fine – it's consistent with our Q&A.

Henry

From: Khanna, Meena
Sent: Friday, March 18, 2011 12:20 PM
To: Jones, Henry
Subject: FW: QA and Messages Regarding tsunami.docx
Importance: High

Henry, I did the best that I could...any comments or additions, pls?

From: [Anthony J Crone](mailto:Anthony.J.Crone@usgs.gov)
To: Len.Ackland@colorado.edu; benz@usgs.gov; jbowen4850@msn.com; bradley@usgs.gov; rbriggs@usgs.gov; bb.claus@yahoo.com; jeffcoburn@aol.com; icreber@comcast.net; cdccoburn@aol.com; afrankel@usgs.gov; [Ryan D Gold](mailto:Ryan.D.Gold); [Peter J Haeussler](mailto:Peter.J.Haeussler); jeff.johnston@earthlink.net; pennyjohnston@comcast.net; kkellogg@usgs.gov; kklassen@gnet.com; [Koehler, Richard D \(DNR\)](mailto:Koehler, Richard D (DNR)); billlund@utah.gov; I.MacDonnell@comcast.net; I.MacDonnell@comcast.net; [Michael Machette](mailto:Michael.Machette); [Jill McCarthy](mailto:Jill.McCarthy); [Munson, Clifford](mailto:Munson.Clifford); anelson@usgs.gov; ccramer@memphis.edu; [Jaume". Steven C](mailto:Jaume); [Bauer, Laurel](mailto:Bauer.Laurel); rbriggs@usgs.gov; [Suzanne Hecker](mailto:Suzanne.Hecker); [Li, Yong](mailto:Li.Yong); [Anthony J Crone](mailto:Anthony.J.Crone); [Plaza-Toledo, Meralis](mailto:Plaza-Toledo.Meralis); [Plaza-Toledo, Meralis](mailto:Plaza-Toledo.Meralis); [Rodriguez, Ricardo](mailto:Rodriguez.Ricardo); [Rodriguez, Ricardo](mailto:Rodriguez.Ricardo); [Xi, Zuhan](mailto:Xi.Zuhan); [Xi, Zuhan](mailto:Xi.Zuhan); rbriggs@usgs.gov; [Kathleen M Haller](mailto:Kathleen.M.Haller); [Jaume". Steven C](mailto:Jaume); cmueller@usgs.gov; [Mark D Petersen](mailto:Mark.D.Petersen); [Anthony J Crone](mailto:Anthony.J.Crone); [Stirewalt, Gerry](mailto:Stirewalt.Gerry); [Graizer, Vladimir](mailto:Graizer.Vladimir); [Plaza-Toledo, Meralis](mailto:Plaza-Toledo.Meralis); rbriggs@usgs.gov; shartzell@usgs.gov; [Anthony J Crone](mailto:Anthony.J.Crone); [Yuehua Zeng](mailto:Yuehua.Zeng); [David M Boore](mailto:David.M.Boore); [Stirewalt, Gerry](mailto:Stirewalt.Gerry); [Tabatabai, Sarah](mailto:Tabatabai.Sarah); [Koji Okumura](mailto:Koji.Okumura); [Susan Olig@URSCorp.com](mailto:Susan.Olig@URSCorp.com); personius@usgs.gov; [Mark D Petersen](mailto:Mark.D.Petersen); mark.quigley@canterbury.ac.nz; rreynolds@usgs.gov; mauratrice@comcast.net; cruleman@usgs.gov; dschwartz@usgs.gov; [Eugene S Schweig](mailto:Eugene.S.Schweig); [gordon seitz](mailto:gordon.seitz); wstephens@usgs.gov; [Stirewalt, Gerry](mailto:Stirewalt.Gerry); wald@usgs.gov; [Robert L Wesson](mailto:Robert.L.Wesson); [Mary Lou. Zoback](mailto:Mary.Lou.Zoback)
Subject: Web site with information on Japanese nuclear reactors
Date: Friday, March 18, 2011 12:15:28 PM

FYI, this website has good, up-to-date information on the status of events at the Japanese nuclear reactors.

<http://mitnse.com/>

Anthony J. Crone
Research Geologist
Geologic Hazards Science Center
U.S. Geological Survey
MS. 966, P.O. Box 25046
Denver, Colorado 80225-0046

=====
Phone: (303) 273-8591; fax: (303) 273-8600;
E-mail: crone@usgs.gov
=====

NRR

From: [Schwarz, Sherry](#) on behalf of [Leeds, Eric](#)
To: [NRR Distribution](#)
Subject: Japanese Event Response and Available Resources
Date: Monday, March 21, 2011 6:03:23 PM

I want to echo the Commission and Bill Borchardt's words of appreciation and admiration spoken of the staff during the Commission Meeting this morning. NRR has provided tremendous support over the last week, and we will continue our efforts in the weeks, months, and years to come.

In our continued efforts to assist with responding and centralizing information related to events in Japan, we've added a new feature to the homepage of the NRR internal SharePoint site, "[Japan Event Information](#)." All of the information under this title has been publicly released or has been approved to be used publicly in our responses to related questions that might arise. Included in the list is a link to the NRC public web site, "[NRC Actions on Japan's Emergency](#)," where you may find information related to NRC actions, including news releases, NRC Blog posts, Frequently Asked Questions (FAQs), and other related information and sources. Please be sure to check these resources frequently, as information is being updated daily.

In addition, I've assigned Bob Nelson, Deputy Director, Division of Operating Reactor Licensing (DORL), as the NRR Coordinator for External Communications related to NRR's response to the recent events in Japan. Assisting Nelson will be Sean Meighan and Quynh Nguyen from the NRR front office, Eric Thomas from Division of Inspection and Regional Support, Eric Oesterle from the Office of New Reactors and a communications "tiger team" formulated in DORL headed by Mike Markley. Harold Chernoff will also provide assistance as needed. Nelson and his team will be responsible for coordinating the development and review of related Qs & As and coordinating the response to related controlled correspondence tasked to NRR, including related 2.206 petitions.

Please forward all of your requests for support in this area, to [Nelson](#), 301-415-1453.

Thank you all for your continued support!

Eric

- NRR SharePoint Site: <http://portal.nrc.gov/edo/nrr/default.aspx>
- NRC Public Website: NRC Actions on Japan's Emergency:
<http://www.nrc.gov/japan/japan-info.html>

9/144

See, Kenneth

From: Khanna, Meena
Sent: Friday, March 18, 2011 1:03 PM
To: Mahoney, Michael; Gratton, Christopher; Boska, John
Cc: Wilson, George; Hiland, Patrick; Skeen, David; Wescott, Rex; See, Kenneth
Subject: QA and Messages Regarding Flooding
Attachments: QA and Messages Regarding Flooding KSeeRWescott.docx

All,
Here is a 1-pager on flooding in support of the Comm. Briefing...pls call us if you need any other information.

thanks

Flooding Issues:

1. General Design Criterion 2 (GDC 2), 10CFR50, requires, in part, that structures, systems, and components important to safety be designed to withstand the effects of natural phenomena such as floods, tsunamis, and seiches without loss of capability to perform their safety functions. Design bases for these SSCs are also required to reflect:
 - a. Appropriate consideration of the most severe of the natural phenomena that have been historically reported for the site and surrounding region, with sufficient margin for the limited accuracy and quantity of the historical data and the period of time in which the data have been accumulated.
 - b. Appropriate combinations of the effects of normal and accident conditions with the effects of the natural phenomena.
 - c. The importance of the safety functions to be performed.
2. Almost all design basis floods for presently operating plants were based on the use of deterministic methods such as the probable maximum flood, precipitation, hurricane, and seiche as well as postulated undersea earthquakes and landslides. Those standards have been monitored, and were found to be sufficient and appropriate. In order to impose new requirements on existing plants, the NRC must be able to justify the new requirements in accordance with the "Backfit Rule" (10 CFR 50.109)

Questions and Answers for Flooding Issues

Does the NRC consider severe floods in the design of nuclear power plants?

Yes. NRC regulations require that nuclear power plants are capable of shutting down and maintaining a safe shutdown condition under severe flooding situations. Safety-related Structures, Systems and Components (SSCs) of Nuclear reactors in the U.S. are required to withstand the design basis flood (DBF). The design basis flood may be caused by the following natural Phenomena:

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- 3) Floods from upstream dam failure or a combination of upstream dam failures.
- 4) Failure of On-site Water Control or Storage Structures (i.e. tanks).
- 5) Storm Surge, Seiche and Tsunami including wave effects. **(See Tsunami Q&A Sheet)**
- 6) Flooding caused by ice effects (i.e. ice dams both upstream and downstream).
- 7) Floods caused by diversions of stream channels toward the site.
- 8) Other site specific cause(s) identified by the applicant and/or the NRC.

What about droughts and conditions which lead to low water? Are these considered?

Yes. Impacts to the plant from low water conditions brought about by ice effects, downstream dam breach, and channel diversions away from the site are reviewed as well to ensure the plant remains safe under these scenerios.

Periods of long rainfall can cause the groundwater elevation to rise which can cause structures such as deeply embedded tanks to fail due to buoyancy. Are nuclear power plants designed to withstand this effect?

Yes. Worst-case groundwater levels are estimated for each site and the effects of these levels are considered in the design of the plant to ensure the plant remains safe under these conditions.

Some of the Reports from the National Weather Service used to estimate the design precipitation are 30-40 years old. Are these estimates still valid?

The NRC has funded research by the U.S. Bureau of Reclamation to review the information and methods developed by the National Weather Service and the U.S. Army Corps of Engineers (HMR 51), focusing on South and North Carolina. To date, reviews of precipitation records from extreme storm events (e.g., tropical storms, hurricanes) since the publication of HMR 51 does not indicate any exceedance or potential for exceedance of those precipitation (PMP) estimates in this region. We have not seen any information or data that would indicate that HMR precipitation (PMP) estimates for the U.S. have been exceeded.

Martin, Karnisha

From: See, Kenneth
Sent: Friday, March 18, 2011 1:18 PM
To: Chokshi, Niles; Raione, Richard; Cook, Christopher; Jones, Henry; Wilson, George; Flanders, Scott; Giacinto, Joseph
Subject: FW: QA and Messages Regarding Flooding
Attachments: QA and Messages Regarding Flooding KSeeRWescottCookGiacinto.docx

Thanks to everyone for their help. Meena already has a copy.

See attached Q&A for flooding

Ken

From: See, Kenneth
Sent: Friday, March 18, 2011 1:17 PM
To: Khanna, Meena
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The latest and greatest version.

Ken See

From: Khanna, Meena
Sent: Friday, March 18, 2011 1:06 PM
To: See, Kenneth
Subject: RE: QA and Messages Regarding Flooding

Ok thanks Ken

From: See, Kenneth
Sent: Friday, March 18, 2011 1:04 PM
To: Khanna, Meena
Subject: RE: QA and Messages Regarding Flooding

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From: Khanna, Meena
Sent: Friday, March 18, 2011 1:03 PM
To: Mahoney, Michael; Gratton, Christopher; Boska, John
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C/146

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See, Kenneth

From: Wilson, George
Sent: Friday, March 18, 2011 1:19 PM
To: See, Kenneth; Chokshi, Nilesh; Raione, Richard; Cook, Christopher; Jones, Henry; Flanders, Scott; Giacinto, Joseph
Subject: RE: QA and Messages Regarding Flooding

I second that thanks for the great help and support it is greatly appreciated

From: See, Kenneth
Sent: Friday, March 18, 2011 1:18 PM
To: Chokshi, Nilesh; Raione, Richard; Cook, Christopher; Jones, Henry; Wilson, George; Flanders, Scott; Giacinto, Joseph
Subject: FW: QA and Messages Regarding Flooding

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From: See, Kenneth
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To: See, Kenneth
Subject: RE: QA and Messages Regarding Flooding

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To: Khanna, Meena
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To: Mahoney, Michael; Gratton, Christopher; Boska, John
Cc: Wilson, George; Hiland, Patrick; Skeen, David; Wescott, Rex; See, Kenneth
Subject: QA and Messages Regarding Flooding

All,
Here is a 1-pager on flooding in support of the Comm. Briefing...pls call us if you need any other information.

thanks

See, Kenneth

From: Wescott, Rex
Sent: Friday, March 18, 2011 1:59 PM
To: See, Kenneth
Subject: RE: QA and Messages Regarding Flooding

OK, I agree

From: See, Kenneth
Sent: Friday, March 18, 2011 1:49 PM
To: Wescott, Rex
Subject: RE: QA and Messages Regarding Flooding

Based on expert opinion of maximum magnitude...it was used for earthquakes...i.e. maximum credible earthquake leading to maximum credible tsunami. They now use PSHA.

Given the short period of time to develop Q&A we cannot expect perfection...the document simply reflects a consensus view.

Ken

From: Wescott, Rex
Sent: Friday, March 18, 2011 1:31 PM
To: See, Kenneth
Subject: RE: QA and Messages Regarding Flooding

Ken,

Thanks, but be prepared to define "maximum credible"

Rex

From: See, Kenneth
Sent: Friday, March 18, 2011 1:27 PM
To: Wescott, Rex
Subject: FW: QA and Messages Regarding Flooding

Rex,

I left you off...sorry.

Ken

From: See, Kenneth
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To: Khanna, Meena
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The latest and greatest version.

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Subject: QA and Messages Regarding Flooding

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See, Kenneth

From: Dreisbach, Jason
Sent: Friday, March 18, 2011 3:51 PM
To: Chokshi, Niles; See, Kenneth
Cc: McKirgan, John; Flanders, Scott; Kammerer, Annie; Bagchi, Goutam; Ader, Charles; Lombard, Mark; Khanna, Meena; Vettori, Robert; Dinh, Thinh; Lee, Samuel
Subject: RE: Qs on Seismic-induced flooding and fire
Attachments: Seismic and Fire QA.docx

Here are the seismic/fire Q&As...

From: Lee, Samuel
Sent: Friday, March 18, 2011 3:48 PM
To: Chokshi, Niles; See, Kenneth
Cc: McKirgan, John; Flanders, Scott; Kammerer, Annie; Bagchi, Goutam; Ader, Charles; Lombard, Mark; Khanna, Meena; Dreisbach, Jason
Subject: RE: Qs on Seismic-induced flooding and fire

Niles/Ken,
Attached provides SBP's suggested Q&As on seismically-induced internal flooding for the upcoming Commission meeting. Jason Dreisbach will send you our suggested Q&As on seismically-induced fire, separately.
sam

Samuel S. Lee, Chief
Balance of Plant Branch 2
Division of Safety Systems & Risk Assessment
Office of New Reactors
U.S. Nuclear Regulatory Commission
301-415-0155
samuel.lee@nrc.gov

From: Chokshi, Niles
Sent: Friday, March 18, 2011 10:10 AM
To: Lee, Samuel; McKirgan, John
Cc: See, Kenneth; Flanders, Scott; Kammerer, Annie; Bagchi, Goutam; Ader, Charles; Khanna, Meena
Subject: RE: Qs on Seismic-induced flooding and fire

Sam,

Questions were verbal and general. I tried to characterize them in my e-mail. If it helps, let's have a phone call - you, me, and Ken, we can formulate questions together..

Thanks,

Niles

From: Lee, Samuel
Sent: Friday, March 18, 2011 10:02 AM
To: Chokshi, Niles; McKirgan, John
Cc: See, Kenneth; Flanders, Scott; Kammerer, Annie; Bagchi, Goutam; Ader, Charles; Khanna, Meena
Subject: RE: Qs on Seismic-induced flooding and fire

Nilesh,
Please forward me the questions that GXA asked during your briefing with him.
sam

Samuel S. Lee, Chief
Balance of Plant Branch 2
Division of Safety Systems & Risk Assessment
Office of New Reactors
U.S. Nuclear Regulatory Commission
301-415-0155
samuel.lee@nrc.gov

From: Chokshi, Nilesh
Sent: Friday, March 18, 2011 9:51 AM
To: McKirgan, John
Cc: See, Kenneth; Flanders, Scott; Kammerer, Annie; Bagchi, Goutam; Ader, Charles; Khanna, Meena; Lee, Samuel
Subject: Qs on Seismic-induced flooding and fire

John,

As we discussed, during my briefing with Comm. Apostolakis , he asked questions regarding how we look at seismic-induced internal floods. Internal floods are handled in the review of SRP Sections 3.4.1 and 3.4.2. I am not sure about seismic-induced fire during the design review. I know how we do both of these things in the beyond design basis space. So we need your help in developing answers to these questions. Ken See of my staff is working on these questions and I will ask him to contact Sam. These answers will also go in a Qs and As document being put together by Annie. We need these answers today. There is a Commission briefing on Monday morning.

Thanks,

Nilesh

Dep. Dir., Div. of Site & Environmental Reviews
Office of New Reactors
USNRC
MS T-07F3
Washington, DC 20555
(301)-415-1634

Q: How does the NRC address seismic-induced fire?

A: The NRC's rules for fire protection are independent of the event that caused the fire. The power plant operators are required to evaluate all the fire hazards in the plant and make sure a fire will not prevent a safe plant shutdown. The NRC's guidance says that power plant operators should assume that a fire can happen at any time. The rules do not require specific consideration of a fire that starts as a result of an earthquake. In addition, we do not require analysis of more than one fire at a time at one reactor.

Q: Does the NRC require the fire protection water supply system be designed to withstand an earthquake?

A: Yes, NRC's guidance recommends all areas of the plant that contain equipment required to safely shutdown have at least 2 standpipes for firefighting and a source of water that will work after a severe earthquake. NRC requires that there are enough pumps, even assuming the largest pump fails during a severe earthquake or there is a loss of power, to supply the fire protection system. This can be accomplished, for example, by providing either electric-motor-driven fire pumps and separate diesel-driven fire pumps or two or more electric-motor-driven fire pumps that can survive a severe earthquake or a loss of power.

The NRC's guidance recommends that fire detection, alarm, and suppression systems function as designed after less severe earthquakes that are expected to occur once every 10 years. The guidance recommends plant operators in areas of high seismic activity consider the need to design those fire protection systems to function after a severe earthquake.

Q: How are safe shutdown equipment protected from an oil spill which can cause potential fire?

A: The pumps that are used to pump water through the reactor use oil as a lubricant. The NRC requires that plants have a way to collect this oil. The NRC requires this oil collection system to be designed so that a severe earthquake does not cause the oil to start a fire.

Q: How are safe shutdown equipment protected from a hydrogen fire?

A: The NRC recommends that pipes that contain hydrogen are designed to withstand a severe earthquake. This design includes a separate pipe wrapped around the hydrogen pipe that vents any leaked hydrogen to the outside.

Raione, Richard

From: See, Kenneth
Sent: Friday, March 18, 2011 3:54 PM
To: Khanna, Meena; Cook, Christopher; Chokshi, Nilesh; Jones, Henry; Raione, Richard; Wescott, Rex; Joe Giacinto
Subject: Minor edits to the document have been made
Attachments: QA and Messages Regarding Flooding KSeeRWescottCookGiacinto.docx

Meena,

See attached.

Ken

Kenneth R. See, P.E.
Senior Hydrologist
U.S. Nuclear Regulatory Commission
Division of Site and Environmental Reviews
Hydrologic Engineering Branch
(301)415-1508
kenneth.see@nrc.gov

0517

Flooding Issues:

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Martin, Karnisha

From: See, Kenneth
Sent: Friday, March 18, 2011 4:34 PM
To: Kanney, Joseph; Nicholson, Thomas; Dion, Jeanne; Cook, Christopher
Cc: Randall, John; Ott, William; Chokshi, Nilesh; Raione, Richard
Subject: RE: Revision to PMP Narrative

I agree. I think the term "most" of the existing plants were designed for the PMP/PMF is applicable, but not all.

Ken

From: Kanney, Joseph
Sent: Friday, March 18, 2011 4:26 PM
To: Nicholson, Thomas; See, Kenneth; Dion, Jeanne
Cc: Randall, John; Ott, William; Chokshi, Nilesh; Raione, Richard
Subject: RE: Revision to PMP Narrative

I think perhaps we are getting carried away with our focus on PMP. PMP is only one part of the flooding analysis and probably the not weakest link. Recall that the design basis floods for many of the existing plants were determined from area-discharge envelope curves, not from an analysis that routed the PMP through the basin and down to the site. I'm more comfortable with the level of conservatism in PMP than I am with the level of conservatism in the envelope curve approach.

-- Joe

Joseph Kanney, Ph.D.
Hydrogeologist
Office of Nuclear Regulatory Research
U.S. Nuclear Regulatory Commission
Mail Stop CSB-2A07M
11555 Rockville Pike
Rockville, MD 20852-2738

joseph.kanney@nrc.gov
Phone: 301-251-7600
Fax: 301-251-7422

From: Nicholson, Thomas
Sent: Friday, March 18, 2011 4:01 PM
To: See, Kenneth; Dion, Jeanne
Cc: Randall, John; Kanney, Joseph; Ott, William; Chokshi, Nilesh; Raione, Richard
Subject: Revision to PMP Narrative

Ken:

I just spoke to John England, U.S. Bureau of Reclamation concerning our response to the NRO information request. He would like a one-word addition to the narrative to say the Southeast U.S. rather than just the U.S.

This is his suggested wording:

Some of the Reports from the National Weather Service used to estimate the design precipitation are 30-40 years old. Are these estimates still valid?

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Please make whatever changes are possible at this time.

Thanks Tom

Thomas J. Nicholson, Senior Technical Advisor
U.S. Nuclear Regulatory Commission
Office of Nuclear Regulatory Research
Mail Stop CSB 2-A07
11555 Rockville Pike
Rockville, MD 20852
Tel: (301) 251-7498
Fax: (301) 251-7422
E-mail: Thomas.Nicholson@nrc.gov

Martin, Karnisha

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Sent: Friday, March 18, 2011 4:37 PM
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Subject: Flooding Q&A
Attachments: QA and Messages Regarding Flooding KSeeRWescottCookGiacintoKanney.docx

Meena,

This is the last update today.

Thanks

Ken

Kenneth R. See, P.E.
Senior Hydrologist
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Division of Site and Environmental Reviews
Hydrologic Engineering Branch
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 - b. Appropriate combinations of the effects of normal and accident conditions with the effects of the natural phenomena.
 - c. The importance of the safety functions to be performed.
2. Design basis floods for most of the present fleet of operating reactors were calculated using deterministic methods to determine the maximum credible flood levels at the site. These deterministic methods include the site specific calculation of parameters such as the probable maximum precipitation, which is defined as the theoretically greatest depth of precipitation for a given duration that is physically possible over a particular drainage basin. Other potential flooding hazards such as flooding due to storm surge, river flooding, coastal flooding including tsunamis, are evaluated at each site using maximum credible levels from each hazard. Over the life of the operating reactor, if new information becomes available that could affect the design basis, licensees are required to evaluate the new information. Based on this review, if needed, licensees are required to take appropriate mitigation measures, update their final safety analysis report and submit it to the NRC for review and approval.
3. In order to impose new requirements on existing plants, the NRC must be able to justify the new requirements in accordance with the "Backfit Rule" (10 CFR 50.109).

Questions and Answers for Flooding Issues

Does the NRC consider severe floods in the design of nuclear power plants?

Yes. NRC regulations require that nuclear power plants are, at all times, capable of safely shutting down and maintaining a safe shutdown condition under severe flooding situations. Safety-related Structures, Systems and Components (SSCs) of Nuclear reactors in the U.S. are required to withstand the design basis flood (DBF). The design basis flood may be caused by the following natural Phenomena:

- 1) Intense rainfall occurring at the site (known as local intense precipitation).
- 2) Intense rainfall (known as the Probable Maximum Precipitation) occurring on other areas of the watershed leading to riverine or coastal flooding (known as Probable Maximum Flood" or "PMF".

- 3) Floods from upstream dam failure or a combination of upstream dam failures.
- 4) Failure of On-site Water Control or Storage Structures (i.e. tanks).
- 5) Storm Surge, Seiche and Tsunami including wave effects. **(See Tsunami Q&A Sheet)**
- 6) Flooding caused by ice effects (i.e. ice dams both upstream and downstream).
- 7) Floods caused by diversions of stream channels toward the site.
- 8) Other potential site specific flood hazard(s).

What about droughts and conditions which lead to low water? Are these considered?

Yes. Impacts to the plant from low water conditions brought about by ice effects, downstream dam breach, tsunamis, hurricanes and channel diversions away from the site are reviewed to ensure the plant remains safe under these scenerios.

Periods of long rainfall can cause the groundwater elevation to rise which can cause structures such as deeply embedded tanks to fail due to buoyancy. Are nuclear power plants designed to withstand this effect?

Yes. Worst-case groundwater levels are estimated for each site and the impacts of these levels are considered in the design of the plant to ensure the plant remains safe under these conditions. During the safety review, impacts due to groundwater levels and other hydrodynamic effects on the design bases of plant foundations and other safety-related structures systems and components (SSCs) are evaluated. Impacts to a safety-related structure such as a deeply embedded tank or a structure containing a deeply embedded tank are considered in the safety review.

Some of the Reports from the National Weather Service used to estimate the design precipitation are 30-40 years old. Are these estimates still valid?

The NRC has funded research by the U.S. Bureau of Reclamation to review the information and methods developed by the National Weather Service and the U.S. Army Corps of Engineers (HMR 51), focusing on South and North Carolina. To date, reviews of precipitation records from extreme storm events (e.g., tropical storms, hurricanes) since the publication of HMR 51 does not indicate any exceedance or potential for exceedance of those precipitation (PMP) estimates in this region. We have not seen any information or data that would indicate that HMR precipitation (PMP) estimates for the U.S. have been exceeded. As expected, individual point rainfall gauges have recorded rainfall amounts that have exceeded these areal estimates.

See, Kenneth

From: Khanna, Meena
Sent: Friday, March 18, 2011 4:50 PM
To: Wilson, George; Chokshi, Nilesh; Stutzke, Martin; Farzam, Farhad; Mathew, Roy; Matharu, Gurcharan; Kammerer, Annie; Munson, Clifford; Jones, Henry; See, Kenneth; Wescott, Rex; Hiser, Allen; Pelton, David; Terao, David; Cook, Christopher; Graves, Herman; Pires, Jose; Beasley, Benjamin; Murphy, Andrew; Uribe, Juan; Markley, Michael; Hiser, Allen
Subject: URLs for articles addressed at meeting...

As requested, here are the url's for the two articles that we addressed at today's meeting..thanks again to all of you for all of the tremendous support!

http://www.msnbc.msn.com/id/42103936/ns/world_news-asiapacific/

From: Beasley, Benjamin
Sent: Friday, March 18, 2011 3:35 PM
To: Khanna, Meena; Wilson, George
Subject: URL for article

http://www.huffingtonpost.com/2011/03/18/nuclear-plants-regulators-risk_n_837504.html

See, Kenneth

From: Khanna, Meena
Sent: Friday, March 18, 2011 5:02 PM
To: See, Kenneth
Subject: RE: Flooding Q&A

Thanks for everything, Ken

From: See, Kenneth
Sent: Friday, March 18, 2011 4:37 PM
To: Khanna, Meena; Wilson, George
Cc: Cook, Christopher; Chokshi, Nilesh
Subject: Flooding Q&A

Meena,

This is the last update today.

Thanks

Ken

Kenneth R. See, P.E.
Senior Hydrologist
U.S. Nuclear Regulatory Commission
Division of Site and Environmental Reviews
Hydrologic Engineering Branch
(301)415-1508
kenneth.see@nrc.gov

See, Kenneth

From: Chokshi, Nilesh
Sent: Friday, March 18, 2011 5:04 PM
To: Lee, Samuel; See, Kenneth
Cc: McKirgan, John; Flanders, Scott; Kammerer, Annie; Bagchi, Goutam; Ader, Charles; Lombard, Mark; Khanna, Meena; Dreisbach, Jason
Subject: RE: Qs on Seismic-induced flooding and fire

Sam, Jason, and Ken,

Thanks so much for preparing Qs and As for us at a very short notice. I will feel lot better going into the Commission briefing having these answers.

Nilesh

From: Lee, Samuel
Sent: Friday, March 18, 2011 3:48 PM
To: Chokshi, Nilesh; See, Kenneth
Cc: McKirgan, John; Flanders, Scott; Kammerer, Annie; Bagchi, Goutam; Ader, Charles; Lombard, Mark; Khanna, Meena; Dreisbach, Jason
Subject: RE: Qs on Seismic-induced flooding and fire

Nilesh/Ken,
Attached provides SBP's suggested Q&As on seismically-induced internal flooding for the upcoming Commission meeting. Jason Dreisbach will send you our suggested Q&As on seismically-induced fire, separately.
sam

Samuel S. Lee, Chief
Balance of Plant Branch 2
Division of Safety Systems & Risk Assessment
Office of New Reactors
U.S. Nuclear Regulatory Commission
301-415-0155
samuel.lee@nrc.gov

From: Chokshi, Nilesh
Sent: Friday, March 18, 2011 10:10 AM
To: Lee, Samuel; McKirgan, John
Cc: See, Kenneth; Flanders, Scott; Kammerer, Annie; Bagchi, Goutam; Ader, Charles; Khanna, Meena
Subject: RE: Qs on Seismic-induced flooding and fire

Sam,

Questions were verbal and general. I tried to characterize them in my e-mail. If it helps, let's have a phone call - you, me, and Ken, we can formulate questions together..

Thanks,

Nilesh

From: Lee, Samuel
Sent: Friday, March 18, 2011 10:02 AM

class

To: Chokshi, Niles; McKirgan, John

Cc: See, Kenneth; Flanders, Scott; Kammerer, Annie; Bagchi, Goutam; Ader, Charles; Khanna, Meena

Subject: RE: Qs on Seismic-induced flooding and fire

Niles,

Please forward me the questions that GXA asked during your briefing with him.

sam

Samuel S. Lee, Chief

Balance of Plant Branch 2

Division of Safety Systems & Risk Assessment

Office of New Reactors

U.S. Nuclear Regulatory Commission

301-415-0155

samuel.lee@nrc.gov

From: Chokshi, Niles

Sent: Friday, March 18, 2011 9:51 AM

To: McKirgan, John

Cc: See, Kenneth; Flanders, Scott; Kammerer, Annie; Bagchi, Goutam; Ader, Charles; Khanna, Meena; Lee, Samuel

Subject: Qs on Seismic-induced flooding and fire

John,

As we discussed, during my briefing with Comm. Apostolakis, he asked questions regarding how we look at seismic-induced internal floods. Internal floods are handled in the review of SRP Sections 3.4.1 and 3.4.2. I am not sure about seismic-induced fire during the design review. I know how we do both of these things in the beyond design basis space. So we need your help in developing answers to these questions. Ken See of my staff is working on these questions and I will ask him to contact Sam. These answers will also go in a Qs and As document being put together by Annie. We need these answers today. There is a Commission briefing on Monday morning.

Thanks,

Niles

Dep. Dir., Div. of Site & Environmental Reviews

Office of New Reactors

USNRC

MS T-07F3

Washington, DC 20555

(301)-415-1634

See, Kenneth

From: Cook, Christopher
Sent: Friday, March 18, 2011 7:02 PM
To: See, Kenneth
Subject: RE: QA and Messages Regarding Flooding

OK. Just go back to GDC2.

U.S. nuclear power plants are built to withstand environmental hazards, including floods, earthquakes, and tsunamis. And the NRC requires that safety-significant structures, systems and components be designed to take into account the most severe natural phenomenon historically reported for the site and surrounding area. The NRC then adds a margin for error to account for the historical data's accuracy. This basically means that U.S. nuclear power plants are designed to be safe based on historical data from the area's maximum credible hazard. And the NRC remains attentive to any information that can be applied to U.S. reactors. Our focus is always on keeping plants in this country safe and secure.

From: See, Kenneth
Sent: Friday, March 18, 2011 1:45 PM
To: Cook, Christopher
Subject: FW: QA and Messages Regarding Flooding

fyi

From: Wescott, Rex
Sent: Friday, March 18, 2011 1:31 PM
To: See, Kenneth
Subject: RE: QA and Messages Regarding Flooding

Ken,

Thanks, but be prepared to define "maximum credible"

Rex

From: See, Kenneth
Sent: Friday, March 18, 2011 1:27 PM
To: Wescott, Rex
Subject: FW: QA and Messages Regarding Flooding

Rex,

I left you off...sorry.

Ken

From: See, Kenneth
Sent: Friday, March 18, 2011 1:17 PM
To: Khanna, Meena
Subject: RE: QA and Messages Regarding Flooding

The latest and greatest version.

Ken See

C/156

From: Khanna, Meena
Sent: Friday, March 18, 2011 1:06 PM
To: See, Kenneth
Subject: RE: QA and Messages Regarding Flooding

Ok thanks Ken

From: See, Kenneth
Sent: Friday, March 18, 2011 1:04 PM
To: Khanna, Meena
Subject: RE: QA and Messages Regarding Flooding

I have a update sending very shortly

Ken

From: Khanna, Meena
Sent: Friday, March 18, 2011 1:03 PM
To: Mahoney, Michael; Gratton, Christopher; Boska, John
Cc: Wilson, George; Hiland, Patrick; Skeen, David; Wescott, Rex; See, Kenneth
Subject: QA and Messages Regarding Flooding

All,
Here is a 1-pager on flooding in support of the Comm. Briefing... pls call us if you need any other information.

thanks

See, Kenneth

From: Khanna, Meena
Sent: Friday, March 18, 2011 7:56 PM
To: Chokshi, Nilesch
Cc: Wilson, George; Flanders, Scott; Holahan, Gary; Munson, Clifford; Karas, Rebecca; Cook, Christopher; Jones, Henry; See, Kenneth; Raione, Richard
Subject: RE: Update - Monday's Commission Briefing

Thanks, Nilesch. Yes, I sent an email to all the folks that we originally invited to the briefing and apologized for any inconvenience that we may have caused. I also sent out a cancellation scheduler. Again, the support that we received from NRO and RES will greatly assist Eric and Bill with the briefing and Q&A session. The 1-pagers were very helpful and thanks again for all of the great support.

Have a nice weekend,

Meena

From: Chokshi, Nilesch
Sent: Friday, March 18, 2011 7:16 PM
To: Khanna, Meena
Cc: Wilson, George; Flanders, Scott; Holahan, Gary
Subject: RE: Update - Monday's Commission Briefing

Meena.

I understand. Also, I presume that I do not need to spend my weekend preparing for questions and answers. Is this also true of the other NRO participants? I do not want them to spend their weekend about worrying and preparing for Qs and As they do not have to answer.

Thanks,

Nilesch

From: Khanna, Meena
Sent: Friday, March 18, 2011 6:48 PM
To: Chokshi, Nilesch
Cc: Wilson, George
Subject: Update - Monday's Commission Briefing
Importance: High

Nilesch,

I sincerely apologize, however, based on last minute direction that we got from NRR office management, and the limited space available in the Commr. Hearing Room, we have been asked to not attend the briefing in the Commr Hearing Room. Annie Kammerer has been requested to address questions on GSI-199, so if okay with you, I will ask her to contact you if she needs some support. Pls accept our apology and we really appreciate all of the great help that you have provided to us.

Thanks again and I apologize for any inconvenience.

Meena Khanna, Branch Chief
Mechanical and Civil Engineering Branch
Division of Engineering

c/157

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11555 Rockville Pike
Rockville, MD 20852
Tel: (301) 251-7498
Fax: (301) 251-7422

E-mail: Thomas.Nicholson@nrc.gov

MR
From: [Stuchell, Sheldon](#) *NR*
To: [Philpott, Stephen](#); [Cruz, Holly](#); [Golla, Joe](#); [Hon, Andrew](#); [Honcharik, Michelle](#); [Lenning, Ekaterina](#); [Miller, Barry](#); [Rowley, Jonathan](#)
Subject: Volunteers for Japan Event
Date: Friday, March 18, 2011 11:22:15 AM
Importance: High

All,

Tim McGinty just stopped by and told me they are putting together lists of folks that are willing to go to Japan to assist in the event. For the most part, they are looking for anyone with one or more of the following skills;

1. BWR operations
2. Health physics
3. Emergency operations / incident response

If you would like to have your name added to the list, please let me know today. Most of the deployments will be 2 weeks in length.

Sheldon

Sheldon Stuchell
Sr. Project Manager
Division of Policy & Rulemaking
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission

301-415-1847 work

C/158

MRK
From: [Nguyen, Quynh](#)
To: [Bahadur, Sher](#); [Blount, Tom](#); [Brown, Frederick](#); [Cheok, Michael](#); [Evans, Michele](#); [Galloway, Melanie](#); [Glitter, 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](#); [Thomas, Brian](#); [Westreich, Barry](#)
Cc: [Leeds, Eric](#); [Grobe, Jack](#); [Boger, Bruce](#)
Subject: IN 2011-05 (ML110760432) ... It's the IN regarding the Earthquake.
Date: Monday, March 21, 2011 10:30:09 AM
Attachments: [SecureZIP Attachments.zip](#)
Importance: High

It's the IN regarding the Earthquake.

MRK
From: RidsNrrOd Resource
Sent: Monday, March 21, 2011 10:03 AM
To: Meighan, Sean
Cc: Nguyen, Quynh
Subject: FW: IN 2011-05 (ML110760432)
Importance: High

MRK
From: Hawes, Cathy
Sent: Friday, March 18, 2011 4:56 PM
To: Albert, Ronald; Beaulieu, David; Blount, Tom; Foster, Jack; Furst, David; Gray, Kathy; Hawes, Cathy; Laura, Richard; Markley, Anthony; McGinty, Tim; Murphy, Martin; OGCMailCenter Resource; Peduzzi, Francis; Quay, Theodore; RidsEdoMailCenter Resource; RidsFsmeOd Resource; RidsNmssOd Resource; RidsNrrAdes Resource; RidsNrrAdro Resource; RidsNrrDpr Resource; RidsNrrMailCenter Resource; RidsNrrOd Resource; RidsOcaaMailCenter Resource; RidsOpaMail Resource; RidsRgn1MailCenter Resource; RidsRgn2MailCenter Resource; RidsRgn3MailCenter Resource; RidsRgn4MailCenter Resource; Rini, Brett; Stuchell, Sheldon; Tabatabai, Omid
Subject: IN 2011-05 (ML110760432)
Importance: High

Attached is NRC Information Notice 2011-05: Tohoku-Taiheiyou-Oki Earthquake Effects on Japanese Nuclear Power Plants, dated March 18, 2011.
This IN can also be found in ADAMs under Accession No. ML110760432

C/159

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION
WASHINGTON, DC 20555-0001

March 18, 2011

NRC INFORMATION NOTICE 2011-05: TOHOKU-TAIHEIYOU-OKI EARTHQUAKE
EFFECTS ON JAPANESE NUCLEAR POWER
PLANTS

ADDRESSEES

All holders of or applicants for operating licenses for nuclear power reactors under the provision of Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, "Domestic Licensing of Production and Utilization Facilities," except those who have permanently ceased operations and have certified that fuel has been permanently removed from the reactor vessel.

All holders of or applicants for a standard design certification, standard design approval, manufacturing license, limited work authorization, early site permits or combined license issued under 10 CFR Part 52, "Licenses, Certifications and Approvals for Nuclear Power Plants."

PURPOSE

The U.S. Nuclear Regulatory Commission (NRC) is issuing this information notice (IN) to inform addressees of effects of the Tohoku-Taiheiyou-Oki Earthquake on nuclear power plants in Japan. The NRC expects that recipients will review the information for applicability to their facilities and consider actions, as appropriate, to avoid similar problems. Suggestions contained in this IN are not NRC requirements; therefore, no specific action or written response is required.

DESCRIPTION OF CIRCUMSTANCES

The following summary of events is provided based on the best information available at this time. The situation in Japan regarding recovery efforts for the Fukushima Daiichi Nuclear Power Station continues to evolve on an hourly basis.

On March 11, 2011, the Tohoku-Taiheiyou-Oki Earthquake occurred near the east coast of Honshu, Japan. This magnitude 9.0 earthquake and the subsequent tsunami caused significant damage to at least four of the six units of the Fukushima Daiichi nuclear power station as the result of a sustained loss of both the offsite and on-site power systems. Efforts to restore power to emergency equipment have been hampered or impeded by damage to the surrounding areas due to the tsunami and earthquake.

ML110760432

PA

Units 1 through 3, which had been operating at the time of the earthquake, scrambled automatically, inserting their neutron absorbing control rods to ensure immediate shutdown of the fission process. Following the loss of electric power to normal and emergency core cooling systems and the subsequent failure of back-up decay heat removal systems, water injection into the cores of all three reactors was compromised, and reactor water levels could not be maintained. Tokyo Electric Power Company (TEPCO), the operator of the plant, resorted to injecting sea water and boric acid into the reactor vessels of these three units, in an effort to cool the fuel and ensure the reactors remained shutdown. However, the fuel in the reactor cores became partially uncovered. Hydrogen gas built up in Units 1 and 3 as a result of exposed, overheated fuel reacting with water. Following gas venting from the primary containment to relieve pressure, hydrogen explosions occurred in both units and damaged the secondary containments. It appears that primary containments for Units 1 and 3 remain functional, but the primary containment for Unit 2 may be damaged. TEPCO cut a hole in the side of the Unit 2 secondary containment to prevent hydrogen buildup following a sustained period when there was no water injection into the core.

In addition, Units 3 and 4 have low spent fuel pool (SFP) water levels. Efforts continue to supply seawater to the SFPs for Units 1 through 4 using various methods. At this time, the integrity of the SFPs for Units 3 and 4 is unknown.

Fukushima Daiichi Units 4 through 6 were shutdown for refueling outages at the time of the earthquake. The fuel assemblies for Unit 4 had been offloaded from the reactor core to the SFP. The SFPs for Units 5 and 6 appear to be intact, but the temperature of the pool water appears to be increasing. Emergency power is available to provide cooling water flow through the SFPs for Units 5 and 6.

The Japanese Government ordered an evacuation out to 20 km for the area surrounding Fukushima Daiichi. Residents out to 30 km were ordered to shelter in place.

The damage to Fukushima Daiichi nuclear power station appears to have been caused by initiating events outside of the design basis for the facilities.

BACKGROUND

10 CFR Part 50, Appendix A, "General Design Criteria for Nuclear Power Plants," General Design Criterion (GDC) 2, "Design Bases for Protection against Natural Phenomena," or similar appropriate requirements in the licensing basis for a reactor facility, requires that structures, systems, and components (SSCs) important to safety be designed to withstand the effects of natural phenomena such as earthquakes, tornadoes, hurricanes, floods, tsunamis, and seiches without loss of capability to perform their safety functions. The design bases for these SSCs reflect: (1) appropriate consideration of the most severe of the natural phenomena that have been historically reported for the site and surrounding area, with sufficient margin for the limited accuracy, quantity, and period of time in which the historical data have been accumulated, (2) appropriate combinations of the effects of normal and accident conditions with the effects of the natural phenomena, and (3) the importance of the safety functions to be performed.

As a result of the terrorist events of September 11, 2001, the NRC issued EA-02-026, "Order for Interim Safeguards and Security Compensatory Measures" (the ICM Order) dated February 25, 2002. The ICM Order, which is designated as Safeguards Information (SGI), modified then-operating licenses for commercial power reactor facilities to require compliance with specified interim safeguards and security compensatory measures. Section B.5.b of the ICM Order requires licensees to adopt mitigation strategies using readily available resources to maintain or restore core cooling, containment, and SFP cooling capabilities to cope with the loss of large areas of the facility due to large fires and explosions from any cause, including beyond-design-basis aircraft impacts.

By letter, dated February 25, 2005, the NRC staff provided guidance for implementing Section B.5.b of the ICM Order. This guidance, designated as SGI, included best practices for mitigating losses of large areas of the plant and measures to mitigate fuel damage and minimize releases. Following issuance of the B.5.b Phase 1 Guidance, the NRC staff conducted inspections at operating reactor sites using Temporary Instruction (TI) 2515/164 (SGI) and subsequently TI 2515/168 (SGI) to ensure compliance with Section B.5.b of the ICM Order.

In December 2006, the Nuclear Energy Institute (NEI) issued NEI 06-12, Revision 2, "B.5.b Phase 2 & 3 Submittal Guideline." NEI 06-12 is designated for Official Use Only – Security Related Information (OUO-SRI). The NRC endorsed NEI 06-12, Revision 2, by letter dated December 22, 2006, also designated OUO-SRI, as an acceptable means for developing and implementing the mitigation strategies requirement in Section B.5.b of the ICM Order. NEI 06-12, Revision 2, provides guidance for implementing a set of strategies intended to maintain or restore core cooling, containment, and SFP cooling capabilities under the circumstances associated with the loss of a large area of the plant due to explosions or fire. NEI 06-12 provides guidance in the following areas:

- Adding make-up water to the SFP,
- Spraying water on the spent fuel,
- Enhanced initial command and control activities for challenges to core cooling and containment, and
- Enhanced response strategies for challenges to core cooling and containment.

The specific strategies covered in NEI 06-12, Revision 2, were developed based on the results of assessments conducted at currently licensed power reactor facilities for the purpose of enhancing plant specific mitigation capability for damage conditions caused by a large explosion or fire. These assessments identified a wide spectrum of potential plant specific strategies. NEI 06-12, Revision 2, specifies one set of strategies applicable to all pressurized-water reactors and another set applicable to all boiling-water reactors. Both sets are derived from the results of the plant specific assessments.

The B.5.b Phase 1 Guidance and NEI 06-12, Revision 2, were used by each licensee in preparing information submitted to the NRC that describes a plant specific approach to implementing mitigating strategies and supports each plant specific license condition. The NRC staff has completed its review of the information submitted by each licensee, as well as information obtained during prior NRC inspections, and has issued an OUO-SRI safety

evaluation (SE) that documents the bases for its approval of the license condition for each facility. The SE issued for each licensee includes regulatory guidance in Section 3.0 of Appendix A, "Phase 1 Assessment," that recites the generic B.5.b Phase 1 Guidance of Reference 3, as clarified in TI 2515/168, in a form that is designated OUO-SRI rather than SGI.

By publishing new requirements in the *Federal Register* dated March 27, 2009 (74 FR 13926), the NRC amended 10 CFR Part 50, 10 CFR Part 52, "Licenses, Certifications, and Approvals for Nuclear Power Plants," and 10 CFR Part 73, "Physical Protection of Plants and Materials." This rulemaking added paragraph (i) to 10 CFR 50.34, "Contents of Applications; Technical Information," and paragraph (d) to 10 CFR 52.80 " Contents of Applications; Additional Technical Information," to require submittal of a "description and plans for implementation of the guidance and strategies intended to maintain or restore core cooling, containment, and spent fuel pool cooling capabilities under the circumstances associated with the loss of large areas of the plant due to explosions or fire as required by § 50.54(hh)(2) of this chapter." This rulemaking also added 10 CFR 50.54(hh)(2) to impose the same mitigating strategies requirements on all reactor applicants and licensees as those imposed by the ICM Order and associated license conditions. The Statement of Considerations for this rulemaking specifically noted that the requirements in 10 CFR 50.54(hh) are intended to address certain events that are the cause of large fires and explosions that affect a substantial portion of the nuclear power plant and are not limited or directly linked to an aircraft impact. In addition, the rule contemplates that the initiating event for such large fires and explosions could be any number of beyond-design basis events. Such events include natural phenomena such as those described in GDC 2 (i.e., earthquakes, tornadoes, floods, tsunamis, and seiches), without regard to the GDC 2 provisions governing the severity of natural phenomena.

NRC regulations at 10 CFR 50.63, "Loss of All Alternating Current Power," require that light-water-cooled nuclear power plants be capable of withstanding for a specified duration and recovering from a station blackout.

DISCUSSION

The nuclear power industry has taken the actions listed below at each licensed reactor site. Additional information is available in the NEI Fact Sheet, "Industry Taking Action to Ensure Continued Safety at U.S. Nuclear Energy Plants," dated March 16, 2011, available at www.nei.org.

1. verification of the capability to mitigate conditions that result from severe adverse events, including the loss of significant operational and safety systems due to natural events, fires, aircraft impact and explosions
2. verification of the capability to mitigate a total loss of electric power to a nuclear power plant
3. verification of the capability to mitigate flooding and the impact of floods on systems inside and outside the plant
4. identification of the potential for loss of equipment functions during seismic events appropriate for the site and the development of mitigating strategies to address potential vulnerabilities

NRC assessment of the implications of beyond design-basis natural phenomena is continuing as more information becomes available. The NRC staff is currently developing a TI to guide staff in performing independent assessments of nuclear power plant readiness to address beyond design-basis natural phenomena under the Reactor Oversight Process. The NRC is considering additional generic communications and additional action including requesting operating plants to provide specific information relating to their facilities to enable the NRC staff to complete a regulatory assessment of beyond design basis phenomena.

PAPERWORK REDUCTION ACT STATEMENT

This Information Notice does not contain any information collections and, therefore, is not subject to the requirements of the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.).

Public Protection Notification

The NRC may not conduct or sponsor, and a person is not required to respond to, a request for information or an information collection requirement unless the requesting document displays a currently valid Office of Management and Budget control number.

CONTACTS

This information notice requires no specific action or written response. Please direct any questions about this matter to the technical contact listed below or the appropriate Office of Nuclear Reactor Regulation (NRR) project manager.

/RA/

Laura A. Dudes, Director
Division of Construction Inspection,
and Operational Programs
Office of New Reactors

/RA/

Timothy J. McGinty, Director
Division of Policy and Rulemaking
Office of Nuclear Reactor Regulation

Technical Contact: Eric E. Bowman, NRR
301-415-2963
e-mail: Eric.Bowman@nrc.gov

Note: NRC generic communications may be found on the NRC public Web site, <http://www.nrc.gov>, under Electronic Reading Room/Document Collections.

NRC assessment of the implications of beyond design-basis natural phenomena is continuing as more information becomes available. The NRC staff is currently developing a TI to guide staff in performing independent assessments of nuclear power plant readiness to address beyond design-basis natural phenomena under the Reactor Oversight Process. The NRC is considering additional generic communications and additional action including requesting operating plants to provide specific information relating to their facilities to enable the NRC staff to complete a regulatory assessment of beyond design basis phenomena.

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This information notice requires no specific action or written response. Please direct any questions about this matter to the technical contact(s) listed below or the appropriate Office of Nuclear Reactor Regulation (NRR) project manager.

/RA/
 Laura A. Dudes, Director
 Division of Construction Inspection,
 and Operational Programs
 Office of New Reactors

/RA/
 Timothy J. McGinty, Director
 Division of Policy and Rulemaking
 Office of Nuclear Reactor Regulation

Technical Contact: Eric E. Bowman, NRR
 301-415-2963
 e-mail: Eric.Bowman@nrc.gov

Note: NRC generic communications may be found on the NRC public Web site, <http://www.nrc.gov>, under Electronic Reading Room/Document Collections.
 ADAMS Accession Number: ML110760432 * by e-mail

OFFICE	NRR/DPR/PGCB	TECH EDITOR*	NRR/DIRS/D*	NRR/DE/D*	NSIR/DSP*
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DATE	03/17/2011	03/17/2011	03/17/2011	03/17/2011	03/17/2011
OFFICE	NRO/DCIP/CAEB*	DPR/PGCB/LA	DPR/PGCB/BC	NRO/DCIP/D	NRR/DPR/D
NAME	TFrye	CHawes	SRosenberg	LDudes (MShuaibi for)	TMcGinty
DATE	03/18/2011	03/17/2011	03/17/2011	03/18/2011	03/18/2011

OFFICIAL RECORD COPY

From: [NEWS Automated Mailer](#)
To: NEWS.Contact-Point@iaea.org
Subject: New Event on NEWS, Japan, Power Reactor
Date: Friday, March 18, 2011 6:32:53 AM

Dear NEWS User,

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

"Loss of the cooling function to the ultimate heat sink due to the big tsunami"

has as of today, Friday, 18 March 2011, 10:11:00 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-DAINI-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

e/1160

From: [NEWS Automated Mailer](#)
To: NEWS.Contact-Point@iaea.org
Subject: New Event on NEWS, Japan, Power Reactor
Date: Friday, March 18, 2011 5:22:49 AM

Dear NEWS User,

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

"Loss of the cooling function to the ultimate heat sink due to the big tsunami"

has as of today, Friday, 18 March 2011, 10:17:15 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-DAINI-4

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

41161

From: [NEWS Automated Mailer](#)
To: NEWS.Contact-Point@iaea.org
Subject: New ERF on NEWS, INES Rating: 5, Japan, Power Reactor
Date: Friday, March 18, 2011 6:35:43 AM

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:

"The core damage by loss of all cooling function due to the big tsunami."

has as of today, Friday, 18 March 2011, 09:59:34 UTC, been added to the NEWS Web site. Additional information regarding the ERF is as follows:

Country: Japan
Location/Facility: FUKUSHIMA-DAIICHI-3
Event Type: Power Reactor
Event Date: 2011.03.11

Rating Date: 2011.03.18
ERF Version: Provisional
INES Rating Level: 5

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

C/162

From: [NEWS Automated Mailer](#)
To: NEWS.Contact-Point@iaea.org
Subject: New Event on NEWS, Japan, Power Reactor
Date: Friday, March 18, 2011 5:15:50 AM

Dear NEWS User,

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

"Loss of the cooling function to the ultimate heat sink due to the big tsunami"

has as of today, Friday, 18 March 2011, 10:13:34 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-DAINI-2

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

C/163

From: [NEWS Automated Mailer](#)
To: NEWS.Contact-Point@iaea.org
Subject: New Event on NEWS, Japan, Power Reactor
Date: Friday, March 18, 2011 5:20:28 AM

Dear NEWS User,

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

"The core damage by loss of all cooling function due to the big tsunami."

has as of today, Friday, 18 March 2011, 09:51:46 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-DAIICHI-2

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

C/164

From: [NEWS Automated Mailer](#)
To: NEWS.Contact-Point@iaea.org
Subject: New Event on NEWS, Japan, Power Reactor
Date: Friday, March 18, 2011 5:20:41 AM

Dear NEWS User,

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

"Loss of cooling function and water supplying function on the spent fuel pool due to the big tsunami."

has as of today, Friday, 18 March 2011, 10:05:19 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-DAIICHI-4

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

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From: [NEWS Automated Mailer](#)
To: NEWS.Contact-Point@iaea.org
Subject: New Event on NEWS, Japan, Power Reactor
Date: Friday, March 18, 2011 6:33:55 AM

Dear NEWS User,

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

"The core damage by loss of all cooling function due to the big tsunami."

has as of today, Friday, 18 March 2011, 09:56:10 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-DAIICHI-3

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

C/166

From: [NEWS Automated Mailer](#)
To: NEWS.Contact-Point@iaea.org
Subject: New ERF on NEWS, INES Rating: 5, Japan, Power Reactor
Date: Friday, March 18, 2011 6:36:02 AM

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, Friday, 18 March 2011, 09:48:34 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: 5

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

0/167

From: [NEWS Automated Mailer](#)
To: NEWS.Contact-Point@iaea.org
Subject: New ERF on NEWS, INES Rating: 5, Japan, Power Reactor
Date: Friday, March 18, 2011 5:08:44 AM

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:

"The core damage by loss of all cooling function due to the big tsunami."

has as of today, Friday, 18 March 2011, 09:54:39 UTC, been added to the NEWS Web site. Additional information regarding the ERF is as follows:

Country: Japan
Location/Facility: FUKUSHIMA-DAIICHI-2
Event Type: Power Reactor
Event Date: 2011.03.11

Rating Date: 2011.03.18
ERF Version: Provisional
INES Rating Level: 5

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

C/1108

From: [NEWS Automated Mailer](#)
To: NEWS.Contact-Point@iaea.org
Subject: New ERF on NEWS, INES Rating: 3, Japan, Power Reactor
Date: Friday, March 18, 2011 6:36:32 AM

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:

"Loss of cooling function and water supplying function on the spent fuel pool due to the big tsunami."

has as of today, Friday, 18 March 2011, 10:07:27 UTC, been added to the NEWS Web site. Additional information regarding the ERF is as follows:

Country: Japan
Location/Facility: FUKUSHIMA-DAIICHI-4
Event Type: Power Reactor
Event Date: 2011.03.11

Rating Date: 2011.03.18
ERF Version: Provisional
INES Rating Level: 3

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

C/169

From: [NEWS Automated Mailer](#)
To: NEWS.Contact-Point@iaea.org
Subject: New ERF on NEWS, INES Rating: 3, Japan, Power Reactor
Date: Friday, March 18, 2011 1:59:48 AM

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:

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

has as of today, Friday, 18 March 2011, 06:33:54 UTC, been added to the NEWS Web site. Additional information regarding the ERF is as follows:

Country: Japan
Location/Facility: FUKUSHIMA-DAIIC1-1,2 FUKUSHIMA-DAINI-1, Japan
Event Type: Power Reactor
Event Date: 2011.03.11

Rating Date: 2011.03.12
ERF Version: Provisional
INES Rating Level: 3

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

9/170

From: [NEWS Automated Mailer](#)
To: NEWS.Contact-Point@iaea.org
Subject: New ERF on NEWS, INES Rating: 3, Japan, Power Reactor
Date: Friday, March 18, 2011 5:31:45 AM

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:

"Loss of the cooling function to the ultimate heat sink due to the big tsunami"

has as of today, Friday, 18 March 2011, 10:14:53 UTC, been added to the NEWS Web site. Additional information regarding the ERF is as follows:

Country: Japan
Location/Facility: FUKUSHIMA-DAINI-2
Event Type: Power Reactor
Event Date: 2011.03.11

Rating Date: 2011.03.18
ERF Version: Provisional
INES Rating Level: 3

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

clm

From: [NEWS Automated Mailer](#)
To: NEWS.Contact-Point@iaea.org
Subject: New ERF on NEWS, INES Rating: 3, Japan, Power Reactor
Date: Friday, March 18, 2011 6:36:07 AM

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:

"Loss of the cooling function to the ultimate heat sink due to the big tsunami"

has as of today, Friday, 18 March 2011, 10:12:38 UTC, been added to the NEWS Web site. Additional information regarding the ERF is as follows:

Country: Japan
Location/Facility: FUKUSHIMA-DAINI-1
Event Type: Power Reactor
Event Date: 2011.03.11

Rating Date: 2011.03.18
ERF Version: Provisional
INES Rating Level: 3

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

cln2

From: [NEWS Automated Mailer](#)
To: NEWS.Contact-Point@iaea.org
Subject: New ERF on NEWS, INES Rating: 3, Japan, Power Reactor
Date: Friday, March 18, 2011 6:36:11 AM

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:

"Loss of the cooling function to the ultimate heat sink due to the big tsunami"

has as of today, Friday, 18 March 2011, 10:18:13 UTC, been added to the NEWS Web site. Additional information regarding the ERF is as follows:

Country: Japan
Location/Facility: FUKUSHIMA-DAINI-4
Event Type: Power Reactor
Event Date: 2011.03.11

Rating Date: 2011.03.18
ERF Version: Provisional
INES Rating Level: 3

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

C/173

From: [NRC Announcement](#)
To: [NRC Announcement](#)
Subject: Event: Supplemental Information on Today's All-Employees Meeting
Date: Friday, March 18, 2011 10:34:38 AM

NRC Daily Announcements



Highlighted Information and Messages



Friday March 18, 2011 -- Headquarters Edition

[Event: Supplemental Information on Today's All-Employees Meeting](#)

Event: Supplemental Information on Today's All-Employees Meeting

As mentioned in a previous Network Announcement, there will be an All-Employees meeting today at 2:00 p.m. in the TWFN auditorium, led by EDO Bill Borchardt, to discuss events in Japan. VTC will be available to the regions, TTC, and headquarters satellite offices. Please note the following additional information:

- The bridgeline (call-in number: 888-820-8960; passcode: 8690842) is intended for employees who are teleworking today. If you are not working at home, please attend the meeting in person or via VTC to avoid overloading the bridgelines.
- There will be a sign-language interpreter in the auditorium for the hearing-impaired.
- The event will videotaped for later viewing.
- The slides that will be used during the presentation are available on the OEDO [Sharepoint site](#).



(2011-03-18 00:00:00.0)

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