



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

April 11, 2011

Senator James M. Inhofe
Ranking Member
Committee on Environment and Public Works
United States Senate
Washington, DC 20510-6175

Dear Senator Inhofe:

This letter responds to your inquiry, dated April 6, 2011, regarding the NRC's response to the events in Japan and, in particular, my actions as Chairman as part of the response to that emergency. The President designated me as Chairman of the Nuclear Regulatory Commission on May 13, 2009. That designation conferred upon me the executive authorities vested in the chairmanship, including the authority to exercise emergency powers, when warranted.

As the events at Fukushima began to unfold following the March 11, 2011 earthquake and tsunami in Japan, and in light of the presence of U.S. citizens and U.S. interests in Japan, not to mention Japan's status as a close ally to the United States, it became clear that the U.S. Government would have a significant interest regarding this foreign nuclear emergency. The NRC is the U.S. agency responsible for monitoring, understanding, and communicating about nuclear plant safety events, and those core competencies have served an important role in our Government's response to the events in Japan.

The NRC's Headquarters Operations Center has served a key role in assisting the U.S. Government's efforts to monitor the events at the Fukushima Daiichi nuclear plant. The Operations Center is intended to be managed during events by a traditional management structure with a single responsible official in charge. My exercise of emergency powers facilitates that process. Also, please note that there are no procedures in place for the full Commission to manage ongoing Operations Center response activities, nor would one expect there to be, given the assignment of responsibility to the Chairman under Reorganization Plan No. 1 of 1980. The agency's well-established and oft-tested emergency response procedures serve us well not only in responding to domestic events, but also to international events where NRC's response capabilities can support our government's interests.

As you note, after the initial threat of potential tsunami effects on U.S. territory had passed, our subsequent activities have focused primarily on monitoring potential radiation reaching the U.S. and on providing advice and assistance within our Government and to Japan. To the extent this is said to involve the exercise of my emergency powers, I have been careful to act in the spirit of the Reorganization Plan, with appropriate regard to existing Commission policy and by keeping my fellow Commissioners informed. With respect to the Japanese emergency, many of the NRC's primary activities have involved communications—an authority the Chairman possesses as official spokesman even in non-emergency situations—and monitoring via the NRC's Operations Center—an executive activity that would also fall within the Chairman's authority to manage as the agency's principal executive officer.

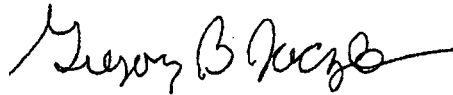
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Over the course of the events in Japan, I have maintained regular contact with my fellow Commissioners and have briefed them frequently, both individually and as a group on the latest developments. Event notification emails sent throughout the agency by the Headquarters Operations Center, beginning on March 11, also alerted agency personnel generally that the NRC was responding to the emergency. Press releases issued in the days after the earthquake and tsunami also provided notice to the general public that the NRC was engaging in response activities and that the Headquarters Operations Center was monitoring the events in Japan on a 24-hour basis.

As we take steps to understand any implications of the events in Japan for the regulation and safe operation of nuclear facilities in the United States, I have fully engaged my colleagues to obtain their insights and they supported the direction to the NRC staff to establish a task force to look at the near-term and longer-term implications of the Fukushima event.

I appreciate this opportunity to respond to your questions and trust I have satisfied your concerns.

Sincerely,

A handwritten signature in black ink, appearing to read "Gregory B. Jaczko", with a long horizontal flourish extending to the right.

Gregory B. Jaczko

BARBARA BOXER, CALIFORNIA, CHAIRMAN

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United States Senate

COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

WASHINGTON, DC 20510-6175

BETTINA PORIER, MAJORITY STAFF DIRECTOR
RUTH VAN MARK, MINORITY STAFF DIRECTOR

April 6, 2011

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

Dear Chairman Jaczko,

I appreciate your hard work on the nuclear accident at the Fukushima power plant, and your efforts to help the public understand its implications for the American nuclear power fleet. I do want to raise concerns about some aspects of your response, with the hope that you can resolve them fully and quickly.

My concerns stem from the confirmation in response to my staff's inquiries that the Nuclear Regulatory Commission has been operating in a state of emergency since the Tohoku Earthquake on March 11, 2011. In particular, I question whether:

- 1) You may not have followed law as it pertains to the delineation of emergency authority as provided in Reorganization Plan #1 of 1980 (PL 98-614); and
- 2) This action may have reduced the contributions of your experienced colleagues in monitoring the event and in decision-making.

Section 3 of the Reorganization Plan #1 states that the functions transferred to the Chairman are those pertaining to an emergency concerning a particular facility or materials licensed or regulated by the NRC. Your Congressional Affairs staff indicated that you invoked these powers when the NRC Operations Center entered "monitoring mode" at 9:46 AM on March 11th in reaction to the Tohoku Earthquake and resulting potential tsunami threat to U.S. plants. At this time, the crisis is unfolding in Japan and I am not aware that you issued any warnings to any U.S. licensee or regulated facility since March 11th. On the contrary, you have repeatedly stated publicly that U.S. nuclear plants are safe and indicated, as has the U.S. Environmental Protection Agency, that any radiation resulting from the Fukushima nuclear accident that reaches the U.S. will not be significant enough to impact public health. Given what has transpired, it would be helpful if you could provide the basis for your invocation of emergency authority.

Secondly, if your basis for invoking emergency authority was the potential threat of a tsunami affecting nuclear plants in California, that threat ceased on March 11th. Please provide your rationale for continuing to exercise emergency authority after March 11th and your

Chairman Gregory Jaczko
April 6, 2011
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expectations for when and under what conditions you anticipate returning the agency to non-emergency status.

Section 3 of Reorganization Plan #1 also states that the functions transferred to the Chairman in an emergency include declaring, responding, issuing orders, etc., relative to the emergency incident. Since March 28th was the first indication my staff received regarding your exercise of emergency authority—and apparently no public declaration was made—I am concerned that any effort by you to declare an emergency has been less than ideal, especially given your commitment to openness and transparency.

Lastly, Section 3 of Reorganization Plan #1 states that the Chairman shall, to the maximum extent possible, inform the Commission of actions taken relative to the emergency. On March 30, my staff queried all four of your fellow commissioners regarding their knowledge of any such declaration. All four offices indicated that none of the commissioners received any communication from you declaring your intent to exercise emergency powers. It would be helpful if you could provide an explanation as to why the commissioners were apparently not informed of your action.

By April 8th, please provide the information requested above and any legal analysis prepared prior to March 30, 2011 that supports the transfer of functions from the Commission to you including the basis for continuing to exercise those powers.

I look forward to working with you as the NRC addresses the Japan nuclear accident, and to ensure the safety of the nation's nuclear fleet.

Sincerely,



James M. Inhofe
Ranking Member
Committee on Environment and Public Works

Cc: Commissioner Svinicki
Commissioner Apostolakis
Commissioner Magwood
Commissioner Ostendorff

From: Droggitis, Spiros
Sent: Monday, April 11, 2011 7:08 AM
To: RST01 Hoc
Subject: FW: Seawater should be replaced with river water of lake water. With the snow in the upper elevations there should be an excess of distilled water (H2O) - Clean
Attachments: image001.gif; Nuclear power answer.docx

From: OCA_Web Resource [mailto:OCA_Web.Resource@nrc.gov]
Sent: Monday, April 11, 2011 5:13 AM
To: Droggitis, Spiros; Belmore, Nancy
Subject: FW: Seawater should be replaced with river water of lake water. With the snow in the upper elevations there should be an excess of distilled water (H2O) - Clean

From: bill castrop [mailto:P.W.CASTROP001@KC.RR.COM]
Sent: Monday, April 11, 2011 5:12:42 AM
To: OCA_Web Resource
Subject: FW: Seawater should be replaced with river water of lake water. With the snow in the upper elevations there should be an excess of distilled water (H2O) - Clean
Auto forwarded by a Rule

Please contact me with any questions or comments relating to the attached as it is a workable plan and the seawater must be stopped ASAP.

 – **Please read immediately!**

I am a chemist and Physics Fellow. The attachment has answers for you

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**regarding Nuclear meltdown and what
not to do as well as what would work.**

816 213 6759

**William S. CastropI
Tire Failure Expert
Thirteenth Circuit FL.**

Wcastrop001@kc.rr.com

**William S. CastropI
Tire Failure Espert
TDhirteenth Circuit FL.**

From: bill castrop [mailto:wcastrop001@kc.rr.com]

Sent: Monday, April 11, 2011 4:09 AM

To: 'oca_web@nrc.gov'

Subject: Seawater should be replaced with river water of lake water. With the snow in the upper elevations there should be an excess of distilled water (H2O) - Clean

 **– Please read immediately!**

I am a chemist and Physics Fellow. The attachment has answers for you regarding Nuclear meltdown and what not to do as well as what would work.

816 213 6759

**William S. Castrop
Tire Failure Expert
Thirteenth Circuit FL.**

Wcastrop001@kc.rr.com

IMPORTANT – PLEASE READ ASAP

3/20/2011

RE: Japan and Radiation Issues

From: William S. Castrop (Grad Student-Georgia Tech 2011)

(Areas highlighted in Yellow are Chemistry calculations)

Did not know who to write in order to get this out, so I am sending to you.

Based on my Chemistry and Physics years I remember while attending school going to a lecture a number of years back.

I remember a professor from Northwestern outside of Chicago I believe and an undergrad giving a workable solution to the elimination of Cesium 137. (Cr^+) This was either at Purdue or Northwestern in Chicago, in early 2003 or 2004. He and an undergrad gave a dissertation. It was after Chernobyl I believe. His name was Kanatzids¹ out of Northwestern where I was attending a lecture. I was there on campus that day to audit a class for some reason but had some free time to attend if I remember correctly.

I became intrigued about it over the Japan incident and took it a few more steps.

These principles are sound and proven in a lab. Their main thrust was the quieting down of cesium 137 (Cs^+) which is an isotope of Cesium 55 (Cs). Although does not seem like a lot the atomic weight of an additional 82 neutrons is major.

The solution to the meltdown in Japan is more problematic with the use of seawater than it is solving at this juncture in my opinion, again based off of schooling in Chemistry and Physics.

Seawater is made up mainly of (H_2O) - Two parts Hydrogen and one part Oxygen as all water. Seawater however contains in soluble form; calcium (Ca), Sodium (Na), Sulphur (S), Carbon (C). Four elements not conducive to quieting down Cesium 137 (Cr^+) which is an isotope of Cesium 55.0012 (Cr) which is stable in its own right. This means it has 82 more protons than the stable element Cesium 55.0012 (Cr) it also has 82 more neutrons which creates a heavier element and thus a radioactive isotope of the Cesium $\text{Cr}55.0012$

Cesium 55.0012 (Cs) was found in water some 150 years ago, the name coming from the Greek word 'Blue Water'.

The element is Alkali similar to the makeup of Potassium (K) (volatile when exposed to concentrated oxygen) Sodium (S) which will burn Hydrogen, (H) which is highly explosive as it has no neutrons to bind to its protons and electrons, easy to split comparatively-thus the Hydrogen bomb. Last but not least Francium (Fr), an unknown element but one of great importance in the nuclear age and part of the alkalis. Cesium (Cs), the stable element has 55 protons thus 55 electrons thus 78 neutrons based on its atomic weight. This becomes a heavier element not one found in water normally. This isotope -used in the reactors has as said earlier an increase of 82 neutrons

and the ability to create heat in excess of 10,000 degrees F. or roughly 4480 C... If not contained by other elements the pellets of Cesium 137 (Cs^+) as they are rightfully described are coated in ceramic which has a melting point of 3000 degrees F. These ceramic coated pellets of Cesium 137 (Cs^+) are then placed in a 2-3" tube of Zirconium (Zr)- which is used in making gemstones and has a melting point of almost 3390° F. These are the rods being referred to in the news. Rods are in a closed vessel much like a car engines radiator. The rods heat the water turning into steam and then the steam powers turbines creating the electricity. It is then condensed in a radiator with cold fresh water circulating around it usually coming in from an ocean or river and then being cooled down and rereleased into the body of water it came. The two waters never come in contact with each other they are completely separate systems. The water next to the rods never sees the light of day. The problem in Japan was the 'cooling' water was shut off due to lack of workable pumps driving the interior water to a boiling point under its pressure. It finally blew like your radiator cap would under overheating conditions.

This is where it gets difficult. Usually during cold shutdown for upkeep and maintenance Boron (B) or Borax ($\text{Na}_2\text{B}_4\text{O}_7 \cdot 10\text{H}_2\text{O}$) rods are put into the chamber along with the Cesium (Cs^+) rods to absorb the radioactive chain reaction that is going on. This could not take place due to the fact of no power and possible the melted rods eliminated the ability to lower the mediating rods into place. This, if it would have happened would have created a safe environment-not the case. The ceramic pellets got hotter thus the rods began to melt exposing the pellets which now begin to shed their coating of ceramic and thus you have unshielded radiation.

The problem presents itself in how you cool the rods down as well as the main ingredient, the pellets inside.

When you introduce non-distilled seawater you are pouring more fuel to the fire in the long term due to the elements in the seawater. You exacerbate the problem not just physically but chemically.

The seawater will offer a degree of cooling but with it will come problems chemically.

Certain chemicals or isotopes can be created by the introduction of 'polluted' seawater mixed under heat and pressure- much like a cake through the process of mixing to baking. Chemicals such as Nitrous Oxide (N_2O), Calcium Oxide (CaO), a high percentage of Hydrogen Peroxide (H_2O_2) at lethal levels and certain dangerous acids. These will contaminate the groundwater and aquifers as well as the farm ground. When mixed with certain ground elements and minerals, you will get an extremely toxic acid of hydrofluoric acid (HCL) which is highly corrosive and can be deadly if inhaled in the smallest amounts. This acid also attaches to the calcium atoms of vertebrae animals and does harm to the bone and marrow thus causing leukemia in the long run. Hydrochloric acid (HCl) will also come from this operation of seawater because of the chlorine (Cl) a Halogen, in the water (non-distilled). This will vaporize and thus also will be inhaled and carried by the weather patterns to be brought to earth as rain. Hydrazine (H_2H_4) will also be formed given the right temps, along with benzene (C_6H_6), both highly toxic and hazardous according to OSHA IMIS # 1794.

Acids, John, are hazardous to metals thus the zirconium (Zr) rods become even more in danger with the influx of seawater. Acids with a PH of 0-7 are the most hazardous. Bases as they are called are hazardous to organic materials such as animal and plant life including Human Beings in high levels. These bases range anywhere from 6.011 to 14 thus not

organically compatible. They both will be generated by the introduction of seawater. The only variable is to what temp and pressure they will encounter.

Boron (B) has a boiling point of 3927 degrees C, thus approximately 7000 degrees F... Its atomic weight which is important is only 10.8 and had 6 protons thus 6 electrons considerable smaller than the cesium 137. It is an Isotope of Boron 10 which is a naturally occurring isotope. Boric Acid (H_3BO_3) is also a fire retardant. Borax (Disodium tetraborate) the kind you use at home in your wash is an important boron compound and is an inert mineral when it comes to radiation. Boron is found mainly in seawater however the rate is 4.01 milligrams per liter thus less than 0.0001 to the ounce, thus no real solution. Seawater is only short gap at best as stated but mixed with Cesium 137 (Cs^+) w/o being filtered or salt (Na) and other elements it creates a problematic issue that can lead to great strife for years if not four scores. Bottom line use of seawater is building on sand without piers.

Distilled water however eliminates the calcium (Ca) element, Sodium element (Na) and other minerals and puts the pH level @ 6-7 with no additional elements or gases. This puts clean water on the cesium 137 (Cs^+) only with the allotted chemicals to bring out the isotopes and not add to the negative circumstances being generated by the present method. The framework of capturing these ions is a mixture of 3 elements Tin (Sn) atomic weight of 118 thus 69 neutrons and it possesses no half life, it is stable in the environment. The second element needed is Sulfur (S) with a mass of 32.0 thus 16 protons and 16 electrons and 16 neutrons.

Third and final ingredient is Gallium (Ga) with a mass of 69.72396 thus 38 neutrons. These elements are layered if you will and it works because the Cesium 137 (Cs^+) mixes and binds with the sulfur atom and in the molecule it becomes trapped. (Cs^+) is captured in the material of the alkalis and nuclear heat slowly becomes remediated.

The chemical framework is Tin, Gallium, Sulfur, Nitrogen (an inert gas), and Hydrogen as a compound with the Nitrogen. Included is Antimony (Sb), this element has a boiling point of 3200° F. and has a minimal half life of mere minutes instead of years. Its atomic number is 51 thus with a mass of 122 it has 71 neutrons binding it. Also added to the equation DMA - dimethylammonium which is positively charged like the (Cs^+) thus allowing it to trade places with the radioactive material and it (Cs^+) becomes ingrained in the compound. Thus it would allow it to be incased and transported rather than washed away into the ground. The chemical compounding is as follows. $[(CH_3)_2NH_2]^+$ and $[Ga_2Sb_2S_7]$ These used in layers as described earlier such as Swiss Cheese perforated with holes, will, as long as the Cesium 137 (Cs^+) is in a soluble solution which it would be such as water (distilled)- not sea water.

Like a sponge to Cesium ions they are trapped and prevented from leeching out. As you can see all the chemicals are short in half lives as well as **have high boiling points contrary to sea water.**

I stress distilled water because its entire make up is just H_2O no other elements of any consequence. Seawater mixed with Cesium 137 (Cs^+) will bind with the salts and other minerals and create greater strife in the long run. The facility must be made safe to enter not just continually pour water on it.

One final issue, even though the containment center is 40 years old the Portland Cement is more than likely still hydrating meaning its insides being 4' thick has not yet cured thus leaving it vulnerable to splits and cracks over time with that amount of heat and pressure.

This conclusion is held by chemist and myself and needs to be brought to the forefront.

Fill the facility with a solution that will basically freeze the meltdown at the point of contact with this solution. Without further peril to the country and surrounding countries.

As a side bar I heard a comment made of no concern to the United States was in the offing. This is not quite true at this point. Japan is exporter of fish to the United States and along with that our weather patterns start in the Pacific Ocean area.

A more serious problem is that Japan itself is dependent on its fishing to feed its population at the tune of almost a million tons a year as well as the rice that it grows. Many Americans live in Tokyo as teachers etc.

Boron and Borax are used in shutting down a reactor as mentioned before for maintenance. It can be used now before the complete filling of seawater into the reactors.

The procedure is this:

Bring the runaway heat buildup into control. It is a fairly new process – a chemical process of introducing a procedure of capturing the Cesium 137. (Cs^+) It is one of the most radioactive materials on the face of the earth. It has a half life of 30.007 years thus if it is operating at a temp of 6000 degrees F. in 2011 it will still be over 3000 degrees F. in 2041 and in the year 3000 it will still be capable of a temp of 750 degrees F. enough energy to continue to boil most liquid elements and compounds.

Cesium 137 (Cs^+) is deadly it enters your body through one of four methods; Alpha, Beta, Neutron or Gamma rays. Cesium 137 (Cs^+) Gamma rays which are extremely decisive. They are extremely small in amplitude thus difficult to ward against and over 4000 hertz or cycles per second. Thus $6.94 \times 1/10,000 = .0000694$ meters in length. Very short which makes them deadly?

I felt this needed to get to those in charge of the clean up and I figured if anyone could figure how to convey this to people at the top it would be you.

Sorry about the length but I wanted to support the argument with a sustainable logic.

If you wish to contact **Messer. Kanatzids¹**, please do so at Northwestern University Chemistry Dept... Should you have questions and cannot reach me. He and his grad student have made huge inroads into this industry. He speaks from authority of his experiments.

Thanks for your Help (contact me if you can when you have read)
William S. Castrop
Grad Student 2011
816 213 6759
Wcastrop001@kc.rr.com

¹Messr. Kanatzids

From: Droggitis, Spiros
Sent: Monday, April 11, 2011 2:30 PM
To: Riley (OCA), Timothy
Subject: FW: Constituent solution for Fukushima reactors
Attachments: image001.gif; image002.gif; image003.gif; image004.gif

From: Droggitis, Spiros
Sent: Wednesday, March 30, 2011 12:43 PM
To: RST01 Hoc; 'inpoercassistance@inpo.org'
Cc: Riley (OCA), Timothy; Weil, Jenny
Subject: FW: Constituent solution for Fukushima reactors

The following is a suggestion from a constituent of Congressman Doggett for your consideration. Thanks,
Spiros Droggitis

From: Hupart, Ruth [mailto:Ruth.Hupart@mail.house.gov]
Sent: Wednesday, March 30, 2011 12:24 PM
To: Droggitis, Spiros
Subject: Constituent solution for Fukushima reactors

Dear Spiros,

This is the information we received from our constituent. Thanks for taking a look.

Ruth

Ruth Hupart
Legislative Assistant
Office of Congressman Lloyd Doggett (TX-25)
201 Cannon House Office Bldg.
Tel.: (202) 225.4865
Fax: (202) 225.3073



Sign up for Lloyd's List [Here](#)

Thank you for your response and interest in the ORIE/CryoRain technology for cooling the Fukushima reactor containment vessels. As requested per conversation with your D.C. staff today, the links are being re-sent:

<http://fukushimareactormeltdown.weebly.com/> (aerial photos supplied by US Army)

<http://www.prlog.org/11384663-independent-scientists-propose-use-of-cry-orain-technology-to-mitigate-reactor-meltdowns-in-japan.html>

Liquid Nitrogen application removes the oxygen thus creating an environment where the molecular activity is halted or frozen. The ORIE (Optical Remote Image Enhancement) technology, which also utilizes the science of "Spectrography", identifies the mounting and

dangerous molecular activity inside the cracked containment vessels, including the radiation levels, where no other imaging technology can go. These two technologies, when used in conjunction with one another, can mitigate the meltdown status thus inhibiting further radiation release into the environment.

We require assistance with connecting to the appropriate authorities i.e. TEPCO, Japanese PM office, Japanese Nuclear Officials. Our efforts to inform and contact various stakeholding agencies (NRC, IAEA, etc) have resulted in no progress whatsoever.

Our team is formulating logistical strategies and stands ready to mobilize.

Thank you in advance for your immediate assistance in this most urgent of humanitarian and environmental issues.

Joy Mann Simmons for Constituent Ronald Stewart Montgomery
478-244-2131

From: ET07 Hoc
Sent: Tuesday, April 12, 2011 3:42 PM
To: Marshall, Jane
Attachments: Japan Response- Status Officer Comments.docx

JJJ/324

Japan Response

Lessons Learned

Jeff's comments

- Ensure we capture the finalized Sitrep construct. It evolved nicely throughout the event and has ended up being a very refined and useful product. Will need to slightly adjust the template for a domestic event as well as the international version.
- The "One Pager" was also a very useful response tool, and would be invaluable for high level briefings. We need to ensure the template and processing model be captured (i.e. the original creation will come from the EBT, and then will be continually updated by the Responses Advisor.)
- Create a high level milestone /priority/major issues board. This board will contain the major objectives that each shift will be working on and can be continually feed by the responsible teams/contributors.
- Add filters to the Task Tracked to make it more user friendly. Sort by team, Priority, Requestor, etc...
- Conduct more in-depth training on the response tool set. In general, responders seemed unfamiliar with many of the feature of Web EOC, e-Library, etc....
- Consider eliminating the EST Tech Advisor Position. Not sure if this position really adds much to the response.
- Formalize the EBT. Complete the Procedure, SITREP Template, One-Pager Template, Go-Book Template, Resources list, etc...
- Should the EBT fall under the LT? It may make better since to just expand the LT to include the EBT, as well as formalizing the IRT.
- Ensure the process and template for how the Watchbill was developed and maintained is formalized.
- Increase depth chart for all response positions. During a protracted event, like the Japan response, we would likely find ourselves in a situation where non-qualified responders were filling response positions.
- Computers for ET table. This should be formalized and be a permanent addition. To that end, we will need to train ET members to navigate the system. Added feature would be to have a mobile unit as well that the Chairman, or other senior officials, could deploy with external to the center, and still maintain connectivity.
- Develop better visual aids. Some of what was developed by the media outlets was very good at clearly explaining what was occurring with the accident. Having the tools/capabilities to more dynamically explain what is occurring would be extremely beneficial. 3D type virtual models that have moving parts.
- Early in the event the agency was overly cautious about sharing information. This should be analyzed, and guidance should be developed. Our international response partners, like

ASN/IRSN should be viewed in a different light than political elements. Maybe MOUs established?

- Create a WebEOC Board that captures the "Daily Schedule", broken down by shift.
- LT should have better used the communication transactions board. This would have allowing all parties to best understand who we have talked to and document any outcomes and/or deliverables.
- Review the e-library to ensure it has all the documents needed to respond.
- Should SORCA and MELCOR be more readily available and used during event response? Should they be a response tool?
- The multiple events Summary Board should be created in Web EOC, and not left as a PowerPoint slide.
- The visual products that were available from the NRC, regarding plume plots overlaid on maps, were on very good. Need produced that look like NARAC images.
- RASCAL issues. I got the sense it should be more flexible/adaptable. Need to discuss its future and if it would benefit from RES managing it rather than NSIR. RES may be able to develop a more sophisticated model. Can we get IRSN model?
- Way to much clutter. We should have one centralized location for food, snakes, coffee, etc... Also, we should think of ways to cut down on the paper usage. Way too many hardcopies!
-

Jane's Comment:

- Notes from the Japan team: only 4 of 10 had computers, and not all four of those had citrix. That was a challenge as some were trying to use webmail and they couldn't forward attachments from webmail. Made internal communications with other team members more difficult. Need to develop a list for a "go-kit" stuff for folks with specs for each item – probably don't want to build the kits ahead of time (at least not entirely) as we'll turn over several laptops before one ever is used. But a list of what is needed, considerations for usability, and that sort of thing would be good to think through ahead of time.
- Several responders have missed shift turnover because they were unaware they were on shifts. Somehow folks are not getting the word that they have been added to the watchbill.
- Need to be sure the layout of the new ops center does not have packs of responders trooping through the ET room just to use a speaker phone...
- Need a burn bin in the Ops Center. Found OUO and PII in the recycle bin today (4/6/11).
- Need to institute a document list so that documents that get nicknames can still be tracked shift to shift.

Bill's Comment:

- Need to develop an information flow path similar to the verbal flow path used by the team communicators. In this event much of the emails came through the ET to the teams. It should go to the teams.
- Each team needs to have a email communicator and task tracker.
-

From: OST01 HOC
Sent: Tuesday, April 12, 2011 8:17 AM
To: Marshall, Jane
Subject: WEB EOC Version as of 4/11/11 around 1300 EDT
Attachments: boardfile.docx

JJJ/325

Operations Center Transition Plan to Reduced Staffing for Fukushima Dai-ichi Event

Based on the Chairman's April 8, 2011 memorandum to the EDO with approval of Operations Center staffing for the Japan event, staff is beginning to transition current staffing levels to a six-person team as described in the memorandum:

"I have been briefed by the staff and understand their proposal recommending a reduction in the Operations Center staffing in response to the event. Provided that adequate support to the site team can be maintained, I approve the staff's recommendation to reduce the Operations Center response team to one team directed by a member of the Executive Team (ET), and consisting of two members from the Reactor Safety Team (RST), one member of the Protective Measures Team (PMT), and one member of the Liaison Team (L T) to provide immediate support to the site team, and one assistant to the ET director. The team should be supplemented as necessary based on workload, and line organizations should be tasked as a high priority for support as needed. The team should be staffed around-the-clock as long as the site team is staffed."

The intent of this document is to detail the actions taken and planned for an orderly transition to the six-person agency watch staff, the associated actions to transfer incoming requests to NRC line organizations, and the subsequent reduction of products delivered by the agency watch team and/or participation in conferences or calls regarding the event. It is expected that each NRC Office will have a central point of contact and a distribution network to properly process and distribute to key available staff members the requests sent by the agency watch team as it continues to support the needs of the Site Team in Japan. The principal roles of the team in the Operations Center are to provide a point of contact for the site team and to ensure that site team needs are met with a similar response time as a fully-staffed Operations Center. The change is that the Operations Center team is not expected to provide support directly, but rather to manage that support from the line organizations. The Operations Center team will provide direct support consistent with the limited resources and available skill sets of the new team size.

Messaging on Transition

NRC is realigning the functions for the Japan Earthquake and Tsunami response to better serve the changing information needs for stakeholders. The following realignment will occur, beginning Monday April 11, 2011:

1. The NRC Site Team in Japan will continue to be staffed at the current level. Additional NRC staff are preparing to depart the U.S. for Japan for turnover to allow some of the current staff to return to the U.S.
2. NRC's line organizations will be leveraged to perform detailed technical analyses previously performed by the full Reactor Support and Protective Measures Teams in the NRC HQ Operations Center.
3. The Headquarters Operations Center will continue to have enhanced staffing around the clock dedicated to this response, but will have fewer individuals per shift in the Operations Center. Their focus will be coordination and communications while shifting

most of the technical work associated with this response to NRC's regular line organizations.

Actions by Team:

Executive Team

1. Continue to update the ET one-pager.
2. Define roles and skills needed for each position.
3. Determine when and if temporary augmentation of the Ops Center staff is needed (when tasks cannot be efficiently or effectively worked through the line organization), which skill sets are needed, and the duration of the augmentation.
4. Change to 2 Commissioners' Assistants (CA) briefings per week starting April 11. Briefings will be Tuesdays and Thursdays at 10 am (CAs notified on 4/10/11 call).
5. Modify Ops Center Status Update as of April 11 to once per day and shorten.
6. Brief TAs on new schedule for status updates. (completed 4/10/11)
7. Determine criteria or date to move team of 6 to the _____ Room?
8. Determine staff for the start of the 6 person team on Monday April 11 – April 16 (completed 4/9/11)
9. Develop implementing plan for new staffing starting April 17.
10. Ensure ODs provide a point of contact for Japan-event related tasks coordinated through the Ops Center. (M. Evans sent an email request to ODs on 4/9/11 to provide a POC.)
11. Ensures consistency in document nomenclature for various documents and responses to information requests. Identify reports/documents to be sunsetted, as more global documents are created and kept up-to-date.

Executive Briefing Team

1. Based on feedback from external stakeholders, the SitRep will continue to be provided in its current format. The update frequency will be reduced to once per day. Obtain input from PMT/RST and issue SitRep daily at NOON EDT.

ET Support Team

1. Update list of calls for ops center.
2. Support staff should have appropriate coordination skills to work with the entire team to facilitate the completion of actions and provide support as needed.
3. Teams should provide information so that support staff can be aware of the existence and location and nomenclature of important documents.
4. Coordinate with the HOOs to schedule and announce non-routine Commissioner Assistance briefings for emergent issues as directed by ET Director (HOOs need 2 hrs to make notifications and setup the voice conferencing system for CA calls).

NSIR Incident Response Staff (weekday dayshift; as part of the line organization)

1. Implement a process for capturing relevant items from various workstations and emails (an auto-forward or bounce-back message may help for emails).
2. Provide SharePoint and WebEOC access and instruction to support staff so that SharePoint can be utilized once the briefing products are consolidated/discontinued.
3. Determine an effective method to track actions, information, and decisions if Chronology is to be discontinued.
4. Address Ops Center operational issues (facility and Ops Center computer system issues)
5. Determine computer work station usage and how to transition to the 6 person team functions.

Protective Measures Team

1. Notify participants on 0930 call – change to weekly. Consider moving to line organizations for conducting weekly calls.
2. Agree with recommendation to go to weekly calls for information exchange on monitoring data (1100).
3. Modify calls with the Japan team to once per day, but team should select the best time.
4. Maintain 1545 radiological community of interest call with PACOM – done in SCIF, supported by Whitney, Ulses, and V. Holahan.
5. Modify PACOM J2 calls to on an as-needed basis from 1700 daily.
6. Maintain daily calls w/ V. Holahan, and PACOM.
7. Determine computer work station usage and how to transition to person/shift.

Reactor Safety Team

1. Staff the BWR Expert position with a person with the following skills: Strong BWR experience and continuity in the Japan event in RST area.
2. Staff a Severe Accident/BWR Analyst position with the following skills in priority order: (1) severe accident/PRA, (2) BWR experience, and (3) Ops center function and equipment experience.
3. Assign to the BWR expert the primary responsibility to:
 - a. Lead the overall RST activities for the Japan Event
 - b. Lead periodic calls with the consortium and Japan site team
 - c. Develop assessments on RST activities for Japan site team and appropriate stakeholders.
 - d. Provide recommendation on release of RST assessments to the ET director.
 - e. Develop taskings for line organization to assist site team.
4. Assign to the Severe Accident/BWR analyst the primary responsibility to:
 - a. Provide support to the BWR expert on RST assessments
 - b. Provide updates to Fukushima status update chart
 - c. Coordinate and track external requests going to line organizations

- d. Maintain RST task tracker
5. Move responsibility of the UK/Canada/France call to the line organization or discontinue. Notify participants on Monday, 4/11/11.
6. Consolidate two calls with the industry consortium/Japan team (one at 0300, and one at 1700). Include PMT in both calls. Suspend 1100 consortium call on Tuesday.

Liaison Team

In addition to site team support, the LT member is responsible for providing liaison support to the Operations Center team consistent with normal Liaison Team responsibilities. The LT member will work with the POCs identified in each supporting office (principally OIP, FSME, and OCA) to ensure that tasks, deliverables, and schedules are understood by the appropriate line organization.

The LT member will participate on the following calls:

1. Calls with the site team.
2. 1100 Emergency Support Function (ESF)-8 call – this occurs on Tuesdays only now (state or OIP and LT Coordinator)
3. 1400 USAID Congressional call – this call occurs on Tuesdays only now (OCA and LT Coordinator)
4. 1700 HHS call with 50 states and federal partners – State Liaison and LT Coordinator participate – now down to Tuesdays and Thursdays only

These calls can be handled by the LT member and, at their judgment, by including appropriate program office staff. These calls may stop altogether in the near future due to diminishing interest by other stakeholders.

Actions to Implement Prior to Transition

There are no LT calls that need to be cancelled and no actions required to interact with other stakeholders prior to implementing the new ops center staffing plan.

1. Issue new roster for the revised staffing (Completed 4/9/11 for interim staffing; longer-term staffing will be worked week of April 11).
2. Brief new team on roles/responsibilities
3. Identify POC's for Offices to provide as "reach-back" access, Brief Offices on transition and implications including need for close communications (M. Evans requested Office POCs by email dated 4/9/11)
 - a. FSME –
 - b. NMSS – Doug Weaver
 - c. NRR – Pat Hiland (backup: Dave Skeen)
 - d. NSIR – Michael Dudek
 - e. OPA - ?
 - f. OCA - ?

- g. OIP –Steve Bloom (backup: Danielle EmcheNRO – Jeff Ciocco (backup: Tom Kevern
 - h.
4. Notify stakeholders that the SitRep will be issued once daily.

From: OST01 HOC
Sent: Tuesday, April 12, 2011 12:06 PM
To: Dyer, Jim
Attachments: HOC Red Ticket Process.doc

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HOC Red Ticket Process

Background:

NRC is realigning the functions for the Japan Earthquake and Tsunami response to better serve the changing information needs of stakeholders. The Headquarters Operations Center will continue to have enhanced staffing around the clock dedicated to this response, but will have fewer individuals per shift in the Operations Center. The focus of staff in the Operations Center will be coordination and communications. Most of the Technical work associated with this response will shift to NRC's regular line organizations. To facilitate this goal, the Headquarters Operations Center has developed the HOC Red Ticket process to track and assign technical work outside of the Headquarters Operations Center.

Objective:

The objective of the HOC Red Ticket process is to provide a consistent approach for assigning and tracking technical work performed outside of the Headquarters Operations Center for high-priority short and medium term actions. Longer term actions in support of the Headquarters Operations Center will be tasked through the normal OEDO Green Ticket process.

Process Overview:

Tasks initiated through the Headquarters Operations Center in support of NRC response efforts will be evaluated by the Headquarters Response Team to determine if the task involves technical work that should be performed outside of the Operations Center. If the Headquarters Response Team identifies a need for work to be performed outside of the Operations Center, the Operations Center will initiate a ticket. If the task requires longer term work that be assigned through the normal Green Ticket process without detriment to the response efforts, the Headquarters Response Team will work with OEDO to generate a Green Ticket. If the task requires a shorter response timeframe, it will be assigned through the HOC Red Ticket process. Assignments will include specific expectations for the date and time of completion of the assignment, deliverable to be provided back to the Executive Team, and the level of internal coordination and concurrence (if any).

Red Tickets will be tracked via the NSIR Ops. Share Point site (<http://nsir-ops.nrc.gov/Lists/HOC%20Red%20Tickets/AllItems.aspx>) and will be assigned a tracking number that corresponds with the WEBEOC Task Tracker record number associated with the task. Office points of contacts are strongly encouraged to subscribe to the SharePoint HOC Red Ticket list via the "Alert Me" feature. Once the task is entered into the SharePoint site, a PDF assignment sheet will be transmitted electronically to the assigned Office point of contact and technical staff. Work on the Red Ticket task should begin as soon as possible after assignment to meet the assigned due date and time, as well as the requested level of coordination and concurrence. Supervisors are advised to authorize overtime work as needed to support timely completion of these tasks. Technical staff should contact the Operations Center to, at a minimum, confirm receipt and understanding of the assignment. If the technical staff need more information on the task, or if they cannot meet the assigned due date, staff should contact the Headquarters Operations Center at 301-816-5100 for discussion of the assignment.

Responsibilities:

Headquarters Response Team – The Headquarters Response Team is responsible for reviewing tasks and assigning them within the Operations Center via the Task Tracker or outside the Operations Center through initiation of a Green Ticket with OEDO or issuance of an HOC Red Ticket through the process outlined above.

OEDO – OEDO is responsible for supporting the Headquarters Operations Center by issuing and tracking Green Tickets associated with longer-term work initiated by the Headquarters Operations Center.

Office Points of Contact – Office points of contact are responsible for receiving HOC Red Tickets from the Headquarters Operations Center. If the tasking does not identify a specific staff person, the Office Points of Contact are responsible for identifying the technical staff responsible for the task and providing that information to the Headquarters Operations Center.

Technical Staff – NRC technical staff are responsible for providing support for the completion of assigned Headquarter Operations Center tasks within the appropriate timeframe. Completion of these tasks should be given high a priority but should not interfere with the NRC's responsibility to protect the U.S. public health and safety and the environment. Questions regarding priorities should be directed by the staff to their supervision. NRC Technical Staff should contact the Headquarters Operations Center (301-816-5100) as necessary to obtain clarification on specific tasks adjustment of due dates.

Managers and Supervisors – Managers and supervisors are responsible for supporting technical staff in completion of Headquarters Operations Center actions (including through the approval of overtime) without interfering with the NRC's responsibility to protect the U.S. public health and safety and the environment.

Effective Date:

Monday, April 11, 2011.

From: LIA03 Hoc
Sent: Tuesday, April 12, 2011 9:02 PM
To: LIA08 Hoc; LIA02 Hoc; LIA10 Hoc
Subject: FW: Daily: 2 New Items from Tuesday, April 12, 2011
Attachments: ~WRD000.jpg; image001.jpg; image002.jpg; image003.jpg; image004.jpg

From: NRC Announcement [mailto:nrc.announcement@nrc.gov]
Sent: Tuesday, April 12, 2011 9:00 PM
To: NRC Announcement
Subject: Daily: 2 New Items from Tuesday, April 12, 2011



Tuesday April 12, 2011 -- Headquarters Edition

☐ Reminder: EWRA - Financial Seminar Planned

☐ General Interest: National Volunteer Week - April 10-16, 2011

Reminder: EWRA - Financial Seminar Planned

The Employees Welfare and Recreation Association is sponsoring a noontime financial seminar, Thursday, April 14, 2011.

Diana Leon, a certified Financial Advisor from Merrill Lynch Wealth Management, will present a seminar, "Organize Your Financial Life." It will address the following:

If you are like most people, you are incredibly busy. You manage your family, health, career, financial life, personal relationships, and maybe even the care of aging relatives. Please join an important seminar designed to help you organize your personal finances. In just a short time, you'll find out how to:

- Organize your financial life.
- Build your personal financial team.
- Customize your overall financial strategy.

Help Your Family Members Get Organized Too

You will also be provided with helpful tips for getting your family's finances in order- a valuable gift to your family that they will never forget.

Remember, your life may be hectic, but your financial life doesn't have to be.

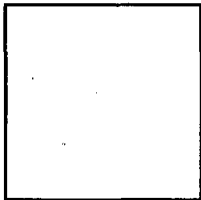
The session will be from 12 noon to 1 p.m. in T-2 B3. For more information contact: Jessie

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Delgado.

Sign up for a Complimentary Cash Flow and Retirement Analysis.

Refreshments will be served!

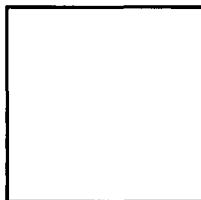


(2011-04-12 00:00:00.0)

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General Interest: National Volunteer Week - April 10-16, 2011

President Obama has proclaimed April 10th-16th National Volunteer Week. All Americans are called upon to observe this week by volunteering in service projects across the country and pledging to make service a part of their daily lives. To find a local project, visit the [United We Serve Website](#). In addition, if you are interested in serving as an agency volunteer at area schools, please contact Kreslyon Fleming in the Outreach & Recruitment Branch of Human Resources at 301-492-2209 for opportunities. To read the President's proclamation click the [Federal Register document](#).



(2011-04-12 00:00:00.0)

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From: Turner, Joseph
Sent: Tuesday, April 12, 2011 7:12 PM
To: Bernhard, Rudolph; ET02 Hoc; Liaison Japan
Cc: LIA02 Hoc; LIA08 Hoc; OST01 HOC; Reyes, Debra
Subject: Re: help with our Japan team computer network - As requested the folder has been created.

I have notified the NOC and will let you know when the problem has been corrected.
This message was sent via Blackberry.

From: Bernhard, Rudolph
To: ET02 Hoc; Liaison Japan
Cc: LIA02 Hoc; LIA08 Hoc; OST01 HOC; Reyes, Debra; Turner, Joseph
Sent: Tue Apr 12 19:05:37 2011
Subject: RE: help with our Japan team computer network - As requested the folder has been created.

The HQ based folks have the mapping. I do not have the N:drive on logon. I tried to map the network drive, and was successful at getting a map, but do not have rights to read or write. The regional users on the team may need something else to gain access to the folder.

Thanks.
Rudy

From: ET02 Hoc
Sent: Tuesday, April 12, 2011 9:03 AM
To: Liaison Japan
Cc: LIA02 Hoc; LIA08 Hoc; OST01 HOC; Reyes, Debra; Turner, Joseph
Subject: FW: help with our Japan team computer network - As requested the folder has been created.
Importance: High

Japan Team:
Please read the information below provided by OIS (Debra Reyes) concerning access to a shared folder on the Citrix server for your use. If you have any questions or need help, please contact the CSC at 301-415-1234. Thanks...Karen Jackson

From: Reyes, Debra
Sent: Tuesday, April 12, 2011 7:59 AM
To: ET02 Hoc
Cc: Reyes, Debra
Subject: RE: help with our Japan team computer network - As requested the folder has been created.

Good morning,

The NOC has created a folder named 'Liaison Japan' and a control group 'G-OIS-Liaison Japan' on the existing HQ S: drive. Added the users from the spreadsheet provided to G-OIS-Liaison Japan. Added G-OIS-Liaison Japan to the folder Liaison Japan. Upon login the users in the group should receive a N: drive mapping to access the folder. The folder can also be accessed using the following link <\\nrc.gov.nrc\hq\Shared\Liaison Japan>. This can be copied to the desktop for use.

Please let me know if you need anything else.

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debbie

From: ET02 Hoc
Sent: Monday, April 11, 2011 7:13 AM
To: Turner, Joseph; Reyes, Debra
Subject: FW: help with our Japan team computer network

Fyi...karen

From: Bernhard, Rudolph
Sent: Monday, April 11, 2011 6:27 AM
To: LIA08 Hoc; Rich, Thomas; Paradiso, Karen
Cc: ET02 Hoc
Subject: RE: help with our Japan team computer network

Jeff, thanks for kicking off the request. I had no clue who to ask.

A subdirectory that all in country Japan team members could be mapped to would be great. Since we are all from different offices, we have no common network drive that we share. We do not want to use Sharepoint, but want a subdirectory that we can map to a drive that all can reach when using Citrix. IT would have to be provided with names of those shipped over in the future, so they could be added to the access for the drive or subdirectory.

Thanks
Rudy

From: LIA08 Hoc
Sent: Monday, April 11, 2011 6:15 AM
To: Rich, Thomas; Paradiso, Karen
Cc: ET02 Hoc; Bernhard, Rudolph
Subject: help with our Japan team computer network

Good morning

Our Japan site team called us this morning and asked if a separate network could be created for them to use to store documents created by and used by the NRC site team in Japan, similar I think to the way we use the M drive in the NRC Ops Center to capture event info at our end.

Please let us know if this is possible and what the procedure is for this to occur.

Thanks for any help you can provide

Jeff Temple
NRC Operations Center
Liaison Team Coordinator
301-816-5185

From: LIA03 Hoc
Sent: Tuesday, April 12, 2011 10:36 AM
To: LIA08 Hoc; LIA02 Hoc; LIA10 Hoc
Subject: FW: Event: Native American Advisory Committee Open House
Attachments: ~WRD000.jpg; image001.jpg; image002.jpg; image003.jpg; image004.jpg

From: NRC Announcement [mailto:nrc.announcement@nrc.gov]
Sent: Tuesday, April 12, 2011 10:34 AM
To: NRC Announcement
Subject: Event: Native American Advisory Committee Open House



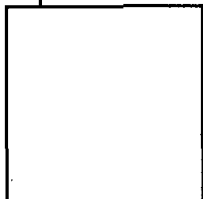
Tuesday April 12, 2011 -- Headquarters Edition

☐ [Event: Native American Advisory Committee Open House](#)

Event: Native American Advisory Committee Open House

Please join the Native American Advisory Committee (NAAC) for an Open House on April 13, 2011, from 11:30 a.m. to 12:30 p.m. in the TWFN exhibit area. Come enjoy free food (Indian Fry Bread!), drinks, and games. NAAC members will be present to discuss the committee and to solicit volunteers. For additional information, please contact [Jody Martin](#), Co-Chair, NAAC, at 301-415-1569.

Additionally, NAAC will be joined by members of the Asian Pacific American Advisory Committee, who will be folding cranes and training interested new participants as part of the NRC's Origami Crane Folding Project. Feel free to come fold cranes to support this worthy project. More information on the Origami Crane Folding Project can be found in the latest edition of the NRC Reporter.



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From: LIA10 Hoc
Sent: Tuesday, April 12, 2011 2:31 AM
To: LIA08 Hoc; LIA02 Hoc; LIA03 Hoc
Subject: FW: Laptops

From: LIA02 Hoc
Sent: Tuesday, April 12, 2011 2:30 AM
To: LIA08 Hoc; LIA03 Hoc; LIA10 Hoc
Subject: FW: Laptops

From: Emche, Danielle
Sent: Tuesday, April 12, 2011 2:30 AM
To: LIA02 Hoc; Bloom, Steven
Cc: Foggie, Kirk
Subject: Re: Laptops

I plan to leave my working laptop and take back a broken one.
Danielle
Sent from an NRC BlackBerry.

From: Stahl, Eric
To: LIA02 Hoc; Emche, Danielle
Sent: Mon Apr 11 18:07:02 2011
Subject: RE: Laptops

I had brought my own laptop and forgot/didn't think to grab one of the non-working ones. Sorry.

From: LIA02 Hoc
Sent: Monday, April 11, 2011 2:08 PM
To: Emche, Danielle; Stahl, Eric
Subject: Laptops

Are either of you planning on bringing back the laptops that were not working correctly.

Steve

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From: LIA10 Hoc
Sent: Tuesday, April 12, 2011 7:26 AM
To: LIA08 Hoc; LIA02 Hoc; LIA03 Hoc
Subject: FW: test message to see if it arrives in Steve Bloom's mailbox

From: LIA02 Hoc
Sent: Tuesday, April 12, 2011 7:26 AM
To: LIA08 Hoc; LIA03 Hoc; LIA10 Hoc
Subject: FW: test message to see if it arrives in Steve Bloom's mailbox

From: ET02 Hoc
Sent: Tuesday, April 12, 2011 7:25 AM
To: LIA02 Hoc
Subject: test message to see if it arrives in Steve Bloom's mailbox

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The New York Times

Green**A Blog About Energy and the Environment**

APRIL 12, 2011, 3:07 PM

Keeping Score on Nuclear Accidents

By MATTHEW L. WALD

Tokyo Electric Power Company The damaged Unit 3 reactor at the Fukushima Daiichi plant in Japan. Now that Japan has raised its assessment of the Fukushima accident to a 7 on the International Atomic Energy Agency's scale, equal to the 1986 accident at Chernobyl, it may be time to review past accidents. Thomas B. Cochran, a physicist at the Natural Resources Defense Council, just did that in preparing to testify on Tuesday afternoon before the Senate Environment and Public Works Committee.

Some of the incidents that he lists are technically not meltdowns but rather "core damage accidents." That term is used when an intact core holds in nearly all of the radioactive materials that are created by a reactor as it splits atoms of uranium and plutonium, leaving behind fragment atoms of materials like cesium, strontium and iodine, which seek to return to stability by giving off radiation. If the core melts, as it did at Fukushima, or explodes, as it did at Chernobyl, that radioactive material is released.

The seven-level scale for the seriousness of the accidents runs from "anomaly," something that would probably not be mentioned in a newspaper, to "incident," which might be, to an event with major off-site consequences for health and the environment, like Chernobyl or Fukushima. Some do not involve reactors: Japan, for example, experienced an accident in 1999 at a plant that processes plutonium fuel. The plutonium was stored in a liquid in a vessel that was too large, inadvertently creating a "critical mass," an amount capable of sustaining a chain reaction. The chain reaction created a shower of radiation and heat, blowing apart the critical mass, but as it cooled, it re-assembled. That rated a level 4.

In fact, the International Atomic Energy Agency pointed out a few hours after Japan announced the 7 rating on Tuesday, the 7 applies to reactors 1, 2 and 3 at Fukushima Daiichi. The accident at Unit 4 is not in the reactor but in the spent fuel pool and is still rated at 5.

Some of the events on this list predate the scale and do not appear to have been rated. They are listed by Mr. Cochran in chronological order.

1. Sodium Reactor Experiment (SER)

Location: Santa Susana Field Laboratory, California, United States

Reactor type: sodium-cooled graphite-moderated thermal power reactor

Power: 20 MWt; 6.5 MWe

History: initial criticality: April 25, 1957; first produced electricity in July 1957; operated two years, partial core meltdown accident from July 12 to 26, 1959, resulting in melting of as much as one-third of the fuel; shutdown July 26, 1959 (appears to have been operated for several days with its core partially

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melted); converted to HEU-Th fuel; second core operations began September 1960; permanently shutdown in February 1964.

2. Stationary Low-Power Reactor No. 1 (SL-1)

Location: National Reactor Testing Station (now Idaho National Laboratory), United States

Reactor type: experimental, gas-cooled, water-moderated

Power: 3.3 MWt; 300 kWe

History: initial criticality March 1961; prompt criticality accident Jan. 3, 1961; shut down May 1964

3. Enrico Fermi Unit 1 Reactor

Location: Newport, Lagoona Beach, Frenchtown Township, Monroe County, Mich., United States

Reactor Type: Liquid Metal Fast Breeder Reactor (LMFBR)

Power: 200 MWt; 65 MWe (gross); 61 MWe (net)

History: initial criticality Aug. 23, 1963; commercial operations began August 1966; partial fuel melt accident Oct. 5, 1966, two of the 105 fuel assemblies melted, but no contamination was recorded outside the containment vessel; closed November 1972

4. Chapelcross Unit 2 Nuclear Power Plant

Location: Annan, Dumfrieshire, Scotland, United Kingdom

Reactor Type: gas-cooled, graphite moderated; Magnox

Power: originally 180 MWt, up-rated progressively to 265 MWt, originally 23 MWe (gross)

progressively up-rated to 60 MWe (gross); 50 MWe (net)

History: start-up May 1959; while under evaluation for the commercial reactor program, experienced a partial blockage in a single fuel channel May 1967, contamination was limited to one region of the core; shut down June 29, 2004

5. Saint-Laurent A-1 Nuclear Power Plant

Location: St. Laurent-Nouan, Loir-et-Cher, Centre, France

Reactor Type: gas-cooled, graphite moderated

Power: 1570 MWt; 405 MWe (gross), 390 MWe (net)

History: grid connection March 14, 1969; commercial operation June 1969; 50 kg of uranium began to melt Oct. 17, 1969; permanently shut down May 27, 1992

6. Saint-Laurent A-2 Nuclear Power Plant

Location: St. Laurent-Nouan, Loir-et-Cher, France

Reactor Type: gas-cooled, graphite moderated

Power: 1690 MWt; 465 MWe (gross) [uprated to 530 MWe (gross)], 450 MWe (net)

History: started November 1970; grid connection Aug. 9, 1971; commercial operation November 1971; heat excursion causing some fuel melting March 13, 1980; permanently shut down May 27, 1992

7. Three Mile Island Unit 2 Nuclear Power Plant

Location: Londonderry Township; Dauphine County, Pa., United States

Reactor Type: Pressurized Water Reactor (PWR)

Power: 2,568 MWt, 808 MWe (gross); 776 MWe (net)

History: initial criticality December 1978; partial core melt accident March 1979; decommissioned 1979

8. Chernobyl Unit 4 Nuclear Power Plant

Location: Pripyat, Ukraine, Soviet Union (now Ukraine)

Reactor Type: RBMK-1000 (graphite-moderated water-cooled)

Power: 3,200 MWt; 1,000 MWe (gross); 925 MWe (net)

History: destroyed in full-core melt accident April 26, 1986

9. Greifswald Unit 5 (KGR-5) Nuclear Power Plant

Location: Lubmin, East Germany (now Germany)

Reactor Type: VVER-440, Model V-230, Pressurized Water Reactor (PWR)

Power: 1,375 MWt; 440 MWe (gross); 408 MWe (net)

History: grid connection April 24, 1989; commercial operation Nov. 1, 1989; near core melt with 10 fuel elements damaged Dec. 7, 1975; permanent shutdown Nov. 24, 1989

10. Fukushima Daiichi Unit 1 Nuclear Power Plant

Location: Ohkuma, Fukushima Prefecture, Japan

Reactor Type: Boiling Water Reactor (BWR), GE BWR/2, Mark 1 Containment

Power: 1,380 MWt; 450 MWe (gross); 439 MWe (net)

History: initial criticality Oct. 10, 1970; grid connection Nov. 17, 1970; commercial operation March 26, 1971; partial core meltdown after earthquake on March 11, 2011

11. Fukushima Daiichi Unit 2 Nuclear Power Plant

Location: Ohkuma, Fukushima Prefecture, Japan

Reactor Type: Boiling Water Reactor (BWR), TOS1 [GE BWR/4], Mark 1 Containment

Power: 2,381 MWt; 794 MWe (gross); 760 MWe (net)

History: initial criticality May 10, 1973; grid connection Dec. 24, 1973; commercial operation July 18, 1974; partial core meltdown after earthquake on March 11, 2011

12. Fukushima Daiichi Unit 3 Nuclear Power Plant

Location: Ohkuma, Fukushima Prefecture, Japan

Reactor Type: Boiling Water Reactor (BWR), TOS1 [GE BWR/4], Mark 1 Containment

Power: 2,381 MWt; 794 MWe (gross); 760 MWe (net)

History: initial criticality Jan. 28, 1978; grid connection Feb. 24, 1978; commercial operation Oct. 12, 1978; partial core meltdown after earthquake on March 11, 2011

Allen, Linda

From: Hiltz, Thomas
Sent: Wednesday, April 13, 2011 11:39 AM
To: Allen, Linda
Subject: FW: "Official Use Only" : 0700 EDT (March 17, 2011) USNRC Earthquake/Tsunami SitRep
Attachments: NRC Status Update 3-17.11--07.00am.pdf

From: Tschiltz, Michael
Sent: Thursday, March 17, 2011 8:17 AM
To: Smith, Brian; Campbell, Larry; Hiltz, Thomas; Habighorst, Peter; Silva, Patricia; Bailey, Marissa; Johnson, Robert
Cc: Kinneman, John
Subject: "Official Use Only" : 0700 EDT (March 17, 2011) USNRC Earthquake/Tsunami SitRep

Please keep your people informed. Thanks. Mike

Attached, please find a 0700 EDT situation report from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami on March 17, 2011. **This Update corrects information about the US State Department's actions for employees in Japan.**
Please note that this information is "Official Use Only" and is only being shared within the federal family.
Please call the Headquarters Operations Officer at 301-816-5100 with questions.

-Jim

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

JJJ / 333

From: ET02 Hoc
Sent: Wednesday, April 13, 2011 3:48 PM
To: OST01 HOC
Subject: FW: FYI - TOP STORY IN TODAY'S GLOBAL SECURITY NEWSWIRE
Attachments: image001.jpg

fyi

From: ET01 Hoc
Sent: Wednesday, April 13, 2011 3:43 PM
To: ET02 Hoc
Subject: FW: FYI - TOP STORY IN TODAY'S GLOBAL SECURITY NEWSWIRE

From: Weber, Michael
Sent: Wednesday, April 13, 2011 3:42:45 PM
To: Carpenter, Cynthia; ET05 Hoc; ET01 Hoc; OST02 HOC; OST01 HOC
Cc: Brenner, Eliot; Hayden, Elizabeth; Burnell, Scott; Doane, Margaret; Mamish, Nader; Virgilio, Martin; Merzke, Daniel
Subject: FYI - TOP STORY IN TODAY'S GLOBAL SECURITY NEWSWIRE
Auto forwarded by a Rule

Japan Denies Withholding Evidence of Massive Radiation Release

Wednesday, April 13, 2011

Japanese authorities on Tuesday attempted to deflect criticism for withholding over a period of weeks indications of significant radioactive material leakages from the Fukushima Daiichi nuclear power plant, the *New York Times* reported (see [GSN](#), April 12).



(Apr. 13) - A perimeter fence, shown on Tuesday, restricts access to Japan's Fukushima Daiichi nuclear power plant. Tokyo last month did not release calculations pointing to major radioactive material releases from the severely damaged facility due to concerns over their accuracy, officials said this week (Athit Perawongmetha/Getty Images).

55 | 334

Japan on Tuesday upgraded the plant's incident level from 5 to 7, a classification reserved for the most severe nuclear crises. The government took the action in large part in response to calculations showing that extreme quantities of radioactive iodine and cesium had escaped from the six-reactor facility in the first week after it was crippled by the 9.0-magnitude earthquake and devastating tsunami that hit Japan on March 11. The confirmed death toll from those events now exceeds 12,000 people.

Uncertainty over the calculations' accuracy held up their release, Japanese Nuclear Safety Commission official Seiji Shiroya said. In addition, the official suggested the government was concerned the measurements could exacerbate public fear over the atomic crisis.

"Some foreigners fled the country even when there appeared to be little risk," Shiroya said. "If we immediately decided to label the situation as level 7, we could have triggered a panicked reaction."

"At first, the calculations could have been off by digits," the official added. "It was only when there was certainty that the margin of error was within two to three times that we made an announcement" (*New York Times*, April 12).

Japanese Chief Cabinet Secretary Yukio Edano said he knew last month that the plant's incident level might be raised to 7, though details on radiation escaping from the facility were unclear at the time, Kyodo News reported. The Nuclear Safety Commission had measurements from only three sites away from the facility at that point, and the country's Nuclear and Industrial Safety Agency collects its own figures for verification.

The two organizations "said they could not vouch for the certainty of their estimates, so I told them to make a thorough, reliable analysis as soon as possible," Edano said, noting he was informed on Monday of the updated assessment (*Kyodo News I*, April 12).

The plant has released between 370,000 and 630,000 terabecquerels of radiation, Reuters reported, quoting estimates by both government offices.

"If that is the total radiation so far from the time of first leakage, that amount is very serious. It's undoubtedly very bad. That is close to one-tenth of Chernobyl's radiation in a month," said Lam Ching-wan, a member of the American Board of Toxicology and a chemical pathologist with the University of Hong Kong. "It means there is damage to soil, ecosystem, water, food and people. People receive this radiation. You can't escape it by just shutting the window."

"The radiation threat is there and there must be national radiation surveillance for health purposes ... they must decide if there should be regular screening for cancer," the expert said. Iodine 131, cesium 134 and cesium 137 can all produce cancer years after exposure (*Tan Ee Lyn, Reuters I*, April 12).

Japanese Prime Minister Naoto Kan on Tuesday denied concealing radiation data, the *Times* reported.

"What I can say for the information I obtained -- of course the government is very large, so I don't have all the information -- is that no information was ever suppressed or hidden after the accident," Kan said. "There are various ways of looking at this, and I know there are opinions saying that information could have been disclosed faster. However, as the head of the government, I never hid any information because it was inconvenient for us."

Separately, a senior executive for the plant's operator suggested the facility might eventually emit more radioactive material than was released in the 1986 Chernobyl disaster. The plant has so far hemorrhaged roughly 10 percent of the amount of radioactive contaminants released by the incident in the former Soviet Union, according to the Japanese government.

"The radiation leak has not stopped completely, and our concern is that it could eventually exceed Chernobyl," Tokyo Electric Power executive Junichi Matsumoto said on Tuesday.

NISA Deputy Director General Hidehiko Nishiyama, though, said he "cannot understand" the company's stance. He suggested the operator was being "prudent and thinking about the worst-case scenario," noting, "I think they don't want to be seen as optimistic."

The plant has now leaked "almost all" of the total amount of radioactive material that would escape, Nishiyama said, adding the level of contaminants leaving the facility has fallen by nine-tenths since the first days of the crisis (*New York Times*).

A senior International Atomic Energy Agency official said the "Fukushima accident and Chernobyl are very different," Kyodo News reported.

The Chernobyl reactor was running at the time of the incident, whereas operations at the Japanese plant were rapidly suspended following last month's earthquake and tsunami, IAEA Deputy Director General Denis Flory said (*Kyodo News II*, April 12).

The Fukushima disaster's designation at the same level as the Chernobyl incident points to the need to revise the IAEA International Nuclear and Radiological Event Scale, Reuters on Wednesday quoted a specialist as saying.

"Fukushima was not as bad as Chernobyl. If Fukushima is a level 7 accident, maybe we need to go back and recalibrate the scale and add a level 8 or 9," said Najmedin Meshkati, a civil and environmental engineering professor with the University of Southern California (DiSavino/O'Grady, *Reuters II*, April 12).

Meanwhile, plant personnel as of Wednesday morning had pumped nearly one-third of a 700-ton quantity of radiation-tainted water out of an underground area of the No. 2 reactor's turbine area and another passage into a steam condenser, Kyodo News reported. The operation, slated for completion by Thursday, had reduced the water's depth in the passage.

Recovery efforts were unaffected by a 5.8-magnitude earthquake on Wednesday morning, the Japanese atomic safety agency said.

Contaminated water has hindered efforts to restore cooling mechanisms needed to help prevent additional radioactive material from escaping the site. Workers intend to eventually transfer 60,000 tons of fluid flooding underground portions of the facility, including turbine areas at the plant's No. 1, No. 2 and No. 3 reactors.

The plant operator overnight fired 195 tons of fresh water into a spent nuclear fuel cooling point in the reactor 4 structure after the water was found on Tuesday to be approaching boiling temperature. The site's water depth has fallen as a series of tremors rocked the plant, according to the company (*Kyodo News III*, April 13).

Tokyo Electric Power said a number of the spent fuel rods in storage at the reactor have been harmed, but most of the fuel seemed stable (*Kyodo News IV*, April 13).

The firm intends on Wednesday to complete the deployment of seven steel radiation containment barriers close to a No. 2 reactor pipe for receiving ocean water. "Silt fence" installations were slated for placement near similar pipes at the No. 3 and No. 4 reactors (*Kyodo News III*).

Japan on Monday announced plans to establish "planned evacuation areas" and "evacuation-prepared areas" outside the exclusion zone extending 12.4 miles from the plant, the International Atomic Energy Agency said. Residents are expected to leave planned evacuation areas within one month, while individuals in evacuation-

prepared areas could be asked to remain indoors or potentially to leave their homes (International Atomic Energy Agency release, April 12).

The government has announced plans to evacuate five additional jurisdictions, possibly including more areas in the town of Minamisoma located partially within the exclusion zone, the London *Guardian* reported. All but 10,000 of the town's 71,000 residents have already left (Justin McCurry, *London Guardian*, April 12).

Radioactivity in Tokyo on Wednesday was found at levels typical prior to the Fukushima plant crisis, Kyodo News reported (*Kyodo News V*, April 13).

A longer-term plan for containing plant radiation was still in development, Reuters quoted Tokyo Electric Power President Masataka Shimizu as saying on Wednesday.

"As instructed by Prime Minister Kan we are working out the specific details of how to handle the situation so they can be disclosed as soon as possible," Shimizu said. "We are making the utmost effort to bring the reactors at Fukushima Daiichi to a cold shutdown and halt the spread of radiation" (Fujioka/Uranaka, *Reuters III*, April 13).

Machinery operated from a distance has begun taking radioactive detritus from the area surrounding the plant, the *Asahi Shimbun* reported (*Asahi Shimbun*, April 13).

Japan on Wednesday prohibited deliveries of shiitake mushrooms grown in exposed areas close to the facility, Kyodo News reported (*Kyodo News VII*, April 13).

In South Korea, plutonium traces turned up in 12 ocean water samples taken between March 23 and April 6, the Yonhap News Agency reported.

"The amount detected is negligible with concentration levels being more than a millionth-to-one of the 1 millisievert safety standard set by the government," Korea Institute of Nuclear Safety President Yun Choul-ho said, adding the plutonium did not appear to have originated in Japan.

"Instead of carrying out biannual tests on seawater, Seoul will check for radiation every month starting in April," Yun said (*Yonhap News Agency*, April 13).

Chinese Premier Wen Jiabao on Tuesday pressed Prime Minister Kan to provide faster updates on the disaster, *China Daily* reported (*China Daily*, April 13).

Japanese Foreign Minister Takeaki Matsumoto on Wednesday said the government had not provided advance notice of a recent radioactive water release to all governments that have diplomatic ties with Tokyo, Kyodo News reported.

"It is true that our notification was sent after the water discharge started, but communication channels have since been improved," he said (*Kyodo News VIII*, April 13).

Tokyo is expected to dispatch a delegate to provide information on the crisis at a number of international atomic safety meetings in Ukraine (*Kyodo News IX*, April 13).

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

Allen, Linda

From: Hiltz, Thomas
Sent: Wednesday, April 13, 2011 11:36 AM
To: Allen, Linda
Subject: FW: Official Use Only: USNRC Earthquake-Tsunami Update 03.20.11--1800 EDT
Attachments: USNRC Earthquake-Tsunami Update.032011.1800EDT.pdf

From: Tschiltz, Michael
Sent: Monday, March 21, 2011 7:40 AM
To: Habighorst, Peter; Hiltz, Thomas; Smith, Brian; Silva, Patricia; Campbell, Larry; Johnson, Robert
Cc: Bailey, Marissa; Smith, James; Kinneman, John
Subject: Official Use Only: USNRC Earthquake-Tsunami Update 03.20.11--1800 EDT

Branch Chiefs.. please share with your staff.. **Please note that this information is "Official Use Only" and is only being shared within the federal family.**

Thanks.. Mike

From: LIA07 Hoc
Sent: Sun Mar 20 17:56:57 2011
Subject: USNRC Earthquake-Tsunami Update 03.20.11--1800 EDT

Attached, please find the **1800 EDT March 20, 2011** status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

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

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

- Caroline

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LIA07.HOC@nrc.gov (Operations Center)

JJJ|335

Allen, Linda

From: Hiltz, Thomas
Sent: Wednesday, April 13, 2011 11:39 AM
To: Allen, Linda
Subject: FW: "Official Use Only" : 0630 EDT (March 16, 2011) USNRC Earthquake/Tsunami SitRep
Attachments: NRC Status Update 3-16.11--0630am.pdf
Importance: High

From: Tschiltz, Michäel
Sent: Wednesday, March 16, 2011 9:39 AM
To: Smith, Brian; Habighorst, Peter; Hiltz, Thomas; Campbell, Larry; Silva, Patricia; Johnson, Robert
Cc: Kinneman, John; Bailey, Marissa
Subject: "Official Use Only" : 0630 EDT (March 16, 2011) USNRC Earthquake/Tsunami SitRep
Importance: High

Branch Chiefs, please share this with your staff with the appropriate caution that this information is "Official Use Only" and is only being shared within the federal family.

Attached, please find a 0630 EDT situation report from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami on March 16, 2011. This Update includes information on dose rates near Fukushima Daiichi, Fukushima Daiichi plant parameters, and NRC PMT hypothetical Worst Case Analyses.

In the event that a member of the staff receives a call from a member of the public concerning the event please refer them to the Office of Public Affairs. This actually happened yesterday with a call that Lorena received.

Thanks,
Mike

JJJ | 336

From: LIA03 Hoc
Sent: Wednesday, April 13, 2011 7:00 AM
To: LIA08 Hoc; LIA02 Hoc; LIA10 Hoc
Subject: FW: Status of Foreign Assistance April 13, 2011
Attachments: Status of Foreign Assistance April 13 2011.pdf

From: Kreuter, Jane
Sent: Wednesday, April 13, 2011 7:00 AM
To: LIA02 Hoc; LIA03 Hoc; LIA08 Hoc
Cc: Young, Francis; Bloom, Steven; Foggie, Kirk
Subject: Status of Foreign Assistance April 13, 2011

Jane A. Kreuter
U.S. Nuclear Regulatory Commission
Office of International Programs
Phone: 301-415-1780
Fax: 301-415-2395
E-Mail: Jane.Kreuter@nrc.gov

JJJ/337

Status of Foreign Assistance for Fukushima-Daiichi Nuclear Power Plant

8-Apr-11

Goods	Number of Goods	Nations/Organizations	Status	Recipient	Note
Radiation survey meter	185	Canada	Decided to accept	Fukushima Pref.	
	n/a	UK	Accepted	Under consideration	
	75	France	Decided to accept	Under consideration	
	1,000	Ukraine	Decided to accept	Under consideration	
	20	Korea	Decided to accept	Under consideration	
Personal radiation dosimeter (PRD)	2,100	USA	Under consideration	Under consideration	from Illinois
	30,500	USA	Accepted	MOD and FDMA	
	5,005	Canada	Decided to accept	TEPCO	
	n/a	UK	Accepted	Under consideration	
	130	Germany	Accepted	TEPCO	from AREVA Germany
	70	Germany	Under consideration	Under consideration	from KHD
	1,689	France	Decided to accept	Under consideration	
	400	Russia	Accepted	Under consideration	
	1,000	Ukraine	Decided to accept	Under consideration	
	50,000	Israel	Under consideration	Under consideration	
Radiation detector (various types)	250	France	Accepted	TEPCO, FDMA and Fukushima Pref.	from EDF
	7	Germany	Accepted	TEPCO	from AREVA Germany
	33	Germany	Under consideration	Under consideration	from KHD
Germanium semiconductor detector	3	USA	Decided to accept	MEXT, MAFF and MHLW	
Radiation measurement vehicle	4	France	Accepted	Under consideration	from AREVA and EDF
	1	Germany	Under consideration	Under consideration	from KHD
Protective mask	n/a	UK	Accepted	Under consideration	
	3,378	Germany	Accepted	TEPCO	from AREVA Germany
	3,000	France	Accepted	TEPCO	from AREVA
	1,470	France	Decided to accept	Under consideration	
	1,000	Ukraine	Decided to accept	Under consideration	
Replacement filter (for Protective mask)	n/a	UK	Accepted	Under consideration	
	9,055	Germany	Accepted	TEPCO	from AREVA Germany
	1,720	France	Decided to accept	Under consideration	
	1,000	Ukraine	Decided to accept	Under consideration	
Protective body armor	10,200	USA	Accepted	Fukushima Pref.	with PRD, 150 protective masks and 588 cartridges/canisters
	99	USA	Accepted	MOD	with protective mask
	150	USA	Under consideration	Under consideration	with protective mask
	10,000	France	Accepted	TEPCO	from AREVA
	about 20,000	France	Accepted	TEPCO, FDMA and Fukushima Pref.	from EDF, with protective mask
	1,000	France	Accepted	MOD	
Pump	5	USA	Accepted	TEPCO	
Concrete pump	10	France	Accepted	Under consideration	from EDF
	5	Germany	Accepted	TEPCO	charged, from Putzmeister
Boric acid	1	China	Accepted	TEPCO	from SANY
	about 8 tons	USA	Accepted	TEPCO	
Potassium iodine	100 tons	France	Accepted	TEPCO	from EDF
	for 15 million adults	USA	Decided to accept	Under consideration	
	n/a	UK	Decided to accept	Under consideration	
	n/a	France	Under consideration	Under consideration	
Robot	n/a	UNICEF	Under consideration	Under consideration	
	8	USA	Accepted	TEPCO	from Cinetiq and i-robot
	n/a	USA	Under consideration	Under consideration	
Experts	1	Germany	Under consideration	Under consideration	from KHD
	about 60	USA	Accepted		
	8	France	Accepted		from AREVA
	5	Republic of Korea	Decided to accept		
		IAEA	Accepted		

From: LIA03 Hoc
Sent: Wednesday, April 13, 2011 2:25 PM
To: LIA08 Hoc; LIA02 Hoc; LIA10 Hoc
Subject: FW: General Interest: Latest NRC Reporter Now Online
Attachments: ~WRD000.jpg; image001.jpg; image002.jpg; image003.jpg; image004.jpg

From: NRC Announcement [mailto:nrc.announcement@nrc.gov]
Sent: Wednesday, April 13, 2011 2:20 PM
To: NRC Announcement
Subject: General Interest: Latest NRC Reporter Now Online



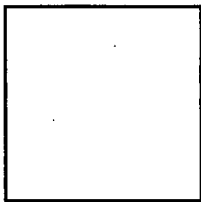
Wednesday April 13, 2011 -- Headquarters Edition

☐ [General Interest: Latest NRC Reporter Now Online](#)

General Interest: Latest NRC Reporter Now Online

The latest edition of the NRC Reporter is now on line, with a story about an All Hands meeting in a regional office that took an unexpected turn, and a look at how requests under the Freedom of Information Act are affecting the agency.

The Reporter is published weekly, on Wednesdays, for the benefit of NRC employees. To help make it a better publication, be sure to send your news, calendar entries, and other material to Glenn Ellmers.



(2011-04-13 00:00:00.0)

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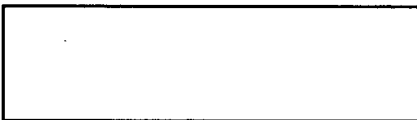
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JJJ | 338

From: LIA03 Hoc
Sent: Wednesday, April 13, 2011 3:34 PM
To: LIA08 Hoc; LIA02 Hoc; LIA10 Hoc
Subject: FW: General Interest: Message from President Obama
Attachments: ~WRD242.jpg; image001.jpg; image002.jpg; image003.jpg; image004.jpg

From: NRC Announcement [mailto:nrc.announcement@nrc.gov]
Sent: Wednesday, April 13, 2011 3:32 PM
To: NRC Announcement
Subject: General Interest: Message from President Obama

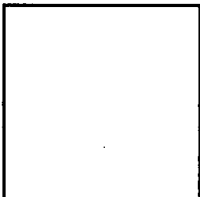


Wednesday April 13, 2011 -- Headquarters Edition

☐ General Interest: Message from President Obama

General Interest: Message from President Obama

Please read this personal message to all Federal employees from President Obama.



(2011-04-13 00:00:00.0)

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JJJ/339

From: LIA03 Hoc
Sent: Wednesday, April 13, 2011 7:41 AM
To: LIA08 Hoc; LIA02 Hoc; LIA10 Hoc
Subject: FW: Network Bulletin: Space and Property Management System Maintenance

From: Network Bulletin
Sent: Wednesday, April 13, 2011 7:40 AM
Subject: Network Bulletin: Space and Property Management System Maintenance

Announcement: The Space and Property Management System (SPMS) will be down due to routine system maintenance every Friday between 7pm and 8pm Eastern Standard Time (EST)

Impact: The Space Planning, Property and Visitor Access Request modules within SPMS will not be available during the scheduled maintenance outages.

Contact: SPMSAdministrators@nrc.gov or 301-492-3767 SPMS Hotline

JJJ/348

Pulley, Britaney

From: ~~Schroer, Suzanne~~
Sent: ~~Wednesday, April 13, 2011 2:57 PM~~
To: ~~Schroer, Suzanne~~
Subject: FW: FOR OFFICIAL USE ONLY - 1200 EDT (April 13, 2011) USNRC Earthquake/Tsunami SitRep - FOR OFFICIAL USE ONLY
Attachments: USNRC Earthquake-Tsunami Update.041311.1200EDT.pdf

From: Wert, Leonard
Sent: Wednesday, April 13, 2011 2:57 PM
To: R2MAIL; R2_RESIDENT SITES
Subject: FOR OFFICIAL USE ONLY - 1200 EDT (April 13, 2011) USNRC Earthquake/Tsunami SitRep - FOR OFFICIAL USE ONLY

~~—FOR OFFICIAL USE ONLY—~~

Attached, for your information, is the NRC situation report dated 1200, April 13, 2011, regarding the impacts of the Japan earthquake/tsunami event. This document is considered **FOR OFFICIAL USE ONLY** and is not to be distributed outside the agency.

Len

~~—FOR OFFICIAL USE ONLY—~~

JJJ/341

From: Uselding, Lara
To: Brenner, Eliot; Akstulewicz, Brenda; Harrington, Holly; Burnell, Scott
Cc: Howell, Linda
Subject: Updated talkers 3_11_QUAKE_talk_pts.docx
Date: Friday, March 11, 2011 10:26:23 AM
Attachments: 3_11_QUAKE_talk_pts.docx

JJJ/342

OPA

TALKING POINTS

MARCH 11, 2011 JAPAN EARTHQUAKE AND WEST COAST TSUNAMI

As of 4/26/2011 2:54 PM

- The Nuclear Regulatory Commission is following events on the U.S. West Coast and U.S. Pacific interests in the wake of the March 11 earthquake in Japan and associated tsunami.
- The NRC resident inspector at the Diablo Canyon nuclear power plant on the central California coast is on site and keeping track of the plant's response to the tsunami warning for that area. The plant is operating normally but has declared an Unusual Event; plant employees are taking preplanned actions to prepare for the predicted tsunami effects. The licensee continues to monitor the event to assess whether additional planned actions,

to include plant shutdown, are appropriate. NRC resident inspector staff is on site monitoring the licensee's activities.

- The San Onofre nuclear power plant on the southern California coast is operating normally and is in the tsunami advisory area.
- The Humboldt Bay spent fuel storage site on the northern California coast is in the tsunami warning area; site personnel have informed the NRC they are prepared for possible effects.
- The tsunami is expected to miss NRC-regulated nuclear materials sites in Hawaii and Alaska; the NRC remains in contact with these facilities.
- The NRC has regulations in place that require licensees to design their plants to withstand the effects of tsunamis.
(10CFR 50, Appendix A, Criterion 2, "Design bases for protection against natural phenomenon" requires licensees to design structures, systems, and components important to safety to withstand the effects of natural phenomenon, including tsunamis.)
- At Diablo Canyon, the plant is safe from a tsunami. The plant's ability to withstand large waves and the maximum wave height at the intake structure were determined through extensive and detailed scaled model wave testing. To prevent water from entering the intake structure and affecting the pump motors, the structure is equipped with a snorkel valve that can close.
- Nuclear power plants are built to withstand environmental hazards, including earthquakes. Even those plants that are located outside of areas

with extensive seismic activity are designed for safety in the event of such a natural disaster.

- The NRC requires that safety-significant structures, systems, and components be designed to take into account the most severe natural phenomena historically reported for the site and surrounding area. The NRC then adds a margin for error to account for the historical data's limited accuracy. In other words, the licensing bases for existing nuclear power plants are based on historical data from the area's maximum credible earthquake, with an additional margin included.

From: OST01 HOC
Sent: Thursday, April 14, 2011 8:45 PM
To: Dorsey, Cynthia
Subject: hl-011-user_list_mcust(1).xls
Attachments: hl-011-user_list_mcust(1).xls

JJJ/343

NRR/DE

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ADAKOUFOLI

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GURCHARANMATHARU

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MATTHEWMCCONNELL

PREMSAHAY

SWAGATASOM

ROSSNYEVALVARADO

NORBERTCARTE

PONGCHUNG

SAMIRDARBALI

BERNARDDITTMAN

WILLIAMKEMPER

SUBINOYMAZUMDAR

TIMOTHYMOSSMAN

DAVIDRAHN

GURSHARANSINGH

RICHARDSTATTEL

GEORGEWILSON1

STEPHENWYMAN

CHAKRAPANIBASAVARAJU

ANDYDUBOUCHET

FARHADFARZAM

DANHOANG

WILLIAMJESSUP

MEENAKHANNA

GEORGETHOMAS2

ALEXANDERTSIRIGOTIS

JUANURIBE

AARONARMSTRONG

JULIECRUTCHLEY

LOISJAMES

MARTINMURPHY
JONATHANORTEGALUCIAN
JOSEPHPETROSINO
ROBERTPETTIS
PAULPRESCOTT
CARLAROQUECRUZ

ARND06502

OBE Login Not Established

HILA03298

MANO02765

SCAL01369

SKEE03298

From: OST01 HOC
Sent: Thursday, April 14, 2011 3:28 PM
To: Casto, Chuck; Collins, Elmo
Cc: Boger, Bruce; LIA08 Hoc
Subject: FW: Japan Global Assessment slides

We are resending to make sure you received. We sent the original version that we marked "Draft" to the TA's this afternoon.

From: Dyer, Jim
Sent: Wednesday, April 13, 2011 1:04 PM
To: OST01 HOC
Subject: FW: Japan Global Assessment slides

Here's Cindy's comments. Jim

From: Carpenter, Cynthia
Sent: Tuesday, April 12, 2011 9:52 PM
To: Collins, Elmo; Casto, Chuck
Cc: Wiggins, Jim; Dyer, Jim
Subject: Japan Global Assessment slides

Elmo and Chuck

Marty had a few comments on the 4 pager slides titled, "Japan Global Assessment slides":

1. Overall, he indicated that he found it hard to comment on the slides without fully understanding the purpose of the Global Assessment and what this will include. Based on our conversation, I will have references to the NUREG and historical removed from the "All Teams Major Document Status" to try and minimize the confusion on this. As you indicated, the Reactor Safety Assessment and Overall SFP Assessment documents will be included in as appendixes to the Global Assessment, and perhaps the Department of State "Re-entry into Tokyo" might be included.
2. His comments on the slides were all on the first slide
 - a. First bullet – recommend it read: "Consortium of U. S. nuclear organizations supporting assessments of facility conditions."
 - b. Delete 3rd bullet which current reads, "All major assessments completed."
 - c. Last bullet, which reads, "Provided results to TEPCO and NISA" - he asks if this is intended as a summary of our completed actions directed towards re-entry?

JJJ/344

Pulley, Britaney

From: ~~Schroer, Suzanne~~
Sent: ~~Thursday, April 14, 2011 1:51 PM~~
To: Schroer, Suzanne
Subject: FW: FOR OFFICIAL USE ONLY - 1200 EDT (April 14, 2011) USNRC Earthquake/Tsunami SitRep - FOR OFFICIAL USE ONLY
Attachments: USNRC Earthquake-Tsunami Update.041411.1200EDT.PDF

From: McCree, Victor
Sent: Thursday, April 14, 2011 1:47 PM
To: R2MAIL; R2_RESIDENT SITES
Subject: FOR OFFICIAL USE ONLY - 1200 EDT (April 14, 2011) USNRC Earthquake/Tsunami SitRep - FOR OFFICIAL USE ONLY

~~FOR OFFICIAL USE ONLY~~

Attached, for your information, NRC situation report regarding the impacts of the earthquake/tsunami event dated 1200, April 14, 2011. This document is considered **FOR OFFICIAL USE ONLY** and is not to be distributed outside the agency.

Vic

~~FOR OFFICIAL USE ONLY~~

JJJ/345

From: Dudek, Michael
Sent: Thursday, April 14, 2011 2:42 PM
To: OST01 HOC
Subject: "Red Ticket" Procedure

Annette,

Can you please sent me the draft procedure that Melissa put together for the "Red Tickets"?

Thanks! ☺

Michael Dudek | Technical Assistant | NSIR/Division of Preparedness & Response | U.S. NRC
11555 Rockville Pike, Rockville, MD 20852 | ☎ (301) 415-6500 | ✉: Michael.Dudek@nrc.gov

JJJ/346

From: OST01 HOC
Sent: Thursday, April 14, 2011 3:42 PM
To: Dudek, Michael
Subject: RE: "Red Ticket" Procedure
Attachments: HOC Task Assignment Process_4.12.11.doc

I think this is the latest.

Annette

From: Dudek, Michael
Sent: Thursday, April 14, 2011 2:42 PM
To: OST01 HOC
Subject: "Red Ticket" Procedure

Annette,

Can you please sent me the draft procedure that Melissa put together for the "Red Tickets"?

Thanks! ☺

Michael Dudek | Technical Assistant | NSIR/Division of Preparedness & Response | U.S. NRC
11555 Rockville Pike, Rockville, MD 20852 | ☎ (301) 415-6500 | ✉ Michael.Dudek@nrc.gov

JJJ/347

HOC Task Assignment Process

Background:

NRC is realigning the functions of the Japan Earthquake and Tsunami response to better serve the changing information needs of stakeholders. The Headquarters Response Team will continue to have enhanced staffing around the clock dedicated to this response, but will have fewer individuals per shift in the Headquarters Operations Center (HOC). The primary focus of the Response Team will be coordination and communications. Most of the technical assessment work associated with this response will shift to NRC's regular line organizations. To facilitate this goal, the HOC Task Assignment Process has been established to assign and track technical work performed outside of the HOC.

Objective:

The objective of the HOC Task Assignment Process is to provide a consistent approach for assigning and tracking technical work performed outside of the HOC for high-priority short and medium term actions. Longer term actions in support of the HOC will be tasked through the normal OEDO Green Ticket process or other mechanisms (e.g., NSIR's lessons learned process).

Process Overview:

Tasks initiated through the HOC in support of Fukushima Daiichi response efforts will be evaluated by the Headquarters Response Team to determine if the task involves technical work that should be performed outside of the HOC. If the Headquarters Response Team identifies a need for work to be performed outside of the HOC, the HOC will initiate the assignment following approval by the ET Director. Assignments will include specific expectations for the date and time of completion of the assignment, deliverable to be provided back to the Response Team, and the level of internal coordination and concurrence.

Assignments will be tracked via the nsir-ops.nrc.gov Share Point site and will be assigned a tracking number that corresponds with the WEBEOC Task Tracker record number associated with the task. Office points of contacts are strongly encouraged to subscribe to the SharePoint HOC assignment list via the "Alert Me" feature. Once the task is entered into the SharePoint site, an Adobe PDF assignment sheet will be transmitted electronically to the assigned Office point of contact and technical staff. Work on the task should begin as soon as possible after assignment to meet the assigned due date and time, as well as the requested level of coordination and concurrence. Supervisors are advised to authorize overtime work as needed to support timely completion of these tasks. If the technical staff need more information on the task, or if they cannot meet the assigned due date, the assigned lead office point of contact should promptly contact the Response Team at 301-816-5111 for discussion of the assignment.

Responsibilities:

Headquarters Response Team – The Headquarters Response Team under the direction of the Executive Team Director is responsible for reviewing tasks and assigning them within the HOC via the Task Tracker or outside the HOC through the HOC Task Assignment Process (or initiation an alternative tracking mechanism).

OEDO – OEDO is responsible for supervising the assignment of tasks and supporting the agency's overall response.

Office Points of Contact – Office points of contact are responsible for receiving Task Assignments from the HOC. The Office Points of Contact are responsible for identifying the technical staff responsible for the task and providing that information to the HOC.

Technical Staff – NRC technical staff are responsible for providing support for the completion of assigned HOC tasks within the appropriate timeframe and scope of the assignment. Completion of these tasks should be given high a priority but should not detract from - the NRC's mission to protect the U.S. public health and safety and the environment and promote the common defense and security associated with nuclear facilities and materials that are regulated by the NRC. Questions regarding priorities should be directed by the staff to their supervision. NRC Technical Staff should contact the Headquarters Response Team (301-816-5111) as necessary to obtain clarification on specific tasks adjustments.

Managers and Supervisors – Managers and supervisors are responsible for supporting technical staff in timely and high quality completion of HOC actions (including through the approval of overtime) while accomplishing the NRC's mission of licensing and regulating the U.S.'s civilian use of byproduct, source, and special nuclear materials in order to protect public health and safety, promote the common defense and security, and protect the environment.

Effective Date:

From: OST01 HOC
Sent: Thursday, April 14, 2011 1:24 AM
To: Hoc, PMT12
Subject: FW: Fax from 301-763-8000 x 7718
Attachments: File1.PDF

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

From: HOO Hoc
Sent: Thursday, April 14, 2011 1:23 AM
To: LIA07 Hoc; LIA08 Hoc; OST01 HOC
Subject: FW: Fax from 301-763-8000 x 7718

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

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

From: hoo1 [mailto:hoo1.hoc@nrc.gov]
Sent: Thursday, April 14, 2011 1:22 AM
To: HOO Hoc
Subject: Fax from 301-763-8000 x 7718

RECEIVE NOTIFICATION FOR JOB 00018155

Notice for: HOO1

Remote ID: 301-763-8000 x 7718

Received at: 04/14/2011 01:20

Pages: 6

Routed by:

Routed at: 04/14/2011 01:20

JJJ/348

U.S. NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION**RSMC Washington (NOAA ARL, NOAA NCEP)**

Room 410 - W/NMC33
World Weather Building
5200 Auth Road
Camp Springs, Maryland USA

Tel (24 hrs - NCEP): 301-763-8298

Tel (Backup - ARL): 301-713-2614

Fax (24 hrs - NCEP): 301-763-8592

Fax (Backup - ARL): 301-713-4592

RSMC products created Thu Apr 14 04:51 UTC 2011

The following charts will follow:

- trajectory map
- several time-integrated concentration maps
- total (dry + wet) deposition map

Please contact us if any problems arise with these products.

Source term and dispersion model details

RSMC Washington - NOAA ARL / NCEP

Response: IAEA NOTIFIED EMERGENCY

Location: FUKUSHIMA-DAIICHI-1 lat: 37.4206 lon: 141.0329

Release Start (YYYY MM DD HH MM): 2011 04 14 00 00

Meteorology: 0000 UTC 14 Apr 2011 GFS

Trajectories: 500.0, 1500.0, 3000.0 m AGL

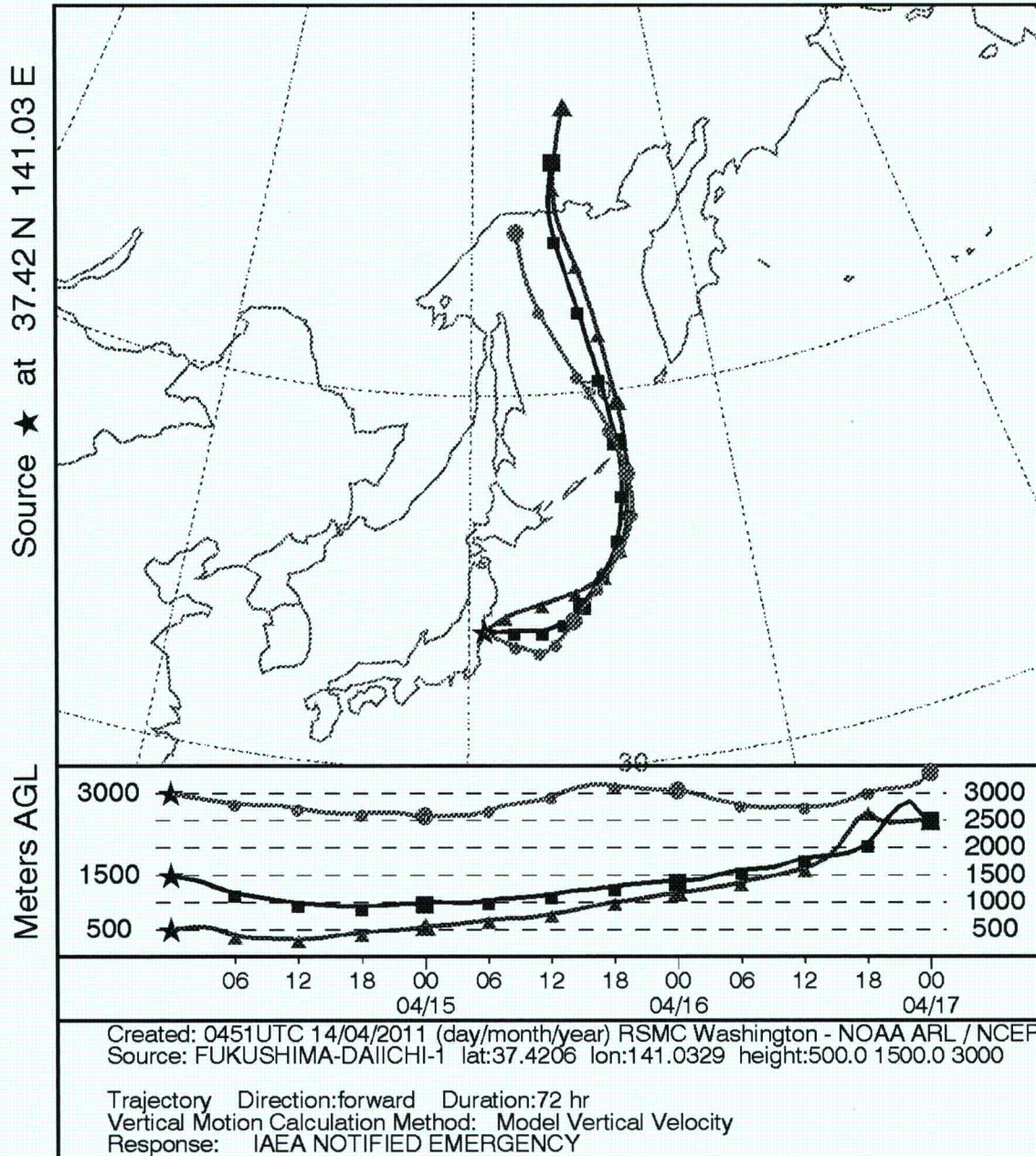
Release ID: I131 Rate: .0138 Bq/hr Duration: 72 hr Particles: 5000

Distribution: Uniform between 20 and 500 m AGL

Dry Deposition Rate: 0.02 m/s Wet Removal (below/in-cloud): 1.00E-04/3.20

Note: Contour values may change from chart to chart

NOAA HYSPLIT MODEL
Forward trajectories starting at 00 UTC 14 Apr 11
00 UTC 14 Apr GFSG Forecast Initialization

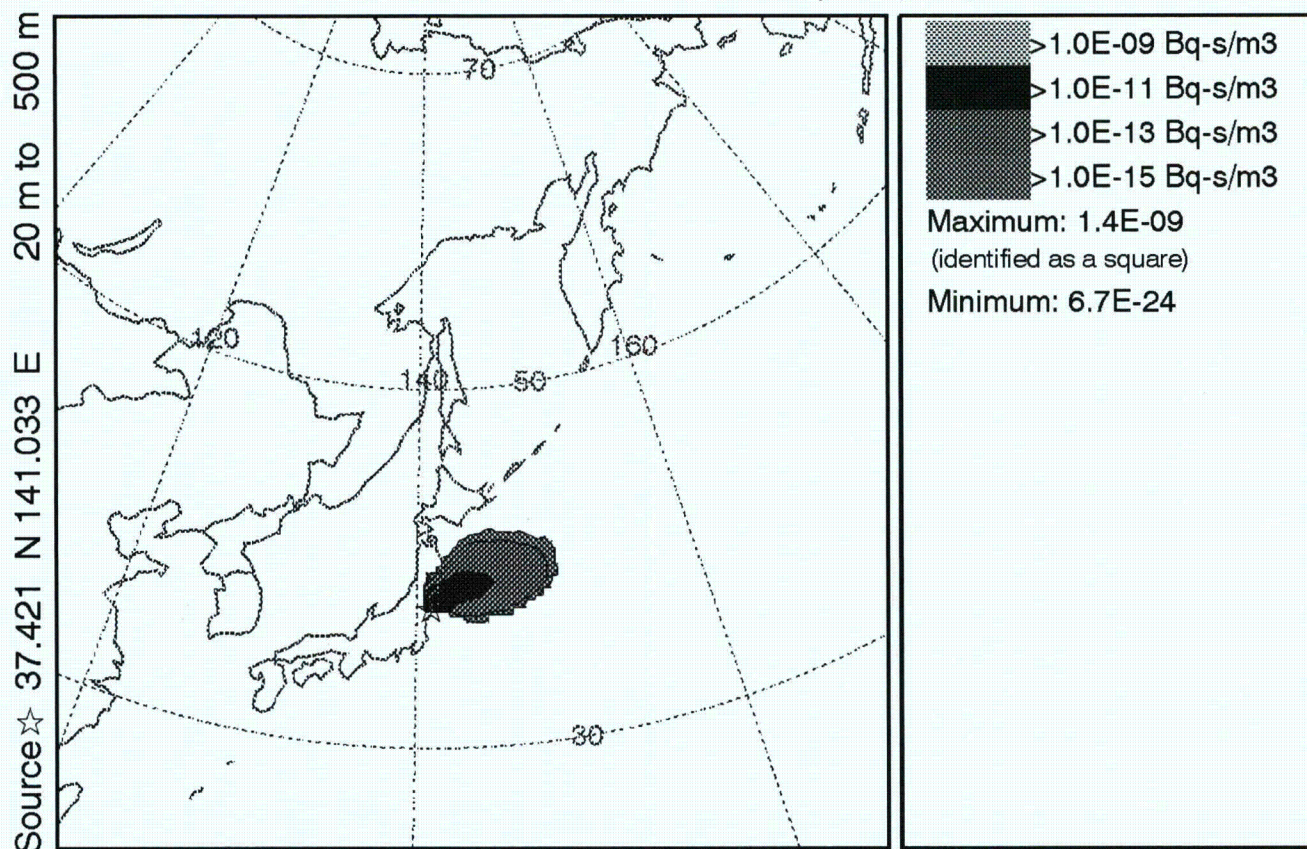


NOAA HYSPLIT MODEL

Exposure (Bq-s/m3) averaged between 0 m and 500 m

Integrated from 0000 14 Apr to 0000 15 Apr 11 (UTC)

I131 Release started at 0000 14 Apr 11 (UTC)



0000 14 Apr 11 GFSG FORECAST INITIALIZATION

Created: 0451UTC 14/04/2011 (day/month/year) RSMC Washington - NOAA ARL / NCEP
Source:FUKUSHIMA-DAIICHI-1 lat:37.4206 lon:141.0329 hgt:20 to 500 m
Release ID:I131 Rate: .0138 Bq/hr Duration: 72 hr Particles: 5000
Distribution: Uniform between 20 and 500 m AGL
Dry Deposition Rate:0.02 m/s Wet Removal (below/in-cloud):1.00E-04/3.20E+05
Meteorology: 0000 UTC 14 Apr 2011 GFS
Note: Contour values may change from chart to chart

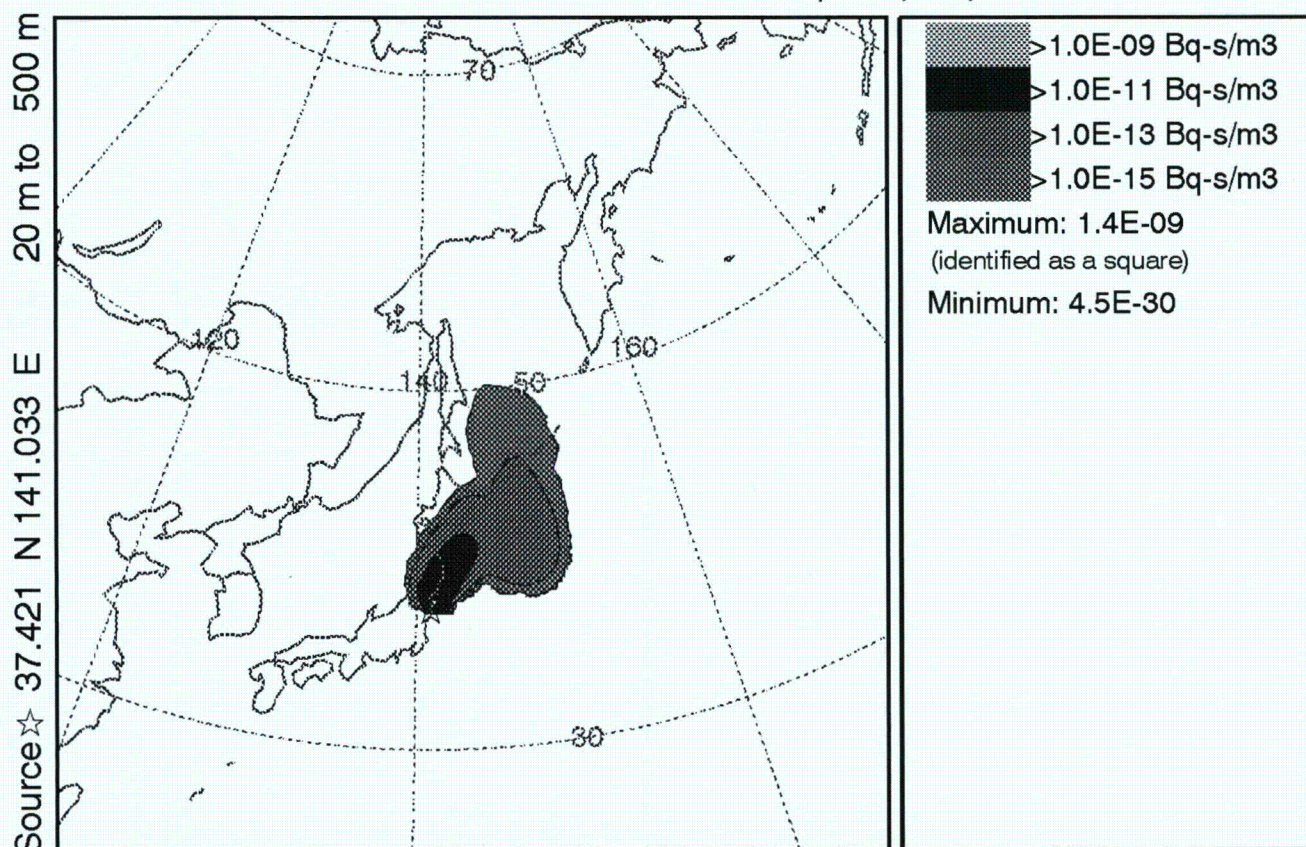
Response: IAEA NOTIFIED EMERGENCY

NOAA HYSPLIT MODEL

Exposure (Bq-s/m3) averaged between 0 m and 500 m

Integrated from 0000 15 Apr to 0000 16 Apr 11 (UTC)

I131 Release started at 0000 14 Apr 11 (UTC)



0000 14 Apr 11 GFSG FORECAST INITIALIZATION

Created: 0451UTC 14/04/2011 (day/month/year) RSMC Washington - NOAA ARL / NCEP
Source: FUKUSHIMA-DAIICHI-1 lat:37.4206 lon:141.0329 hgt:20 to 500 m
Release ID: I131 Rate: .0138 Bq/hr Duration: 72 hr Particles: 5000
Distribution: Uniform between 20 and 500 m AGL
Dry Deposition Rate: 0.02 m/s Wet Removal (below/in-cloud): 1.00E-04/3.20E+05
Meteorology: 0000 UTC 14 Apr 2011 GFS
Note: Contour values may change from chart to chart

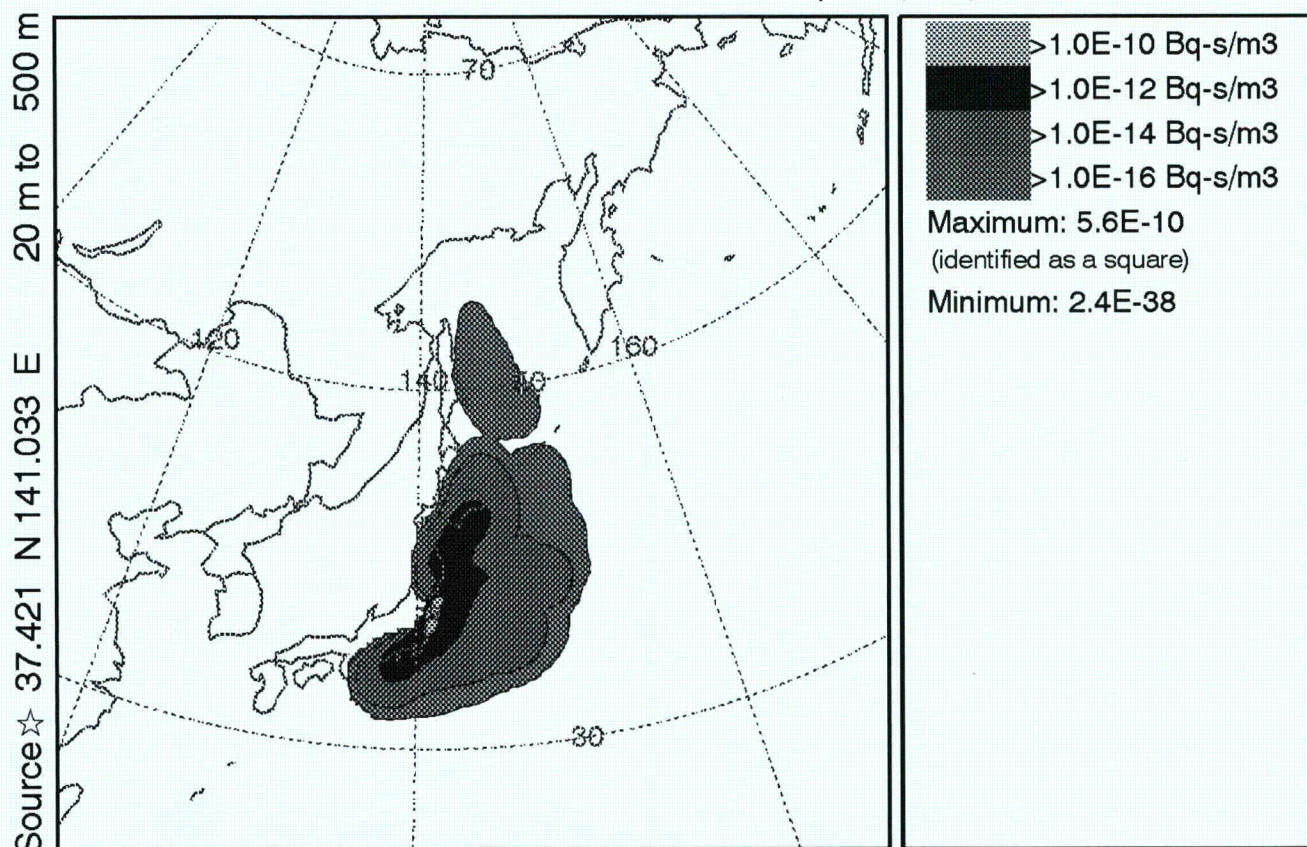
Response: IAEA NOTIFIED EMERGENCY

NOAA HYSPLIT MODEL

Exposure (Bq-s/m3) averaged between 0 m and 500 m

Integrated from 0000 16 Apr to 0000 17 Apr 11 (UTC)

I131 Release started at 0000 14 Apr 11 (UTC)



0000 14 Apr 11 GFSG FORECAST INITIALIZATION

Created: 0451UTC 14/04/2011 (day/month/year) RSMC Washington - NOAA ARL / NCEP
Source:FUKUSHIMA-DAIICHI-1 lat:37.4206 lon:141.0329 hgt:20 to 500 m
Release ID:I131 Rate: .0138 Bq/hr Duration: 72 hr Particles: 5000
Distribution: Uniform between 20 and 500 m AGL
Dry Deposition Rate:0.02 m/s Wet Removal (below/in-cloud):1.00E-04/3.20E+05
Meteorology: 0000 UTC 14 Apr 2011 GFS
Note: Contour values may change from chart to chart

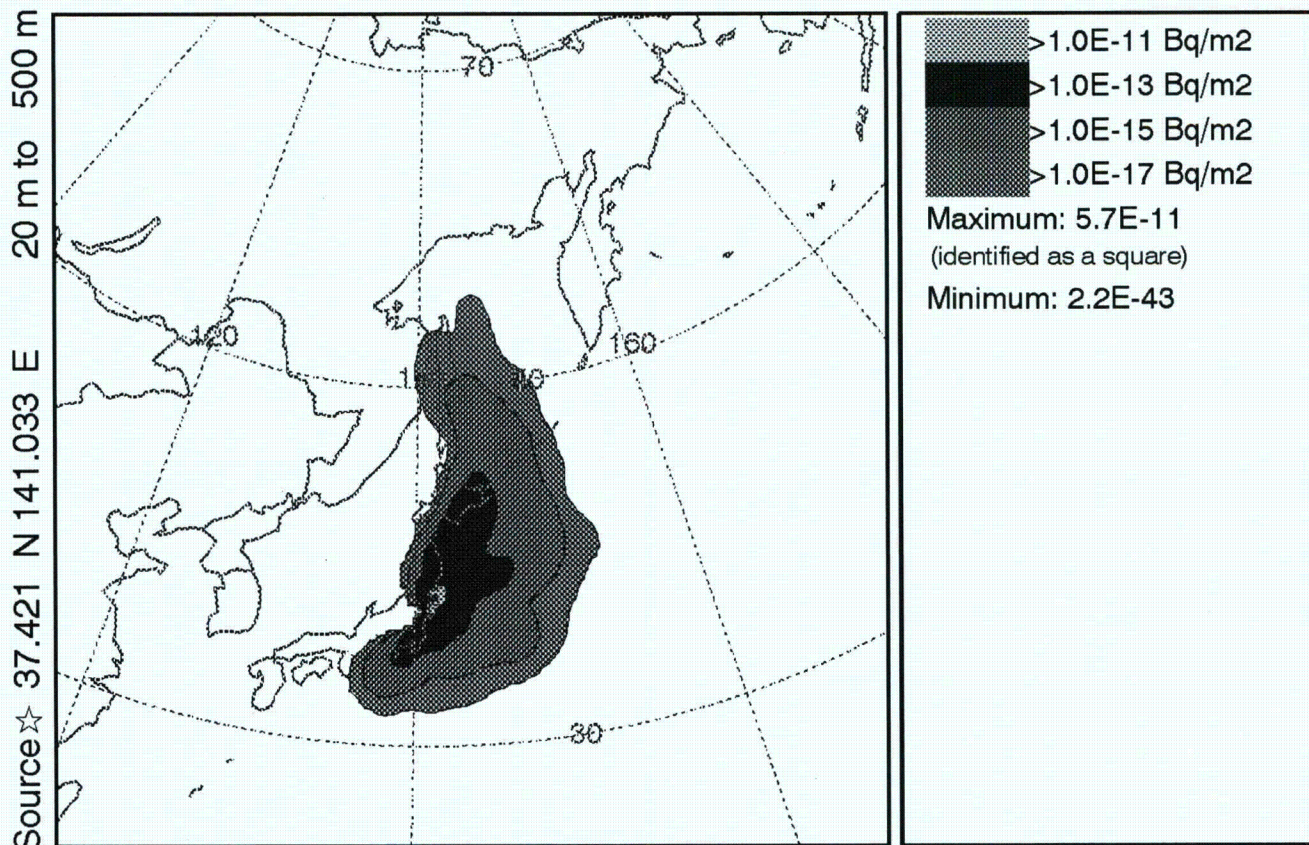
Response: IAEA NOTIFIED EMERGENCY

NOAA HYSPLIT MODEL

Deposition (Bq/m²) at ground-level

Integrated from 0000 14 Apr to 0000 17 Apr 11 (UTC)

I131 Release started at 0000 14 Apr 11 (UTC)



0000 14 Apr 11 GFSG FORECAST INITIALIZATION

Created: 0451UTC 14/04/2011 (day/month/year) RSMC Washington - NOAA ARL / NCEP
Source:FUKUSHIMA-DAIICHI-1 lat:37.4206 lon:141.0329 hgt:20 to 500 m
Release ID:I131 Rate: .0138 Bq/hr Duration: 72 hr Particles: 5000
Distribution: Uniform between 20 and 500 m AGL
Dry Deposition Rate:0.02 m/s Wet Removal (below/in-cloud):1.00E-04/3.20E+05
Meteorology: 0000 UTC 14 Apr 2011 GFS
Note: Contour values may change from chart to chart

Response: IAEA NOTIFIED EMERGENCY

From: OST01 HOC
Sent: Thursday, April 14, 2011 9:53 AM
To: Mroz (Sahm), Sara; Anderson, James
Subject: Weekend

Jim/Sara,

Do you know who is supposed to update the SIT REP on the weekends? If it's the LT that would need updated/procedures. Can you let me know.

Thanks,
Annette

JJ/349

From: Marshall, Jane
Sent: Thursday, April 14, 2011 10:25 AM
To: OST01 HOC
Attachments: transition plan - short.docx

JJ / 350

Operations Center Transition Plan to a More Sustainable Staffing Level for the Fukushima Dai-ichi Event

Based on the Chairman's April 8, 2011 memorandum to the EDO with approval of Operations Center staffing for the NRC's response to the events in Japan, staff is beginning to transition current staffing levels to a six-person team as described in the memorandum. Staff will continue to evaluate staffing levels as conditions in Japan change.

This document provides the planning basis to effect an orderly transition to the six-person agency watch staff. The plan includes provisions for NRC line organizations to handle incoming requests and the subsequent reduction of products delivered by the agency watch team and participation in conferences or calls regarding the event. Each NRC Office has a central point of contact and a distribution network to properly process and distribute the requests to available staff members as HQ continues to support the needs of the Site Team in Japan. The principal roles of the team in the Operations Center are to provide a point of contact for the site team and to ensure that site team needs are met in a timely manner. The reduced Operations Center team is not expected to provide support directly, but rather to coordinate that support from the line organizations. The Operations Center team will provide direct support consistent with the resources and available skill sets of the new team.

Messaging on Transition

NRC is realigning the functions for the Japan Earthquake and Tsunami response to better serve the changing information needs for stakeholders. The following realignment began on Monday April 11, 2011:

1. The NRC Site Team in Japan will continue to be staffed at the current level. The site team will continue to be refreshed with additional members of the NRC staff to allow some of the current Japan team members to return to the U.S.
2. NRC's line organizations are being leveraged to perform detailed technical analyses previously performed by the full Reactor Safety and Protective Measures Teams in the NRC HQ Operations Center.
3. The Headquarters Operations Center will continue to have enhanced staffing around the clock dedicated to this response, but will have fewer individuals per shift in the Operations Center. Their focus will be coordination and communications while shifting most of the technical work associated with this response to NRC's regular line organizations.

Actions by Team to facilitate the transition:

Executive Team

The Executive Team will consist of one SES director, supported by appropriate staff. The ET will define the roles and skills needed for each response position as conditions change throughout the response, including temporary augmentation of the responding staff if needed.

The ET director will continue to keep the Commission informed through scheduled and emergent Commissioners' Assistants (CA) briefings, as necessary.

The ET director is also responsible for directing and conducting the review of information from the site team, other U.S. agencies, IAEA, and other credible sources to develop an integrated understanding of conditions and issues related to the response.

The ET director will be responsible for ensuring that the documents developed in response to requests to the NRC by the team in Japan or other stakeholders are consistent with NRC's understanding of the events, NRC policy, and are responsive to the request.

ET Support Team

The ET Support Team (EST) responder will coordinate with the HQ team to facilitate the completion of actions and tracking of progress on tasks. The EST responder will also facilitate emergent CA briefing calls and other ET communications as necessary. Issues with equipment in the NRC HQ Operations Center will be addressed by NSIR staff and will be resolved during regular work hours to the extent possible.

Protective Measures Team

The Protective Measures Team (PMT) responder will coordinate with the Japan team and other NRC staff serving in liaison roles to other organizations as well as external stakeholders. The PMT responder will ensure that tasks that are normally performed by the full PMT are addressed by the appropriate line organization in a timely manner, and ensure that the line organization Point of Contact (POC) understands the needs the task is addressing. In addition, the PMT responder will provide expertise to the ET director when needed.

Reactor Safety Team

The Reactor Safety Team (RST) responders will maintain cognizance of the events in Japan through periodic calls with the consortium and Japan team and continuity of tasks being coordinated through the response team. The RST responders will also provide BWR and Severe Accident expertise to support the ET director. The RST responders will coordinate tasks that result from requests to the Ops Center that previously would have been performed within the Ops Center with the appropriate line organization POC.

Liaison Team

The Liaison Team (LT) member is responsible for providing liaison support to the Japan team and the Operations Center team consistent with normal Liaison Team responsibilities. The LT member will work with the POCs identified in each supporting office to ensure that tasks, deliverables, and schedules are understood by the appropriate line organization. The LT member will also be responsible for updating the NRC's daily SitRep based on input collected from other response team members.

The LT member will provide continuity and coordination through periodic conference calls with internal and external stakeholders, including line organization staff when appropriate.

Line Organization POCs:

- a. FSME – FSME Rids box, George Deegan, and Robert Lewis
- b. NMSS – Doug Weaver
- c. NRO – Jeff Ciocco (backup: Tom Kevern)
- d. NRR – Pat Hiland (backup: Dave Skeen)
- e. NSIR – Michael Dudek
- f. OCA - normal process
- g. OCFO – Jim Dyer (backup: Milton Brown)
- h. OIP –Steve Bloom (backup: Danielle Emche)
- i. OPA – normal process
- j. RES – Kathy Gibson (backup : Mike Case)

JIM WEBB

MR. JACZKO

COMMITTEE ON
ARMED SERVICES

COMMITTEE ON
FOREIGN RELATIONS

COMMITTEE ON
VETERANS' AFFAIRS

10 N. E. CONGRESS DRIVE, 1ST FL.

WASHINGTON OFFICE

2000 M STREET, N.W.
SUITE 1000
WASHINGTON, D.C. 20004

United States Senate

WASHINGTON, DC 20510-4601

April 15, 2011

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

Dear Chairman Jaczko:

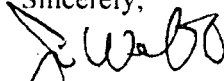
I write regarding the March 16, 2011 Nuclear Regulatory Commission (NRC) evacuation recommendation for U.S. residents within 50 miles of the Fukushima reactors. According to the NRC, this recommendation was issued under guidelines for public safety that would be used in the United States under similar circumstances.

As this recommendation could have important implications for U.S. energy security, public health, and environmental protection, I respectfully request that you disclose all assumptions that were used in reaching this conclusion. In addition to any other relevant information, please address the following points:

- 1) The assumed magnitudes of the total releases (in Curies) to the atmosphere of the radioisotopes dominating the inhalation, cloudshine, and 4-day groundshine effective whole body doses and the thyroid inhalation doses;
- 2) The assumed duration of the releases;
- 3) The assumed wind speed and deposition velocities;
- 4) Any assumption concerning wind wander;
- 5) The height of the assumed release including any height increase of the mid-line of the plume due to heat buoyancy effects; and
- 6) The dose conversion factor that the NRC uses for Iodine-131 for converting exposure to airborne I-131 measured in Ci-seconds/m³ exposure to thyroid doses in rem for adults and children of different ages.

I appreciate your prompt attention to this matter.

Sincerely,



Jim Webb
United States Senator

JJS/351

From: Boger, Bruce
Sent: Friday, April 15, 2011 4:03 PM
To: OST01 HOC
Subject: FW: FYI - NRC's Daily Assessment of Conditions at Fukushima Daiichi
Attachments: NRC Daily Assessment of Daiichi - 4-15-11.pdf

Please print this for me—in color. Thanks.

From: Weber, Michael
Sent: Friday, April 15, 2011 7:51 AM
To: OST01 HOC; Zimmerman, Roy; Boger, Bruce; Johnson, Michael
Cc: Virgilio, Martin; RST01 Hoc
Subject: FYI - NRC's Daily Assessment of Conditions at Fukushima Daiichi

From: Salay, Michael
Sent: Friday, April 15, 2011 3:00 AM
To: Jaczko, Gregory
Cc: Borchardt, Bill; Weber, Michael; Virgilio, Martin; Casto, Chuck; Leeds, Eric; RST01 Hoc
Subject: NRC's Daily Assessment of Conditions at Fukushima Daiichi

Dear Chairman,

Attached please find the NRC Japan Team's Daily Assessment of conditions at the Fukushima Daiichi nuclear power plants and spent fuel pools. There are two changes of note today: Although temperatures in the Unit 3 vessel have started decreasing, the upper drywell temperature continues to rise although the rate of increase has decreased. This is reflected by a down arrow in the attached for integrity of the Unit 3 containment integrity. A positive indication of liquid level was detected at the standby liquid level switch. This is consistent with estimates of liquid level based upon pressure increase in the DW. This reflected by an up arrow and a change in status from "Inc./Needed" to "challenged" for the Unit 1 containment flooding. We will continue to discuss these issues with NISA and TEPCO.

If you have any questions, please don't hesitate to ask.

Best regards,
Mike Salay
NRC Japan Team

JJJ/352

~~Official Use Only~~

NRC's Daily Assessment of Conditions at Fukushima Daiichi Nuclear Power Plant

<u>Unit 1</u>		Today	Yesterday
Vessel	Cooling	Challenged	Challenged
		↔	↔
	Integrity	Intact	Intact
		↔	↔
Containment	Flooding	Challenged	Inc./Needed
		↑	↔
	Integrity	Challenged	Challenged
		↔	↔
Spent Fuel Pool	Cooling/Level	Adequate	Adequate
		↔	↔
	Integrity	Intact	Intact
		↔	↔

<u>Unit 2</u>		Today	Yesterday
Vessel	Cooling	Challenged	Challenged
		↔	↔
	Integrity	Failed	Failed
		↔	↔
Containment	Flooding	Inc./Needed	Inc./Needed
		↔	↔
	Integrity	Failed	Failed
		↔	↔
Spent Fuel Pool	Cooling/Level	Adequate	Adequate
		↔	↔
	Integrity	Intact	Intact
		↔	↔

<u>Unit 3</u>		Today	Yesterday
Vessel	Cooling	Adequate	Adequate
		↔	↔
	Integrity	Failed	Failed
		↔	↔
Containment	Flooding	Challenged	Challenged
		↔	↔
	Integrity	Failed	Failed
		↓	↓
Spent Fuel Pool	Cooling/Level	Challenged	Challenged
		↔	↔
	Integrity	Challenged	Challenged
		↔	↔

<u>Unit 4</u>		Today	Yesterday
Spent Fuel Pool	Cooling/Level	Challenged	Challenged
		↔	↔
	Integrity	Challenged	Challenged
		↔	↑

		Today	Yesterday
Protective Measures	Exposure Risk	Low	Low
		↔	↔

~~Official Use Only~~

April 15, 2011

Methodology for Developing the Fukushima Daiichi Daily Assessment Report

PURPOSE: The report is prepared to provide a qualitative high level assessment of daily conditions at Fukushima Daiichi that the U.S. Ambassador can use to assess the safety of American citizens in Japan.

DISCLAIMER: The development of the daily assessment report includes a number of inputs. Some of these are objective, such as plant data provided by TEPCO, while others are subjective, such as engineering insights from the NRC's reactor and protective measures specialists in Japan. It should be recognized that there are many unknowns and uncertainties associated with having a complete understanding of conditions in each of the Daiichi reactors and spent fuel pools. As such, this tool represents the collective judgment of the NRC staff in Japan based on all available data.

For each of the major plant parameters listed below, the NRC staff assesses its status daily and bins it into one of the three categories listed. The staff uses the listed plant information and conditions in making its assessment. The arrows on the report indicate the relative trend in plant conditions from the previous day.

- | | |
|---|---|
| <ul style="list-style-type: none">1. Reactor Pressure Vessel<ul style="list-style-type: none">a. Cooling – Adequate, Challenged, or Inadequate.<ul style="list-style-type: none">i. Flow or Injection Rateii. Reliability of Injectioniii. Source of Waterb. Integrity – Intact, Challenged, or Failed.<ul style="list-style-type: none">i. Temperature indicationsii. Pressure readings2. Primary Containment<ul style="list-style-type: none">a. Flooding Status – Complete/Not needed, Challenged, or Incomplete/Needed.<ul style="list-style-type: none">i. Water Levelii. Sourcesiii. Injection capacity/rateb. Integrity - Intact, Challenged, or Failed.<ul style="list-style-type: none">i. Pressure readingsii. Bypass evaluationsiii. Temperature indications | <ul style="list-style-type: none">3. Spent Fuel Pools<ul style="list-style-type: none">a. Cooling/Level – Adequate, Challenged, or Inadequate.<ul style="list-style-type: none">i. Flow or Injection Rateii. Reliability of Injectioniii. Source of Waterb. Integrity – Intact, Challenged, or Failed. Due to limited available data, this assessment relies strongly on the NRC team's engineering judgment.4. Protective Measures – Exposure Risk to American citizens in Japan outside the U.S. government's recommended 50-mile evacuation zone.<ul style="list-style-type: none">a. Low – 50-mile recommendation remains sufficientb. Medium – New information has raised questions regarding the sufficiency of the 50-mile recommendation.c. High – 50-mile recommendation is no longer sufficient due to changing plant condition |
|---|---|

From: OST01 HOC
Sent: Friday, April 15, 2011 8:09 AM
To: RST01 Hoc; RST07 Hoc; RST08 Hoc; Hoc, PMT12; LIA08 Hoc
Subject: FW: FYI - NRC's Daily Assessment of Conditions at Fukushima Daiichi
Attachments: NRC Daily Assessment of Daiichi - 4-15-11.pdf

FYI

From: Weber, Michael
Sent: Friday, April 15, 2011 7:51 AM
To: OST01 HOC; Zimmerman, Roy; Boger, Bruce; Johnson, Michael
Cc: Virgilio, Martin; RST01 Hoc
Subject: FYI - NRC's Daily Assessment of Conditions at Fukushima Daiichi

From: Salay, Michael
Sent: Friday, April 15, 2011 3:00 AM
To: Jaczko, Gregory
Cc: Borchardt, Bill; Weber, Michael; Virgilio, Martin; Casto, Chuck; Leeds, Eric; RST01 Hoc
Subject: NRC's Daily Assessment of Conditions at Fukushima Daiichi

Dear Chairman,

Attached please find the NRC Japan Team's Daily Assessment of conditions at the Fukushima Daiichi nuclear power plants and spent fuel pools. There are two changes of note today: Although temperatures in the Unit 3 vessel have started decreasing, the upper drywell temperature continues to rise although the rate of increase has decreased. This is reflected by a down arrow in the attached for integrity of the Unit 3 containment integrity. A positive indication of liquid level was detected at the standby liquid level switch. This is consistent with estimates of liquid level based upon pressure increase in the DW. This reflected by an up arrow and a change in status from "Inc./Needed" to "challenged" for the Unit 1 containment flooding. We will continue to discuss these issues with NISA and TEPCO.

If you have any questions, please don't hesitate to ask.

Best regards,
Mike Salay
NRC Japan Team

JJJ | 353

Official Use Only

NRC's Daily Assessment of Conditions at Fukushima Daiichi Nuclear Power Plant

<u>Unit 1</u>		Today	Yesterday
Vessel	Cooling	Challenged	Challenged
		↔	↔
	Integrity	Intact	Intact
		↔	↔
Containment	Flooding	Challenged	Inc./Needed
		↑	↔
	Integrity	Challenged	Challenged
		↔	↔
Spent Fuel Pool	Cooling/Level	Adequate	Adequate
		↔	↔
	Integrity	Intact	Intact
		↔	↔

<u>Unit 2</u>		Today	Yesterday
Vessel	Cooling	Challenged	Challenged
		↔	↔
	Integrity	Failed	Failed
		↔	↔
Containment	Flooding	Inc./Needed	Inc./Needed
		↔	↔
	Integrity	Failed	Failed
		↔	↔
Spent Fuel Pool	Cooling/Level	Adequate	Adequate
		↔	↔
	Integrity	Intact	Intact
		↔	↔

<u>Unit 3</u>		Today	Yesterday
Vessel	Cooling	Adequate	Adequate
		↔	↔
	Integrity	Failed	Failed
		↔	↔
Containment	Flooding	Challenged	Challenged
		↔	↔
	Integrity	Failed	Failed
		↓	↓
Spent Fuel Pool	Cooling/Level	Challenged	Challenged
		↔	↔
	Integrity	Challenged	Challenged
		↔	↔

<u>Unit 4</u>		Today	Yesterday
Spent Fuel Pool	Cooling/Level	Challenged	Challenged
		↔	↔
	Integrity	Challenged	Challenged
		↔	↑

		Today	Yesterday
Protective Measures	Exposure Risk	Low	Low
		↔	↔

Official Use Only

April 15, 2011

NRC INTERIM COMPREHENSIVE ASSESSMENT of FUKUSHIMA EVENT

Background

- Consortium of U.S. nuclear organizations completed assessment
 - NRC; Department of Energy; Naval Reactors; Institute of Nuclear Power Operations; Electric Power Research Institute; General Electric
- Collaborated to complete technical assessments for safety issues for reactors and spent fuel pools
- All major technical assessments completed
- Provided results to TEPCO and NISA

Assessment Conclusions

- U.S. Protective Action decisions remain conservative through all scenarios
 - Tokyo is not seriously threatened
- Unknown Ocean impacts
- Active radiation releases ongoing
- Accident conditions static but fragile
- Mitigating features temporary and highly unconventional

airborne or
~~disseminated~~
waterborne?
STET

Assessment of Conditions

are unit #3

- Fuel Damage estimates: U-1 67%; U-2 44%; U-3 30% (est.)
- Reliance on steam cooling for reactors
- Time to react on a loss of injection is short – less than 10 hours for Unit 1
- Current situation results in a 1-10 to 1-100 probability of *energetic?* release
- Probability driven by seismic events without diversity or redundancy of injection system
- Can get 1-100,000 probability with training & preplanning of fire equipment and diverse & redundant injection system
- Containment flooding remains primary suggestion – especially for Units 1 & 3
- Flooding reduces consequences by one-to-two orders of magnitude

Next Steps

- Feed and bleed assessment recommends more actions to mitigate additional events
 - Diversity and redundancy in feeding system
 - Automation of Giraffes and feeding systems
 - Additional feeding system injection points
 - Additional venting system
- Stability requires more actions
 - Completing actions to Phase 1 and Phase 2 stability
 - For example - decay heat removal system

Methodology for Developing the Fukushima Daiichi Daily Assessment Report

PURPOSE: The report is prepared to provide a qualitative high level assessment of daily conditions at Fukushima Daiichi that the U.S. Ambassador can use to assess the safety of American citizens in Japan.

DISCLAIMER: The development of the daily assessment report includes a number of inputs. Some of these are objective, such as plant data provided by TEPCO, while others are subjective, such as engineering insights from the NRC's reactor and protective measures specialists in Japan. It should be recognized that there are many unknowns and uncertainties associated with having a complete understanding of conditions in each of the Daiichi reactors and spent fuel pools. As such, this tool represents the collective judgment of the NRC staff in Japan based on all available data.

For each of the major plant parameters listed below, the NRC staff assesses its status daily and bins it into one of the three categories listed. The staff uses the listed plant information and conditions in making its assessment. The arrows on the report indicate the relative trend in plant conditions from the previous day.

- | | |
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|---|---|

From: Morris, Scott
Sent: Friday, April 15, 2011 8:56 AM
To: Dudek, Michael; OST01 HOC; Kowalczyk, Jeffrey; Stone, Rebecca
Cc: Marshall, Jane
Subject: RE: SharePoint Access - Transition Team POCs

I would like access as well.

From: Dudek, Michael
Sent: Friday, April 15, 2011 8:24 AM
To: OST01 HOC; Kowalczyk, Jeffrey; Stone, Rebecca
Cc: Marshall, Jane; Morris, Scott
Subject: SharePoint Access - Transition Team POCs

Jeff, Rebecca:

Can you please make sure that the following Office POCs have "viewing rights" to the Japan Response SharePoint site. I am going to put out a guidance e-mail to everyone and need to ensure that they can access the site.

Michele Evans
Marty Virgilio
Michael Weber
Steven Bloom
Danielle Emche
Jeff Ciocco
David Skeen
Kathy Gibson
Mike Case
George Deegan
Robert Lewis
Richard Lee
Bernie White
Patrick Hiland
Jim Dyer
Milton Brown
Amy Powell
Rebecca Schmidt
Eliot Brenner
Stephen Burns
Trip Rothschild
Marv Itzkowitz
Glenn Tracy
Jennifer Uhle

Thanks! Please let me know if you have any questions or concerns regarding these names!

Michael I. Dudek
Michael Dudek | Technical Assistant | NSIR/Division of Preparedness & Response | U.S. NRC
11555 Rockville Pike, Rockville, MD 20852 | ☎ (301) 415-6500 | ✉ Michael.Dudek@nrc.gov

JJJ | 354

OST01 HOC

From: Dyer, Jim
Sent: Friday, April 15, 2011 11:27 AM
To: Casto, Chuck; Virgilio, Martin; ET02 Hoc; Wiggins, Jim; OST01 HOC
Subject: RE: global assessment presentation

Here's my comments on the presentation as input to the discussion. I'll be out of the office this PM so consider them for what they are worth. I'm sure OCFO won't have the lead for this item. Jim

Slide 2: Is this assessment "completed"? The Global Assessment is still a work in progress; so are we discussing the earlier stability assessments? Probably needs to be cleared up that it may be ongoing.

Slide 4: Agree with earlier comment on probabilities; I'm not sure of the basis and it may cause confusion to someone who is not familiar with "risk speak" and become a point of argument for someone who is conversant. Suggest we take the numbers out and try to relate qualitatively.

Slide 5: "Feed and Bleed" is nuclear slang that hasn't been defined earlier. We should keep to the same terminology between slides 4 (steam cooling) and slide 5 (Feed and bleed). Similarly, we haven't defined phase 1 and 2 stability, so I'm not sure it adds much to the slide than what's already described in the first section.

Jim

From: Casto, Chuck
Sent: Friday, April 15, 2011 6:11 AM
To: Virgilio, Martin; Dyer, Jim; ET02 Hoc
Subject: global assessment presentation

Attached is the draft presentation

JJJ | 355

From: OST01 HOC
Sent: Friday, April 15, 2011 9:30 PM
To: Boger, Bruce
Subject: RE: New Tasker

Has been added in the system

From: Boger, Bruce
Sent: Friday, April 15, 2011 8:26 PM
To: OST01 HOC
Cc: RST01 Hoc
Subject: New Tasker

Please create a new tasker for RST to develop and document a process for updating the plant status in the sit rep and the screen in the ET room. High priority. Due date 0700 Monday, 4/18.

JJJ/356

From: OST01 HOC
Sent: Friday, April 15, 2011 9:33 PM
To: Boger, Bruce
Subject: FW: New Tasker

From: OST01 HOC
Sent: Friday, April 15, 2011 9:30 PM
To: Boger, Bruce
Subject: RE: New Tasker

The tasker has been added and email been sent to RST01

From: Boger, Bruce
Sent: Friday, April 15, 2011 8:26 PM
To: OST01 HOC
Cc: RST01 Hoc
Subject: New Tasker

Please create a new tasker for RST to develop and document a process for updating the plant status in the sit rep and the screen in the ET room. High priority. Due date 0700 Monday, 4/18.

JJJ / 357

From: OST01 HOC
Sent: Friday, April 15, 2011 11:20 AM
To: Zimmerman, Roy; Boger, Bruce; Johnson, Michael; Moore, Scott; Tracy, Glenn; Wiggins, Jim; Uhle, Jennifer; Kokajko, Lawrence; Carpenter, Cynthia
Cc: McDermott, Brian; Morris, Scott; Marshall, Jane; Gott, William
Subject: ET Director Information

All,

An ET Log Book has been created to aid in transition between ET Directors. It is intended to contain current copies of relevant documents such as NRC Status Updates, One-Pagers, DOE SitReps, Staffing Plan, etc. This will hopefully cut down on the amount of paper clutter in the ET room, and lead to better organizational effectiveness.

For past entries of these documents, and more, a SharePoint site has been created at: <http://nsir-ops.nrc.gov/default.aspx>. This is not intended to replace WebEOC for current status of working documents.

If you have any questions, please let us know.

Thank you,

EST Admin

JJJ/358

From: Harrington, Holly
To: Brenner, Eliot
Subject: blog
Date: Friday, March 11, 2011 11:39:00 AM

So I did this:

NRC Chairman Gregory Jaczko, other top officials and nuclear experts at the NRC headquarters office and the Incident Response Center in our regional office in Texas are closely monitoring the aftermath of the Japanese earthquake and subsequent tsunami.

Chairman Jaczko said this: "The NRC resident inspectors who work at the Diablo Canyon Power Plant in San Luis Obispo, Calif., are at the plant and working closely with plant personnel as they take appropriate precautions."

Who do you want to "author" the post? Would you like the honors?

JJJ/359

From: Brenner, Eliot
To: Harrington, Holly
Subject: RE: blog
Date: Friday, March 11, 2011 11:43:17 AM

You can make me the author – looks good.

From: Harrington, Holly
Sent: Friday, March 11, 2011 11:40 AM
To: Brenner, Eliot
Subject: blog

So I did this:

NRC Chairman Gregory Jaczko, other top officials and nuclear experts at the NRC headquarters office and the Incident Response Center in our regional office in Texas are closely monitoring the aftermath of the Japanese earthquake and subsequent tsunami.

Chairman Jaczko said this: "The NRC resident inspectors who work at the Diablo Canyon Power Plant in San Luis Obispo, Calif., are at the plant and working closely with plant personnel as they take appropriate precautions."

Who do you want to "author" the post? Would you like the honors?

From: Uselding, Lara
To: Burnell, Scott; Brenner, Eliot; Harrington, Holly
Subject: DC Press release
Date: Friday, March 11, 2011 12:30:42 PM
Attachments: 3-11-11 UF News Release FINAL.doc

From: Raftery, Kory [mailto:MKR6@pge.com]
Sent: Friday, March 11, 2011 10:34 AM
To: Uselding, Lara; Flake, Paul; Gil.Alexander@sce.com; liese.mosher@sce.com
Subject: RE: DRAFT Press Release FYI Only

Hi Lara and Gil,
Here is the news release that we are sending to local media as well.
Kory

JIT/ 360



***Pacific Gas and
Electric Company®***

External Communications
Department
77 Beale Street
San Francisco, CA 94105
415/973-5930

NEWS

FOR IMMEDIATE RELEASE:

March 11, 2011 8:15 a.m.

CONTACT: External Communications Department (415) 973-5930

**UNUSUAL EVENT DECLARED AT DIABLO CANYON POWER PLANT DUE TO
TSUNAMI WARNING**

SAN LUIS OBISPO, Calif. – Pacific Gas and Electric Company (PG&E) today responded to a tsunami warning by declaring an Unusual Event at its Diablo Canyon Power Plant Unit 1 and Unit 2 near San Luis Obispo, Calif. All plant safety systems and components remain in normal operating condition and both units are currently operating at 100 percent power. There is no threat to the health and safety of the public from Diablo Canyon Power Plant.

The Unusual Event was declared at approximately 1:23 a.m., Friday, March 11, 2011. As defined by the Nuclear Regulatory Commission, an Unusual Event is any other-than-normal plant-related condition that does not require any emergency action by the general public or any government authorities. An Unusual Event is the lowest of four levels of emergency classification.

PG&E will continue to monitor the situation and work with local authorities throughout the county. DCPD personnel undergo extensive emergency preparedness training and participate in various exercises throughout the year to ensure they are always ready to safely, swiftly and effectively manage emergency events.

The utility is also assisting with local emergency response efforts. In response to a county declaration for Avila Beach residents to relocate to higher elevation, PG&E has opened its Energy Education Center at 6588 Ontario Road off of Highway 101 in San Luis Obispo.

High swell estimates at Port San Luis may cause flooding near the Avila Beach gate entrance. Diablo Canyon has implemented a plan which allows us to continue to operate the facility safely in the event that access to Diablo Canyon Power Plant is restricted.

From: OST01 HOC
Sent: Saturday, April 16, 2011 8:45 PM
To: RST01 Hoc; Moore, Scott; LIA08 Hoc; Hoc, PMT12
Subject: FW: Inerting Question
Attachments: N2 Inerting Question.docx

From: Garchow, Steve
Sent: Saturday, April 16, 2011 8:42 PM
To: OST01 HOC; Reynolds, Steven
Cc: Moore, Carl; Mitman, Jeffrey; Lupold, Timothy; Norwood, Donald
Subject: Inerting Question

Find attached the question we posed with regard to inerting the pc.

JJJ/361

Question:

The Severe Accident Guidelines (SAGs) recommend inerting the Primary Containment with N₂ in order to reduce the probability of an H₂ burn/explosion.

Assume sufficient water is being injected to cool the damaged core via steam cooling. Also assume a large amount of steam is being generated and is escaping the RCS and primary containment via significant leaks in each such that the primary containment is completely inerted with steam.

The nitrogen injection rate is low via a 2" line and based on this low injection rate it would rapidly be displaced by the much greater volume of steam and exit the PC. Also consider the high dose costs and the use of very limited resources.

Under these conditions, are there any advantages that would still support the evolution to inert the PC?

From: Johnson, Michael
Sent: Saturday, April 16, 2011 4:54 AM
To: OST01 HOC
Subject: FW: Change on EOC staffing
Attachments: RE: Change on EOC staffing

Here is the process!

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

From: LIA08 Hoc
Sent: Saturday, April 16, 2011 4:50 AM
To: Johnson, Michael
Subject: FW: Change on EOC staffing

FYI, Mike...

This came in Sunday and apparently made it to Brian McDermott but not sure who else on the ET, EST or OST was apprized. I have no record of further distribution.
Rani

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

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

From: Andersen, James
Sent: Sunday, April 10, 2011 7:34 PM
To: LIA06 Hoc
Cc: LIA08 Hoc; Correia, Richard; McDermott, Brian
Subject: RE: Change on EOC staffing

Rich or the current LT Director, Here is the process we agreed upon several days ago. Please advise if this will not work.

Handling tasks that fall outside of the purview of the Operations Center:

1. The assigned Ops. Center team will forward the action to the appropriate program office.
2. OEDO (Jim Andersen) will be cc'd on the request to the program office.
3. The program office will be requested to respond and to provide the assigned office ticket number to acknowledge acceptance of the action.
4. If the program office does not think the tasking is appropriate or wants to discuss with OEDO, please contact Jim Andersen
5. OEDO will reassign if the activity is not accepted by the to another program office, if appropriate.

6. The Ops. Center task will be closed upon receipt of the ticket number from the assigned program office or OEDO.

Jim A.

From: LIA06 Hoc
Sent: Saturday, April 09, 2011 7:53 PM
To: Andersen, James
Cc: LIA08 Hoc
Subject: Change on EOC staffing

Jim,

As you are probably aware, the EOC staffing will change effective April 11th. One of the items that will need OEDO support is the ticketing and tracking of incoming requests for information or other items that will come into the EOC that are currently being addressed by the EOC teams. With basically one person/team in the EOC starting Monday morning, these expected actions will be forwarded to OEDO for appropriate action.

Should there be a new or different protocol for this change in processing incoming requests?

Please advise,

Regards,

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

From: LIA06 Hoc
Sent: Saturday, April 09, 2011 8:00 PM
To: OST01 HOC
Subject: FW: Change on EOC staffing

For the new action.

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

From: LIA06 Hoc
Sent: Saturday, April 09, 2011 7:53 PM
To: Andersen, James
Cc: LIA08 Hoc
Subject: Change on EOC staffing

Jim,

As you are probably aware, the EOC staffing will change effective April 11th. One of the items that will need OEDO support is the ticketing and tracking of incoming requests for information or other items that will come into the EOC that are currently being addressed by the EOC teams. With basically one person/team in the EOC starting Monday morning, these expected actions will be forwarded to OEDO for appropriate action.

Should there be a new or different protocol for this change in processing incoming requests?

Please advise,

Regards,

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

From: OST01 HOC
Sent: Saturday, April 16, 2011 2:04 AM
To: Johnson, Michael; LIA08 Hoc; Hoc, PMT12
Subject: NRC's Daily Assessment of Conditions at Fukushima Daiichi
Attachments: NRC Daily Assessment of Daiichi - 4-16-11.pdf

From: Moore, Carl
Sent: Saturday, April 16, 2011 2:01 AM
To: Jaczko, Gregory
Cc: Borchardt, Bill; Weber, Michael; Virgilio, Martin; Casto, Chuck; Leeds, Eric; RST01 Hoc; OST01 HOC
Subject: NRC's Daily Assessment of Conditions at Fukushima Daiichi

Dear Chairman,

Attached please find the NRC Japan Team's Daily Assessment of conditions at the Fukushima Daiichi nuclear power plants and spent fuel pools. There are no changes today: Temperatures in the upper drywell and under the vessel of Unit 3 are trending up but the rate of increase is slowing. Isotopic data from the water sample taken of the unit 4 pool are inconsistent with fuel damage. This is reflected by an up arrow for the Unit 4 spent fuel pool integrity but please realize this is only one sample. We will continue to encourage NISA and TEPCO to pull another sample.

If you have any questions, please don't hesitate to ask.

Best regards,
Carl Moore
NRC Japan Team

JJJ/363

~~Official Use Only~~

NRC's Daily Assessment of Conditions at Fukushima Daiichi Nuclear Power Plant

<u>Unit 1</u>		Today	Yesterday		<u>Unit 3</u>		Today	Yesterday
Vessel	Cooling	Challenged	Challenged		Vessel	Cooling	Adequate	Adequate
		↔	↔				↔	↔
	Integrity	Intact	Intact			Integrity	Failed	Failed
		↔	↔				↔	↔
Containment	Flooding	Inc./Needed	Inc./Needed		Containment	Flooding	Challenged	Challenged
		↔	↔				↔	↔
	Integrity	Challenged	Challenged			Integrity	Failed	Failed
		↔	↔				↓	↓
Spent Fuel Pool	Cooling/Level	Adequate	Adequate		Spent Fuel Pool	Cooling/Level	Challenged	Challenged
		↔	↔				↔	↔
	Integrity	Intact	Intact			Integrity	Challenged	Challenged
		↔	↔				↔	↔
<u>Unit 2</u>		Today	Yesterday		<u>Unit 4</u>		Today	Yesterday
Vessel	Cooling	Challenged	Challenged		Spent Fuel Pool	Cooling/Level	Challenged	Challenged
		↔	↔				↔	↔
	Integrity	Failed	Failed			Integrity	Challenged	Challenged
		↔	↔				↑	↑
Containment	Flooding	Inc./Needed	Inc./Needed				Today	Yesterday
		↔	↔				Low	Low
	Integrity	Failed	Failed		Protective Measures	Exposure Risk	↔	↔
		↔	↔					
Spent Fuel Pool	Cooling/Level	Adequate	Adequate					
		↔	↔					
	Integrity	Intact	Intact					
		↔	↔					

~~Official Use Only~~

April 16, 2011

Methodology for Developing the Fukushima Daiichi Daily Assessment Report

PURPOSE: The report is prepared to provide a qualitative high level assessment of daily conditions at Fukushima Daiichi that the U.S. Ambassador can use to assess the safety of American citizens in Japan.

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|---|---|

From: OST01 HOC
Sent: Saturday, April 16, 2011 1:08 PM
To: Hoc, PMT12
Subject: turnover

Hi Kimberly,

John Parillo is on 11-7 on M,T & W. Thanks!

Jeff

JJJ / 304

From: [Harrington, Holly](#)
To: [Brenner, Eliot](#)
Subject: Blog comment to respond to
Date: Friday, March 11, 2011 12:42:00 PM

This came in on Open Forum before we did our post. The comment is below and my suggested response. See what you think:

.. s the NRC staff following the recent news from the earthquake in Japan? Can you post some reliable technical information regarding the impact of the earthquake on Japanes nuclear facilities? What is the significance of the evacuations that have been ordered due to "failure of backup generators"?

Yes, the NRC is following the impact of the earthquake in Japan and the resulting tsunami. Please see our blog post outlining NRC actions. However, we cannot speak for the Japanese government on their actions nor on the specifics of their plants.

JIT 365

From: Brenner, Eliot
To: Harrington, Holly
Subject: RE: Blog comment to respond to
Date: Friday, March 11, 2011 12:43:05 PM

Fine

From: Harrington, Holly
Sent: Friday, March 11, 2011 12:42 PM
To: Brenner, Eliot
Subject: Blog comment to respond to

This came in on Open Forum before we did our post. The comment is below and my suggested response. See what you think:

Is the NRC staff following the recent news from the earthquake in Japan? Can you post some reliable technical information regarding the impact of the earthquake on Japanese nuclear facilities? What is the significance of the evacuations that have been ordered due to "failure of backup generators"?

Yes, the NRC is following the impact of the earthquake in Japan and the resulting tsunami. Please see our blog post outlining NRC actions. However, we cannot speak for the Japanese government on their actions nor on the specifics of their plants.

Wittick, Brian

From: Wittick, Brian
Sent: Monday, April 18, 2011 3:44 AM
To: bannai-toshihiro@meti.go.jp
Cc: Ramsey, Jack; Foggie, Kirk; Emche, Danielle; Emche, Danielle; Doane, Margaret; Mamish, Nader
Subject: TMI Studies

Dear Bannai-san,

Thank you for the discussions concerning your interest in TMI lessons learned. As we discussed, Jack Ramsey and Kirk Foggie (soon to be Danielle Emche) are two good points for contact that are working to get you information about TMI lessons learned. Please communicate with them at your convenience to help them define your information support desires.

Let me know if I can help in any way.

Kind regards,
Brian

Pulley, Britaney

From: ~~Schroer, Suzanne~~
Sent: ~~Monday, April 18, 2011 6:57 AM~~
To: Schroer, Suzanne
Subject: FW: FOR OFFICIAL USE ONLY - 1200 EDT (April 15, 2011) USNRC Earthquake/Tsunami SitRep - FOR OFFICIAL USE ONLY
Attachments: USNRC Earthquake-Tsunami Update.041511.1200EDT.PDF

Unless you specifically ask, I probably won't be sending these out anymore unless new developments occur.

Happy Monday!
Suzanne

From: McCree, Victor
Sent: Friday, April 15, 2011 4:56 PM
To: R2MAIL; R2_RESIDENT SITES
Subject: FOR OFFICIAL USE ONLY - 1200 EDT (April 15, 2011) USNRC Earthquake/Tsunami SitRep - FOR OFFICIAL USE ONLY

~~FOR OFFICIAL USE ONLY~~

Attached, for your information, NRC situation report regarding the impacts of the earthquake/tsunami event dated 1200, April 15, 2011. This document is considered **FOR OFFICIAL USE ONLY** and is not to be distributed outside the agency.

Vic

~~FOR OFFICIAL USE ONLY~~

JJJ | 367

From: OST01 HOC
Sent: Monday, April 18, 2011 6:17 PM
To: RST01 Hoc; Hoc, PMT12; Boger, Bruce
Subject: FW: [METI Japan](Apr_18)Update on Seismic and Tsunami Damage Information
Attachments: [METI] Apr 18_0800_Seismic Damages to the NPSs.pdf; Apr_18 Radioactivity Level Map [Chart].pdf

FYI...

Executive Support Team
US Nuclear Regulatory Commission
email: ost01hoc@nrc.gov
Ph: 301-816-5100

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

From: HOO Hoc
Sent: Monday, April 18, 2011 6:01 PM
To: LIA07 Hoc; LIA08 Hoc; OST01 HOC
Subject: FW: [METI Japan](Apr_18)Update on Seismic and Tsunami Damage Information

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

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

From: meti-info@meti.go.jp [mailto:meti-info@meti.go.jp]
Sent: Monday, April 18, 2011 5:13 PM
To: meti-info@meti.go.jp
Subject: [METI Japan](Apr_18)Update on Seismic and Tsunami Damage Information

For your reference, Ministry of Economy, Trade and Industry of Japan (METI) is providing latest information on the seismic and tsunami damages to the nuclear power stations (NPSs) in Japan, including those caused to Fukushima Dai-ichi NPS.

This Monday, the following information has been updated.

---- Today's news ----

1. Japan's Road to Recovery and Rebirth (Op-ed by Prime Minister Kan to International Herald Tribune and Washington Post) [Please refer to 7.]

JJJ | 368

---- Updates from NISA ----

2. [NISA] Apr 18 1500_Current Situation of Onagawa, Fukushima Dai-ichi, Fukushima Dai-ni, Tokai Dai-ni NPSs (only Japanese version is now available. English version will be uploaded.)

<http://www.meti.go.jp/press/2011/04/20110418005/20110418005-1.pdf>

3. [NISA] Apr 14 1500_Current Situation of Onagawa, Fukushima Dai-ichi, Fukushima Dai-ni, Tokai Dai-ni NPSs (English version) <http://www.nisa.meti.go.jp/english/files/en20110418-3-1.pdf>

4. [NISA] Apr 14 0800_Fukushima Dai-ichi Major Parameters of the Plant (English version)

<http://www.nisa.meti.go.jp/english/files/en20110418-3-3.pdf>

---- Updates from METI ----

5. [METI] Apr 18_0800_Seismic Damages to the NPSs [Please refer to the attached file]

6. [METI] Apr 18_Radioactivity Level Map Chart [Please refer to the attached file]

---- Major Updates from other agencies of Japanese Government --- 7. [PM] Apr 15_ Japan's Road to Recovery and Rebirth (Op-ed by Prime Minister Kan to International Herald Tribune and Washington Post) [International Herald Tribune] http://www.kantei.go.jp/foreign/kan/statement/201104/15kikou_IHT_e.html [Washington Post]

http://www.kantei.go.jp/foreign/kan/statement/201104/15kikou_WP_e.html

8. [MLIT] Apr 18 AM_Measurement of Radiation Doses in the Ports around Tokyo Bay

http://www.mlit.go.jp/kowan/kowan_fr1_000041.html

Currently, the level of radiation in Tokyo City, Yokohama City, Kawasaki City and Ichikawa City (Chiba) were as shown in the attachment at very safe level to health.

9. [MLIT] Apr 18 PM_Measurement of radiation doses around the Metropolitan Airports

http://www.mlit.go.jp/koku/koku_tk7_000003.html

The current level of radiation does not have any effects on human health.

If you need to add other e-mail address to this mailing list or do not need our information mail any more, please contact at meti-info@meti.go.jp

=====
International Public Relations Team

Ministry of Economy, Trade and Industry (METI)

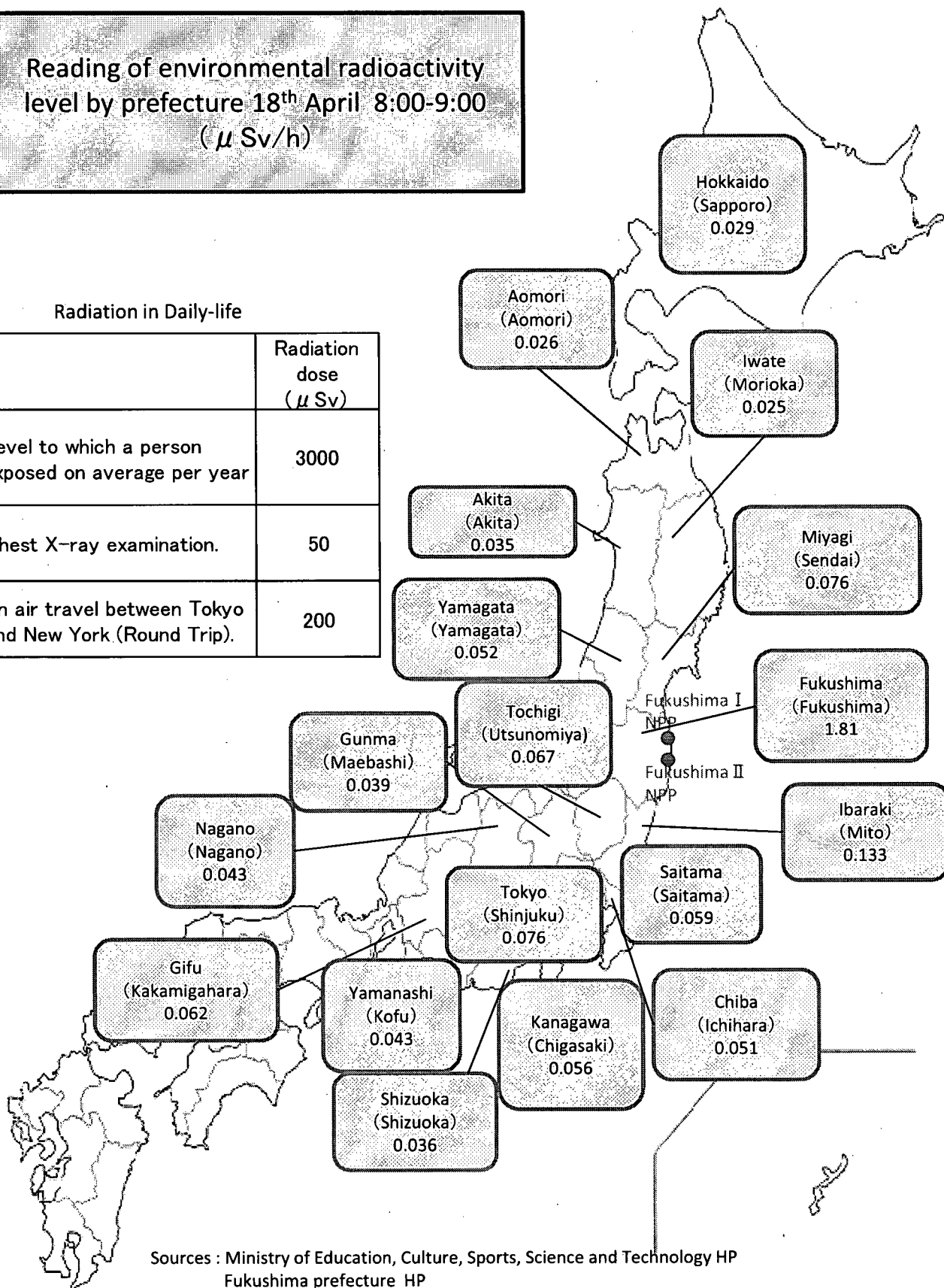
1-3-1 Kasumigaseki, Chiyoda-ku, Tokyo 100-8901, Japan E-mail : meti-info@meti.go.jp

=====
(See attached file: [METI] Apr 18_0800_Seismic Damages to the NPSs.pdf)

(See attached file: Apr_18 Radioactivity Level Map [Chart].pdf)

Reading of environmental radioactivity
level by prefecture 18th April 8:00-9:00
(μ Sv/h)

Radiation in Daily-life	
	Radiation dose (μ Sv)
Level to which a person exposed on average per year	3000
Chest X-ray examination.	50
An air travel between Tokyo and New York (Round Trip).	200



Sources : Ministry of Education, Culture, Sports, Science and Technology HP
Fukushima prefecture HP

Tohoku Pacific Earthquake and the seismic damage to the NPSs

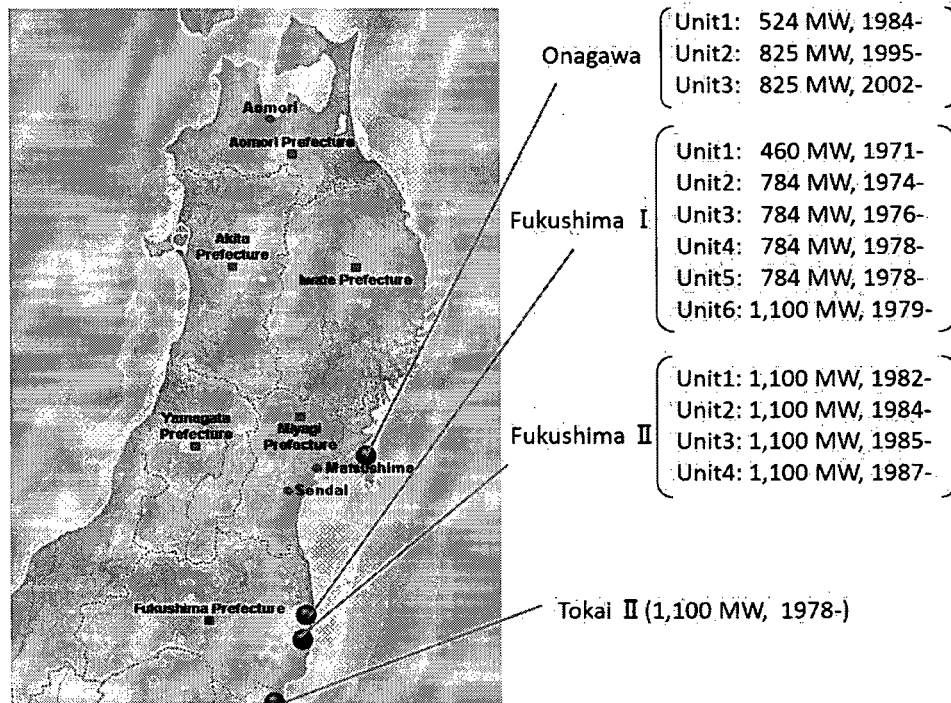
As of 8:00am April 18th, 2011 (JST)

Ministry of Economy, Trade and industry

Earthquake and automatic shut-down of nuclear reactors

The Tohoku Pacific Earthquake of historic magnitude 9.0 struck the northeastern part of Japan at 14:46 on March 11th, 2011.

At the time of the earthquake occurrence, 3 reactors (Units 4, 5 and 6 at Fukushima Dai-ichi (I) Nuclear Power Station (NPS)) were under periodic inspection outage, and 11 reactors (Units 1, 2 and 3 at Onagawa NPS; Units 1, 2 and 3 at Fukushima I NPS; Units 1, 2, 3 and 4 of Fukushima Dai-ni (II) NPS; and an unit of Tokai Dai-ni (II) NPS) were automatically shut-down.



Tsunami damaged the emergency generators and the cooling systems at the Fukushima Dai-ichi (I)

Since the external power supply was cut off upon the earthquake occurrence, the emergency diesel power generators at Fukushima I automatically started generating electricity and the cooling systems began their operation.

Then, the massive earthquake triggered the devastating Tsunami wiping away houses, buildings, cars along the widespread areas of the northeast coast. The emergency diesel power generators and the pumps supplying seawater to the cooling system were halted at 15:41 on March 11th due to the Tsunami estimated more than 14 meters high from the seawater level.

Report concerning incidents at the Fukushima Dai-ichi (I)

Unit 1 Fresh water is being injected to the spent fuel pool and the reactor.

After the reactor was automatically shut-down and the Tsunami disabled the equipments. The pressure of containment vessel unusually increased and the water level inside the reactor pressure vessel dropped. Vent of the primary containment vessel was operated at 10:17am on March 12th; thereafter, hydrogen explosion occurred at the upper-part of the reactor building at 15:36.

Water injection to the reactor pressure vessel

- Seawater had been injected into the reactor pressure vessel since March 12th; thereafter, fresh water has been injected since March 25th, instead of seawater.

Water injection to the spent fuel pool

- On March 31st, spray of fresh water over the spent fuel pool of Unit 1 using the concrete pump truck was carried out.

Power supply

- Lighting in the main control room was recovered on March 24th. And the power supply for the fresh water injection to the reactor pressure vessel was switched to the external power supply on April 3rd.

Stagnant water

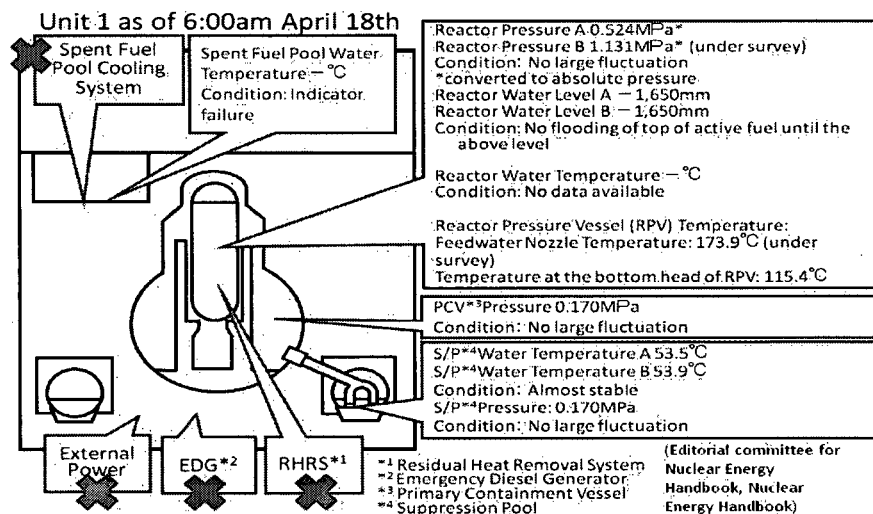
- As the result of concentration measurement in the stagnant water on the basement floor of the turbine building, $2.1 \times 10^5 \text{ Bq/cm}^3$ of ^{131}I (Iodine) and $1.8 \times 10^6 \text{ Bq/cm}^3$ of ^{137}Cs (Caesium) were detected as major radioactive nuclides. Since March 24th, the stagnant water has been transferred to the condenser until it was fulfilled.
- In order to prepare to transfer the stagnant water in the turbine building to the condenser, the water in the condensate storage tank was transferred to the surge tank of suppression pool water and finished on April 2nd. The transfer of the water in the condenser to the condensate storage tank was completed on April 10th.

Nitrogen injection

- Aiming at reducing the possibility of hydrogen combustion in the primary containment vessel of Unit 1, the operations for the injection of nitrogen to the vessel were started at 22:30 on April 6th. The start of nitrogen injection to the primary containment vessel of Unit 1 was confirmed. (1:31am April 7th)

Confirmation by unmanned robots

- Confirmation of situation, etc. was carried out by unmanned robots at the reactor building for Unit 1 on April 17th.



Unit 2 Fresh water is being injected to the spent fuel pool and the reactor.

After the automatic shut-down of the reactor, the water injection function was sustained. And vent of the primary containment vessel was operated at 11:00am on March 13th and at 0:02am on March 15th. But the reactor water level tended to decrease. At 6:10am on March 15th, there was an explosion sound at Unit 2. Given the fact that the pressure in the suppression chamber decreased, it is presumed that there is possibility of certain damage on the suppression chamber.

Water injection to the reactor pressure vessel

- Seawater had been injected into the reactor pressure vessel since March 14th; thereafter, fresh water has been injected since March 26th, instead of seawater.

Water injection to the spent fuel pool

- The seawater injection to the spent fuel pool using the fire pump truck started on March 20th. On March 29th, the injection was switched to the fresh water injection using the temporary motor-driven pump.

Power supply

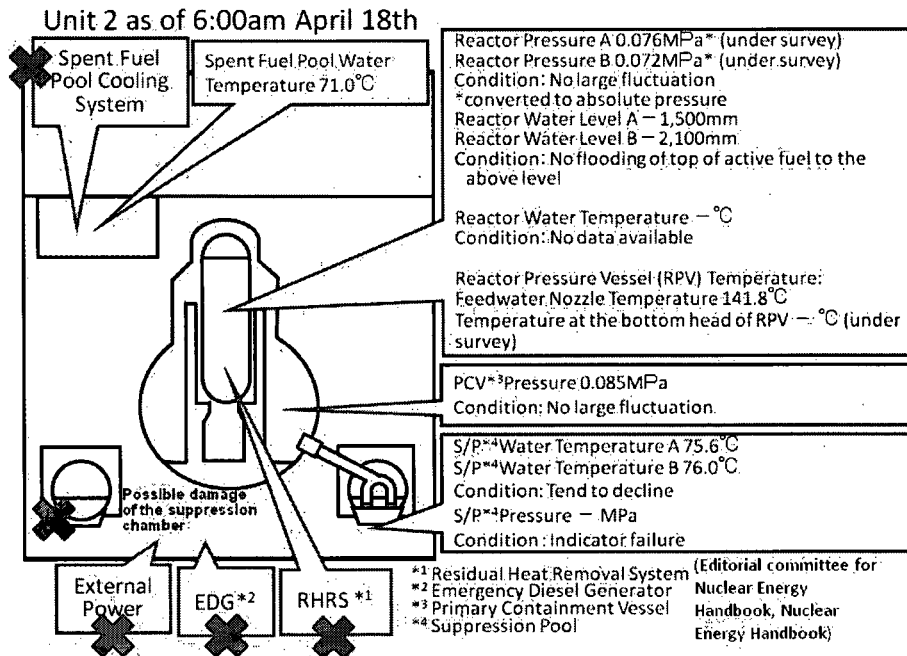
- On March 26th, lighting of the main control room was recovered. And the power supply for the fresh water injection to the reactor pressure vessel was switched to the external power supply on April 3rd.

Stagnant water

- In order to prepare for transferring the stagnant water on the basement floor of turbine building to the condenser, the water in the condensate storage tank was transferred to the surge tank of suppression pool water from March 29th till April 1st. Thereafter, the water in the condenser was transferred to the condensate storage tank and completed on April 9th. The stagnant water in the trench of the turbine building was transferred to the condenser from April 12th till 13th.

Water in the pit

- The water, of which the dose rate was at the level of more than 1,000 mSv/h, was confirmed to be collected in the pit (a vertical portion of an underground structure) located near the intake channel of Unit 2. In addition, the outflow from the crack with a length of around 20 cm in the concrete portion of the lateral surface of the pit into the sea was confirmed on April 2nd. In order to stop the outflow, concrete was put inside, then high polymer absorbent etc. was used, but the outflow did not stop.
- After the coagulant (soluble glass) started to be injected from the holes around the pit on April 5th, the outflow of the water was confirmed to stop on April 6th. Furthermore, the measures to stop water by means of rubber board and jig (prop) were implemented at the outflowing point. (Finished on April 6th)



Unit 3 Fresh water is being injected to the spent fuel pool and the reactor.

After the automatic shut-down of the reactor, fresh water and subsequently seawater were injected into the reactor pressure vessel. And vent of the primary containment vessel was operated on March 13th and 14th. However, the pressure in the primary containment vessel rose up unusually and the explosion took place around the reactor building at 11:01am on March 14th.

Water injection to the reactor pressure vessel

- The seawater had been injected into the reactor pressure vessel since March 13th, thereafter; fresh water has been injected since March 25th, instead of seawater. On March 28th, the pump for the fresh water injection was switched from the fire pump truck to the temporary motor-driven pump.

Water injection to the spent fuel pool

- In order to pour water into the spent fuel pool, helicopters, water cannon trucks, fire engines and concrete pump trucks discharged water to the spent fuel pool of Unit 3 from sky and ground. Since March 29th till April 14th, fresh water spray over the spent fuel pool using the concrete pump truck had been carried out.

Power supply

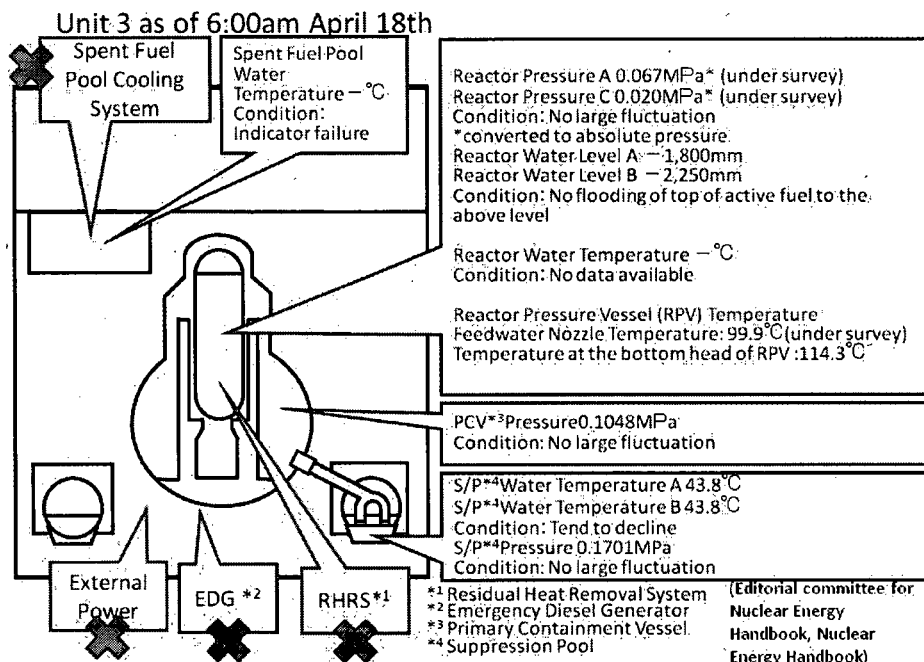
- On March 22nd, lighting in the main control room was recovered. And the power supply for the fresh water injection to the reactor pressure vessel was switched to the external power supply on April 3rd.

Stagnant water

- In order to prepare for transferring the stagnant water on the basement floor of turbine building to the condenser, the water in the condensate storage tank is being transferred to the surge tank of suppression pool water from March 28th till March 31st.

Confirmation by unmanned robots

- Confirmation of situation, etc. was carried out by unmanned robots at the reactor building for Unit 3 on April 17th.



Unit 4 No fuel is in the reactor. Fresh water is being injected to the spent fuel pool.

There is no fuel in the reactor pressure vessel due to replacement of the shroud. It was confirmed that a part of wall of the operation floor of the reactor building of Unit 4 was damaged at 6:14am on March 15th. A fire took place at Unit 4 at 9:38am March 15th, but the fire was extinguished spontaneously as of 11:00am. Another fire took place on March 16th, but no fire could be confirmed from the ground.

Water injection to spent fuel pool

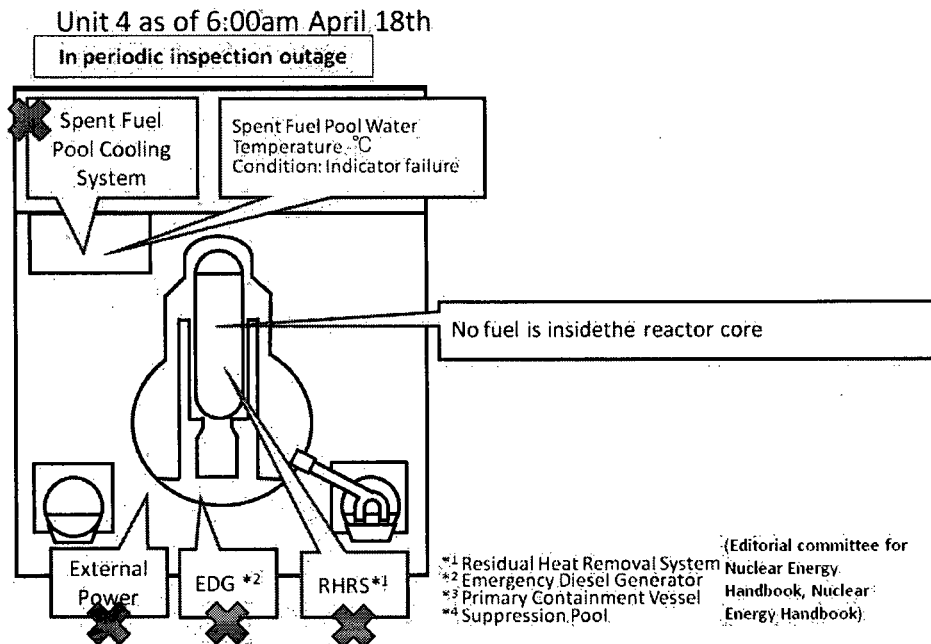
- Water spray using fire engine with seawater over the spent fuel pool of Unit 4 was carried out from March 20th till March 21st. And water spray using a concrete pump truck had been carried out five times with seawater from March 22nd till March 27th and nine times with fresh water from March 30th till April 17th.

Power supply

- On March 29th, lighting in the main control room was recovered.

Stagnant water

- From April 2nd, the stagnant water in the main building of radioactive waste treatment facilities was being transferred to the turbine building of Unit 4. As the water level in the vertical portion of the trench for Unit 3 rose from April 3rd, by way of precaution, the transfer was suspended notwithstanding that the path of the water was not clear.(9:22am April 4th)



Unit 5&6 Unit 5 & 6 is under cold shut down.

One of the emergency generators for Unit 6 was operating and supplying electricity to Unit 5 and Unit 6. Fresh water was being injected into the reactor pressure vessels and the spent fuel pools by make-up water condensate system.

Cold shut down

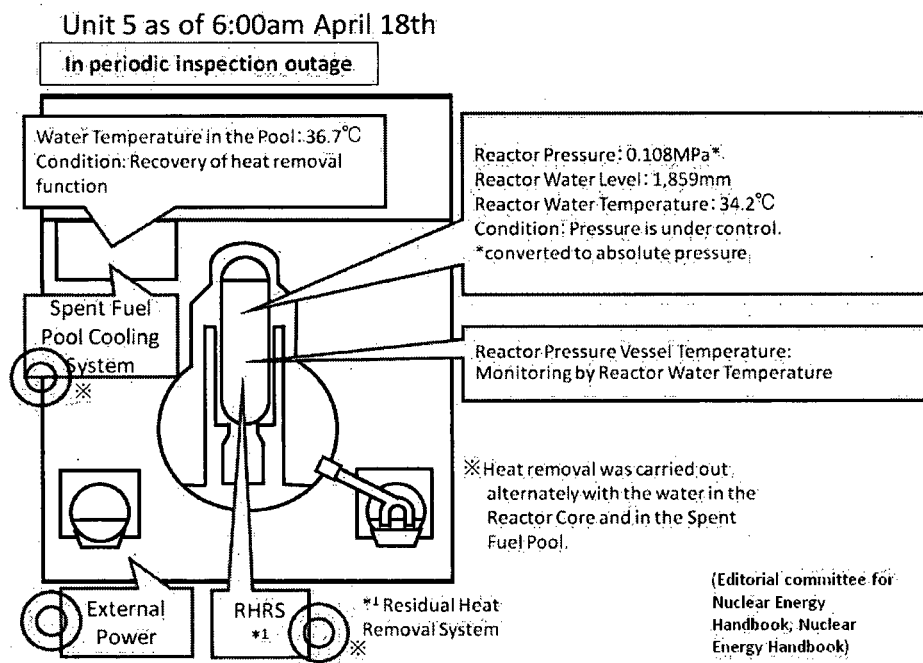
- The pump for residual heat removal system (RHR) for Unit 5 and the pump for RHR for Unit 6 started up on March 19th and recovered heat removal function.
- Unit 5 was under cold shut down at 14:30 on March 20th and Unit 6 was under cold shut down at 19:27 on the same day.

Power supply

- Unit 5 and 6 received electricity reached to the starting transformer on March 20th. The power supply of Unit 5 and 6 was switched from the emergency diesel generators to the external power supply on March 21st and March 22nd.
- Power supply for the temporary pumps for RHR seawater system of Unit 5 and 6 were switched from the temporary to the permanent on March 24th and 25th.

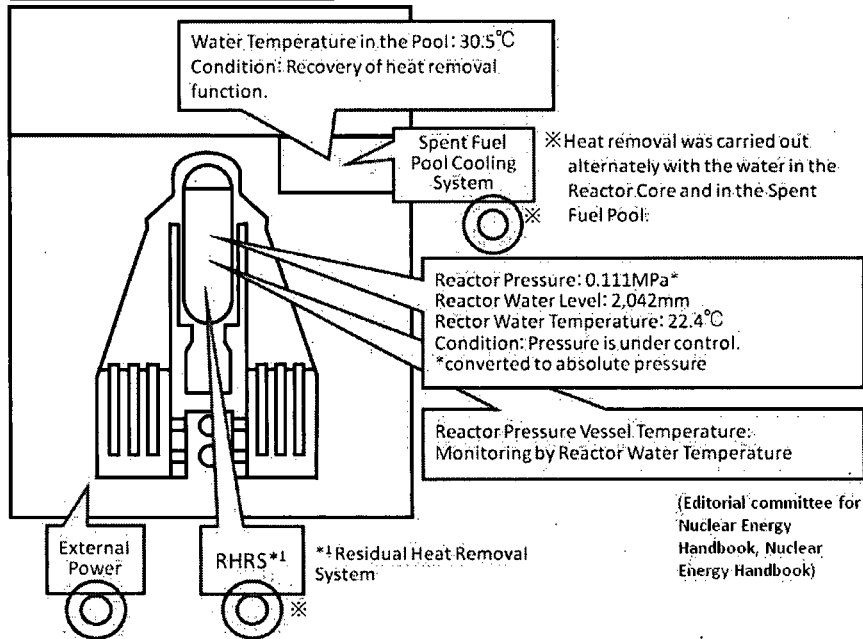
Low-level radioactivity water discharge

- The groundwater with low-level radioactivity in the sub drain pits of Units 5 and 6 (around 1,300t) was discharged through the water discharge canal to the sea from April 4th till 9th in order to protect the critical safety facilities of the reactors. The water was beginning to leak out to the reactor building and other buildings of Unit 6 and there was no further capacity to accommodate it.



Unit 6 as of 6:00am April 18th

In periodic inspection outage



Common Spent Fuel Pool

- The power supply was started at 15:37 on March 24th and cooling was also started at 18:05 on the same day.
- The power supply was stopped due to short-circuiting of the end of the power supply circuit. (14:34 April 17th) Thereafter the facility inspection was carried out and the power supply was recovered. (17:30 April 17th)

Other

Nuclide analysis at water discharge canal

- As the result of nuclide analysis at around the southern water discharge canal, $7.4 \times 10^1 \text{ Bq/cm}^3$ of ^{131}I (1850.5 times higher than the limit of concentration of water outside the Environmental Monitoring Area) was detected on March 26th. (As the result of measurement on March 29th, it was detected as 3355.0 times higher than the limit in water.)
As the result of the analysis at the northern water discharge canal, $4.6 \times 10^1 \text{ Bq/cm}^3$ of ^{131}I (1262.5 times higher) was detected on March 29th.

Water in the trenches

- The water was confirmed to be collected in the vertical parts of the trenches (an underground structure for laying pipes, shaped like a tunnel) outside of the turbine building of Units 1 to 3. The dose rates on the water surface were 0.4 mSv/h of the Unit 1's trench and 1,000 mSv/h of the Unit 2's trench on March 27th. The rate of the Unit 3's trench could not measure because of the rubble.

Nuclide analysis of soil

- In the samples of soil collected on March 21st, 22nd, 25th, 28th, 31nd and April 4th

on the site of Fukushima I, ^{238}Pu (Plutonium), ^{239}Pu and ^{240}Pu were detected. The concentration of the detected plutonium was at the equivalent level of the fallout that was observed in Japan concerning the past atmospheric nuclear testing, i.e. at the equivalent level of the normal condition of environment, and was not at the level of having harmful influence on human body.

Stagnant water

- On March 28th, the stagnant water was confirmed in the main building of radioactive waste treatment facilities. As the result of analysis of radioactivity, the total amount of the radioactivity $1.2 \times 10^1 \text{ Bq/cm}^3$ in the controlled area and that of $2.2 \times 10^1 \text{ Bq/cm}^3$ in the non-controlled area were detected in March 29th.

Barges loading fresh water

- Two barges of the US armed forces carrying fresh water for cooling reactors, etc. landed in the exclusive port of the power station, being towed by the ships of Japan Maritime Self-Defense Force on March 31st and April 2nd. The transfer of fresh water from the barges to the filtrate tank was started.

Low-level radioactive water discharge

- The wastewater with high concentration of radioactive materials was trapped on the basement floor of the turbine building of Unit2 and it was necessary to immediately be transferred to another location as it was leaking out to the surrounding environment. But there was no further capacity to accommodate it.
- In order to use the main building of radioactive waste treatment facilities for accommodating the wastewater of the turbine building of Unit2, the stagnant water with low-level radioactivity in the radioactive waste treatment facilities was started to be discharged from the southern side of the water discharge canal to the sea from 19:03 April 4th till 10th. Confirmation of the remaining water is being carried out. (Total amount of discharged water is around 9,070t.)
- The stagnant water with low-level radioactivity in the building of miscellaneous solid waste volume reduction processing was discharged from the southern side of the water discharge canal to the sea using 5 pumps. (From 17:20 April 6th till 18:20 April 7th)

Other

- In order to prevent the contaminated water from outflowing from the exclusive port, the work for stopping water by means of large-sized sandbags was implemented around the seawall on the south side of the NPS on April 5th.
- 3 sandbags filled with Zeolite were placed between the inlet screen pump room of Unit 3 and that of Unit 4 on April 15th. Thereafter, 2 sandbags were placed between the inlet screen pump room of Unit 1 and that of Unit 2, and 5 sandbags were placed between that of Unit 2 and that of Unit 3 on April 17th.
- The silt fences to prevent the contaminated water from being scattered were completed to be doubly installed at the appropriate part of the seawall on the south side of the NPS on April 11th. Other silt fences were installed in front of the screen of Units 3 and 4 on April 13th, and at the curtain wall and in front of the screen of Unit 1 and 2 on April 14th.
- The test scattering of anti-scattering agent to prevent the radioactive materials on the ground surface from being scattered was carried out on the mountain-side of the Common Pool from April 1st till 17th.
- Removal of the rubble using remote-control heavy machineries was carried out from April 10th till 17th.
- On the ocean-side of the inlet bar screen of Unit 2, temporary boards to stop water were installed on April 12th, 13th and 15th.

Countermeasures for Tsunami

- The distribution boards, etc. for the pumps injecting water to the reactors of Units 1 to 3 were transferred to a hill on April 15th.

Current Situation

- Evacuation as far as 20 kilometers from Fukushima I NPS and 10 kilometers from Fukushima II NPS was almost completed (see the diagram “Fukushima prefecture”). The residents in the areas from 20 kilometers to 30 kilometers radius from Fukushima I NPS are directed to stay in-house.
- On March 16th, the Local Emergency Response Headquarter issued “the direction to administer the stable Iodine during evacuation from the evacuation area (20 km radius)” to the Prefecture Governors and the heads of cities, towns and villages.

Monitoring Data

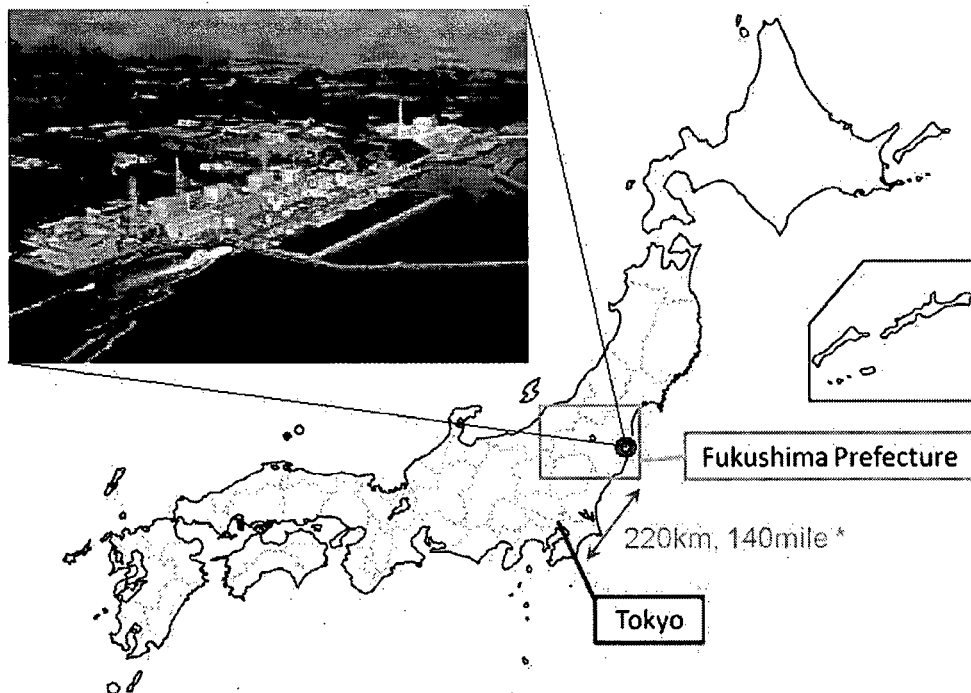
1) The data of Monitoring Post out of 20 kilometers zone of Fukushima I NPS is available on the following website:

http://www.mext.go.jp/a_menu/saigaijohou/syousai/1303726.htm

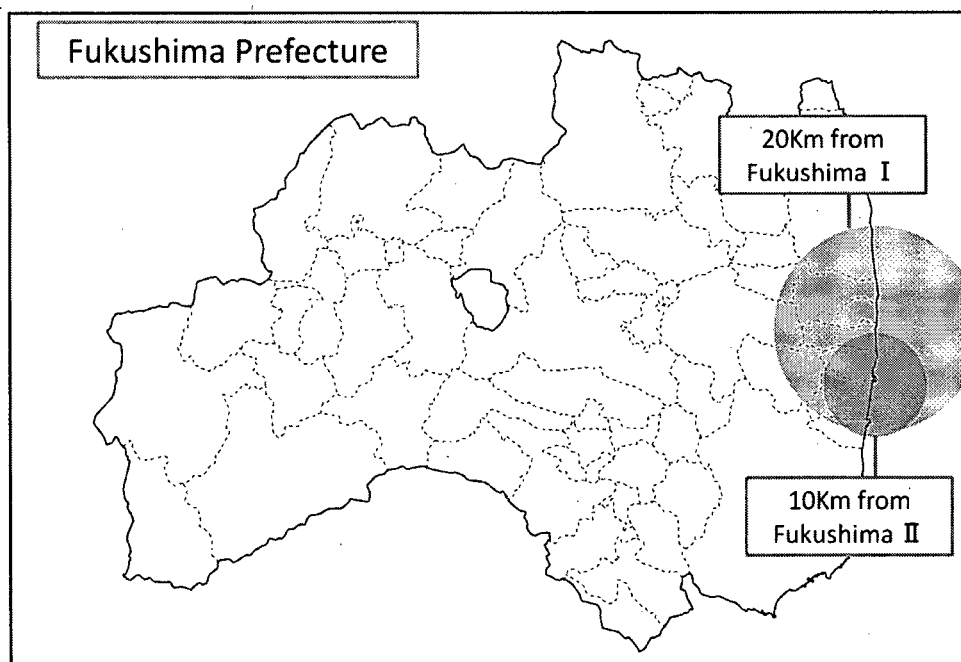
2) The real-time radiation data collected via the System for Prediction of Environment Emergency Dose Information (SPEEDI) is available on the following website:

<http://www.bousai.ne.jp/eng/>

Location of Fukushima I and II in Japan



*Distance between Three Mile Island and Washington D.C. : 140km, 88mile



From: Brenner, Eliot
To: Harrington, Holly
Subject: RE: update on strategy
Date: Friday, March 11, 2011 1:58:30 PM

Good.

From: Harrington, Holly
Sent: Friday, March 11, 2011 1:58 PM
To: Brenner, Eliot
Subject: RE: update on strategy

What would you think about putting in the blog post a link to a source of information about the Japanese situation, such as this link:
<http://www.iaea.org/newscenter/news/2011/tsunamiupdate.html> ? NEI has done something similar on their web page. Also, it will counter comments we're getting (at least one anyway) that a meltdown is imminent in Japan. (I have not yet posted that comment BTW. Not sure what to do about it.)

Holly

From: Brenner, Eliot
Sent: Friday, March 11, 2011 1:55 PM
To: Hayden, Elizabeth; Akstulewicz, Brenda; Chandrathil, Prema; McIntyre, David; Screnci, Diane; Harrington, Holly; Couret, Ivonne; Janbergs, Holly; Ledford, Joey; Sheehan, Neil; Hannah, Roger; Burnell, Scott; Uselding, Lara; Shannon, Valerie; Dricks, Victor; Mitlyng, Viktoria
Subject: update on strategy

1: we will aim for a 3 p.m. press release making the transition from leaving monitoring in R4 to keeping an eye on things from HQ and standing prepared to assist the Japanese if asked. It will include an expression of condolences from the chairman. We will similarly update the blog. Scott is drafting the release.

2: we are looking at the television requests. If we do anything, and it would not be today, it would not be the chairman but more likely someone like Borchardt to discuss how U.S. plants are prepared.

3: While one reporter knows or has guessed there are Japanese here in our Ops center in communication with their home authorities, we will NOT make the available and we will NOT volunteer their presence. If anyone knows they are here and wants to talk with them, they will have to make the request through the embassy to have it relayed to these folks.

4: NRR is getting tasked with making an overlay of the Japanese conditions (8.9 and whatever the height of the wave was) to see how west coast plants stack up against it. we think preliminarily Diablo would have had no trouble with a wave that size. 8.9 we're not so sure about, but again we are not talking about that.

JJJ/369

5: It is OK to describe to reporters how reactors work ... but please avoid being quoted even as an NRC person not involved in the Japan thing. Tell folks they can write of their own knowledge (based on what you tell them) and/or point them to pages 34/325 of the Info Digest.

Great work so far.

Eliot Brenner

Director, Office of Public Affairs

Nuclear Regulatory Commission

Rockville, Md.

O: 301-415-8200

C: 240-888-2923

From: [Uselding, Lara](#)
To: [Brenner, Eliot](#); [Harrington, Holly](#); [Burnell, Scott](#)
Subject: Corrected misinformation on ELP and ANS websites that California plants shutdown
Date: Friday, March 11, 2011 2:30:33 PM

Just spoke to online editor at ELP (source of misinformation) to have them correct their story and headline that California plants shutdown

From: Brenner, Eliot
Sent: Friday, March 11, 2011 11:09 AM
To: Uselding, Lara
Subject: FW: Google Alert - Nuclear Regulatory Commission

From: Google Alerts [<mailto:googlealerts-noreply@google.com>]
Sent: Friday, March 11, 2011 11:53 AM
To: Brenner, Eliot
Subject: Google Alert - Nuclear Regulatory Commission

News

1 new result for **Nuclear Regulatory Commission**

California nuclear plants shut down as tsunami precaution

Electric Light & Power

The **Nuclear Regulatory Commission** said there is nothing wrong with the plant, but a tsunami warning requires the plant to shut down as a precaution. The **NRC** said the plants are located in an area that the expected waves should not impact, ...

[See all stories on this topic »](#)

Tip: Use quotes ("like this") around a set of words in your query to match them exactly. [Learn more.](#)

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[Create](#) another alert.
[Manage](#) your alerts.

JJJ/370

From: RST01B Hoc
To: Monninger, John; Batkin, Joshua; Brenner, Eliot; Hayden, Elizabeth; Harrington, Holly; McDermott, Brian
Subject: Natural Phenomena Response Requirements for Region IV NPPs
Date: Friday, March 11, 2011 2:34:45 PM

The is the Natural Phenomena Response Requirements for Region IV NPPs, as requested by the Chairman. Similar info is available for sites in other regions.

Rick Hasselberg,
Sr. Emergency Response Coordinator
Response Program Manager
Reactor Safety Team
Office of Nuclear Security & Incident Response
U.S. Nuclear Regulatory Commission
rick.hasselberg@nrc.gov
Office - 301-415-6419

55/371

From: LIA03 Hoc
Sent: Tuesday, April 19, 2011 12:52 PM
To: LIA08 Hoc; LIA02 Hoc; LIA10 Hoc
Subject: FW: USNRC Earthquake-Tsunami Update 041911 Revision 1, 1300 EDT
Attachments: USNRC Earthquake-Tsunami Update 041911 Revision 1, 1300 EDT.pdf

From: LIA08 Hoc

Sent: Tuesday, April 19, 2011 12:52 PM

To: OST01 HOC; A Green; A Rock; Al Coons; Aleshia Duncan; alexancg; Anthony Herbold; Appleman Binkert; B Green; B Russo; Bill King; Bill King2; Bruce Howard; C Lay; C Noser; C Ops; Charles Burrows; Charles Donnell; Christopher Meadow; Clinton Carroll; Conrad Burnside; D Drakeley; D May; D Murakami; D Webb; Damian Peko; Dan Feighert; Darrell Hammons; DHS Ops; DOE NIT; DOT; DTRA; DTRA; Dudek; E Wright; Elmer Naples; EOP; EPA; EPA2; Eric Sinibaldi; F Lewis; G Szeto; G Whitmire; George Higdon; gregopk; Gregory Simonson; Gretchen McCoy; H; Harry Sherwood; HHS; I Clark; Intel DIA; J Barnes; J Bartlett; J Moeller; J Noonkester; J Szymanski; J Tippets; James Purvis; Japan Embassy Task Force; Japan Pentagon; Jason CIA; Jason Pepin; Jeffrey Conran; Jeremy Demott; Jeremy Morrow; Jeremyft1; Jim Kish; Johanna Berkey; John Holdren; Joyce Connery; K Donald; K Gonzalez; K Ousley; Karyn Keller; Kyle Viayra; L Mayer; Lee Nickel; Lee-Jake Strunk; Lisa; Lisa Hammond; Lukas McMichael; M Huchla; M Kerber; M Lansley; M Thon; M Thon2; maceck; MARFORPAC CAT All Hazards Div; MARFORPAC CAT G2; Mark Shaffer; markwb2; Marshall Shull; Michelle Ralston; Nan Calhoun; Navy; NICC; NMIC; NOC; NOC Duty Director; Nulcear SSA; P Gardner; pentagon; Peter Lyons; Phillip Barks; R Roesler; R Schueneman; Rebecca Thomson; roberhh; Ron Cherry; Ron McCabe; S Basile; S Buntman; S Levy; scotc1; Seamus O'Boyle; seiden; state; Stephen Trautman; Steve Colman; Steve Horwitz; T Gatling; T Roberts; Thomas Conran; Thomas Zerr; Tim Greten; Timothy Hitzelberger; Trent Hughes; Troy Heytens; USDA, John; USMC; Vanessa Quinn; Victoria Kinsey; W Cluff; W Young; Will Friese; William Harding; William Webb; A Aviles; A Brown; A Estes; A Hough; A Tribble; B goldberg; B Moffat; B Perry; B Woo; Beavers, Shane; Brinser, Andrew; Brooks, Andrae; Brown, Michael; C Fiore; C Good; C Kim; Carlos Islas; CPF CATN5; Craig Gaddis; D Fletcher; D Putthoff; D Scully; D Smith; D Souza; D Wade; D Williams; David Graves; DOE DART; E Fiser; E kaye; E Price; E Shelland; E Train; Elder, Troy M SGT MIL USA USARPAC; Eric Wright; F Bantell; Fossum, Sgt Zachary; Guathier, Ronald; H Zito; Hickam; Hickam; J Blankenburg; J Kreykes; J McCallister; J Rhodes; J Rivera; J Scarbrough; J Soderbeck; J Stewart; J Trussler; James Williams; JR Haley; JTF505-MAIN-JOC-J2; JTF505-MAIN-JOC-J2-INTEL-ANAY; K Bollow; K Bollow; K Tomlinson; Koluch, SSgt Eric; L Bolling; L Elkins; L Heinrich; L Walter; M Howsare; M Kabbur; M Nguyen; M Opfer; M Taafe; M Thon; M Thon; Marina Llewellyn; Michael Anderson; Micheael Eberlein; Monaghan, Dylan; N Albritton; N Albritton; NCMI Ops; Office of Secretary of Defense Watch Officer ; Olson, Niels; P Almquist; P Higginbotham; P Higgins; P Lyons; P Smalley; P Somboonpakron; PACOM; PACOM; Pasit Somboonpakron; Powers, Jeffrey; R Backley; R Fisher; R Garrett; R Neff; R Stephenson; R Tashma; Richard, Sgt William; Robert Duke; Robert P; RST01 Hoc; RST01B Hoc; RST03 Hoc; S Aoki; S Jerabek; Sean Basile; Shirey, Sgt Eric; Simmers, Keith; Spencer Nordgran; Spurlock, Kenneth; Stephen Greco; T Baden; T Lowman; T Miller; T Reeves; T Reeves; T True; Tovar, SSgt Eric; USAFJ.A2@yokota.af.mil; USFJ; USFJ Intel; V Raphael; Valerie Makino; Vaughn, Sgt Jerrod; Walter Hokett; Wanda Ayuso; William Brysacz; Andersen, James; Anderson, Joseph; Ash, Darren; Baggett, Steven; Barker, Allan; Batkin, Joshua; Boger, Bruce; Borchardt, Bill; Bradford, Anna; Brenner, Eliot; Breskovic, Clarence; Smith, Brooke; Brown, Frederick; Brown, Milton; Bubar, Patrice; Burns, Stephen; Camper, Larry; Carpenter, Cynthia; Castleman, Patrick; Ader, Charles; Casto, Chuck; Coggins, Angela; Collins, Elmo; ConE_Resource; Copeland, Douglas; Correia, Richard; Craffey, Ryan; Dapas, Marc; Dean, Bill; Decker, David; Diaz-Sanabria, Yoira; Dickman-Disabled-11/14/2010, Paul; Dorman, Dan; Droggitis, Spiros; Dyer, Jim; English, Lance; ET02 Hoc; Evans, Michele; Franovich, Mike; Frye, Timothy; Garmon, David; Apostolakis, George; Gibbs, Catina; Gliitter, Joseph; Gott, William; Grobe, Jack; Hahn, Matthew; Haney, Catherine; Harrington, Holly; Hipschman, Thomas; Hoc, PMT12; Holahan, Gary; Holahan, Patricia; HOO Hoc; Howe, Allen; Howell, Art; Howell, Linda; Issa, Alfred; Itzkowitz, Marvin; Foster, Jack; Jackson, Donald; Jaczko, Gregory; Johnson, Andrea; Johnson, Michael; Jones, Cynthia; Kahler, Robert; King, Mark; Foggie, Kirk; Kock, Andrea; Kozal, Jason; Leeds, Eric; LIA01 Hoc; LIA02 Hoc; LIA03 Hoc; LIA06 Hoc; LIA08 Hoc; LIA11 Hoc; Logaras, Haral; Loyd, Susan; Magwood, William; Maier, Bill; Marshall, Jane; Marshall, Michael; McCree, Victor; McDermott, Brian; McIntosh, Angela; McNamara, Nancy; Michalak, Paul; Miller, Charles; Miller, Chris; Monninger, John; Morris, Scott; Nease, Rebecca; Nieh, Ho; NRCHQ; NSIR_DDSP_ILTAB_Distribution; Ordaz, Vonna; Orders, William; OST05

Hoc; Ostendorff, William; Pace, Patti; Patel, Jay; Pearson, Laura; Pederson, Cynthia; Plisco, Loren; Powell, Amy; Quichocho, Jessie; R1 IRC; R2 IRC; R3 IRC; R4 IRC; Reddick, Darani; Reyes, Luis; Devercelly, Richard; Nelson, Robert; ROO hoc; Rothschild, Trip; Satorius, Mark; Schmidt, Rebecca; Sharkey, Jeffry; Sheron, Brian; Sigmon, Rebecca; Snodderly, Michael; Sosa, Belkys; Speiser, Herald; Svinicki, Kristine; Tabatabai, Omid; Thoma, John; Thomas, Eric; Tifft, Doug; Kolb, Timothy; Ulses, Anthony; Nakanishi, Tony; Tracy, Glenn; Trapp, James; Trojanowski, Robert; Turtill, Richard; Uhle, Jennifer; Virgilio, Martin; Warnick, Greg; Warren, Roberta; Weber, Michael; Westreich, Barry; Wiggins, Jim; Cook, William; Williams, Kevin; Wittick, Brian; Woodruff, Gena; Zimmerman, Roy; Zimmerman, Roy; Zorn, Jason; Borchardt, Bill; Cohen, Shari; Cooper, LaToya; Dyer, Jim; ET07 Hoc; Flory, Shirley; Hudson, Sharon; Schwarz, Sherry; Sprongeris, Patricia; Taylor, Renee; Virgilio, Martin; Walker, Dwight; Walls, Lorena; Weber, Michael

Subject: USNRC Earthquake-Tsunami Update 041911 Revision 1, 1300 EDT

From: OST02 HOC
Sent: Tuesday, April 19, 2011 9:17 PM
To: OST01 HOC
Subject: FW: RESPONSE - Composite Document, Rev. 6

From: Virgilio, Martin
Sent: Tuesday, April 19, 2011 9:17:20 PM
To: Zimmerman, Roy; Boger, Bruce
Cc: OST02 HOC; OST01 HOC
Subject: Re: RESPONSE - Composite Document, Rev. 6
Auto forwarded by a Rule

Roy

I remained concerned that the approach does not go far enough. I believe we need to set out what it would take us to be able to say that the conditions are such that we can support the Japanese decisions on evacuation. I do not assert that we are there. I just believe that we need to answer the question that we are being asked by our stakeholders

Marty

From: Weber, Michael
To: Zimmerman, Roy
Cc: Virgilio, Martin; OST02 HOC; OST01 HOC
Sent: Tue Apr 19 15:57:52 2011
Subject: RESPONSE - Composite Document, Rev. 6

Looks good, Roy. Thanks

From: Zimmerman, Roy
Sent: Tuesday, April 19, 2011 12:16 PM
To: Ruland, William; Brown, Frederick; Wiggins, Jim
Cc: Weber, Michael
Subject: FW:

fyi

From: Hoc, PMT12
Sent: Tuesday, April 19, 2011 12:13 PM
To: Virgilio, Martin
Cc: Zimmerman, Roy; Milligan, Patricia
Subject:

Marty,

Attached is the Composite Document, revision 6. It incorporates the change in Enclosure 2 to maintain consistency between the base document and each enclosure.

JSJ/373

Speaking with Trish Milligan, she conveyed that the 25 mile radius is supported by DOE reports, which state "radiation levels (are) consistently below actionable levels for evacuation or relocation outside of 25 miles." Thought is, after folks move in and take more readings/samples the evacuation radius would likely be adjusted further.

Also per the discussion, Trish brought up that while the number of individuals impacted by this relaxation may be small, we don't know how many unregistered U.S. Citizens reside or the number of GE staff that may be in the region.

V/r,

Kimberly Gambone
PMT12

From: OST01 HOC
Sent: Tuesday, April 19, 2011 7:17 AM
To: Zimmerman, Roy
Subject: RE: New Tasker

It's in task tracker as task #4776.

From: Zimmerman, Roy
Sent: Tuesday, April 19, 2011 7:16 AM
To: OST01 HOC
Subject: FW: New Tasker

Emily, pls add to tracker if not there, thx

From: Boger, Bruce
Sent: Monday, April 18, 2011 11:44 PM
To: Dudek, Michael
Cc: LIA08 Hoc; Zimmerman, Roy; Morris, Scott
Subject: FW: New Tasker

Mike, I'm not sure this tasker got to you. I hope you can tackle it quickly, so we have the appropriate support for the SVTC this afternoon. Thanks. Bruce

From: Boger, Bruce
Sent: Friday, April 15, 2011 9:46 PM
To: OST01 HOC
Cc: Westreich, Barry; Zimmerman, Roy; Johnson, Michael
Subject: New Tasker

Please create a new tasker for NSIR to identify a person to serve as the principle participant in the twice weekly (T, TH at 15:45) SVTC status briefing. Two backups should also be identified. The interest is to provide continuity in the NRC participation. A system to capture briefing notes should be established. Send to NSIR POC Mike Dudek. High priority. Due date 1700 on Monday, 4/18, to allow time to prepare for the 4/19 briefing. Barry Westrich should be consulted for his perspectives on the 4/15 call.

JJJ/374

From: Harrington, Holly
To: Uselding, Lara
Subject: RE: UPDATE ON TSUNAMI WARNING
Date: Friday, March 11, 2011 2:35:00 PM

Are they trying to earn overtime???

From: Uselding, Lara
Sent: Friday, March 11, 2011 2:32 PM
To: Brenner, Eliot; Harrington, Holly; Burnell, Scott
Subject: UPDATE ON TSUNAMI WARNING

We have just learned from our RIs that it is POSSIBLE that California Emergency Management Agency may extend tsunami warning an additional 12 hours

JJJ / 375

From: Harrington, Holly
To: OST03 HOC
Subject: Verbiage -- or something like this
Date: Friday, March 11, 2011 2:35:00 PM

Press releases about the NRC response to the Japanese earthquake and resulting tsunami can be found at www.nrc.gov. Information about the NRC response is posted on the NRC External Blog, at: <http://public-blog.nrc-gateway.gov/>.

JW/376

From: Harrington, Holly
To: Akstulewicz, Brenda; Burnell, Scott
Cc: Brenner, Eliot; Couret, Ivonne
Subject: RE: Are either of you in the OPS Ctr? Mike Webber has requested OPA presence there
Date: Friday, March 11, 2011 10:32:00 AM

I gave update on our activities

From: Akstulewicz, Brenda
Sent: Friday, March 11, 2011 9:59 AM
To: Burnell, Scott; Harrington, Holly
Cc: Brenner, Eliot; Couret, Ivonne
Subject: Are either of you in the OPS Ctr? Mike Webber has requested OPA presence there
Importance: High

Brenda Akstulewicz
Administrative Assistant
Office of Public Affairs
301-415-8209
brenda.akstulewicz@nrc.gov



JII/377

From: Brenner, Eliot
To: Uselding, Lara; Burnell, Scott; Harrington, Holly
Cc: Akstulewicz, Brenda
Subject: RE: DRAFT PRESS RELEASE FOR REVIEW RIVDC TSUNAMI .docx
Date: Friday, March 11, 2011 10:32:04 AM

Talking points are good. Item re tsunami should be changed to say Diablo is "well protected against possible effects of tsunamis." Xxx well protected, sted "safe."

From: Uselding, Lara
Sent: Friday, March 11, 2011 10:24 AM
To: Brenner, Eliot; Burnell, Scott; Harrington, Holly
Cc: Akstulewicz, Brenda
Subject: DRAFT PRESS RELEASE FOR REVIEW RIVDC TSUNAMI .docx
Importance: High

In the interest of time, I sent with RIV header but change to HQ header and add contacts for folks at Eliot's request.

No. IV-11-007

Contact: Lara Uselding (817) 276-6519

E-Mail: OPA4.Resource@nrc.gov

NRC MONITORS NOTICE OF UNUSUAL EVENT AT DIABLO CANYON POWER PLANT

The U.S. Nuclear Regulatory Commission is monitoring the notice of unusual event (NOUE) at the Diablo Canyon Power Plant, located near San Luis Obispo, Calif. The NRC entered Monitoring mode at 9:46 a.m. EST in response to the 8.9 magnitude earthquake in Japan and subsequent tsunami warnings. NRC Headquarters is monitoring Japan's response to the current situation.

Pacific Gas and Electric Co. (PG&E) declared a NOUE at 1:23 a.m. PST today after receiving a Tsunami Warning from the West California Emergency Management Agency. The tsunami warning was generated after an estimated 8.9 magnitude earthquake occurred off the eastern Japanese coast.

NRC Chairman Gregory Jaczko said, "The NRC is closely monitoring this situation as it unfolds with respect to nuclear facilities within the United States. NRC staff is working closely with its resident inspectors who are on site to ensure safe operating conditions at plants affected by the tsunami warnings."

2011378

The licensee reported the Diablo Canyon plant is stable and both units remain on line. The plant is well protected against tsunami conditions as required by NRC regulations.

###

News releases are available through a free *listserv* subscription at the following Web address: <http://www.nrc.gov/public-involve/listserver.html>. The NRC homepage at www.nrc.gov also offers a SUBSCRIBE link. E-mail notifications are sent to subscribers when news releases are posted to NRC's Web site.

From: Brenner, Eliot
To: Uselding, Lara; Burnell, Scott; Harrington, Holly
Cc: Akstulewicz, Brenda
Subject: RE: DRAFT PRESS RELEASE FOR REVIEW RIVDC TSUNAMI .docx
Date: Friday, March 11, 2011 10:26:23 AM

Lara: please add to the bottom the boilerplate regarding earthquake hazards. Then return it to me.

From: Uselding, Lara
Sent: Friday, March 11, 2011 10:24 AM
To: Brenner, Eliot; Burnell, Scott; Harrington, Holly
Cc: Akstulewicz, Brenda
Subject: DRAFT PRESS RELEASE FOR REVIEW RIVDC TSUNAMI .docx
Importance: High

In the interest of time, I sent with RIV header but change to HQ header and add contacts for folks at Eliot's request.

No. IV-11-007

Contact: Lara Uselding (817) 276-6519

E-Mail: OPA4.Resource@nrc.gov

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The licensee reported the Diablo Canyon plant is stable and both units remain on

JJJ/379

line. The plant is well protected against tsunami conditions as required by NRC regulations.

###

News releases are available through a free *listserv* subscription at the following Web address: <http://www.nrc.gov/public-involve/listserver.html>. The NRC homepage at www.nrc.gov also offers a SUBSCRIBE link. E-mail notifications are sent to subscribers when news releases are posted to NRC's Web site.

OIP ITServices Resource

From: Dembek, Stephen
Sent: Wednesday, April 20, 2011 11:44 AM
To: OIP ITServices Resource
Subject: FOIA RESPONSE
Attachments:

RE: ACTION: Commissioner's Assistant Briefing Notification; Re: Sharing Info on the Japanese Quake; URGENT Ops Center Staffing needed tonight; RE: URGENT Ops Center Staffing needed tonight; ACTION: Commissioner's Assistant Briefing Notification; FW: ACTION: Commissioner's Assistant Briefing Notification; FW: NSS sous-Sherpa meeting Friend of Chair papers - Transport Security; Untitled; FW: Names; RE: Names; THE TEAM!; RE: Names; Transition Update - Tuesday, March 15 - 7am Shift Change; RE: Transition Update - Tuesday, March 15 - 7am Shift Change; Re: Transition Update - Tuesday, March 15 - 7am Shift Change; ICWG Meeting - Tomorrow; RE: ICWG Meeting - Tomorrow; RE: Action Request - Potential Temporary Assignees to OIP; please distribute to ops team; RE: Action Request - Potential Temporary Assignees to OIP; FW: Launch of FAQ Related to Events Occurring in Japan; FW: OIP Analysis no2.docx; FW: japanese translators/interpreters; Transition Update - Tuesday, March 15 - 3pm Shift Change; RE: Interpreter Services; translators/interpreters for the OP Center; Long-term Staffing for the Op Center; RE: Transition Update - Tuesday, March 15 - 3pm Shift Change; FW: Request for staff that can support OIP Additional Staff requirements outside Ops Center Long Term Staffing; US Embassy Resources; RE: G8 NSSG Meeting - May Have to Cancel trip; RE: G8 NSSG Meeting - May Have to Cancel trip; Re: NRC Staff Travel to Japan; FW: NRC Staff Travel to Japan; RE: Other Country Response to the Japanese Emergency; interpreters schedule for March 16-evening and March 17, 2011; RE: interpreters schedule for March 16-evening and March 17, 2011; RE: Email; FW: Email; RE: Email; RE: Email; RE: Email; TRANSITION REPORT FOR MARCH 16, 2011 11pm - NOT URGENT; FW: New Agency Wide TAC Number; TRANSITION REPORT FOR MARCH 17, 2011, 7 am; Clarification for use of the Tac ZG0061; RE: G8 NSSG Meeting - May Have to Cancel trip; RE: TRANSITION REPORT FOR MARCH 17, 2011, 7 am; RE: TRANSITION REPORT FOR MARCH 17, 2011, 7 am; RE: Reminder - NSSG; FW: TRANSITION REPORT FOR MARCH 17, 2011, 7 am; RE: TRANSITION REPORT FOR MARCH 17, 2011, 7 am; FW: eWash: WH 124; FW: Final List of Volunteers for assistance to OIP; Untitled; RE: Proposal to save lives attenuating radiation levels in Japan using melanins; TRANSITION REPORT FOR MARCH 17, 2011 11PM (i.e. "not my problem anymore"); Work Schedule and Pay Guidance for Reponders to Japan Events; NSSG; RE: TRANSITION REPORT FOR MARCH 17, 2011 11PM (i.e. "not my problem anymore"); FW: NSSG; RE: My G-8 NSSG Trip Next Week; RE: Mailbox for NRC Staff in Japan; RE: Mailbox for NRC Staff in Japan; Re: TRANSITION REPORT FOR MARCH 17, 2011 11PM (i.e. "not my problem anymore"); FW: Traveller Information Requirements; RE: Traveller Information Requirements; RE: Traveller Information Requirements; FW: Traveller Information Requirements; RE: Traveller Information Requirements; RE: Traveller Information Requirements; RE: Traveller Information Requirements; RE: Translating/Understanding IRSN Document; FW: Traveller Information Requirements; FW: Traveller Information Requirements; FW: Translating/Understanding IRSN Document; FW: Traveller Information Requirements; FW: Traveller Information Requirements; RE: Traveller Information Requirements; RE: Traveller Information Requirements; RE: Traveller Information Requirements; RE: Traveller Information Requirements; RE: Translating/Understanding IRSN Document; Draft Traveler Checklist; FW: Translating/Understanding IRSN Document; FW: Traveller Information Requirements; RE: Draft Traveler Checklist; FW: UPDATE: Traveller Information Requirements; RE: Draft Traveler Checklist; FW: UPDATE: Traveller Information Requirements; FW: Draft Traveler Checklist; traveler to Japan; FW: Traveller Information Requirements; RE: Traveller Information Requirements; RE: USAID Coordinated Flights to Japan; G8 NSSG Meeting March 24-25; TRANSITION REPORT FOR MARCH 18, 2011 3 PM; TRANSITION REPORT FOR MARCH 18, 2011 11 PM; FW: ACTION NEEDED: Proposed replacement staff for team in Japan; FW: Deployment to Japan; Next Travelers ; TRANSITION REPORT FOR MARCH 19, 2011/ 1500; TRANSITION REPORT FOR MARCH 19, 2011/ 2300; FW: Travel to Japan Checklist-UPDATED!.docx; Re: Travel to Japan Checklist-UPDATED!.docx; GOING TO JAPAN - QUESTION; FW: NRC TEAM IN JAPAN; RE: Request for information for contact purposes; NRC Travelers to Japan ; RE: GOING TO JAPAN - QUESTION; RE: NRC Travelers to Japan ; RE: NRC Travelers to Japan ; FW: NRC Travelers to Japan ; RE: NRC Travelers to Japan ; RE: NRC Travelers to Japan ; RE: NRC Travelers to Japan ; RE: NRC Travelers to Japan ; RE: NRC Travelers to Japan ;

Attachments:

TEAM IN JAPAN; RE: NRC Travelers to Japan ; RE: NRC Travelers to Japan ; RE: NRC Travelers to Japan ; RE: NRC TEAM IN JAPAN; RE: NRC Travelers to Japan ; RE: NRC Travelers to Japan ; RE: NRC Travelers to Japan ; RE: NRC Travelers to Japan ; RE: NRC Travelers to Japan ; FW: Travelers checklist and passport; FW: Travel to Japan; RE: Travelers checklist and passport; RE: Travelers checklist and passport; Radiation briefing; RE: Radiation briefing; RE: Travelers checklist and passport; RE: Travelers checklist and passport; RE: Radiation briefing; RE: Travelers checklist and passport; RE: Travelers checklist and passport; RE: Travelers checklist and passport; OIP Briefing for Travelers; RE: OIP Briefing for Travelers; RE: OIP Briefing for Travelers; RE: OIP Briefing for Travelers; Legislation on International Nuclear Safety Cooperation; RE: FW: NSSG; Fw: Funding Needs for Japan Follow-up - Resent to provide Attachment

From: Dembek, Stephen**Sent:** Wednesday, April 20, 2011 9:27 AM**To:** Dembek, Stephen**Subject:**

From: Hoc, PMT12
Sent: Wednesday, April 20, 2011 4:39 PM
To: Dudek, Michael
Cc: OST01 HOC
Subject: RE: Composite Paper

Hi Michael,

I am the PAAD to cover 15:00-23:00. I do not know which copy is the latest version.
Could you ask please Trish Milligan directly?

Thanks,
Casper

From: OST01 HOC
Sent: Wednesday, April 20, 2011 4:31 PM
To: Hoc, PMT12
Subject: FW: Composite Paper

From: Dudek, Michael
Sent: Wednesday, April 20, 2011 4:30 PM
To: OST01 HOC
Subject: Composite Paper

Executive Support Team:

Do you have a copy of the latest version of the Composite Paper?

Thanks!
Michael I. Dudek

Michael Dudek | Technical Assistant | NSIR/Division of Preparedness & Response | U.S. NRC
11555 Rockville Pike, Rockville, MD 20852 | ☎ (301) 415-6500 | ✉ Michael.Dudek@nrc.gov

JJJ/381

From: Harrington, Holly
To: Brenner, Eliot; Burnell, Scott; Uselding, Lara
Subject: Talking points to OCA
Date: Friday, March 11, 2011 9:22:00 AM

When we get our talking points assembled, we need to cc Jenny Weil in OCA

JJI/382

From: Kowalczyk, Jeffrey
Sent: Wednesday, April 20, 2011 7:48 PM
To: OST01 HOC
Subject: RE: ET Admin Staffing-May 7

Thank you! and thanks for the parking list!

From: OST01 HOC
Sent: Wednesday, April 20, 2011 7:37 PM
To: Kowalczyk, Jeffrey
Cc: Larson, Emily
Subject: ET Admin Staffing-May 7

Signed up for 3-11 on May 7. Updated in master watchbill.

JJ/383

From: LIA08 Hoc
Sent: Wednesday, April 20, 2011 5:26 AM
To: OST01 HOC
Subject: RE: Japan One Pager 0700 EDT 4-20-11

No revision required for the LT section.

Milt Murray
Liaison Team Coordinator
US Nuclear Regulatory Commission
email: lia08.hoc@nrc.gov
Desk Ph: 301-816-5185

From: OST01 HOC
Sent: Tuesday, April 19, 2011 11:41 PM
To: Hoc, PMT12; RST01 Hoc; LIA08 Hoc; Holonich, Joseph
Subject: Japan One Pager 0700 EDT 4-20-11

Japan One Pager for 0700 Updating.

DANIEL K. INOUE, HAWAII, CHAIRMAN
THAD COCHRAN, MISSISSIPPI, VICE CHAIRMAN

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DANIEL COATS, INDIANA
ROY BLUNT, MISSOURI
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United States Senate

COMMITTEE ON APPROPRIATIONS

WASHINGTON, DC 20510-6025

<http://appropriations.senate.gov>

April 20, 2011

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

Dear Chairman Jaczko:

I am writing to request that the Nuclear Regulatory Commission (NRC) begin examining seismic and tsunami hazards, operational issues, plant security, emergency preparedness, spent fuel storage options and other elements of a nuclear power plant's "design basis" within the scope of the relicensing process.

The current relicensing process is focused entirely on identifying and managing the detrimental effects of aging plant facilities. The process does not reevaluate the threat assessment that formed the basis of the plant's original design.

I believe that our understanding of many threats – especially seismic threats, tsunami threats, spent fuel risks, and terrorist threats – has improved dramatically since most nuclear power plants were originally designed and licensed thirty or more years ago. Relicensing these facilities offers a unique opportunity to review the original assessment of potential threats, in order to ensure that a facility is designed to endure all threats safely.

I appreciate that the NRC continuously reviews threats, and has required upgrades to address newly understood concerns outside of the relicensing process. For instance, the Commission issued rules to lower the risk of hydrogen explosions when this threat was identified in the 1980s. However, the ongoing assessment process places the burden of proof on the NRC to demonstrate that a design or operational modification of a fully

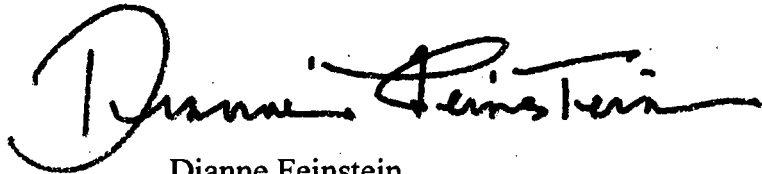
JJ | 385

licensed facility is necessary. In contrast, the relicensing process would place the burden of proof on the facility to demonstrate that it is designed to endure and survive all potential threats.

Recent events demonstrate that thirty year old threat assessments can be devastatingly inaccurate. In Japan there have been two earthquakes in four years that exceeded the "design basis" of nuclear plants. In California, researchers have recently found new faults close to nuclear power plants, and tsunami experts have learned that submarine landslides can generate local tsunamis far larger than previously believed. Finally, recent research has demonstrated the susceptibility of storing radioactive spent fuel in densely packed pools. These new threats logically should be considered in a relicensing process, just as they would be in the licensing of a new nuclear power plant in the United States.

I strongly encourage the NRC to modify its relicensing policies in order to assure a full reexamination of design basis elements, including seismic and tsunami hazards, operational issues, plant security, emergency preparedness, and spent fuel storage options. If you have any questions or concerns about this request, please do not hesitate to contact me. I look forward to working with you to ensure that the United States has the world's safest nuclear industry.

Sincerely,

A handwritten signature in black ink, reading "Dianne Feinstein". The signature is fluid and cursive, with the first name "Dianne" being larger and more prominent than the last name "Feinstein".

Dianne Feinstein
Chairman
Subcommittee on Energy and Water
Development

DF/mbn

V

From: LIA08 Hoc
Sent: Wednesday, April 20, 2011 1:01 PM
To: LIA08 Hoc
Subject: FW: April 20, 2011 NRC Emergency Operations Center Status Update
Attachments: USNRC Earthquake-Tsunami Update 042011 1300 EDT.pdf

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

From: LIA08 Hoc
Sent: Wednesday, April 20, 2011 12:58 PM
To: Temple, Jeffrey
Subject: April 20, 2011 NRC Emergency Operations Center Status Update

Jeff Temple
Liaison Team Coordinator
US Nuclear Regulatory Commission
email: lia08.hoc@nrc.gov
Desk Ph: 301-816-5185

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From: Moore, Carl
Sent: Wednesday, April 20, 2011 2:48 AM
To: Jaczko, Gregory
Cc: Borchardt, Bill; Weber, Michael; Virgilio; Martin; Casto, Chuck; Leeds, Eric; Reynolds, Steven; RST01 Hoc; OST01 HOC
Subject: NRC's Daily Assessment of Conditions at Fukushima Daiichi
Attachments: NRC Daily Assessment of Daiichi - 4-20-11.pdf

Dear Chairman

The attached is the NRC Japan Team's Daily Assessment of conditions at the Fukushima Daiichi nuclear power plants and spent fuel pools. There are no changes to the daily assessment chart for today. It should be noted that the Unit 3 reactor pressure vessel flange temperature and upper drywell temperature indicators are continuing to trend down in the safe direction. Over the past 72 hours the reactor pressure vessel flange and upper drywell temperatures have come down approximately 60 degrees C. The cause for the decreases are still unknown and are being evaluated. Unit 2 has experienced an approximate 50 degree C decrease in the reactor pressure vessel lower head skirt temperatures. These temperatures spiked for approximately 20 hours and then dropped back down. The cause for the increase and subsequent decrease is unknown and is being evaluated.

If you have any questions, please don't hesitate to ask.

Best regards,
Carl Moore
NRC Japan Team

JJJ/387

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NRC's Daily Assessment of Conditions at Fukushima Daiichi Nuclear Power Plant

<u>Unit 1</u>		Today	Yesterday
Vessel	Cooling	Challenged	Challenged
		↔	↔
	Integrity	Intact	Intact
		↔	↔
Containment	Flooding	Inc./Needed	Inc./Needed
		↔	↔
	Integrity	Challenged	Challenged
		↔	↔
Spent Fuel Pool	Cooling/Level	Adequate	Adequate
		↔	↔
	Integrity	Intact	Intact
		↔	↔

<u>Unit 2</u>		Today	Yesterday
Vessel	Cooling	Challenged	Challenged
		↔	↔
	Integrity	Failed	Failed
		↔	↔
Containment	Flooding	Inc./Needed	Inc./Needed
		↔	↔
	Integrity	Failed	Failed
		↔	↔
Spent Fuel Pool	Cooling/Level	Adequate	Adequate
		↔	↔
	Integrity	Intact	Intact
		↔	↔

<u>Unit 3</u>		Today	Yesterday
Vessel	Cooling	Adequate	Adequate
		↔	↔
	Integrity	Failed	Failed
		↔	↔
Containment	Flooding	Challenged	Challenged
		↔	↔
	Integrity	Failed	Failed
		↓	↓
Spent Fuel Pool	Cooling/Level	Challenged	Challenged
		↔	↔
	Integrity	Challenged	Challenged
		↔	↔

<u>Unit 4</u>		Today	Yesterday
Spent Fuel Pool	Cooling/Level	Challenged	Challenged
		↔	↔
	Integrity	Challenged	Challenged
		↑	↑

		Today	Yesterday
Protective Measures	Exposure Risk	Low	Low
		↔	↔

~~Official Use Only~~

April 20, 2011

Methodology for Developing the Fukushima Daiichi Daily Assessment Report

PURPOSE: The report is prepared to provide a qualitative high level assessment of daily conditions at Fukushima Daiichi that the U.S. Ambassador can use to assess the safety of American citizens in Japan.

DISCLAIMER: The development of the daily assessment report includes a number of inputs. Some of these are objective, such as plant data provided by TEPCO, while others are subjective, such as engineering insights from the NRC's reactor and protective measures specialists in Japan. It should be recognized that there are many unknowns and uncertainties associated with having a complete understanding of conditions in each of the Daiichi reactors and spent fuel pools. As such, this tool represents the collective judgment of the NRC staff in Japan based on all available data.

For each of the major plant parameters listed below, the NRC staff assesses its status daily and bins it into one of the three categories listed. The staff uses the listed plant information and conditions in making its assessment. The arrows on the report indicate the relative trend in plant conditions from the previous day.

1. Reactor Pressure Vessel
 - a. Cooling – Adequate, Challenged, or Inadequate.
 - i. Flow or Injection Rate
 - ii. Reliability of Injection
 - iii. Source of Water
 - b. Integrity – Intact, Challenged, or Failed.
 - i. Temperature indications
 - ii. Pressure readings
2. Primary Containment
 - a. Flooding Status – Complete/Not needed, Challenged, or Incomplete/Needed.
 - i. Water Level
 - ii. Sources
 - iii. Injection capacity/rate
 - b. Integrity - Intact, Challenged, or Failed.
 - i. Pressure readings
 - ii. Bypass evaluations
 - iii. Temperature indications
3. Spent Fuel Pools
 - a. Cooling/Level – Adequate, Challenged, or Inadequate.
 - i. Flow or Injection Rate
 - ii. Reliability of Injection
 - iii. Source of Water
 - b. Integrity – Intact, Challenged, or Failed. Due to limited available data, this assessment relies strongly on the NRC team's engineering judgment.
4. Protective Measures – Exposure Risk to American citizens in Japan outside the U.S. government's recommended 50-mile evacuation zone.
 - a. Low – 50-mile recommendation remains sufficient
 - b. Medium – New information has raised questions regarding the sufficiency of the 50-mile recommendation.
 - c. High – 50-mile recommendation is no longer sufficient due to changing plant condition



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
WASHINGTON, D.C. 20555-0001

April 21, 2011

The Honorable Edward J. Markey
United States House of Representatives
Washington, D.C. 20515

Dear Congressman Markey:

On behalf of the U.S. Nuclear Regulatory Commission (NRC), I am responding to your letters of March 11, 15, and 18, 2011, which raised a number of important questions and concerns regarding recent events in Japan and their implications for the continuing safety of nuclear power plants in the United States.

Japan is still focused on bringing the nuclear events and their ramifications under control. The NRC's Emergency Operations Center continues to monitor and assess events, and to provide expert assistance and review. We are focused on meeting the near-term technical and information needs of the Japanese Government, various components of the Executive Branch, Members of Congress, and the American public, while ensuring there is no reduction in the domestic licensing and oversight functions of the NRC. The NRC will be prepared to share a complete and accurate summary of events in Japan when the immediate crisis is over and we obtain more complete and verified information over time.

We expect that decisions regarding our domestic regulatory program based on lessons learned from the events in Japan will be made over the course of the next 6 – 9 months. During this time, the NRC staff has established, in accordance with the Commission's March 23rd direction, a senior level task force to conduct a methodical and systematic review of our processes and regulations to determine whether the agency should make additional improvements to our regulatory system. This activity will have both near-term and longer-term components.

For the near-term effort, the task force is beginning a 90-day review. This review will evaluate the currently available information from the Japanese events to identify immediate or near-term operational or regulatory issues potentially affecting the 104 operating reactors in the U.S., including their spent fuel pools. Areas of investigation will include the ability to protect against natural disasters, response to station blackouts, severe accidents and spent fuel accident progression, radiological consequence analysis, severe accident management issues and emergency preparedness. Over this 90-day period, the NRC staff will develop recommendations, as appropriate, for changes to inspection procedures and licensing review guidance, and will recommend whether generic communications, orders, or other regulatory requirements are needed. This 90-day effort will include a briefing of the Commission after approximately 30 days to provide a snapshot of the regulatory response and the condition of the U.S. reactor fleet based on information available at that time.

The NRC's longer-term review will begin as soon as the NRC staff has sufficient technical information from the events in Japan, with a goal of commencing no later than the completion of the 90-day near-term report. The task force will evaluate all technical and policy

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issues related to the events to identify any additional potential research, generic issues, changes to the reactor oversight process, rulemakings, and modifications to the regulatory framework that should be pursued by the NRC. A report with appropriate recommendations will be provided to the Commission within 6 months after the start of this evaluation. Both the 90-day and final reports will be made publicly available in accordance with normal Commission processes.

With those plans in place and underway, we also are currently pursuing prudent actions, even though we do not yet have all the details we need to fully assess the implications of the Japanese events for the U.S. reactor fleet. Specifically, we have begun inspection activities through temporary instructions to our inspection staff, including the resident inspectors and the region-based inspectors in our four Regional offices, to look at licensees' readiness to deal with both design basis accidents and beyond-design basis accidents. We have also issued an information notice to our licensees to make them aware of the events in Japan. Nuclear power plant licensees are voluntarily verifying that their capabilities to mitigate conditions that result from severe accidents, including the loss of significant operational and safety systems, are in effect and operational. The NRC will take additional actions that we believe to be appropriate as our understanding of the events in Japan becomes clearer.

In your letter of March 18th, you requested that we provide Congress and the public with a daily "situation report" or other similar document providing various updated information on the impacted facilities in Japan. I understand that the NRC Office of Congressional Affairs has begun providing that information to your office. To inform the public, we have prominently placed on the NRC webpage a link to "NRC's Actions on Japan's Emergency." This link, which is updated regularly, provides a range of information that includes Congressional testimony, Commission meeting transcripts, news releases, and Frequently Asked Questions. It also includes links to additional information on the web sites of a number of U.S. Government agencies and other organizations.

Let me assure you that our ongoing monitoring of events in Japan and review of all available information leads us to conclude that U.S. plants continue to operate safely. Let me also assure you that our review of this ongoing and dynamic situation will be systematic and methodical. We will take whatever actions are determined necessary in light of the information we receive.

I want to reiterate that we continue to view our domestic responsibilities for licensing and oversight of the U.S. licensees as our top priority and that U.S. nuclear plants continue to operate safely. I look forward to being able to provide you with additional information as it becomes available. If you have any additional questions, please contact me or Ms. Rebecca Schmidt, Director of the Office of Congressional Affairs, at (301) 415-1776.

Sincerely,

A handwritten signature in black ink, appearing to read "G. B. Jaczko", with a stylized flourish at the end.

Gregory B. Jaczko

Similar letter sent to:

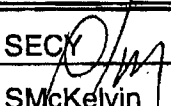
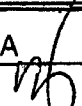
The Honorable Edward J. Markey
United States House of Representatives
Washington, D.C. 20515

The Honorable Lois Capps
United States House of Representatives
Washington, D.C. 20515

Originating Office: EDO
REF: CORR-11-0039
Commission Correspondence

GBJ – Approved/edit
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NAME	SMcKelvin		JMonninger	GBJaczeko		
DATE	04/18/2011	04/17/2011	04/ /2011	04/ /2011		

OFFICIAL RECORD COPY

Congress of the United States

House of Representatives

Washington, DC 20515-2107

March 11, 2011

The Honorable Greg Jaczko
Chairman
Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852

Dear Chairman Jaczko:

I write to request information related to the potential impacts of the devastating earthquake in Japan on that country's nuclear facilities, as well as on the implications for our own domestic industry.

The 8.9 magnitude earthquake has caused some serious damage at two nuclear facilities in Japan. The Japanese government declared an "atomic power emergency."¹ Fukushima Daiichi nuclear power plant has experienced a failure associated with its emergency diesel generators, preventing the flow of water into its cooling system. To reduce rising pressure inside the Fukushima reactor, slightly radioactive vapor is being released.² Residents within a 3 km radius of Fukushima have been evacuated.³ The United States Air Force also reportedly delivered equipment that could be used to cool the reactor.⁴ The International Atomic Energy Agency (IAEA) is seeking information about whether the flow of cooling water has been restored, and about other nuclear power plants and research reactors in Japan.⁵ Nuclear fuel requires continued cooling even after a plant has shut down. Failure of the cooling system for many hours is what resulted in a partial core melt at Three Mile Island in 1979.⁶ There was also a fire in a turbine building at the Onagawa nuclear facility; Japanese authorities reported to the IAEA that it had been extinguished.⁷

The earthquake and tsunami pose threats to nuclear facilities in the United States. Your staff has informed mine that the Diablo Canyon nuclear power plant in San Luis Obispo, California has declared an 'unusual event' because of the tsunami warnings that have been issued. Taiwan, which has six nuclear reactors, issued a tsunami alert.

¹ <http://www.nytimes.com/2011/03/12/world/asia/12nuclear.html>

² http://www.msnbc.msn.com/id/42025882/ns/world_news-asia-pacific/

³ <http://www.reuters.com/article/2011/03/11/us-quake-japan-iaea-statement-idUSTRE72A2F820110311>

⁴ <http://www.reuters.com/article/2011/03/11/japan-quake-reactor-idUSL3E7EB2AH20110311>

⁵ <http://www.iaea.org/newscenter/news/2011/tsunamiupdate.html>

⁶ <http://www.nytimes.com/2011/03/12/world/asia/12nuclear.html>

⁷ <http://www.reuters.com/article/2011/03/11/us-quake-japan-iaea-statement-idUSTRE72A2F820110311>

03/11... To EDO to Prepare Response for Signature of Chairman... Due date: 03/30... Copy to:
OCA to Ack, RF... 11-0110.... Commission Correspondence (Response requested by 04/08/11)

This disaster serves to highlight both the fragility of nuclear power plants and the potential consequences associated with a radiological release caused by earthquake-related damage. We must ensure that America's nuclear power plants can withstand a catastrophic event and abide by the absolute highest standards for safety. Last year, I requested a GAO investigation⁸ into the adequacy of Commission regulations associated with seismic safety. Earlier this week, I wrote⁹ you regarding the Commission's pending approval of the design for the AP1000 nuclear reactor, in light of concerns raised by one of the Commission's most long-serving staff that there is a risk that an earthquake at the AP1000 could result in a catastrophic core meltdown. According to this individual:

- The AP1000 shield building failed tests because it is brittle, and could shatter "like a glass cup". About 60 percent of the shield building would consist of a building material that "failed miserably" in a physical test of its ability to withstand out-of-plane shear, one of the forces caused by an earthquake.
- Weak and inadequate computer simulations were used to "prove" the reactor shield is "strong enough".
- Earthquake forces may have been underestimated by Westinghouse.

My concerns about the vulnerabilities of the AP1000 reactor design are only heightened by the reports of the effect of the Japanese quake on their reactors.

I request your prompt attention to the questions raised in my earlier letter. In addition, I request that you provide me with responses to the following questions:

- 1) Please provide me with a detailed description of the earthquake and tsunami-related damage experienced by the nuclear facilities in Japan. If earthquake and tsunami-related damages are reported at other nuclear facilities, please also provide me with a detailed description of these damages. Please ensure that your response includes:
 - a. a description of each specific failure that occurred
 - b. the cause of each specific failure
 - c. whether any radiological release occurred because of the failure
 - d. whether each specific failure could have caused a radiological release if not promptly mitigated and
 - e. how long each specific failure will take to fully repair
- 2) Please also indicate in your response whether you believe each nuclear power plant design a) that is currently in operation in this country, or b) a license for which has been submitted for approval to the Commission for eventual construction and operation in this country can withstand an earthquake or tsunami that is comparable in strength to the one experienced in Japan.
- 3) Please inform me whether you believe that what happened at the Japanese reactors as a result of the earthquake suggests any need for safety improvements at any U.S. reactor, and if so, what actions the Commission is taking to ensure such improvements are made.


⁸ <http://markey.house.gov/docs/gaoinspection.pdf>

⁹ <http://markey.house.gov/docs/3-7-11.ejmtomrc.pdf>

- 4) Please inform me whether the events in Japan indicate any need for changes to the emergency response plans of U.S. nuclear power plants. Would these plans be adequate in a situation where emergency responders and other resources are needed to deal with many problems simultaneously?
- 5) Please indicate whether NRC regulations require nuclear reactor operators to have emergency backup power for long enough to maintain safe conditions through a crisis such as that occurring in Japan, where power may not come back online for days?¹⁰

Please provide your response no later than close of business on Friday April 8, 2011. If you have any questions or concerns, please have your staff contact Dr. Michal Freedhoff or Dr. Ilya Fischhoff of my staff at 202-225-2836.

Sincerely,


Edward J. Markey

¹⁰ <http://www.nrc.gov/reading-rm/doc-collections/cfr/part050/part050-0063.html>

Congress of the United States
Washington, DC 20515

March 15, 2011

The Honorable Greg Jaczko
Chairman
Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852

Dear Chairman Jaczko:

We write to request additional information related to the seismic safety features that are included in nuclear reactors currently in operation in this country. We are concerned that these reactors may not have the features necessary to withstand the sort of catastrophic earthquake and tsunami that has crippled several reactors in Japan, and caused a meltdown and the release of the highly radioactive materials contained within them.

The 9.0 magnitude earthquake caused a number of Japan's nuclear reactors to shut down automatically. However, a combination of tsunami-related damage and the long duration of the external power outages have subsequently led some of these reactors' emergency diesel generators, and thus cooling systems, to fail. To reduce rising pressure inside the Fukushima reactors, radioactive vapor is being vented, but three explosions have occurred as these pressures grew too high.¹ It appears as though meltdowns are proceeding at these reactors. Now life-threatening levels of radiation are being emitted, a 19-mile evacuation and no-fly zone has been established, a fire at a spent fuel pool at one of the units occurred, and 1,350 of the plant's 1,450 workers have been evacuated. Radioactive materials such as cesium and iodine have been detected as much as 100 miles away from these reactors.²

According to analysis prepared by Rep. Markey (see Appendix A, the map appended to this letter), there are eight nuclear reactors located on the seismically active West Coast of the United States, and twenty-seven nuclear reactors located near the New Madrid fault line in the Midwest.³ There are additionally thirty-one nuclear reactors in

¹ http://www.washingtonpost.com/business/economy/nuclear-crisis-deepens-as-third-reactor-loses-cooling-capacity/2011/03/14/ABk6rQV_story.html

² http://www.msnbc.msn.com/id/42066534/ns/world_news-asia-pacific/

³ See <http://pubs.usgs.gov/fs/2009/3071/pdf/FS09-3071.pdf>. In 1811-1812, three major earthquakes (magnitude 7 to 7.7 on the commonly used Richter Scale) occurred near the town of New Madrid, MO. In 1886, a large earthquake (Richter Scale magnitude of about 7) occurred near Charleston, S.C. The United States Geological Survey has estimated that the chance of having an earthquake similar to one of the 1811-12 sequence in the next 50 years is about 7 to 10 percent, and the chance of having a magnitude 6 or larger earthquake in 50 years is 25 to 40 percent.

the United States that are of the same Mark 1 or Mark 2 design as those currently imperiled in Japan, and twelve of these are located in seismically active zones.

The Nuclear Regulatory Commission (NRC)⁴ indicates that safety-significant structures, systems, and components of nuclear reactors must be designed to take into account:

- "the most severe natural phenomena historically reported for the site and surrounding area. The NRC then adds a margin for error to account for the historical data's limited accuracy;
- appropriate combinations of the effects of normal and accident conditions with the effects of the natural phenomena; and
- the importance of the safety functions to be performed."

According to its website⁵, the San Onofre nuclear power plant, which is located 45 miles from Long Beach, California, is designed to withstand a 7.0 magnitude earthquake. An NRC staff memo⁶ indicates that the Diablo Canyon nuclear power plant, which is located 12 miles from San Luis Obispo, California, is designed to withstand a 7.5 magnitude earthquake. But according to the Southern California Earthquake Center,⁷ there is an 82 percent probability of an earthquake of 7.0 magnitude occurring in the next 30 years, and a 37 percent probability that an earthquake of 7.5 magnitude will occur.

It is not just resilience to the direct effects of an earthquake that raises concerns. While all nuclear power plants are equipped with emergency diesel generators, it is clear from the Japanese catastrophe that these are not themselves infallible, since they all appear to have failed at the Fukushima reactors. These can also fail for other reasons. For example, in 1990,⁸ the Vogtle plant in Georgia experienced a station blackout when a truck knocked over a transmission pole in the switchyard causing a loss of offsite power. The emergency diesel generator started but failed to load. The power plant suffered a complete station blackout, but fortunately power was restored in just over half an hour. NRC regulations only require nuclear power plants to be able to sustain cooling function in a station blackout for 4-8 hours⁹ using back-up battery powered generation capacity.

The vulnerability to the effects of a total station blackout was also noted by the NRC in its 2003 report entitled "Regulatory Effectiveness of the Station Blackout

⁴ <http://www.nrc.gov/reading-rm/doc-collections/fact-sheets/fs-seismic-issues.html>

⁵ <http://www.sce.com/PowerandEnvironment/PowerGeneration/SanOnofreNuclearGeneratingStation/publicsafety.htm>

⁶ Research Information Letter 09-001: Preliminary Deterministic Analysis of Seismic Hazard at Diablo Canyon Nuclear Power Plant from Newly Identified "Shoreline Fault"

⁷ <http://www.scec.org/core/public/sceccontext.php/3935/13662>

⁸ <http://query.nytimes.com/gst/fullpage.html?res=9C0CEEDF123AF932A35757C0A966958260>

⁹ http://adamswebsearch2.nrc.gov/idmws/DocContent.dll?library=PU_ADAMS%20pbntad01&Lo: onID: b: 229e2ba98e61e668d07a5da3c0e726&id=032520158

Rule."¹⁰ Appendix B of this report (attached to this letter) provides reactor-specific information related to outages experienced, demonstrating that many nuclear reactors in this country have already experienced lengthy power outages. The second column in this table reports the overall risk of core-damage frequency as calculated by the plant owners. The third column reports the risk of core damage due to complete station blackout as calculated by the plant owners, which is also expressed as a percentage in column 4. If emergency diesel generators were truly fully reliable, there would be no risk associated with a complete station blackout. Instead, many nuclear reactors are estimated to have a real risk of core damage due to a complete station blackout. The fifth column in this table shows four parameters. The first parameter is the battery coping duration in hours, which can easily be seen to be four hours for most reactors, so some reactors can operate on batteries for eight hours.

Clearly, the risks of core damage to reactors due to a complete power outage are non-trivial and have already been contemplated by the NRC. The 4-8 hour battery generation capacity currently in place at U.S. reactor sites would not have helped mitigate the effects of the Japanese earthquake and subsequent tsunami.

Finally, the spent fuel pools at these nuclear reactors can also fail. If the water that cools these fuel rods drains, the zirconium cladding them can catch fire and lead to another source of melting fuel that can spew high level radioactive materials into the environment. This appears to have already occurred in Japan.

We are concerned that San Onofre, Diablo Canyon, and possibly other nuclear reactors located in seismically active areas are not designed with sufficient levels of resiliency against the sort of earthquakes scientists predict they could experience. We are also interested in more detailed information about just what it means to take the "most severe natural phenomena historically reported for the site and surrounding area" into account when designing the safety related features of nuclear reactors. Consequently, we ask for your prompt response to the following questions and requests for information.

- 1) Please provide the Richter or moment magnitude scale rating for each operating nuclear reactor in the United States. If no such rating information exists, then on what basis can such an assertion be made regarding the design of any single nuclear power plant?
- 2) The San Onofre reactor is reportedly designed to withstand a 7.0 earthquake, and the Diablo Canyon reactor is designed to withstand a 7.5 earthquake. According to the Southern California Earthquake Center,¹¹ there is an 82 percent probability of an earthquake of 7.0 magnitude in the next 30 years, and a 37 percent probability that an earthquake of 7.5 magnitude will occur. Shouldn't these reactors be retrofitted to ensure that they can withstand a stronger earthquake than a 7.5? If not, why not?
- 3) Please provide specific information regarding the differences in safety-significant structures between a nuclear power plant that is located in a seismically active area and one that is not. Please provide, for each operating nuclear reactor in a seismically

¹⁰ See <http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1776/sr1776.pdf>

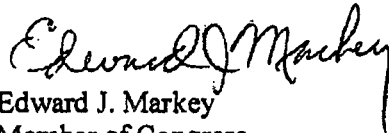
¹¹ <http://www.scec.org/core/public/sceccontxt.php/3635/3662>

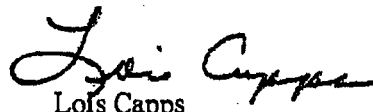
active area, a full list and description of the safety-significant design features that are included that are not included in similar models that are not located in seismically active areas.

- 4) Please fully describe the emergency back-up power requirements that operating nuclear power plants must possess. How long are emergency diesel generators and back-up battery-powered generators required to be able to operate? If different requirements exist for different locations in the United States or for different types of reactors, please also include this information in your response.
- 5) For each operating nuclear power plant, please indicate a) whether the spent fuel pools are located inside or out of the containment structure, b) whether the emergency diesel generators are connected to the cooling and other equipment associated with the spent fuel pools, c) whether the battery-powered generators are connected to the cooling and other equipment associated with the spent fuel pools.
- 6) Please provide a list of all incidents at operating nuclear reactors since 1990 that have involved a) the loss of off-site power, b) a station blackout, or c) a failure of the battery-powered generators at the reactor. For each such incident, please fully describe the circumstances and duration, and impacts or damages, if any.
- 7) In your opinion, can any of the operating nuclear reactors in the United States withstand an earthquake of the magnitude experienced in Japan?

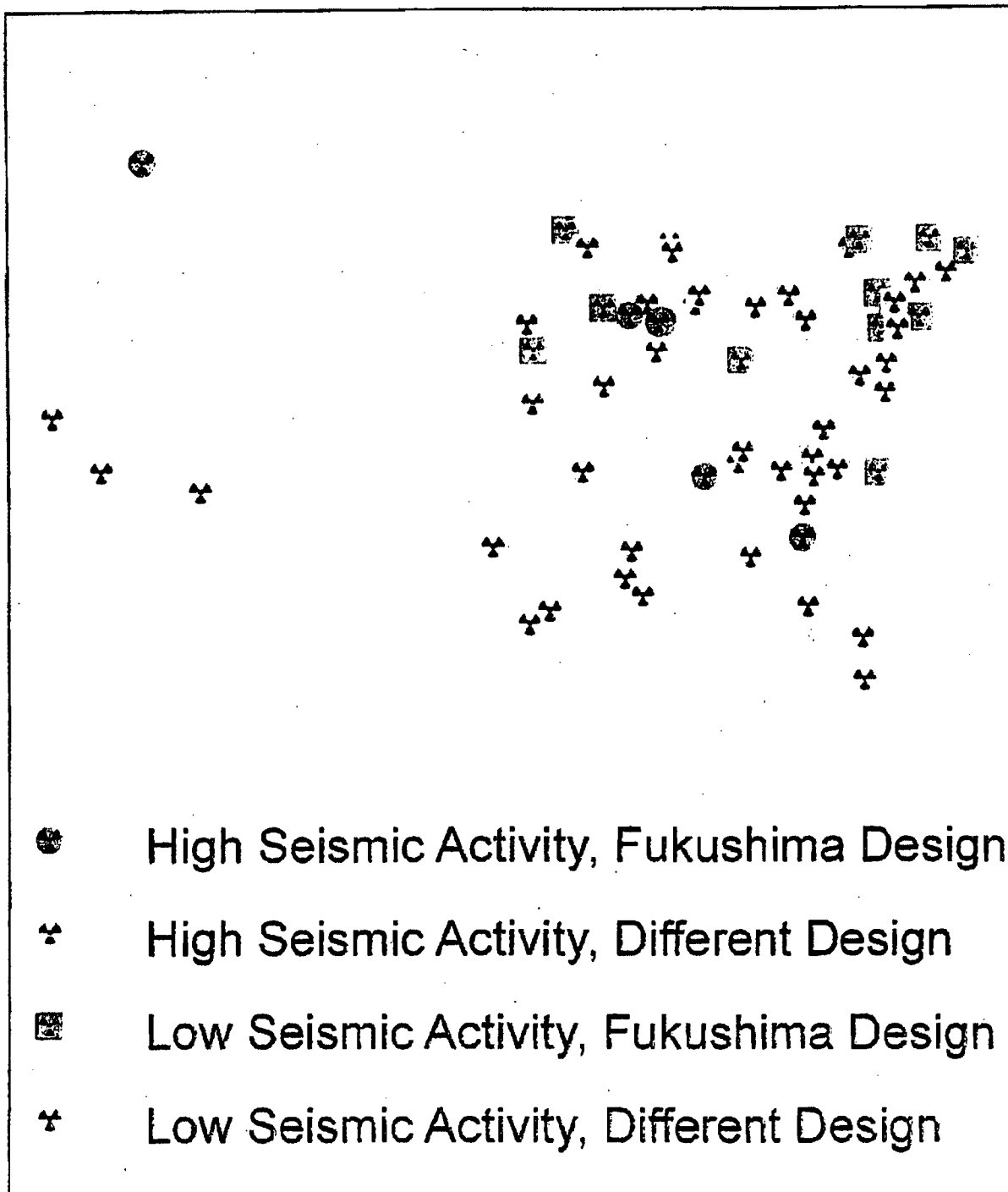
Please provide your response no later than close of business on Friday April 8, 2011. If you have any questions or concerns, please have your staff contact Dr. Michal Freedhoff of the Natural Resources Committee staff or Dr. Ilya Fischhoff of Rep. Markey's staff at 202-225-2836 or Jonathan Levenshus of Rep. Capps' staff at 202-225-3601.

Sincerely,


Edward J. Markey
Member of Congress


Lois Capps
Member of Congress

APPENDIX A



APPENDIX B

Plant-Specific Station Blackout Information by Reactor Type and Operating Status

Table B-1 Operating pressurized-water reactors

Plant	Plant CDF	SBO CDF	Percent SBO CDF of Plant CDF	Coping time in hours/EDG reliability/Aac access time in minutes/ extremely severe weather	Modification summary including dc load shed procedural modifications	SBO factors					
						PRA LOOP Initiating event frequency	Number of LOOP events at power since commercial operation			LOOP event recovery times \geq 240 minutes	
							Plant	Weather	Grid	Power	Shutdown
Arkansas Nuclear One Unit 1	4.67E-05	1.58E-05	33.8	4/95/10/1	Added 1 DG and cross tie	3.58E-02	2	1			
Arkansas Nuclear One Unit 2	3.40E-05	1.23E-06	3.6	4/95/10/1	Added cross tie	5.84E-02	1	1			
Beaver Valley Unit 1	2.14E-04	6.51E-05	30.4	4/975/60/1	Added cross tie	6.64E-02	2				
Beaver Valley Unit 2	1.92E-04	4.86E-05	25.3	4/975/60/1	Added cross tie	7.44E-02	1				
Braidwood Units 1&2	2.74E-06	6.20E-08	22.6	4/95/10/1		4.53E-02	2				
Bryon Units 1&2	3.08E-05	4.30E-06	13.9	4/95/10/1		4.43E-02					
Callaway	5.86E-05	1.80E-05	30.8	4/975/-1/1		4.60E-02					
Calvert Cliffs Units 1&2	2.40E-04	8.32E-06	3.4	4/975/60/4	Added 1 EDG and one 1 DG	1.36E-01	3				
Catawba Units 1&2	5.80E-05	6.0E-07	10.3	4/95/10/1		2.0E-03	1			330	
Comanche Peak Units 1&2	5.72E-05	1.5E-05	26.2	4/95/-1/1							

Plant-Specific Station Blackout Information by Reactor Type and Operating Status

Table B-1 Operating pressurized-water reactors (Cont.)

Plant	Plant CDF	SBO CDF	Percent SBO CDF of Plant CDF	Coping time in hours/EDG reliability/Aac access time in minutes/ extremely severe weather	Modification summary including dc load shed procedural modifications	SBO factors					
						PRA LOOP initiating event frequency	Number of LOOP events at power since commercial operation			LOOP event recovery times \geq 240 minutes	
							Plant	Weather	Grid	Power	Shutdown
Crystal River Unit 3	1.53E-05	3.28E-06	21.5	4/975/-14	dc load shed. Added nonclass 1E battery	4.35E-01	3				
Davis-Besse	6.6E-05	3.50E-05	53	4/95/10/2	Added 1 DG	3.50E-02	2	1		1680	
DC Cook Units 1&2	6.2E-05	1.13E-05	18.1	4/975/-12	dc load shed	4.0E-02	1				
Diablo Canyon Units 1&2	8.8E-05	5.0E-06	5.68	4/95/-1	Added 1 DG	9.1E-02	1				261 917
Farley Units 1&2	1.3E-04	1.22E-05	9.4	4/95/10/3	Service water to Aac, auto load shedding	4.70E-02	2				
Fort Calhoun	1.36E-05	NA	-	4/95/-12	DC load shed	2.17E-01	2				
Ginna	8.74E-05	1.0E-06	1.14	4/975/-1		3.50E-03	4				
Harris	7.0E-05	1.71E-05	24.4	4/95/-13	Lighting in several areas, ladder to isolation valve						
Indian Point Unit 2	3.13E-05	4.47E-06	14.3	8/95/60/2	Added a DG for gas turbine auxiliaries	6.91E-02	2		3	390	

Plant-Specific Station Blackout Information by Reactor Type and Operating Status

Table B-1 Operating pressurized-water reactors (Cont.)

Plant	Plant CDF	SBO CDF	Percent SBO CDF of Plant CDF	Coping time in hours/EDG reliability/Aac access time in minutes/ extremely severe weather	Modification summary including dc load shed procedural modifications	SBO factors					
						PRA LOOP initiating event frequency	Number of LOOP events at power since commercial operation			LOOP event recovery times \geq 240 minutes	
							Plant	Weather	Grid	Power	Shutdown
Indian Point Unit 3	4.40E-05	4.80E-06	10.9	8/95/60/2		6.80E-02	1				
Kewaunee	6.6E-05	2.64E-05	40	4/95/60/2	Cross-tie to nonsafety power source	4.4E-02					
McGuire Units 1&2	4.0E-05	9.26E-06	23.3	4/95/10/1		7.0E-02	3				
Millstone Unit 2	3.42E-05	1.0E-10	NMN	8/975/60/5	Upgraded unit 1-2 crosstie	9.10E-02	1	1		330	
Millstone Unit 3	5.61E-05	5.10E-06	6	8/975/60/5	Added DG	1.12E-01					
North Anna Units 1&2	7.16E-05	8.0E-06	11.2	4/95/60/4	Added DG, switchgear, crosstie	1.14E-02					
Oconee Units 1, 2&3	2.3E-05	2.57E-06	11.2	4/975/10/1		9.0E-02	2				
Palisades	5.07E-05	9.10E-06	17.9	4/95/-/1	DC load shed, compressed air for ADVs	3.0E-02	3			388	
Palo Verde Units 1, 2&3	9.0E-05	1.91E-05	21.2	4/95/10/2	Added 2 gas turbines	7.83E-02	3			1138	
Point Beach Units 1&2	1.15E-04	1.51E-05	13.1	4/975/60/2	Gas turbine modifications	6.10E-02	4				

Plant-Specific Station Blackout Information by Reactor Type and Operating Status

Table B-1 Operating pressurized-water reactors (Cont.)

Plant	Plant CDF	SBO CDF	Percent SBO CDF of Plant CDF	Coping time in hours/EDG reliability/Aac access time in minutes/ extremely severe weather	Modification summary including dc load shed procedural modifications	SBO factors				
						PRA LOOP initiating event frequency	Number of LOOP events at power since commercial operation			LOOP event recovery times ≥ 240 minutes
							Plant	Weather	Grid	
Prairie Island Units 1&2	5.05E-05	3.1E-06	6.14	4/975/10/3	Added 2 EDGs	—	1	2		296 296
Robinson Unit 2	3.20E-04	2.6E-05	8.13	8/95/60/4	Modified conduit supports in switchgear room	6.1E-02	2			454
Salem Unit 1	5.20E-05	2.10E-05	40.4	4/975/-/2	EDG compressed air mod	6.0E-02	1			
Salem Unit 2	5.5E-05	1.70E-05	30.9	4/975/-/2	EDG compressed air mod	6.0E-02	2			655 1675
San Onofre Units 2&3	3.0E-05	2.0E-06	6.67	4/95/-/1	DC load shed and crosstie	1.1E-01			2	
St. Lucie Unit 1	2.30E-05	2.65E-06	11.5	4/975/10/5	Added crosstie	1.5E-01	1		3	
St. Lucie Unit 2	2.62E-05	2.64E-06	10.1	4/975/10/5	Added crosstie	1.5E-01				
Seabrook	6.86E-05	1.53E-05	22.3	4/975/-/3	DC load shed	4.93E-02				
Sequoyah Units 1&2	1.70E-04	5.32E-06	3.2	4/975/-/2	DC load shed, added air supply	5.16E-03	2			

Plant-Specific Station Blackout Information by Reactor Type and Operating Status

Table B-1 Operating pressurized-water reactors (Cont.)

Plant	Plant CDF	SBO CDF	Percent SBO CDF of Plant CDF	Coping time in hours/EDG reliability/Aac access time in minutes/ extremely severe weather	Modification summary including dc load shed procedural modifications	SBO factors				
						PRA LOOP initiating event frequency	Number of LOOP events at power since commercial operation			LOOP event recovery times ≥ 240 minutes
							Plant	Weather	Grid	
Summer	2.0E-04	4.9E-05	24.5	4/95/-/3	DC load shed, battery mod	7.3E-02			1	
South Texas Units 1&2	4.3E-05	1.46E-05	34.9	4/975/10/5	Procedural cross-tie					
Surry Units 1&2	1.25E-04	8.09E-06	6.47	4/975/10/4	Added DG	7.69E-02				
Three Mile Island Unit 1	4.49E-04	1.57E-05	3.5	4/975/10/3	Modifications to existing DGs	5.68E-02				
Turkey Point Units 3&4	3.73E-04	4.70E-06	1.2	8/95/10/5	Added 2 EDGs and cross-tie	1.7E-01	4	2	7	7950 7908
Vogtle Units 1&2	4.9E-05	4.4E-07	11	4/95/-/2	Added 5 circuit breakers and lighting	6.6E-04				
Waterford Unit 3	1.80E-05	6.24E-06	34.7	4/975/-/4	DC load shed. Added portable air compressors for EDGs	3.6E-02				
Watts Bar Unit 1	8.0E-05	1.73E-05	21.6	4/975/-/1/1		3.64E-02				
Wolf Creek	4.2E-05	1.88E-05	44.8	4/95/-/1		5.12E-02				

Plant-Specific Station Blackout Information by Reactor Type and Operating Status

Table B-2 Operating boiling-water reactors

Plant	Plant CDF	SBO CDF	Percent SBO CDF of Plant CDF	Coping time in hours/EDG reliability/Aac access time in minutes/ extremely severe weather	Modification summary including dc load shed procedural modifications	SBO factors					
						PRA LOOP initiating event frequency	Number of LOOP events at power since commercial operation			LOOP event recovery times ≥ 240 minutes	
							Plant	Weather	Grid	Power	Shutdown
Browns Ferry Units 2&3	4.80E-05	1.30E-05	27	4/95/-/1	dc load shed	1.12E-01					
Brunswick Units 1&2	2.70E-05	1.80E-05	66.7	4/975/60/5	Modified controls for existing crosstie	7.40E-02	3				1508 814
Clinton	2.66E-05	9.8E-06	36.8	4/95/10/1	Added gas fans for selected room cooling	8.40E-02					
Cooper	7.97E-05	2.77E-05	34.8	4/95/-/2		3.50E-02					
Dresden Units 2&3	1.8E-05	9.30E-07	5.03	4/95/60/2	Added 2 DGs	1.12E-01	3	1		240	
Duane Arnold	7.84E-06	1.90E-06	24.2	4/975/-/2	dc load shed, RCIC insulation & main control room lighting	1.17E-01			1		
Fermi	5.70E-06	1.3E-07	NMN	4/95/60/1		1.88E-01					
FitzPatrick	1.92E-06	1.75E-06	NMN	4/95/-/1	dc load shed, instrumentation and power supply mods	5.70E-02					
Grand Gulf	1.77E-05	7.46E-06	36.8	4/95/-/2	dc load shed	6.80E-02					

Plant-Specific Station Blackout Information by Reactor Type and Operating Status

Table B-2 Operating boiling-water reactors (Cont.)

Plant	Plant CDF	SBO CDF	Percent SBO CDF of Plant CDF	Coping time in hours/EDG reliability/Aac access time in minutes/ extremely severe weather	Modification summary including dc load shed procedural modifications	SBO factors					
						PRA LOOP initiating event frequency	Number of LOOP events at power since commercial operation			LOOP event recovery times \geq 240 minutes	
							Plant	Weather	Grid	Power	Shutdown
Hatch Unit 1	2.23E-05	3.30E-06	14.8	4/95/60/2	Replaced battery chargers	2.20E-02					
Hatch Unit 2	2.36E-05	3.23E-06	13.7	4/95/60/2	Replaced battery chargers	2.20E-02					
Hope Creek	4.63E-05	3.38E-05	73	4/95/-12	Valve modifications	3.4E-02					
LaSalle Units 1&2	4.74E-05	3.82E-05	80.6	4/975/-1	dc load shed, New batteries	9.60E-02	1				
Limerick Units 1&2	4.30E-06	1.0E-07	NMN	4/95/60/3	Upgraded cross-ties	5.9E-02					
Monticello	2.60E-05	1.20E-05	46.2	4/95/-1	dc load shed	7.90E-02					
Nine Mile Point Unit 1	5.50E-06	3.50E-06	NMN	4/975/-1	dc load shed, added two safety related batteries	5.00E-02	4			595	
Nine Mile Point Unit 2	3.10E-05	5.50E-06	17.7	4/975/-1	dc load shed	1.20E-01					

Plant-Specific Station Blackout Information by Reactor Type and Operating Status

Table B-2 Operating boiling-water reactors (Cont.)

Plant	Plant CDF	SBO CDF	Percent SBO CDF of Plant CDF	Coping time in hours/EDG reliability/Aac access time in minutes/ extremely severe weather	Modification summary including dc load shed procedural modifications	SBO factors					
						PRA LOOP initiating event frequency	Number of LOOP events at power since commercial operation			LOOP event recovery times ≥ 240 minutes	
							Plant	Weather	Grid	Power	Shutdown
Oyster Creek	3.98E-06	2.30E-06	NMN	4/975/60/1	Added crosstie & reactor pressure indication	3.26E-02	3				240
Peach Bottom Units 2 & 3	5.53E-06	4.81E-07	8.7	8/975/60/3	Cross-tie to hydro unit	5.9E-02					
Perry	1.30E-05	2.25E-06	43.4	4/95/10/1	Replaced selected cables	6.09E-02					
Pilgrim	5.80E-05	1.0E-10	NMN	8/975/10/4	Alarms to line-up Aac	6.17E-01	1	5			1263 534
Quad Cities Units 1&2	1.2E-06	5.72E-07	NMN	4/95/60/1	Added 2 DGs	4.81E-02	2				
River Bend	1.55E-05	1.35E-05	87.5	4/95/-/2	Minor structural mod	3.50E-02	1				
Susquehanna Units 1&2	1.7E-05	4.2E-11	NMN	4/975/-/2	dc load shed	-	1				
Vermont Yankee	4.30E-06	9.17E-07	21.3	8/975/10/4	Modified incoming line and controls	1.0E-01	2			277	
Washington Nuclear Plant Unit 2	1.73E-05	1.07E-05	81.1	4/95/-/1	dc load shed, replaced inverters	2.46E-02					

COMMITTEES

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RANKING DEMOCRAT
ENERGY AND COMMERCE

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Congress of the United States
House of Representatives
Washington, DC 20515-2107

March 18, 2011

The Honorable Greg Jaczko
Chairman
Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852

Dear Chairman Jaczko:

I write to request information regarding the Nuclear Regulatory Commission's (NRC's) current assessments of damage as well as an assessment of the potential worst-case consequences associated with the current nuclear emergency in Japan. As reports have noted, there has been some conflicting information regarding the status of the meltdowns and condition of the spent nuclear fuel ponds at the Fukushima Daiichi nuclear power plant.

As you know, focus of late has shifted to two questions: First, whether containment has been breached at any of the units, and second, whether there remains water (and if so how much) in the spent nuclear fuel ponds, especially in units 3 and 4. However, conflicting information is being provided by different parties.

For example, in your testimony in front of the House Energy and Commerce Committee on Wednesday, you indicated, with regard to unit 4, that you believed that "There is no water in the spent fuel pool and we believe that radiation levels are extremely high, which could possibly impact the ability to take corrective measures."

Following your statement, representatives from Tokyo Electric Power Company (TEPCO), the plant's operator stated that "We can't get inside to check, but we've been carefully watching the building's environs, and there has not been any particular problem," Hajime Motojuku, a spokesman for Tokyo Electric, said Thursday morning in Japan. After that, a spokesman for Japan's Nuclear and Industrial Safety Agency (NISA) said that, "Because we have been unable to go to the scene, we cannot confirm whether there is water left or not in the spent fuel pool at Reactor No. 4."¹ Later that evening, a press release issued by the Nuclear Energy Institute (NEI) stated that both TEPCO and NISA had refuted your statement, and that the spokesmen had stated that "the situation at

¹ <http://www.nytimes.com/2011/03/18/world/asia/18nuclear.html?pagewanted=2&hp>

Unit 4 has changed little during the day today and water remained in the fuel pool. However, both officials said that the reactor had not been inspected in recent hours.”²

A similar situation exists with respect to the extent of damage to the containment structures of units 2 and 3. Numerous press reports have speculated that the hydrogen explosions experienced at these units may have created a path for radioactive materials to escape containment. One of these reports³ states that officials have concluded that “the chambers surrounding units 2 and 3 now have been cracked, allowing radiation to escape.” During a conference call on March 17 with Congressional staff, NRC staff indicated that the NRC believes that there has been a breach in or damage to the primary and/or secondary containment structures in units 1, 2 and 3. Yet earlier that day, the NEI released a statement⁴ that said (in part), on the Fukushima Daiichi plant, that:

“The reactors at the Fukushima Daiichi plant are in stable condition and are being cooled with seawater, but workers at the plant continue efforts to add cooling water to fuel pools at reactors 3 and 4.... Reactor 2 is in stable condition with seawater injection continuing. The reactor’s primary containment may not have been breached, Tokyo Electric Power Co. and World Association of Nuclear Operators officials said on Thursday. Containment pressure is at 65 psig, an indication that containment has not been breached. Access problems at the site have delayed connection of a temporary cable to restore offsite electricity. The connection will provide power to the control rod drive pump, instrumentation, batteries, and power to the control room. Power has not been available at the site since the earthquake on March 11. Reactor 3 is in stable condition with seawater injection continuing. The primary containment is believed to be intact. Pressure in the containment has fluctuated due to venting of the reactor containment structure, but has been as high as 83 psig.”

The information that is being received on a daily basis by Congress is currently limited to daily emails from the State Department, which contains some information related to the nuclear crisis in addition to the earthquake and tsunami relief and consular information provided. This is supplemented by multiple daily emails from the NEI, which as the principal trade association for manufacturers of nuclear power-plants, equipment, nuclear fuel, and owners of utilities which own nuclear plants (including Tokyo Electric Power, which owns the Fukushima Daiichi plants), has a clear vested interest in providing a highly optimistic assessment of the situation.

Now that NRC staff is on the ground in Japan, it is my hope that it will be able to add to the information that is currently being provided to Congress and the public on a daily basis. While I appreciate the daily conference calls your staff has begun to hold, I

² NEI’s **Update 9:00pm March 16** Information on the Japanese Earthquake and Reactors in that Region

³ <http://www.voanews.com/english/news/asia/IAEA-Chief-Heads-to-Japan-to-Assess-Nuclear-Crisis-118105754.html>

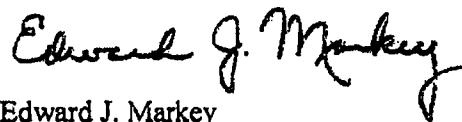
⁴ NEI’s Update 11:45am March 17 Information on the Japanese Earthquake and Reactors in that Region

believe that it is vitally important to all those who may be considering leaving the vicinity of the impacted reactors to be receiving accurate and unbiased written assessment of current conditions. It is also important that the American public fully understand the potential magnitude and timing associated with a worst-case core melt-down and radiation release or spent fuel fire. Members of Congress must also be kept similarly informed so that they can assist any of their constituents who may have family members currently in the impacted areas and so that they can continue their oversight efforts in assuring the safety of our domestic nuclear reactors. Consequently, I ask for your prompt response to the following questions:

- 1) I request that you please begin to provide Congress and the public with a daily "situation report" or other similar document that contains your staff's assessment of the conditions at the impacted reactors, the radiation readings at each unit, the status of efforts to halt the melt-downs and radiation releases from the spent-fuel storage areas, and any reports of radiation exposures experienced by those working at or located in the vicinity of the impacted reactors.
- 2) Please provide me with your assessment of the worst-case potential consequences (including the total radiation that could be released as well as the possible timing for such an event based on current situational awareness), for each of the Daiichi units regarding
 - a. The loss of water in the spent fuel cooling ponds and subsequent fire and/or release of radiation
 - b. A full core melt-down assuming that no further breaches in containment occur
 - c. A full core melt-down assuming that the containment structures are breached.

Thank you very much for your prompt attention to this matter. Please provide me with your initial response to question 1 by close of business on Monday March 21, 2011 and on an ongoing basis thereafter. Please provide me with your response to question 2 by Friday March 25, 2011. If you have any questions or concerns, please have your staff call Dr. Michal Freedhoff of my staff at 202-225-2836.

Sincerely,



Edward J. Markey

Answers to Michal Freedhoff's questions 4/21/11

Questions:

1. What plants have isolation condensers?
 - a. The United States BWRs that have isolation condensers are Oyster Creek in New Jersey, Dresden Station Units 2 and 3 in Illinois and Nine Mile Point Unit 1 in upstate New York.
2. What is the melting temperature of the Control Rod Drive Mechanism (CRDM) seals and also what is the melting temperature of the vessel?
 - a. The CRD graphite seals are not used for the reactor pressure boundary, so the absence of the seals in the CRD will not cause leaking and the drainage of the reactor vessel. In the event of a CRD withdraw line failure, the flow restrictions in the CRD (two of the three flow paths include the graphite seals) will limit the leakage rate out of the reactor vessel. Although the graphite seals will lose some strength and durability at ~500 deg. F (the normal reactor water temperature), the seals will not melt. Fabrication of the seals includes baking at temperatures above 1000 deg. F.
 - b. The reactor vessel is made of steel and thus the melting temperature is in excess of 2000 deg. F.

Question: doesn't zircalloy melt at about 1800 C and uranium oxide at about 2800 C? And since many sources have indicated that the fuel in all 3 units has melted, what relevance do the 1000 and 2000 degree thresholds you cite have? Why wouldn't the seals melt if the fuel does? If they did, would all leaks still be precluded or would they just be limited by other barriers?

There are four sub-questions regarding Question 2b. The following presents these four sub-questions and the staff's response to them.

Q2b(1) Doesn't zircalloy melt at about 1800 C and uranium oxide at about 2800 C?

Answer: Yes, but with the following clarification:

- (1) Melting point of Uranium Oxide fuel is dependent on burnup:

Fresh UO₂ Melting point (MP) is 4980 degrees F (2750 degree C).

After a spike in the MP during initial burnup (less than 5 GWd/MT) of up to about 5170 degrees F, the MP decreases, namely,

At a burnup of 27 GWd/MT the MP is 5070 degrees F (2800 degrees C)

At a burnup of 50 GWd/MT the MP is 5030 degrees F (2776 degrees C)

- (2) Melting point of Zircaloy: 3320 degrees F (1827 degrees C)

Reference: "Thermal Analysis of Pressurized Water Reactors", Third Edition, L. S. Tong and Joel Weisman, American Nuclear Society, 1996.

Q2b(2) And since many sources have indicated that the fuel in all 3 units has melted, what relevance do the 1000 and 2000 degree thresholds you cite have?

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Answer: For the Japan's case, since the theory of fuel melting was not verified by direct examination, the staff does not know whether fuel was actually melted or what happened after that. Even if the fuel melted, there could be different scenarios and impacts on the reactor pressure vessel. For example, in the Three Mile Island Accident, the fuel melted, but the reactor pressure vessel was not breached, indicating the melted mixture was not hot enough to melt a hole in the reactor pressure vessel bottom with a melting point around 2000 degree F.

Q2b(3) Why wouldn't the seals melt if the fuel does?

Answer: Due to the design (e.g., geometric location and the distance between the control rod drive seals and the postulated molten mixture location), there is not a direct link between fuel melting and seal failure.

Q2b(4) If they did, would all leaks still be precluded or would they just be limited by other barriers?

Answer: If the control rod drive seals broke down, it will not cause leaking of the reactor vessel because the seals are not part of the pressure boundary.

3. Why are radiation levels on Unit 1 increasing and why is pressure on Unit 1 increasing?
 - a. The drywell (DW) radiation detector monitoring unit 1 radiation is believed to have failed after the earthquake on April 7th. Therefore any data from this radiation monitor would be suspect.
 - b. The secondary containment (S/C) radiation monitor on Unit 1 has been dropping since April 7th. (Indicating radiation conditions are improving)
 - i. On April 7th the detector was reading 12.9 Si/hr (1290 rem/hr)
 - ii. On April 14th the detector was reading 10.4 Si/hr (1040 rem/hr)Could you send me all the readings you have for this monitor? It doesn't seem to be included in your daily plant status reports (or, if it is, I couldn't find it so perhaps you could direct me).

The NISA webpage contains information on plant parameters
http://www.nisa.meti.go.jp/itiran/new_genshi_index.html

- c. Pressure on Unit 1 has been relatively stable for several days. This would indicate that condition of the Unit 1 reactor has not changed for several days. This is not what I see for the past few days. I've seen a slow increase – however, this has been attributable in your plant status reports to N2 injections rather than anything else. However, JAIF has also reported that the N2 injections have not led to the expected pressure increase and that a leak in primary containment is suspected. I am confused by this conflict – on the one hand, your reports say that the pressure increase in the daily reports is due to N2 and not H2. In this document, you're saying the pressure is stable. JAIF is saying pressure is increasing but not by enough – got any clarity?

Unit 1 pressure indication is stable as of 4/20/2011.

4. What cools the Recirc pump seals?
 - a. Recirc pump seal cooling is from both Reactor Building Closed Cooling Water (RBCCW) cooling water and CRD seal purge.

5. What are the results of the GE-Hitachi (GEH) analysis (once the results become known) on whether or not there was a Reactor Pressure Vessel (RPV) breach on Unit 2?
- a. This information will not be available until either late Friday or early next week. Is this available yet? I saw that Japan had released something that speculated the fuel had melted into pellets but I didn't see anything about breaches.

This information is not final. The data to support further more accurate analysis of this phenomenon is held by TEPCO and is not available to the NRC. Therefore any determination of Vessel Breach would be premature at this time.



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

April 21, 2011

The Honorable Nita M. Lowey
United States House of Representatives
Washington, D.C. 20515

Dear Congresswoman Lowey:

On behalf of the U.S. Nuclear Regulatory Commission (NRC), I am responding to your letter of March 15, 2011, which raised concerns regarding Indian Point Nuclear Generating Station Units 2 and 3 in light of recent events in Japan and their implications for ensuring the continued safety of nuclear power plants in the United States.

We continue to collect information regarding the events in Japan. The Commission directed the staff to conduct a methodical and systematic review of our processes and regulations to determine whether the agency should make improvements to our regulatory system. This activity will have both near-term and longer-term components.

For the near-term effort, the task force has begun a 90-day review. This review will evaluate all of the currently available information from the Japanese events to identify immediate or near-term operational or regulatory issues potentially affecting the 104 operating reactors in the U.S., including their spent fuel pools. Areas of investigation will include the ability to protect against natural disasters, response to station blackouts, severe accidents and spent fuel accident progression, radiological consequence analysis, and severe accident management issues, and emergency preparedness. Over this 90-day period, the NRC staff will develop recommendations, as appropriate, for changes to inspection procedures and licensing review guidance, and will recommend whether generic communications, orders, or other regulatory requirements are needed. This 90-day effort will include a briefing of the Commission after approximately 30 days to provide a snapshot of the regulatory response and the condition of the U.S. reactor fleet based on information available at that time.

The task force's longer-term review will begin as soon as the NRC staff has sufficient technical information from the events in Japan, with a goal of commencing no later than the completion of the 90-day near-term report. The task force will evaluate all technical and policy issues related to the events to identify any additional potential research, generic issues, changes to the reactor oversight process, rulemakings, and modifications to the regulatory framework that should be considered by the NRC. A report with appropriate recommendations will be provided to the Commission within six months after the start of this evaluation. Both the 90-day and final reports will be made publicly available in accordance with normal Commission processes.

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With those plans in place and underway, we also are currently pursuing prudent actions, even though we do not yet have all the details we need to fully assess the implications of the Japanese events for the U.S. reactor fleet. Specifically, we have begun inspection activities through temporary instructions to our inspection staff, including the resident inspectors and the region-based inspectors in our four Regional offices, to look at licensees' readiness to deal with both design basis accidents and beyond-design basis accidents. We have also issued an information notice to our licensees to make them aware of the events in Japan. Nuclear power plant licensees are voluntarily verifying that their capabilities to mitigate conditions that result from severe accidents, including the loss of significant operational and safety systems, are in effect and operational. The NRC will take additional immediate actions that we believe to be appropriate as our understanding of the events in Japan becomes clearer.

I am glad that I had the opportunity to speak with you directly on March 25th regarding your specific concerns. The NRC staff also agreed that during the forthcoming review of seismic issues at U.S. commercial nuclear facilities, top priority will be given to reviewing the Indian Point data. As I mentioned during our call, I have committed to personally visit the Indian Point facility in the coming weeks. I hope that you will be able to join me.

Let me assure you that our ongoing monitoring of events in Japan and our review of all available information leads us to conclude that U.S. plants continue to operate safely. I want to reiterate that we continue to view our domestic responsibilities for licensing and oversight of the U.S. licensees as our top priority and that U.S. nuclear plants continue to operate safely. I look forward to being able to provide you with additional information as it becomes available. If you have any additional questions, please contact me or Ms. Rebecca Schmidt, Director of the Office of Congressional Affairs, at (301) 415-1776.

Sincerely,

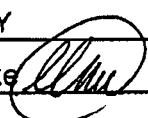
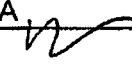


Gregory B. Jaczko

Originating Office: EDO
Ref: CORR-11-0040
Commission Correspondence

GBJ – Approved/edits
KLS – Approved/edits
GA – Approved/edits
WDM – Approved/edits
WCO – Approved/edits/cmt

ADAMS Accession No.: ML11089A002

OFC	SECY	OCA	OCM/GBJ	OCM/GBJ	
NAME	L.Mike 		J.Monninger	G.B.Jaczko	
DATE	04/ 20 /11	04/ 17 /11	04/ /11	04/ /11	

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Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
Mail Stop O-16G4
Washington, DC 20555-0001

March 15, 2011

Dear Chairman Jaczko:

The tragedy in Japan and the threat of meltdowns at the Fukushima Daiichi Nuclear Power Station shine a new light on the need for the heightened evaluation of nuclear power plants within high-population areas. Following the Japan tragedy, it is imperative that the NRC evaluate all possible threats, including terrorism, natural disasters, and the challenges that must be met in developing safety standards and evacuation procedures while determining the re-licensing of the Indian Point Nuclear Facility in Buchanan, New York.

A 2008 study by seismologists at the Columbia University-Lamont-Doherty Earth Observatory found that earthquakes in the New York metropolitan area are common and that risks are particularly high due to infrastructure and high population. A 3.9 magnitude earthquake occurred in the Atlantic Ocean approximately 80 miles off Long Island as recently as November 30, 2010. In fact, there have been five earthquakes in the same area in the past two decades, including a 4.7 magnitude earthquake in 1992.

The Ramapo Seismic Zone is a particular threat because the zone passes within two miles of Indian Point. The Ramapo Seismic Zone includes the Dobbs Ferry fault in Westchester, which generated a 4.1 magnitude earthquake in 1985. The Columbia University study suggests that this pattern of subtle but active faults increases the risk to the New York City area and that an earthquake with a magnitude of 7.0 on the Richter scale is within reach. Disturbingly, Entergy measures the risk of an earthquake near Indian Point to be between 1.0 and 3.0 on the Richter scale, despite evidence to the contrary.

As our nation stands ready to assist the Japanese to calm this potential nuclear meltdown and disaster, we must not let the same mistakes happen on our shores. The NRC should study Indian Point's risk of and ability to sustain a disaster, including the impact of earthquakes and hurricanes, as well as collateral impacts such as loss of power, inability to cool reactors, and emergency evacuation routes. The NRC should evaluate how a similar incident in the New York metropolitan area could be further complicated due to a dramatically higher population and the effectiveness of proposed evacuation routes. We simply cannot allow those who live in the New York metropolitan area to be susceptible to such risks.

Sincerely,

Nita M. Lowey
Member of Congress

From: HOO Hoc
Sent: Thursday, April 21, 2011 1:08 PM
To: LIA07 Hoc; LIA08 Hoc; OST01 HOC
Subject: FW: [METI Japan](Apr_21)Update on Seismic and Tsunami Damage Information
Attachments: [METI] Apr 21_0800_Seismic Damages to the NPSs.pdf; Apr_21 Radioactivity Level Map Chart.pdf

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

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

From: meti-info@meti.go.jp [mailto:meti-info@meti.go.jp]
Sent: Thursday, April 21, 2011 12:46 PM
To: meti-info@meti.go.jp
Subject: [METI Japan](Apr_21)Update on Seismic and Tsunami Damage Information

For your reference, Ministry of Economy, Trade and Industry of Japan (METI) is providing latest information on the seismic and tsunami damages to the nuclear power stations (NPSs) in Japan, including those caused to Fukushima Dai-ichi NPS.

This Thursday, the following information has been updated.

---- Today's news ----

1. Ministry of Health, Labor and Welfare (MHLW) sent out press release on restriction of distribution and consumption of Juvenile sand lance landed at Fukushima Prefecture, in relation to the accident at Fukushima Nuclear Power Plant. [Please refer to 9.]

2. OECD Secretary-General Angel Gurría visited Japan and met with Japan's Foreign Minister Matsumoto. [Please refer to 10.]

---- Updates from METI ----

3. [METI] Apr 21_0800_Seismic Damages to the NPSs [Please refer to the attached file]
4. [METI] Apr 21_Radioactivity Level Map Chart [Please refer to the attached file]

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---- Updates from NISA ----

5. [NISA] Apr 21 0800_Current Situation of Onagawa, Fukushima Dai-ichi, Fukushima Dai-ni, Tokai Dai-ni NPSs (only Japanese version is now available. English version will be uploaded.)

<http://www.meti.go.jp/press/2011/04/20110421001/20110421001-3.pdf>

[NISA] Apr 15 1500_Current Situation of Onagawa, Fukushima Dai-ichi, Fukushima Dai-ni, Tokai Dai-ni NPSs (English version) <http://www.nisa.meti.go.jp/english/files/en20110416-11-1.pdf>

6. [NISA] Apr 20 1300_Fukushima Dai-ichi Major Parameters of the Plant (English version)

<http://www.nisa.meti.go.jp/english/files/en20110421-1-3.pdf>

---- Major Updates from other agencies of Japanese Government --- 7. [MLIT] Apr 21 AM_Measurement of Radiation Doses in the Ports around Tokyo Bay http://www.mlit.go.jp/kowan/kowan_fr1_000041.html

Currently, the level of radiation in Tokyo City, Yokohama City, Kawasaki City and Ichikawa City (Chiba) were as shown in the attachment at very safe level to health.

8. [MLIT] Apr 21 PM_Measurement of radiation doses around the Metropolitan Airports

http://www.mlit.go.jp/koku/koku_tk7_000003.html

The current level of radiation does not have any effects on human health.

9. [MHLW] Apr 20 Restriction of distribution and consumption of Juvenile sand lance landed at Fukushima Prefecture, in relation to the accident at Fukushima Nuclear Power Plant.

<http://www.mhlw.go.jp/english/topics/2011eq/dl/food-110420.pdf>

10. [MOFA] Apr 21 OECD Secretary-General Angel Gurría visited Japan and met with Japan's Foreign Minister Matsumoto. (only Japanese version is now available)

http://www.mofa.go.jp/mofaj/kinkyu/2/20110421_224241.html

If you need to add other e-mail address to this mailing list or do not need our information mail any more, please contact at meti-info@meti.go.jp

=====
International Public Relations Team

Ministry of Economy, Trade and Industry (METI)

1-3-1 Kasumigaseki, Chiyoda-ku, Tokyo 100-8901, Japan E-mail : meti-info@meti.go.jp

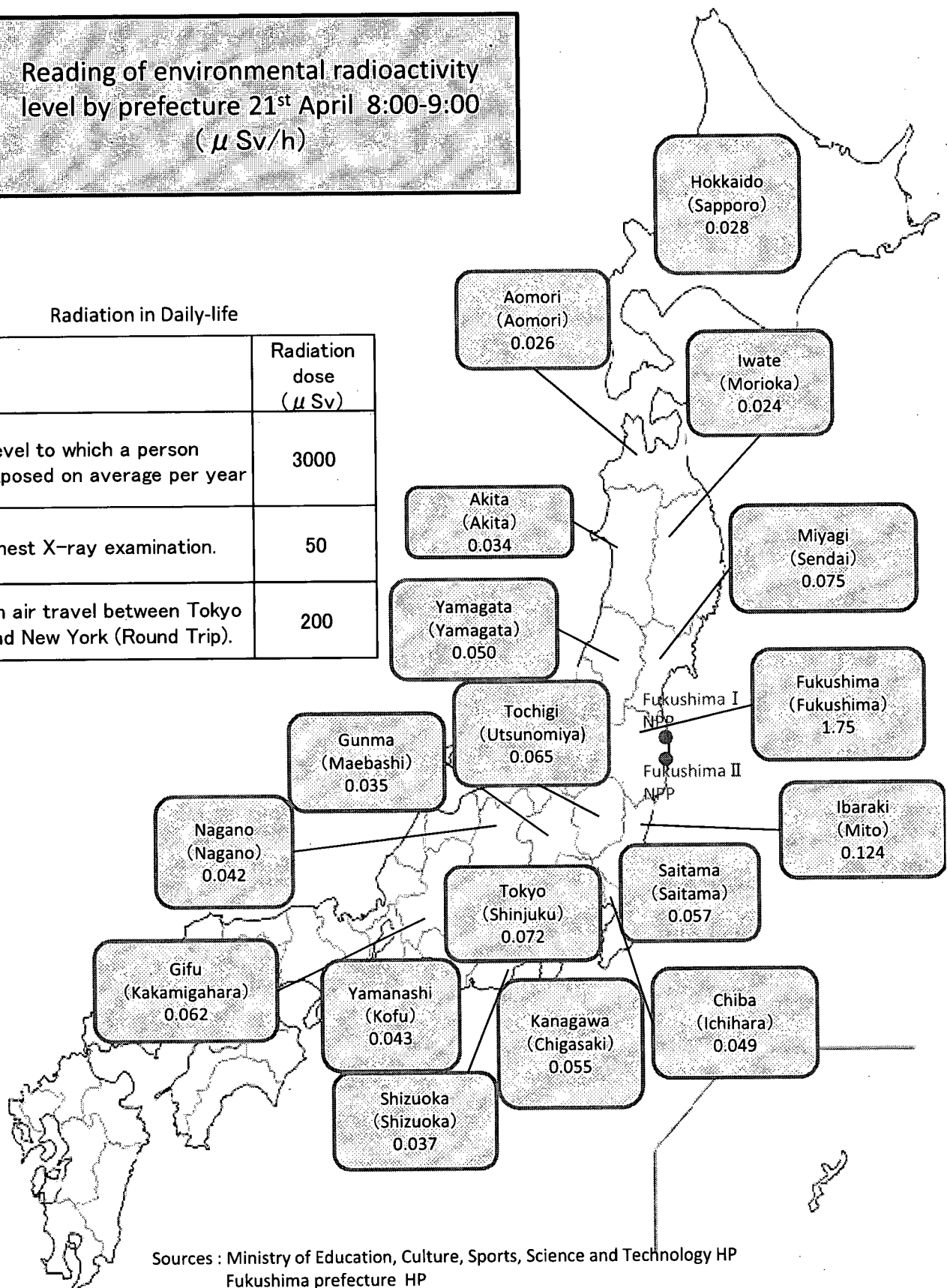
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(See attached file: [METI] Apr 21_0800_Seismic Damages to the NPSs.pdf)

(See attached file: Apr_21_Radioactivity Level Map Chart.pdf)

Reading of environmental radioactivity
level by prefecture 21st April 8:00-9:00
(μ Sv/h)

Radiation in Daily-life

	Radiation dose (μ Sv)
Level to which a person exposed on average per year	3000
Chest X-ray examination.	50
An air travel between Tokyo and New York (Round Trip).	200



Sources : Ministry of Education, Culture, Sports, Science and Technology HP
Fukushima prefecture HP

Great East Japan Earthquake and the seismic damage to the NPSs

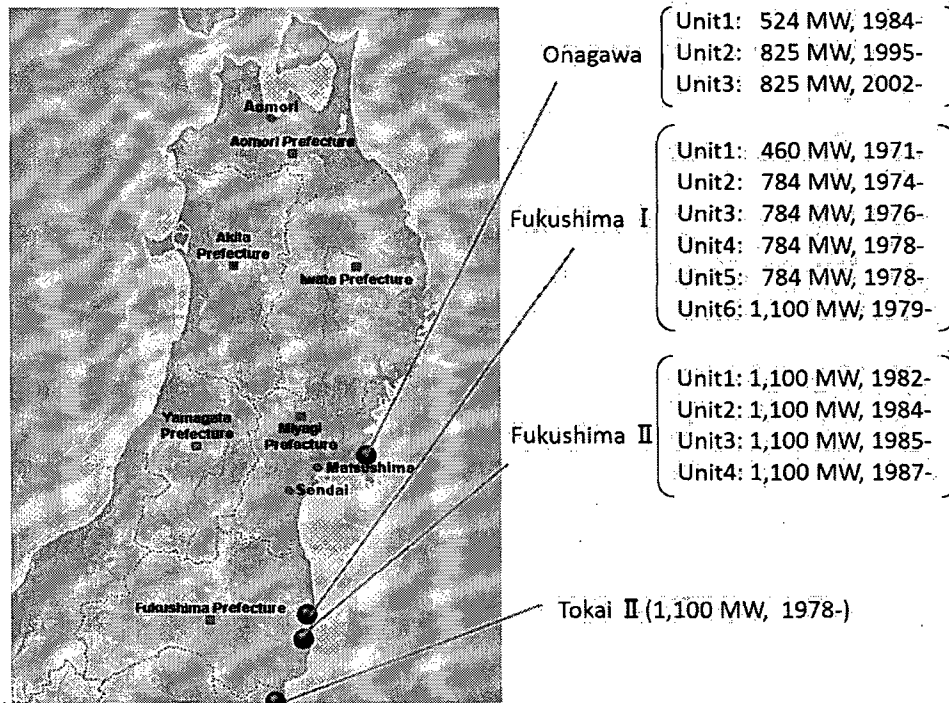
As of 8:00am April 21st, 2011 (JST)

Ministry of Economy, Trade and industry

Earthquake and automatic shut-down of nuclear reactors

The Great East Japan Earthquake of historic magnitude 9.0 struck the northeastern part of Japan at 14:46 on March 11th, 2011.

At the time of the earthquake occurrence, 3 reactors (Units 4, 5 and 6 at Fukushima Dai-ichi (I) Nuclear Power Station (NPS)) were under periodic inspection outage, and 11 reactors (Units 1, 2 and 3 at Onagawa NPS; Units 1, 2 and 3 at Fukushima I NPS; Units 1, 2, 3 and 4 of Fukushima Dai-ni (II) NPS; and an unit of Tokai Dai-ni (II) NPS) were automatically shut-down.



Tsunami damaged the emergency generators and the cooling systems at the Fukushima Dai-ichi (I)

Since the external power supply was cut off upon the earthquake occurrence, the emergency diesel power generators at Fukushima I automatically started generating electricity and the cooling systems began their operation.

Then, the massive earthquake triggered the devastating Tsunami wiping away houses, buildings, cars along the widespread areas of the northeast coast. The emergency diesel power generators and the pumps supplying seawater to the cooling system were halted at 15:41 on March 11th due to the Tsunami estimated more than 14 meters high from the seawater level.

Report concerning incidents at the Fukushima Dai-ichi (I)

Unit 1 Fresh water is being injected to the spent fuel pool and the reactor.

After the reactor was automatically shut-down and the Tsunami disabled the equipments. The pressure of containment vessel unusually increased and the water level inside the reactor pressure vessel dropped. Vent of the primary containment vessel was operated at 10:17am on March 12th; thereafter, hydrogen explosion occurred at the upper-part of the reactor building at 15:36.

Water injection to the reactor pressure vessel

- Seawater had been injected into the reactor pressure vessel since March 12th; thereafter, fresh water has been injected since March 25th, instead of seawater.

Water injection to the spent fuel pool

- On March 31st, spray of fresh water over the spent fuel pool of Unit 1 using the concrete pump truck was carried out.

Power supply

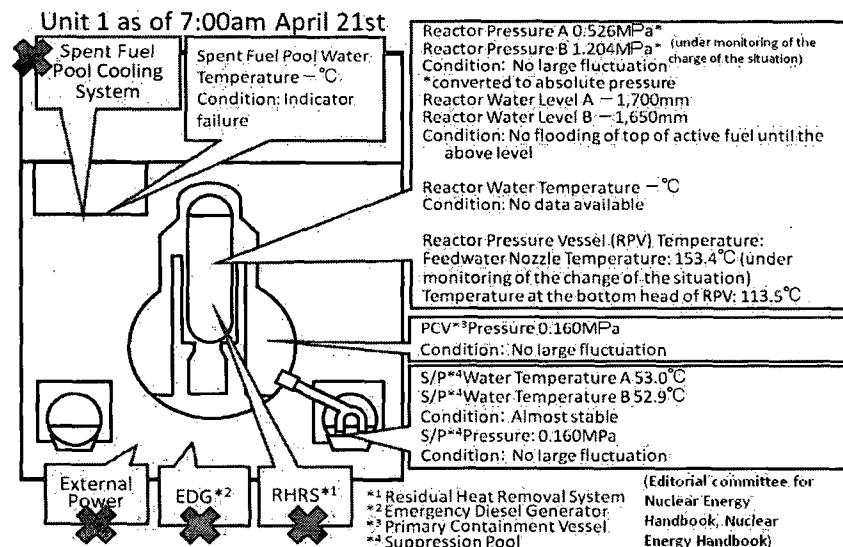
- Lighting in the main control room was recovered on March 24th. And the power supply for the fresh water injection to the reactor pressure vessel was switched to the external power supply on April 3rd.

Stagnant water

- As the result of concentration measurement in the stagnant water on the basement floor of the turbine building, $2.1 \times 10^5 \text{ Bq/cm}^3$ of ^{131}I (Iodine) and $1.8 \times 10^6 \text{ Bq/cm}^3$ of ^{137}Cs (Caesium) were detected as major radioactive nuclides. Since March 24th, the stagnant water has been transferred to the condenser until it was fulfilled.
- In order to prepare to transfer the stagnant water in the turbine building to the condenser, the water in the condensate storage tank was transferred to the surge tank of suppression pool water and finished on April 2nd. The transfer of the water in the condenser to the condensate storage tank was completed on April 10th.

Nitrogen injection

- Aiming at reducing the possibility of hydrogen combustion in the primary containment vessel of Unit 1, the operations for the injection of nitrogen to the vessel were started at 22:30 on April 6th. The start of nitrogen injection to the primary containment vessel of Unit 1 was confirmed. (1:31am April 7th)



Unit 2 Fresh water is being injected to the spent fuel pool and the reactor.

After the automatic shut-down of the reactor, the water injection function was sustained. And vent of the primary containment vessel was operated at 11:00am on March 13th and at 0:02am on March 15th. But the reactor water level tended to decrease. At 6:10am on March 15th, there was an explosion sound at Unit 2. Given the fact that the pressure in the suppression chamber decreased, it is presumed that there is possibility of certain damage on the suppression chamber.

Water injection to the reactor pressure vessel

- Seawater had been injected into the reactor pressure vessel since March 14th; thereafter, fresh water has been injected since March 26th, instead of seawater.

Water injection to the spent fuel pool

- The seawater injection to the spent fuel pool using the fire pump truck started on March 20th. On March 29th, the injection was switched to the fresh water injection using the temporary motor-driven pump.
- The work of sampling water that flowed out in the skimmer surge tank from the spent fuel pool of Unit 2 was carried out in order to grasp the condition of water in the pool. (April 16th) As a result of nuclide analysis of radioactive materials regarding the sampled water of the pool, $4.1 \times 10^3 \text{ Bq/cm}^3$ of ^{131}I (Iodine), $1.6 \times 10^3 \text{ Bq/cm}^3$ of ^{134}Cs (Cesium), $1.5 \times 10^3 \text{ Bq/cm}^3$ of ^{137}Cs (Cesium) were detected. (April 17th)

Power supply

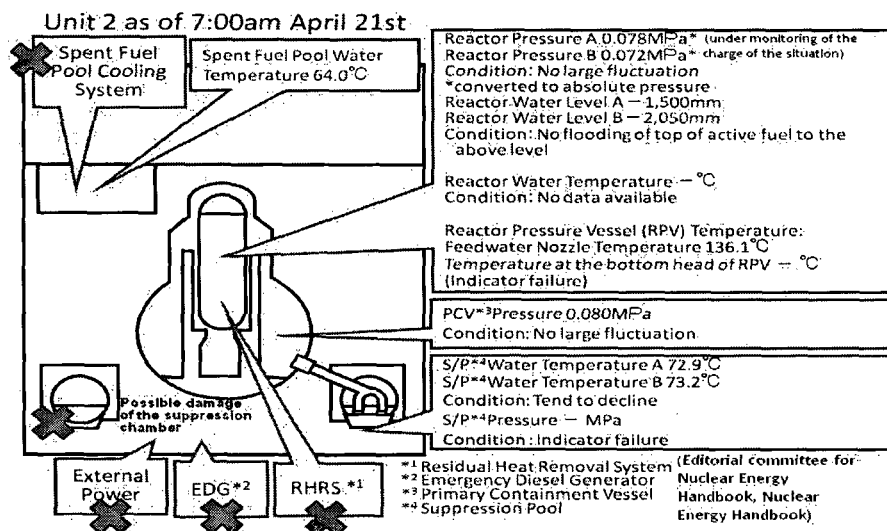
- On March 26th, lighting of the main control room was recovered. And the power supply for the fresh water injection to the reactor pressure vessel was switched to the external power supply on April 3rd.

Stagnant water

- After transferring the water in the condenser to the condensate storage tank, the stagnant water in the trench of the turbine building was transferred to the condenser from April 12th till 13th. Then, stagnant water (stagnant water with high-level radioactivity) in the turbine building of Unit 2 was started to be transferred to the radioactive waste treatment facilities at 10:08am on April 19th.

Water in the pit

- The water, of which the dose rate was at the level of more than 1,000 mSv/h, was confirmed to be collected in the pit (a vertical portion of an underground structure) located near the intake channel of Unit 2. In addition, the outflow from the crack(20cm) in the concrete portion of the lateral surface of the pit into the sea was confirmed on April 2nd. In order to stop the outflow the coagulant (soluble glass) was injected from the holes around the pit from April 5th, the outflow was confirmed to stop on 6th. Furthermore, the measures to stop water by means of rubber board and jig (prop) were implemented at the outflowing point. (April 6th)
- Injection of the coagulant to the power cable trench of Unit 2 was carried out on April 18th and 19th.



Unit 3 Fresh water is being injected to the spent fuel pool and the reactor.

After the automatic shut-down of the reactor, fresh water and subsequently seawater were injected into the reactor pressure vessel. And vent of the primary containment vessel was operated on March 13th and 14th. However, the pressure in the primary containment vessel rose up unusually and the explosion took place around the reactor building at 11:01am on March 14th.

Water injection to the reactor pressure vessel

- The seawater had been injected into the reactor pressure vessel since March 13th, thereafter; fresh water has been injected since March 25th, instead of seawater. On March 28th, the pump for the fresh water injection was switched from the fire pump truck to the temporary motor-driven pump.

Water injection to the spent fuel pool

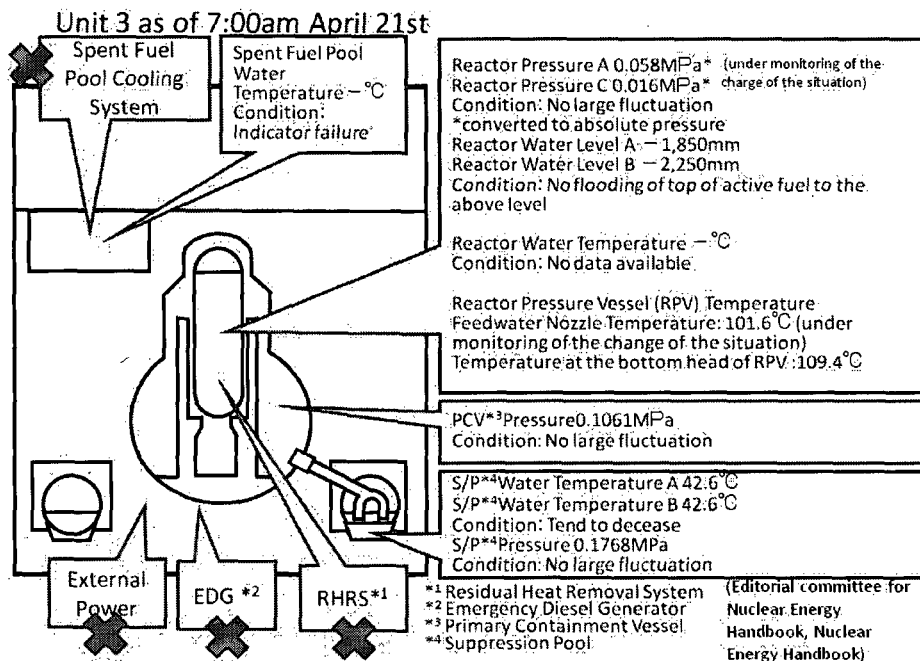
- In order to pour water into the spent fuel pool, helicopters, water cannon trucks, fire engines and concrete pump trucks discharged water to the spent fuel pool of Unit 3 from sky and ground. Since March 29th till April 18th, fresh water spray over the spent fuel pool using the concrete pump truck had been carried out.

Power supply

- On March 22nd, lighting in the main control room was recovered. And the power supply for the fresh water injection to the reactor pressure vessel was switched to the external power supply on April 3rd.

Stagnant water

- In order to prepare for transferring the stagnant water on the basement floor of turbine building to the condenser, the water in the condensate storage tank is being transferred to the surge tank of suppression pool water from March 28th till March 31st.



Unit 4 No fuel is in the reactor. Fresh water is being injected to the spent fuel pool.

There is no fuel in the reactor pressure vessel due to replacement of the shroud. It was confirmed that a part of wall of the operation floor of the reactor building of Unit 4 was damaged at 6:14am on March 15th. A fire took place at Unit 4 at 9:38am March 15th, but the fire was extinguished spontaneously as of 11:00am. Another fire took place on March 16th, but no fire could be confirmed from the ground.

Water injection to spent fuel pool

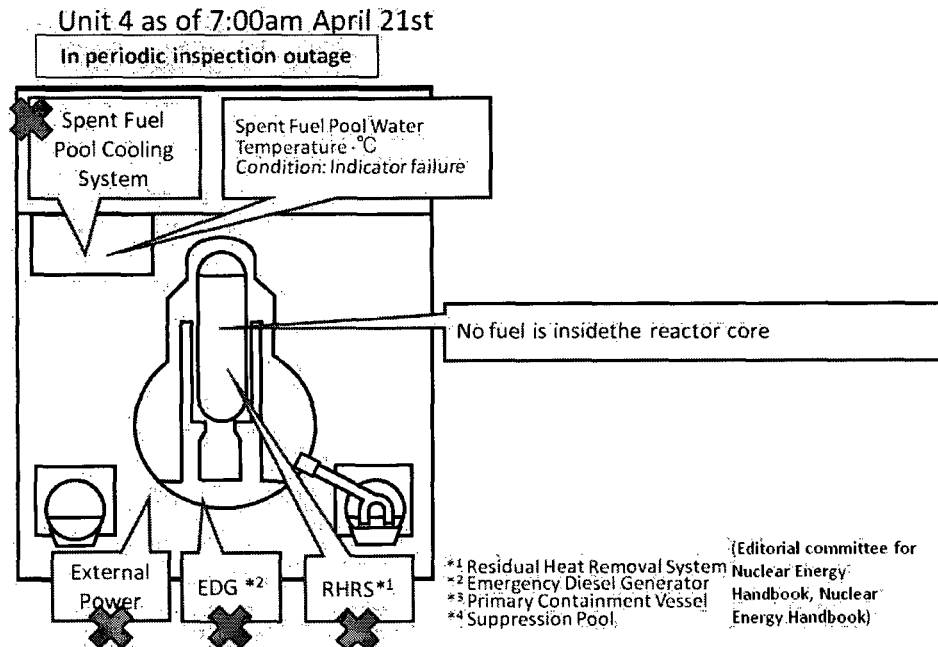
- Water spray using fire engine with seawater over the spent fuel pool of Unit 4 was carried out from March 20th till March 21st. And water spray using a concrete pump truck had been carried out five times with seawater from March 22nd till March 27th and eleven times with fresh water from March 30th till April 20th.

Power supply

- On March 29th, lighting in the main control room was recovered.

Stagnant water

- From April 2nd, the stagnant water in the main building of radioactive waste treatment facilities was being transferred to the turbine building of Unit 4. As the water level in the vertical portion of the trench for Unit 3 rose from April 3rd, by way of precaution, the transfer was suspended notwithstanding that the path of the water was not clear.(9:22am April 4th)



Unit 5&6 Unit 5 & 6 is under cold shut down.

One of the emergency generators for Unit 6 was operating and supplying electricity to Unit 5 and Unit 6. Fresh water was being injected into the reactor pressure vessels and the spent fuel pools by make-up water condensate system.

Cold shut down

- The pump for residual heat removal system (RHR) for Unit 5 and the pump for RHR for Unit 6 started up on March 19th and recovered heat removal function.
- Unit 5 was under cold shut down at 14:30 on March 20th and Unit 6 was under cold shut down at 19:27 on the same day.

Power supply

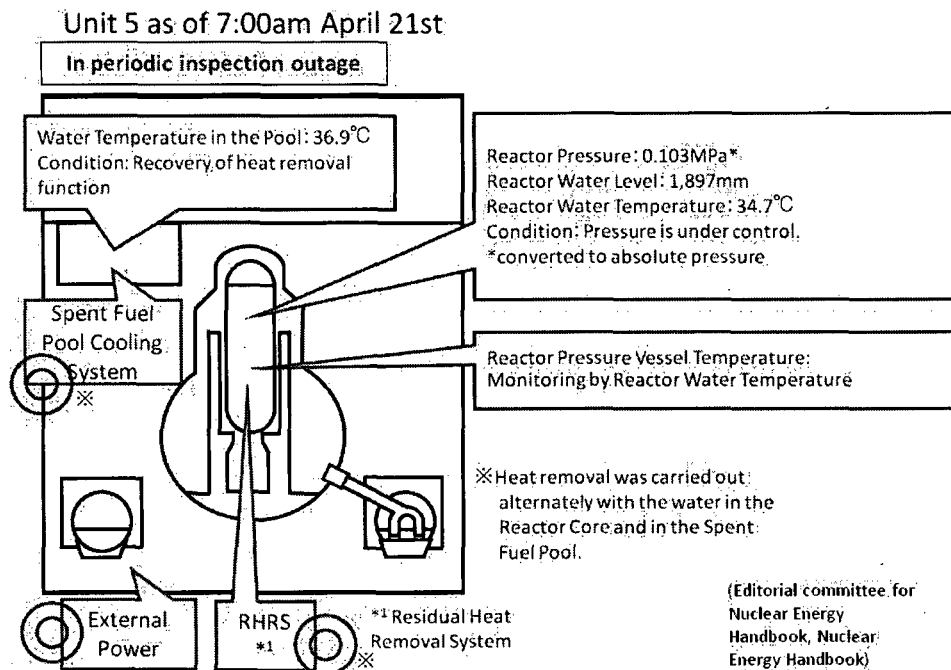
- Unit 5 and 6 received electricity reached to the starting transformer on March 20th. The power supply of Unit 5 and 6 was switched from the emergency diesel generators to the external power supply on March 21st and March 22nd.
- Power supply for the temporary pumps for RHR seawater system of Unit 5 and 6 were switched from the temporary to the permanent on March 24th and 25th.

Low-level radioactivity water discharge

- The groundwater with low-level radioactivity in the sub drain pits of Units 5 and 6 (around 1,300t) was discharged through the water discharge canal to the sea from April 4th till 9th in order to protect the critical safety facilities of the reactors. The water was beginning to leak out to the reactor building and other buildings of Unit 6 and there was no further capacity to accommodate it.

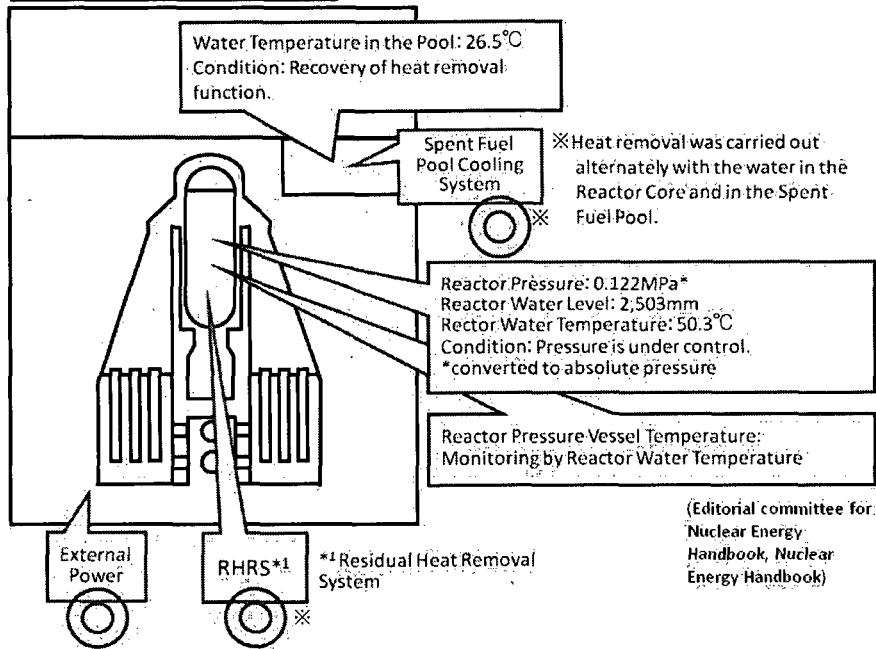
Stagnant water

- The stagnant water in the basement floor of the turbine building of Unit 6 was transferred to the condenser. (From 11:00 till 15:00 April 19th)



Unit 6 as of 7:00am April 21st

In periodic inspection outage:



Common Spent Fuel Pool

- The power supply was started at 15:37 on March 24th and cooling was also started at 18:05 on the same day.
- The power supply was stopped due to short-circuiting of the end of the power supply circuit. (14:34 April 17th) Thereafter the facility inspection was carried out and the power supply was recovered. (17:30 April 17th)

Other

Nuclide analysis at water discharge canal

- As the result of nuclide analysis at around the southern water discharge canal, $7.4 \times 10^1 \text{ Bq/cm}^3$ of ^{131}I (1850.5 times higher than the limit of concentration of water outside the Environmental Monitoring Area) was detected on March 26th. (As the result of measurement on March 29th, it was detected as 3355.0 times higher than the limit in water.)
As the result of the analysis at the northern water discharge canal, $4.6 \times 10^1 \text{ Bq/cm}^3$ of ^{131}I (1262.5 times higher) was detected on March 29th.

Water in the trenches

- The water was confirmed to be collected in the vertical parts of the trenches (an underground structure for laying pipes, shaped like a tunnel) outside of the turbine building of Units 1 to 3. The dose rates on the water surface were 0.4 mSv/h of the Unit 1's trench and 1,000 mSv/h of the Unit 2's trench on March 27th. The rate of the Unit 3's trench could not measure because of the rubble.

Nuclide analysis of soil

- In the samples of soil collected on March 21st, 22nd, 25th, 28th, 31nd and April 4th on the site of Fukushima I, ^{238}Pu (Plutonium), ^{239}Pu and ^{240}Pu were detected. The concentration of the detected plutonium was at the equivalent level of the fallout that was observed in Japan concerning the past atmospheric nuclear testing, i.e. at

the equivalent level of the normal condition of environment, and was not at the level of having harmful influence on human body.

Stagnant water

- On March 28th, the stagnant water was confirmed in the main building of radioactive waste treatment facilities. As the result of analysis of radioactivity, the total amount of the radioactivity 1.2×10^1 Bq/cm³ in the controlled area and that of 2.2×10^1 Bq/cm³ in the non-controlled area were detected in March 29th.

Barges loading fresh water

- Two barges of the US armed forces carrying fresh water for cooling reactors, etc. landed in the exclusive port of the power station, being towed by the ships of Japan Maritime Self-Defense Force on March 31st and April 2nd. The transfer of fresh water from the barges to the filtrate tank was started.

Low-level radioactive water discharge

- The wastewater with high concentration of radioactive materials was trapped on the basement floor of the turbine building of Unit2 and it was necessary to immediately be transferred to another location as it was leaking out to the surrounding environment. But there was no further capacity to accommodate it.
- In order to use the main building of radioactive waste treatment facilities for accommodating the wastewater of the turbine building of Unit2, the stagnant water with low-level radioactivity in the radioactive waste treatment facilities was started to be discharged from the southern side of the water discharge canal to the sea from April 4th till 10th. Confirmation of the remaining water is being carried out. (Total amount of discharged water is around 9,070t.)
- The stagnant water with low-level radioactivity in the building of miscellaneous solid waste volume reduction processing was discharged from the southern side of the water discharge canal to the sea using 5 pumps. (From April 6th till 7th)
- The watertight measures in the buildings of the radioactive waste treatment facilities were completed. (April 18th)

Countermeasures for Tsunami

- The distribution boards, etc. for the pumps injecting water to the reactors of Units 1 to 3 were transferred to a hill on April 15th.

Other

- In order to prevent the contaminated water from outflowing from the exclusive port, the work for stopping water by means of large-sized sandbags was implemented around the seawall on the south side of the NPS on April 5th.
- 3 sandbags filled with Zeolite were placed between the inlet screen pump room of Unit 3 and that of Unit 4 on April 15th. Thereafter, 2 sandbags were placed between the inlet screen pump room of Unit 1 and that of Unit 2, and 5 sandbags were placed between that of Unit 2 and that of Unit 3 on April 17th.
- The silt fences to prevent the contaminated water from being scattered were completed to be doubly installed at the appropriate part of the seawall on the south side of the NPS on April 11th. Other silt fences were installed in front of the screen of Units 3 and 4 on April 13th, and at the curtain wall and in front of the screen of Unit 1 and 2 on April 14th.
- The test scattering of anti-scattering agent to prevent the radioactive materials on the ground surface from being scattered was carried out on the mountain-side of the Common Pool and other areas from April 1st till 20th.
- Removal of the rubble using remote-control heavy machineries was carried out from April 10th till 20th.
- On the ocean-side of the inlet bar screen of Unit 2, temporary boards to stop water were installed on April 12th, 13th and 15th.
- Work of strengthening connection of the power supplies between Units 1 and 2 and Units 3 and 4 was completed. (10:23 April 19th)
- Confirmation of situation, etc. was carried out by unmanned robots at the reactor building for Unit 1, 2 and 3 on April 17th and 18th.

Current Situation

- Evacuation as far as 20 kilometers from Fukushima I NPS and 10 kilometers from Fukushima II NPS was almost completed (see the diagram “Fukushima prefecture”). The residents in the areas from 20 kilometers to 30 kilometers radius from Fukushima I NPS are directed to stay in-house.

- On March 16th, the Local Emergency Response Headquarter issued “the direction to administer the stable Iodine during evacuation from the evacuation area (20 km radius)” to the Prefecture Governors and the heads of cities, towns and villages.

Monitoring Data

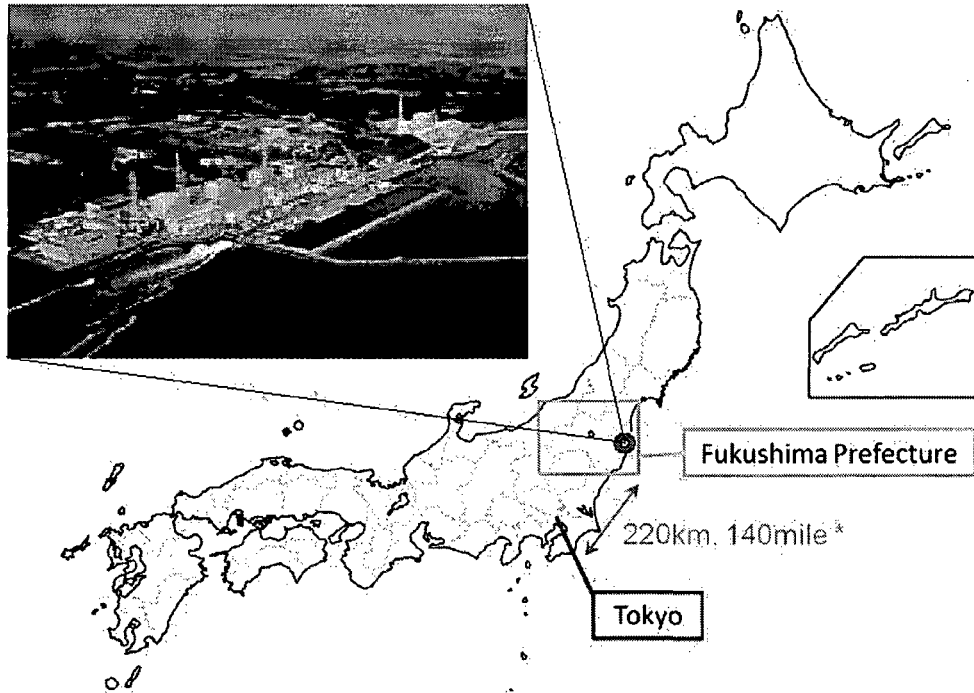
- 1) The data of Monitoring Post out of 20 kilometers zone of Fukushima I NPS is available on the following website:

http://www.mext.go.jp/a_menu/saigaijohou/syousai/1303726.htm

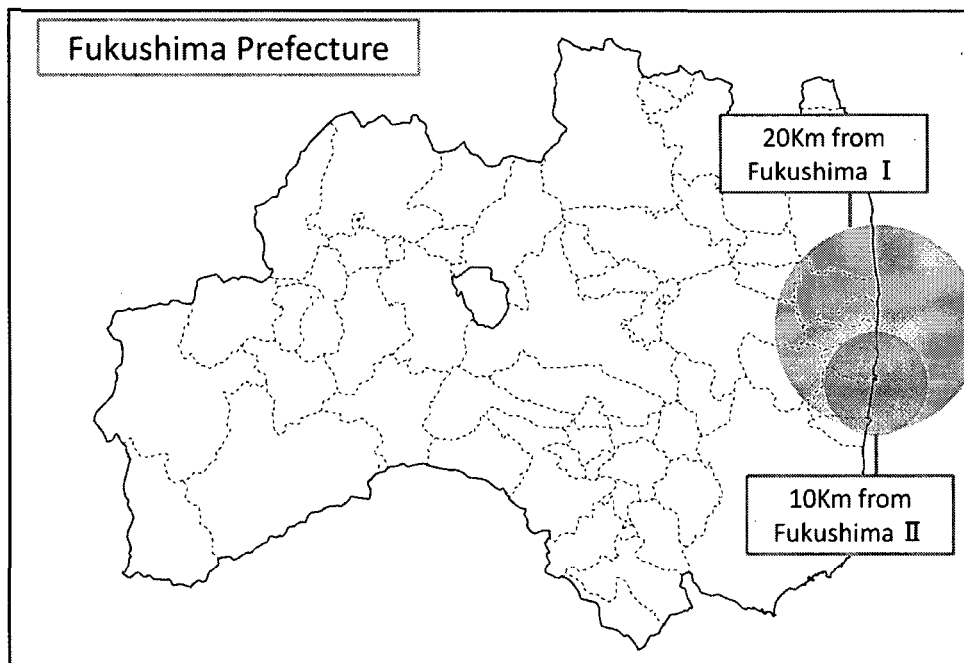
- 2) The real-time radiation data collected via the System for Prediction of Environment Emergency Dose Information (SPEEDI) is available on the following website:

<http://www.bousai.ne.jp/eng/>

Location of Fukushima I and II in Japan



*Distance between Three Mile Island and Washington D.C. : 140km, 88mile



Report concerning incidents at the Fukushima Dai-ichi (I)

Unit 1 Fresh water is being injected to the spent fuel pool and the reactor.

After the reactor was automatically shut-down and the Tsunami disabled the equipments. The pressure of containment vessel unusually increased and the water level inside the reactor pressure vessel dropped. Vent of the primary containment vessel was operated at 10:17am on March 12th; thereafter, hydrogen explosion occurred at the upper-part of the reactor building at 15:36.

Water injection to the reactor pressure vessel

- Seawater had been injected into the reactor pressure vessel since March 12th; thereafter, fresh water has been injected since March 25th, instead of seawater.

Water injection to the spent fuel pool

- On March 31st, spray of fresh water over the spent fuel pool of Unit 1 using the concrete pump truck was carried out.

Power supply

- Lighting in the main control room was recovered on March 24th. And the power supply for the fresh water injection to the reactor pressure vessel was switched to the external power supply on April 3rd.

Stagnant water

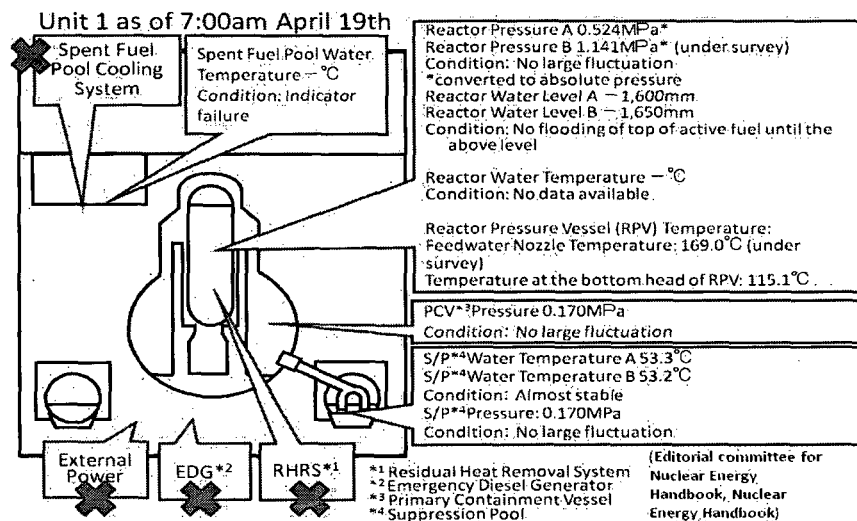
- As the result of concentration measurement in the stagnant water on the basement floor of the turbine building, $2.1 \times 10^5 \text{ Bq/cm}^3$ of ^{131}I (Iodine) and $1.8 \times 10^6 \text{ Bq/cm}^3$ of ^{137}Cs (Caesium) were detected as major radioactive nuclides. Since March 24th, the stagnant water has been transferred to the condenser until it was fulfilled.
- In order to prepare to transfer the stagnant water in the turbine building to the condenser, the water in the condensate storage tank was transferred to the surge tank of suppression pool water and finished on April 2nd. The transfer of the water in the condenser to the condensate storage tank was completed on April 10th.

Nitrogen injection

- Aiming at reducing the possibility of hydrogen combustion in the primary containment vessel of Unit 1, the operations for the injection of nitrogen to the vessel were started at 22:30 on April 6th. The start of nitrogen injection to the primary containment vessel of Unit 1 was confirmed. (1:31am April 7th)

Confirmation by unmanned robots

- Confirmation of situation, etc. was carried out by unmanned robots at the reactor building for Unit 1 on April 17th.



Unit 2 Fresh water is being injected to the spent fuel pool and the reactor.

After the automatic shut-down of the reactor, the water injection function was sustained. And vent of the primary containment vessel was operated at 11:00am on March 13th and at 0:02am on March 15th. But the reactor water level tended to decrease. At 6:10am on March 15th, there was an explosion sound at Unit 2. Given the fact that the pressure in the suppression chamber decreased, it is presumed that there is possibility of certain damage on the suppression chamber.

Water injection to the reactor pressure vessel

- Seawater had been injected into the reactor pressure vessel since March 14th; thereafter, fresh water has been injected since March 26th, instead of seawater.

Water injection to the spent fuel pool

- The seawater injection to the spent fuel pool using the fire pump truck started on March 20th. On March 29th, the injection was switched to the fresh water injection using the temporary motor-driven pump.

Power supply

- On March 26th, lighting of the main control room was recovered. And the power supply for the fresh water injection to the reactor pressure vessel was switched to the external power supply on April 3rd.

Stagnant water

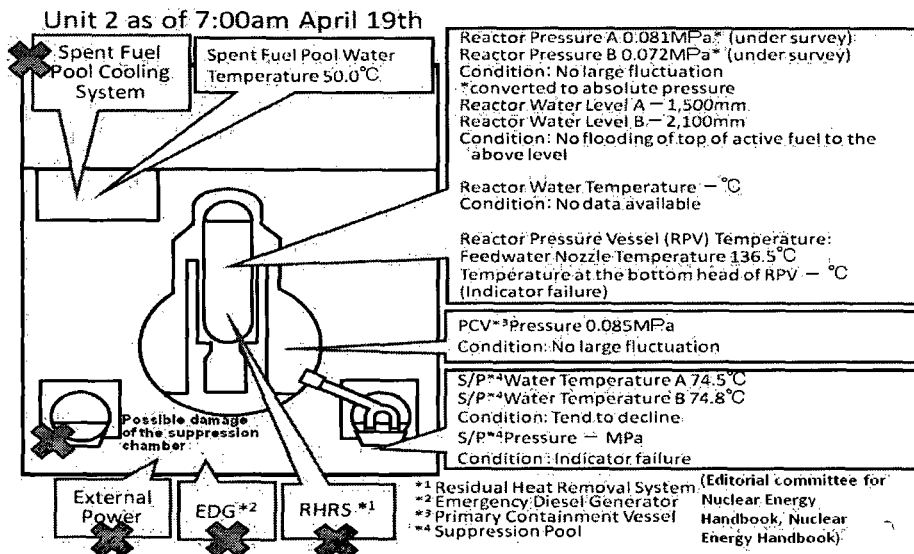
- In order to prepare for transferring the stagnant water on the basement floor of turbine building to the condenser, the water in the condensate storage tank was transferred to the surge tank of suppression pool water from March 29th till April 1st. Thereafter, the water in the condenser was transferred to the condensate storage tank and completed on April 9th. The stagnant water in the trench of the turbine building was transferred to the condenser from April 12th till 13th.

Water in the pit

- The water, of which the dose rate was at the level of more than 1,000 mSv/h, was confirmed to be collected in the pit (a vertical portion of an underground structure) located near the intake channel of Unit 2. In addition, the outflow from the crack with a length of around 20 cm in the concrete portion of the lateral surface of the pit into the sea was confirmed on April 2nd. In order to stop the outflow, concrete was put inside, then high polymer absorbent etc. was used, but the outflow did not stop.
- After the coagulant (soluble glass) started to be injected from the holes around the pit on April 5th, the outflow of the water was confirmed to stop on April 6th. Furthermore, the measures to stop water by means of rubber board and jig (prop) were implemented at the outflowing point. (Finished on April 6th)

Confirmation by unmanned robots

- Confirmation of situation, etc. was carried out by unmanned robots at the reactor building for Unit 2 on April 18th.



Unit 3 Fresh water is being injected to the spent fuel pool and the reactor.

After the automatic shut-down of the reactor, fresh water and subsequently seawater were injected into the reactor pressure vessel. And vent of the primary containment vessel was operated on March 13th and 14th. However, the pressure in the primary containment vessel rose up unusually and the explosion took place around the reactor building at 11:01am on March 14th.

Water injection to the reactor pressure vessel

- The seawater had been injected into the reactor pressure vessel since March 13th, thereafter; fresh water has been injected since March 25th, instead of seawater. On March 28th, the pump for the fresh water injection was switched from the fire pump truck to the temporary motor-driven pump.

Water injection to the spent fuel pool

- In order to pour water into the spent fuel pool, helicopters, water cannon trucks, fire engines and concrete pump trucks discharged water to the spent fuel pool of Unit 3 from sky and ground. Since March 29th till April 18th, fresh water spray over the spent fuel pool using the concrete pump truck had been carried out.

Power supply

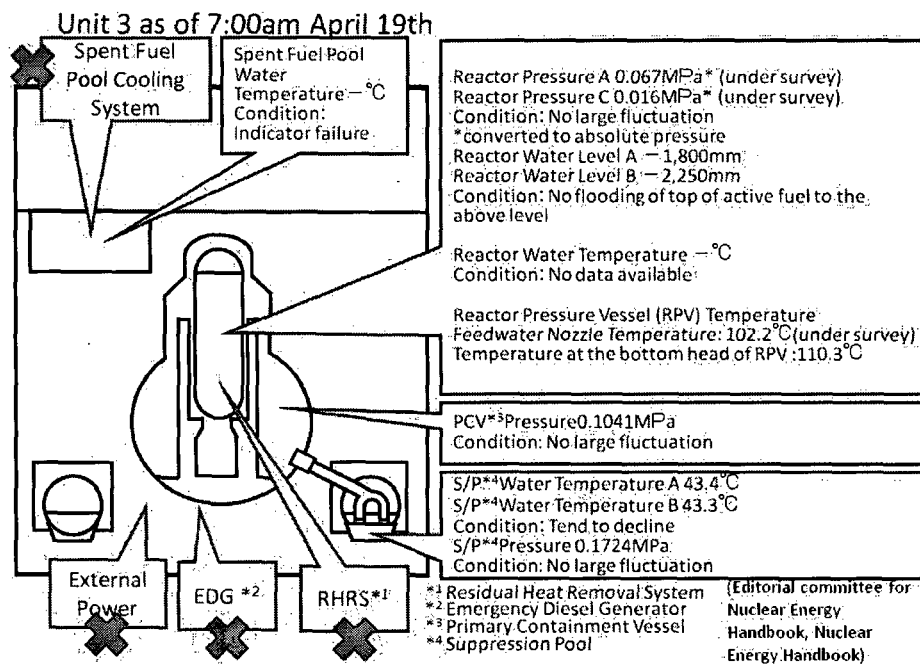
- On March 22nd, lighting in the main control room was recovered. And the power supply for the fresh water injection to the reactor pressure vessel was switched to the external power supply on April 3rd.

Stagnant water

- In order to prepare for transferring the stagnant water on the basement floor of turbine building to the condenser, the water in the condensate storage tank is being transferred to the surge tank of suppression pool water from March 28th till March 31st.

Confirmation by unmanned robots

- Confirmation of situation, etc. was carried out by unmanned robots at the reactor building for Unit 3 on April 17th.



Unit 4 No fuel is in the reactor. Fresh water is being injected to the spent fuel pool.

There is no fuel in the reactor pressure vessel due to replacement of the shroud. It was confirmed that a part of wall of the operation floor of the reactor building of Unit 4 was damaged at 6:14am on March 15th. A fire took place at Unit 4 at 9:38am March 15th, but the fire was extinguished spontaneously as of 11:00am. Another fire took place on March 16th, but no fire could be confirmed from the ground.

Water injection to spent fuel pool

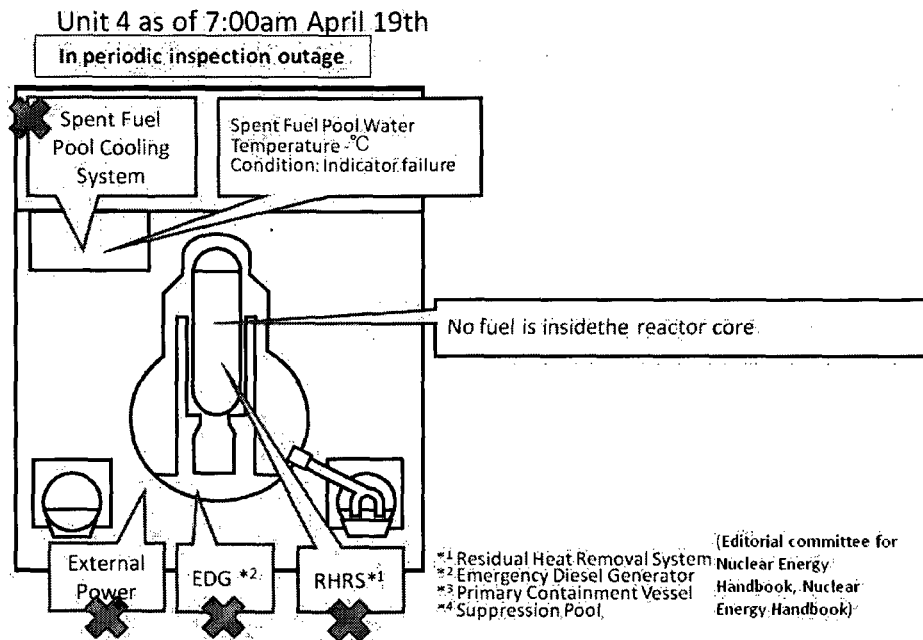
- Water spray using fire engine with seawater over the spent fuel pool of Unit 4 was carried out from March 20th till March 21st. And water spray using a concrete pump truck had been carried out five times with seawater from March 22nd till March 27th and nine times with fresh water from March 30th till April 17th.

Power supply

- On March 29th, lighting in the main control room was recovered.

Stagnant water

- From April 2nd, the stagnant water in the main building of radioactive waste treatment facilities was being transferred to the turbine building of Unit 4. As the water level in the vertical portion of the trench for Unit 3 rose from April 3rd, by way of precaution, the transfer was suspended notwithstanding that the path of the water was not clear.(9:22am April 4th)



Unit 5&6 Unit 5 & 6 is under cold shut down.

One of the emergency generators for Unit 6 was operating and supplying electricity to Unit 5 and Unit 6. Fresh water was being injected into the reactor pressure vessels and the spent fuel pools by make-up water condensate system.

Cold shut down

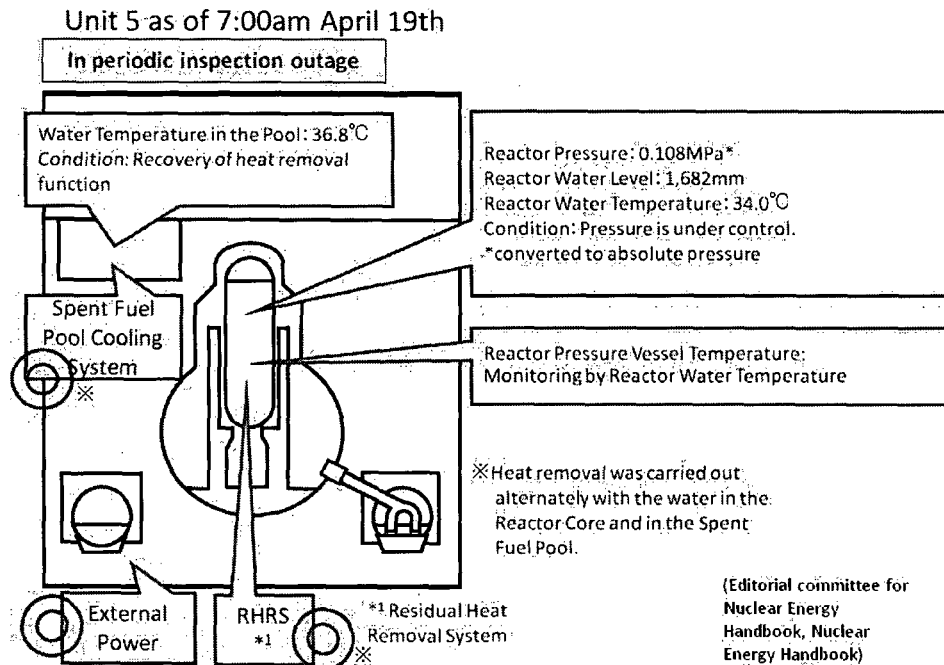
- The pump for residual heat removal system (RHR) for Unit 5 and the pump for RHR for Unit 6 started up on March 19th and recovered heat removal function.
- Unit 5 was under cold shut down at 14:30 on March 20th and Unit 6 was under cold shut down at 19:27 on the same day.

Power supply

- Unit 5 and 6 received electricity reached to the starting transformer on March 20th. The power supply of Unit 5 and 6 was switched from the emergency diesel generators to the external power supply on March 21st and March 22nd.
- Power supply for the temporary pumps for RHR seawater system of Unit 5 and 6 were switched from the temporary to the permanent on March 24th and 25th.

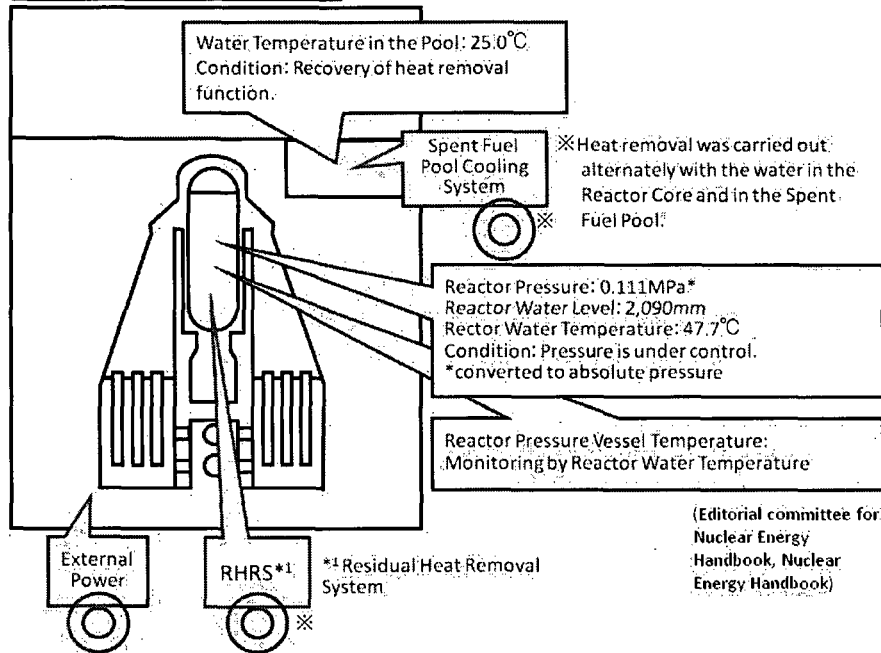
Low-level radioactivity water discharge

- The groundwater with low-level radioactivity in the sub drain pits of Units 5 and 6 (around 1,300t) was discharged through the water discharge canal to the sea from April 4th till 9th in order to protect the critical safety facilities of the reactors. The water was beginning to leak out to the reactor building and other buildings of Unit 6 and there was no further capacity to accommodate it.



Unit 6 as of 7:00am April 19th

In periodic inspection outage



Common Spent Fuel Pool

- The power supply was started at 15:37 on March 24th and cooling was also started at 18:05 on the same day.
- The power supply was stopped due to short-circuiting of the end of the power supply circuit. (14:34 April 17th) Thereafter the facility inspection was carried out and the power supply was recovered. (17:30 April 17th)

Other

Nuclide analysis at water discharge canal

- As the result of nuclide analysis at around the southern water discharge canal, $7.4 \times 10^1 \text{ Bq/cm}^3$ of ^{131}I (1850.5 times higher than the limit of concentration of water outside the Environmental Monitoring Area) was detected on March 26th. (As the result of measurement on March 29th, it was detected as 3355.0 times higher than the limit in water.)
As the result of the analysis at the northern water discharge canal, $4.6 \times 10^1 \text{ Bq/cm}^3$ of ^{131}I (1262.5 times higher) was detected on March 29th.

Water in the trenches

- The water was confirmed to be collected in the vertical parts of the trenches (an underground structure for laying pipes, shaped like a tunnel) outside of the turbine building of Units 1 to 3. The dose rates on the water surface were 0.4 mSv/h of the Unit 1's trench and 1,000 mSv/h of the Unit 2's trench on March 27th. The rate of the Unit 3's trench could not measure because of the rubble.

Nuclide analysis of soil

- In the samples of soil collected on March 21st, 22nd, 25th, 28th, 31nd and April 4th on the site of Fukushima I, ^{238}Pu (Plutonium), ^{239}Pu and ^{240}Pu were detected. The concentration of the detected plutonium was at the equivalent level of the fallout

that was observed in Japan concerning the past atmospheric nuclear testing, i.e. at the equivalent level of the normal condition of environment, and was not at the level of having harmful influence on human body.

Stagnant water

- On March 28th, the stagnant water was confirmed in the main building of radioactive waste treatment facilities. As the result of analysis of radioactivity, the total amount of the radioactivity 1.2×10^1 Bq/cm³ in the controlled area and that of 2.2×10^1 Bq/cm³ in the non-controlled area were detected in March 29th.

Barges loading fresh water

- Two barges of the US armed forces carrying fresh water for cooling reactors, etc. landed in the exclusive port of the power station, being towed by the ships of Japan Maritime Self-Defense Force on March 31st and April 2nd. The transfer of fresh water from the barges to the filtrate tank was started.

Low-level radioactive water discharge

- The wastewater with high concentration of radioactive materials was trapped on the basement floor of the turbine building of Unit2 and it was necessary to immediately be transferred to another location as it was leaking out to the surrounding environment. But there was no further capacity to accommodate it.
- In order to use the main building of radioactive waste treatment facilities for accommodating the wastewater of the turbine building of Unit2, the stagnant water with low-level radioactivity in the radioactive waste treatment facilities was started to be discharged from the southern side of the water discharge canal to the sea from April 4th till 10th. Confirmation of the remaining water is being carried out. (Total amount of discharged water is around 9,070t.)
- The stagnant water with low-level radioactivity in the building of miscellaneous solid waste volume reduction processing was discharged from the southern side of the water discharge canal to the sea using 5 pumps. (From April 6th till 7th)
- The watertight measures in the buildings of the radioactive waste treatment facilities were completed. (April 18th)

Other

- In order to prevent the contaminated water from outflowing from the exclusive port, the work for stopping water by means of large-sized sandbags was implemented around the seawall on the south side of the NPS on April 5th.
- 3 sandbags filled with Zeolite were placed between the inlet screen pump room of Unit 3 and that of Unit 4 on April 15th. Thereafter, 2 sandbags were placed between the inlet screen pump room of Unit 1 and that of Unit 2, and 5 sandbags were placed between that of Unit 2 and that of Unit 3 on April 17th.
- The silt fences to prevent the contaminated water from being scattered were completed to be doubly installed at the appropriate part of the seawall on the south side of the NPS on April 11th. Other silt fences were installed in front of the screen of Units 3 and 4 on April 13th, and at the curtain wall and in front of the screen of Unit 1 and 2 on April 14th.
- The test scattering of anti-scattering agent to prevent the radioactive materials on the ground surface from being scattered was carried out on the mountain-side of the Common Pool and other areas from April 1st till 18th.
- Removal of the rubble using remote-control heavy machineries was carried out from April 10th till 18th.
- On the ocean-side of the inlet bar screen of Unit 2, temporary boards to stop water were installed on April 12th, 13th and 15th.

Countermeasures for Tsunami

- The distribution boards, etc. for the pumps injecting water to the reactors of Units 1 to 3 were transferred to a hill on April 15th.

Current Situation

- Evacuation as far as 20 kilometers from Fukushima I NPS and 10 kilometers from Fukushima II NPS was almost completed (see the diagram “Fukushima prefecture”). The residents in the areas from 20 kilometers to 30 kilometers radius from Fukushima I NPS are directed to stay in-house.

- On March 16th, the Local Emergency Response Headquarter issued “the direction to administer the stable Iodine during evacuation from the evacuation area (20 km radius)” to the Prefecture Governors and the heads of cities, towns and villages.

Monitoring Data

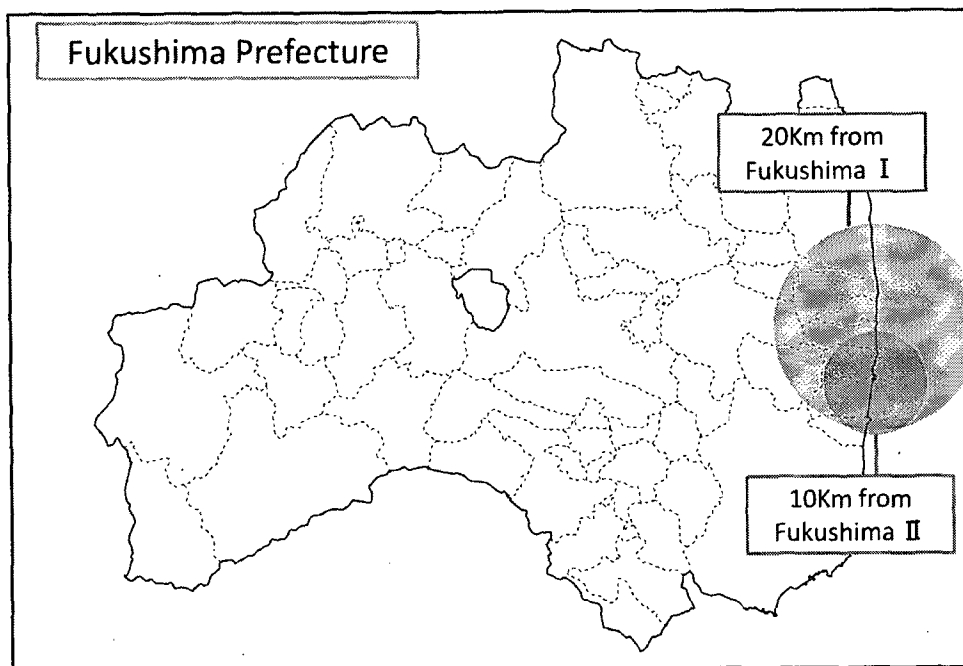
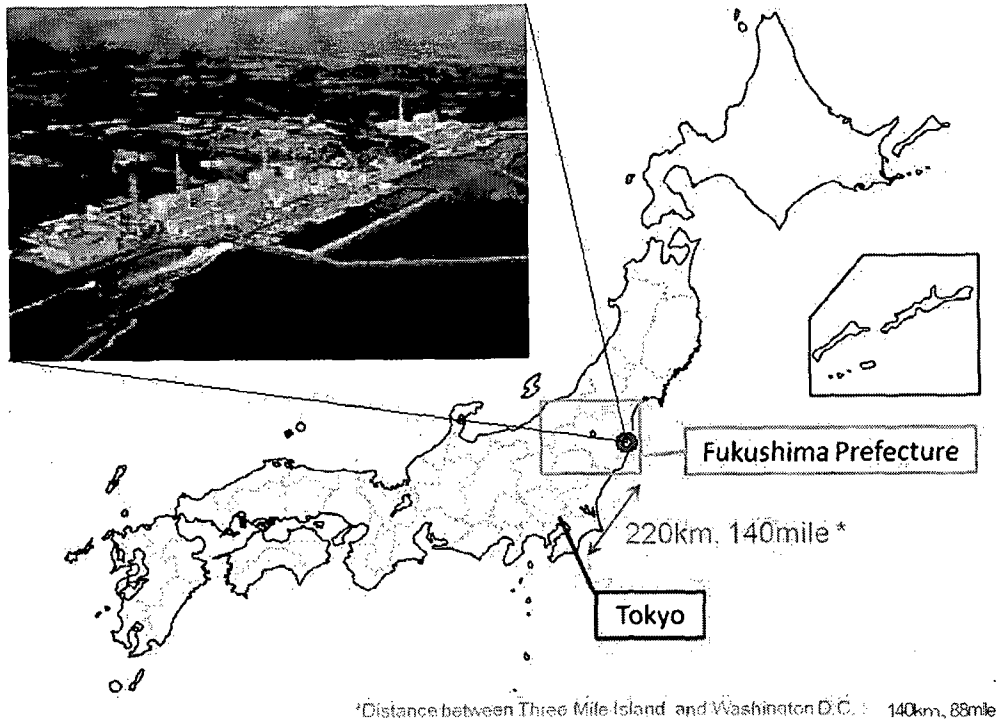
- 1) The data of Monitoring Post out of 20 kilometers zone of Fukushima I NPS is available on the following website:

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- 2) The real-time radiation data collected via the System for Prediction of Environment Emergency Dose Information (SPEEDI) is available on the following website:

<http://www.bousai.ne.jp/eng/>

Location of Fukushima I and II in Japan



From: RST01 Hoc
Sent: Thursday, April 21, 2011 5:10 PM
To: OST01 HOC
Subject: RE: TASK 4706 Rev. 2

Thanks

From: OST01 HOC
Sent: Thursday, April 21, 2011 5:10 PM
To: RST01 Hoc
Subject: RE: TASK 4706 Rev. 2

closed

From: RST01 Hoc
Sent: Thursday, April 21, 2011 4:33 PM
To: OST01 HOC
Subject: FW: TASK 4706 Rev. 2
Importance: High

FYI

From: Hiland, Patrick
Sent: Thursday, April 21, 2011 9:55 AM
To: Riley (OCA), Timothy
Cc: RST01 Hoc; Lubinski, John; Skeen, David
Subject: TASK 4706 Rev. 2
Importance: High

Tim, attached is the final response to the subject task. It includes the information sent to you by John Lubinski and was reviewed by the RST. Please communicate response.

RST01, NRR considers TASK 4706 Closed.

Answers to Michal Freedhoff's questions 4/21/11

Questions:

1. What plants have isolation condensers?
 - a. The United States BWRs that have isolation condensers are Oyster Creek in New Jersey, Dresden Station Units 2 and 3 in Illinois and Nine Mile Point Unit 1 in upstate New York.
2. What is the melting temperature of the Control Rod Drive Mechanism (CRDM) seals and also what is the melting temperature of the vessel?
 - a. The CRD graphite seals are not used for the reactor pressure boundary, so the absence of the seals in the CRD will not cause leaking and the drainage of the reactor vessel. In the event of a CRD withdraw line failure, the flow restrictions in the CRD (two of the three flow paths include the graphite seals) will limit the leakage rate out of the reactor vessel. Although the graphite seals will lose some strength and durability at ~500 deg. F (the normal reactor water temperature), the seals will not melt. Fabrication of the seals includes baking at temperatures above 1000 deg. F.
 - b. The reactor vessel is made of steel and thus the melting temperature is in excess of 2000 deg. F.

Question: doesn't zircalloy melt at about 1800 C and uranium oxide at about 2800 C? And since many sources have indicated that the fuel in all 3 units has melted, what relevance do the 1000 and 2000 degree thresholds you cite have? Why wouldn't the seals melt if the fuel does? If they did, would all leaks still be precluded or would they just be limited by other barriers?

There are four sub-questions regarding Question 2b. The following presents these four sub-questions and the staff's response to them.

Q2b(1) Doesn't zircalloy melt at about 1800 C and uranium oxide at about 2800 C?

Answer: Yes, but with the following clarification:

- (1) Melting point of Uranium Oxide fuel is dependent on burnup:

Fresh UO₂ Melting point (MP) is 4980 degrees F (2750 degree C).

After a spike in the MP during initial burnup (less than 5 GWd/MT) of up to about 5170 degrees F, the MP decreases, namely,

At a burnup of 27 GWd/MT the MP is 5070 degrees F (2800 degrees C)

At a burnup of 50 GWd/MT the MP is 5030 degrees F (2776 degrees C)

- (2) Melting point of Zircaloy: 3320 degrees F (1827 degrees C)

Reference: "Thermal Analysis of Pressurized Water Reactors", Third Edition, L. S. Tong and Joel; Weisman, American Nuclear Society, 1996.

Q2b(2) And since many sources have indicated that the fuel in all 3 units has melted, what relevance do the 1000 and 2000 degree thresholds you cite have?

Answer: For the Japan's case, since the theory of fuel melting was not verified by direct examination, the staff does not know whether fuel was actually melted or what happened after that. Even if the fuel melted, there could be different scenarios and impacts on the reactor pressure vessel. For example, in the Three Mile Island Accident, the fuel melted, but the reactor pressure vessel was not breached, indicating the melted mixture was not hot enough to melt a hole in the reactor pressure vessel bottom with a melting point around 2000 degree F.

Q2b(3) Why wouldn't the seals melt if the fuel does?

Answer: Due to the design (e.g., geometric location and the distance between the control rod drive seals and the postulated molten mixture location), there is not a direct link between fuel melting and seal failure.

Q2b(4) If they did, would all leaks still be precluded or would they just be limited by other barriers?

Answer: If the control rod drive seals broke down, it will not cause leaking of the reactor vessel because the seals are not part of the pressure boundary.

3. Why are radiation levels on Unit 1 increasing and why is pressure on Unit 1 increasing?

- a. The drywell (DW) radiation detector monitoring unit 1 radiation is believed to have failed after the earthquake on April 7th. Therefore any data from this radiation monitor would be suspect.
- b. The secondary containment (S/C) radiation monitor on Unit 1 has been dropping since April 7th. (Indicating radiation conditions are improving)
 - i. On April 7th the detector was reading 12.9 Si/hr (1290 rem/hr)
 - ii. On April 14th the detector was reading 10.4 Si/hr (1040 rem/hr)
Could you send me all the readings you have for this monitor? It doesn't seem to be included in your daily plant status reports (or, if it is, I couldn't find it so perhaps you could direct me).

The NISA webpage contains information on plant parameters

http://www.nisa.meti.go.jp/itiran/new_genshi_index.html

- c. Pressure on Unit 1 has been relatively stable for several days. This would indicate that condition of the Unit 1 reactor has not changed for several days. This is not what I see for the past few days. I've seen a slow increase – however, this has been attributable in your plant status reports to N2 injections rather than anything else. However, JAIF has also reported that the N2 injections have not led to the expected pressure increase and that a leak in primary containment is suspected. I am confused by this conflict – on the one hand, your reports say that the pressure increase in the daily reports is due to N2 and not H2. In this document, you're saying the pressure is stable. JAIF is saying pressure is increasing but not by enough – got any clarity?

Unit 1 pressure indication is stable as of 4/20/2011.

4. What cools the Recirc pump seals?

- a. Recirc pump seal cooling is from both Reactor Building Closed Cooling Water (RBCCW) cooling water and CRD seal purge.

5. What are the results of the GE-Hitachi (GEH) analysis (once the results become known) on whether or not there was a Reactor Pressure Vessel (RPV) breach on Unit 2?
- a. This information will not be available until either late Friday or early next week. Is this available yet? I saw that Japan had released something that speculated the fuel had melted into pellets but I didn't see anything about breaches.

This information is not final. The data to support further more accurate analysis of this phenomenon is held by TEPCO and is not available to the NRC. Therefore any determination of Vessel Breach would be premature at this time.

From: OST01 HOC
Sent: Thursday, April 21, 2011 11:49 AM
To: FOIA Response.hoc Resource
Subject: FW: REPLY: Coordinating Call with Japan Team on Key Taskers

From: Virgilio, Martin
Sent: Thursday, April 21, 2011 9:11 AM
To: Tracy, Glenn; OST01 HOC; LIA08 Hoc; RST01 Hoc; Hoc, PMT12
Cc: Holonich, Joseph; Zimmerman, Roy; Uhle, Jennifer; Boger, Bruce; Johnson, Michael; Weber, Michael; Holahan, Patricia; Casto, Chuck; Reynolds, Steven; Skeen, David; Hiland, Patrick; Wiggins, Jim; Evans, Michele
Subject: REPLY: Coordinating Call with Japan Team on Key Taskers

Glenn

Thanks for taking this on and completing the assignment.

Trish

Please determine how we can build a similar systematic review of work activities and their priority into our ops center site team support process (maybe the transition plan). We should be reviewing the ongoing work and priorities at each shift turnover and confirming alignment with the site team daily.

Marty

From: Tracy, Glenn
Sent: Wednesday, April 20, 2011 10:23 PM
To: OST01 HOC; LIA08 Hoc; RST01 Hoc; Hoc, PMT12
Cc: Holonich, Joseph; Zimmerman, Roy; Uhle, Jennifer; Boger, Bruce; Johnson, Michael; Virgilio, Martin; Weber, Michael; Holahan, Patricia; Casto, Chuck; Reynolds, Steven; Skeen, David; Hiland, Patrick
Subject: Coordinating Call with Japan Team on Key Taskers

FYI, during a call this evening, higher priority taskers, documents and deliverables were discussed with Chuck Casto. This action was intended to verify priorities and support weekend watchbill decision-making by senior leadership.

Per Chuck, priorities from the NRC Japan team's perspective are: (with tasker numbers in parentheses)

Technical Taskers:

- 1.) The RST technical safety issues regarding: bypass to suppression pool (#4896); inerting Unit 3 containment (#4902); and Unit 2 turbine bldg radioactive water (#4899); current due dates of 4/26 are acceptable.
- 2.) RST review of the JNES spent fuel analysis to see if any other scenarios were possible to explain the explosion in the Unit 4 reactor building - see JNES presentation (#4922); due 4/21.

Documents (in order of priority to the NRC Japan Team):

- 1.) Detailed comment of Roadmap to Restoration (#4839); by 4/22

JJJ | 393

2.) RST Assessment Rev 2 (#4769); 4/27 to consortium

3.) Interim Comprehensive Safety Assessment (#4775); 4/29 (concern it will become stale, if continues past this date)

4.) Composite (Re-entry) Document (#4810); 4/21 (while lower priority to Japan Team, due to need to first achieve site stability, not lowest from agency perspective and a leadership priority – so maintain current level of effort). [Chuck also requests we review recent UK and German re-entry decisions as we close this item.]

No new issues were identified during the discussion that are not under consideration or being formally tracked. The OST Lead updated taskers/matrix to reflect these coordinated dates and document further clarity/revisions. Lastly, the results of this effort was discussed with NRR POC, Dave Skeen. Thanks.

Subject: Consortium Conference Call
Location: BACC Conference Room

Start: Thu 4/21/2011 8:00 PM
End: Thu 4/21/2011 9:00 PM

Recurrence: Weekly

Meeting Status: Accepted

Organizer: Abbot, Charles Spencer (TDY/DAO)

JJJ/394

From: OST01 HOC
Sent: Thursday, April 21, 2011 7:13 PM
To: Tracy, Glenn
Subject: RE: FYI - LETTER OF THANKS FROM SENATOR MIKULSKI

thanks

From: Tracy, Glenn
Sent: Thursday, April 21, 2011 7:07 PM
To: Hoc, PMT12; RST01 Hoc; LIA08 Hoc; OST01 HOC
Cc: Johnson, Michael; Uhle, Jennifer; Kokajko, Lawrence; Wiggins, Jim; Dyer, Jim
Subject: FW: FYI - LETTER OF THANKS FROM SENATOR MIKULSKI

Request wide distribution and thanks to those who have supported. Please print and post at your station. Thank you.

From: Weber, Michael
Sent: Thursday, April 21, 2011 4:13 PM
To: OST01 HOC; Casto, Chuck; Reynolds, Steven
Cc: Zimmerman, Roy; Boger, Bruce; Tracy, Glenn; Holonich, Joseph; Skeen, David; Trapp, James
Subject: FYI - LETTER OF THANKS FROM SENATOR MIKULSKI

Please share the attached letter with our HQ and Japan Site Team. Not every day we receive such a complimentary and heartfelt letter. Well done.

JJJ/395

BARBARA A. MIKULSKI
MARYLAND

SUITE 503
HART SENATE OFFICE BUILDING
WASHINGTON, DC 20510-2003

(202) 224-4654
TDD: (202) 224-6223

United States Senate
WASHINGTON, DC 20510-2003

April 20, 2011

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

Dear Chairman Jaczko,

Thank you once again to you and your staff for the outstanding visit on Monday. The wealth of knowledge displayed by your team was highly impressive. The informative briefing and operations center tour were top-notch, and I greatly appreciated the opportunity to learn more about the fantastic work being done by the staff at the Nuclear Regulatory Commission each day.

The NRC is being relied upon to provide support and guidance during the nuclear crisis in Japan, and is working hard to keep domestic plants safe right here in our backyard. The essential work of these federal employees is paramount as we work to ensure a safe energy future. They are working around the clock and deserve the utmost appreciation for their service.

Please thank the staff once again for all that they do. They have my sincere gratitude.

Sincerely,



Barbara A. Mikulski
United States Senator

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1629 THAMES STREET
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(410) 962-4510

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(410) 546-7711

<http://mikulski.senate.gov/>

From: Weber, Michael
Sent: Thursday, April 21, 2011 4:13 PM
To: OST01 HOC; Casto, Chuck; Reynolds, Steven
Cc: Zimmerman, Roy; Boger, Bruce; Tracy, Glenn; Holonich, Joseph; Skeen, David; Trapp, James
Subject: FYI - LETTER OF THANKS FROM SENATOR MIKULSKI
Attachments: Tab A Sen. Barbara Mikulski 04-20-11.pdf

Please share the attached letter with our HQ and Japan Site Team. Not every day we receive such a complimentary and heartfelt letter. Well done.

BARBARA A. MIKULSKI
MARYLAND

SUITE 503
HART SENATE OFFICE BUILDING
WASHINGTON, DC 20510-2003

(202) 224-4054
TDD: (202) 224-5223

United States Senate
WASHINGTON, DC 20510-2003

April 20, 2011

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

Dear Chairman Jaczko,

Thank you once again to you and your staff for the outstanding visit on Monday. The wealth of knowledge displayed by your team was highly impressive. The informative briefing and operations center tour were top-notch, and I greatly appreciated the opportunity to learn more about the fantastic work being done by the staff at the Nuclear Regulatory Commission each day.

The NRC is being relied upon to provide support and guidance during the nuclear crisis in Japan, and is working hard to keep domestic plants safe right here in our backyard. The essential work of these federal employees is paramount as we work to ensure a safe energy future. They are working around the clock and deserve the utmost appreciation for their service.

Please thank the staff once again for all that they do. They have my sincere gratitude.

Sincerely,



Barbara A. Mikulski
United States Senator

SUITE 400
1629 THAMES STREET
BALTIMORE, MD 21231
(410) 962-4510

SUITE 202
60 WEST STREET
ANNAPOLIS, MD 21401-2448
(410) 263-1805

SUITE 406
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ROOM 203
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(301) 797-2826

SUITE 200
212 MAIN STREET
SALISBURY, MD 21801-2403
(410) 546-7711

<http://mikulski.senate.gov/>

From: Harrington, Holly
To: RST01B Hoc
Subject: RE: Natural Phenomena Response Requirements for Region IV NPPs
Date: Friday, March 11, 2011 2:35:00 PM

Attachment?

From: RST01B Hoc
Sent: Friday, March 11, 2011 2:35 PM
To: Monninger, John; Batkin, Joshua; Brenner, Eliot; Hayden, Elizabeth; Harrington, Holly; McDermott, Brian
Subject: Natural Phenomena Response Requirements for Region IV NPPs

The is the Natural Phenomena Response Requirements for Region IV NPPs, as requested by the Chairman. Similar info is available for sites in other regions.

Rick Hasselberg,
Sr. Emergency Response Coordinator
Response Program Manager
Reactor Safety Team
Office of Nuclear Security & Incident Response
U.S. Nuclear Regulatory Commission
rick.hasselberg@nrc.gov
Office - 301-415-6419

JJJ/396

From: Akstulewicz, Brenda
To: Uselding, Lara; Brenner, Eliot; Harrington, Holly; Burnell, Scott
Subject: RE: Updated with earthquake info RIVDC TSUNAMI .docx
Date: Friday, March 11, 2011 10:35:06 AM

Yes, not a problem!

From: Uselding, Lara
Sent: Friday, March 11, 2011 10:33 AM
To: Brenner, Eliot; Akstulewicz, Brenda; Harrington, Holly; Burnell, Scott
Subject: Updated with earthquake info RIVDC TSUNAMI .docx
Importance: High

Can you all add the HQ boiler and any contact info you require for you all?

Thanks!

Lara

JJJ/397

From: Uselding, Lara
To: Brenner, Eliot; Burnell, Scott; Harrington, Holly
Cc: Akstulewicz, Brenda
Subject: updated! DRAFT PRESS RELEASE FOR REVIEW RIVDC TSUNAMI .docx
Date: Friday, March 11, 2011 10:36:44 AM
Attachments: 3 11 QUAKE talk pts.docx
Importance: High

Updated: Here we go! FYI, RIV Linda Howell is getting requests from NSIR for these talkers so you all may want to share with them.....

From: Brenner, Eliot
Sent: Friday, March 11, 2011 9:32 AM
To: Uselding, Lara; Burnell, Scott; Harrington, Holly
Cc: Akstulewicz, Brenda
Subject: RE: DRAFT PRESS RELEASE FOR REVIEW RIVDC TSUNAMI .docx

Talking points are good. Item re tsunami should be changed to say Diablo is "well protected against possible effects of tsunamis." Xxx well protected, sted "safe."

From: Uselding, Lara
Sent: Friday, March 11, 2011 10:24 AM
To: Brenner, Eliot; Burnell, Scott; Harrington, Holly
Cc: Akstulewicz, Brenda
Subject: DRAFT PRESS RELEASE FOR REVIEW RIVDC TSUNAMI .docx
Importance: High

In the interest of time, I sent with RIV header but change to HQ header and add contacts for folks at Eliot's request.

No. IV-11-007

Contact: Lara Uselding (817) 276-6519

E-Mail: OPA4.Resource@nrc.gov

NRC MONITORS NOTICE OF UNUSUAL EVENT AT DIABLO CANYON POWER PLANT

The U.S. Nuclear Regulatory Commission is monitoring the notice of unusual event (NOUE) at the Diablo Canyon Power Plant, located near San Luis Obispo, Calif. The NRC entered Monitoring mode at 9:46 a.m. EST in response to the 8.9 magnitude earthquake in Japan and subsequent tsunami warnings. NRC Headquarters is monitoring Japan's response to the current situation.

Pacific Gas and Electric Co. (PG&E) declared a NOUE at 1:23 a.m. PST today after

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receiving a Tsunami Warning from the West California Emergency Management Agency. The tsunami warning was generated after an estimated 8.9 magnitude earthquake occurred off the eastern Japanese coast.

NRC Chairman Gregory Jaczko said, "The NRC is closely monitoring this situation as it unfolds with respect to nuclear facilities within the United States. NRC staff is working closely with its resident inspectors who are on site to ensure safe operating conditions at plants affected by the tsunami warnings."

The licensee reported the Diablo Canyon plant is stable and both units remain on line. The plant is well protected against tsunami conditions as required by NRC regulations.

###

News releases are available through a free *listserv* subscription at the following Web address: <http://www.nrc.gov/public-involve/listserver.html>. The NRC homepage at www.nrc.gov also offers a SUBSCRIBE link. E-mail notifications are sent to subscribers when news releases are posted to NRC's Web site.

OPA

TALKING POINTS

MARCH 11, 2011 JAPAN EARTHQUAKE AND WEST COAST TSUNAMI

As of 4/26/2011 2:55 PM

- The Nuclear Regulatory Commission is following events on the U.S. West Coast and U.S. Pacific interests in the wake of the March 11 earthquake in Japan and associated tsunami.
- The NRC resident inspector at the Diablo Canyon nuclear power plant on the central California coast is on site and keeping track of the plant's response to the tsunami warning for that area. The plant is operating normally but has declared an Unusual Event; plant employees are taking preplanned actions to prepare for the predicted tsunami effects. The licensee continues to monitor the event to assess whether additional planned actions,

JJJ/399

to include plant shutdown, are appropriate. NRC resident inspector staff is on site monitoring the licensee's activities.

- The San Onofre nuclear power plant on the southern California coast is operating normally and is in the tsunami advisory area.
- The Humboldt Bay spent fuel storage site on the northern California coast is in the tsunami warning area; site personnel have informed the NRC they are prepared for possible effects.
- The tsunami is expected to miss NRC-regulated nuclear materials sites in Hawaii and Alaska; the NRC remains in contact with these facilities.
- The NRC has regulations in place that require licensees to design their plants to withstand the effects of tsunamis.
(10CFR 50, Appendix A, Criterion 2, "Design bases for protection against natural phenomenon" requires licensees to design structures, systems, and components important to safety to withstand the effects of natural phenomenon, including tsunamis.)
- The Diablo Canyon plant is well protected against a tsunami. The plant's ability to withstand large waves and the maximum wave height at the intake structure were determined through extensive and detailed scaled model wave testing. To prevent water from entering the intake structure and affecting the pump motors, the structure is equipped with a snorkel valve that can close.
- Nuclear power plants are built to withstand environmental hazards, including earthquakes. Even those plants that are located outside of areas

with extensive seismic activity are designed for safety in the event of such a natural disaster.

- The NRC requires that safety-significant structures, systems, and components be designed to take into account the most severe natural phenomena historically reported for the site and surrounding area. The NRC then adds a margin for error to account for the historical data's limited accuracy. In other words, the licensing bases for existing nuclear power plants are based on historical data from the area's maximum credible earthquake, with an additional margin included.

From: Akstulewicz, Brenda
To: Uselding, Lara; Brenner, Eliot; Harrington, Holly; Burnell, Scott
Cc: Howell, Linda
Subject: RE: Updated talkers 3_11_QUAKE_talk_pts.docx
Date: Friday, March 11, 2011 10:38:34 AM

FYI - I have saved these:

G:-03_11-QUAKE_talk_pts.docx It is the first document after the list of folders.

From: Uselding, Lara
Sent: Friday, March 11, 2011 10:26 AM
To: Brenner, Eliot; Akstulewicz, Brenda; Harrington, Holly; Burnell, Scott
Cc: Howell, Linda
Subject: Updated talkers 3_11_QUAKE_talk_pts.docx

JJJ/400

OIP_ITServices Resource

From: Schwartzman, Jennifer
Sent: Friday, April 22, 2011 10:46 AM
To: OIP_ITServices Resource
Subject: FW: TEPCO Considers Using Helos to douse spent fuel rods on Fukushima Dai-ichi Unit 4

From: Fladeboe, Jan P [mailto:FladeboeJP@state.gov]
Sent: Tuesday, March 15, 2011 2:43 PM
To: ISN-NESS-DL; TaskForce-1
Cc: Shaffer, Mark R; Duncan, Aleshia; Scheland, Mark DL; Wood, Robert A; Schwartzman, Jennifer; Astwood, Heather; McClelland, Vince; Heinrich, Ann
Subject: TEPCO Considers Using Helos to douse spent fuel rods on Fukushima Dai-ichi Unit 4

From the NY Times...

TEPCO is also concerned about the spent fuel storage at Units 5 and 6

Workers Strain to Retake Control After Blast and Fire at Japan Plant

By KEITH BRADSHER and HIROKO TABUCHI

TOKYO — A small crew of technicians braved radiation and fire through the day on Tuesday as they fought to prevent three nuclear reactors in northeastern Japan from melting down and stop storage ponds loaded with spent uranium fuel pods from bursting into flames.

Tokyo Electric Power Company officials announced on Tuesday evening that they would consider using helicopters in an attempt to douse with cold water a boiling rooftop storage pond for spent uranium fuel rods. The rods are still radioactive and potentially as hot and dangerous as the fuel rods inside the reactors if not kept submerged in water.

"The only ideas we have right now are using a helicopter to spray water from above, or inject water from below," a power company official said at a news conference. "We believe action must be taken by tomorrow or the day after."

Hydrogen gas bubbling up from chemical reactions set off by the hot fuel rods produced a powerful explosion on Tuesday morning that blew a 26-foot-wide hole in the side of reactor No. 4 at the Fukushima Daiichi nuclear power plant. A fire there may have been caused by machine oil in a nearby facility, inspectors from the United States Nuclear Regulatory Commission said, according to an American official.

Concern remained high about the storage ponds at that reactor and at reactors 5 and 6. All three of those reactors at the plant, 140 miles northeast of Tokyo, were not operating on Friday afternoon when an offshore earthquake with a magnitude now estimated at 9.0 suddenly shook the site. A tsunami with waves up to 30 feet high rolled into the northeast Japanese coastline minutes later, swamping the plant.

JSS | 401

At least 750 workers evacuated on Tuesday morning after a separate explosion ruptured the inner containment building at reactor No. 2 at the Daiichi plant, which was crippled by Friday's earthquake and tsunami. The explosion released a surge of radiation 800 times more intense than the recommended hourly exposure limit in Japan.

But 50 workers stayed behind, a crew no larger than would be stationed at the plant on a quiet spring day. Taking shelter when possible in the reactor's control room, which is heavily shielded from radiation, they struggled through the morning and afternoon to keep hundreds of gallons of seawater a minute flowing through temporary fire pumps into the three stricken reactors, where overheated fuel rods continued to boil away the water at a brisk pace.

By early afternoon radiation levels had plunged, according to the International Atomic Energy Agency in Vienna. Workers have released surges of radiation each time they bleed radioactive steam from the troubled reactors in an attempt to manage the pressure inside the reactors, but the reactors are not yet releasing high levels of radiation on a sustained basis, Japanese officials said.

The United States military revised its plans as radiation from the plant worsened. Some American warships due to arrive at the tsunami-shattered northeast coast of Honshu Island were diverted to the west coast instead because of radiological concerns, the Navy said. The Navy also promised to continue relief missions even though several more helicopter crews were testing positive for low-level exposure to radiation, and even as American military personnel and their families at the Yokosuka and Atsugi bases were encouraged to take precautions against radiation exposure.

Prime Minister Naoto Kan warned in a nationally televised address late Tuesday morning of rising radiation.

The chief cabinet secretary, Yukio Edano, urged people who live within about 18 miles of the plant to take precautions. "Please do not go outside, please stay indoors, please close windows and make your homes airtight," he said. More than 100,000 people are believed to be in the area.

The sudden turn of events, after an explosion Monday at one reactor and then an early-morning explosion Tuesday at yet another — the third in four days at the plant — already made the crisis at the plant the worst nuclear accident since the Chernobyl reactor disaster a quarter century ago. It had become impossible for workers to remain at many areas within the plant for extended periods, the nuclear watchdog said. Japan has requested assistance from the United States Nuclear Regulatory Commission, as well as the International Atomic Energy Agency.

In Tokyo the metropolitan government said Tuesday it had detected radiation levels 20 times above normal over the city, though it stressed that such a level posed no immediate health threat and that readings had dropped since then. The explosion in reactor No. 2, a little after 6 a.m. on Tuesday, particularly alarmed Japanese officials and nuclear power experts around the world because it was the first detonation at the plant that appeared to occur inside one of the primary containment buildings.

Those buildings are fortress-like structures of steel and reinforced concrete, designed to absorb the impact of a plane crash and minimize radiation leaks. After a series of conflicting reports about how much damage was inflicted on the reactor after that blast, Yukio Edano, the chief cabinet secretary, said that "there is a very high probability that a portion of the containment vessel was damaged."

Japanese officials subsequently said that the explosion had damaged a doughnut-shaped steel container of water, known as a torus, that surrounds the base of the reactor vessel inside the primary containment building.

Ruptures in the torus are serious, said Michael Friedlander, a senior nuclear power plant operator for 13 years at three plants in the United States, including three years at a General Electric boiling water reactor very similar to the ones in trouble in Japan. But the torus is not as important as the reactor vessel itself, which has 6.7-inch-thick steel walls and 8.4-inch-thick steel for its roof and floor, and is designed to hold very high-pressure steam as well as the uranium fuel rods.

The reactor vessel has 20 safety valves that during a shutdown of the reactor inject steam into a million-gallon "suppression pool" of water in a steel torus immediately underneath it.

"Imagine if you had a big pressure cooker and you had a tube off the pressure cooker into a big tub of water — the suppression pool is the tub of water," said Mr. Friedlander, a defender of nuclear power who is now a money manager in Hong Kong.

Steam vented into the suppression pool from the reactor vessel is not supposed to be radioactive. But the steam becomes radioactive, and potentially very radioactive, if the fuel rods in the reactor vessel above have begun to melt.

The atmosphere in the primary containment building, around the reactor vessel and above the suppression pool, is supposed to consist of inert nitrogen, with no oxygen at all. An inert atmosphere is used in the primary containment building to avoid the risk of oxygen explosions with hydrogen if the reactor starts producing much larger quantities of hydrogen gas than usual, which is highly combustible with oxygen.

The blast on Tuesday morning that broke the suppression pool at reactor No. 2 shows that the reactor vessel is producing hydrogen and that oxygen may have somehow entered the atmosphere above the suppression pool, Mr. Friedlander said.

The primary containment building, with its massive steel and concrete walls, is housed with various ducts, electrical equipment and other gear inside a bigger building, the secondary containment building. Explosions at reactors No. 1 and No. 3 blew the roofs off those reactors' secondary containment buildings, which are not designed to contain hydrogen explosions, unlike primary containment buildings.

The storage pond blast at reactor No. 4 also appears to have ripped a hole in a secondary containment building, based on initial descriptions from Japanese officials.

A senior nuclear industry executive who insisted on anonymity said that a compromised suppression pool made it much harder to bleed high-pressure steam from an overheating nuclear reactor so as to pump more seawater into it. "How are you going to bleed into something that has got a big hole in it?" he said.

Mr. Friedlander was more optimistic, saying that the rupture in the primary containment building was much more likely to have occurred above the water line of the suppression pool than below it. "The likelihood is that it is still holding water," and so can be used for some venting of vapor from the reactor, he said.

But with the atmosphere above the suppression pool no longer inert, small explosions may accompany the release of further gas from the reactor as the hydrogen reacts with oxygen.

Earlier, industry executives in close contact with officials in Japan expressed extreme concern that the authorities were close to losing control over the fuel melting in three reactors at Daiichi, especially at the crippled No. 2 reactor where the containment vessel was damaged.

Even if a full meltdown is averted, Japanese officials have been facing unpalatable options. One was to continue flooding the reactors and venting the resulting steam, while hoping that the prevailing winds did not turn south toward Tokyo or west, across northern Japan to the Korean Peninsula. The other was to hope that the worst of the overheating was over, and that with the passage of a few more days the nuclear cores would cool enough to essentially entomb the radioactivity inside the plants, which clearly will never be used again. Both approaches carried huge risks.

While Japanese officials made no comparisons to past accidents, the release of an unknown quantity of radioactive gases and particles — all signs that the reactor cores were damaged from at least partial melting of fuel — added considerable tension to the effort to cool the reactors.

“It’s way past Three Mile Island already,” said Frank von Hippel, a physicist and professor at Princeton. “The biggest risk now is that the core really melts down and you have a steam explosion.”

Keith Bradsher reported from Hong Kong, and Hiroko Tabuchi from Tokyo. David E. Sanger and Matthew L. Wald contributed reporting from Washington.

Jan Peter Fladeboe
Office of Nuclear Energy, Safety and Security
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fladeboejp@state.gov

This email is UNCLASSIFIED.

OIP_ITServices Resource

From: Schwartzman, Jennifer
Sent: Friday, April 22, 2011 9:59 AM
To: OIP_ITServices Resource
Subject: FW: Powerful quake rocks northern Japan - Onagawa reactor automatically shuts down

From: Breskovic, Clarence
Sent: Friday, March 11, 2011 2:37 AM
To: Breskovic, Clarence
Subject: Powerful quake rocks northern Japan - Onagawa reactor automatically shuts down

Friday, March 11, 2011

Powerful quake rocks northern Japan

Kyodo News

A powerful earthquake with a magnitude of 7.9 rocked northeastern Japan on Friday, measuring the highest level intensity of 7 on the Japanese seismic scale, in Miyagi Prefecture, the Japan Meteorological Agency said. Local police said many people were injured in the 2:46 p.m. quake, with reports of fires coming not only from the prefectural capital of Sendai but also from Tokyo, some 300 kilometers from Sendai, where a prolonged and powerful temblor was also felt.

The Metropolitan Police Department said many people were injured when part of the Kudan Kaikan hall in Chiyoda Ward in central Tokyo collapsed.

The agency issued a rare warning of huge tsunami for the Pacific coastal region including Iwate Prefecture. Public broadcaster NHK said a large number of cars were washed away into the sea when a tsunami hit the Kamaishi port in Iwate Prefecture.

In Kyodo News' Sendai office, part of the ceiling collapsed and bookshelves and office equipment toppled over.

Fires occurred across a wide area, including at an ironworks in Chiba Prefecture.

Onagawa nuclear power plant in Miyagi Prefecture automatically halted operations following the quake. Its operator, Tohoku Electric Power Co., was checking whether any damage was caused.

A major blackout occurred across a wide area of northeastern Japan.

The quake affected the nation's key transportation systems, including Narita airport, which shut its runways for safety checks.

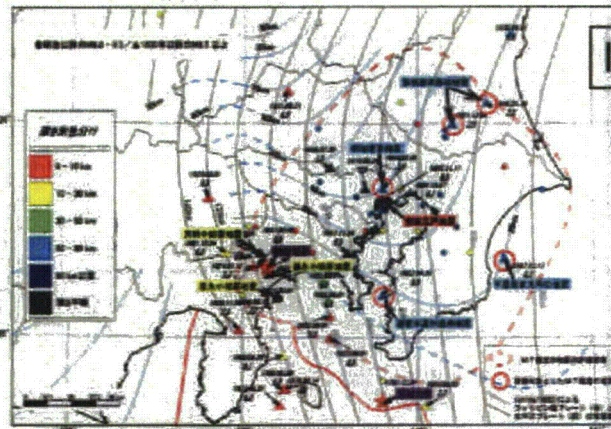
USGS earthquake map:

http://earthquake.usgs.gov/earthquakes/recenteqsww/Maps/10/140_35.php

<http://earthquake.usgs.gov/earthquakes/recenteqsww/Quakes/usc0001xka.php#details>

JJJ | 402

Expected EQ around Tokyo(b)



Deep damaging earthquakes

	M	depth
20 Jun 1894	7.0	80km
18 Jan 1895	7.2	40-80km
8 Dec 1921	7.0	53km
26 Apr 1922	6.8	71km
17 Dec 1987	6.7	58km

Inter / Intra plate Eqs (②~④)

Kanto EQ:

- Interplate EQ @ Sagami trough
- M7.9
- Possibility (30yrs): $\approx 0 \sim 2\%$
- (last event:A.D. 1923, recurrence time:200~400yrs)

South Kanto EQs (M7 level):

- somewhere in Kanto plain (depth 30~80km)
- M6.7~7.2
- Possibility (30yrs):70% (5EQs since 1895;avg. 24yrs.)

the Strong Ground Motion Prediction Method

Promoted the improvement & standardization of the prediction procedure

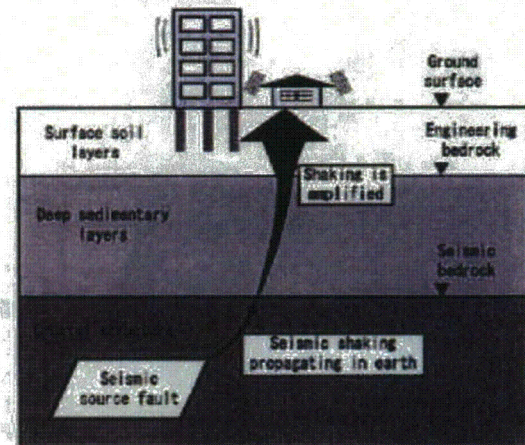


Published as a '**recipe**' for predicting strong ground motions

Enable anybody to obtain the same results

Use only **distance** & **amplified by surface soil layer**

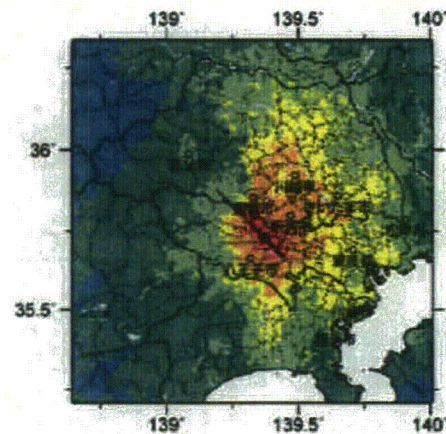
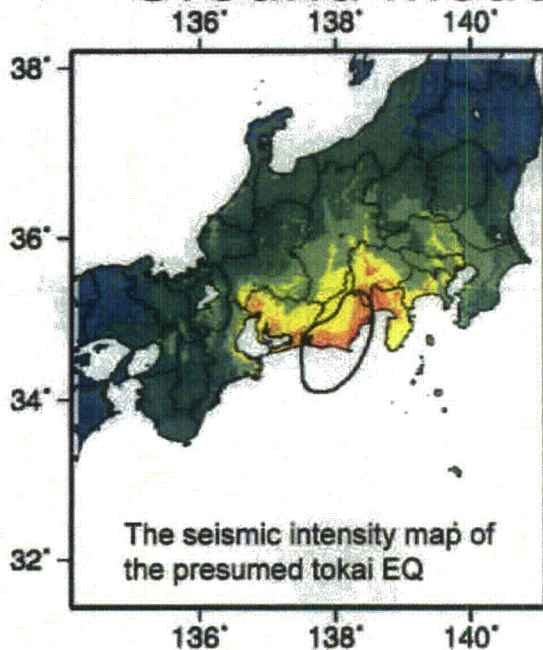
Conventional Method



consider **fault rupture model (asperity)** and **detailed subsurface structure**

Detailed Method

Ground Motion Prediction(1)



Seismic intensity scale (JMA scale)



Ground Motion Prediction(2)

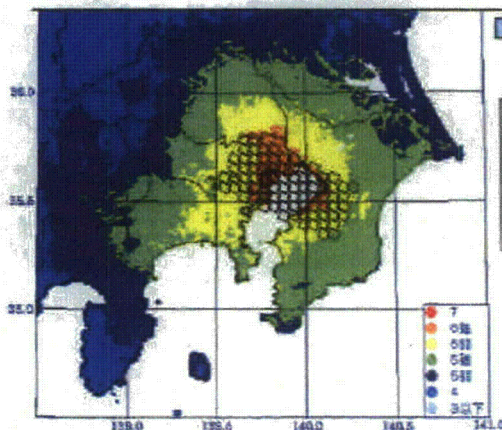
South Kanto EQs (M7 level):

•source(s) not identified

→ many possible scenarios

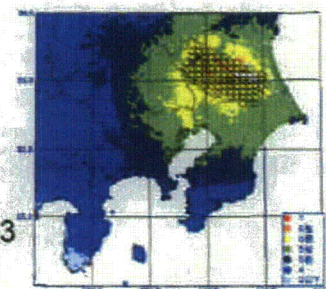
The worst scenario: M7.3
EQ at ④ in N. Tokyo bay

•Central disaster council discussed
scenarios & estimate damages

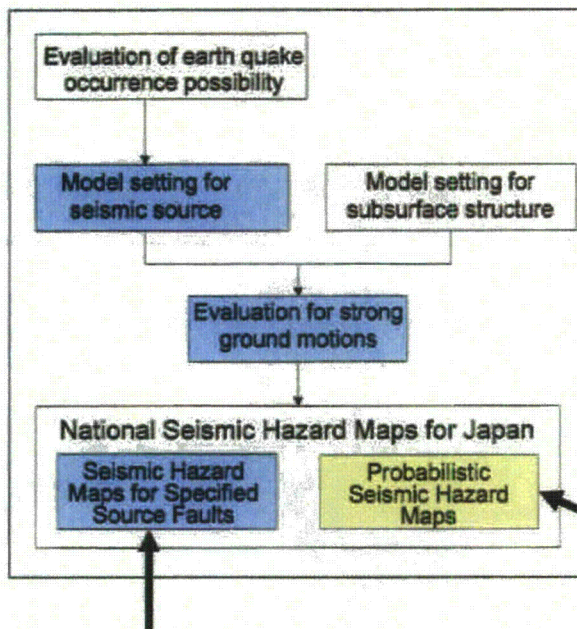


Worst case : winter evening, gale wind
Damaged / burned bldgs.: 850,000
The death toll : 11,000

Less severe scenario: M7.3
EQ at ④ in Ibaraki pref.



National Seismic Hazard Maps for Japan



Situation:

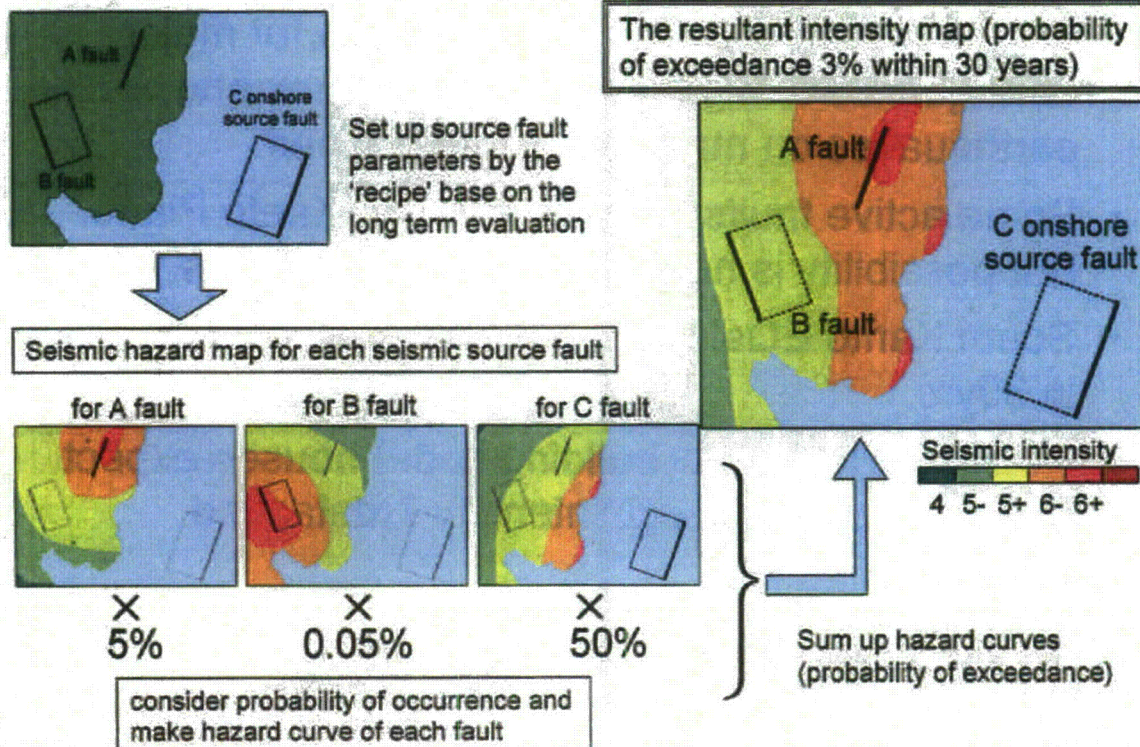
- the first version in March, 2005
- the revised version in March, 2006
- annual update of the 'probabilistic seismic hazard maps', reflecting added / updated long term evaluations & yearly update of the probability of occurrence of earthquakes

Prepare for a major revision of both maps in 2009

the probability of exceedance of the strong ground motion within a certain time period at every location

Focus on a specific source fault and indicate the strong ground motion of the surrounding areas when an earthquake occurs.

Making the Probabilistic Hazard Maps



An Example of the Probabilistic Hazard Maps

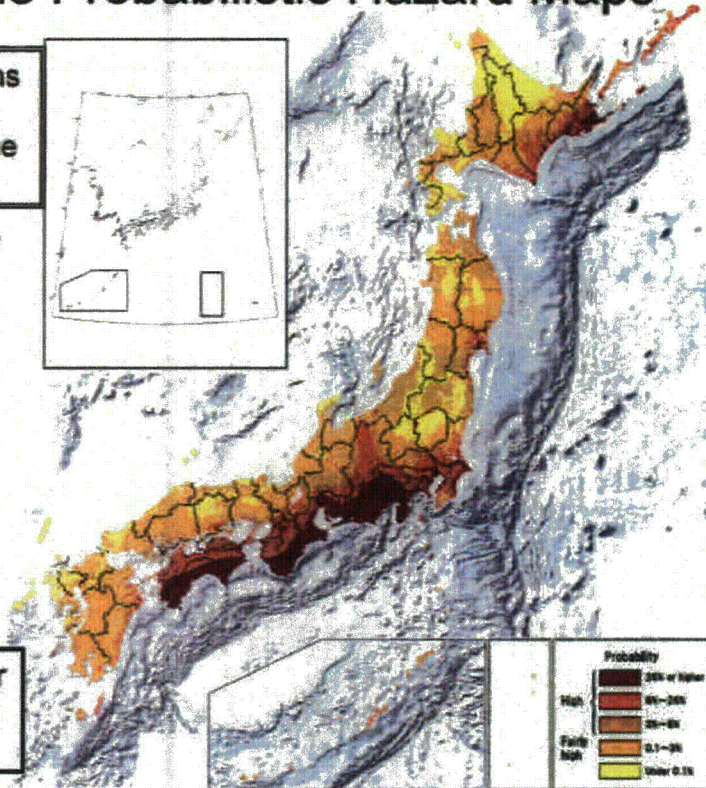
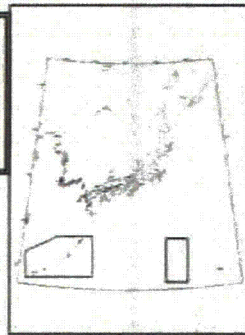
The probability of ground motions seismic intensity ≥ 6 Lower, occurring within 30 years from the present. (as of Jan. 1, 2008)

consider all type of earthquakes

- Large difference in the risk of strong motion by region
- $\geq 26\%$ at Pacific coastal areas (near the Nankai trough)
- Higher risk at the Kanto plain, near the Japan trench, and near the Kuril trench



Risk evaluation, Plan for disaster mitigation, Raise awareness for disaster prevention



Conclusions

- Long-term forecasts have been made for major earthquakes along the oceanic trenches and earthquakes on major active fault zones.
- Some active faults distributed in the Kanto Plane. But possibility is not high (< once at 1000yrs.)
- South Kanto EQs (M7 level) : pay attention (70% in 30yrs.)
- Newer (~1981 new building code) houses expect few damage ($\leq 2\%$ @ intensity 7(detached house))

The HERP HP (English) <http://www.jishin.go.jp/main/index-e.html>

OIP_ITServices Resource

From: Schwartzman, Jennifer
Sent: Friday, April 22, 2011 9:59 AM
To: OIP_ITServices Resource
Subject: FW: Japan: Onagawa and Fukushima plants shut down

From: Breskovic, Clarence
Sent: Friday, March 11, 2011 2:44 AM
To: Breskovic, Clarence
Subject: Japan: Onagawa and Fukushima plants shut down

Nuclear Plants Shut Down in Miyagi, Fukushima

Tokyo *Kyodo World Service* 0707 GMT 11 Mar 11

Tokyo, March 11 Kyodo -- (EDS: ADDING INDUSTRY MINISTRY INFO, INFO ON HOKKAIDO, FIXING OPERATOR) Nuclear plants on the Pacific coast in Miyagi and Fukushima prefectures have been automatically shut down Friday following a powerful earthquake that hit a wide area in northeastern Japan, the operators said.

There were no immediate reports from monitoring posts of fires or other abnormalities near the nuclear plants after the 2:46 p.m. quake, the industry ministry said.

The suspended power plants were the Onagawa plant in Miyagi Prefecture, operated by Tohoku Electric Power Co., and the Fukushima No. 1 and No. 2 plants in the adjacent Fukushima Prefecture, run by Tokyo Electric Power Co., according to the companies.

Tokyo Electric also said it kept operating the Kashiwazaki-Kariwa nuclear plant on the Sea of Japan coast in Niigata Prefecture, while Hokkaido Electric Power Co. reported no problems at its Tomari No. 1, No. 2 and No. 3 plants in the northernmost main island.

There were no immediate signs of any problems at the Hamaoka nuclear plant on the Pacific coast in Shizuoka Prefecture, southwest of Tokyo, the prefectural government said.

More USGS data:

Magnitude 7.1 - OFF THE EAST COAST OF HONSHU, JAPAN

2011 March 11 06:25:50 UTC

<http://earthquake.usgs.gov/earthquakes/recenteqsww/Quakes/usc0001xig.php#details>

JJJ | 403

OIP_ITServices Resource

From: Schwartzman, Jennifer
Sent: Friday, April 22, 2011 9:59 AM
To: OIP_ITServices Resource
Subject: FW: Earthquake/Tsunami in Tokyo

From: Shaffer, Mark R [<mailto:ShafferMr@state.gov>]
Sent: Friday, March 11, 2011 3:54 AM
To: Schwartzman, Jennifer; Mamish, Nader
Subject: FW: Earthquake/Tsunami in Tokyo

FYI, there was an 8.9-magnitude earthquake 231 miles north of Tokyo that triggered several tsunamis. The power plants were shut down and the story is still developing.

<http://www.cnn.com/2011/WORLD/asiapcf/03/11/japan.quake/index.html?hpt=T1&iref=BN1>

This email is UNCLASSIFIED.

JJS/404

OIP_ITServices Resource

From: Schwartzman, Jennifer
Sent: Friday, April 22, 2011 9:59 AM
To: OIP_ITServices Resource
Subject: FW: Japan earthquake/tsunami - more reactors shut down

From: Breskovic, Clarence
Sent: Friday, March 11, 2011 3:38 AM
To: Breskovic, Clarence
Subject: Japan earthquake/tsunami - more reactors shut down

Powerful Quake Hits Northeastern Japan

Tokyo, March 11 (Jiji Press) -- An extremely powerful earthquake hit the northeastern Japan region of Tohoku at 2:46 p.m. Friday (5:46 a.m. GMT).

The quake, which also rocked a wide range of areas including Tokyo, eastern Japan, measured 7, the upper limit of the Japanese seismic intensity scale, in northern Miyagi Prefecture in the Tohoku region. Its magnitude was estimated at 7.9, the Meteorological Agency said.

The agency issued a heightened tsunami alert to residents in the prefectures of Iwate, Miyagi and Fukushima along the Pacific coast.

A tsunami with an estimated height of more than 10 meters reached the shore of Miyagi Prefecture, the agency said.

The focus of the quake is located off Miyagi Prefecture and is 10 kilometers deep.

Tohoku Electric Power Co. halted its Onagawa nuclear power plant, according to the industry ministry's Nuclear and Industrial Safety Agency.

Tokyo Electric Power Co. officials said the No. 1 to No. 3 reactors of its first Fukushima nuclear plant was shut down automatically.

Operations of the firm's second Fukushima plant's No. 1 to No. 4 reactors were also suspended.

Japan Atomic Power Co. halted its Tokai nuclear power plant in Ibaraki Prefecture.

According to Miyagi police, many portions of the Tohoku Expressway were damaged.

The Tokyo Fire Department reported several injuries in central Tokyo and fires in 10 places including Daiba and Ikebukuro.

Tohoku Electric said power outage affects all areas in Aomori, Akita and Iwate Prefectures and almost all areas in Yamagata and Miyagi Prefectures.

JJJ/405

OIP_ITServices Resource

From: Schwartzman, Jennifer
Sent: Friday, April 22, 2011 9:59 AM
To: OIP_ITServices Resource
Subject: FW: Japan earthquake: Government Says No radioactive leaks at Tohoku nuke plants

From: Breskovic, Clarence
Sent: Friday, March 11, 2011 3:29 AM
To: Breskovic, Clarence
Subject: Japan earthquake: Government Says No radioactive leaks at Tohoku nuke plants

Govt: No radioactive leaks at Tohoku nuke plants

The government's Nuclear and Industrial Safety Agency says no abnormal levels of radiation have been reported at four nuclear power plants in the quake-hit Tohoku region.

Power companies have suspended the operation of the plants and are checking their safety.
NHK News, Friday, March 11, 2011 15:34 +0900 (JST)

JJJ/406

OIP_ITServices Resource

From: Schwartzman, Jennifer
Sent: Friday, April 22, 2011 9:59 AM
To: OIP_ITServices Resource
Subject: FW: Japan: Onagawa map and details

From: Breskovic, Clarence
Sent: Friday, March 11, 2011 2:50 AM
To: Breskovic, Clarence
Subject: Japan: Onagawa map and details

<http://world-nuclear.org/NuclearDatabase/reactordetails.aspx?id=27570&rid=CA833697-1FFF-4CBB-B729-74C88B99295B>

JJJ/407

OIP_ITServices Resource

From: Schwartzman, Jennifer
Sent: Friday, April 22, 2011 9:59 AM
To: OIP_ITServices Resource
Subject: FW: Japan: No Radiation Leaks Or Abnormalities - 11 reactors shut down

From: Breskovic, Clarence
Sent: Friday, March 11, 2011 4:06 AM
To: Breskovic, Clarence
Subject: Japan: No Radiation Leaks Or Abnormalities - 11 reactors shut down

No Radiation Leaks Or Abnormalities in Quake-hit Japan: Prime Minister Kan

Tokyo, March 11 Kyodo -- (EDS: RECASTING) Japan has detected no abnormalities such as radiation leakage at nuclear power plants in the country, Prime Minister Naoto Kan said Friday, following a powerful earthquake and aftershocks that hit a wide area on the Pacific coast of the northeastern region.

A total of 11 nuclear reactors were automatically shut down at the Onagawa plant, Fukushima No. 1 and No. 2 plants and Tokai No. 2 plant, the industry ministry said, adding there were no immediate reports from monitoring posts of fires or other abnormalities near the nuclear plants after the 2:46 p.m. quake.

Kan told a press conference, "Parts of nuclear plants were automatically shut down but we haven't confirmed any effects induced by radioactive materials outside the facilities." Tokyo Electric Power Co., which operates the Fukushima plants, said it kept operating the Kashiwazaki-Kariwa nuclear plant on the Sea of Japan coast in Niigata Prefecture, while Hokkaido Electric Power Co. reported no problems at its Tomari No. 1, No. 2 and No. 3 plants on the northernmost main island.

There were no immediate signs of any problems at the Hamaoka nuclear plant on the Pacific coast in Shizuoka Prefecture, southwest of Tokyo, the prefectural government said.

JJJ|408

OIP_ITServices Resource

From: Schwartzman, Jennifer
Sent: Friday, April 22, 2011 10:12 AM
To: OIP_ITServices Resource
Subject: FW: UNVIE Update

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

From: Shaffer, Mark R [<mailto:ShafferMr@state.gov>]
Sent: Saturday, March 12, 2011 1:09 PM
To: Foggie, Kirk; LIA02 Hoc; Doane, Margaret; Schwartzman, Jennifer
Subject: UNVIE Update

UNVIE has been information that the Japanese have begun injection of sea water into the reactor and that the process will take approximately 10 hours. DG Amano believes the Japanese (for the moment) have the situation under control. Tokyo has not yet asked the Agency to send personnel.

Amano video statement will go out shortly.

JJ/409

OIP_ITServices Resource

From: Schwartzman, Jennifer
Sent: Friday, April 22, 2011 10:28 AM
To: OIP_ITServices Resource
Subject: FW: Helloooo out there

From: Foggie, Kirk
Sent: Sunday, March 13, 2011 10:28 PM
To: Schwartzman, Jennifer; Henderson, Karen
Subject: RE: Helloooo out there

Hey,
The email systme in the Ops Center slowed to a crawl, so i'm just opening webmail and seeing this message. Nancy just arrived so we are updating her on all the fun.

From: Schwartzman, Jennifer
Sent: Sunday, March 13, 2011 9:04 PM
To: Foggie, Kirk; Henderson, Karen; LIA02 Hoc
Subject: Helloooo out there

Hi guys,

Just wanted to say hi and see how things are going over there. The latest from IAEA (which has just appeared on my facebook) is pretty sobering, though most people leaving comments are characterizing it as "good news."

I'm pasting it below on the off chance you haven't already seen it. I'm also making a pitch on behalf of my friend Mark that you tell your successors this evening to please keep him in the loop on any new information received from the Japanese or otherwise. I imagine he's asleep right now (at least i hope) so it wouldn't so much matter for you right now.

Hope you're at least finding ways to make it fun!

J

Based on information provided by Japanese authorities, the IAEA can confirm the following information about the status of Units 1, 2 and 3 at Fukushima Daiichi nuclear power plant.

Unit 1 is being powered by mobile power generators on site, and work continues to restore power to the plant. There is currently no power via off-site power supply or backup diesel generators being provided to the plant. Seawater and boron are being injected into the reactor vessel to cool the reactor. Due to the explosion on 12 March, the containment building has been lost.

Unit 2 is being powered by mobile power generators on site, and work continues to restore power to the plant. There is currently neither off-site power supply nor backup diesel generators providing power to the plant. The reactor core is being cooled through reactor core isolation cooling, a procedure used to remove heat from the core. The current reactor water level is lower than normal but remains steady. The containment building is intact at Unit 2.

Unit 3 does not have off-site power supply nor backup diesel generators providing power to the plant. As the high pressure injection system and other attempts to cool the reactor core have failed, injection of water and boron into the reactor vessel has commenced. Water levels inside the reactor vessel increased steadily for a certain amount of time but readings indicating the water level inside the pressure vessel are no longer showing an increase. The reason behind this

is unknown at this point in time. To relieve pressure, venting of the containment started on 13 March at 9:20AM local Japan time. Planning is underway to reduce the concentration of hydrogen inside the containment building. The containment building is intact at Unit 3.

The IAEA is seeking information about the status of spent fuel at the Daiichi plant.

OIP_ITServices Resource

From: Schwartzman, Jennifer
Sent: Friday, April 22, 2011 10:26 AM
To: OIP_ITServices Resource
Subject: FW: Shift transition

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

From: LIA03 Hoc
Sent: Sunday, March 13, 2011 12:43 PM
To: Schwartzman, Jennifer
Subject: RE: Shift transition

That's what we have here. The question was asked whether we knew the source of the radiation - even at Onagawa or from Fukushima.

Brooke

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

From: Schwartzman, Jennifer
Sent: Sunday, March 13, 2011 12:39 PM
To: LIA03 Hoc
Subject: RE: Shift transition

Here's what IAEA says:

Japanese authorities have also informed the IAEA that the first (i.e., lowest) state of emergency at the Onagawa nuclear power plant has been reported by Tohoku Electric Power Company. The authorities have informed the IAEA that the three reactor units at the Onagawa nuclear power plant are under control.

As defined in Article 10 of Japan's Act on Special Measures Concerning Nuclear Emergency Preparedness, the alert was declared as a consequence of radioactivity readings exceeding allowed levels in the area surrounding the plant. Japanese authorities are investigating the source of radiation.

From: LIA03 Hoc
Sent: Sunday, March 13, 2011 12:32 PM
To: Schwartzman, Jennifer
Subject: RE: Shift transition

We've heard that as well.

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

From: Schwartzman, Jennifer
Sent: Sunday, March 13, 2011 12:31 PM
To: LIA02 Hoc; LIA03 Hoc
Subject: RE: Shift transition

Hi guys,

JJJ/411

Just read on IAEA's facebook page that a level one (lowest level) state of emergency was declared at Onagawa NPP but they did not say why. Have you heard anything from JNES-US lately?

From: LIA02 Hoc
Sent: Sunday, March 13, 2011 11:02 AM
To: Doane, Margaret; Schwartzman, Jennifer; LIA03 Hoc; Smith, Brooke; Virgilio, Martin
Cc: Owens, Janice
Subject: RE: Shift transition

He is en route now from northern Japan and should get there in a couple hours. Jim Trapp is in Tokyo. Brooke will get you details.

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

From: Doane, Margaret
Sent: Sunday, March 13, 2011 10:55 AM
To: LIA02 Hoc; Schwartzman, Jennifer; LIA03 Hoc; Smith, Brooke; Virgilio, Martin
Cc: Owens, Janice
Subject: Re: Shift transition

Do we have any time line? When did he e-mail?

Sent from an NRC Blackberry
Margaret Doane

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

From: LIA02 Hoc
To: Doane, Margaret; Schwartzman, Jennifer; LIA03 Hoc; Smith, Brooke; Virgilio, Martin
Cc: Owens, Janice
Sent: Sun Mar 13 10:53:23 2011
Subject: RE: Shift transition

This is what we know now. Ulises emailed that he has a military lift to Yakoto. He will then take a bus to Haneda followed by cab to the embassy. The military asked NRC for either an e-mail (or my travel orders) to ensure that Ulises can get on the plane.

Mike Tschiltz authorized Ulises transport.
LT Coordinator - Charles Murray at 10:39:50 on 3/13/2011

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

From: Doane, Margaret
Sent: Sunday, March 13, 2011 10:50 AM
To: Schwartzman, Jennifer; LIA03 Hoc; Smith, Brooke; Virgilio, Martin
Cc: Owens, Janice; LIA02 Hoc
Subject: Re: Shift transition

Can you please confirm whether Tony has landed in Tokyo and whether he's been picked up. See Jen's note below for how it was supposed to transpire. Chairman is requesting info.
Mergie

OIP_ITServices Resource

From: Schwartzman, Jennifer
Sent: Friday, April 22, 2011 10:26 AM
To: OIP_ITServices Resource
Subject: FW: Shift transition

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

From: Doane, Margaret
Sent: Sunday, March 13, 2011 11:09 AM
To: LIA02 Hoc; Schwartzman, Jennifer; LIA03 Hoc; Smith, Brooke; Virgilio, Martin
Cc: Owens, Janice
Subject: Re: Shift transition

Janice. Marty has more up to date info. They have already contacted the Chairman. Marty sd. Tony's plane is grounded for the night.
Thanks.

Sent from an NRC Blackberry
Margaret Doane

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

From: LIA02 Hoc
To: Doane, Margaret; Schwartzman, Jennifer; LIA03 Hoc; Smith, Brooke; Virgilio, Martin
Cc: Owens, Janice
Sent: Sun Mar 13 11:02:20 2011
Subject: RE: Shift transition

He is en route now from northern Japan and should get there in a couple hours. Jim Trapp is in Tokyo. Brooke will get you details.

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

From: Doane, Margaret
Sent: Sunday, March 13, 2011 10:55 AM
To: LIA02 Hoc; Schwartzman, Jennifer; LIA03 Hoc; Smith, Brooke; Virgilio, Martin
Cc: Owens, Janice
Subject: Re: Shift transition

Do we have any time line? When did he e-mail?

Sent from an NRC Blackberry
Margaret Doane

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

From: LIA02 Hoc
To: Doane, Margaret; Schwartzman, Jennifer; LIA03 Hoc; Smith, Brooke; Virgilio, Martin
Cc: Owens, Janice
Sent: Sun Mar 13 10:53:23 2011
Subject: RE: Shift transition

Sent from an NRC Blackberry
Margaret Doane

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

From: Schwartzman, Jennifer
To: Doane, Margaret
Cc: Owens, Janice; Smith, Brooke; Abrams, Charlotte; LIA02 Hoc
Sent: Sun Mar 13 08:50:08 2011
Subject: Re: Shift transition

Yes we did - but it also appears he is getting lots of Embassy instructions. As soon as he landed and got to customs, he was instructed to call a woman at MOFA. She then instructed him to speak with a guy at the Embassy. He was supposed to be put in touch with NISA contacts (hopefully ours) upon arrival in Tokyo, and he will have other contacts based on this meeting they have set up for him before he meets with the Ambassador. He was supposed to call into the HOO after that meeting, before the Ambassador meeting.
Sent from an NRC Blackberry

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

From: Doane, Margaret
To: Schwartzman, Jennifer
Cc: Owens, Janice; Smith, Brooke; Abrams, Charlotte; LIA02 Hoc
Sent: Sun Mar 13 08:47:01 2011
Subject: Re: Shift transition

Jen,
Thanks. Did we give instructions to Tony?
Margie

Sent from an NRC Blackberry
Margaret Doane

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

From: Schwartzman, Jennifer
To: Doane, Margaret
Cc: Owens, Janice; Smith, Brooke; Abrams, Charlotte; LIA02 Hoc
Sent: Sun Mar 13 07:54:45 2011
Subject: Shift transition

Margie,

Charlotte and I have just handed things over to Janice and Brooke. Here are some salient points from the end of our shift:

- situation at unit 3 does not appear to have gotten worse -Tony Ulises was being flown to Tokyo to meet with MOFA and NISA officials and then Ambassador Roos. Unclear if he will be asked to remain in Tokyo.
- we may soon get technical contacts at TEPCO courtesy of a push from Amb Davies to his Japanese colleagues -there is growing concern over radiation contamination picked up on both helicopters and personnel associated with USS Ronald Reagan well outside EPZ (100 km)

Hope this helps,
Jen
Sent from an NRC Blackberry

OIP_ITServices Resource

From: Schwartzman, Jennifer
Sent: Friday, April 22, 2011 10:13 AM
To: OIP_ITServices Resource
Subject: FW: NISA names

From: Foggie, Kirk
Sent: Sunday, March 13, 2011 1:09 AM
To: Schwartzman, Jennifer
Subject: NISA names

Nuclear Power inspection Div. Mr.Mori, Mr.Tsugane

JJJ/412

From: Marshall, Jane
Sent: Friday, April 22, 2011 2:02 PM
To: OST01 HOC
Subject: RE: BWR Expert Volunteer for Mid shift next week

Ok, thanks!

From: OST01 HOC
Sent: Friday, April 22, 2011 1:55 PM
To: Marshall, Jane
Cc: Kowalczyk, Jeffrey
Subject: FW: BWR Expert Volunteer for Mid shift next week
Importance: High

Jane,

I am forwarding this information to Jeff Kowalczyk who is handling all updates to the roster.

Thanks

From: Marshall, Jane
Sent: Friday, April 22, 2011 1:47 PM
To: OST01 HOC
Subject: FW: BWR Expert Volunteer for Mid shift next week
Importance: High

Please update the roster. Thanks.

From: Hiland, Patrick
Sent: Friday, April 22, 2011 1:46 PM
To: Hasselberg, Rick
Cc: RST01 Hoc; Marshall, Jane; Skeen, David; Scales, Kerby; Prescott, Paul; Murphy, Martin; Vick, Lawrence
Subject: BWR Expert Volunteer for Mid shift next week
Importance: High

Rick, Jane Marshall asked me to find volunteers to fill some shifts next week.

Regarding the "BWR Expert" position, the following folks have volunteered:

Mid shift Monday night at 2300 thru Tuesday 0700. = Kerby Scales.
Mid shift Tuesday night at 2300 thru Wednesday 0700. = Kerby Scales.
Day shift Friday April 29 0700 – 1500. = Larry Vick.

You know Larry Vick, and Kerby Scales works for me in NRR/DE. He's an x-Navy RO and worked in industry as systems engineer at Oyster Creek for 18 months before joining NRC about 5-years ago. Kerby will know who to call.

From: OST01 HOC
Sent: Friday, April 22, 2011 2:02 PM
To: Marshall, Jane
Subject: RE: BWR Expert Volunteer for Mid shift next week

No problem!

From: Marshall, Jane
Sent: Friday, April 22, 2011 2:02 PM
To: OST01 HOC
Subject: RE: BWR Expert Volunteer for Mid shift next week

Ok, thanks!

From: OST01 HOC
Sent: Friday, April 22, 2011 1:55 PM
To: Marshall, Jane
Cc: Kowalczyk, Jeffrey
Subject: FW: BWR Expert Volunteer for Mid shift next week
Importance: High

Jane,

I am forwarding this information to Jeff Kowalczyk who is handling all updates to the roster.

Thanks

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From: OST01 HOC
Sent: Friday, April 22, 2011 1:55 PM
To: Marshall, Jane
Cc: Kowalczyk, Jeffrey
Subject: FW: BWR Expert Volunteer for Mid shift next week

Importance: High

Jane,

I am forwarding this information to Jeff Kowalczyk who is handling all updates to the roster.

Thanks

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Importance: High

Please update the roster. Thanks.

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Cc: RST01 Hoc; Marshall, Jane; Skeen, David; Scales, Kerby; Prescott, Paul; Murphy, Martin; Vick, Lawrence
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Importance: High

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Sent: Friday, April 22, 2011 1:46 PM
To: Hasselberg, Rick
Cc: RST01 Hoc; Marshall, Jane; Skeen, David; Scales, Kerby; Prescott, Paul; Murphy, Martin; Vick, Lawrence
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You know Larry Vick, and Kerby Scales works for me in NRR/DE. He's an x-Navy RO and worked in industry as systems engineer at Oyster Creek for 18 months before joining NRC about 5-years ago. Kerby will know who to call.

From: HOO Hoc
Sent: Sunday, April 24, 2011 9:39 AM
To: LIA07 Hoc; LIA08 Hoc; OST01 HOC
Subject: FW: [METI Japan](Apr_24)Update on Seismic and Tsunami Damage Information
Attachments: 110424JOINT STATEMENT.pdf

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

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

From: meti-info@meti.go.jp [mailto:meti-info@meti.go.jp]
Sent: Sunday, April 24, 2011 8:47 AM
To: meti-info@meti.go.jp
Subject: [METI Japan](Apr_24)Update on Seismic and Tsunami Damage Information

For your reference, Ministry of Economy, Trade and Industry of Japan (METI) is providing latest information on the seismic and tsunami damages to the nuclear power stations (NPSs) in Japan, including those caused to Fukushima Dai-ichi NPS.

This weekend, the following information has been updated.

---- Today's news ----

1. The Economic & Trade Ministers' Meeting among Japan, the People's Republic of China and the Republic of Korea was held in Tokyo. Three Ministers arrive at the common understanding that it is important to continue to secure the prompt and smooth flow of goods and persons in the Asian region. [Please refer to 2. and the attached file]

---- Updates from METI ----

2. The Economic & Trade Ministers' Meeting among Japan, the People's Republic of China and the Republic of Korea was held in Tokyo. Three Ministers arrive at the common understanding that it is important to continue to secure the prompt and smooth flow of goods and persons in the Asian region. Three Ministers are also reminded at this juncture that the maintenance and development of free and open trade system will not only enormously support the recovery process of the stricken region of Japan but also effectively secure vigorous and sustainable growth of all three countries. [Please refer to the attached file]

---- Updates from NISA ----

JJJ/414

3. [NISA] Apr 24 1500_Current Situation of Onagawa, Fukushima Dai-ichi, Fukushima Dai-ni, Tokai Dai-ni NPSs (only Japanese version is now available. English version will be uploaded.)
<http://www.meti.go.jp/press/2011/04/20110424001/20110424001-1.pdf>

[NISA] Apr 18 1500_Current Situation of Onagawa, Fukushima Dai-ichi, Fukushima Dai-ni, Tokai Dai-ni NPSs (English version) <http://www.nisa.meti.go.jp/english/files/en20110418-2-1.pdf>

4. [NISA] Apr 23 0200_Fukushima Dai-ichi Major Parameters of the Plant (English version)
<http://www.nisa.meti.go.jp/english/files/en20110423-4-3.pdf>

---- Major Updates from other agencies of Japanese Government --- 5. [MLIT] Apr 24 AM_Measurement of Radiation Doses in the Ports around Tokyo Bay http://www.mlit.go.jp/kowan/kowan_fr1_000041.html
Currently, the level of radiation in Tokyo City, Yokohama City, Kawasaki City and Ichikawa City (Chiba) were as shown in the attachment at very safe level to health.

6. [MLIT] Apr 24 PM_Measurement of radiation doses around the Metropolitan Airports
http://www.mlit.go.jp/koku/koku_tk7_000003.html
The current level of radiation does not have any effects on human health.

7. [NSC] Apr 24 1645_Assessment of the result of environment monitoring (Only Japanese version is available)
http://www.nsc.go.jp/nsc_mnt/110424_1.pdf

If you need to add other e-mail address to this mailing list or do not need our information mail any more, please contact at meti-info@meti.go.jp

=====
International Public Relations Team
Ministry of Economy, Trade and Industry (METI)
1-3-1 Kasumigaseki, Chiyoda-ku, Tokyo 100-8901, Japan E-mail : meti-info@meti.go.jp
=====

(See attached file: 110424JOINT STATEMENT.pdf)

**The Eighth Economic & Trade Ministers' Meeting
among Japan, the People's Republic of China
and the Republic of Korea**

April 24, 2011, Tokyo, Japan

JOINT STATEMENT

We, the Economic and Trade Ministers of Japan, the People's Republic of China and the Republic of Korea convened in Tokyo, Japan, on April 24, 2011, to hold the Eighth Economic and Trade Ministers' Meeting among Japan, the People's Republic of China and the Republic of Korea.

We would like to express our deep condolences toward the victims of the Great East Japan Earthquake of March 11, 2011 and the aftermath.

The Minister of Japan is deeply grateful to the People's Republic of China and the Republic of Korea for their support to assist Japan in dealing with this unprecedented adversity, such as emergency rescue teams, water, food, non-food items and energy related supplies. Ministers of the People's Republic of China and the Republic of Korea take careful note of the explanation by the Minister of Japan on the measures taken so far by the Government of

Japan to cope with the disastrous aftermaths of the aforementioned Earthquakes and Tsunami. They express their hope and conviction for Japan's quick recovery. Ministers of People's Republic of China and the Republic of Korea express their willingness to continue their support upon request from Japan.

We have observed disruption of the sophisticated supply chains which have developed across the three countries and globally, involving the region and the people seriously affected by the Earthquake, Tsunami and the aftermath. Bearing this in mind, we share the view that the recovery of the stricken region as well as Japan as a whole is in the interests of all the three countries. We arrive at the common understanding that it is important to continue to secure the prompt and smooth flow of goods and persons in the Asian region.

We, the Economic and Trade Ministers of Japan, the People's Republic of China and the Republic of Korea, are also reminded at this juncture that the maintenance and development of a free and open trade system will not only enormously support the recovery process of the stricken region of Japan but also effectively secure vigorous and sustainable growth of all three countries. Therefore, we hereby agree on the following.

We acknowledge the growing importance of a trilateral investment framework for further strengthening the

economic partnership among the three countries. In this respect, we share the view of the need to make further efforts to reach a substantive agreement in the Trilateral Investment Agreement negotiation as early as possible.

We welcome the progress to date reported by the Joint Study Committee (JSC) involving government officials, business and academic participants for an FTA among the three countries. Taking into consideration the recovery process of Japan from the disasters and recognizing the importance of cooperation for closer economic integration among the three countries, we share the view of the need for accelerating the work of the JSC and have decided to report this consensus to the coming Trilateral Summit Meeting.

Furthermore, we agree to solidify trilateral cooperation in major global and regional fora such as G20, the WTO, APEC, ASEAN Plus Three Summit and East Asian Summit (EAS). We reaffirm to support and strengthen a free, open and rule-based multilateral trading system as well as to resist protectionism in all forms. We are concerned that there has not been sufficient progress at this critical juncture of the Doha negotiations. We are resolved to make further efforts and agree that all WTO members should work together to find a way out of the current impasse, keeping in mind that 2011 is a critically important "window of opportunity" for concluding the

Doha Development Agenda, with ambitious, balanced, comprehensive and successful outcomes.

We take note with great pleasure trilateral cooperation is being actively undertaken on plenty of issues.

We welcome that trilateral economic cooperation mechanism is further reinforced by holding the Trilateral Economic and Trade Ministers' Meeting independently. In this context, we agree to hold the next independent Trilateral Economic and Trade Ministers' Meeting in the hosting country of the 2012 Trilateral Summit Meeting.

LIST OF MINISTERS

1. H.E. Banri Kaieda,
Minister, Ministry of Economy, Trade and Industry,
Japan
2. H.E. Chen Deming,
Minister, Ministry of Commerce, the People's Republic
of China
3. H.E. Kim Jong-hoon,
Minister for Trade, Ministry of Foreign Affairs and
Trade, the Republic of Korea

From: HOO Hoc
Sent: Monday, April 25, 2011 9:45 AM
To: LIA07 Hoc; LIA08 Hoc; OST01 HOC
Subject: FW: [METI Japan](Apr_25)Update on Seismic and Tsunami Damage Information
Attachments: Apr_25 Radioactivity Level Map Chart.pdf

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

From: meti-info@meti.go.jp [mailto:meti-info@meti.go.jp]
Sent: Monday, April 25, 2011 9:39 AM
To: meti-info@meti.go.jp
Subject: [METI Japan](Apr_25)Update on Seismic and Tsunami Damage Information

For your reference, Ministry of Economy, Trade and Industry of Japan (METI) is providing latest information on the seismic and tsunami damages to the nuclear power stations (NPSs) in Japan, including those caused to Fukushima Dai-ichi NPS.

This Monday, the following information has been updated.

---- Today's news ----

We have regular updates as follow.

---- Updates from METI ----

1. [METI] Apr 25_Radioactivity Level Map Chart [Please refer to the attached file]

---- Updates from NISA ----

2. [NISA] Apr 25 1130_Current Situation of Onagawa, Fukushima Dai-ichi, Fukushima Dai-ni, Tokai Dai-ni NPSs (only Japanese version is now available. English version will be uploaded.)
<http://www.meti.go.jp/press/2011/04/20110425006/20110425006-1.pdf>

[NISA] Apr 20 0800_Current Situation of Onagawa, Fukushima Dai-ichi, Fukushima Dai-ni, Tokai Dai-ni NPSs (English version) <http://www.nisa.meti.go.jp/english/files/en20110420-3-1.pdf>

3. [NISA] Apr 25 0800_Fukushima Dai-ichi Major Parameters of the Plant (only Japanese version is available. English version will be uploaded.) <http://www.meti.go.jp/press/2011/04/20110425006/20110425006-3.pdf>

[NISA] Apr 20 0600_Fukushima Dai-ichi Major Parameters of the Plant (English version)
<http://www.nisa.meti.go.jp/english/files/en20110420-3-2.pdf>

---- Major Updates from other agencies of Japanese Government --- 4. [MLIT] Apr 25 PM_Measurement of Radiation Doses in the Ports around Tokyo Bay http://www.mlit.go.jp/kowan/kowan_fr1_000041.html

Currently, the level of radiation in Tokyo City, Yokohama City, Kawasaki City and Ichikawa City (Chiba) were as shown in the attachment at very safe level to health.

5. [MLIT] Apr 25 PM_Measurement of radiation doses around the Metropolitan Airports

http://www.mlit.go.jp/koku/koku_tk7_000003.html

The current level of radiation does not have any effects on human health.

6. [NSC] Apr 24 1645_Assessment of the result of environment monitoring (only Japanese version is available)

http://www.nsc.go.jp/nsc_mnt/110424_1.pdf

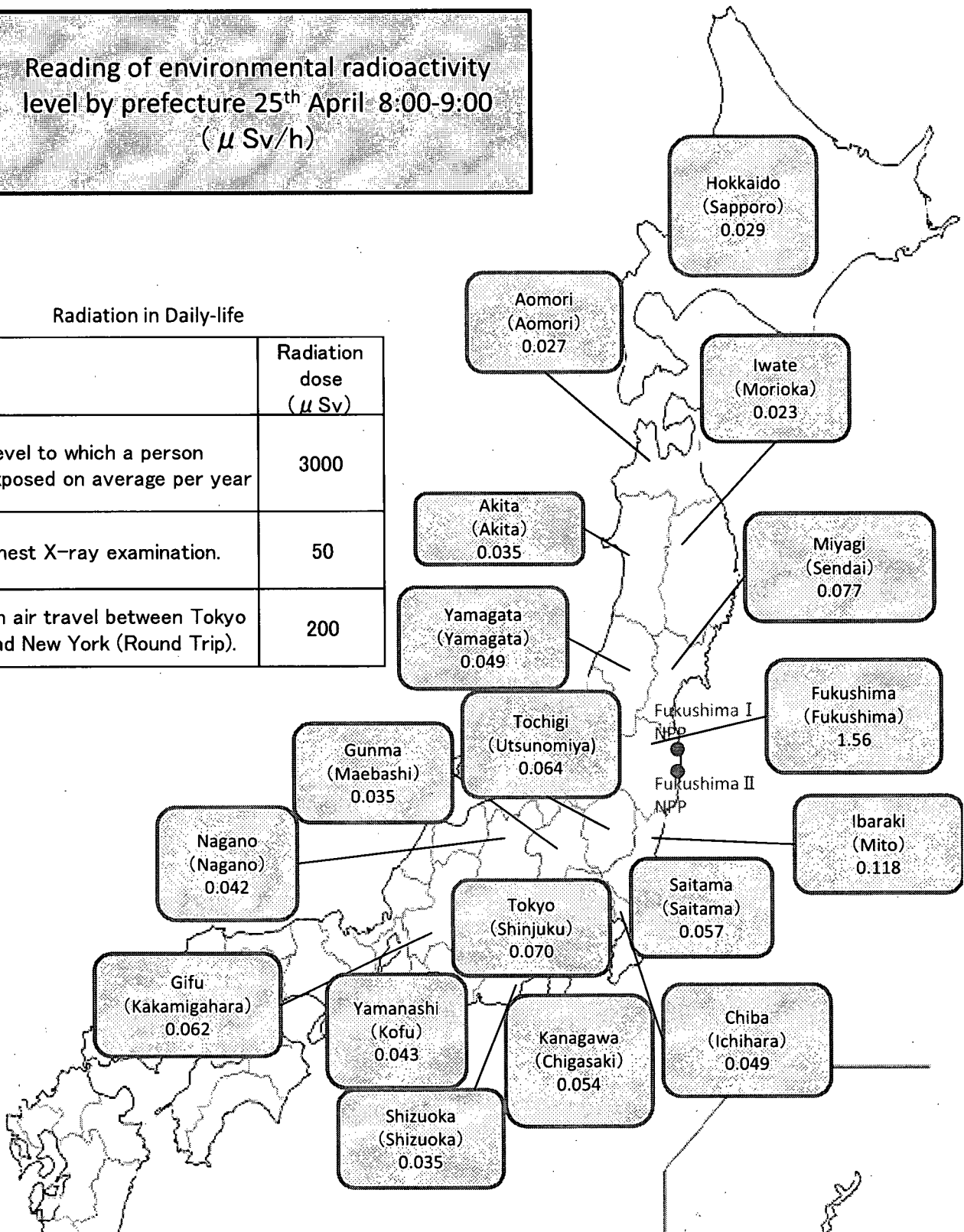
If you need to add other e-mail address to this mailing list or do not need our information mail any more, please contact at meti-info@meti.go.jp

=====
International Public Relations Team
Ministry of Economy, Trade and Industry (METI)
1-3-1 Kasumigaseki, Chiyoda-ku, Tokyo 100-8901, Japan E-mail : meti-info@meti.go.jp
=====

(See attached file: Apr_25 Radioactivity Level Map Chart.pdf)

Reading of environmental radioactivity
level by prefecture 25th April 8:00-9:00
(μ Sv/h)

	Radiation dose (μ Sv)
Level to which a person exposed on average per year	3000
Chest X-ray examination.	50
An air travel between Tokyo and New York (Round Trip).	200



Sources : Ministry of Education, Culture, Sports, Science and Technology HP
Fukushima prefecture HP

From: OST01 HOC
Sent: Monday, April 25, 2011 3:57 PM
To: FOIA Response.hoc Resource
Subject: FW: NRC's Daily Assessment of Conditions at Fukushima Daiichi
Attachments: NRC Daily Assessment of Daiichi - 4-25-11.pdf

From: Moore, Carl
Sent: Monday, April 25, 2011 2:18 AM
To: Jaczko, Gregory
Cc: Borchardt, Bill; Weber, Michael; Virgilio, Martin; Casto, Chuck; Leeds, Eric; Reynolds, Steven; RST01 Hoc; OST01 HOC
Subject: NRC's Daily Assessment of Conditions at Fukushima Daiichi

Dear Chairman

The attached is the NRC Japan Team's Daily Assessment of conditions at the Fukushima Daiichi nuclear power plants and spent fuel pools. There are no changes to the daily assessment chart for today. If you have any questions, please don't hesitate to ask.

Best regards,
Carl Moore
NRC Japan Team

From: Moore, Carl
Sent: Friday, April 22, 2011 2:27 AM
To: Jaczko, Gregory
Cc: Borchardt, Bill; Weber, Michael; Virgilio, Martin; Casto, Chuck; Leeds, Eric; Reynolds, Steven; RST01 Hoc; OST01 HOC
Subject: NRC's Daily Assessment of Conditions at Fukushima Daiichi
Attachments: NRC Daily Assessment of Daiichi - 4-22-11.pdf

Dear Chairman

The attached is the NRC Japan Team's Daily Assessment of conditions at the Fukushima Daiichi nuclear power plants and spent fuel pools. There are no changes to the daily assessment chart for today. If you have any questions, please don't hesitate to ask.

Best regards,
Carl Moore
NRC Japan Team

From: Moore, Carl
Sent: Monday, April 25, 2011 2:18 AM
To: Jaczko, Gregory
Cc: Borchardt, Bill; Weber, Michael; Virgilio, Martin; Casto, Chuck; Leeds, Eric; Reynolds, Steven; RST01 Hoc; OST01 HOC
Subject: NRC's Daily Assessment of Conditions at Fukushima Daiichi
Attachments: NRC Daily Assessment of Daiichi - 4-25-11.pdf

Dear Chairman

The attached is the NRC Japan Team's Daily Assessment of conditions at the Fukushima Daiichi nuclear power plants and spent fuel pools. There are no changes to the daily assessment chart for today. If you have any questions, please don't hesitate to ask.

Best regards,
Carl Moore
NRC Japan Team

~~Official Use Only~~

NRC's Daily Assessment of Conditions at Fukushima Daiichi Nuclear Power Plant

<u>Unit 1</u>		Today	Yesterday		<u>Unit 3</u>		Today	Yesterday
Vessel	Cooling	Challenged	Challenged		Vessel	Cooling	Adequate	Adequate
		↔	↔				↔	↔
	Integrity	Intact	Intact			Integrity	Failed	Failed
		↔	↔				↔	↔
Containment	Flooding	Inc./Needed	Inc./Needed		Containment	Flooding	Challenged	Challenged
		↔	↔				↔	↔
	Integrity	Challenged	Challenged			Integrity	Failed	Failed
		↔	↔				↓	↓
Spent Fuel Pool	Cooling/Level	Adequate	Adequate		Spent Fuel Pool	Cooling/Level	Challenged	Challenged
		↔	↔				↔	↔
	Integrity	Intact	Intact			Integrity	Challenged	Challenged
		↔	↔				↔	↔
<u>Unit 2</u>		Today	Yesterday		<u>Unit 4</u>		Today	Yesterday
Vessel	Cooling	Challenged	Challenged		Spent Fuel Pool	Cooling/Level	Challenged	Challenged
		↔	↔				↔	↔
	Integrity	Failed	Failed			Integrity	Challenged	Challenged
		↔	↔				↑	↑
Containment	Flooding	Inc./Needed	Inc./Needed					
		↔	↔					
	Integrity	Failed	Failed		Protective Measures	Exposure Risk	Today	Yesterday
		↔	↔				Low	Low
Spent Fuel Pool	Cooling/Level	Adequate	Adequate				↔	↔
		↔	↔					
	Integrity	Intact	Intact					
		↔	↔					

~~Official Use Only~~

April 25, 2011

Methodology for Developing the Fukushima Daiichi Daily Assessment Report

PURPOSE: The report is prepared to provide a qualitative high level assessment of daily conditions at Fukushima Daiichi that the U.S. Ambassador can use to assess the safety of American citizens in Japan.

DISCLAIMER: The development of the daily assessment report includes a number of inputs. Some of these are objective, such as plant data provided by TEPCO, while others are subjective, such as engineering insights from the NRC's reactor and protective measures specialists in Japan. It should be recognized that there are many unknowns and uncertainties associated with having a complete understanding of conditions in each of the Daiichi reactors and spent fuel pools. As such, this tool represents the collective judgment of the NRC staff in Japan based on all available data.

For each of the major plant parameters listed below, the NRC staff assesses its status daily and bins it into one of the three categories listed. The staff uses the listed plant information and conditions in making its assessment. The arrows on the report indicate the relative trend in plant conditions from the previous day.

1. Reactor Pressure Vessel
 - a. Cooling – Adequate, Challenged, or Inadequate.
 - i. Flow or Injection Rate
 - ii. Reliability of Injection
 - iii. Source of Water
 - b. Integrity – Intact, Challenged, or Failed.
 - i. Temperature indications
 - ii. Pressure readings
2. Primary Containment
 - a. Flooding Status – Complete/Not needed, Challenged, or Incomplete/Needed.
 - i. Water Level
 - ii. Sources
 - iii. Injection capacity/rate
 - b. Integrity - Intact, Challenged, or Failed.
 - i. Pressure readings
 - ii. Bypass evaluations
 - iii. Temperature indications
3. Spent Fuel Pools
 - a. Cooling/Level – Adequate, Challenged, or Inadequate.
 - i. Flow or Injection Rate
 - ii. Reliability of Injection
 - iii. Source of Water
 - b. Integrity – Intact, Challenged, or Failed. Due to limited available data, this assessment relies strongly on the NRC team's engineering judgment.
4. Protective Measures – Exposure Risk to American citizens in Japan outside the U.S. government's recommended 50-mile evacuation zone.
 - a. Low – 50-mile recommendation remains sufficient
 - b. Medium – New information has raised questions regarding the sufficiency of the 50-mile recommendation.
 - c. High – 50-mile recommendation is no longer sufficient due to changing plant condition

From: Uselding, Lara
To: Harrington, Holly
Subject: RE: updated! DRAFT PRESS RELEASE FOR REVIEW RIVDC TSUNAMI .docx
Date: Friday, March 11, 2011 10:38:29 AM

Very good, thanks

From: Harrington, Holly
Sent: Friday, March 11, 2011 9:38 AM
To: Uselding, Lara; Brenner, Eliot; Burnell, Scott
Cc: Akstulewicz, Brenda
Subject: RE: updated! DRAFT PRESS RELEASE FOR REVIEW RIVDC TSUNAMI .docx

We'll handle from here. Web EOC is up and I just need to get our stuff posted shortly

From: Uselding, Lara
Sent: Friday, March 11, 2011 10:37 AM
To: Brenner, Eliot; Burnell, Scott; Harrington, Holly
Cc: Akstulewicz, Brenda
Subject: updated! DRAFT PRESS RELEASE FOR REVIEW RIVDC TSUNAMI .docx
Importance: High

Updated: Here we go! FYI, RIV Linda Howell is getting requests from NSIR for these talkers so you all may want to share with them.....

From: Brenner, Eliot
Sent: Friday, March 11, 2011 9:32 AM
To: Uselding, Lara; Burnell, Scott; Harrington, Holly
Cc: Akstulewicz, Brenda
Subject: RE: DRAFT PRESS RELEASE FOR REVIEW RIVDC TSUNAMI .docx

Talking points are good. Item re tsunami should be changed to say Diablo is "well protected against possible effects of tsunamis." Xxx well protected, sted "safe."

From: Uselding, Lara
Sent: Friday, March 11, 2011 10:24 AM
To: Brenner, Eliot; Burnell, Scott; Harrington, Holly
Cc: Akstulewicz, Brenda
Subject: DRAFT PRESS RELEASE FOR REVIEW RIVDC TSUNAMI .docx
Importance: High

In the interest of time, I sent with RIV header but change to HQ header and add contacts for folks at Eliot's request.

No. IV-11-007

Contact: Lara Uselding (817) 276-6519

E-Mail: OPA4.Resource@nrc.gov

JJS/417

**NRC MONITORS NOTICE OF UNUSUAL EVENT AT
DIABLO CANYON POWER PLANT**

The U.S. Nuclear Regulatory Commission is monitoring the notice of unusual event (NOUE) at the Diablo Canyon Power Plant, located near San Luis Obispo, Calif. The NRC entered Monitoring mode at 9:46 a.m. EST in response to the 8.9 magnitude earthquake in Japan and subsequent tsunami warnings. NRC Headquarters is monitoring Japan's response to the current situation.

Pacific Gas and Electric Co. (PG&E) declared a NOUE at 1:23 a.m. PST today after receiving a Tsunami Warning from the West California Emergency Management Agency. The tsunami warning was generated after an estimated 8.9 magnitude earthquake occurred off the eastern Japanese coast.

NRC Chairman Gregory Jaczko said, "The NRC is closely monitoring this situation as it unfolds with respect to nuclear facilities within the United States. NRC staff is working closely with its resident inspectors who are on site to ensure safe operating conditions at plants affected by the tsunami warnings."

The licensee reported the Diablo Canyon plant is stable and both units remain on line. The plant is well protected against tsunami conditions as required by NRC regulations.

###

News releases are available through a free *listserv* subscription at the following Web address: <http://www.nrc.gov/public-involve/listserver.html>. The NRC homepage at www.nrc.gov also offers a SUBSCRIBE link. E-mail notifications are sent to subscribers when news releases are posted to NRC's Web site.

From: Burnell, Scott
To: Uselding, Lara; Brenner, Eliot; Harrington, Holly; Howell, Linda
Cc: Akstulewicz, Brenda
Subject: RE: Updated talkers 3_11_QUAKE_talk_pts.docx
Date: Friday, March 11, 2011 10:39:56 AM
Importance: High

Linda, Lara;

Eliot has asked me to coordinate any further updates to the talking points – please send suggested additions to me. Thank you.

Scott

From: Akstulewicz, Brenda
Sent: Friday, March 11, 2011 10:39 AM
To: Uselding, Lara; Brenner, Eliot; Harrington, Holly; Burnell, Scott
Cc: Howell, Linda
Subject: RE: Updated talkers 3_11_QUAKE_talk_pts.docx

FYI - I have saved these:

G:-03_11-QUAKE_talk_pts.docx It is the first document after the list of folders.

From: Uselding, Lara
Sent: Friday, March 11, 2011 10:26 AM
To: Brenner, Eliot; Akstulewicz, Brenda; Harrington, Holly; Burnell, Scott
Cc: Howell, Linda
Subject: Updated talkers 3_11_QUAKE_talk_pts.docx

JJJ/4/8

From: OST01 HOC
Sent: Tuesday, April 26, 2011 4:07 AM
To: LIA08 Hoc; RST01 Hoc
Subject: One Pager Reminder

Just a reminder to have your changes to me by 0500. Thanks!

From: OST01 HOC
Sent: Tuesday, April 26, 2011 2:24 PM
To: FOIA Response.hoc Resource
Subject: FW: Tomorrow's Visit.

From: Skeen, David
Sent: Tuesday, April 26, 2011 10:57 AM
To: OST01 HOC
Subject: Fw: Tomorrow's Visit.

Please contact Martha.

Thanks!

From: Shields, Martha <Martha.Shields@nuclear.energy.gov>
To: Skeen, David
Cc: Peko, Damian <Damian.Peko@Nuclear.Energy.gov>
Sent: Tue Apr 26 09:48:11 2011
Subject: Tomorrow's Visit.

Hi David,

I just wanted to follow up with you on our visit tomorrow. We haven't heard anything from Kevin Harper or whomever you were considering hosting us in the IOC. That may not be a problem if we are on your visitor's list A-OK, but we just don't know. Can you send me confirmation that NRC security knows we're coming, and also send the phone number of the person we call when we get there?

What is the parking situation like these days over at the Marriott / Conf Center (where I have parked in the past)? If it's a bear, do you have any other advise for us?

Thanks, Martha

JJJ / 420

From: LIA08 Hoc
Sent: Tuesday, April 26, 2011 9:28 PM
To: OST01 HOC
Subject: FW: draft one pager
Attachments: Japan One Pager 2300 EDT 4-26-11.doc

The update from the Liaison Team Coordinator is attached. See yellow highlights.

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

From:
Sent: Tuesday, April 26, 2011 3:45 PM
To: RST01 Hoc; Hoc, PMT12; LIA08 Hoc; Carpenter, Cynthia
Subject: draft one pager

FYI, this is the draft version for update, if you have comments during this shift, please provide back to me by 2200 EDT. Thank you!

Jon Fiske
EST Coordinator

From: Hoc, PMT12
Sent: Tuesday, April 26, 2011 10:11 PM
To: OST01 HOC
Subject: RE: draft one pager
Attachments: Japan One Pager 2300 EDT 4-26-11.doc

See updates.

Thanks,
Stacey

From: OST01 HOC
Sent: Tuesday, April 26, 2011 3:45 PM
To: RST01 Hoc; Hoc, PMT12; LIA08 Hoc; Carpenter, Cynthia
Subject: draft one pager

FYI, this is the draft version for update, if you have comments during this shift, please provide back to me by 2200 EDT. Thank you!

Jon Fiske
EST Coordinator

JJJ | 422

From: Harrington, Holly
To: Brenner, Eliot
Subject: blog post
Date: Friday, March 11, 2011 11:33:00 AM
Attachments: blog_posti.docx

JIT/423

NRC Monitoring Earthquake and Tsunami

NRC Chairman Gregory Jaczko, other top officials and nuclear experts at the NRC headquarters office and the Incident Response Center in our regional office in Texas are closely monitoring the aftermath of the Japanese earthquake and subsequent tsunami.

The NRC resident inspectors who work at the Diablo Canyon Power Plant in San Luis Obispo, Calif., are at the plant and working closely with plant personnel as they take appropriate precautions. Although not in location that would likely to be directly impacted by a possible tsunami, the NRC is also monitoring the San Onofre nuclear power plant, the Humboldt Bay spent fuel storage site and NRC-regulated nuclear materials sites in Hawaii and Alaska. All the sites tell the NRC they are prepared for possible tsunami effects.

The nuclear power plant at Diablo Canyon, operated by Pacific Gas and Electric Co., did declare an "unusual event," this morning -- a designation based on NRC event classification requirements. The plant operators report that the facility is stable and both units remain on line. And the plant is well protected against tsunami conditions as required by NRC regulations.

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

More information about seismic protections at nuclear power plants can be found here: <http://www.nrc.gov/reading-rm/doc-collections/fact-sheets/fs-seismic-issues.html> .

From: Harrington, Holly
To: Brenner, Eliot
Subject: Just FYI
Date: Friday, March 11, 2011 2:43:00 PM

Our friend Bob Davis, from DHS health affairs, called me because a TV crew going to Japan wanted to know what radiation levels they were likely to encounter and how to prepare for them, etc. I said anything we told them could be construed as information about the situation in Japan and we didn't want to give that impression. I said they should talk to their OSHA people or the American Nuclear Society . . .

JTF 424

From: Marshall, Jane
Sent: Wednesday, April 27, 2011 6:52 AM
To: Johnson, Michael; Morris, Scott
Cc: Kokajko, Lawrence; Correia, Richard; Tracy, Glenn; OST01 HOC; McDermott, Brian; Morris, Scott
Subject: RE: PMT and LT Staffing

Confirmed. We got the OK yesterday to adjust staffing to better handle the demands of different shifts (and the total lack of demand on some positions in the overnight shift). The positions/shifts that we are no longer staffing:

Not staffing night shift LT

Not staffing night shift PMT

One (vice two) staff for RST for swing and night shift

No change for ET or ET support.

We are continuing to refine and adjust the response posture in the Operations Center to be more efficient in our use of staff time while ensuring we remain responsive to the needs of the Japan team.

From: Johnson, Michael
Sent: Wednesday, April 27, 2011 3:54 AM
To: Marshall, Jane; Morris, Scott
Cc: Kokajko, Lawrence; Correia, Richard; Tracy, Glenn; OST01 HOC
Subject: PMT and LT Staffing

I learned from the folks on the team with me tonight that we are planning to go with staffing those positions from 7 am to 11 pm. They thought we would be going to the after this shift for the PMT and beginning Friday for the LT. Can you confirm?

JD/425



CHAIRMAN

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

April 27, 2011

The Honorable Dennis J. Kucinich
United States House of Representatives
Washington, D.C. 20515

Dear Congressman Kucinich:

On behalf of the U.S. Nuclear Regulatory Commission (NRC), I am responding to your letter of March 16, 2011, which raised concerns regarding recent events in Japan and their implications for ensuring the continued safety of nuclear power plants in the United States.

We continue to collect information regarding the events in Japan. Therefore, we expect that decisions regarding our domestic regulatory program based on lessons learned from the events in Japan will be made over the course of the next 6-9 months. During this time, the NRC staff is implementing the Commission's March 23rd direction to establish a senior level task force to conduct a methodical and systematic review of our processes and regulations to determine whether the agency should make additional improvements to our regulatory system. This activity will have both near-term and longer-term components.

For the near-term effort, the task force has begun a 90-day review. This review will evaluate all of the currently available information from the Japanese events to identify immediate or near-term operational or regulatory issues potentially affecting the 104 operating reactors in the U.S., including their spent fuel pools. Areas of investigation will include the ability to protect against natural disasters, response to station blackouts, severe accidents and spent fuel accident progression, radiological consequence analysis, severe accident management issues and emergency preparedness. Over this 90-day period, the NRC staff will develop recommendations, as appropriate, for changes to inspection procedures and licensing review guidance, and will recommend whether generic communications, orders, or other regulatory requirements are needed. This 90-day effort will include a briefing of the Commission after approximately 30 days to provide a snapshot of the regulatory response and the condition of the U.S. reactor fleet based on information available at that time.

The task force's longer-term review will begin as soon as the NRC staff has sufficient technical information from the events in Japan, with a goal of commencing no later than the completion of the 90-day near-term report. The task force will evaluate all technical and policy issues related to the events to identify any additional potential research, generic issues, changes to the reactor oversight process, rulemakings, and modifications to the regulatory framework that should be considered by the NRC. A report with appropriate recommendations will be provided to the Commission within six months after the start of this evaluation. Both the 90-day and final reports will be made publicly available in accordance with normal Commission processes.

JJJ/426

With those plans in place and underway we also are currently pursuing prudent actions even though we do not yet have all the details we need to fully assess the implications of the Japanese events for the U.S. reactor fleet. Specifically, we have begun inspection activities through temporary instructions to our inspection staff, including the resident inspectors and the region-based inspectors in our four Regional offices, to look at licensees' readiness to deal with both design basis accidents and beyond-design basis accidents. We have also issued an information notice to our licensees to make them aware of the events in Japan. Nuclear power plant licensees are verifying that their capabilities to mitigate conditions that result from severe accidents, including the loss of significant operational and safety systems, are in effect and operational. The NRC will take additional immediate actions that we believe to be appropriate as our understanding of the events in Japan becomes clearer.

Let me assure you that our ongoing monitoring of events in Japan and our review of all available information leads us to conclude that U.S. plants continue to operate safely. I want to reiterate that we continue to view our domestic responsibilities for licensing and oversight of the U.S. licensees as our top priority and we are dedicated to ensuring that U.S. nuclear plants continue to operate safely. I look forward to being able to provide you with additional information as it becomes available. If you have any additional questions, please contact me or Ms. Rebecca Schmidt, Director of the Office of Congressional Affairs, at (301) 415-1776.

Sincerely,

A handwritten signature in black ink, appearing to read 'G. B. Jaczko', with a stylized flourish at the end.

Gregory B. Jaczko

DENNIS J. KUCINICH
10TH DISTRICT, OHIO

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WASHINGTON, D.C. 20515
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COMMITTEE ON EDUCATION AND THE
WORKFORCE

March 16, 2011

The Honorable Gregory B. Jaczko
Chairman
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Dear Chairman Jaczko:

As the situation in Japan forces us to reconsider our definition of "unlikely," I am writing to request a detailed description of the specific actions the NRC will take to ensure measures are taken to provide a level of protection of public health and the environment for all Americans that exceeds the level of protection provided at the failing Japanese nuclear power plants like Fukushima Daiichi. A briefing to Members of Congress in which you explain the actions should accompany the report.

Specific safety issues addressed should include, but not be limited to a history of plant operator malfeasance and/or ineptitude; the flaws in the Mark I reactor design; the risks posed by earthquakes and tsunamis, floods, power outages, fires and intentional aircraft crashes; and the specific criteria for revoking or denying a license to operate.

As the Ranking Member of the Subcommittee on Regulatory Affairs, Stimulus Oversight and Government Spending of the Committee on Oversight and Government Reform, I look forward to hearing how the NRC will act swiftly to learn important lessons from the tragedy in Japan.

Operators of nuclear power plants with demonstrated poor safety records should not be allowed to continue to put the public at risk. Though there are several examples of companies whose past performance has shown that they should not be operating a nuclear power plant, the story of Davis-Besse, operated by FirstEnergy Nuclear Operating Company (FirstEnergy) is instructive.

On June 9, 1985, FirstEnergy allowed a 12-minute interruption in the feedwater flow to the steam generators, which was cited as a "potential catastrophe." In 2002, Davis-Besse's reactor head corroded nearly all the way through because it was "weakened by years of neglect." A former NRC top safety official, Harold Denton, stated in 2004 that these two incidents represent the nuclear "industry's second and third-lowest points after Three Mile Island."

FirstEnergy's employees tried to conceal the truth about the 2002 incident from the NRC using "tricks, schemes, or devices . . . to deliberately mislead" the agency. David Uhlmann, chief of the Justice Department's environmental crimes section, said that FirstEnergy showed "brazen

arrogance" and "breached the public trust" by withholding information about the reactor head incident. Federal prosecutors described the reactor head incident "as one of the biggest cover-ups in U.S. nuclear history."

FirstEnergy paid a record fine of \$33.45 million as a result of its actions. Of that amount, a record \$28 million was the fine that First Energy paid "to avoid being criminally prosecuted for lying to the government about the dangerous condition of Davis-Besse's old reactor head," according to then-U.S. Attorney Greg White in 2006.

The total fine was merely 1% of FirstEnergy's profits in 2004. While these may have been record fines, they were a mere slap on the wrist for FirstEnergy, creating little incentive to protect the public. This conduct is the product of an inveterate, corrupt culture of long standing deceit and corner-cutting on safety. With such an abysmal record, they, and other nuclear power plant operating companies with poor performance records should not be allowed to continue to operate nuclear power plants.

As you know, I have repeatedly called for the denial of FirstEnergy's application to continue to operate Davis-Besse beyond its designed life span. Until there is adequate accountability, incentives to place profits before safety will persist.

The Fukushima Daiichi plant that is currently considered to pose the greatest threat to human health uses the General Electric Mark I reactor design. The Mark I has been criticized by NRC staff and others for failing to perform one of its primary functions: containing radiation in the event of a problem with the reactor.

The three explosions at Daiichi reactors 1, 2 and 3 that released radioactive substances have illuminated this design flaw. The U.S. has nuclear power plants with the Mark I design in Alabama, Georgia, Illinois, Iowa, Michigan, Minnesota, Nebraska, New Jersey, New York, North Carolina, Pennsylvania, and Vermont. Most are operating at or past their design life and most have recently received 20-year extensions of their operating license.

The Fukushima Daiichi power plant was supposedly designed to withstand extreme events such as earthquakes and tsunamis. It failed, and the success of efforts to prevent meltdowns at Fukushima Daiichi power plant, Tokai nuclear power plant, and Onagawa power plant have yet to be determined.

The NRC must review the ability of all nuclear power plants in the U.S. to withstand multiple simultaneous events that could wipe out entire redundancy systems. Plants on or near earthquake faults like San Onofre in Southern California and Perry on Lake Erie in Ohio are particularly vulnerable.

In the New York Times Monday, Michael W. Golay, professor of nuclear science and engineering at Massachusetts Institute of Technology, said, "Utilizing cost-benefit judgments, every nation with nuclear power has set the strongest earthquake that its nuclear plants must survive intact considerably below the level of the Japanese earthquake." We must do better than

to rely on a safety standard which has demonstrated that it would bring us to the brink of a nuclear catastrophe.

Other ongoing safety issues at nuclear power plants in the U.S. pose risks similar to those at the Japanese nuclear power plants. Power outages or floods could cripple primary and secondary core cooling systems. Widespread fire protection deficiencies have not been rectified. Most nuclear power plants in the U.S. remain vulnerable to an intentional aircraft crash. Each of these vulnerabilities merits serious scrutiny.

Bringing our nuclear power plants up to a more suitable safety standard will be expensive. The new reality created by the Japanese nuclear reactors will force us to re-imagine what is possible and, therefore, what must be done. Professor Golay summarized the false choice that exists in the prevailing attitude about nuclear power safety options:

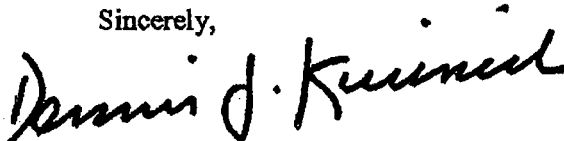
In considering the nuclear hazards of strong earthquakes, it's useful to note the results of a study, which I led from 2001 to 2004, for Tokyo Electric Power Company. The study addressed whether to devote resources to provide robust public protection from nuclear risks that could arise in the event of strong earthquakes or to focus such efforts and researches on the direct effects of the earthquake.

We concluded that any earthquake strong enough to damage the reactor, and thus expose the public to harmful radiation, would be much more dangerous to the public in its direct effects, and that it would be more beneficial to devote efforts and resources to general preparedness.

When the choice is between building a reactor that can survive a major earthquake and preparing the public for a major release, the latter wins. This a false choice about ways to direct scarce resources that facilitates profit for a select few, while placing enormous risks on the rest of us. If the citizens of the U.S. and the world cannot be adequately protected from the risks of nuclear power, then nuclear power should not continue to exist and we should turn to cleaner, safer alternatives.

If you have questions, please do not hesitate to contact me.

Sincerely,

A handwritten signature in dark ink, reading "Dennis J. Kucinich". The signature is fluid and cursive, with the first name "Dennis" being the most prominent part.

Dennis J. Kucinich
Member of Congress



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

April 27, 2011

The Honorable Robert J. Duffy
Lieutenant Governor of New York
New York State Capitol Building
Albany, New York 12224

Dear Mr. Duffy:

On behalf of the U.S. Nuclear Regulatory Commission (NRC or Commission), I am responding to your letter of March 24, 2011, regarding seismic risks at Indian Point Nuclear Generating Station Unit Nos. 2 and 3 (IP2 and IP3) and your meeting with senior managers in the NRC's Office of Nuclear Reactor Regulation (NRR), including the Director of NRR, Eric Leeds.

As you stated in your letter, Mr. Leeds has agreed to make IP2 and IP3 the top priority in the NRC staff's review of seismic hazards under Generic Issue (GI)-199, "Implications of Updated Probabilistic Seismic Hazard Estimates in Central and Eastern U.S. on Existing Plants." GI-199 is one of the generic issues that the NRC is evaluating as part of our well-established program to continually update our regulations based upon new information. The NRC began a review of seismic hazards using GI-199 after learning that data from the U.S. Geological Survey indicate that estimates of the potential for earthquake hazards for some nuclear power plants in the central and eastern United States have changed compared to previous estimates. While we have determined that currently operating plants safely address seismic hazards, we also determined that the recent seismic data and models warrant further study and analysis. This further analysis will allow the NRC to better understand the current seismic hazards and to decide whether to require licensees to make further improvements to their facilities in accordance with Title 10 of the *Code of Federal Regulations*, Section 50.109, "Backfitting." I can assure you that the NRC's review will cover both IP2 and IP3. As indicated in your letter, Mr. Leeds also affirmed that NRC staff will share data with New York's technical experts on this topic, and will allow State observation of NRC seismic inspections at Indian Point, in accordance with a memorandum of understanding between the NRC and the State of New York.

Your letter included comments regarding the seismic safety of the spent fuel pools (SFPs) at IP2 and IP3. SFPs are constructed of reinforced concrete, several feet thick, with a stainless steel liner to prevent any significant leakage. Due to their configuration, SFPs are rugged structures. The NRC has previously reviewed SFPs under GI-173A, "Spent Fuel Storage Pool for Operating Facilities." The SFPs at IP2 and IP3 are designed to the same seismic requirements and ground motion intensity as the containment building. A significant portion of the IP2 and IP3 SFPs are below grade level, and the SFPs are set on solid rock. Based on previous NRC reviews, the NRC staff determined that it is not necessary to include SFPs in the GI-199 review, and SFPs were therefore, not included in the GI-199 safety assessment the NRC issued in September 2010. Additionally, the Commission directed the staff to begin a senior level review of recent events in Japan. This task force will conduct a

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systematic and methodical review of our processes and regulations to evaluate whether the agency should make any improvements to our regulatory system. This 90-day review will encompass such areas as natural disasters, station blackout, severe accident management and emergency preparedness.

As stated in NRC's Management Directive 5.2, "Cooperation With States at Commercial Nuclear Power Plants and Other Nuclear Production or Utilization Facilities," it is the policy of the NRC to cooperate fully with State Governments as they seek to respond to the expectations of their citizens that their health and safety be protected and that there be minimal impact on the environment as a result of activities licensed by the NRC. The NRC is committed to the timely disclosure of matters affecting the public and to fair and uniform agency interactions with the States, the public, and NRC licensees. The Commission fully supports this policy, and as I previously communicated to you I will personally visit the Indian Point site sometime in the near future.

Sincerely,

A handwritten signature in black ink, appearing to read 'G. B. Jaczko', with a stylized flourish at the end.

Gregory B. Jaczko



STATE OF NEW YORK
EXECUTIVE CHAMBER
ALBANY 12224

ROBERT J. DUFFY
LIEUTENANT GOVERNOR

The Honorable Gregory B. Jaczko
Chairman
Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852

March 24, 2011

Dear Dr. Jaczko,

I am writing to follow-up on my March 22nd meeting with Eric Leeds, Jack Grobe, and other members of your staff, as well as our phone conversations.

Our discussion at the meeting focused largely on NRC's September 2010 Safety/Risk Assessment Report and Information Notice. This report found that the risk of damage to Indian Point Unit #3 and 26 other nuclear reactors in the Central and Eastern U.S. increased from previous estimates. Because of these findings, NRC concluded that further site-specific review was necessary at these reactors to determine if plant modifications that would reduce seismic risk are warranted. We believe that in light of the improvements in technologies that afford better monitoring and assessment of earthquakes, such a review is necessary, and the events in Japan underscore the urgency to complete this review as quickly as possible.

At our meeting, Mr. Leeds agreed to make Indian Point the top priority in NRC's review of the 27 nuclear reactors found to have an increase in seismic risk. In addition, Mr. Leeds committed to working with New York's technical experts during this review by sharing data in real time and allowing our team to accompany NRC on related inspections at Indian Point. In our telephone conversation following the meeting, you concurred with Mr. Leeds' commitments to us, and said you'd also conduct a personal site visit at Indian Point. These are good first steps.

During the meeting, we also asked whether the site-specific review would evaluate the spent fuel pools at Indian Point for seismic risk. Mr. Grobe explained that the spent fuel pools were included in the September 2010 assessment and required no further study. However, another NRC staff member at the meeting contradicted Mr. Grobe and explained that spent fuel pools were not part of the 2010 assessment. Mr. Grobe agreed to provide us with whatever seismic risk data NRC has with respect to the spent fuel pools at Indian Point. We will review these data and, depending on our findings, may continue to insist that NRC include the spent fuel pools in its site-specific seismic review at Indian Point. In addition, our technical staff requested

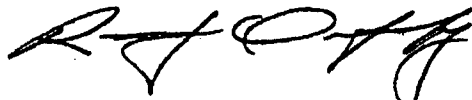


that the site-specific review at Indian Point look at the potential seismic risk at the entire plant, not just Unit #3, and include other key infrastructure such as back-up power systems.

Lastly, I want to express my disappointment with statements made by your spokeswoman, Elizabeth Hayden, to the news media. Ms. Hayden told the *New York Post* that the review of Indian Point "is really not a serious concern." Dismissive comments such as these do not inspire confidence that your agency is taking seriously its responsibilities to protect public safety. I believe that the NRC has many talented staff, and the work they are doing is critically important. The events in Japan are a stark reminder of just how serious the NRC's work really is, and I encourage you to remind your staff of the importance of NRC's mission.

Governor Cuomo and I continue to have serious concerns about Indian Point, and New York State will continue to stay fully engaged in the license renewal proceeding as well as the ongoing review of seismic risk at Indian Point. I appreciate your staff's willingness to meet with us and for the commitment to make Indian Point their top priority in the site-specific seismic risk review that is now underway.

All the best,

A handwritten signature in black ink, appearing to read "R. J. Duffy", with a stylized flourish at the end.

Lieutenant Governor Robert J. Duffy
New York State Capitol Building
Albany, New York 12224

From: OST01 HOC
Sent: Wednesday, April 27, 2011 7:04 AM
To: FOIA Response.hoc Resource
Subject: FW: PMT and LT Staffing

From: Marshall, Jane
Sent: Wednesday, April 27, 2011 6:52 AM
To: Johnson, Michael; Morris, Scott
Cc: Kokajko, Lawrence; Correia, Richard; Tracy, Glenn; OST01 HOC; McDermott, Brian; Morris, Scott
Subject: RE: PMT and LT Staffing

Confirmed. We got the OK yesterday to adjust staffing to better handle the demands of different shifts (and the total lack of demand on some positions in the overnight shift). The positions/shifts that we are no longer staffing:

Not staffing night shift LT

Not staffing night shift PMT

One (vice two) staff for RST for swing and night shift

No change for ET or ET support.

We are continuing to refine and adjust the response posture in the Operations Center to be more efficient in our use of staff time while ensuring we remain responsive to the needs of the Japan team.

From: Johnson, Michael
Sent: Wednesday, April 27, 2011 3:54 AM
To: Marshall, Jane; Morris, Scott
Cc: Kokajko, Lawrence; Correia, Richard; Tracy, Glenn; OST01 HOC
Subject: PMT and LT Staffing

I learned from the folks on the team with me tonight that we are planning to go with staffing those positions from 7 am to 11 pm. They thought we would be going to the after this shift for the PMT and beginning Friday for the LT. Can you confirm?

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From: OST01 HOC
Sent: Wednesday, April 27, 2011 6:21 AM
To: Johnson, Michael; Kokajko, Lawrence; Batkin, Joshua; Boger, Bruce; Carpenter, Cynthia; Castleman, Patrick; Franovich, Mike; Gibbs, Catina; Hipschman, Thomas; Hoc, PMT12; Jaczko, Gregory; LIA08 Hoc; Marshall, Michael; Moore, Scott; Orders, William; Pace, Patti; RST01 Hoc; Snodderly, Michael; Speiser, Herald; Tracy, Glenn; Uhle, Jennifer; Virgilio, Martin; Weber, Michael; Wiggins, Jim; Zimmerman, Roy
Subject: One-Pager 0700 EDT 4/27/11
Attachments: Japan One Pager 0700 EDT 4-27-11.pdf; SharePoint Information

*** Attachments are OUO ***

Per the attached email, this will be the final One-Pager sent via email. Future updates will be loaded to the Japan SharePoint page at <http://nsir-ops.nrc.gov/>. Please let us know if you have any problems or questions. Thank you.

*** Attachments are OUO ***

From: OST01 HOC
Sent: Wednesday, April 27, 2011 5:30 PM
To: Kowalczyk, Jeffrey
Subject: parking permits

Where do I sign in and out parking permits

JJJ/430

From: [Harrington, Holly](#)
To: [Milligan, Patricia](#)
Subject: FW: Draft CDC fact sheet on nuclear power plants
Date: Friday, March 11, 2011 10:59:00 AM
Attachments: [nuclear power plants 11.15.2010 new1.docx](#)

Are you here today? CDC may post this today because of the Japan situation. Can you quickly review?

From: McCurley, Carol M. (CDC/ONDIEH/NCEH) [mailto:cmo3@cdc.gov]
Sent: Friday, March 11, 2011 10:54 AM
To: Harrington, Holly
Cc: Miller, Charles W. (CDC/ONDIEH/NCEH); Olivares, Dagny (CDC/OPHPR/DEO); Briseno, Lisa (ATSDR/OCOM)
Subject: Draft CDC fact sheet on nuclear power plants

Hi, Holly—

Per our conversation, attached is the draft fact sheet on nuclear power plants. As I mentioned, the original intent was to provide this as background information on our web site. Please let me know if you have any concerns or questions. Thanks,

Carol McCurley

Lead Health Education Specialist

Radiation Studies Branch

Division of Environmental Hazards and Health Effects

National Center for Environmental Health, CDC

770/488-3738

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Nuclear Power and Nuclear Power Plants

Traditional coal-fired and natural gas power plants use large amounts of fossil fuel. These plants release carbon dioxide into the air when the coal or natural gas is burned.

Because nuclear power plants make electricity without burning fossil fuel, many people consider electricity made from nuclear power to be a cleaner form of energy. Many others are still concerned about nuclear power production for two main reasons:

- Health risks from the release of radioactive material into the environment
- Long-term environmental threat from radioactive waste produced by nuclear power plants

The Nuclear Fuel Cycle

When atoms are split (a process known as *nuclear fission*), large amounts of energy and heat are released. Nuclear power plants use the energy and heat released by nuclear fission to make electricity. The heat that is released is used to turn water into steam. The steam then drives a turbine which spins a generator to produce electricity. This method of generating electricity, is part of the nuclear fuel cycle which begins with the mining of the uranium and ends with the generation of electricity at a power plant. The nuclear fuel cycle could bring about various concerns because of radiation exposure from various levels which are listed below:

- Environmental exposures from the mining of the uranium, the milling, refining and processing
- Transportation of the material between facilities at all stages of the cycle
- Environmental impact of the construction of these facilities
- Environmental exposures from power plant operations, including incidents and accidents

All of these instances can cause environmental exposures to radiation at some level. Local and state officials as well as electrical utility companies should have emergency response plans in place in the event of a nuclear power emergency.

National Cancer Institute Report on Populations Living Near Power Plants

The National Cancer Institute (NCI) report, *Cancer in Populations Living Near Nuclear Facilities*, studied more than 900,000 cancer deaths from 1950-1984 from mortality records in counties containing nuclear facilities. At the time, it was the broadest study of its type ever to be conducted. The study examined deaths from 16 types of cancer, including leukemia. The NCI report focused on the following:

- In the counties with nuclear facilities, cancer death rates before and after the start up of the facilities were compared with cancer rates in 292 similar counties without nuclear facilities.
- Results of the study showed no increased risk of death from cancer for residents of the 107 U.S. counties containing or closely adjacent to 62 nuclear sites including all of the country's power reactors operational before 1982.

Nuclear Power and Global Climate Change

According to the International Atomic Energy Agency, making electricity by nuclear power

- Does not produce emissions that damage local air quality
- Does not contribute to global climate change.

Among the nine electricity generation mitigation technologies assessed by the Intergovernmental Panel on Climate Change, nuclear power has the largest mitigation potential by a large margin and (after hydroelectric power) the second lowest range of mitigation costs. It is increasingly cited as a positive technology alternative to greenhouse gas emitting power sources.

By-products of Nuclear Power Production / Radioactive Waste

Type of waste	Examples	Amounts	Methods of Disposal
Low-level	Items contaminated with radioactive material, including <ul style="list-style-type: none"> • Clothing • Equipment • Tools • Filters 		Stored onsite (at the plant) OR Shipped to a low-level waste disposal site
High-level	Enriched uranium <ul style="list-style-type: none"> • Formed into ceramic pellets • Bundled into fuel assemblies for power production Spent fuel assemblies <ul style="list-style-type: none"> • No longer useful for energy production • Highly radioactive 	About 20-30 tons per month per nuclear power reactor	Stored in pools of water where water cools the fuel rods OR Stored in dry storage containers with air cooling

Government Oversight of Nuclear Power Plants and Nuclear Waste

Federal Department or Agency	Responsibilities & Activities related to Nuclear Power Plant Safety
Department of Energy (DOE)	Establishes nuclear safety requirements to protect <ul style="list-style-type: none"> • Workers • The public
Nuclear Regulatory Commission (NRC)	Issues licenses and policies governing reactor security and safety Conducts inspections of reactors Works with Department of Homeland Security and local law enforcement to coordinate threat information and response

Environmental Protection Agency (EPA)	<p>Sets standards limiting emissions from all federal and industrial facilities</p> <p>Has written environmental standards for offsite radiation from high-level radioactive waste disposal</p>
Federal Emergency Management Agency (FEMA)	<p>Evaluates emergency response plans and conducts emergency preparedness exercises at nuclear power plants every two years</p>

For more information on nuclear power generation:

Environmental Protection Agency-RadTown-USA
www.epa.gov/radtown/nuclear-plant.html

U.S. Department of Energy
www.ne.doe.gov/

U.S. Nuclear Regulatory Commission
www.nrc.gov

FEMA: Nuclear Power Plan Emergency
<http://www.fema.gov/hazard/nuclear/index.shtm>

Know Your Nuclear Power Plant Terms
http://www.fema.gov/hazard/nuclear/nu_terms.shtm

U.S. Department of Homeland Security
<http://www.dhs.gov/index.shtm>

Date _____

To expedite the process and make it easier for you to review, your signature or initials in one of the categories would be appreciated. Thanks!

Approved _____

Approved with changes _____

Discussion needed _____

Concerns:

From: OST01 HOC
Sent: Wednesday, April 27, 2011 7:08 AM
To: Brandon, Lou
Cc: Casto, Greg
Subject: FW: PMT Staffing for Fukushima to 5-28
Attachments: Japan Roster May 28 (4).xlsx

Lou,

We aren't going to make any staffing changes (other than removing the night shift slot) until you figure out Greg Casto's availability. Please talk to Jeff K if you have questions.

Rebecca Stone
EST Coordinator

From: Casto, Greg
Sent: Tuesday, April 26, 2011 11:07 PM
To: OST01 HOC
Subject: FW: PMT Staffing for Fukushima to 5-28

From: Brandon, Lou
Sent: Tuesday, April 26, 2011 6:02 PM
To: Brock, Kathryn; Foster, Jack; Hardesty, Duane; Harris, Tim; Rosenberg, Stacey; Hart, Michelle; Casto, Greg; Kratchman, Jessica; Lou Brandon
Cc: Gambone, Kimberly; Hardin, Leroy; Barr, Cynthia; Schmidt, Duane; Sun, Casper; Parillo, John; Grant, Jeffery; Marshall, Jane
Subject: PMT Staffing for Fukushima to 5-28

PMT Japan Staff filling the PAAD position:

Please see the attached updated roster. I was just informed that we can eliminate the night shift effectively now. Greg, Jessica, you can work or not for the rest of the week, as desired, or planned, as you like.

That frees up three of us on the night shift to provide breaks for others. I've filled the schedule out based on past rotational schedules, providing relief to Stacy after mid May, as requested, by myself and Greg Casto (let me know if this is a problem Greg). If others need a break on weekend days or otherwise, those of us who were on the night shift, or others, can likely assist.

Keep me informed of conflicts please.

Thanks,

Lou

Planned staffing (and backups):

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Morning

Kathy Brock

Jack Foster

Duane Hardesty

(Kimberly Gambone)

(Leroy Hardin)

(Cynthia Barr)

(Duane Schmidt)

Afternoon

Tim Harris

Stacy Rosenberg

Michelle Hart

(Casper Sun)

Evening

Greg Casto

Jessica Kratchman

Lou Brandon

(John Parillo)

Protective Measures Team - PAAD			
Sat-Sun	5/7-5/8	11pm - 7am	NA
Sun	5/8	7am - 3pm	Kathy Brock
Sun	5/8	3pm-11pm	Tim Harris
Sun-Mon	5/8-5/9	11pm - 7am	NA
Mon	5/9	7am - 3pm	Kathy Brock
Mon	5/9	3pm-11pm	Tim Harris
Mon-Tue	5/9-5/10	11pm - 7am	NA
Tue	5/10	7am - 3pm	Kathy Brock
Tue	5/10	3pm-11pm	Tim Harris
Tue-Wed	5/10-5/11	11pm - 7am	NA
Wed	5/11	7am - 3pm	Kathy Brock
Wed	5/11	3pm-11pm	Tim Harris
Wed-Thur	5/11	11pm - 7am	NA
Thur	5/12	7am - 3pm	Duane Hardesty
Thur	5/12	3pm-11pm	Michelle Hart
Thur-Fri	5/12-5/13	11pm - 7am	NA
Fri	5/13	7am - 3pm	Duane Hardesty
Fri	5/13	3pm-11pm	Michelle Hart
Fri-Sat	5/13-5/14	11pm-7am	NA
Sat	5/14	7am - 3pm	Duane Hardesty
Sat	5/14	3pm-11pm	Michelle Hart
Sat	5/14-5/15	11pm - 7am	NA

Protective Measures Team - PAAD			
Sat-Sun	5/14-5/15	11pm - 7am	NA
Sun	5/15	7am - 3pm	Jack Foster
Sun	5/15	3pm-11pm	Lou Brandon
Sun-Mon	5/15-5/16	11pm - 7am	NA
Mon	5/16	7am - 3pm	Jack Foster
Mon	5/16	3pm-11pm	Lou Brandon
Mon-Tue	5/16-5/17	11pm - 7am	NA
Tue	5/17	7am - 3pm	Jack Foster
Tue	5/17	3pm-11pm	Lou Brandon
Tue-Wed	5/17-5/18	11pm - 7am	NA
Wed	5/18	7am - 3pm	Jack Foster
Wed	5/18	3pm-11pm	Lou Brandon
Wed-Thur	5/18-5/19	11pm - 7am	NA
Thur	5/19	7am - 3pm	Kathy Brock
Thur	5/19	3pm-11pm	Tim Harris
Thur-Fri	5/19-5/20	11pm - 7am	NA
Fri	5/20	7am - 3pm	Kathy Brock
Fri	5/20	3pm-11pm	Tim Harris
Fri-Sat	5/20-5/21	11pm-7am	NA
Sat	5/21	7am - 3pm	Kathy Brock
Sat	5/21	3pm-11pm	Tim Harris
Sat	5/21-5/22	11pm - 7am	NA

Protective Measures Team - PAAD			
Sat-Sun	5/21-5/22	11pm - 7am	NA
Sun	5/22	7am - 3pm	Duane Hardesty
Sun	5/22	3pm-11pm	Michelle Hart
Sun-Mon	5/22-5/23	11pm - 7am	NA
Mon	5/23	7am - 3pm	Duane Hardesty
Mon	5/23	3pm-11pm	Michelle Hart
Mon-Tue	5/23-5/24	11pm - 7am	NA
Tue	5/24	7am - 3pm	Duane Hardesty
Tue	5/24	3pm-11pm	Michelle Hart
Tue-Wed	5/24-5/25	11pm - 7am	NA
Wed	5/25	7am - 3pm	Duane Hardesty
Wed	5/25	3pm-11pm	Michelle Hart
Wed-Thur	5/25-5/26	11pm - 7am	NA
Thur	5/26	7am - 3pm	Jack Foster
Thur	5/26	3pm-11pm	Greg Casto
Thur-Fri	5/26-5/27	11pm - 7am	NA
Fri	5/27	7am - 3pm	Jack Foster
Fri	5/27	3pm-11pm	Greg Casto
Fri-Sat	5/27-5/28	11pm-7am	NA
Sat	5/28	7am - 3pm	Jack Foster
Sat	5/28	3pm-11pm	Greg Casto
Sat	5/28-5/29	11pm - 7am	NA

From: OST01 HOC
Sent: Wednesday, April 27, 2011 9:49 PM
To: RST01 Hoc; LIA08 Hoc
Subject: One-Pager

Reminder, please submit your One-Pager, it's getting close to 10:00pm ☺

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From: Weber, Michael
Sent: Wednesday, April 27, 2011 7:39 AM
To: Moore, Carl
Cc: Uhle, Jennifer; Virgilio, Martin; OST01 HOC
Subject: RESPONSE - NRC's Daily Assessment of Conditions at Fukushima Daiichi

Thanks, Carl

From: Moore, Carl
Sent: Wednesday, April 27, 2011 7:30 AM
To: Weber, Michael
Subject: Re: RESPONSE - NRC's Daily Assessment of Conditions at Fukushima Daiichi

Mike,
Yes, TEPCO reported today that they feel certain that #4 SFP is leaking. No leak location confirmed as of yet. Several possibilities. Could be through the gates or through liner. They are currently filling both U-1 and U-3 drywells. Time frame to full is dependent on leakage rates though, so I wouldn't write July in stone. May be sooner, may not be able to reach desired level.

Sound like info is pretty close overall.

Carl

From: Weber, Michael
To: Moore, Carl
Cc: Uhle, Jennifer; OST01 HOC; RST01 Hoc; Virgilio, Martin
Sent: Wed Apr 27 06:33:23 2011
Subject: RESPONSE - NRC's Daily Assessment of Conditions at Fukushima Daiichi

Thanks, Carl. DOE is reporting concerns about potential leakage from the Unit 4 SFP because water levels are not as high as projected based on TEPCO's adding water with the pumper trucks. I also understand that TEPCO is now planning to flood containment for Units 1 and 3 by July. Just making sure that you are receiving the same information there that we are getting back here.

From: Moore, Carl
Sent: Wednesday, April 27, 2011 2:33 AM
To: Jaczko, Gregory
Cc: Borchardt, Bill; Weber, Michael; Virgilio, Martin; Casto, Chuck; Leeds, Eric; Reynolds, Steven; RST01 Hoc; OST01 HOC
Subject: NRC's Daily Assessment of Conditions at Fukushima Daiichi

Dear Chairman

Sorry for cluttering your email inbox, but I sent the last email before attaching the Daily Assessment.

The attached is the NRC Japan Team's Daily Assessment of conditions at the Fukushima Daiichi nuclear power plants and spent fuel pools. There are no changes to the daily assessment chart for today.

If you have any questions, please don't hesitate to ask.

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Best regards,
Carl Moore
NRC Japan Team

~~Official Use Only~~

NRC's Daily Assessment of Conditions at Fukushima Daiichi Nuclear Power Plant

<u>Unit 1</u>		Today	Yesterday		<u>Unit 3</u>		Today	Yesterday
Vessel	Cooling	Challenged	Challenged		Vessel	Cooling	Adequate	Adequate
		↔	↔				↔	↔
	Integrity	Intact	Intact			Integrity	Failed	Failed
		↔	↔				↔	↔
Containment	Flooding	Inc./Needed	Inc./Needed		Containment	Flooding	Challenged	Challenged
		↔	↔				↔	↔
	Integrity	Challenged	Challenged			Integrity	Failed	Failed
		↔	↔				↔	↔
Spent Fuel Pool	Cooling/Level	Adequate	Adequate		Spent Fuel Pool	Cooling/Level	Challenged	Challenged
		↔	↔				↔	↔
	Integrity	Intact	Intact			Integrity	Challenged	Challenged
		↔	↔				↔	↔
<u>Unit 2</u>		Today	Yesterday		<u>Unit 4</u>		Today	Yesterday
Vessel	Cooling	Challenged	Challenged		Spent Fuel Pool	Cooling/Level	Challenged	Challenged
		↔	↔				↔	↔
	Integrity	Failed	Failed			Integrity	Challenged	Challenged
		↔	↔				↔	↔
Containment	Flooding	Inc./Needed	Inc./Needed				Today	Yesterday
		↔	↔					
	Integrity	Failed	Failed		Protective Measures	Exposure Risk	Low	Low
		↔	↔				↔	↔
Spent Fuel Pool	Cooling/Level	Adequate	Adequate					
		↔	↔					
	Integrity	Intact	Intact					
		↔	↔					

~~Official Use Only~~

April 27, 2011

Methodology for Developing the Fukushima Daiichi Daily Assessment Report

PURPOSE: The report is prepared to provide a qualitative high level assessment of daily conditions at Fukushima Daiichi that the U.S. Ambassador can use to assess the safety of American citizens in Japan.

DISCLAIMER: The development of the daily assessment report includes a number of inputs. Some of these are objective, such as plant data provided by TEPCO, while others are subjective, such as engineering insights from the NRC's reactor and protective measures specialists in Japan. It should be recognized that there are many unknowns and uncertainties associated with having a complete understanding of conditions in each of the Daiichi reactors and spent fuel pools. As such, this tool represents the collective judgment of the NRC staff in Japan based on all available data.

For each of the major plant parameters listed below, the NRC staff assesses its status daily and bins it into one of the three categories listed. The staff uses the listed plant information and conditions in making its assessment. The arrows on the report indicate the relative trend in plant conditions from the previous day.

1. Reactor Pressure Vessel
 - a. Cooling – Adequate, Challenged, or Inadequate.
 - i. Flow or Injection Rate
 - ii. Reliability of Injection
 - iii. Source of Water
 - b. Integrity – Intact, Challenged, or Failed.
 - i. Temperature indications
 - ii. Pressure readings
2. Primary Containment
 - a. Flooding Status – Complete/Not needed, Challenged, or Incomplete/Needed.
 - i. Water Level
 - ii. Sources
 - iii. Injection capacity/rate
 - b. Integrity - Intact, Challenged, or Failed.
 - i. Pressure readings
 - ii. Bypass evaluations
 - iii. Temperature indications
3. Spent Fuel Pools
 - a. Cooling/Level – Adequate, Challenged, or Inadequate.
 - i. Flow or Injection Rate
 - ii. Reliability of Injection
 - iii. Source of Water
 - b. Integrity – Intact, Challenged, or Failed. Due to limited available data, this assessment relies strongly on the NRC team's engineering judgment.
4. Protective Measures – Exposure Risk to American citizens in Japan outside the U.S. government's recommended 50-mile evacuation zone.
 - a. Low – 50-mile recommendation remains sufficient
 - b. Medium – New information has raised questions regarding the sufficiency of the 50-mile recommendation.
 - c. High – 50-mile recommendation is no longer sufficient due to changing plant condition

From: Harrington, Holly
To: Brenner, Eliot; Burnell, Scott; Couret, Ivonne; Hayden, Elizabeth; McIntyre, David; Chandrathil, Prema; Dricks, Victor; Hannah, Roger; Ledford, Joey; Miltvng, Viktoria; Screnci, Diane; Sheehan, Neil; Uselding, Lara
Subject: Old, but what FEMA was saying
Date: Friday, March 11, 2011 3:24:00 PM
Attachments: Talking Points on FEMA.docx

JJJ/43S

Talking Points on FEMA/Federal Family Response to Earthquake, Tsunami in the Pacific

Updated: 03/11/2011, 12:30 pm

President Obama received a briefing this morning at 9:30 a.m. in the Oval Office on the earthquake in Japan and the tsunami warnings across the Pacific from a number of senior US government officials including Homeland Security Secretary Janet Napolitano and Federal Emergency Management Agency Administrator Craig Fugate.

The senior officials provided the President with an update on the evolving situation stemming from the earthquake and subsequent tsunami that struck Japan early this morning including the actions being taken to assist U.S. states and territories that could be affected by the tsunami, as the President directed earlier this morning as well as the work being done to be prepared to assist the people of Japan

FEMA is closely monitoring the effects of the earthquake and subsequent tsunami that struck Japan early this morning, and as directed by the President, FEMA is in close contact and coordination with state and local officials and stands ready to support them in any way needed, through our regional offices in the West Coast and in the pacific area.

The Pacific Tsunami Warning Center has issued Tsunami Warnings and Watches for a number of countries, including parts of U.S. Territories in the Pacific as well as coastal areas along California, Oregon, Washington and Alaska.

We are also in contact with our federal partners at NOAA and other agencies. While there have been no requests for federal assistance from U.S. states or territories at this time, FEMA stands ready to assist if a request is made by a Governor.

FEMA has commodities, such as water, meals, blankets and cots, prepositioned on both Hawaii and Guam, should a request be made.

In addition, U.S. Coast Guard rescue crews are making preparations through the main Hawaiian Islands to provide post-tsunami support following any potential impacts.

Our message to the public is critical and simple: listen to the instructions of state and local officials, and if told to evacuate - evacuate. We urge everyone in the regions who could be impacted to listen to a NOAA Weather Radio and their local news to monitor for updates and directions provided by their local officials.

The United States Agency for International Development (USAID) remains the lead federal agency when it comes to responding to international disasters.

Additional federal coordination efforts include:

The Department of Defense has positioned National Guard personnel in county emergency operation centers in Hawaii, additional aircraft and personnel have been placed on standby if needed.

The U.S. Department of Health and Human Services (HHS) is deploying a Disaster Medical Assistance Team of more than 35 healthcare professionals and an Incident Response Coordination Team to Travis Air Force Base in California, as well as caches of medical equipment and supplies. From the Air Force base, the teams and equipment can deploy quickly wherever they are needed if requested by states or territories in the region or by the government of Japan.

The HHS Administration on Aging is monitoring the situation through its state, tribal and local Agencies on Aging, in impacted areas, to ensure safety of older adults in potentially impacted areas.

The U.S. Nuclear Regulatory Commission (NRC) is closely monitoring conditions near the Diablo Canyon Power Plant, located near San Luis Obispo, CA. The NRC is working closely with its resident inspectors who are on site to ensure safe operating.

The National Oceanic and Atmospheric Administration and its Pacific Tsunami Warning Center are monitoring conditions and issuing warnings and advisory updates as available.

The U.S. Department of State has a call center established for Americans seeking information about family members in Japan. The number is 1-888-407-4747.

While tsunami watches and warning remain in effect, we urge the public to listen to the instructions of state and local officials, and if told to evacuate - evacuate. We urge everyone in the regions who could be impacted to listen to a NOAA Weather Radio and their local news to monitor for updates and directions provided by their local officials.

From: Harrington, Holly
To: OST02 HOC
Subject: RE: Message to be sent: NRC IS RESPONDING TO AN EMERGENCY OUTSIDE U.S. TERRITORY
Date: Friday, March 11, 2011 2:49:00 PM

No, that information is not correct. See corrected version below. (I also added something.)

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

From: OST02 HOC
Sent: Friday, March 11, 2011 2:46 PM
To: Harrington, Holly
Subject: Message to be sent: NRC IS RESPONDING TO AN EMERGENCY OUTSIDE U.S. TERRITORY

This is the message we were planning to send, please let us know if you have any updates
– Thank you

THIS IS NOT A DRILL.

The NRC and other Federal agencies are closely following an emergency occurring outside of the United States. Information regarding this event will be posted and updated as necessary on NRC's internal and external web sites:

<http://public-blog.nrc-gateway.gov> for official NRC Press Releases.

THIS IS NOT A DRILL

Two important reminders:

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

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

No response to this message is required.

JTJ 436

From: Uselding, Lara
To: Burnell, Scott; Brenner, Eliot; Harrington, Holly
Subject: RE: UPDATE ON TSUNAMI WARNING
Date: Friday, March 11, 2011 3:41:54 PM

Because the tsunami warning is still in effect until possibly midnight, then Diablo Canyon will remain in the NOUE status.

Per Eliot, lets add wording to our next release that you are working Scott such as:

NRC will continue to monitor as long as the alert is in effect...

From: Burnell, Scott
Sent: Friday, March 11, 2011 2:38 PM
To: Uselding, Lara; Brenner, Eliot; Harrington, Holly
Subject: RE: UPDATE ON TSUNAMI WARNING

Any update on the NOUE?

From: Uselding, Lara
Sent: Friday, March 11, 2011 2:32 PM
To: Brenner, Eliot; Harrington, Holly; Burnell, Scott
Subject: UPDATE ON TSUNAMI WARNING

We have just learned from our RIs that it is POSSIBLE that California Emergency Management Agency may extend tsunami warning an additional 12 hours

JJJ/437

From: Odonnell, Michelle
To: Odonnell, Michelle
Subject: Pacific Tsunami/Japan Earthquake ESF 15 Daily Communications Summary
Date: Friday, March 11, 2011 4:17:31 PM
Attachments: 3.11.2011 Tsunami ESF 15 Daily Communications Summary.docx

Good Afternoon,

Please see attached for today's Pacific Tsunami/Japan Earthquake ESF 15 Daily Communications Summary. The summary is also pasted below for your convenience.

Thank you,
Michelle

Michelle N. O'Donnell
Office of External Affairs-Disaster Operations Division
Federal Emergency Management Agency
500 C St SW
Washington, DC 20472
Office: 202 646 3667
michelle.odonnell@dhs.gov

Emergency Support Function 15 – External Affairs
Pacific Tsunami/Japan Earthquake
03/11/2011-last updated 4:00pm EST

- President Obama received a briefing this morning at 9:30 a.m. in the Oval Office on the earthquake in Japan and the tsunami warnings across the Pacific from a number of senior US government officials including Homeland Security Secretary Janet Napolitano and Federal Emergency Management Agency Administrator Craig Fugate.
- The senior officials provided the President with an update on the evolving situation stemming from the earthquake and subsequent tsunami that struck Japan early this morning including the actions being taken to assist U.S. states and territories that could be affected by the tsunami, as the President directed earlier this morning as well as the work being done to be prepared to assist the people of Japan
- FEMA is closely monitoring the effects of the earthquake and subsequent tsunami that struck Japan early this morning, and as directed by the President, FEMA is in close contact and coordination with state and local officials and stands ready to support them in any way needed, through our regional offices in the West Coast and in the Pacific area.
- The Pacific Tsunami Warning Center has issued Tsunami Warnings and Watches for a number of countries, including parts of U.S. Territories in the Pacific as well as coastal areas along California, Oregon, Washington and Alaska.
- We are in contact with our federal partners at NOAA and other agencies. While

JJJ/438

there have been no requests for federal assistance from U.S. states or territories at this time, FEMA stands ready to assist if a request is made by a Governor.

- FEMA has commodities, such as water, meals, blankets and cots, prepositioned on both Hawaii and Guam, should a request be made.
- In addition, U.S. Coast Guard rescue crews are making preparations through the main Hawaiian Islands to provide post-tsunami support following any potential impacts.
- Our message to the public is critical and simple: listen to the instructions of state and local officials, and if told to evacuate – evacuate. We urge everyone in the regions who could be impacted to listen to a NOAA Weather Radio and their local news to monitor for updates and directions provided by their local officials.
- The United States Agency for International Development (USAID) remains the lead federal agency when it comes to responding to international disasters.

Federal Emergency Management Agency (FEMA)

- Activated NRCC at Level I (all ESFs)
- Regional Response Coordination Centers (RRCCs) in Regions 9 and 10 have been activated and contact made with impacted states.
- Prepositioned commodities are in place and on standby.
- Administrator Fugate and Sec. Napolitano briefed President with updates.
- Administrator Fugate speaking with various external stakeholders throughout the day (press, Congressional members, etc).
- FEMA working with USAID to support Japan's request for U.S. Urban Search and Rescue (USAR) teams. Two teams are being activated to send to Japan.

U.S. Agency for International Development (USAID)

- USAID Office of Foreign Disaster Assistance (OFDA) has created the following email address for individuals and businesses who are offering assistance for JAPAN: Rmtpactsu_crc@ofda.gov

U.S. Coast Guard

- Port in Pacific Northwest is closed (Portland and Columbia River)

U.S. Customs and Border Protection

- CBP's port/airport operations are currently unchanged (including Hawaii, Marianas, Guam, American Samoa)
- All CBP personnel are safe and accounted for.
- CBP is prepared to support operations centers when they stand up and/or calls for personnel/assets to aid in recovery efforts.

U.S. Department of Health and Human Services (HHS)

- HHS is prepared to provide with public health and medical support to the government of Japan, the state of Hawaii, and states along the West Coast should assistance be needed in the aftermath of today's earthquake in Japan and subsequent tsunami.
- Deploying a Disaster Medical Assistance Team of more than 35 healthcare professionals, advanced logistics team, and a command and control team, called an Incident Response Coordination Team, to Travis Air Force Base in California, as well as caches of medical equipment and supplies. From the Air Force base, the teams and equipment can deploy quickly wherever they are needed if requested by states or territories in the region or by the government of Japan.
- Additional HHS teams are on alert, ready to deploy if needed to provide emergency medical care, staff medical shelters, augment community hospital staff, provide veterinary care, or conduct disaster mortuary operations.
- HHS regional emergency coordinators are in contact with state and territory health officers to ensure states have the resources necessary to respond.
- The Administration on Aging is monitoring the situation with the state, tribal and local agencies on aging in impacted area to ensure safety of older adults in potentially impacted areas.
- All tsunami resources will be posted on CDC's Tsunami webpage: <http://emergency.cdc.gov/disasters/tsunamis/>. CDC will be doing some re-organization of the page this morning but at this point will not be posting anything new, just pointing to existing resources and will alert ESF-15 if and when we anticipate posting new materials.
- The CDC Emergency twitter account (<http://twitter.com/CDCEMERGENCY>) will be tweeting basic messages pointing to our pages (e.g. "There are safety and health concerns following a tsunami – learn more: <http://emergency.cdc.gov/disasters/tsunamis/>") and retweeting HHS, FEMA and other federal agency messages.
- We have received two media requests as of 11:00am EST (CNN and WebMD). Dr. Mark Keim (<http://www.linkedin.com/pub/mark-keim/13/899/6a7>) has tentatively been identified as the CDC spokesperson; Dr. Keim has extensive experience with tsunamis and public health in the Pacific Rim. These requests will be coordinated with HHS Assistant Secretary for Public Affairs per HHS policy.
- HHS liaison with the National Public Health Information Coalition is in contact with the public information officers in the affected states. He has provided them with CDC resources and asked them to alert us to any public health messaging needs they may have that we can support.

U.S. Geological Survey

- Dr. Applegate participated in 1:45pm EST Press Call with FEMA/NOAA.
- Live streaming video interview at 3:15pm EST on www.usstream.tv Q & A with USGS on 8.9 Earthquake in Japan.

Department of Defense (DoD)

- Initial impacts appear minimal but waiting for sunrise to confirm.
- PACOM focus on US forces deployed abroad and standing by to support Japan.
- NORTHCOM – CCMRFs on Cat 2 and video assets on standby and ready to deploy

National Guard Bureau (NGB)

- WA-JOC- No NG RFI/RFAs received, NO NG assets requested,
- OR-JOC- No NG requests received, No NG anticipated,
- CA-JOC- No NG requests received but RW/FW assets are on standby for Evacs/Search and Rescue as needed, Environmental concern for off-shore rigs = ALL CLEAR, wave heights range .25 - .30 meters, California Urban Search and Rescue Task Force 2 is on standby, Coastal Nuclear Power Plants have been shut-down in preparation, SITREP received with state capabilities
- National Guard Bureau on 24/7 operations.

Environmental Protection Agency (EPA)

- EPA has deployed a staff member to FEMA's NRCC to staff the ESF-10 desk and to FEMA's R9 RRCC. EPA is monitoring the activity from EPA HQ and regional EOCs.
- EPA has also prepared these 2 desk statements just in case we get any media calls about EPA activities. We are NOT distributing these and have no plans to release this information publically.

General Services Administration (GSA)—USA.GOV

- Posted information on USA.gov homepage with links to the Pacific Tsunami Warning Center.
- Posted a blog update with detailed information, links, and a map
- Issued Facebook updates and tweets from USA.gov and GobiernoUSA.gov with information about the emergency.
- Issued a GovDelivery message to subscribers of USA.gov homepage (77,000+) with information and links about the tsunami warning
- Worked with State Department and National Contact Center to respond to the emergency through 1-800-FED-INFO, email and chat inquiries, and Answers.usa.gov.
- Created Frequently Asked Questions in English and Spanish about the disasters
- Featured Trending Searches on USA.gov homepage, which go to high-value search spotlights on:
 - Tsunami Warning
 - Japan Earthquake
 - Hawaii Evacuation
 - Flood

American Red Cross (ARC)

- Developed a new Tsunami Safety Checklist and pushing out to public/posting on website shortly.

ARC stands ready and willing to help in Japan, but currently the Japanese Red Cross

- has not requested any assistance. The Japanese Red Cross has extraordinary disaster response capabilities.
- ARC is working closely with state officials in Hawaii and West Coast Emergency Operations Centers. We are ready to respond as needed with shelters and supplies. Visit www.redcross.org for the latest information about open shelters.
- Pushing the Red Cross Safe and Well website--a secure and easy-to-use online tool that helps families connect during emergencies like tsunamis. To access Safe and Well from a computer visit www.redcross.org, from a smart phone visit www.redcross.org/safeandwell or from any phone call 1-800-RED CROSS (1-800-733-2767).

DHS Office for Civil Rights and Civil Liberties (CRCL)/ FEMA Office on Disability Integration and Coordination (ODIC)

- Issued ongoing updates to federal partner agencies regarding tsunami on behalf of the Interagency Coordinating Council on Emergency Preparedness and Individuals with Disabilities (the ICC).
- CRCL and ODIC will continue to monitor National Operations Center reports and will seek feedback from affected stakeholders to address and resolve issues that may arise with regard to ensuring that the needs of individuals with disabilities in the impacted areas are met.
- At this time, we are aware that our FCC partners are working to resolve issues regarding closed captioning of public messages in Hawaii.

FEMA EXTERNAL AFFAIRS OPERATIONS

Public Affairs

- Developing Talking Points, press releases and blog posts regarding tsunami warnings
- Scheduling press calls for Administrator Fugate.
- Digital Media Engagement (as of 2:00pm EST):
 - Updated the www.fema.gov home page with preparedness links and links to the blog
 - Updated the mobile site home page with preparedness messages <http://m.fema.gov>
 - Published a blog post with a video update from the Administrator <http://blog.fema.gov>
 - Published 11 messages on Twitter <http://twitter.com/fema>
 - The first Twitter message was published at 3:41am EST.
 - Published 3 messages on Facebook <http://www.facebook.com/fema>
 - As of 2:00pm, the link to the Tsunami Preparedness page was clicked on 1250 times
 - As of 2:00pm, the link to the Administrator's blog post (Update 1) was clicked on 4362 times

Legislative Affairs

- Issued Congressional Advisory # 1 to staff members of the following congressional delegations in Regions IX and X: Hawaii, American Samoa, Guam, Northern Mariana Islands, California, Washington, Oregon, Alaska and the Authorizing and Appropriating committees, with Administrator Fugate's statement on Earthquake in Japan and tsunami warnings.

- Issued Congressional Advisory #2 to congressional Members and Chief of Staffs of same delegations and committees inviting them to participate in a conference call with the FEMA Associate Administrator of Response and Recovery William Carwile and our interagency partners. The purpose of the call is to provide an update on the earthquake that struck Japan this morning and the subsequent tsunami threat across much of the Pacific area.
- LAD Director, Pat Hart spoke with Congressman Mike Thompson of the First district of California. The Congressman wanted to know if FEMA Officials would be flying out to California today or if any Military flights would be available. Congressman Thompson has been invited to the 12 p.m. congressional conference call to receive an update on FEMA activities supporting this incident.
- Received a request for a briefing from Senator Joseph Lieberman, Chair of the Senate Homeland Security and Governmental Affairs Committee. Senator Lieberman has been invited to the 12 p.m. congressional conference call to receive an update on FEMA activities supporting this incident.
- Received a request to participate in a member briefing from the Committee on Natural Resources Subcommittee on Fisheries, Wildlife, Oceans and Insular Affairs. Committee staff have been invited to the 12 p.m. congressional conference call to receive an update on FEMA activities supporting this incident.

Intergovernmental Affairs

- Coordinated with WH IGA to conduct a response update call for Asian American and Pacific Islander stakeholders with Administrator Fugate and DoS Deputy Asst. Secretary for Consular Affairs Jim Pettit.

Private Sector

- Disseminated Administrator's Message, General Update, DOS Travel Warning and Request for Information to Top Tier Stakeholders
- Shared with Regions IX and X Top 50 Employer Contact Lists for HI, AS, GU, CA, WA, and OR
- Pushed same out to E-Gov Delivery (25,000 subscribers)
- Pushed from NRCC to Private Sector Stakeholders RFI for situational awareness, including store operational status, employee preparedness, and any challenges or issues encountered.
- Pushed to E-Gov Delivery (25,000 subscribers) additional Tsunami guidance, www.fema.gov/hazard/tsunami
- PS Director forwarded Wal-Mart inquiry to federal counterparts (NS Staff/DoS); Wal-Mart is willing to donate essential goods from their distribution center near Yokota Air force base; they request assistance to transport goods
- Lowes reporting only one store (#21 in Kahului, HI (Maui)) currently closed (as of 11:00am EST), due to local evacuations and road closures. Anticipated location will re-open when evacuation orders lifted. Standing by for West Coast impact but no additional closures expected.

Limited English Proficiency/Additional Communications Needs

- Translated press release in Spanish regarding the Japan Earthquake, Tsunami watches and warning throughout the Pacific and distributed to all relevant media outlets.
- Translated Media Advisory into Spanish and distributed to all relevant media outlets.
- Conducting initial language assessment for: Oregon, Washington, California, and Hawaii to determine LEP/ACN translation needs in the affected communities.

Today		
Time	Event	Lead Organization
5:26am EST	NRCC Activated-Level I	FEMA-NRCC
7:00am EST	NRCC Operations Briefing	FEMA
9:30am EST	NRCC Operations Briefing	FEMA
9:45am EST	NICCL Call	FEMA EA
10:30am EST	Assistant Secretary of State for Consular Affairs Janice L. Jacobs-Press Call on Earthquake in Japan	DoS
11:00am EST	NOC-DHS Senior Leadership Brief	DHS
12:00pm EST	Congressional Call with FEMA Assoc. Administrator for Response and Recovery Bill Carwile	FEMA Leg Affairs
1:00pm EST	NRCC Operations Briefing	FEMA
1:45pm EST	Press Conference Call with FEMA Administrator	FEMA/USGS/NOAA
2:30pm EST	Intergovernmental Affairs Call with FEMA Administrator	FEMA IGA
4:00pm EST	White House Earthquake Response Update Call	WHITE HOUSE
5:00pm EST	DoS Japan Earthquake Update Call	DoS
8:00pm EST	NRCC Shift Change	FEMA-NRCC
Tomorrow		
Time	Event	Lead Organization
8:00am EST	NRCC Shift Change	FEMA-NRCC
TBD	TBD	TBD
MEDIA ANALYSIS		
<p><i>FEMA Digital Engagement</i></p> <p>FEMA published 11 messages on Twitter. The very first Twitter message regarding the tsunami was published at 3:41am EST and was retweeted 280+ times. A subsequent FEMA message promoted tsunami preparedness tips on http://m.fema.gov and asked people to continue to listen to local officials and was retweeted 220+ times, including by the White House and the CDC.</p> <p>The sentiment towards FEMA and our engagement and response to the tsunami is positive. People and organizations are continuing to retweet our messages, as well as writing original messages encouraging people to follow us, NOAA, USGS, the State Dept, and the Red Cross. There is negative sentiment, but it is not anything that we don't see during our regular "steady state" posture.</p>		
PRESS RELEASES/FACT SHEETS		

➤ **FEMA:**

3/11/2011: Administrator Fugate Statement on Earthquake in Japan and resulting Tsunami watches/warnings (HQ-11-23)

➤ **U.S. Coast Guard:**

3/11/2011: US Coast Guard Crews stand ready to provide post-tsunami support in the Pacific

➤ **Department of State**

3/11/2011: Secretary Clinton-Press Statement on Japan Earthquake and Tsunamis

➤ **NOAA**

NOAA Tsunami Fact Sheet

NOAA Tsunami Information Portal

➤ **American Red Cross:**

3/11/2011 (9:30am EST): Disaster Alert: Earthquake in Japan, Tsunami Warnings

IMAGES AND VIDEO

➤ **FEMA:**

FEMA Blog: Administrator Video on Japan Earthquake and Tsunami Update

Emergency Support Function 15 – External Affairs
Pacific Tsunami/Japan Earthquake
03/11/2011-last updated 4:00pm EST

KEY MESSAGES

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KEY EFFORTS

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- Prepositioned commodities are in place and on standby.
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- EPA has also prepared these 2 desk statements just in case we get any media calls about EPA activities. We are NOT distributing these and have no plans to release this information publically.

General Services Administration (GSA)—USA.GOV

- Posted information on USA.gov homepage with links to the Pacific Tsunami Warning Center.
- Posted a blog update with detailed information, links, and a map
- Issued Facebook updates and tweets from USA.gov and GobiernoUSA.gov with information about the emergency.
- Issued a GovDelivery message to subscribers of USA.gov homepage (77,000+) with information and links about the tsunami warning
- Worked with State Department and National Contact Center to respond to the emergency through 1-800-FED-INFO, email and chat inquiries, and Answers.usa.gov.
- Created Frequently Asked Questions in English and Spanish about the disasters
- Featured Trending Searches on USA.gov homepage, which go to high-value search spotlights on:
 - Tsunami Warning
 - Japan Earthquake
 - Hawaii Evacuation
 - Flood

American Red Cross (ARC)

- Developed a new Tsunami Safety Checklist and pushing out to public/posting on website shortly.

- ARC stands ready and willing to help in Japan, but currently the Japanese Red Cross has not requested any assistance. The Japanese Red Cross has extraordinary disaster response capabilities.
- ARC is working closely with state officials in Hawaii and West Coast Emergency Operations Centers. We are ready to respond as needed with shelters and supplies. Visit www.redcross.org for the latest information about open shelters.
- Pushing the Red Cross Safe and Well website--a secure and easy-to-use online tool that helps families connect during emergencies like tsunamis. To access Safe and Well from a computer visit www.redcross.org, from a smart phone visit www.redcross.org/safeandwell or from any phone call 1-800-RED CROSS (1-800-733-2767).

DHS Office for Civil Rights and Civil Liberties (CRCL)/ FEMA Office on Disability Integration and Coordination (ODIC)

- Issued ongoing updates to federal partner agencies regarding tsunami on behalf of the Interagency Coordinating Council on Emergency Preparedness and Individuals with Disabilities (the ICC).
- CRCL and ODIC will continue to monitor National Operations Center reports and will seek feedback from affected stakeholders to address and resolve issues that may arise with regard to ensuring that the needs of individuals with disabilities in the impacted areas are met.
- At this time, we are aware that our FCC partners are working to resolve issues regarding closed captioning of public messages in Hawaii.

FEMA EXTERNAL AFFAIRS OPERATIONS

Public Affairs

- Developing Talking Points, press releases and blog posts regarding tsunami warnings
- Scheduling press calls for Administrator Fugate.
- Digital Media Engagement (as of 2:00pm EST):
 - Updated the www.fema.gov home page with preparedness links and links to the blog
 - Updated the mobile site home page with preparedness messages <http://m.fema.gov>
 - Published a blog post with a video update from the Administrator <http://blog.fema.gov>
 - Published 11 messages on Twitter <http://twitter.com/fema>
 - The first Twitter message was published at 3:41am EST.
 - Published 3 messages on Facebook <http://www.facebook.com/fema>
 - As of 2:00pm, the link to the Tsunami Preparedness page was clicked on 1250 times
 - As of 2:00pm, the link to the Administrator's blog post (Update 1) was clicked on 4362 times

Legislative Affairs

- Issued Congressional Advisory # 1 to staff members of the following congressional delegations in Regions IX and X: Hawaii, American Samoa, Guam, Northern Mariana Islands, California, Washington, Oregon, Alaska and the Authorizing and Appropriating committees, with Administrator Fugate's statement on Earthquake in Japan and tsunami warnings.
- Issued Congressional Advisory #2 to congressional Members and Chief of Staffs of same delegations and committees inviting them to participate in a conference call with the FEMA Associate Administrator of Response and Recovery William Carwile and our interagency partners. The purpose of the call is to provide an update on the earthquake that struck Japan this morning and the subsequent tsunami threat across much of the Pacific area.
- LAD Director, Pat Hart spoke with Congressman Mike Thompson of the First district of California. The Congressman wanted to know if FEMA Officials would be flying out to California today or if any Military flights would be available. Congressman Thompson has been invited to the 12 p.m. congressional conference call to receive an update on FEMA activities supporting this incident.
- Received a request for a briefing from Senator Joseph Lieberman, Chair of the Senate Homeland Security and Governmental Affairs Committee. Senator Lieberman has been invited to the 12 p.m. congressional conference call to receive an update on FEMA activities supporting this incident.
- Received a request to participate in a member briefing from the Committee on Natural Resources Subcommittee on Fisheries, Wildlife, Oceans and Insular Affairs. Committee staff have been invited to the 12 p.m. congressional conference call to receive an update on FEMA activities supporting this incident.

Intergovernmental Affairs

- Coordinated with WH IGA to conduct a response update call for Asian American and Pacific Islander stakeholders with Administrator Fugate and DoS Deputy Asst. Secretary for Consular Affairs Jim Pettit.

Private Sector

- Disseminated Administrator's Message, General Update, DOS Travel Warning and Request for Information to Top Tier Stakeholders
- Shared with Regions IX and X Top 50 Employer Contact Lists for HI, AS, GU, CA, WA, and OR
- Pushed same out to E-Gov Delivery (25,000 subscribers)
- Pushed from NRCC to Private Sector Stakeholders RFI for situational awareness, including store operational status, employee preparedness, and any challenges or issues encountered.
- Pushed to E-Gov Delivery (25,000 subscribers) additional Tsunami guidance, www.fema.gov/hazard/tsunami
- PS Director forwarded Wal-Mart inquiry to federal counterparts (NS Staff/DoS); Wal-Mart is willing to donate essential goods from their distribution center near Yokota Air

force base; they request assistance to transport goods

- Lowes reporting only one store (#21 in Kahului, HI (Maui)) currently closed (as of 11:00am EST), due to local evacuations and road closures. Anticipated location will re-open when evacuation orders lifted. Standing by for West Coast impact but no additional closures expected.

Limited English Proficiency/Additional Communications Needs

- Translated press release in Spanish regarding the Japan Earthquake, Tsunami watches and warning throughout the Pacific and distributed to all relevant media outlets.
- Translated Media Advisory into Spanish and distributed to all relevant media outlets.
- Conducting initial language assessment for: Oregon, Washington, California, and Hawaii to determine LEP/ACN translation needs in the affected communities.

NATIONAL DAILY EVENT SCHEDULE

Today		
Time	Event	Lead Organization
5:26am EST	NRCC Activated-Level I	FEMA-NRCC
7:00am EST	NRCC Operations Briefing	FEMA
9:30am EST	NRCC Operations Briefing	FEMA
9:45am EST	NICCL Call	FEMA EA
10:30am EST	Assistant Secretary of State for Consular Affairs Janice L. Jacobs-Press Call on Earthquake in Japan	DoS
11:00am EST	NOC-DHS Senior Leadership Brief	DHS
12:00pm EST	Congressional Call with FEMA Assoc. Administrator for Response and Recovery Bill Carwile	FEMA Leg Affairs
1:00pm EST	NRCC Operations Briefing	FEMA
1:45pm EST	Press Conference Call with FEMA Administrator	FEMA/USGS/NOAA
2:30pm EST	Intergovernmental Affairs Call with FEMA Administrator	FEMA IGA
4:00pm EST	White House Earthquake Response Update Call	WHITE HOUSE
5:00pm EST	DoS Japan Earthquake Update Call	DoS
8:00pm EST	NRCC Shift Change	FEMA-NRCC
Tomorrow		
Time	Event	Lead Organization

8:00am EST	NRCC Shift Change	FEMA-NRCC
TBD	TBD	TBD
MEDIA ANALYSIS		
<p><i>FEMA Digital Engagement</i></p> <p>FEMA published 11 messages on Twitter. The very first Twitter message regarding the tsunami was published at 3:41am EST and was retweeted 280+ times. A subsequent FEMA message promoted tsunami preparedness tips on http://m.fema.gov and asked people to continue to listen to local officials and was retweeted 220+ times, including by the White House and the CDC.</p> <p>The sentiment towards FEMA and our engagement and response to the tsunami is positive. People and organizations are continuing to retweet our messages, as well as writing original messages encouraging people to follow us, NOAA, USGS, the State Dept, and the Red Cross. There is negative sentiment, but it is not anything that we don't see during our regular "steady state" posture.</p>		
<u>PRESS RELEASES/FACT SHEETS</u>		
<ul style="list-style-type: none"> ➤ FEMA: 3/11/2011: <u>Administrator Fugate Statement on Earthquake in Japan and resulting Tsunami watches/warnings (HQ-11-23)</u> ➤ U.S. Coast Guard: 3/11/2011: <u>US Coast Guard Crews stand ready to provide post-tsunami support in the Pacific</u> ➤ Department of State 3/11/2011: <u>Secretary Clinton-Press Statement on Japan Earthquake and Tsunamis</u> ➤ NOAA <u>NOAA Tsunami Fact Sheet</u> <u>NOAA Tsunami Information Portal</u> ➤ American Red Cross: 3/11/2011 (9:30am EST): <u>Disaster Alert: Earthquake in Japan, Tsunami Warnings</u> 		
<u>IMAGES AND VIDEO</u>		
<ul style="list-style-type: none"> ➤ FEMA: FEMA Blog: <u>Administrator Video on Japan Earthquake and Tsunami Update</u> 		

From: Mamish, Nader
To: Brenner, Eliot; Harrington, Holly; Hayden, Elizabeth; Burnell, Scott
Subject: FW: Japan: media reports government has decided to declare a nuclear power emergency situation
Date: Friday, March 11, 2011 7:28:57 AM

From: Breskovic, Clarence
Sent: Friday, March 11, 2011 5:31 AM
To: Breskovic, Clarence
Subject: Japan: media reports government has decided to declare a nuclear power emergency situation

Fire at Tohoku Elec Onagawa nuclear plant

TOKYO, March 11 (Reuters) - A fire broke out at Tohoku Electric Power Co's Onagawa nuclear plant in northeastern Japan following Friday's major earthquake, Kyodo news agency said.

Prior to the Kyodo report, the company had said it had not received information on whether there had been any problems at the nuclear power plant after the disaster.

Separately, Fukushima Prefecture, the site of a Tokyo Electric Power nuclear power plant, said on Friday the plant's reactor cooling system was functioning, denying an earlier report that it was malfunctioning.

Japanese media reported that the government had decided to declare a nuclear power emergency situation, which occurs if there is confirmation of radioactivity leaks from a nuclear power plant or a reactor cooling system breaks down.

JJJ/439

From: Harrington, Holly
To: Brenner, Eliot; Burnell, Scott
Subject: Fill-in tech briefer, if we need one
Date: Friday, March 11, 2011 11:09:00 PM

Scott Morris is going to be in the Op Center all night and into the morning. If for any reason we need a technical person to explain BWRs etc in some sort of background brief to reporters, he is willing to do that for us . . .

JJJ/440

From: OST01 HOC
Sent: Thursday, April 28, 2011 12:44 PM
To: FOIA Response.hoc Resource
Subject: FW: [METI Japan](Apr_28)Update on Recovery from Seismic and Tsunami Damage
Attachments: Economic Impact of Earthquake.pdf; [METI] Apr 27_0800_Seismic Damage to the NPSs.pdf; Apr_28 Radioactivity Level Map Chart.pdf

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

From: HOO Hoc
Sent: Thursday, April 28, 2011 12:20 PM
To: LIA07 Hoc; LIA08 Hoc; OST01 HOC
Subject: FW: [METI Japan](Apr_28)Update on Recovery from Seismic and Tsunami Damage

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

From: meti-info@meti.go.jp [mailto:meti-info@meti.go.jp]
Sent: Thursday, April 28, 2011 12:11 PM
To: meti-info@meti.go.jp
Subject: [METI Japan](Apr_28)Update on Recovery from Seismic and Tsunami Damage

For your information, Ministry of Economy, Trade and Industry is providing information on Japan's recovery from Great East Japan Earthquake.

This Thursday, the following information has been updated.

---- Today's news ----

1. METI released a report on the economic impact of Great East Japan Earthquake. [Please refer to 2. and the attached file]

---- Updates from METI ----

2. [METI] Apr 28_METI released a report on the economic impact of Great East Japan Earthquake.
http://www.meti.go.jp/english/press/2011/0428_01.html

3. [METI] Apr 27_0800_Seismic Damage to the NPSs [Please refer to the attached file]

4. [METI] Apr 28_Radioactivity Level Map Chart [Please refer to the attached file]

---- Updates from NISA ----

5. [NISA] Apr 28 1200_Current Situation of Onagawa, Fukushima Dai-ichi, Fukushima Dai-ni, Tokai Dai-ni NPSs (only Japanese version is now available. English version will be uploaded.)
<http://www.meti.go.jp/press/2011/04/20110428007/20110428007-1.pdf>

[NISA] Apr 23 0800_Current Situation of Onagawa, Fukushima Dai-ichi, Fukushima Dai-ni, Tokai Dai-ni NPSs (English version) <http://www.nisa.meti.go.jp/english/files/en20110423-4-6.pdf>

6. [NISA] Apr 28 0600_Fukushima Dai-ichi Major Parameters of the Plant
<http://www.nisa.meti.go.jp/english/files/en20110428-1-3.pdf>

---- Major Updates from other agencies of Japanese Government --- 7. [MLIT] Apr 28 PM_Measurement of Radiation Doses in the Ports around Tokyo Bay http://www.mlit.go.jp/kowan/kowan_fr1_000041.html
Currently, the level of radiation in Tokyo City, Yokohama City, Kawasaki City and Ichikawa City (Chiba) were as shown in the attachment at very safe level to health.

8. [MLIT] Apr 28 PM_Measurement of radiation doses around the Metropolitan Airports
http://www.mlit.go.jp/koku/koku_tk7_000003.html
The current level of radiation does not have any effects on human health.

9. [NSC] Apr 28 1645_Assessment of the result of environment monitoring (only Japanese version is available)
http://www.nsc.go.jp/nsc_mnt/110428_1.pdf

If you need to add other e-mail address to this mailing list or do not need our information mail any more, please contact at meti-info@meti.go.jp

=====
International Public Relations Team
Ministry of Economy, Trade and Industry (METI)
1-3-1 Kasumigaseki, Chiyoda-ku, Tokyo 100-8901, Japan E-mail : meti-info@meti.go.jp
=====

(See attached file: Economic Impact of Earthquake.pdf)

(See attached file: [METI] Apr 27_0800_Seismic Damage to the NPSs.pdf)

(See attached file: Apr_28 Radioactivity Level Map Chart.pdf)

Economic Impact of the Great East Japan Earthquake and current status of Recovery

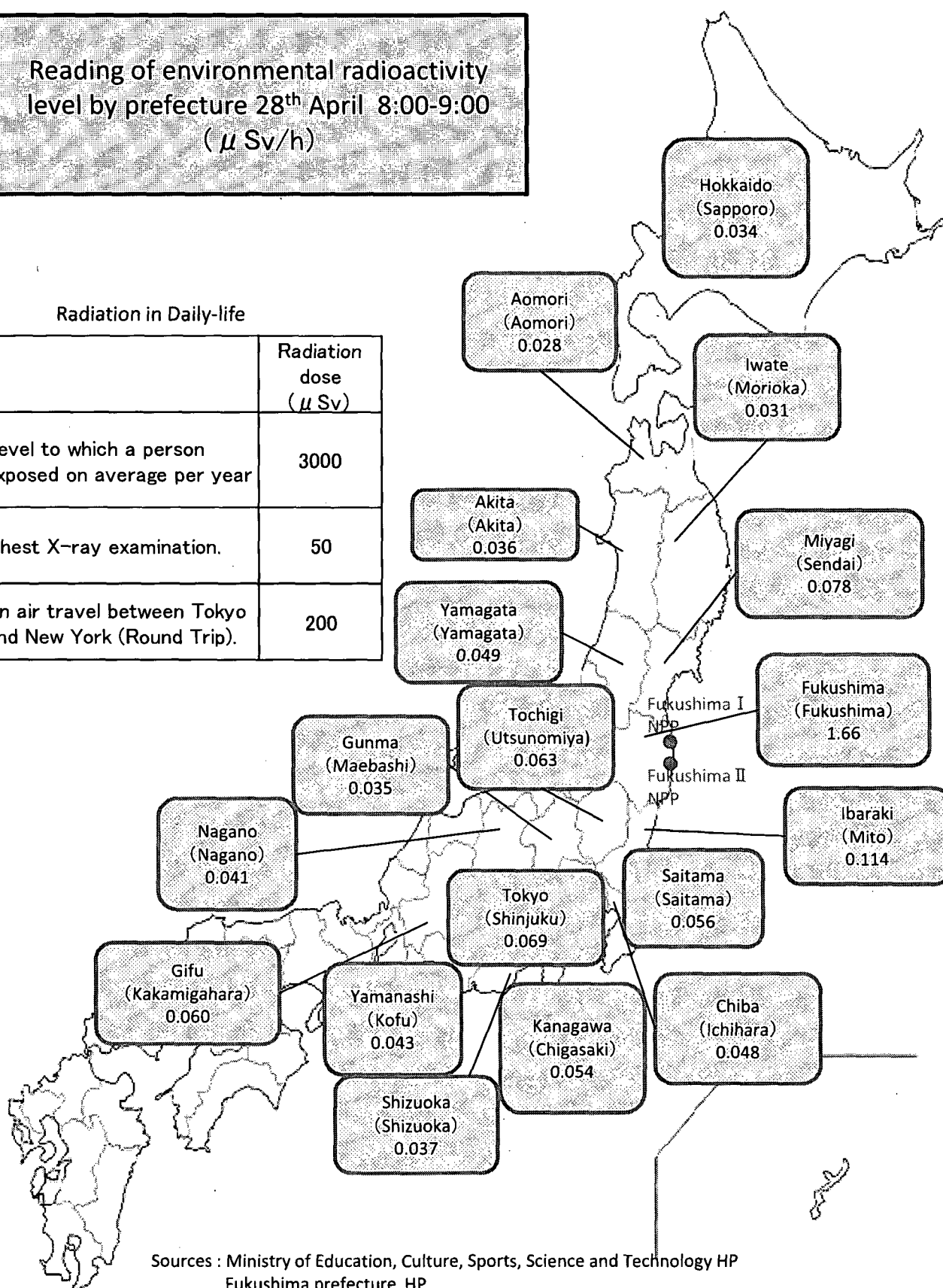
2011/04/27

Ministry of Economy, Trade and Industry

Reading of environmental radioactivity
level by prefecture 28th April 8:00-9:00
(μ Sv/h)

Radiation in Daily-life

	Radiation dose (μ Sv)
Level to which a person exposed on average per year	3000
Chest X-ray examination.	50
An air travel between Tokyo and New York (Round Trip).	200



“ARIGATO”

“Thank You”

Yomiuri Shimbun

‘ARIGATO’ is the word to express appreciation.

The photograph is ‘ARIGATO’ which people affected by the East Japan great earthquake disaster showed on the shore with pine trees for the United States Armed Forces which had supported restoration of Sendai Airport.

‘ARIGATO’ expresses the appreciation of the Japanese people for the support by each state and people including U.S.A..

Message from Prime Minister Naoto Kan Regarding Assistance Received from Overseas

Tuesday, March 22, 2011

I would like to express my most sincere appreciation for the condolences and assistance Japan has received from approximately 130 countries, more than 30 international organizations, and people all around the world in response to the Tohoku-Pacific Ocean Earthquake.

The rescue workers, search dogs, and nuclear power experts from various countries, as well as the human resources support from the U.S. Forces in Japan and others, assistance with food, medical supplies, blankets, and other supplies, and offers of assistance from over 670 NGOs and other organizations have all been profoundly uplifting to the Japanese people, who have come to realize acutely that "a friend in need is a friend indeed" ...

On behalf of the Japanese people, I would like once again to express my deepest appreciation upon having received this truly tremendous outpouring of cordial assistance from around the world.

Naoto Kan
Prime Minister of Japan

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1. Devastated Area is Limited

- Adverse impact to Japanese economy is limited since the Pacific Ocean Coast which suffered the greatest damage accounts for only 2.5 % of the size of the total Japanese economy.
- The damaged area is slightly smaller in economic size than that of the Great Hanshin-Awaji Earthquake(1995).

The Size of Economic Activities in the Municipalities Along Pacific Ocean Coast (Census of Manufactures)

	Shipment value		Gross value added	
	(trillion yen)	In percent of total	(trillion yen)	In percent of total
All Japan	335.6	100.0%	110.8	100.0%
Municipalities along Pacific Ocean Coast*	8.3	2.5%	2.8	2.5%

【Source】 Census of Manufactures 2008 (Ministry of Economy, Trade & Industry)

* Municipalities along pacific ocean coast in Aomori, Iwate, Miyagi, Fukushima and Ibaragi prefectures

The Size of Economic Activities in the Municipalities Devastated by the Great Hanshin-Awaji Earthquake* (Census of Manufactures)

	Shipment value		Gross value added	
	(trillion yen)	In percent of total	(trillion yen)	In percent of total
All Japan	311.2	100.0%	127.6	100.0%
Damaged Municipalities*	8.3	2.7%	3.7	2.9%

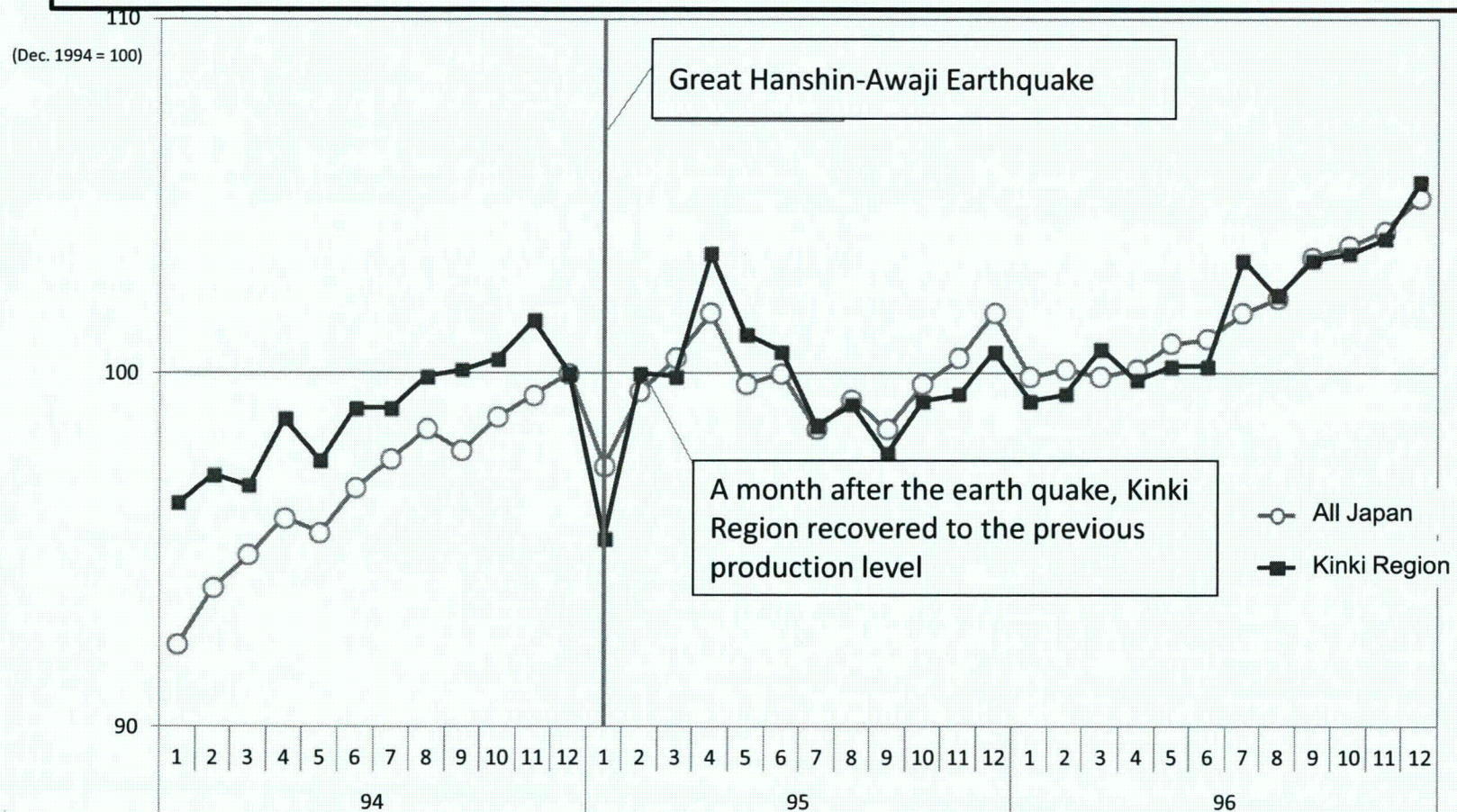
【Source】 Census of Manufactures 1993 (Ministry of Economy, Trade & Industry)

* 10 cities and 10 towns which Disaster Relief Act was applied to in Hyogo Prefecture.

2. Reconstruction from the Hanshin-Awaji Earthquake

- The negative effect was temporary in the quake-hit area as well as nationwide, and production level showed a sharp reconstruction after hitting bottom in the aftermath of the Great Hanshin-Awaji Earthquake.

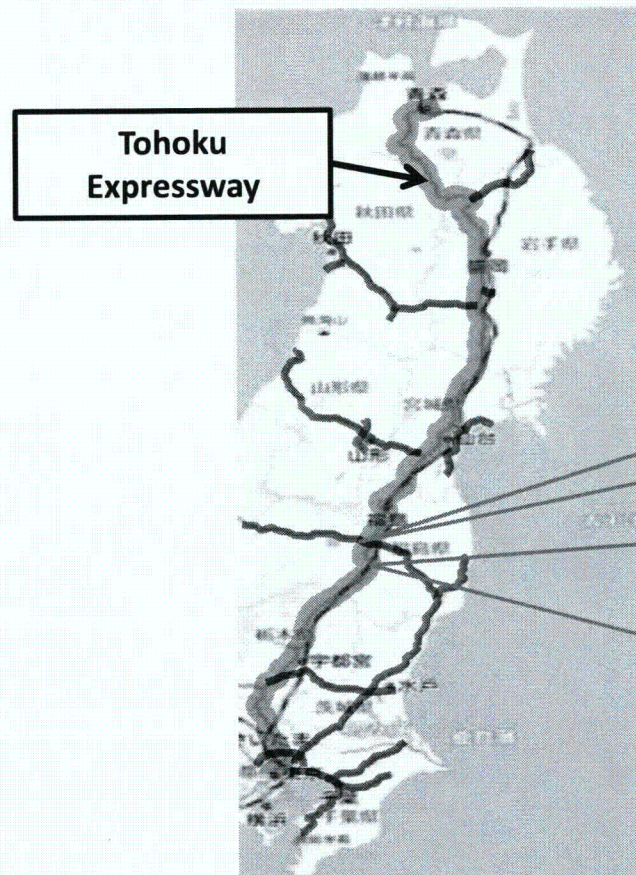
Mining and Manufacturing Production Before and After the Great Hanshin-Awaji Earthquake



【Source】 Indices of Industrial Production (Ministry of Economy, Trade & Industry)
Changes in Industrial Production (Kinki, Ministry of Economy, Trade & Industry)

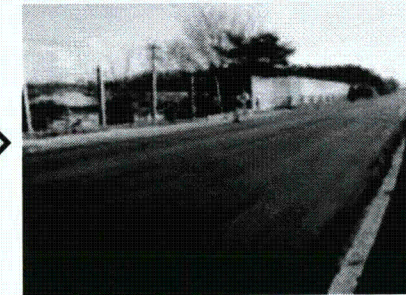
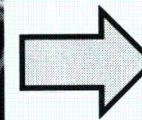
3. Reconstruction from the Present Earthquake: (1)Tohoku Expressway

- Tohoku Expressway is a traffic and commercial artery which connects Tohoku and Kanto regions. Numerous factories are located along the route.
- 347 km out of 675 km of the expressway was destroyed by the earthquake on March 11, but the traffic restriction was lifted on March 24th, following the completion of emergency restoration measures.



NEXCO East

Mar 12th



NEXCO East

Mar 17th



NEXCO East

Mar 12th



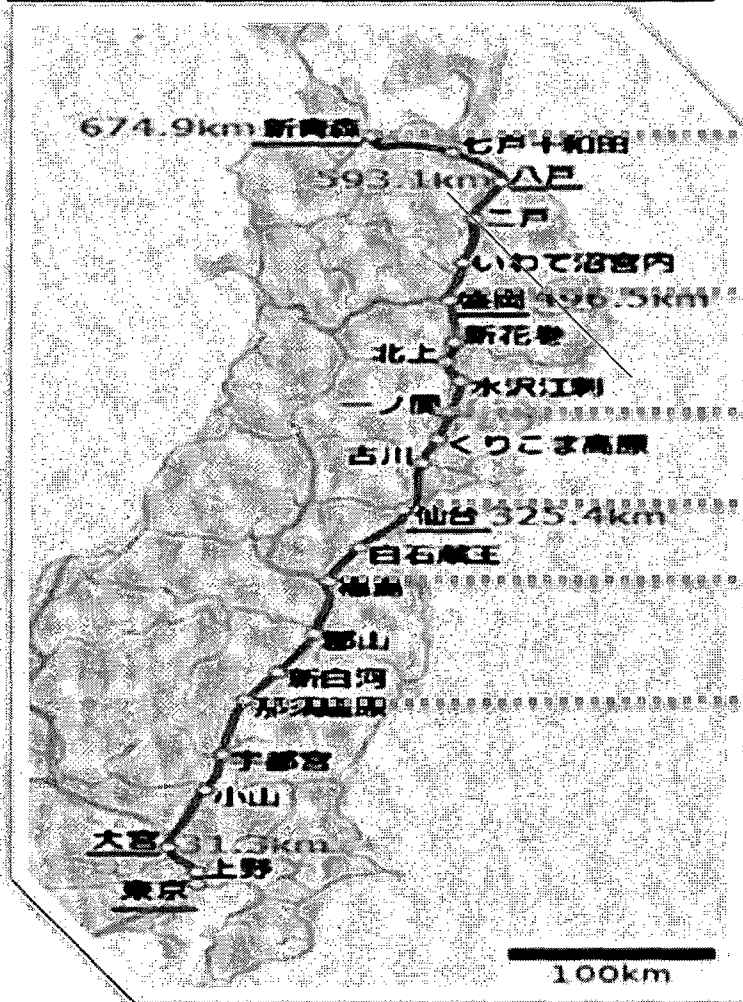
NEXCO East

Mar 21th

3. Reconstruction from the Present Earthquake: (2) Railroads

- None of 26 trains operating at the time of the earthquake derailed, not did any serious destruction of elevated bridges and stations, or collapse of tunnels occur.
- The entire Tohoku Shinkansen will resume operation by April 30th.

Scheduled resumption of operations as of April 18th



Morioka to Shin Aomori

Resumed Operation in April 13th

Ichinoseki to Morioka

Resumed Operation in April 23th

Sendai to Ichinoseki

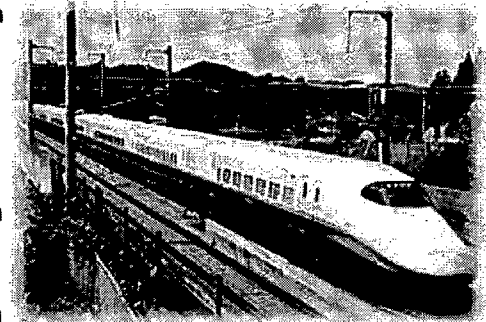
Around April 29th

Fukushima to Sendai

Resumed Operation in April 25th

Nasushiobara to Fukushima

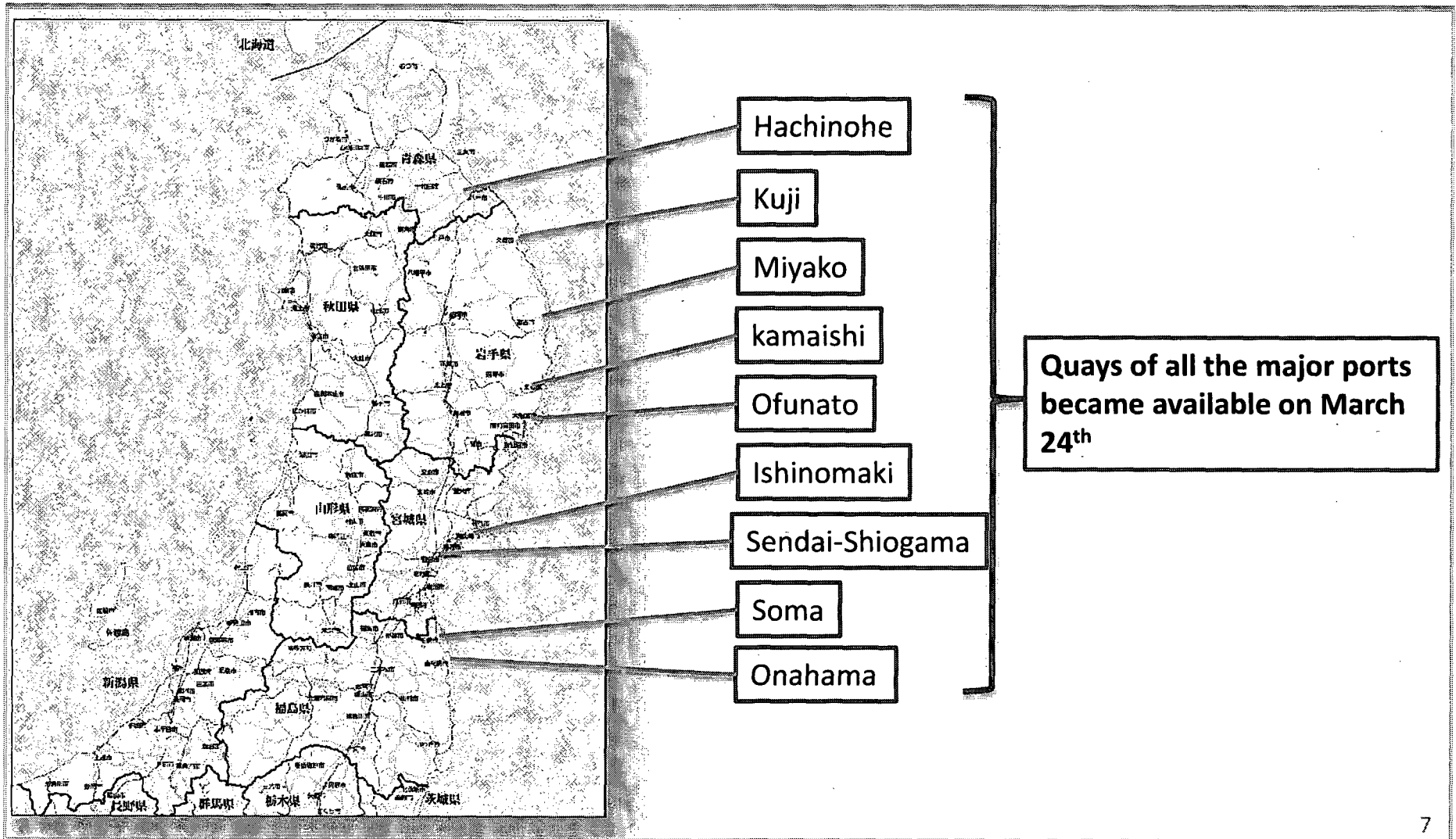
Resumed Operation in April 12th



JR East

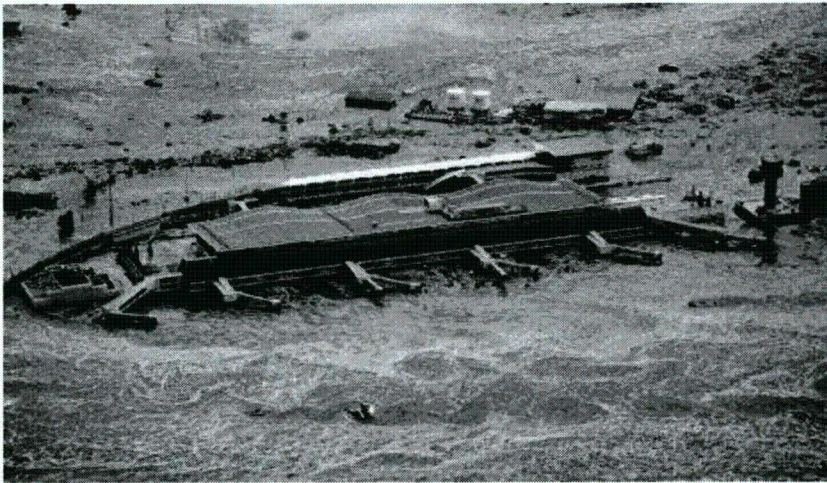
3. Reconstruction from the Present Earthquake: (3) Sea Ports

- Quays of all major ports in the quake-hit Pacific Coast from Aomori to Ibaragi became available by May 24th.
- The ports damaged by the tsunami are subsequently recovering its functions.



3. Reconstruction from the Present Earthquake: (4) Airports

- The reconstruction of Sendai Airport which was badly damaged by the tsunami showed surprisingly rapid progress thanks to the cooperation between the US Armed Forces and Japanese Self-Defense Forces. The entire runway was restored and became available by March 28th.
- Passenger flights between Haneda-Sendai and Osaka(Itami)-Miyagi resumed operation on April 13th, a month after the earthquake.



Kyodo

Sendai air port damaged by the tsunami as of March 13th.

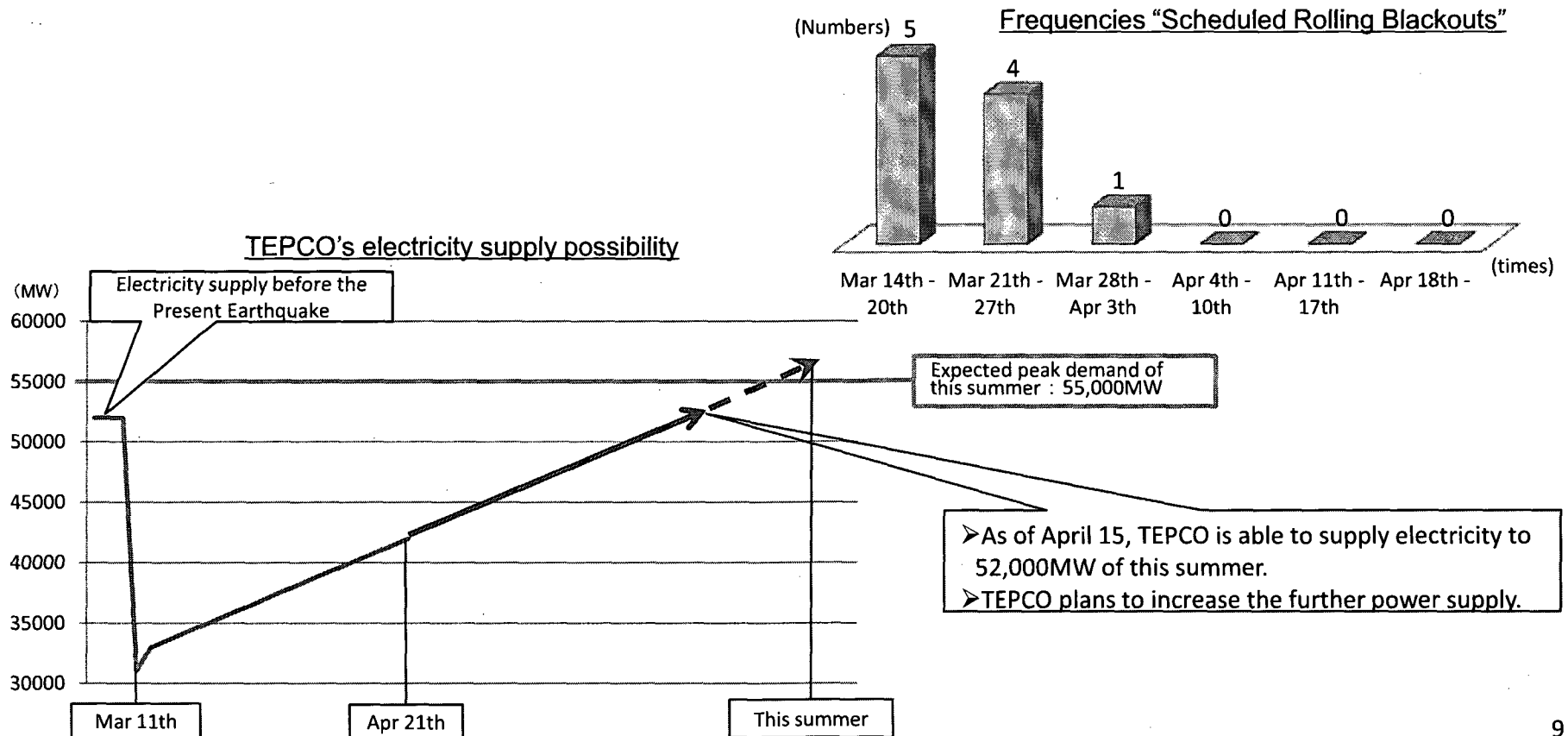


Kyodo

The first landing to Sendai airport since the earthquake on April 13th.

4. Electricity Supply/Demand Toward This Summer

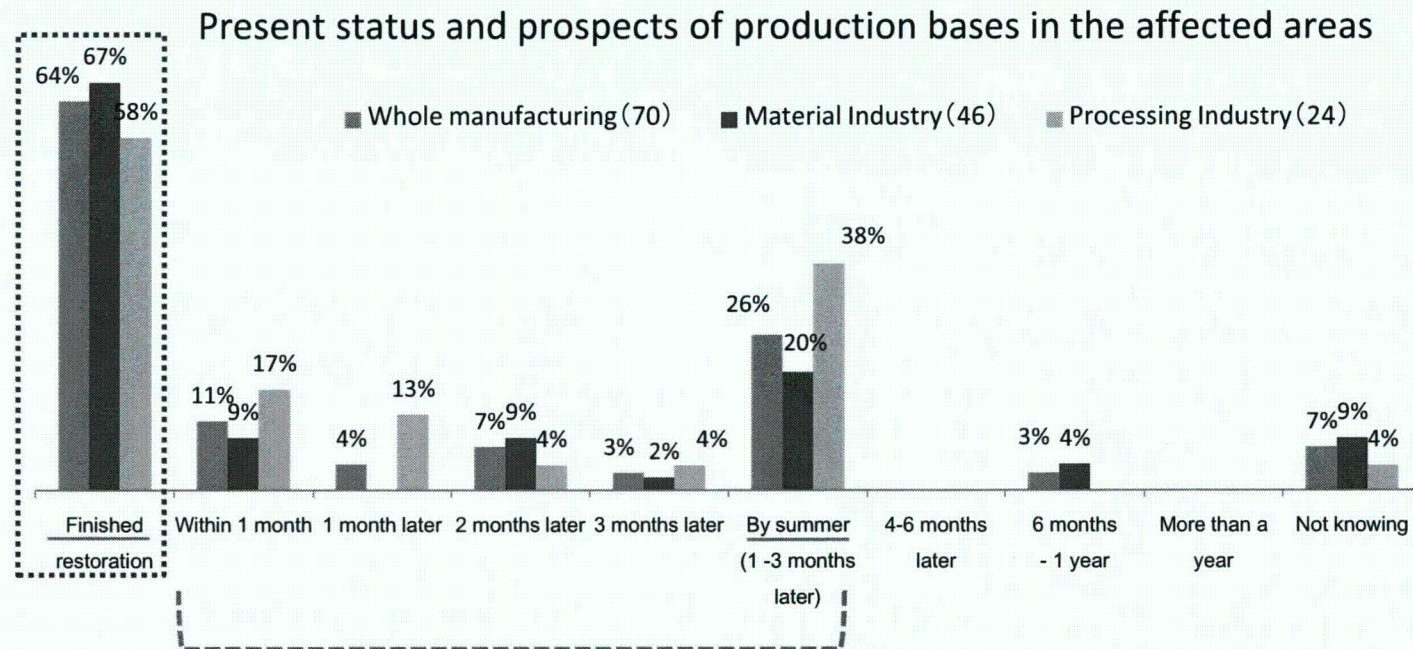
- With the reinforcement of the power supply, Tokyo Electric Power Company decided, in principle, to not carry out the "Scheduled Rolling Blackouts."
After March 29th, "Scheduled Rolling Blackouts" have been discontinued.
- TEPCO forecasts that it will be able to supply electricity of up to 52,000 MW this summer.
- With TEPCO's action to reinforce further power supply, "Scheduled Rolling Blackouts" will be discontinued all the way till summer.



5. Present status and prospects of restoration of production bases in the affected areas

- More than 60% of affected bases of respondents have already finished restoration.
- Meanwhile, other production bases are on the way to resumption, and about less than 30% are expected to be restored by summer.

(Reference) The ratio of the number of establishments located in the municipalities in 7 prefectures (Aomori, Iwate, Miyagi, Fukushima, Tochigi, and Chiba) covered by the Disaster Relief Act in the total number of the manufacturing establishments all over the country, is about 7%. (The figure was calculated based on Census of Manufactures 2008, as of March 27th)

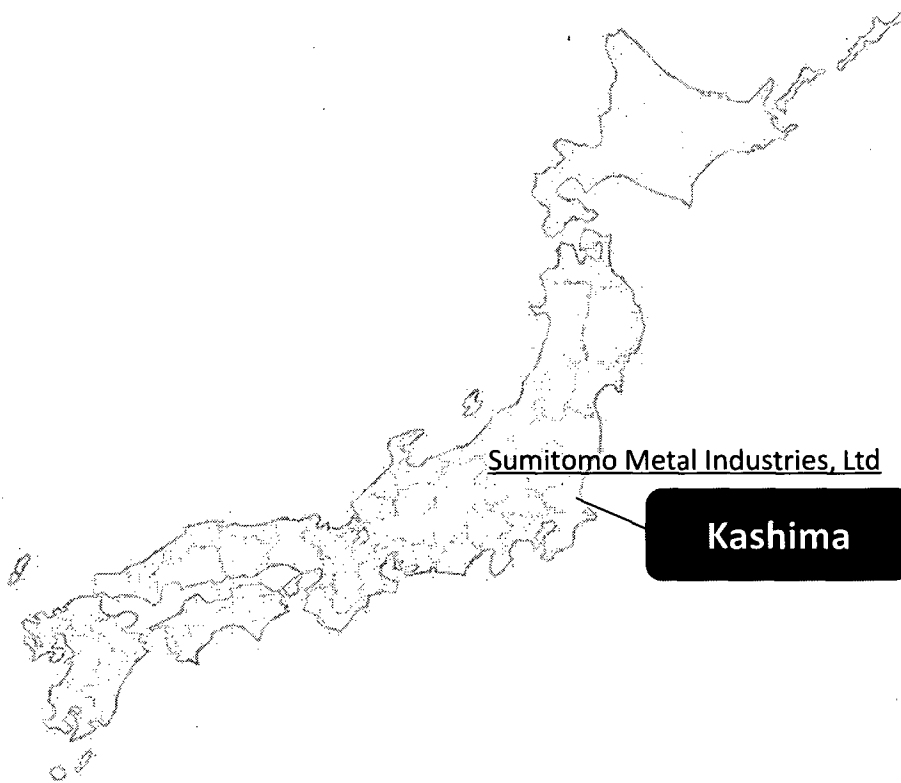


※Affected areas : Aomori, Iwate, Miyagi, Fukushima, Ibaraki, Tochigi, Chiba

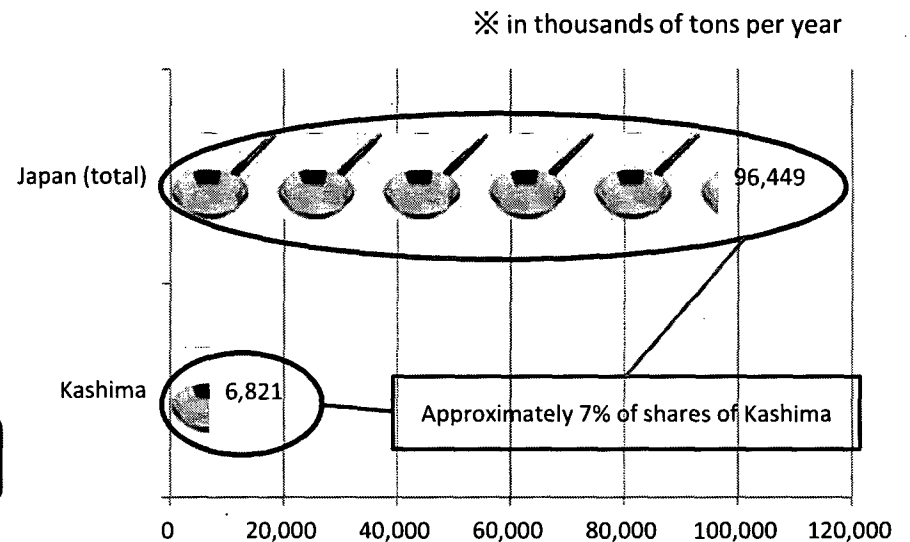
6. Effects on Specific Industries : (1) Steel

- Although Sumitomo Metal's Kashima Plant has stopped production, other Japanese iron works can still produce plenty of crude steel.

Geographical Locations of Damaged Iron Works



Production Capacity for Crude Steel
(As of March, 2010)



6. Effects on Specific Industries: (2) Petrochemicals

- Mitsubishi Chemical's Kashima Plant, which has suffered some damage from the Great East Japan Quake, is responsible for about 10% of Japan's ethylene production. Even if it cannot be repaired soon, Japan has many other complexes which can produce more than the necessary volume of petrochemicals.

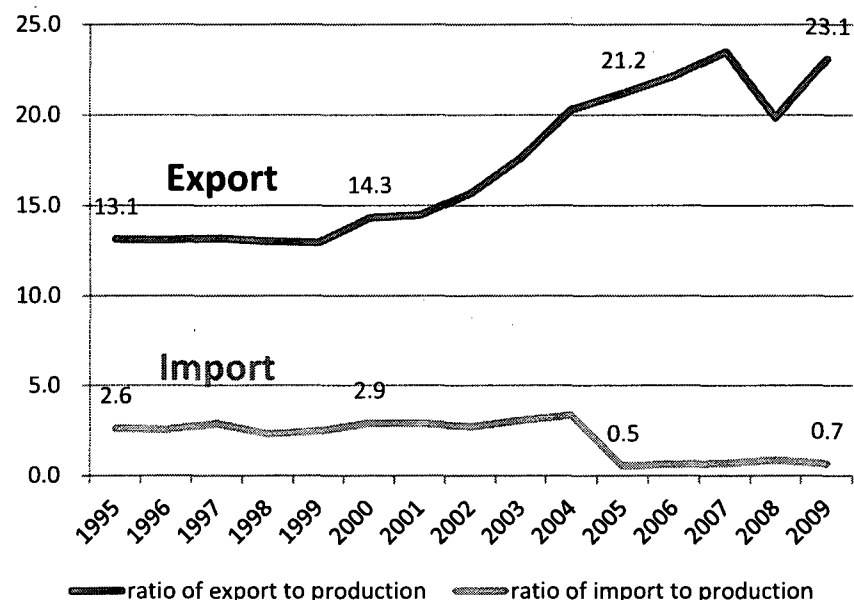
Production Capacity for Ethylene
(As of December, 2009)

※ in thousands of tons per year

Location	Company	Capacity	Share
Kashima	<u>MITSUBISHI CHEMICAL CORP.</u>	<u>828</u>	<u>11.4%</u>
Goi	MARUZEN PETROCHEMICAL CO., LTD.	480	6.6%
Ichihara	KEIYO ETHYLENE CO., LTD.	690	9.5%
	MITSUI CHEMICALS, INC.	553	7.6%
Chiba	IDEMITSU KOSAN CO., LTD.	374	5.1%
Anegasaki Sodegaura	SUMITOMO CHEMICAL CO., LTD.	380	5.2%
Kawasaki	JX NIPPON OIL & ENERGY CORP.	404	5.6%
	TONEN CHEMICAL CORP.	491	6.7%
Yokkaichi	TOSOH CORP.	493	6.8%
Osaka	MITSUI CHEMICALS, INC.	455	6.3%
Mizushima	MITSUBISHI CHEMICAL CORP.	450	6.2%
Fukuyama	ASAHI KASEI CHEMICALS CORP.	443	6.1%
Shunan	IDEMITSU KOSAN CO., LTD.	623	8.6%
Ohita	SHOWA DENKO K. K.	615	8.4%
Total Capacity		7279	100.0%

※ Underlined plants shut their naphtha crackers after the quake.

Ratio of Export & Import to
Production of Petrochemicals



6. Effects on specific Industries : (3) Auto / Electronics Industries

- Several weeks after the earthquake, certain major factories producing core parts and materials temporally ceased the operation, but sequentially resumed its operation. For factories that need more time to recover, companies are seeking substitution by other factories.
- Most of the motor production companies have restarted production, depending on the supply level of core parts and materials.

Toyota Motor	All factories resume production from April 18 th .
Nissan	All factories, including seismic-damaged Engine factory in Iwaki-city, resume production from April 18 th .
Honda	By the resuming production of finished automobiles at the Saitama Factory and Suzuka Factory, all factories resume production from April 11 th .
Hitachi Automotive Systems	Seismic-damaged Sawa and Fukushima Auto-parts manufacturing factories partially resume production from March 25 th . Manufacturing facilities has been almost completely repaired.
Hitachi Vehicle Energy	Seismic-damaged Headquarter Factory at Hitachinaka-city resume production of Lithium-ion batteries from March 28 th .
Hitachi Ltd.	Seismic-damaged factory at Hitachi partially resumes manufacturing of turbine for electricity power plants from March 29 th . 90% production level has recovered.
Renesas Electronics	6 of 7 factories that suffer seismic damage already resume production. All the stakeholders concerned try to make every effort to restart the operation of NAKA Factory as soon as possible. Originally they announced "before July, now try to accelerate the schedule.
Shinetsu Chemicals	Seismic-damaged Shirakawa Factory resumed production by the end of April. Right now, substituting by other group factories.
IHI	Seismic-damaged Soma Factory, producing engines and gas turbine, now resume operation since march 29 th .

7. Effects of Radioactivity from Fukushima Dai-ichi NPS

➤ Distance Between Tokyo and Fukushima Dai-ichi NPA is 230km (about 144 miles) .

Tokyo - Fukushima Dai-ichi NPS : 230 km (about 144 miles)

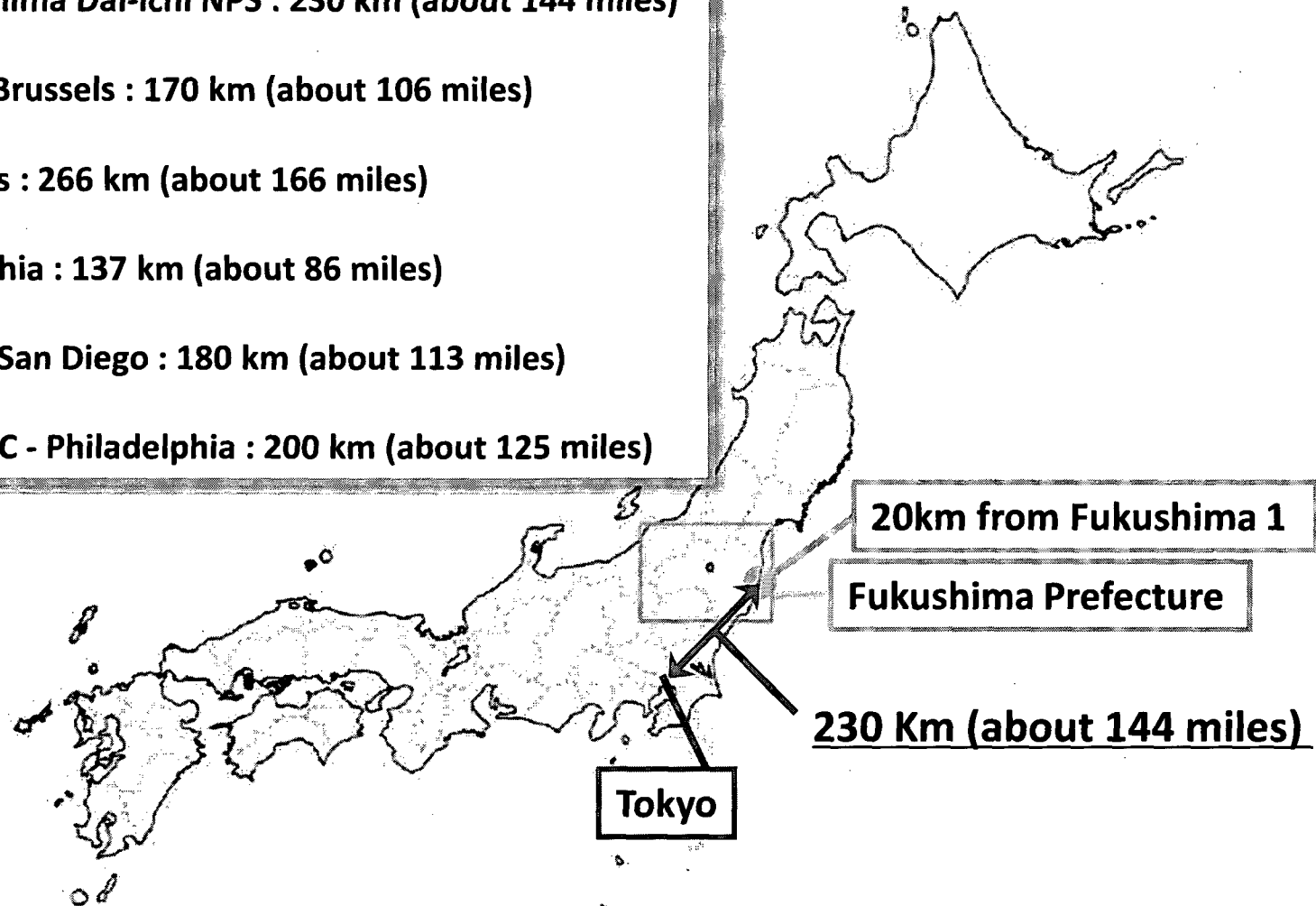
Amsterdam - Brussels : 170 km (about 106 miles)

Paris - Brussels : 266 km (about 166 miles)

NY - Philadelphia : 137 km (about 86 miles)

Los Angeles – San Diego : 180 km (about 113 miles)

Washington DC - Philadelphia : 200 km (about 125 miles)



7. Effects of Radioactivity from Fukushima Dai-ichi NPS

- The recent environmental radioactivity level in Tokyo is lower than the level in New York and Hong Kong.
- Several UN agencies, including the WHO, have announced that radioactive materials have been of low concentration and do not present health or transportation safety risk.

< International Organizations press release >

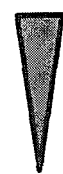
○ International Civil Aviation Organization
(April 11, 2011)

“Continuous monitoring around these airports confirms that radiation levels are well within safe limits from a health perspective.”

○ World Health Organization
(April 5, 2011, FAQs)

“WHO is not advising general restrictions on travel to Japan.”

< Environmental radioactivity levels around the world >



Hong Kong: 0.14 $\mu\text{Sv}/\text{hour}$

New York: 0.095 $\mu\text{Sv}/\text{hour}$

Tokyo: 0.078 $\mu\text{Sv}/\text{hour}$

[Source]

Ministry of Education, Culture, Sports, Science and Technology (MEXT), Hong Kong Observatory, Live radioactivity monitoring online USA

Hong Kong (as of 13 April, 2011), New York (7 days average to April 13, 2011)

Tokyo (as of 12 April, 2011)

< Environmental radioactivity level in Tokyo >

○ The environmental radioactivity level in Tokyo, if the current level continues for three months, will be 168.5 μSv^* .

* $0.078 \mu\text{Sv}/\text{hr}$ (as April 12th, 2011) $\times 24\text{hour} \times 90\text{days} = 168.5 \mu\text{Sv}$

[Radiation in daily life]

• An air travel between Tokyo and New York (RT): 200 μSv

• A gastrointestinal X-ray examination: 600 μSv

Article by Bloomberg

April 1st, 2011(Bloomberg) -- Hong Kong, Cornwall Radiation Beats Tokyo Even After Japan Nuclear Crisis

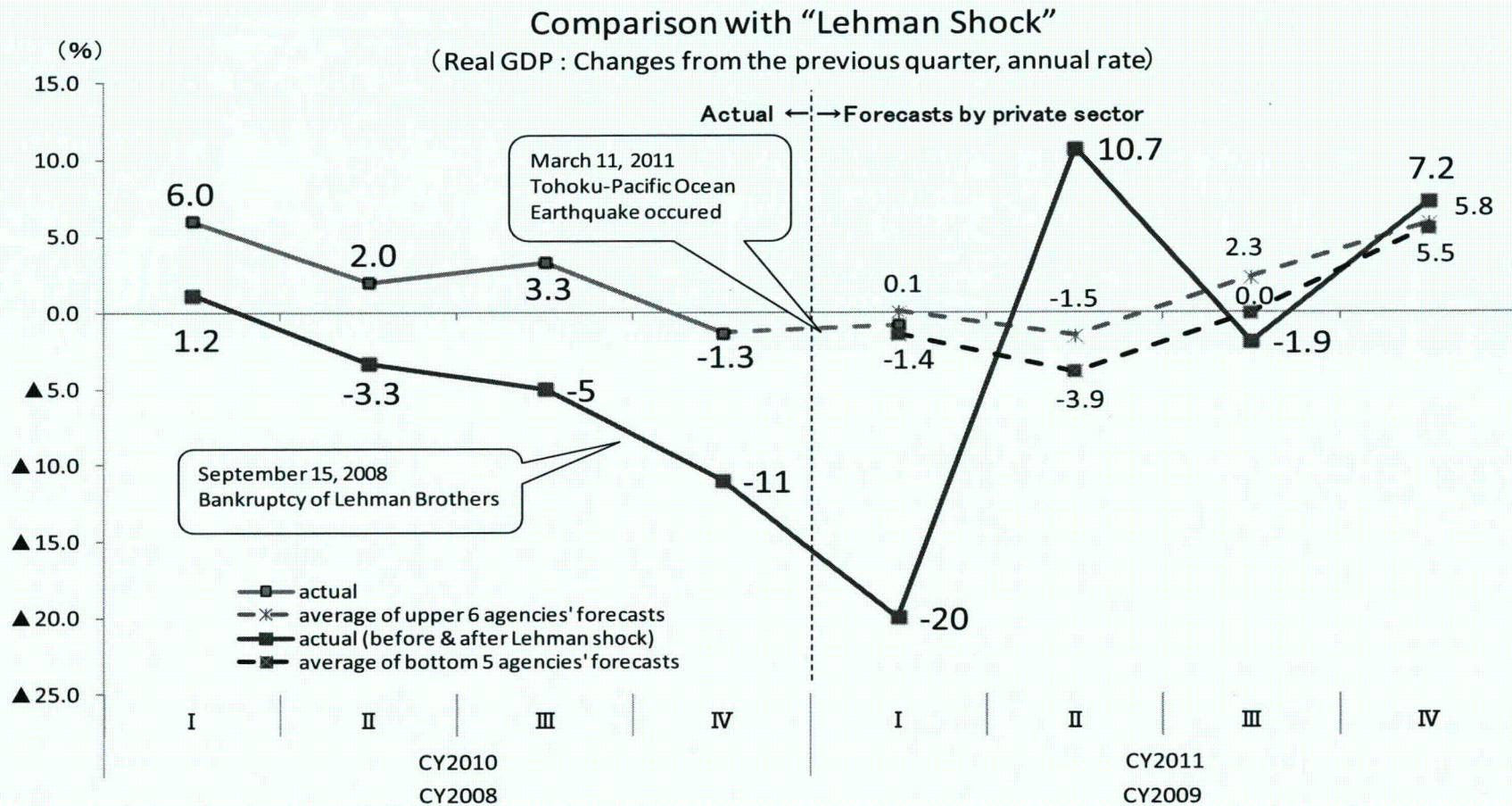
Typical amounts of radiation in Hong Kong exceed those in Tokyo even as workers struggle to contain a crippled nuclear plant in northern Japan, indicating concerns about spreading contamination may be overblown.

The radiation level in central Tokyo reached a high of 0.109 microsieverts per hour in Shinjuku Ward yesterday, data from the Tokyo Metropolitan Institute of Public Health show. That compares with 0.14 microsieverts in the Kowloon district of Hong Kong, the Hong Kong Observatory said on its website. A person is exposed to 50 microsieverts from a typical x-ray.

Tokyo's radiation level is only slightly higher than New York, where an average of 0.095 microsieverts an hour was recorded in the seven days to yesterday, according to a real-time Geiger counter reading set up as part of the Background Radiation Survey, a project where owners of the equipment feed their readings into a central database. The level in Tokyo the day before the accident averaged 0.0338 microsieverts an hour.

8. Macroeconomic Impact : (1) Comparison with the “Lehman Shock”

- According to private sector forecasts, Japan’s economy will grow in Q3 and Q4 2011 after slowing down in the Q1 and Q2. The degree of the slowdown is expected to be much less than after the “Lehman Shock.”



【Source】“National Accounts” (Cabinet Office) 、 “The Nikkei” (April 5, 2011)

8. Macroeconomic Impact : (2) Cabinet Office Estimate

➤ The Cabinet Office forecasts that Japan's growth will be positive following the "Great East Japan Earthquake." It estimates damage to the stock in the disaster to be about 1% of the national stock.

	FY2011(2011,4~2012,3)		FY2012 (2012,4~2013,3)	FY2013 (2013,4~2014,3)
	First half	Second half		
Impact on GDP in the disaster area <i>Decline in production due to the damage of private plant & equipment</i>	▲1.25~▲0.5	▲1.25~▲0.5	▲2.25~▲1.25	▲2.25~▲1.25
Impact on GDP in the non-disaster area via supply-chain connections	▲0.25	—	—	—
Impact on Reconstruction of damaged stocks (assuming a scenario where reconstruction takes 3 years) <i>Increase in production corresponding to the gross fixed capital formation</i>	2~3	3~5	6~9.5	5~7.75
Total impact on GDP	0.5~2.25	2~4.25	3.75~8.25	2.75~6.5
In percent of real GDP (annualized)	0.25~0.75%	0.75~1.5%	0.75~1.5%	0.5~1.25%
Damage on Stocks (Social Capital, Housing, Private Plant & Equipment)	16~25 trillion yen (about 1% of all stock)			

【Source】 Cabinet Office

(※1) Prefectures Covered : Hokkaido, Aomori, Iwate, Miyagi, Fukushima, Ibaraki, and Chiba. Period Covered : FY2011 – FY2013

(※2) This table shows the difference from a baseline which corresponds to real GDP that would have realized if the Tohoku-Pacific Ocean Earthquake did not occur.

When calculating the ratio to real GDP, estimated real GDP for FY2010 as shown in the government economic outlook (Cabinet Decision in January 2011) is used.

(※3) Total Stocks in Japan is 2,054 trillion yen. (by macroeconomic and fiscal model database 2009)

(※4) Expect for the impact on GDP via constraint on electric power supply.



“ARIGATO”

“Thank You”

Yomiuri Shimbun

‘ARIGATO’ is the word to express appreciation.

The photograph is ‘ARIGATO’ which people affected by the East Japan great earthquake disaster showed on the shore with pine trees for the United States Armed Forces which had supported restoration of Sendai Airport.

‘ARIGATO’ expresses the appreciation of the Japanese people for the support by each state and people including U.S.A..

Message from Prime Minister Naoto Kan Regarding Assistance Received from Overseas

Tuesday, March 22, 2011

I would like to express my most sincere appreciation for the condolences and assistance Japan has received from approximately 130 countries, more than 30 international organizations, and people all around the world in response to the Tohoku-Pacific Ocean Earthquake.

The rescue workers, search dogs, and nuclear power experts from various countries, as well as the human resources support from the U.S. Forces in Japan and others, assistance with food, medical supplies, blankets, and other supplies, and offers of assistance from over 670 NGOs and other organizations have all been profoundly uplifting to the Japanese people, who have come to realize acutely that “a friend in need is a friend indeed.” ...

On behalf of the Japanese people, I would like once again to express my deepest appreciation upon having received this truly tremendous outpouring of cordial assistance from around the world.

Naoto Kan
Prime Minister of Japan

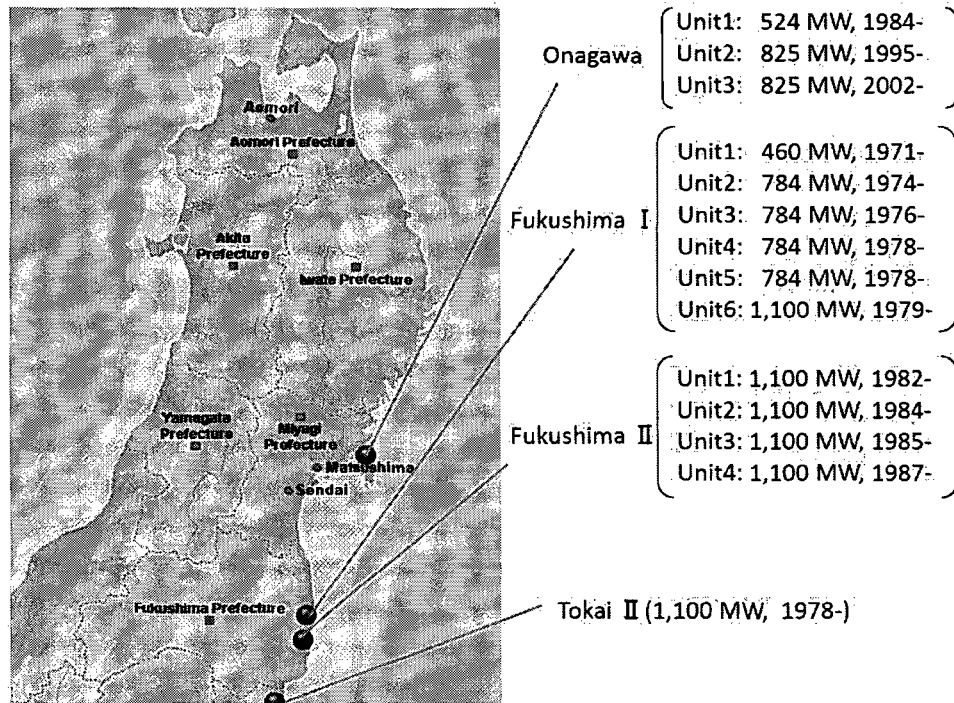
Great East Japan Earthquake and the seismic damage to the NPSs

As of 8:00am April 27th, 2011 (JST)
Ministry of Economy, Trade and industry

Earthquake and automatic shut-down of nuclear reactors

The Great East Japan Earthquake of historic magnitude 9.0 struck the northeastern part of Japan at 14:46 on March 11th, 2011.

At the time of the earthquake occurrence, 3 reactors (Units 4, 5 and 6 at Fukushima Dai-ichi (I) Nuclear Power Station (NPS)) were under periodic inspection outage, and 11 reactors (Units 1, 2 and 3 at Onagawa NPS; Units 1, 2 and 3 at Fukushima I NPS; Units 1, 2, 3 and 4 of Fukushima Dai-ni (II) NPS; and an unit of Tokai Dai-ni (II) NPS) were automatically shut-down.



Tsunami damaged the emergency generators and the cooling systems at the Fukushima Dai-ichi (I)

Since the external power supply was cut off upon the earthquake occurrence, the emergency diesel power generators at Fukushima I automatically started generating electricity and the cooling systems began their operation.

Then, the massive earthquake triggered the devastating Tsunami wiping away houses, buildings, cars along the widespread areas of the northeast coast. The emergency diesel power generators and the pumps supplying seawater to the cooling system were halted at 15:41 on March 11th due to the Tsunami estimated more than 14 meters high from the seawater level.

Report concerning incidents at the Fukushima Dai-ichi (I)

Unit 1 Fresh water is being injected to the spent fuel pool and the reactor.

After the reactor was automatically shut-down and the Tsunami disabled the equipments. The pressure of containment vessel unusually increased and the water level inside the reactor pressure vessel dropped. Vent of the primary containment vessel was operated at 10:17am on March 12th; thereafter, hydrogen explosion occurred at the upper-part of the reactor building at 15:36.

Water injection to the reactor pressure vessel

- Seawater had been injected into the reactor pressure vessel since March 12th; thereafter, fresh water has been injected since March 25th, instead of seawater.

Water injection to the spent fuel pool

- On March 31st, spray of fresh water over the spent fuel pool of Unit 1 using the concrete pump truck was carried out.

Power supply

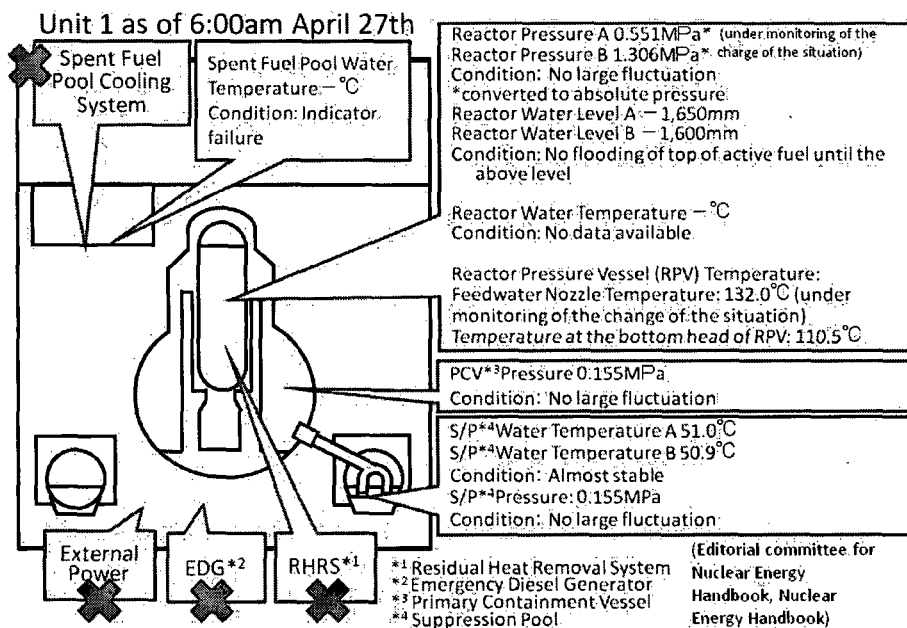
- Lighting in the main control room was recovered on March 24th. And the power supply for the fresh water injection to the reactor pressure vessel was switched to the external power supply on April 3rd.

Stagnant water

- As the result of concentration measurement in the stagnant water on the basement floor of the turbine building, $2.1 \times 10^5 \text{ Bq/cm}^3$ of ^{131}I (Iodine) and $1.8 \times 10^6 \text{ Bq/cm}^3$ of ^{137}Cs (Caesium) were detected as major radioactive nuclides. Since March 24th, the stagnant water has been transferred to the condenser until it was fulfilled.
- In order to prepare to transfer the stagnant water in the turbine building to the condenser, the water in the condensate storage tank was transferred to the surge tank of suppression pool water and finished on April 2nd. The transfer of the water in the condenser to the condensate storage tank was completed on April 10th.

Nitrogen injection

- Aiming at reducing the possibility of hydrogen combustion in the primary containment vessel of Unit 1, the operations for the injection of nitrogen to the vessel were started at 22:30 on April 6th. The start of nitrogen injection to the primary containment vessel of Unit 1 was confirmed. (1:31am April 7th)



Unit 2 Fresh water is being injected to the spent fuel pool and the reactor.

After the automatic shut-down of the reactor, the water injection function was sustained. And vent of the primary containment vessel was operated at 11:00am on March 13th and at 0:02am on March 15th. But the reactor water level tended to decrease. At 6:10am on March 15th, there was an explosion sound at Unit 2. Given the fact that the pressure in the suppression chamber decreased, it is presumed that there is possibility of certain damage on the suppression chamber.

Water injection to the reactor pressure vessel

- Seawater had been injected into the reactor pressure vessel since March 14th; thereafter, fresh water has been injected since March 26th, instead of seawater.

Water injection to the spent fuel pool

- The seawater injection to the spent fuel pool using the fire pump truck started on March 20th. On March 29th, the injection was switched to the fresh water injection using the temporary motor-driven pump.
- The work of sampling water that flowed out in the skimmer surge tank from the spent fuel pool of Unit 2 was carried out in order to grasp the condition of water in the pool. (April 16th) As a result of nuclide analysis of radioactive materials regarding the sampled water of the pool, $4.1 \times 10^3 \text{ Bq/cm}^3$ of ^{131}I (Iodine), $1.6 \times 10^3 \text{ Bq/cm}^3$ of ^{134}Cs (Cesium), $1.5 \times 10^3 \text{ Bq/cm}^3$ of ^{137}Cs (Cesium) were detected. (April 17th)

Power supply

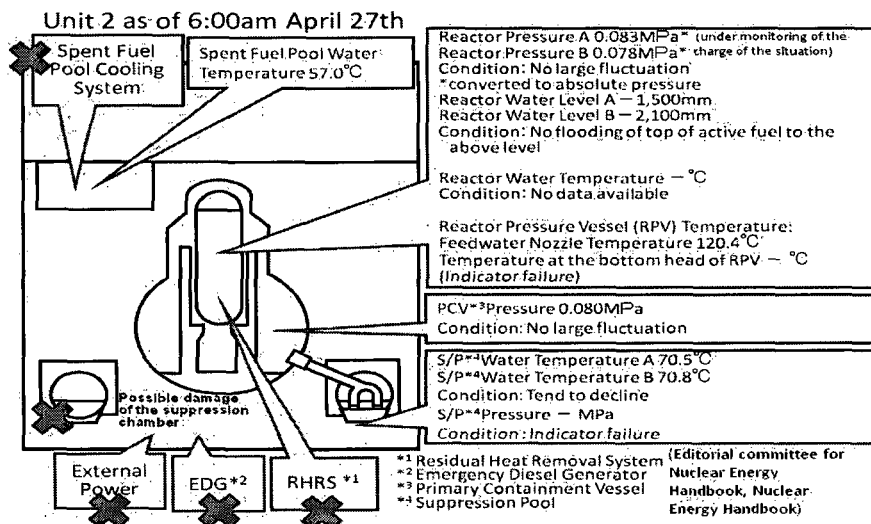
- On March 26th, lighting of the main control room was recovered. And the power supply for the fresh water injection to the reactor pressure vessel was switched to the external power supply on April 3rd.

Stagnant water

- After transferring the water in the condenser to the condensate storage tank, the stagnant water in the trench of the turbine building was transferred to the condenser from April 12th till 13th. Then, stagnant water (stagnant water with high-level radioactivity) in the turbine building of Unit 2 was started to be transferred to the radioactive waste treatment facilities at 10:08am on April 19th.

Water in the pit

- The water, of which the dose rate was at the level of more than 1,000 mSv/h, was confirmed to be collected in the pit (a vertical portion of an underground structure) located near the intake channel of Unit 2. In addition, the outflow from the crack (20cm) in the concrete portion of the lateral surface of the pit into the sea was confirmed on April 2nd. In order to stop the outflow the coagulant (soluble glass) was injected from the holes around the pit from April 5th, the outflow was confirmed to stop on 6th. Furthermore, the measures to stop water by means of rubber board and jig (prop) were implemented at the outflowing point. (April 6th)
- Injection of the coagulant to the power cable trench of Unit 2 was carried out on April 18th and 19th.



Unit 3 Fresh water is being injected to the spent fuel pool and the reactor.

After the automatic shut-down of the reactor, fresh water and subsequently seawater were injected into the reactor pressure vessel. And vent of the primary containment vessel was operated on March 13th and 14th. However, the pressure in the primary containment vessel rose up unusually and the explosion took place around the reactor building at 11:01am on March 14th.

Water injection to the reactor pressure vessel

- The seawater had been injected into the reactor pressure vessel since March 13th, thereafter; fresh water has been injected since March 25th, instead of seawater. On March 28th, the pump for the fresh water injection was switched from the fire pump truck to the temporary motor-driven pump.

Water injection to the spent fuel pool

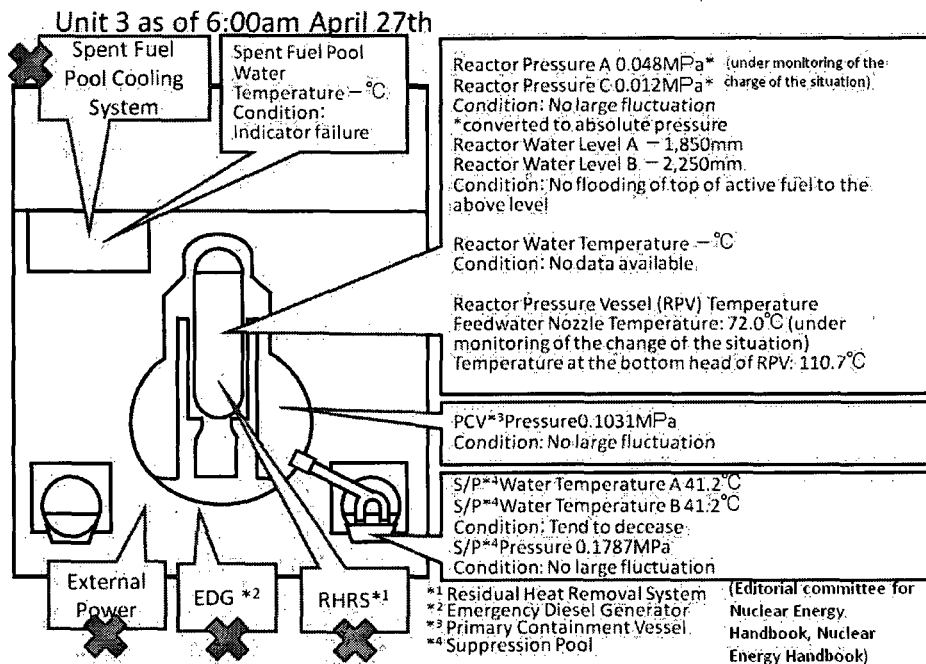
- In order to pour water into the spent fuel pool, helicopters, water cannon trucks, fire engines and concrete pump trucks discharged water to the spent fuel pool of Unit 3 from sky and ground. Since March 29th till April 22th, fresh water spray over the spent fuel pool using the concrete pump truck had been carried out.
- Test injection of fresh water to the spent fuel pool using fuel pool coolant clean-up system for Unit 3 was carried out on April 22nd and 26th.

Power supply

- On March 22nd, lighting in the main control room was recovered. And the power supply for the fresh water injection to the reactor pressure vessel was switched to the external power supply on April 3rd.

Stagnant water

- In order to prepare for transferring the stagnant water on the basement floor of turbine building to the condenser, the water in the condensate storage tank is being transferred to the surge tank of suppression pool water from March 28th till March 31st.



Unit 4 No fuel is in the reactor. Fresh water is being injected to the spent fuel pool.

There is no fuel in the reactor pressure vessel due to replacement of the shroud. It was confirmed that a part of wall of the operation floor of the reactor building of Unit 4 was damaged at 6:14am on March 15th. A fire took place at Unit 4 at 9:38am March 15th, but the fire was extinguished spontaneously as of 11:00am. Another fire took place on March 16th, but no fire could be confirmed from the ground.

Water injection to spent fuel pool

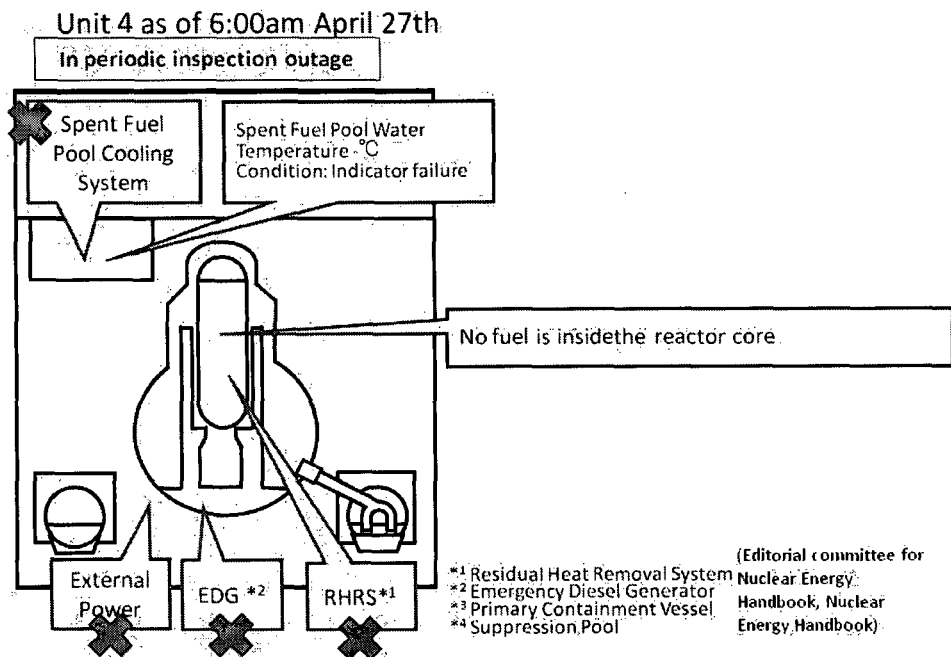
- Water spray using fire engine with seawater over the spent fuel pool of Unit 4 was carried out from March 20th till March 21st. And water spray using a concrete pump truck had been carried out with seawater from March 22nd till March 27th and with fresh water from March 30th till April 26th.

Power supply

- On March 29th, lighting in the main control room was recovered.

Stagnant water

- From April 2nd, the stagnant water in the main building of radioactive waste treatment facilities was being transferred to the turbine building of Unit 4. As the water level in the vertical portion of the trench for Unit 3 rose from April 3rd, by way of precaution, the transfer was suspended notwithstanding that the path of the water was not clear.(9:22am April 4th)



Unit 5&6 Unit 5 & 6 is under cold shut down.

One of the emergency generators for Unit 6 was operating and supplying electricity to Unit 5 and Unit 6. Fresh water was being injected into the reactor pressure vessels and the spent fuel pools by make-up water condensate system.

Cold shut down

- The pump for residual heat removal system (RHR) for Unit 5 and the pump for RHR for Unit 6 started up on March 19th and recovered heat removal function.
- Unit 5 was under cold shut down at 14:30 on March 20th and Unit 6 was under cold shut down at 19:27 on the same day.

Power supply

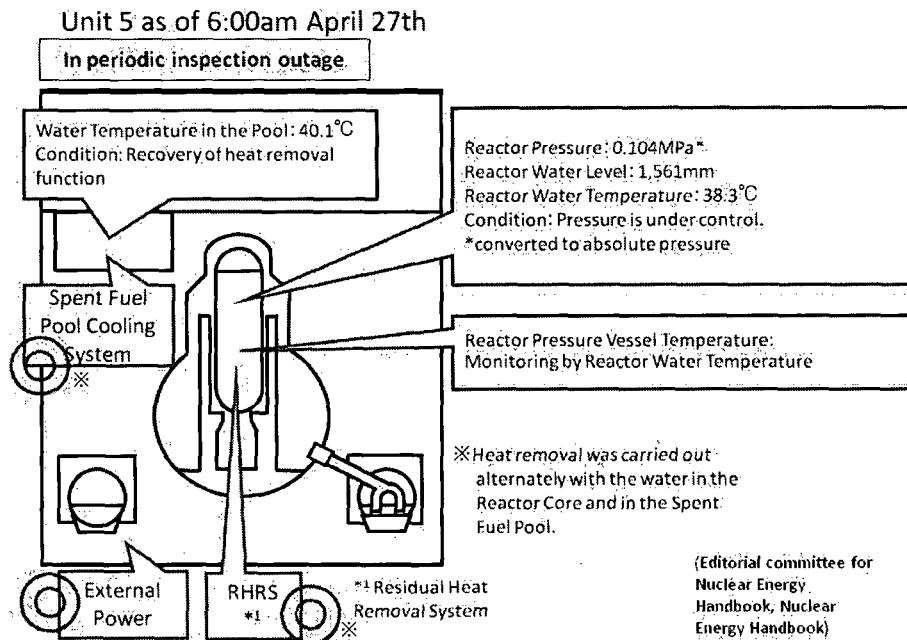
- Unit 5 and 6 received electricity reached to the starting transformer on March 20th. The power supply of Unit 5 and 6 was switched from the emergency diesel generators to the external power supply on March 21st and March 22nd.
- Power supply for the temporary pumps for RHR seawater system of Unit 5 and 6 were switched from the temporary to the permanent on March 24th and 25th.

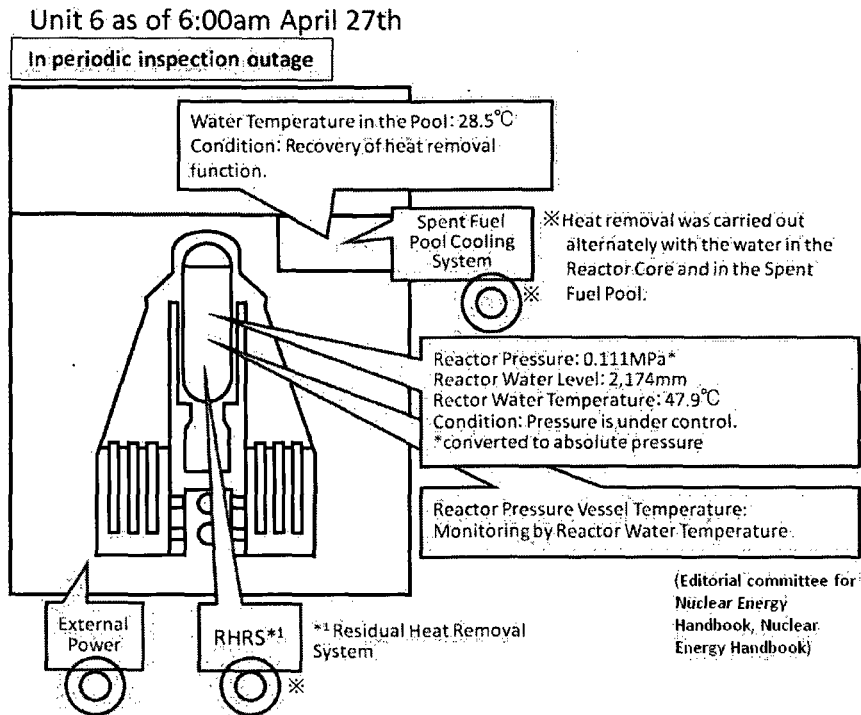
Low-level radioactivity water discharge

- The groundwater with low-level radioactivity in the sub drain pits of Units 5 and 6 (around 1,300t) was discharged through the water discharge canal to the sea from April 4th till 9th in order to protect the critical safety facilities of the reactors. The water was beginning to leak out to the reactor building and other buildings of Unit 6 and there was no further capacity to accommodate it.

Stagnant water

- The stagnant water in the basement floor of the turbine building of Unit 6 was transferred to the condenser. (From 11:00 till 15:00 April 19th)





Common Spent Fuel Pool

- The power supply was started at 15:37 on March 24th and cooling was also started at 18:05 on the same day.
- The power supply was stopped due to short-circuiting of the end of the power supply circuit. (14:34 April 17th) Thereafter the facility inspection was carried out and the power supply was recovered. (17:30 April 17th)

Other

Nuclide analysis at water discharge canal

- As the result of nuclide analysis at around the southern water discharge canal, $7.4 \times 10^1 \text{ Bq/cm}^3$ of ^{131}I (1850.5 times higher than the limit of concentration of water outside the Environmental Monitoring Area) was detected on March 26th. (As the result of measurement on March 29th, it was detected as 3355.0 times higher than the limit in water.)
As the result of the analysis at the northern water discharge canal, $4.6 \times 10^1 \text{ Bq/cm}^3$ of ^{131}I (1262.5 times higher) was detected on March 29th.

Water in the trenches

- The water was confirmed to be collected in the vertical parts of the trenches (an underground structure for laying pipes, shaped like a tunnel) outside of the turbine building of Units 1 to 3. The dose rates on the water surface were 0.4 mSv/h of the Unit 1's trench and 1,000 mSv/h of the Unit 2's trench on March 27th. The rate of the Unit 3's trench could not measure because of the rubble.

Nuclide analysis of soil

- In the samples of soil collected on March 21st, 22nd, 25th, 28th, 31st and April 4th on the site of Fukushima I, ^{238}Pu (Plutonium), ^{239}Pu and ^{240}Pu were detected. The concentration of the detected plutonium was at the equivalent level of the fallout that was observed in Japan concerning the past atmospheric nuclear testing, i.e. at the equivalent level of the normal condition of environment, and was not at the level of having harmful influence on human body.

Stagnant water

- On March 28th, the stagnant water was confirmed in the main building of radioactive waste treatment facilities. As the result of analysis of radioactivity, the total amount of the radioactivity $1.2 \times 10^1 \text{ Bq/cm}^3$ in the controlled area and that of $2.2 \times 10^1 \text{ Bq/cm}^3$ in the non-controlled area were detected in March 29th.

Barges loading fresh water

- Two barges of the US armed forces carrying fresh water for cooling reactors, etc. landed in the exclusive port of the power station, being towed by the ships of Japan Maritime Self-Defense Force on March 31st and April 2nd. The transfer of fresh water from the barges to the filtrate tank was started.

Low-level radioactive water discharge

- The wastewater with high concentration of radioactive materials was trapped on the basement floor of the turbine building of Unit2 and it was necessary to immediately be transferred to another location as it was leaking out to the surrounding environment. But there was no further capacity to accommodate it.
- In order to use the main building of radioactive waste treatment facilities for accommodating the wastewater of the turbine building of Unit2, the stagnant water with low-level radioactivity in the radioactive waste treatment facilities was started to be discharged from the southern side of the water discharge canal to the sea from April 4th till 10th. Confirmation of the remaining water is being carried out. (Total amount of discharged water is around 9,070t.)
- The stagnant water with low-level radioactivity in the building of miscellaneous solid waste volume reduction processing was discharged from the southern side of the water discharge canal to the sea using 5 pumps. (From April 6th till 7th)
- The watertight measures in the buildings of the radioactive waste treatment facilities were completed. (April 18th)

Countermeasures for Tsunami

- The distribution boards, etc. for the pumps injecting water to the reactors of Units 1 to 3 were transferred to a hill on April 15th.

Other

- In order to prevent the contaminated water from outflowing from the exclusive port, the work for stopping water by means of large-sized sandbags was implemented around the seawall on the south side of the NPS on April 5th.
- 3 sandbags filled with Zeolite were placed between the inlet screen pump room of Unit 3 and that of Unit 4 on April 15th. Thereafter, 2 sandbags were placed between

- the inlet screen pump room of Unit 1 and that of Unit 2, and 5 sandbags were placed between that of Unit 2 and that of Unit 3 on April 17th.
- The silt fences to prevent the contaminated water from being scattered were completed to be doubly installed at the appropriate part of the seawall on the south side of the NPS on April 11th. Other silt fences were installed in front of the screen of Units 3 and 4 on April 13th, and at the curtain wall and in front of the screen of Unit 1 and 2 on April 14th.
 - The test scattering of anti-scattering agent to prevent the radioactive materials on the ground surface from being scattered was carried out on the mountain-side of the Common Pool and other areas from April 1st till 25th. And on April 26th, full-scale implementation of spraying anti-scattering agent was carried out in the area of about 5,000 m² on the ocean-side of Unit 3 using an unmanned crawler dump.
 - Removal of the rubble using remote-control heavy machineries was carried out from April 10th till 26th.
 - On the ocean-side of the inlet bar screen of Unit 2, temporary boards to stop water were installed on April 12th, 13th and 15th.
 - Work of strengthening connection of the power supplies between Units 1 and 2 and Units 3 and 4 was completed. (10:23 April 19th)
 - Confirmation of situation, etc. was carried out by unmanned robots at the reactor building for Unit 1, 2 and 3 on April 17th and 18th.

Current Situation

- Evacuation as far as 20 kilometers from Fukushima I NPS and 10 kilometers from Fukushima II NPS was almost completed (see the diagram "Fukushima prefecture"). The residents in the areas from 20 kilometers to 30 kilometers radius from Fukushima I NPS are directed to stay in-house.
- On March 16th, the Local Emergency Response Headquarter issued "the direction to administer the stable Iodine during evacuation from the evacuation area (20 km radius)" to the Prefecture Governors and the heads of cities, towns and villages.

Monitoring Data

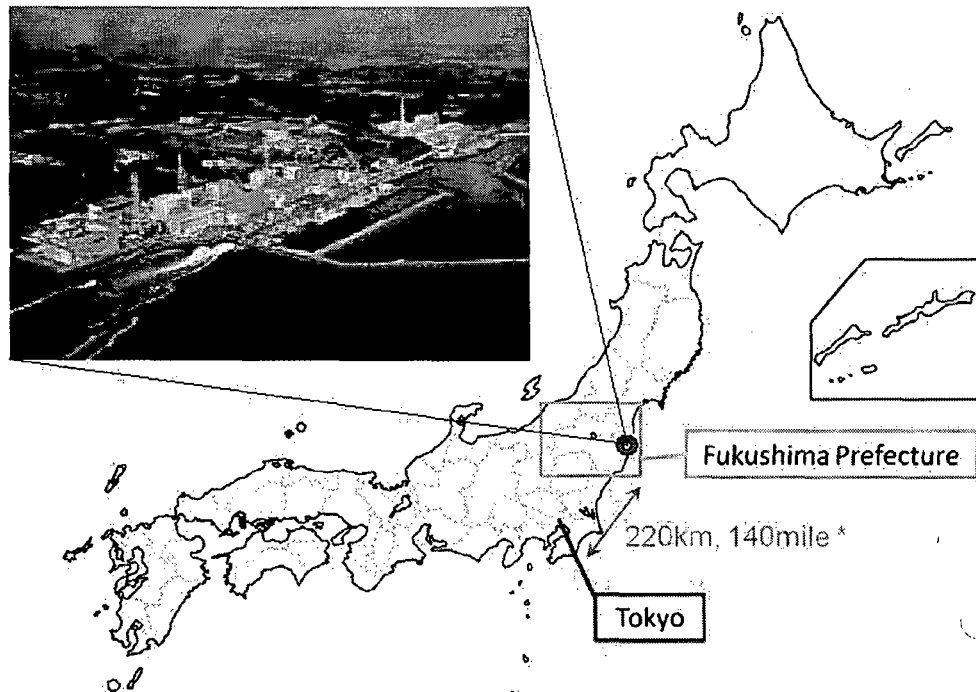
1) The data of Monitoring Post out of 20 kilometers zone of Fukushima I NPS is available on the following website:

http://www.mext.go.jp/a_menu/saigaijohou/syousai/1303726.htm

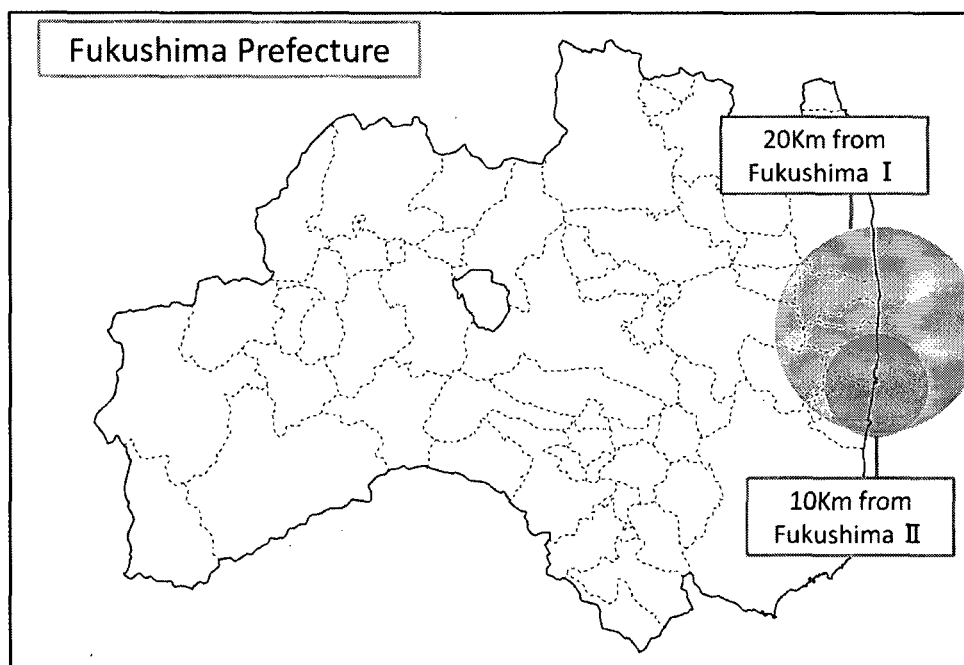
2) The real-time radiation data collected via the System for Prediction of Environment Emergency Dose Information (SPEEDI) is available on the following website:

<http://www.bousai.ne.jp/eng/>

Location of Fukushima I and II in Japan



*Distance between Three Mile Island and Washington D.C. : 140km, 88mile



From: LIA08 Hoc
Sent: Thursday, April 28, 2011 9:17 AM
To: Merzke, Daniel
Subject: RE: ACTION - Conference Call for Tomorrow, 4/28/11

Categories: FOIA Forwarded

1300 due to Commission hearing

Ned Wright

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

From: Merzke, Daniel
Sent: Thursday, April 28, 2011 9:11 AM
To: LIA08 Hoc
Subject: RE: ACTION - Conference Call for Tomorrow, 4/28/11

Some time last night OST01 sent out an e-mail telling everyone the time for the call had been changed to 1300. Could you verify whether the call is at 1300 or 1430? I'm hearing from some that 1430 would be a better time, but so far neither time looks like a deal breaker. Just tell me which time is best, and I'll let the CAs know. Thanks.

Dan

From: LIA08 Hoc
Sent: Wednesday, April 27, 2011 5:49 PM
To: Merzke, Daniel
Cc: Correia, Richard
Subject: FW: ACTION - Conference Call for Tomorrow, 4/28/11

Dan,

After talking with Rich Correia regarding the below e-mails, we propose moving this call to 1430 Thursday afternoon. Is this time acceptable for you and the CA's for the call? If not, can you propose an alternate time. Thanks.

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

From: Correia, Richard
Sent: Wednesday, April 27, 2011 5:35 PM
To: Weber, Michael
Cc: Virgilio, Martin; Merzke, Daniel; Evans, Michele; OST01 HOC; LIA08 Hoc
Subject: RE: ACTION - Conference Call for Tomorrow, 4/28/11

JJJ/442

Will do Mike. We find a new time for the CA call.

Rich

From: Weber, Michael
Sent: Wednesday, April 27, 2011 5:30 PM
To: Correia, Richard
Cc: Virgilio, Martin; Merzke, Daniel; Evans, Michele; OST01 HOC
Subject: ACTION - Conference Call for Tomorrow, 4/28/11

As we discussed, please reschedule tomorrow's call with the Commissioner Assistants to avoid the conflict with the SBO meeting.

Thanks

From: Castleman, Patrick
Sent: Wednesday, April 27, 2011 5:25 PM
To: OST01 HOC; Franovich, Mike; Hipschman, Thomas; Hoc, PMT12; LIA08 Hoc; Marshall, Michael; Orders, William; RST01 Hoc; Snodderly, Michael; Virgilio, Martin; Weber, Michael
Subject: Conference Call for Tomorrow, 4/28/11

To whom it may concern,

During our scheduled time for tomorrow's conference call, most, if not all, of the Commissioner Assistants will be occupied with the Commission meeting on Japan/SBO. Would it be possible to reschedule the call to Thursday afternoon or sometime on Friday?

Thanks!

From: LIA08 Hoc
Sent: Thursday, April 28, 2011 8:02 AM
To: Merzke, Daniel
Subject: RE: ACTION - Conference Call for Tomorrow, 4/28/11

Categories: FOIA Forwarded

Dan

The CA briefings are to the Commissioner's Assistants to keep they abreast of current operations dealing with the Japanese response.

Ned Wright

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

From: Merzke, Daniel
Sent: Thursday, April 28, 2011 7:36 AM
To: LIA08 Hoc
Subject: RE: ACTION - Conference Call for Tomorrow, 4/28/11

I have to claim ignorance here, as I have no idea what this conference call is about. Rich's e-mail says he's out the rest of the week. Can you fill me in on what this call is for? Thanks.

Dan

From: LIA08 Hoc
Sent: Wednesday, April 27, 2011 5:49 PM
To: Merzke, Daniel
Cc: Correia, Richard
Subject: FW: ACTION - Conference Call for Tomorrow, 4/28/11

Dan,

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

From: Correia, Richard
Sent: Wednesday, April 27, 2011 5:35 PM
To: Weber, Michael

Cc: Virgilio, Martin; Merzke, Daniel; Evans, Michele; OST01 HOC; LIA08 Hoc
Subject: RE: ACTION - Conference Call for Tomorrow, 4/28/11

Will do Mike. We find a new time for the CA call.

Rich

From: Weber, Michael
Sent: Wednesday, April 27, 2011 5:30 PM
To: Correia, Richard
Cc: Virgilio, Martin; Merzke, Daniel; Evans, Michele; OST01 HOC
Subject: ACTION - Conference Call for Tomorrow, 4/28/11

As we discussed, please reschedule tomorrow's call with the Commissioner Assistants to avoid the conflict with the SBO meeting.

Thanks

From: Castleman, Patrick
Sent: Wednesday, April 27, 2011 5:25 PM
To: OST01 HOC; Franovich, Mike; Hipschman, Thomas; Hoc, PMT12; LIA08 Hoc; Marshall, Michael; Orders, William; RST01 Hoc; Snodderly, Michael; Virgilio, Martin; Weber, Michael
Subject: Conference Call for Tomorrow, 4/28/11

To whom it may concern,

During our scheduled time for tomorrow's conference call, most, if not all, of the Commissioner Assistants will be occupied with the Commission meeting on Japan/SBO. Would it be possible to reschedule the call to Thursday afternoon or sometime on Friday?

Thanks!

From: LIA08 Hoc
Sent: Thursday, April 28, 2011 3:52 PM
To: Reed, Elizabeth
Subject: RE: extended Liaison Team coverage

Categories: FOIA Forwarded

Thanks Beth. I know I can always count on you to help. Jeff

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

From: Reed, Elizabeth
Sent: Thursday, April 28, 2011 3:51 PM
To: LIA08 Hoc
Subject: RE: extended Liaison Team coverage

You can count on me for most days; I can't do May 10th though. I am willing to work any shift you need help with.

Beth

From: LIA08 Hoc
Sent: Thursday, April 28, 2011 3:49 PM
To: Wright, Lisa (Gibney); Ragland, Robert; Murray, Charles; Franovich, Rani; Chazell, Russell; Rivers, Joseph; Reed, Elizabeth; Jessie, Janelle; Kellum, Jim; Libby, Earl; Tabatabai, Omid; Lising, Jason; Smith, Theodore; Wright, Ned; Temple, Jeffrey; Dudek, Michael
Subject: extended Liaison Team coverage

We are still not sure how much longer we will be staffing the LT position for the Japanese earthquake response, but I have been asked to plan for perhaps a few more weeks of day shifts and evening shifts (no overnight shifts). Please let me know if you can help with any of these shifts. Again, if everyone can take 2-4 shifts, we can cover this with limited pain for everyone. Thanks for any help you can provide.

Jeff Temple
Liaison Team Coordinator
US Nuclear Regulatory Commission
email: lia08.hoc@nrc.gov
Desk Ph: 301-816-5185

JJJ / 443

From: LIA08 Hoc
Sent: Thursday, April 28, 2011 4:20 PM
To: Smith, Theodore
Subject: RE: extended Liaison Team coverage

Categories: FOIA Forwarded

thanks Ted. Will be in touch. Jeff

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

From: Smith, Theodore
Sent: Thursday, April 28, 2011 4:14 PM
To: LIA08 Hoc
Subject: RE: extended Liaison Team coverage

I can take 5/10, 11, and 12 for day shift. (7am -3pm)

Ted

From: LIA08 Hoc
Sent: Thursday, April 28, 2011 3:49 PM
To: Wright, Lisa (Gibney); Ragland, Robert; Murray, Charles; Franovich, Rani; Chazell, Russell; Rivers, Joseph; Reed, Elizabeth; Jessie, Janelle; Kellum, Jim; Libby, Earl; Tabatabai, Omid; Lising, Jason; Smith, Theodore; Wright, Ned; Temple, Jeffrey; Dudek, Michael
Subject: extended Liaison Team coverage

We are still not sure how much longer we will be staffing the LT position for the Japanese earthquake response, but I have been asked to plan for perhaps a few more weeks of day shifts and evening shifts (no overnight shifts). Please let me know if you can help with any of these shifts. Again, if everyone can take 2-4 shifts, we can cover this with limited pain for everyone. Thanks for any help you can provide.

Jeff Temple
Liaison Team Coordinator
US Nuclear Regulatory Commission
email: lia08.hoc@nrc.gov
Desk Ph: 301-816-5185

JJJ/444

From: [Harrington, Holly](#)
To: [Burnell, Scott](#); [Brenner, Eliot](#)
Subject: FW: Q&A
Date: Friday, March 11, 2011 10:59:00 PM
Attachments: [Questions and Answers for Chairman Jaczko.earthquake.031111.docx](#)

These are the Q&As as they stand now with public and non public answers.

From: LIA07 Hoc
Sent: Friday, March 11, 2011 10:57 PM
To: Harrington, Holly
Cc: Mroz (Sahm), Sara
Subject: Q&A

Here you go.

JJJ/445

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

Public Answer: We are closely following events in Japan, working with other agencies of the federal government, and have been in direct contact with our counterparts in that country. In addition, we are ready to provide assistance if there is a specific request.

We have identified individuals who could support response efforts in Japan if requested.

Additional technical, non-public information:

We are taking the knowledge that the staff has about the design of the US nuclear plants and we are applying this knowledge to the Japan situation. For example, this includes calculations of severe accident mitigation that have been performed.

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

Public Answer: All U.S. nuclear power plants are built to withstand environmental hazards, including earthquakes and tsunamis. Even those plants that are located outside of areas with extensive seismic activity are designed for safety in the event of such a natural disaster. The NRC requires that safety-significant structures, systems, and components be designed to take into account the most severe natural phenomena historically reported for the site and surrounding area and then goes further. Nuclear power plants are designed to be safe based on historical data from the area's maximum credible earthquakes.

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

Additional technical, non-public information:

The reactor design is a Boiling Water Reactor that is similar to some of the designs here in the US.

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

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

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

Additional technical, non-public information:

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

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

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

Additional, technical, non-public information:

Tsunami have been considered in the design of US nuclear plants since the publication of Regulatory Guide 1.59 in 1977. Nuclear plants are designed to withstand flooding from not only tsunami, but also hurricane and storm surge. Currently the US NRC has a tsunami research program that is focused on developing additional guidance through cooperation with the National Oceanic and Atmospheric Administration and the United States Geological Survey.

5. Could the Japanese situation in the nuclear power plants there end up like Chernobyl?

Public Answer: We don't feel it appropriate for the NRC, which has no regulatory responsibility for Japan's nuclear power plants, to make comments about what may or may not be happening or happen there in the future. However, it's important to note that Japanese nuclear power plants are built to fundamentally different designs than the Chernobyl facility way.

Additional, technical, non-public information:

Japanese nuclear power plants are built to a significant level of robustness where the Chernobyl facility was definitely not. The design and reactor physics of Chernobyl plant are fundamentally different from those of the Japanese plant. The reactor core is expected to be contained and containment is a part of the design.

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

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

Additional, technical, non-public information:

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

7. Should people in Japan take KI?

Public Answer: The Japanese people should listen to the public authorities in Japan regarding protective actions. KI – potassium iodide – is one of the protective measures that might be taken in a radiological emergency in this country. We do not know if this measure is necessary or appropriate in the Japanese situation.

Additional, technical non-public information:

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

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

Public Answer: No

Additional, technical non-public information:

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

9. Is there a risk that radiation from Japan will reach the U.S.?

Public Answer: The NRC is not in a position to make any statements in this regard. When and if the time comes for concern, the question should be directed to the U.S. Environmental Protection Agency.

Additional, technical, non-public information:

We believe there is very low risk to the US considering the long distance from the US and the type of event. We should not compare this event to Chernobyl.

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

Public Answer: As is prudent, the NRC will certainly be looking closely at this incident and the effects on the Japanese nuclear power plant in the future to see if any changes are necessary to NRC regulations.

Additional, technical, non-public information.

We expect that there would be lessons learned, etc.

11. Will this incident affect new reactor licensing?

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

Additional, technical non-public information:

From: LIA08 Hoc
Sent: Thursday, April 28, 2011 4:22 PM
To: Ragland, Robert
Subject: RE: extended Liaison Team coverage

Categories: FOIA Forwarded

Thanks Clyde. Hopefully we will be out of business by then, but you never know. Jeff

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

From: Ragland, Robert
Sent: Thursday, April 28, 2011 4:18 PM
To: LIA08 Hoc
Cc: Temple, Jeffrey
Subject: RE: extended Liaison Team coverage

Jeff,

I'm away from the office on business or pleasure during most of next month, but I intend to make myself available for some slots in June, if you haven't closed down the Ops Center by then.

Until then, good luck!

Clyde

From: LIA08 Hoc
Sent: Thursday, April 28, 2011 3:49 PM
To: Wright, Lisa (Gibney); Ragland, Robert; Murray, Charles; Franovich, Rani; Chazell, Russell; Rivers, Joseph; Reed, Elizabeth; Jessie, Janelle; Kellum, Jim; Libby, Earl; Tabatabai, Omid; Lising, Jason; Smith, Theodore; Wright, Ned; Temple, Jeffrey; Dudek, Michael
Subject: extended Liaison Team coverage

We are still not sure how much longer we will be staffing the LT position for the Japanese earthquake response, but I have been asked to plan for perhaps a few more weeks of day shifts and evening shifts (no overnight shifts). Please let me know if you can help with any of these shifts. Again, if everyone can take 2-4 shifts, we can cover this with limited pain for everyone. Thanks for any help you can provide.

Jeff Temple
Liaison Team Coordinator
US Nuclear Regulatory Commission
email: lia08.hoc@nrc.gov
Desk Ph: 301-816-5185

JJJ/446

From: LIA08 Hoc
Sent: Thursday, April 28, 2011 11:13 AM
To: tracy.mustin@nnsa.doe.gov
Subject: Combined NRC-DOE Status Report

Categories: FOIA Forwarded

Tracy

I have checked around and while this was kicked around several weeks ago as a possibility, I have not found any current interest to do this now.

Thanks

Ned Wright

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

From: LIA08 Hoc
Sent: Thursday, April 28, 2011 11:18 AM
To: Emche, Danielle
Subject: Update of Site Team Members

Categories: FOIA Forwarded

Danielle

Do you have an updated list with telephone numbers etc that will reflect the new staff enroute to Japan. We need to insure the State Department is aware of the shift changes.

Thanks

Ned Wright

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

From: LIA08 Hoc
Sent: Thursday, April 28, 2011 5:21 AM
To: Carter, Mary
Subject: RE: itineraries for NRC team traveling to japan

Categories: FOIA Forwarded

Good morning,
Is there a comprehensive listing or file of all personnel w/ blackberry telephone numbers that were, are or scheduled for the Japan Site Team? The Ops Center Liaison Team needs one, preferable an .xls file, to support State Department tracking of NRC personnel in Japan.

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

From: Carter, Mary
Sent: Wednesday, April 27, 2011 8:16 AM
To: LIA08 Hoc
Cc: Schwartzman, Jennifer; Bloom, Steven
Subject: itineraries for NRC team traveling to japan

NRC Delegation to Japan April 27-May 20, 2011

Wednesday, April 27, 2011
United 803 Washington Dulles-Tokyo Narita 12:21p 3:10p+1
Thursday, May 19, 2011
United 804 Tokyo Narita-Washington Dulles 4:00p 3:37p
Francis (Skip) Young
Robert Temps
Richard Plasse
Matthew Mitchell

Friday, April 29, 2011
American 5821 Chicago O'Hare-Tokyo Narita 11:10a 2:15p+1

Friday, May 20, 2011
American 5822 Tokyo Narita-Chicago O'Hare 11:00a 8:55a
James Lynch
Hironori Peterson

Friday, April 29, 2011
American 4293 Chatanooga-Chicago O'Hare 7:35a 8:25a
American 5821 Chicago- O'Hare-Tokyo Narita 11:10a 2:15p+1

Friday, May 20, 2011
American 176 Tokyo Narita-Dallas/Ft. Worth 1:10p 10:45a
American 3201 Dallas/Ft. Worth- Chatanooga 1:45p 4:40p
Mark Miller

JJJ/449

Friday, April 29, 2011

American 1755 Atlanta- Dallas/Ft. Worth 6:50a 8:10a

American 175 Dallas/Ft. Worth- Tokyo Narita 10:00a 1:05p+1

Friday, May 20, 2011

American 5822 Tokyo Narita-Chicago O'Hare 11:00a 8:55a

American 3851 Chicago O'Hare- Atlanta 10:20a 1:15p

Scott Freeman

Mary Faith Carter

Office of International Programs

U. S. Nuclear Regulatory Commission

e-mail:mary.carter@nrc.gov

ph:301-415-2331

fax:301-415-2395

From: Tracy, Glenn
Sent: Thursday, April 28, 2011 1:49 AM
To: OST01 HOC
Subject: RE: One-Pager 0700 EDT 4/27/11

From: OST01 HOC
Sent: Wednesday, April 27, 2011 6:21 AM
To: Johnson, Michael; Kokajko, Lawrence; Batkin, Joshua; Boger, Bruce; Carpenter, Cynthia; Castleman, Patrick; Franovich, Mike; Gibbs, Catina; Hipschman, Thomas; Hoc, PMT12; Jaczko, Gregory; LIA08 Hoc; Marshall, Michael; Moore, Scott; Orders, William; Pace, Patti; RST01 Hoc; Snodderly, Michael; Speiser, Herald; Tracy, Glenn; Uhle, Jennifer; Virgilio, Martin; Weber, Michael; Wiggins, Jim; Zimmerman, Roy
Subject: One-Pager 0700 EDT 4/27/11

*** Attachments are OUO ***

Per the attached email, this will be the final One-Pager sent via email. Future updates will be loaded to the Japan SharePoint page at <http://nsir-ops.nrc.gov/>. Please let us know if you have any problems or questions. Thank you.

*** Attachments are OUO ***

JJJ/450

From: PMT10 Hoc
Sent: Thursday, April 28, 2011 9:50 PM
To: skeith@cdc.gov
Subject: FW: US-Japan Nuclear-Related Assistance Tracker - #18 KI to Japan

From: LIA08 Hoc
Sent: Thursday, April 28, 2011 9:42 PM
To: PMT10 Hoc
Subject: US-Japan Nuclear-Related Assistance Tracker - #18 KI to Japan

Sam,

In accordance with our discussion earlier tonight on the Consortium Call, I wanted to ensure that you had the appropriate item for follow-up.

#18 Request: Potassium Iodide (KI) preparation of 1 million 17 dose bottles. MOFA said 3/30 that it would accept the 1 million (17 doses each) of liquid KI offered.

Follow-Up: HHS (CDC) to confirm the status of KI going MOFA. Is this still currently tied up with GoJ legal or had it been distributed? What can be done to "break the log-jam"?

If you have any comments or concerns regarding this tasking, please do not hesitate to call.

Respectfully,
Michael I. Dudek

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

From: LIA08 Hoc
Sent: Thursday, April 28, 2011 9:15 PM
To: paleyrm@inpo.org
Subject: US-Japan Nuclear-Related Assistance Tracker - Request #34

Categories: FOIA Forwarded

Rob,

In accordance with our discussion earlier tonight on the Consortium Call, I wanted to ensure that you were providing an update on the appropriate item.

#34 Request: List alternative flowpaths that can be used for purging, given accessibility challenges (RST request). GE to provide 3/29 list, INPO providing technical review, NISA will confirm whether any additional info is needed by 4/22.

Follow-Up: INPO to confirm that this information was provided to all appropriate stakeholders. Also ensure that the list and technical analysis are complete.

If you have any comments or concerns regarding this tasking, please do not hesitate to call.

Respectfully,
Michael I. Dudek

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

From: LIA08 Hoc
Sent: Thursday, April 28, 2011 10:03 PM
To: paleyrm@inpo.org
Subject: US-Japan Nuclear-Related Assistance Tracker - Request #20

Categories: FOIA Forwarded

Rob,

In accordance with our discussion earlier tonight on the Consortium Call, I also wanted to check on the status of this item.

#20 Request: Heat exchanger to be used in spent fuel pool. NISA has asked to keep this open until it can confirm whether any additional info is needed.

Follow-Up: Does INPO have a better idea of what the next steps are for this action? Has the INPO report been sent to NISA? Does TEPCO have any further information needs?

If you have any comments or concerns regarding this tasking, please do not hesitate to call.

Respectfully,
Michael I. Dudek

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

JJJ/453

From: Brenner, Eliot
To: Couret, Ivonne; Burnell, Scott; Akstulewicz, Brenda
Cc: Harrington, Holly; Hayden, Elizabeth
Subject: new blog
Date: Saturday, March 12, 2011 11:23:50 AM

The Nuclear Regulatory Commission continues to monitor the unfolding developments in Japan in the aftermath of Friday's earthquake/tsunami and problems at a nuclear power complex. It is a serious and very fluid situation that is being watched by a variety of government agencies who can provide assistance. The NRC is prepared to provide reactor experts should a request be made. In our communications with the Japanese government both the NRC and other elements of the U.S. government have offered our condolences to the Japanese people over the tragedy that has occurred.

The NRC's Rockville, Md., headquarters Operations Center is operating on an around-the-clock basis.

The NRC is not in a position to confirm reports that come from Japan on a minute by minute basis and it would be irresponsible of the agency to speculate on a crisis unfolding half a world away. We will provide information we consider pertinent domestically when necessary.

U.S. nuclear power plants are built to withstand environmental hazards, including earthquakes. Even those plants that are located outside of areas with extensive seismic activity are designed for safety in the event of such a natural disaster.

The NRC requires that safety-significant structures, systems, and components be designed to take into account the most severe natural phenomena historically reported for the site and surrounding area. The NRC then adds a margin for error to account for the historical data's limited accuracy. In other words, U.S. nuclear power plants are designed to be safe based on historical data from the area's maximum credible earthquake.

One of the items we have been asked about is how does a boiling water reactor operate. For background information on generic operations at a boiling-water reactor, including an animated graphic, visit the NRC's website at www.nrc.gov.

Eliot Brenner
Director of Public Affairs.

From: Couret, Ivonne
Sent: Saturday, March 12, 2011 10:52 AM
To: Burnell, Scott; Akstulewicz, Brenda
Cc: Brenner, Eliot
Subject: RE: New press release for posting on Web and EOC


Scott are you doing the blog Post, just spoke with Holly and she provided guidance on this. I'm also going to have OIS lift the BWR design on to the Hot Topics section on the Web and include the PDF of designs. We should link these additional designs to press release and new blog post. Thoughts? Ivonne


Ivonne L. Couret

JIT/454

Public Affairs Officer
Office of Public Affairs




 (301) 415-8205

 ivonne.couret@nrc.gov

Visit our online photo gallery. Incorporate graphics and photographs to tell your story!
<http://www.nrc.gov/reading-rm/photo-gallery/>

2010-2011 Information Digest - Where you can find NRC Facts at a Glance
<http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1350/>

NRC Employees can read interesting insight on the OPA Blog
<http://portal.nrc.gov/OCM/opa/blog/default.aspx>

 Please consider the environmental impact before printing this email.

From: Burnell, Scott
Sent: Saturday, March 12, 2011 10:44 AM
To: Akstulewicz, Brenda; Couret, Ivonne
Cc: Brenner, Eliot
Subject: New press release for posting on Web and EOC

Brenda;

Please set this up for immediate release. Ivonne, once it's final can you post it to WebEOC? Thanks.

Scott

From: McIntyre, David
To: Brenner, Eliot
Cc: Akstulewicz, Brenda; Harrington, Holly
Subject: NHK report
Date: Saturday, March 12, 2011 10:34:18 AM

Watching NHK on my iPad, excerpt of NISA press conference, through interpreter: "We have confirmed that the explosion did not happen in the reactor's container. The explosion occurred because the building's walls fell down."

Well, that's a relief!

JJJ/4SS

OIP_ITServices Resource

From: Bloom, Steven
Sent: Thursday, April 28, 2011 3:45 PM
To: OIP_ITServices Resource
Subject: FW: Japanese station blackout rules

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

From: Michael W. Chinworth [<mailto:michael-chinworth@jnes-usa.org>]
Sent: Thursday, April 28, 2011 2:50 PM
To: Bloom, Steven
Cc: michael.ucllingford@nrc.gov
Subject: Japanese station blackout rules

Steve:

Hope all is well.

Just wanted to let you know that we are in the process of assembling information on Japan's counterpart to NRC station blackout rule. We're assuming that it might be an item of interest due to this morning's briefing and comments by Mr. Borchardt.

Best,
Michael C.

--
Michael W. Chinworth
Senior Researcher
Japan Nuclear Energy Safety Organization (JNES) 1850 M Street, N.W.
Suite 1070
Washington, D.C. 20036
202-223-9584 (tel)
202-223-9585 (fax)

JJJ/456

OIP_ITServices Resource

From: Bloom, Steven
Sent: Thursday, April 28, 2011 12:45 PM
To: OIP_ITServices Resource
Attachments: OUO: Transition Report April 10 1530- 2400; OUO: Transition Report April 10, 0600-1530; OUO: Transition Report April 9 1530-2400; OUO: Transition Report-Apr 9- 6:30-1530; One Pager for April 9, 2011; OUO: Transition Report 1500-1400; RE: OUO- Transition Report April 8, 0630 - 1500 ; RE: One Page Summary March 8, 2011 Should Read APRIL!; One Page Summary March 8, 2011; OUO- Transition Report April 8, 1500 - 2400

JJJ/457

From: Harrington, Holly
To: Akstulewicz, Brenda; Brenner, Eliot; Hayden, Elizabeth
Subject: RE: FYI
Date: Saturday, March 12, 2011 12:33:00 PM

I'm writing a script for Brenda to say to these people

From: Akstulewicz, Brenda
Sent: Saturday, March 12, 2011 12:33 PM
To: Brenner, Eliot; Hayden, Elizabeth; Harrington, Holly
Subject: FYI

Don't know if it makes a difference in your decision making, but I'm beginning to receive calls from people who are very disappointed, concerned, uncertain of the information they're receiving on TV, etc. and would like/feel more comfortable if there was a statement/information from the NRC.

Brenda Akstulewicz
Administrative Assistant
Office of Public Affairs
301-415-8209
brenda.akstulewicz@nrc.gov



JJJ/458

From: RST01B Hoc
To: Monninger, John; Batkin, Joshua; Brenner, Eliot; Hayden, Elizabeth; Harrington, Holly; McDermott, Brian
Subject: Natural Phenomena Response Requirements for Region IV NPPs
Date: Friday, March 11, 2011 4:27:06 PM
Attachments: Natural Phenomina Response Requirements for NPPs (2009).docx

The is the Natural Phenomena Response Requirements for Region IV NPPs, as requested by the Chairman. Similar info is available for sites in other regions.

Rick Hasselberg,
Sr. Emergency Response Coordinator
Response Program Manager
Reactor Safety Team
Office of Nuclear Security & Incident Response
U.S. Nuclear Regulatory Commission
rick.hasselberg@nrc.gov
Office - 301-415-6419

JJJ/459

Licensee Natural Phenomena Response Requirements

Arkansas Nuclear One, Units 1 and 2

LICENSEE EMERGENCY PLAN REQUIREMENTS	<u>NOUE</u>	<u>ALERT</u>	<u>SITE AREA EMERGENCY</u>
	<p><u>Flooding</u> - Lake level >340' and rising with forecasted lake level >350'</p> <p><u>Loss of Dardanelle Reservoir</u> - Lake level <337' AND forecasted by the U.S. Army Corps of Engineers (USACE) to reach 335'</p> <p><u>Earthquake</u> - Verified earthquake accompanied by 0.1g alarm.</p> <p><u>Tornado/High Wind/Thunderstorms</u> - Tornado observed on the ground within the exclusion area</p>	<p><u>Flooding</u> - Flood waters >350' AND forecasted by the USACE to reach or exceed 354' OR any natural event resulting in the potential or actual loss of <u>one</u> train of any ES system.</p> <p><u>Loss of Dardanelle Reservoir</u> - lake level <335' elevation OR any natural event resulting in the potential or actual loss of <u>one</u> train of any ES system</p> <p><u>Earthquake</u> - Verified earthquake accompanied by 0.1g alarm OR any natural event resulting in the potential or actual loss of <u>one</u> train of any ES system.</p> <p><u>Tornado/High Wind/Thunderstorms</u> - Tornado striking vital facility structures (e.g. housing ES related equipment) OR in the event of sustained winds of >60 mph (10 minute average as reported by RDACS from either the 10 or 57 meter instruments) OR any natural event resulting in the potential or actual loss of <u>one</u> train of any ES system.</p>	<p><u>Flooding</u> - flood water is >361' OR any natural event resulting in the potential or actual loss of <u>both</u> trains of any ES system.</p> <p><u>Loss of Dardanelle Reservoir</u> -lake level <335' elevation and Emergency Cooling Pond not available OR any natural event resulting in the potential or actual loss of <u>both</u> trains of any ES system.</p> <p><u>Earthquake</u> - verified earthquake greater than 0.2 g, or any natural event resulting in the potential or actual loss of <u>both</u> trains of any ES system.</p> <p><u>Tornado/High Wind/Thunderstorms</u> - Sustained winds of >67 mph (10 minute average as reported by RDACS from either the 10 or 57 meter instruments), OR or any natural event resulting in the potential or actual loss of <u>both</u> trains of any ES system.</p>
TECHNICAL SPECIFICATION OPERATING REQUIREMENTS	NONE		

Licensee Natural Phenomena Response Requirements

Arkansas Nuclear One, Units 1 and 2

SHUTDOWN REQUIREMENTS	If expected to lose the lake as a SW suction source, then S/D to Mode 3 per Rapid Plant Shutdown procedure (1203.045) If seismic annunciator in alarm AND earthquake is felt physically, then S/D to Mode 3 per Rapid Plant Shutdown procedure (1203.045) When directed by management during a flooding event, then S/D to Mode 3 per Rapid Plant Shutdown procedure (1203.045)
APPLICABLE OPERATING PROCEDURES	"Emergency Action Level Classification" - Procedure 1903.010, Change 039 "Natural Emergencies" - Procedure 1203.025, Change 020-03-0 "Natural Emergencies" - Procedure 2203.008, Change 012

Licensee Natural Phenomena Response Requirements

Callaway Nuclear

LICENSEE EMERGENCY PLAN REQUIREMENTS	<u>NOUE</u>	<u>ALERT</u>	<u>SITE AREA EMERGENCY</u>
	<p><u>Tornado</u> – Report by plant personnel or tornado or high winds >100mph striking within protected area.</p> <p><u>Earthquake</u> – A seismic event identified by any two of the following:</p> <ul style="list-style-type: none"> - Receipt of Annunciator 98E (Seismic Recorder On), verified by Procedure OTO-SG-0001, Seismic Activity. Annunciator 98E is activated by a ground force acceleration of 0.02 sensed at the containment base slab or the containment operating floor. - An earthquake felt in the plant - Earthquake confirmed by earthquake information center 	<p><u>Tornado</u> – Tornado or high winds > 100 mph within protected area boundary and resulting in visible damage to any Table H-1 structure or equipment or control room indication or degraded performance of those system. (Table H1 is shown below)</p> <p><u>Earthquake</u> – OBE exceeded OTO-SG-0001, Seismic Activity, as indicated by Annunciator 98D, Operating Basis Earthquake (Set point is .12g from Stron Motion Accelerometer) and confirmed by the following:</p> <ul style="list-style-type: none"> - An earthquake felt in the plant - Earthquake confirmed by earthquake information center - Control room indication of degraded performance of systems required for the safe shutdown of the plant. 	<p><u>Tornado</u> - N/A</p> <p><u>Earthquake</u> - N/A</p>
TECHNICAL SPECIFICATION OPERATING REQUIREMENTS			
SHUTDOWN REQUIREMENTS			

Licensee Natural Phenomena Response Requirements

Columbia Generating Station

LICENSEE EMERGENCY PLAN REQUIREMENTS	<p style="text-align: center;"><u>NOUE</u></p> <p><u>Tornado/High Winds</u>- Plant personnel confirm a tornado striking within the Protected Area OR Weather Service projects wind speeds >80MPH OR Control Room measured wind speeds >61MPH (15 minute average at 33 ft)</p> <p><u>Earthquake</u> - Minimum Seismic Earthquake alarm AND Control Room receives report from plant personnel who have felt an earthquake</p> <p><u>Volcanic Ash</u> - Visible ash fall at the CGS site</p>	<p style="text-align: center;"><u>ALERT</u></p> <p><u>Tornado/High Winds</u> - Plant personnel confirm a tornado striking a plant safe shutdown building OR Weather Service projects wind speeds >100MPH OR Control Room measured wind speeds >70MPH (15 minute average at 33 ft)</p> <p><u>Earthquake</u> - Operating Basis Earthquake alarm AND Control Room receives report from plant personnel who have felt an earthquake</p> <p><u>Volcanic Ash</u> - Ash fall is severe enough to warrant plant shutdown OR has the potential to damage plant structures or equipment</p>	<p style="text-align: center;"><u>SITE AREA EMERGENCY</u></p> <p><u>Tornado/High Winds/Earthquake/Volcanic Ash</u> - In the judgement of the Emergency Director, events are in progress or have occurred which involve actual or likely major failures of plant functions needed for the protection of the public.</p>
TECHNICAL SPECIFICATION OPERATING REQUIREMENTS			
SHUTDOWN REQUIREMENTS	Volcano activity causing the following limits to be exceeded - total uncompacted ash depth of 4 inches - ash fall rate > 1.0 in/hr		
APPLICABLE OPERATING PROCEDURES	"Emergency Plan Implementing Procedures" - Procedure 13.1.1 "Abnormal Conditions Procedure - Tornado/High Winds" - Procedure ABN-Wind "Abnormal Conditions Procedure - Ash Fall" - Procedure ABN-Ash		

Licensee Natural Phenomena Response Requirements

Comanche Peak

LICENSEE EMERGENCY PLAN REQUIREMENTS	<p style="text-align: center;"><u>NOUE</u></p> <p><u>High Winds/Tornado</u> - Weather Service warning of wind speeds >80MPH OR Tower wind speed >80MPH sustained OR Tornado observed to have touched down within the Exclusion Area Boundary</p> <p><u>Flooding</u> - Safe Shutdown Impoundment (SSI) level >790.5' elevation (USGS level meter)</p> <p><u>Earthquake</u> - Earthquake felt in the plant OR detected by seismic instruments</p>	<p style="text-align: center;"><u>ALERT</u></p> <p><u>High Winds/Tornado</u> - Weather service warning of wind speeds >110mph OR Tower wind speed >100MPH sustained OR Tornado strikes a facility inside the Protected Area (plant structures or equipment; potentially damaging functions needed for safe shutdown)</p> <p><u>Flooding</u> - SSI level >796' elevation (USGS level meter)</p> <p><u>Earthquake</u> - Indicated earthquake > Operating Basis Earthquake</p>	<p style="text-align: center;"><u>SITE AREA EMERGENCY</u></p> <p>Conditions exist which indicate actual or likely major failure of plant functions needed for the protection of the public.</p>
TECHNICAL SPECIFICATION OPERATING REQUIREMENTS	N/A		
SHUTDOWN REQUIREMENTS			
APPLICABLE OPERATING PROCEDURES	<p>"Acts of Nature" - Procedure ABN-907</p> <p>"Assessment of Emergency Action Levels, Emergency Classification and Plan Activation" - Procedure EPP-201</p>		

Licensee Natural Phenomena Response Requirements

Cooper Nuclear Station

LICENSEE EMERGENCY PLAN REQUIREMENTS	<p style="text-align: center;"><u>NOUE</u></p> <p><u>Flooding</u> - River level > 899' or < 867'</p> <p><u>Tornado</u> - Tornado touching down in OCA</p> <p><u>High Winds</u> - Sustained wind speed > 74 mph</p> <p><u>Earthquake</u> - Ground motion > 0.01g as indicated by control room seismic monitor</p>	<p style="text-align: center;"><u>ALERT</u></p> <p><u>Flooding</u> - River Level > 902' or < 865'</p> <p><u>Tornado</u> - Tornado touching down in Protected Area</p> <p><u>High Winds</u> - Sustained wind speed >95 mph.</p> <p><u>Earthquake</u> - Ground motion > 0.1g as indicated by control room seismic monitor</p>	<p style="text-align: center;"><u>SITE AREA EMERGENCY</u></p> <p><u>Flooding</u> - Flooding from any source (External or Internal) which renders multiple ECCS systems inoperable when required to be OPERABLE OR Low river level which results in complete loss of Service Water System.</p> <p><u>Tornado/High Winds</u> - Sustained wind speed >100 mph.</p> <p><u>Earthquake</u> - Ground motion > 0.1g as indicated on the Control Room seismic monitoring panel AND reports of major plant damage.</p>
TECHNICAL SPECIFICATION OPERATING REQUIREMENTS			
SHUTDOWN REQUIREMENTS	<p>River level at 902' MSL OR forecast to be \geq 902' within next 36 hours OR Floodwater accumulates in any of the following: Either Diesel Generator Room, Any Reactor Building Quadrant, Control Building Basement OR Plant conditions warrant reactor shutdown.</p> <p>River level at 873' MSL AND forecast to reach 865'</p>		
APPLICABLE OPERATING PROCEDURES	<p>"Operations During Weather Watches and Warnings" - Emergency Procedure 5.1Weather</p> <p>"Earthquake" - Emergency Procedure 5.1Quake</p> <p>"Flood" - Emergency Procedure 5.1Flood</p> <p>"Service Water Casualties" - Emergency Procedure 5.2SW</p> <p>EPIP 5.7.1 "Emergency Classification"</p>		

Updated 05/05/2009

Licensee Natural Phenomena Response Requirements

Diablo Canyon

LICENSEE EMERGENCY PLAN REQUIREMENTS	<u>NOUE</u>	<u>ALERT</u>	<u>SITE AREA EMERGENCY</u>
	<p><u>Tsunami/Hurricane</u> – Hurricane warning or Tsunami (actual or warning) affecting the Protected Area</p> <p><u>Tornado</u> – Report by plant personnel of tornado or high winds > 80 mph striking within Protected Area boundary</p> <p><u>Earthquake</u> – Seismic event identified by ANY TWO of the following:</p> <ul style="list-style-type: none"> - Earthquake felt in plant - Seismic event confirmed by PK15-24 main annunciator "SEISMIC INSTR SYSTEM" - U.S. Geological survey <p><u>Flooding</u> – Uncontrolled flooding in any area Table H-1 area that has the potential to affect safety related equipment needed for the current operating mode</p> <p><u>Other</u> – Report of turbine failure resulting in casing penetration or damage to turbine or generator seals</p>	<p><u>Hurricane/Tornado</u> – Tornado or high winds > 80 mph within Protected Area boundary and resulting in visible damage to any Table H -1 plant structures/equipment or Control Room indication of degraded performance of those systems</p> <p><u>Earthquake</u> – Earthquake Force Monitor "Alert" alarm or CP M-4, "Earthquake" indicates Operating Basis Earthquake (> 0.2g)</p> <p><u>Flooding/Post-tsunami</u> – Uncontrolled flooding in any Table H-1 area that results in degraded safety system performance as indicated in the Control Room or that creates industrial safety hazards (e.g., electric shock) that precludes access necessary to operate or monitor safety equipment</p> <p><u>Other</u> – Turbine failure-generated missiles result in any visible damage to or penetration of any Table H-1 area.</p> <p><u>Other</u> – Vehicle crash within Protected Area boundary and resulting in visible damage to any Table H-1 plant structures or equipment or control indication of degraded performance of those systems (Note 2)</p>	<p><u>None</u></p> <p style="text-align: center;"><u>Table H-1: Vital Areas</u></p> <ul style="list-style-type: none"> - Containment - Auxiliary Building - Fuel Handling Building - Turbine Building - Intake Structure - RWST - CST <p>Note 2: If vehicle crash is a hostile action, see Subcategory H.4 EALs for possible classification</p>
TECHNICAL SPECIFICATION OPERATING REQUIREMENTS	LCO 3.7.8 Two ASW trains shall be OPERABLE		
SHUTDOWN REQUIREMENTS	S/D required if ASW unavailable due to Tsunami/Flooding/Post-Tsunami (extreme low water) condition		
APPLICABLE OPERATING PROCEDURES	<p>C:\FOIA\Hollman\Harrington_HMH1-9-16-14-11\Final\DFE\Natural Phenomena Response Requirements for N.docx</p> <p>CP M-4 Earthquake, EP C-1 Emergency Classification and Emergency Plan Activation</p>		

Licensee Natural Phenomena Response Requirements

Fort Calhoun Station

LICENSEE EMERGENCY PLAN REQUIREMENTS	<p style="text-align: center;"><u>NOUE</u></p> <p><u>Flooding</u> - River level >1004' MSL but ≤1009' MSL</p> <p><u>Tornado</u> - Tornado touching down in OCA</p> <p><u>Earthquake</u> - Earthquake is felt in plant or the "STRONG MOTION SEISMIC EVENT IN PROGRESS" alarm (valid) is actuated.</p> <p><u>Low River Level</u> - River is ≤978' MSL but >976' 9" MSL</p>	<p style="text-align: center;"><u>ALERT</u></p> <p><u>Flooding</u> - River level >1009' MSL but ≤1014' MSL</p> <p><u>Tornado</u> - Tornado causes damage to any plant vital areas</p> <p><u>Earthquake</u> - Earthquake causes damage to any plant vital areas.</p> <p><u>Low River Level</u> - River level ≤976' 9" MSL but >973' 9" MSL</p>	<p style="text-align: center;"><u>SITE AREA EMERGENCY</u></p> <p><u>Flooding</u> - River level >1014' MSL.</p> <p><u>Low River Level</u> - River level is ≤973' 9" MSL</p>
TECHNICAL SPECIFICATION OPERATING REQUIREMENTS	None		
SHUTDOWN REQUIREMENTS	<ul style="list-style-type: none"> The Reactor must be placed in Hot Shutdown within six hours if either of the following conditions is met: 1) the recorded acceleration at the 991' elevation exceeds 0.1944g horizontal or 0.1068g vertical, or 2) the recorded acceleration at the 1045' elevation exceeds 0.2306g horizontal or 0.1068g vertical. If the river level is expected to rise above elevation 1009 feet due to catastrophic flooding, then shutdown the plant per AOP-05, Emergency Shutdown, and place the plant in cold shutdown per OP-3A, Plant Shutdown. When river level reaches 1004 feet and is expected to reach 1007 feet, then shutdown the plant per one of the following procedures: 1) AOP-05, Emergency Shutdown, or 2) OP-4, Load Change and Normal Power Operation. If the river level reaches 1009 feet, then place the plant in cold shutdown per OP-3A, Plant Shutdown. There are no specific criteria to shutdown the plant in the event of a tornado. 		
APPLICABLE OPERATING PROCEDURES	"Emergency Plan Implementing Procedure" - Procedure EPIP-OSC-1, Rev. 44 AOP-01, Acts of Nature, Rev. 22		

Licensee Natural Phenomena Response Requirements

Grand Gulf

LICENSEE EMERGENCY PLAN REQUIREMENTS	<u>NOUE</u>	<u>ALERT</u>	<u>SITE AREA EMERGENCY</u>
	<p><u>Hurricane</u> - Severe weather with indication of sustained high winds ≥ 74 mph within the protected area boundary</p> <p><u>Tornado</u> - Report by plant personnel of a tornado striking within the PROTECTED AREA boundary</p> <p><u>Earthquake</u> - Valid indication of a felt earthquake: Vibratory ground motion felt in the PROTECTED AREA and recognized as an earthquake AND Activated seismic switches as indicated by activation of the Seismic Monitoring System</p> <p><u>Flooding</u> - Uncontrolled flooding in the Auxiliary Building (Table H1) that has the potential to affect safety related equipment needed for the current operating mode</p>	<p><u>Hurricane</u> - Severe weather with indication of sustained winds ≥ 74 mph within PROTECTED AREA boundary and resulting in VISIBLE DAMAGE to Plant Structures containing Functions or Systems Required for Safe Shutdown (Table H2) or has caused damage as evidenced by Control Room indication of degraded performance of those systems</p> <p><u>Tornado</u> - Tornado striking within the PROTECTED AREA boundary and resulting in VISIBLE DAMAGE to any of the Plant Structures containing Functions or Systems Required for Safe Shutdown (Table H2) or Control Room indication of degraded performance of those systems</p> <p><u>Earthquake</u> - Valid indication of a seismic event greater than an Operating Basis Earthquake:</p> <ul style="list-style-type: none"> • Receipt of all of the following indications on SH13P856: <ul style="list-style-type: none"> ○ Containment Operating Basis Earthquake ○ Drywell Operating Basis Earthquake 	None

Licensee Natural Phenomena Response Requirements

Palo Verde

LICENSEE EMERGENCY PLAN REQUIREMENTS	<p style="text-align: center;"><u>NOUE</u></p> <p><u>Tornado</u> - Tornado affecting the protected area(s) OR Tornado affecting a loaded spent fuel storage cask Confinement Boundary</p> <p><u>Flooding</u> - Flooding affecting a loaded spent fuel storage cask Confinement Boundary OR Flooding affecting the protected area(s)</p> <p><u>Earthquake</u> - Valid "Event Trigger" indicated on Seismic Warning Panel OR seismic activity affecting a loaded spent fuel storage cask Confinement Boundary.</p>	<p style="text-align: center;"><u>ALERT</u></p> <p><u>Tornado</u> - Visible damage to permanent structures and equipment, affecting plant operations OR Sustained winds >105 mph (design levels) or tornado with average winds >300MPH (design basis)</p> <p><u>Flooding</u> - Flooding potentially affecting safety systems required for the current operating mode OR visible structural damage to any building containing safe shutdown equipment.</p> <p><u>Earthquake</u> - OBE annunciator alarm in control room AND earthquake >0.12g horizontal and vertical as indicated by light "OSG-AE-1" or "OSG-AE-2" OR visible structural damage to any building containing safe shutdown equipment</p>	<p style="text-align: center;"><u>SITE AREA EMERGENCY</u></p> <p><u>All Hazards</u> - Other conditions exist which, in the judgement of the Shift Manager/ Emergency Coordinator, indicate actual or likely major failure of plant functions needed for protection of the public.</p>
TECHNICAL SPECIFICATION OPERATING REQUIREMENTS			
SHUTDOWN REQUIREMENTS			
APPLICABLE OPERATING PROCEDURES	"Acts of Nature" - Procedure 40AO-9ZZ21		

Licensee Natural Phenomena Response Requirements

River Bend Station

LICENSEE EMERGENCY PLAN REQUIREMENTS	<u>NOUE</u>	<u>ALERT</u>	<u>SITE AREA EMERGENCY</u>
	<p><u>Hurricane</u> - Severe weather or hurricane conditions with indication of SUSTAINED high winds greater than or equal to 74 mph in the PROTECTED AREA.</p> <p><u>Tornado</u> - Report by plant personnel of a tornado striking within the PROTECTED AREA boundary.</p> <p><u>Flooding</u> - Uncontrolled flooding in the Auxiliary Building (Table H1) that has the potential to affect safety related equipment needed for the current operating mode.</p>	<p><u>Hurricane</u> - Hurricane or high SUSTAINED wind conditions greater than 74 mph within PROTECTED AREA boundary AND resulting in VISIBLE DAMAGE to plant structures containing equipment necessary for safe shutdown (Table H2), OR has caused damage as evidence by control room indication of degraded performance of those systems.</p> <p><u>Tornado</u> - Tornado striking within the PROTECTED AREA boundary AND resulting in VISIBLE DAMAGE to any of the plant structures (Table H2) or equipment therein OR control room indication of degraded performance of those systems.</p> <p><u>Flooding</u> - Uncontrolled flooding in the Auxiliary Building 70' elevation that results in degraded safety system performance as indicated in the control room OR that creates industrial safety hazards (e.g., electrical shock) that precludes access necessary to operate OR monitor safety equipment.</p>	<p>N/A</p> <p style="text-align: center;"><u>Table H2</u></p> <p style="text-align: center;"><u>Structures Containing Functions or Systems Required for Safe Shutdown</u></p> <p>Reactor Building Auxiliary Building Control Building Standby Cooling Tower Diesel Generator Building Tunnels (B, D, E, F, G)</p>

Licensee Natural Phenomena Response Requirements

San Onofre

LICENSEE EMERGENCY PLAN REQUIREMENTS	<p><u>NOUE</u></p> <p><u>Hurricane</u> - National Weather Service (NWS) issues hurricane warning AND SONGS is in the projected path OR Severe wind or storm flooding which causes inoperability of a safety related system to the extent that reactor shutdown has initiated as specified in the applicable Tech Spec.</p> <p><u>Tornado</u> - NWS issues a tornado warning AND a tornado is observed touching down in the protected area or ISFSI area OR Severe wind or storm flooding which causes inoperability of a safety related system to the extent that reactor shutdown has initiated as specified in the applicable Tech Spec.</p> <p><u>Tsunami</u> - NOAA issues a tsunami warning AND predicted wave height of >30ft mllw is calculated in SO23-13-8, Att 5</p> <p><u>Earthquake</u> - Earthquake causing receipt of a valid seismic trigger alarm</p>	<p><u>ALERT</u></p> <p><u>Hurricane/Tornado/Tsunami</u> - Causing the loss of ability to achieve or maintain <u>cold</u> shutdown</p> <p><u>Earthquake</u> - Earthquake >0.33g (Operating Basis Earthquake)</p>	<p><u>SITE AREA EMERGENCY</u></p> <p><u>All Hazards</u> - Natural phenomena event causing the loss of ability to achieve or maintain <u>hot</u> shutdown</p>
TECHNICAL SPECIFICATION OPERATING REQUIREMENTS			
SHUTDOWN REQUIREMENTS	Plant S/D required if predicted tsunami wave height is between $\geq +20$ feet and $< +30$ feet mean lower low water level (mllw). Plant S/D should be considered if basic wind velocity is expected to exceed 73 mph or tornado total wind velocity is expected to exceed 157 mph.		
APPLICABLE OPERATING PROCEDURES	"Emergency Plan Implementation Procedure" - Procedure SO123-VIII-1 "Abnormal Operating Instruction - Severe Weather" - Procedure SO23-13-8 "Abnormal Operating Instruction - Earthquake" - Procedure SO23-13-3		

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Licensee Natural Phenomena Response Requirements

South Texas Project

LICENSEE EMERGENCY PLAN REQUIREMENTS	<u>NOUE</u>	<u>ALERT</u>	<u>SITE AREA EMERGENCY</u>
	<p><u>Hurricane</u> - S/D of the facility required due to actual or predicted natural phenomena</p> <p><u>Tornado</u> - Tornado striking facilities within the PA</p> <p><u>Earthquake</u> - Earthquake detected by seismic monitoring system AND confirmed by Seismic Event Procedure</p> <p><u>Flooding</u> - Other conditions exist which in the judgement of the Emergency Director indicate a potential degradation of the level of safety of the plant.</p>	<p><u>Hurricane/Tornado</u> - Tornado or high winds causing visible structural damage to any of the following plant structures:</p> <ul style="list-style-type: none"> - Reactor Containment Building - ECW Intake Structure - Mechanical/Electrical Aux Building - Isolation Valve Cubicle* - Fuel Handling Building - EDG Building <p>(*) Note: Loss of Isolation Valve Cubicle blow-off roof is not considered structural damage.</p> <p>Missile hazards not consider credible. (See UFSAR 3.5) Considerations for flooding addressed in FUSAR 3.4.3.2.</p> <p><u>Earthquake</u> - Seismic motion exceeding Operating Basis Earthquake as indicated by Seismic monitor alarm AND confirmed by procedure</p> <p><u>Flooding</u> - Floodwater entering safety related structures such that the function of safety related equipment is jeopardized or predicted OR Actual breach of Main Cooling Reservoir retaining Dike along the North Wall</p>	<p>Other conditions exist which in the judgement of the Emergency Director indicate actual or likely major failures of plant functions needed for the protection of the public.</p>

Licensee Natural Phenomena Response Requirements

Waterford 3

LICENSEE EMERGENCY PLAN REQUIREMENTS	<p><u>NOUE</u> (affects the plant PROTECTED AREA)</p> <p><u>Hurricane</u> – Site predicted to experience a hurricane with hurricane force winds (>74 mph) on site within 12 hours as projected by the National Weather Service</p> <p><u>Tornado</u> – Report by plant personnel of tornado or high winds > 100 mph striking within the PROTECTED AREA boundary</p> <p><u>Flooding</u> – > +27' MSL at the intake OR uncontrolled flooding in RAB or CT areas, that has the potential to affect safety-related equipment needed for the current operating mode</p> <p><u>Earthquake</u> – Earthquake felt in plant and detected on station seismic equipment</p>	<p><u>ALERT</u> (affects the plant VITAL AREA)</p> <p><u>Hurricane</u> – Same as tornado</p> <p><u>Tornado</u> – Tornado or high winds > 100 mph within the PROTECTED AREA boundary and resulting in VISIBLE DAMAGE to any of the following plant structures/equipment or Control Room indication of degraded performance of those systems</p> <ul style="list-style-type: none"> • Containment • Reactor Auxiliary Building • Turbine Building • Cooling Tower Areas <p><u>Flooding</u> – Uncontrolled flooding in Reactor Auxiliary Building or Cooling Tower Areas, that results in degraded safety system performance as indicated in the Control Room or that creates industrial safety hazards that preclude access necessary to operate or monitor safety equipment</p> <p><u>Earthquake</u> – RED light on the plant seismic monitor panel indicates a VALID seismic event > operating basis earthquake</p>
TECHNICAL SPECIFICATION OPERATING REQUIREMENTS		
SHUTDOWN REQUIREMENTS	Shutdown required 12 hours prior to arrival of hurricane conditions on site. (Ref. OP-901-521,	
APPLICABLE OPERATING PROCEDURES	"Recognition and Classification of Emergency Conditions" - Procedure EP-001-001 "Severe Weather and Flooding" - Procedure OP-901-521	

Licensee Natural Phenomena Response Requirements

Wolf Creek

LICENSEE EMERGENCY PLAN REQUIREMENTS	<u>NOUE</u> <u>Tornado</u> – Tornado reported in the protected area <u>Earthquake</u> – Earthquake felt in the plant AND control room annunciator 00-98E, SEISMIC RECORDER ON, is alarm, $\geq 0.02g$ All Hazards – If the event caused the loss of a safety related train and has the potential to be a common mode failure	<u>ALERT</u> <u>Tornado</u> – 1) Report of wind speed greater than 95 mph. OR 2) Report of a tornado striking within the protected area and there is visible or other plant indication of damage to any of the following: Reactor Bldg, Control Bldg, Fuel Bldg, Aux Bldg, EDG Bldg, EDG FOST access vaults, Turb Bldg (structural integrity only), Comm Corridor (structural integrity only), ESW <u>Earthquake</u> - Earthquake $>0.05g$ ground acceleration (Control Room annunciators for OBE or OBE exceeded are in alarm)	<u>SITE AREA EMERGENCY</u> <u>None</u>
TECHNICAL SPECIFICATION OPERATING REQUIREMENTS			
SHUTDOWN REQUIREMENTS			
APPLICABLE OPERATING PROCEDURES	"Natural Events" - Procedure OFN SG-003 "Severe Weather" - Procedure AI 14-006 "Emergency Classification" - Procedure EPP 06-005 "R SPCTRM OBE EXCEED," Alarm Response Procedure 00-98C "OBE," Alarm Response Procedure 00-98D "Seismic Recorder On," Alarm Response Procedure 00-98E		

Licensee Natural Phenomena Response Requirements

From: [Harrington, Holly](#)
To: [Brenner, Eliot](#)
Subject: blog post #2
Date: Friday, March 11, 2011 4:34:00 PM
Attachments: [blog post2.docx](#)

From: Uselding, Lara
To: Brenner, Eliot; Harrington, Holly; Burnell, Scott
Cc: Dricks, Victor
Subject: PNO-IV-11-001 Diablo Canyon NOUE.docx
Date: Friday, March 11, 2011 2:35:31 PM
Attachments: PNO-IV-11-001 Diablo Canyon NOUE.docx

JIT 460

March 11, 2011

PRELIMINARY NOTIFICATION OF EVENT OR UNUSUAL OCCURRENCE -- PNO-IV-11-001

This preliminary notification constitutes EARLY notice of events of POSSIBLE safety or public interest significance. The information is as initially received without verification or evaluation, and is basically all that is known by the Region IV staff on this date.

Facility

Pacific Gas and Electric Company
Diablo Canyon Nuclear Plant Units 1 and 2
Avila Beach, CA.
Docket: 50-275, 50-323
License: DPR-80, DPR-82

Licensee Emergency Classification

XX Notification of Unusual Event
 Alert
 Site Area Emergency
 General Emergency
 Not Applicable

SUBJECT: DIABLO CANYON POWER PLANT NOTIFICATION OF UNUSUAL EVENT

DESCRIPTION:

The agency entered Monitoring Mode at 9:46 a.m. EST, on March 11, 2011, in response to a tsunami warning at Diablo Canyon Power Plant, located near San Luis Obispo, California, as a result of the magnitude 8.9 earthquake in Japan. Diablo Canyon declared a Notification of Unusual Event at 4:23 a.m. EST, based on receipt of a tsunami warning from West California Emergency Management. Diablo Canyon anticipates a wave surge of approximately 3 feet at the intake structure. Diablo Canyon is designed to withstand tsunamis to a wave height of 35 feet. The licensee intends to keep both units at full power through the event. The NRC resident inspectors are on site and monitoring plant conditions and licensee actions from the control room.

The effects of the tsunami at San Onofre Nuclear Generating Station are expected to be less severe than at Diablo Canyon. San Onofre is under a tsunami advisory and has not reached any emergency action levels. Both units continue to operate.

The NRC is contacting Program Directors for states impacted by the tsunami. There are no known tsunami impacts to nuclear materials licensees in the affected states or U.S. territories. The NRC is also monitoring the Humboldt Bay spent fuel storage facility. The agency will continue to monitor the situation.

The State of California has been informed. This information has been discussed with licensee management and is current as of 12:19 p.m. EST.

This preliminary notification is issued for information only, and will be updated as more information becomes available.

ADAMS ACCESSION NUMBER: ML110700503

CONTACTS:

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From: LIA08 Hoc
Sent: Thursday, April 28, 2011 12:30 PM
Subject: USNRC Earthquake-Tsunami Update 042811 Revision 1, 1230 EDT
Attachments: USNRC Earthquake-Tsunami Update 042811 Revision 0, 1200 EDT.pdf

Categories: FOIA Forwarded

This information is **OFFICIAL USE ONLY**. Revision 1 to the 1200 distribution changes from earlier distribution are highlighted

From: OST01 HOC
Sent: Thursday, April 28, 2011 5:36 AM
To: RST01 Hoc
Subject: RE: how is this???

Thanks Eva!

From: RST01 Hoc
Sent: Thursday, April 28, 2011 5:35 AM
To: OST01 HOC
Subject: RE: how is this???

Perfect!!!!

From: OST01 HOC
Sent: Thursday, April 28, 2011 5:35 AM
To: RST01 Hoc
Subject: RE: how is this???

Gotcha...how about

- As a result of their mass balance calculations, TEPCO indicated publicly that a potential leak in spent fuel pool Unit 4 may exist.

From: RST01 Hoc
Sent: Thursday, April 28, 2011 5:31 AM
To: OST01 HOC
Subject: RE: how is this???

It's okay. I don't think that they told the public the source of their information was the mass balance.

From: OST01 HOC
Sent: Thursday, April 28, 2011 5:30 AM
To: RST01 Hoc
Subject: how is this???

- TEPCO indicated publicly that a potential leak in spent fuel pool Unit 4 may exist based on their mass balance calculations.

JJJ/462

Greenwire

2. NUCLEAR CRISIS: NRC chairman's 'emergency' status irks leading Senate Republican (04/29/2011)

Hannah Northey, E&E reporter

The Nuclear Regulatory Commission has been in "emergency" status since the United States received tsunami warnings in the wake of a March 11 earthquake that crippled Japanese nuclear reactors last month, documents obtained by *Greenwire* reveal.

NRC Chairman Gregory Jaczko is using the rarely used status, allowing for the transfer of certain commission decisionmaking powers to himself, because of concerns that the tsunami spawned by the quake could hit the United States. Though that threat subsided within 48 hours, the emergency status continues, according to an email the NRC's Office of Congressional Affairs sent to a senior staffer for the Senate Environment and Public Works Committee.

"The chairman has been exercising his emergency authority since that time," the April 4 email said, noting Jaczko had such authority under Section 3 of the Reorganization Plan No. 1 of 1980. "The agency will return to a non-emergency status when the situation warrants."

Congress passed the law in 1980 to ensure there was decisive leadership for dealing with nuclear emergencies in the aftermath of the partial nuclear meltdown in 1979 at the Three Mile Island plant in Pennsylvania, the NRC said.

Former NRC Chairman Richard Meserve last used such authority following the terrorist attacks of Sept. 11, 2001, according to the NRC, which allowed Meserve to ensure that security designations at U.S. nuclear plants were raised to the highest levels.

"Responding to external emergencies is a basic function of the agency and its designated chairman, as noted by President Carter when he sent the Congress the current reorganization plan under which the NRC operates," said Eliot Brenner, a spokesman for Jaczko.

"When the NRC stands down its emergency response capabilities is wholly dependent on the status of the situation in Japan and the need for our assistance to the embassy, American citizens and the request by Japan for assistance," he said.

NRC commissioners were notified on March 11 that the agency had entered into a "monitoring mode" in response to the Japanese crisis, and Brenner said the chairman was not required to make a declaration of any type for using emergency authority.

But Sen. James Inhofe (R-Okla.), the ranking member on the Senate Environment and Public Works Committee, says the chairman's decision could be limiting crucial input from other commissioners. "This action may have reduced the contributions of your experienced colleagues in monitoring the event and in decision-making," Inhofe wrote in an April 6 letter to Jaczko.

A senior agency official said at least one NRC commissioner was not aware of the "emergency" declaration for at least a month. That commissioner, who refused to be named, has questions about how the chairman is using the emergency authority and whether he has assumed the policy function to make decisions on behalf of the entire commission, the official said.

Brenner said NRC commissioners are not precluded from providing input and that all four commissioners and the chairman together last month adopted the NRC's review of U.S. nuclear reactors in the aftermath of the Japanese disaster. "Any decisions that flow from that study would, of course, be commission decisions," Brenner said.

Inhofe, whose office provided the email to *Greenwire*, has questioned how the head of a federal agency can declare an emergency in the United States for a disaster that happened in another country. The 1980s law guides how an emergency can be declared and what it allows the chairman to do.

Jaczko raised eyebrows when he recommended that Japanese officials evacuate people living within 50 miles of the Fukushima Daiichi plant, which was damaged by the March 11 earthquake and tsunami. Japanese officials at the time were maintaining an evacuation area of 12 miles around the reactor complex.

NRC staff were unable to say who vetted Jaczko's recommendation when the NRC Advisory Committee on Reactor Safeguards asked for clarification at an April 7 meeting (*E&ENews* [F/1](#), April 7).

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The advisory committee, composed of part-time government employees with expertise in nuclear engineering, risk assessment and general engineering, voiced concern over the lack of knowledge surrounding Jaczko's high-level statement and asked the commission to provide detailed calculations that went into supporting the 50-mile evacuation recommendation.

NRC staff said at the time that the "conservative" decision to call for a 50-mile evacuation zone was based on assumptions that the spent fuel pool was full of fuel, as are American spent fuel pools. But NRC staff said they were surprised to later learn that the Japanese spent fuel pools were not as packed with nuclear fuel as they would have been in the United States.

Brenner clarified that the chairman's recommendation for a 50-mile evacuation zone was a recommendation, not an official order.

Robert Duffy, chairman of the political science department at Colorado State University, said he sympathizes with the need for leadership in the aftermath of the Japanese crisis but found it odd that the chairman wouldn't inform commissioners of the "emergency" status.

Duffy said Jaczko's recommendation to implement a 50-mile evacuation zone may be scrutinized because it raises doubts about the safety of the nuclear industry in the United States.

"My guess would be the industry wasn't really thrilled with a statement that you need to evacuate within 50 miles of the Fukushima plant," Duffy said. "All of a sudden, people start asking questions about U.S. plants and the NRC's ability to regulate."

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 **Land Letter**

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From: Uselding, Lara
To: Burnell, Scott; Screnci, Diane; Sheehan, Neil; Hannah, Roger; Ledford, Joey; Mitlyng, Viktoria; Chandrathil, Prema; Dricks, Victor; Harrington, Holly; McIntyre, David; Couret, Ivonne
Cc: Brenner, Eliot
Subject: RE: Rumor control
Date: Friday, March 11, 2011 12:17:18 PM

Elaine Hiruo knew Japanese industry is in town for RIC but I didn't tell her that they were at our building, maybe they connected dots

From: Burnell, Scott
Sent: Friday, March 11, 2011 11:15 AM
To: Screnci, Diane; Sheehan, Neil; Hannah, Roger; Ledford, Joey; Mitlyng, Viktoria; Chandrathil, Prema; Dricks, Victor; Uselding, Lara; Harrington, Holly; McIntyre, David; Couret, Ivonne
Cc: Brenner, Eliot
Subject: Rumor control

All;

Eliot just took a call from Platts asking about Japanese "utility execs" at HQ responding to the quake. The reporter said another Platts reporter had heard "from the regions" that this was the case. While Eliot told Platts we are allowing Japanese REGULATORS to use our communications facilities as a courtesy, the bottom line is that this topic is off-limits for now. Refer any further questions on this to HQ. Thanks.

Scott

JJJ/464

From: LIA08 Hoc
Sent: Friday, April 29, 2011 1:24 PM
To: Hoc, PMT12
Subject: FW: NREP Trish Milligan PAR Presentation.pptx
Attachments: NREP Trish Milligan PAR Presentation.pptx

Categories: FOIA Forwarded

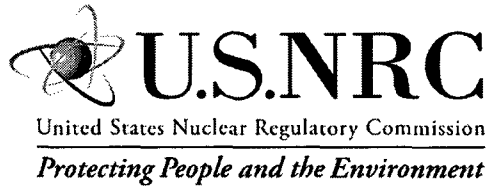
Liaison Team Coordinator
US Nuclear Regulatory Commission
email: lia08.hoc@nrc.gov
Desk Ph: 301-816-5185

From: Wright, Lisa (Gibney)
Sent: Friday, April 29, 2011 1:22 PM
To: LIA08 Hoc; Hoc, PMT12; RST02 Hoc
Subject: NREP Trish Milligan PAR Presentation.pptx

Kathryn—

Here you go...(its slide #5 that you probably want)

JJJ/465



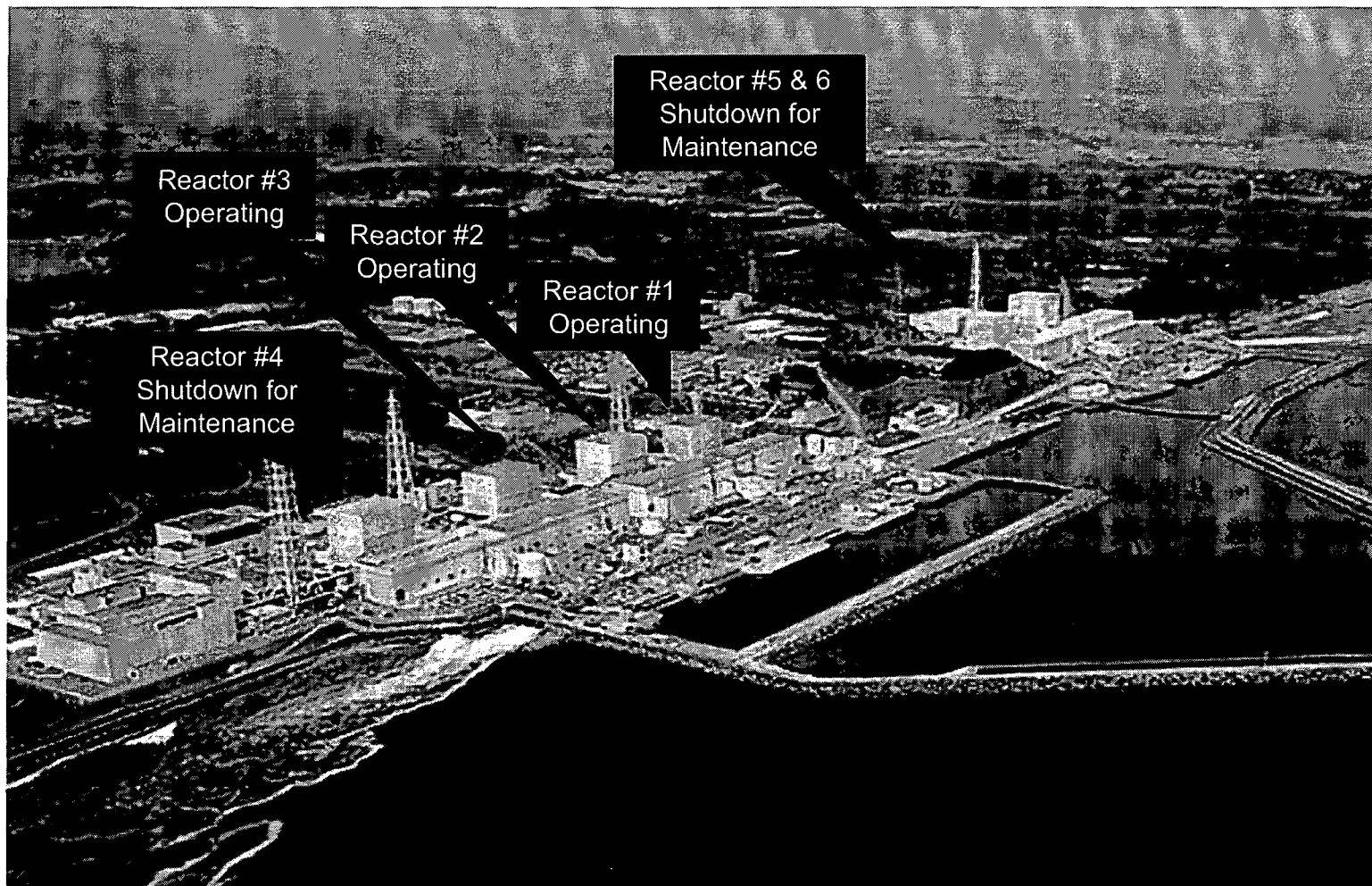
Nuclear Accident in Japan: NRC Early Protective Action Recommendations

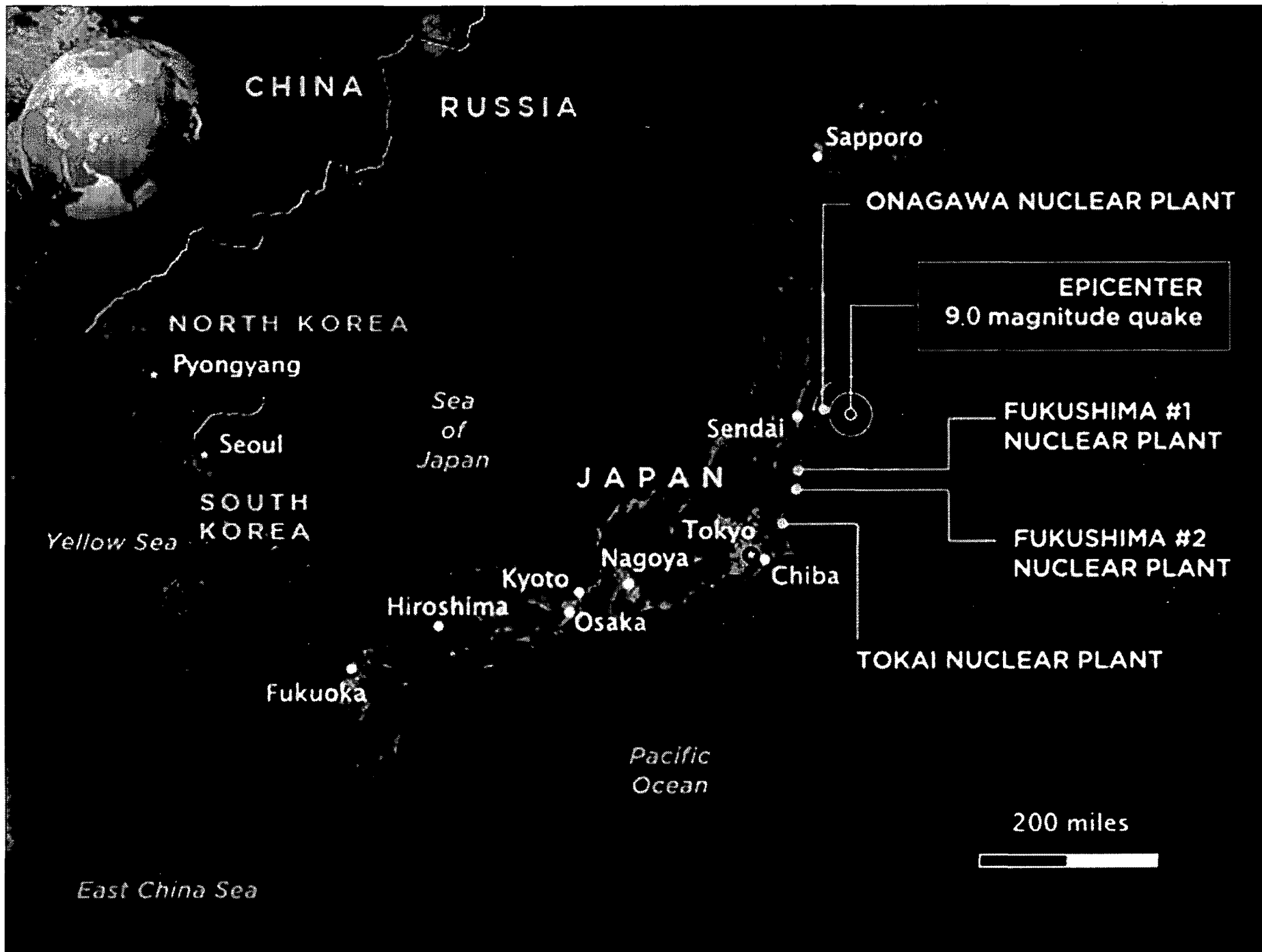
**National Radiological Emergency
Preparedness Conference**

April 18, 2011

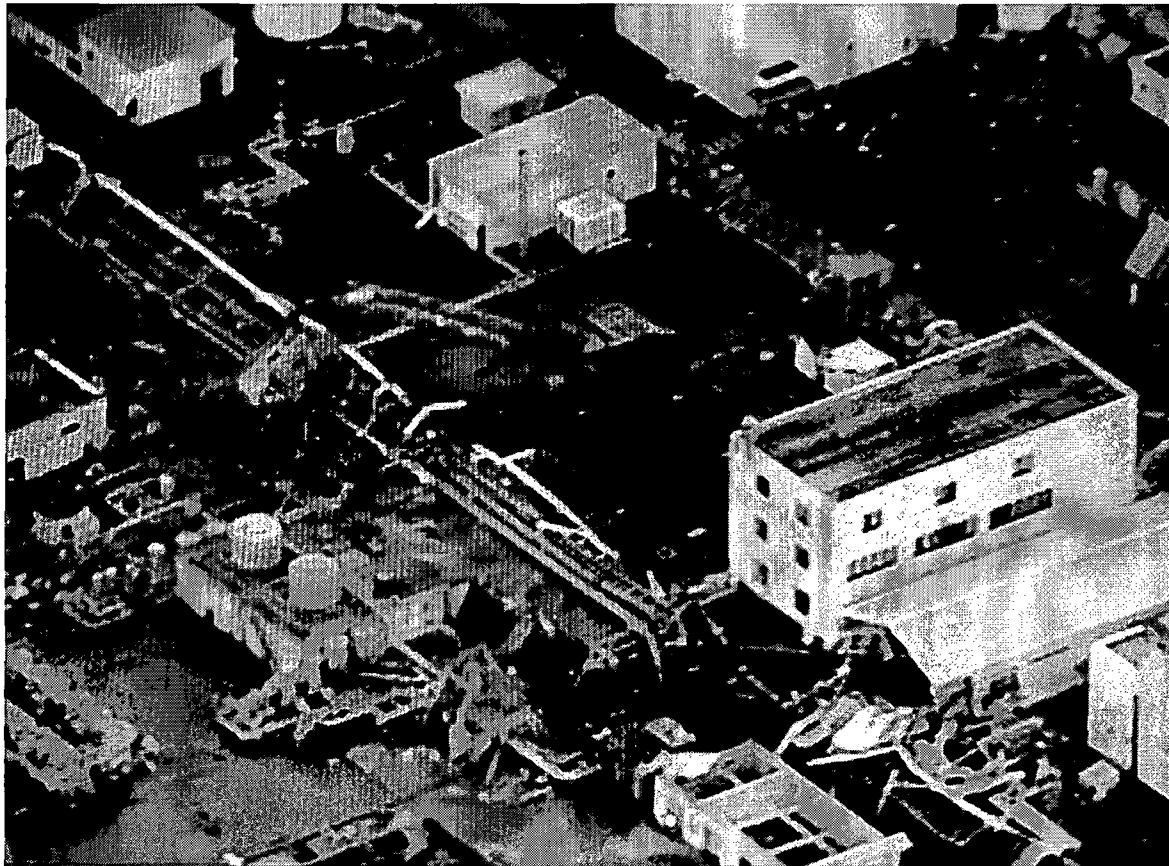
**Patricia A. Milligan, CHP
Senior Technical Advisor for Preparedness & Response
Office of Nuclear Security and Incident Response**

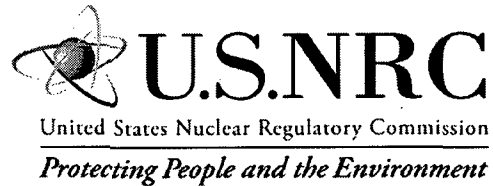
Status of site prior to earthquake





NPP site post Tsunami March 11, 2011





Plant Response

Earthquake

- Earthquake Caused Automatic Shutdown of 3 Operating Units
- Offsite Power Lost
- Initial indications are that Emergency Diesels were operating

14m Tsunami (less than 1 hour later)

- All Emergency Back-up Power Lost
- 8-10 hours later Station Batteries Depleted

NRC Response

- Ops Center 24/7
- Team of experts to Tokyo
 - First team deployed on March 12
 - Additional teams have been deployed
- Support to U.S. Ambassador and Japanese
- Coordinating Environmental Monitoring with DOE & EPA
- PARs

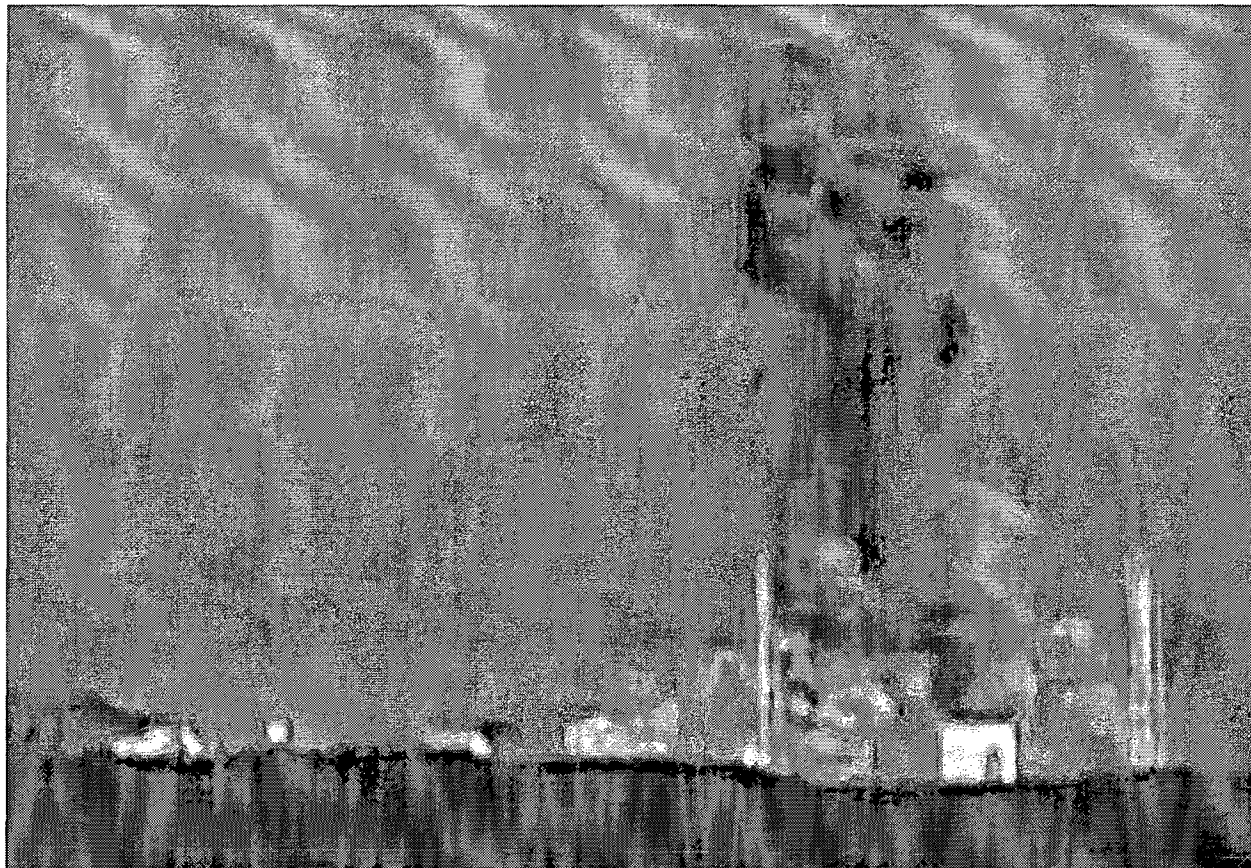
March 12, 2011 early in the day



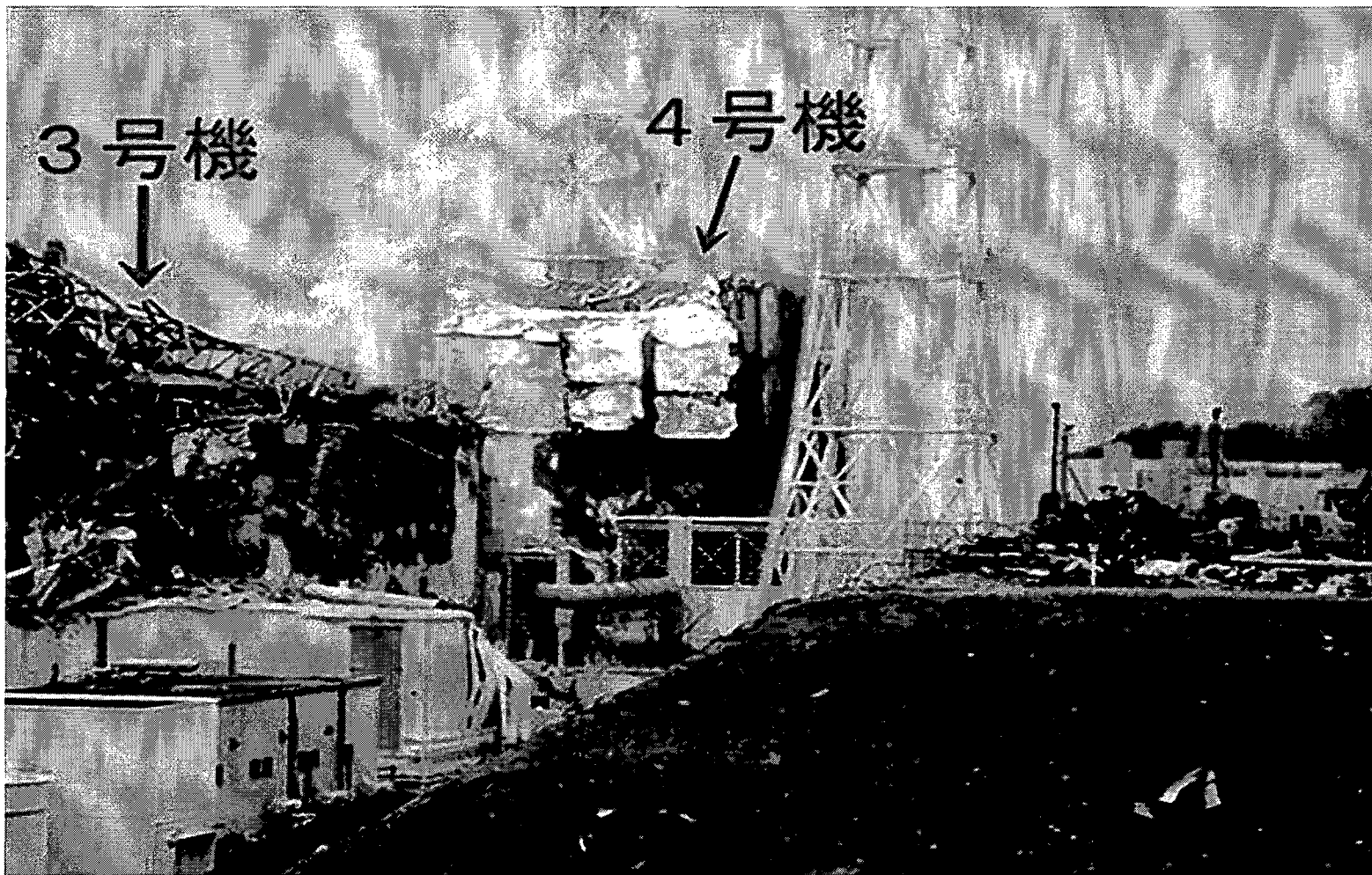
March 12, 2011- later in the day



March 14, 2011



March 15, 2011



March 16, 2011



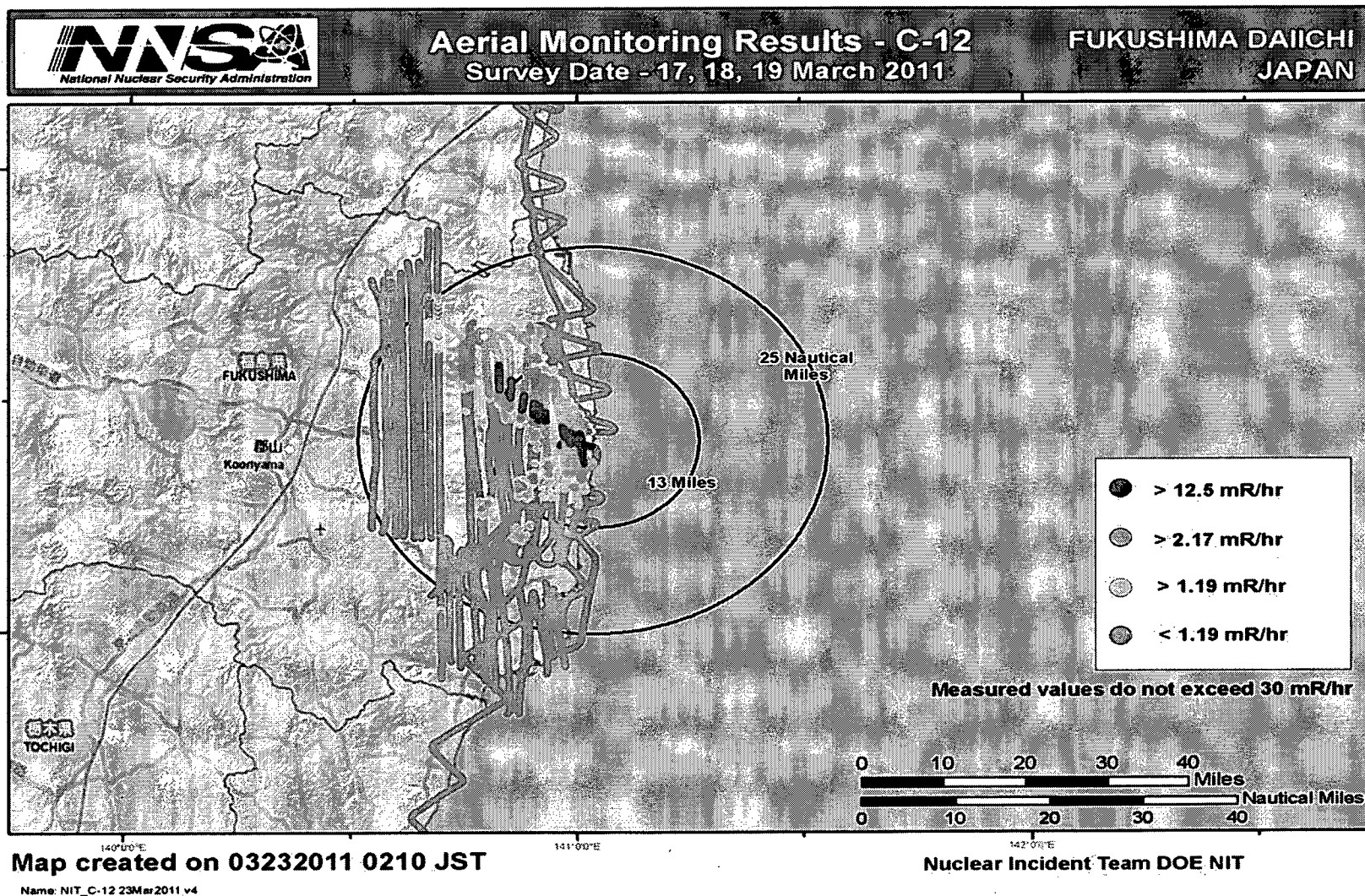
Emergency Planning Zones and Protective Action Recommendations Why 50 miles?

- Limited and uncertain data was available
- Significant challenges to 3 units and at least 2 spent fuel pools on site
- Potential for large offsite release existed
- Elevated dose rates on site presented challenges to crews attempting to stabilize reactor
- Limited offsite data suggested serious damage to fuel
- Winds shifting from out to sea to land

Emergency Planning Zones and Protective Action Recommendations

Why 50 miles?

- US government cannot affect the outcomes in Japan
- US government can only take actions to protect its citizens
- Evacuation recommendation to 50 miles afforded protection to US citizens in uncertain and challenging conditions



Emergency Planning Zones and Protective Action Recommendations

- Two emergency planning zones (EPZ) around each nuclear power plant
 - 10 mile EPZ – plume exposure planning zone
 - 50 mile EPZ – ingestion exposure planning zone
- EPZ size established:
 - to protect against most accident sequences
 - to provide a substantial basis for expansion of response efforts as needed beyond the EPZ distances

Basis for Emergency Planning

- What is the basis for the existing Emergency Planning Zones (EPZs) the nuclear power plants in US?
 - Emergency planning in the US is based on a range of accidents including most severe
 - Two EPZs (10/50 miles) around each NPP
 - Exact size and shape of EPZ is a result of detailed planning which includes consideration of the specific conditions at each site, unique geographical features of the area, and demographic information.

Domestic Considerations

- No U.S. Health Effects from radiation fall out from Fukushima
- U.S. Plants Designed for External Events
- NRC has initiated additional inspections at all U.S. Plants
- NRC conducting Near-Term and Long-Term Reviews.

NRC Near Term Review

- Evaluate Fukushima Daiichi Events
- Domestic Operating Reactors and Spent Fuel Pools
 - External Events
 - Station Blackout
 - Severe Accident Mitigation
 - Emergency Preparedness
 - Combustible Gas Control
- Staff will brief the Commission in public meetings on May 12 and June 16 ; final recommendations in public meeting July 19.

NRC Longer Term Review

- Begin as soon as NRC has sufficient technical information from the events in Japan -no later than the completion of the 90 day near term report
- Include specific information on the sequence of events and the status of equipment during the duration of the event.
- Evaluate all technical and policy issues related to the event to identify potential research, generic issues, changes to the reactor oversight process, rulemakings, and adjustments to the regulatory framework that should be conducted by NRC.
- Evaluate potential interagency issues such as emergency preparedness.
- Applicability of the lessons learned to non-operating reactor and non-reactor facilities should also be explored.
- Provide a report with recommendations, as appropriate, to the Commission within six months from the start of the evaluation for Commission policy direction.

From: LIA08 Hoc
Sent: Friday, April 29, 2011 11:48 AM
To: Jones, Andrea
Subject: RE: updated list for new bb numbers

Categories: FOIA Forwarded

Hooray!

Thanks Andrea!

JJ

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

From: Jones, Andrea
Sent: Friday, April 29, 2011 11:47 AM
To: LIA08 Hoc
Subject: updated list for new bb numbers

See attached.

JJJ/466

OIP_ITServices Resource

From: Bloom, Steven
Sent: Friday, April 29, 2011 12:38 PM
To: OIP_ITServices Resource
Subject: FW: [Question] Exposure limit in your country

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

From: Foggie, Kirk
Sent: Friday, April 29, 2011 8:35 AM
To: Bloom, Steven
Subject: FW: [Question] Exposure limit in your country

FYI. Request from MEXT. They have regulatory responsibilities as well as NISA, so this should be answered with priority.

Kirk

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

From: saigai03@mext.go.jp [<mailto:saigai03@mext.go.jp>]
Sent: Thursday, April 28, 2011 11:43 PM
To: Foggie, Kirk
Subject: [Question] Exposure limit in your country

Dear Mr. Foggie,

I, Naoaki Akasaka of MEXT-Japan, send you this e-mail from another office, Emergency Operating Center (EOC)-MEXT.

We apologize that you may have some worry about the accident of Fikushima Dai-ich Nuclear Power Plant, and also we thank you for your kindly cooperation for response for this accident.

As you probably know, I and all my colleagues who are in the nuclear safety and regulation sections are conducting to tackle the accident of Fukushima-Daiich NPP every day, especially conducting environmental radiation monitoring.

I would like to ask you some question about limit of radiation exposure for radiation workers and public in your country.

Q1. What is the limit of radiation exposure for radiation workers in the regulation and/or guide of your country at the normal operation and the emergency response ?

Q2. In the regulation and/or guide of your country, have you decided limit of radiation exposure for public at the recovery term after nuclear accident preliminarily ?

During the response for this accident, we decided the level of radiation exposure for public which is lower than 20 mSv during the recovery term based on ICRP Pub.103 (2007).

I want to know that the regulatory bodies of nuclear safety in other countries have decided this level preliminarily, or not.

I appreciate very much if you will reply me your answer as soon as possible.

Sincerely yours,

JJJ/467

=====

Naoaki AKASAKA

Director, Office of International Relations, Nuclear Safety Division, Science and Technology Policy Bureau,
Ministry of Education, Culture, Sports, Science and Technology - Japan

894155C

Plant Name, Unit Number	NRC Reactor Unit Web Page	Docket Number	Location
Arkansas Nuclear One, Unit 1	Arkansas Nuclear 1	5000313	London, AR (6 MI WNW of Russellville, AR)
Arkansas Nuclear One, Unit 2	Arkansas Nuclear 2	5000368	London, AR (6 MI WNW of Russellville, AR)
Beaver Valley Power Station, Unit 1	Beaver Valley 1	5000334	Shippingport, PA (17 MI W of McCandless, PA)
Beaver Valley Power Station, Unit 2	Beaver Valley 2	5000412	Shippingport, PA (17 MI W of McCandless, PA)
Braidwood Station, Unit 1	Braidwood 1	5000456	Braceville, IL (20 MI SSW of Joliet, IL)
Braidwood Station, Unit 2	Braidwood 2	5000457	Braceville, IL (20 MI SSW of Joliet, IL)
Browns Ferry Nuclear Plant, Unit 1	Browns Ferry 1	5000259	Athens, AL (32 MI W of Huntsville, AL)
Browns Ferry Nuclear Plant, Unit 2	Browns Ferry 2	5000260	Athens, AL (32 MI W of Huntsville, AL)
Browns Ferry Nuclear Plant, Unit 3	Browns Ferry 3	5000296	Wheeler Lake, AL (10 MI SW of Athens, AL)
Brunswick Steam Electric Plant, Unit 1	Brunswick 1	5000325	Southport, NC (40 MI S of Wilmington, NC)
Brunswick Steam Electric Plant, Unit 2	Brunswick 2	5000324	Southport, NC (40 MI S of Wilmington, NC)
Byron Station, Unit 1	Byron 1	5000454	Byron, IL (17 MI SW of Rockford, IL)
Byron Station, Unit 2	Byron 2	5000455	Byron, IL (17 MI SW of Rockford, IL)
Callaway Plant	Callaway	5000483	Fulton, MO (25 MI ENE of Jefferson City, MO)
Calvert Cliffs Nuclear Power Plant, Unit 1	Calvert Cliffs 1	5000317	Lusby, MD (40 MI S of Annapolis, MD)
Calvert Cliffs Nuclear Power Plant, Unit 2	Calvert Cliffs 2	5000318	Lusby, MD (40 MI S of Annapolis, MD)
Catawba Nuclear Station, Unit 1	Catawba 1	5000413	York, SC (18 MI S of Charlotte, NC)
Catawba Nuclear Station, Unit 2	Catawba 2	5000414	York, SC (18 MI S of Charlotte, NC)
Clinton Power Station, Unit 1	Clinton	5000461	Clinton, IL (23 MI SSE of Bloomington, IL)
Columbia Generating Station, Unit 2	Columbia Generating Station	5000397	Richland, WA (20 MI NNE of Pasco, WA)
Comanche Peak Steam Electric Station, Unit 1	Comanche Peak 1	5000445	Glen Rose, TX (40 MI SW of Fort Worth, TX)
Comanche Peak Steam Electric Station, Unit 2	Comanche Peak 2	5000446	Glen Rose, TX (40 MI SW of Fort Worth, TX)
Cooper Nuclear Station	Cooper	5000298	Brownville, NE (23 MI S of Nebraska City, NE)
Crystal River Nuclear Generating Plant, Unit 3	Crystal River 3	5000302	Crystal River, FL (80 MI N of Tampa, FL)
Davis-Besse Nuclear Power Station, Unit 1	Davis-Besse	5000346	Oak Harbor, OH (21 MI ESE of Toledo, OH)
Diablo Canyon Nuclear Power Plant, Unit 1	Diablo Canyon 1	5000275	Avila Beach, CA (12 MI WSW of San Luis Obispo, CA)
Diablo Canyon Nuclear Power Plant, Unit 2	Diablo Canyon 2	5000323	Avila Beach, CA (12 MI WSW of San Luis Obispo, CA)
Donald C. Cook Nuclear Power Plant, Unit 1	D.C. Cook 1	5000315	Bridgman, MI (13 MI S of Benton Harbor, MI)
Donald C. Cook Nuclear Power Plant, Unit 2	D.C. Cook 2	5000316	Bridgman, MI (13 MI S of Benton Harbor, MI)
Dresden Nuclear Power Station, Unit 2	Dresden 2	5000237	Morris, IL (25 MI SW of Joliet, IL)
Dresden Nuclear Power Station, Unit 3	Dresden 3	5000249	Morris, IL (25 MI SW of Joliet, IL)

NRC Region	Licensee	Nuclear Steam				Construction Permit Issued	Operating License Issued	Commercial Operation
		Reactor and Containment Type	System Supplier and Design Type	Architect- Engineer	Contractor			
4	Entergy Nuclear Operations, Inc.	PWR-DRYAMB	B&W LLP	BECH	BECH	12/6/1968	5/21/1974	12/19/1974
4	Entergy Nuclear Operations, Inc.	PWR-DRYAMB	CE	BECH	BECH	12/6/1972	9/1/1978	3/26/1980
1	First Energy Nuclear Operating Co.	PWR-DRYAMB	WEST 3LP	S&W	S&W	6/26/1970	7/2/1976	10/1/1976
1	First Energy Nuclear Operating Co.	PWR-DRYAMB	WEST 3LP	S&W	S&W	5/3/1974	8/14/1987	11/17/1987
3	Exelon Generation Co., LLC	PWR-DRYAMB	WEST 4LP	S&L	CWE	12/31/1975	7/2/1987	7/29/1988
3	Exelon Generation Co., LLC	PWR-DRYAMB	WEST 4LP	S&L	CWE	12/31/1975	5/20/1988	10/17/1988
2	Tennessee Valley Authority	BWR-MARK 1	GE 4	TVA	TVA	5/10/1967	12/20/1973	8/1/1974
2	Tennessee Valley Authority	BWR-MARK 1	GE 4	TVA	TVA	5/10/1967	8/2/1974	3/1/1975
2	Tennessee Valley Authority	BWR-MARK 1	GE 4	TVA	TVA	7/31/1968	8/18/1976	3/1/1977
2	Carolina Power & Light Co.	BWR-MARK 1	GE 4	UE&C	BRRT	2/7/1970	9/8/1976	3/18/1977
2	Carolina Power & Light Co.	BWR-MARK 1	GE 4	UE&C	BRRT	2/7/1970	12/27/1974	11/3/1975
3	Exelon Generation Co., LLC	PWR-DRYAMB	WEST 4LP	S&L	CWE	12/31/1975	2/14/1985	9/16/1985
3	Exelon Generation Co., LLC	PWR-DRYAMB	WEST 4LP	S&L	CWE	12/31/1975	1/30/1987	8/2/1987
4	Union Electric Co.	PWR-DRYAMB	WEST 4LP	BECH	DANI	4/16/1976	10/18/1984	12/19/1984
1	Calvert Cliffs Nuclear Power Plant Inc.	PWR-DRYAMB	CE	BECH	BECH	7/7/1969	7/31/1974	5/8/1975
1	Calvert Cliffs Nuclear Power Plant Inc.	PWR-DRYAMB	CE	BECH	BECH	7/7/1969	8/13/1976	4/1/1977
2	Duke Energy Carolinas, LLC	PWR-ICECND	WEST 4LP	DUKE	DUKE	8/7/1975	1/17/1985	6/29/1985
2	Duke Energy Carolinas, LLC	PWR-ICECND	WEST 4LP	DUKE	DUKE	8/7/1975	5/15/1986	8/19/1986
3	Exelon Generation Co., LLC	BWR-MARK 3	GE 6	S&L	BALD	2/24/1976	4/17/1987	11/24/1987
4	Energy Northwest	BWR-MARK 2	GE 5	B&R	BECH	3/19/1973	4/13/1984	12/13/1984
4	Luminant Generation Co., LLC	PWR-DRYAMB	WEST 4LP	G&H	BRRT	12/19/1974	4/17/1990	8/13/1990
4	Luminant Generation Co., LLC	PWR-DRYAMB	WEST 4LP	BECH	BRRT	12/19/1974	4/6/1993	8/3/1993
4	Nebraska Public Power District	BWR-MARK 1	GE 4	B&R	B&R	6/4/1968	1/18/1974	7/1/1974
2	Florida Power Corp.	PWR-DRYAMB	B&W LLP	GIL	JONES	9/25/1968	12/3/1976	3/13/1977
3	First Energy Nuclear Operating Co.	PWR-DRYAMB	B&W LLP	BECH	B&W	3/24/1971	4/22/1977	7/31/1978
4	Pacific Gas & Electric Co.	PWR-DRYAMB	WEST 4LP	PG&E	PG&E	4/23/1968	11/2/1984	5/7/1985
4	Pacific Gas & Electric Co.	PWR-DRYAMB	WEST 4LP	PG&E	PG&E	12/9/1970	8/26/1985	3/13/1986
3	Indiana Michigan Power Co.	PWR-ICECND	WEST 4LP	AEP	AEP	3/25/1969	10/25/1974	8/28/1975
3	Indiana Michigan Power Co.	PWR-ICECND	WEST 4LP	AEP	AEP	3/25/1969	12/23/1977	7/1/1978
3	Exelon Generation Co., LLC	BWR-MARK 1	GE 3	S&L	UE&C	1/10/1966	2/20/1991	6/9/1970
3	Exelon Generation Co., LLC	BWR-MARK 1	GE 3	S&L	UE&C	10/14/1966	1/12/1971	11/16/1971

3	FPL Energy Duane Arnold, LLC	BWR-MARK 1	GE 4	BECH	BECH	6/22/1970	2/22/1974	2/1/1975
2	Southern Nuclear Operating Co.	BWR-MARK 1	GE 4	BECH	GPC	9/30/1969	10/13/1974	12/31/1975
2	Southern Nuclear Operating Co.	BWR-MARK 1	GE 4	BECH	GPC	12/27/1972	6/13/1978	9/5/1979
3	The Detroit Edison Co.	BWR-MARK 1	GE 4	S&L	DANI	9/26/1972	7/15/1985	1/23/1988
4	Omaha Public Power District	PWR-DRYAMB	CE	GHDR	GHDR	6/7/1968	8/9/1973	9/26/1973
4	Entergy Nuclear Operations, Inc.	BWR-MARK 3	GE 6	BECH	BECH	9/4/1974	11/1/1984	7/1/1985
2	Carolina Power & Light Co.,	PWR-DRYAMB	WEST 3LP	EBSO	EBSO	4/13/1967	7/31/1970	3/7/1971
1	PSEG Nuclear, LLC	BWR-MARK 1	GE 4	BECH	BECH	11/4/1974	7/25/1986	12/20/1986
1	Entergy Nuclear Operations, Inc.	PWR-DRYAMB	WEST 4LP	UE&C	WDCO	10/14/1966	9/28/1973	8/1/1974
1	Entergy Nuclear Operations, Inc.	PWR-DRYAMB	WEST 4LP	UE&C	WDCO	8/13/1969	12/12/1975	8/30/1976
1	Entergy Nuclear Operations, Inc.	BWR-MARK 1	GE 4	S&W	S&W	5/20/1970	10/17/1974	7/28/1975
2	Southern Nuclear Operating Co.	PWR-DRYAMB	WEST 3LP	SSI	DANI	8/16/1972	6/25/1977	12/1/1977
2	Southern Nuclear Operating Co.	PWR-DRYAMB	WEST 3LP	SSI	BECH	8/16/1972	3/31/1981	7/30/1981
3	Dominion Energy Kewaunee, Inc.	PWR-DRYAMB	WEST 2LP	PSE	PSE	8/6/1968	12/21/1973	6/16/1974
3	Exelon Generation Co., LLC	BWR-MARK 2	GE 5	S&L	CWE	9/10/1973	4/17/1982	1/1/1984
3	Exelon Generation Co., LLC	BWR-MARK 2	GE 5	S&L	CWE	9/10/1973	12/16/1983	10/19/1984
1	Exelon Generation Co., LLC	BWR-MARK 2	GE 4	BECH	BECH	6/19/1974	8/8/1985	2/1/1986
1	Exelon Generation Co., LLC	BWR-MARK 2	GE 4	BECH	BECH	6/19/1974	8/25/1989	1/8/1990
2	Duke Energy Carolinas, LLC	PWR-ICECND	WEST 4LP	DUKE	DUKE	2/23/1973	7/8/1981	12/1/1981
2	Duke Energy Carolinas, LLC	PWR-ICECND	WEST 4LP	DUKE	DUKE	2/23/1973	5/27/1983	3/1/1984
1	Dominion Nuclear Connecticut, Inc.	PWR-DRYAMB	CE	BECH	BECH	12/11/1970	9/26/1975	12/26/1975
1	Dominion Nuclear Connecticut, Inc.	PWR-DRYSUB	WEST 4LP	S&W	S&W	8/9/1974	1/31/1986	4/23/1986
3	Northern States Power Company	BWR-MARK 1	GE 3	BECH	BECH	6/19/1967	1/9/1981	6/30/1971
1	Nine Mile Point Nuclear Station, LLC	BWR-MARK 1	GE 2	NIAG	S&W	4/12/1965	12/26/1974	12/1/1969
1	Nine Mile Point Nuclear Station, LLC	BWR-MARK 2	GE 5	S&W	S&W	6/24/1974	7/2/1987	3/11/1988
2	Virginia Electric & Power Co.	PWR-DRYSUB	WEST 3LP	S&W	S&W	2/19/1971	4/1/1978	6/6/1978
2	Virginia Electric & Power Co.	PWR-DRYSUB	WEST 3LP	S&W	S&W	2/19/1971	8/21/1980	12/14/1980
2	Duke Energy Carolinas, LLC	PWR-DRYAMB	B&W LLP	DBDB	DUKE	11/6/1967	2/6/1973	7/15/1973
2	Duke Energy Carolinas, LLC	PWR-DRYAMB	B&W LLP	DBDB	DUKE	11/6/1967	10/6/1973	9/9/1974
2	Duke Energy Carolinas, LLC	PWR-DRYAMB	B&W LLP	DBDB	DUKE	11/6/1967	7/19/1974	12/16/1974
1	Exelon Generation Co., LLC	BWR-MARK 1	GE 2	B&R	B&R	12/15/1964	7/2/1991	12/1/1969
3	Entergy Nuclear Operations, Inc.	PWR-DRYAMB	CE	BECH	BECH	3/14/1967	2/24/1971	12/31/1971
4	Arizona Public Service Company	PWR-DRYAMB	CE80-2L	BECH	BECH	5/25/1976	6/1/1985	1/28/1986
4	Arizona Public Service Company	PWR-DRYAMB	CE80-2L	BECH	BECH	5/25/1976	4/24/1986	9/19/1986
4	Arizona Public Service Company	PWR-DRYAMB	COMB CE80-2L	BECH	BECH	5/25/1976	11/25/1987	1/8/1988
1	Exelon Generation Co., LLC	BWR-MARK 1	GE 4	BECH	BECH	1/31/1968	10/25/1973	7/5/1974
1	Exelon Generation Co., LLC	BWR-MARK 1	GE 4	BECH	BECH	1/31/1968	7/2/1974	12/23/1974

Duane Arnold Energy Center
 Edwin I. Hatch Nuclear Plant, Unit 1
 Edwin I. Hatch Nuclear Plant, Unit 2
 Fermi, Unit 2
 Fort Calhoun Station, Unit 1
 Grand Gulf Nuclear Station, Unit 1
 H. B. Robinson Steam Electric Plant, Unit 2
 Hope Creek Generating Station, Unit 1
 Indian Point Nuclear Generating, Unit 2
 Indian Point Nuclear Generating, Unit 3
 James A. FitzPatrick Nuclear Power Plant
 Joseph M. Farley Nuclear Plant, Unit 1
 Joseph M. Farley Nuclear Plant, Unit 2
 Kewaunee Power Station
 LaSalle County Station, Unit 1
 LaSalle County Station, Unit 2
 Limerick Generating Station, Unit 1
 Limerick Generating Station, Unit 2
 McGuire Nuclear Station, Unit 1
 McGuire Nuclear Station, Unit 2
 Millstone Power Station, Unit 2
 Millstone Power Station, Unit 3
 Monticello Nuclear Generating Plant, Unit 1
 Nine Mile Point Nuclear Station, Unit 1
 Nine Mile Point Nuclear Station, Unit 2
 North Anna Power Station, Unit 1
 North Anna Power Station, Unit 2
 Oconee Nuclear Station, Unit 1
 Oconee Nuclear Station, Unit 2
 Oconee Nuclear Station, Unit 3
 Oyster Creek Nuclear Generating Station, Unit 1
 Palisades Nuclear Plant
 Palo Verde Nuclear Generating Station, Unit 1
 Palo Verde Nuclear Generating Station, Unit 2
 Palo Verde Nuclear Generating Station, Unit 3
 Peach Bottom Atomic Power Station, Unit 2
 Peach Bottom Atomic Power Station, Unit 3

Duane Arnold
Hatch 1
Hatch 2
Fermi 2
Fort Calhoun
Grand Gulf 1
Robinson 2
Hope Creek 1
Indian Point 2
Indian Point 3
FitzPatrick
Farley 1
Farley 2
Kewaunee
La Salle 1
La Salle 2
Limerick 1
Limerick 2
McGuire 1
McGuire 2
Millstone 2
Millstone 3
Monticello
Nine Mile Point 1
Nine Mile Point 2
North Anna 1
North Anna 2
Oconee 1
Oconee 2
Oconee 3
Oyster Creek
Palisades
Palo Verde 1
Palo Verde 2
Palo Verde 3
Peach Bottom 2
Peach Bottom 3

5000331 Palo, IA (8 MI NW of Cedar Rapids, IA)
 5000321 Baxley, GA (20 MI S of Vidalia, GA)
 5000366 Baxley, GA (20 MI S of Vidalia, GA)
 5000341 Newport, MI (25 MI NE of Toledo, OH)
 5000285 Fort Calhoun, NE (19 MI N of Omaha, NE)
 5000416 Port Gibson, MS (20 MI S of Vicksburg, MS)
 5000261 Hartsville, SC (26 MI NW of Florence, SC)
 5000354 Hancock Bridge, NJ (18 MI SE of Wilmington, DE)
 5000247 Buchanan, NY (24 MI N of New York City, NY)
 5000286 Buchanan, NY (24 MI N of New York City, NY)
 5000333 Scriba, NY (6 MI NE of Oswego, NY)
 5000348 Columbia, AL (18 MI S of Dothan, AL)
 5000364 Columbia, AL (18 MI S of Dothan, AL)
 5000305 Kewaunee, WI (27 MI ESE of Green Bay, WI)
 5000373 Marseilles, IL (11 MI SE of Ottawa, IL)
 5000374 Marseilles, IL (11 MI SE of Ottawa, IL)
 5000352 Limerick, PA (21 MI NW of Philadelphia, PA)
 5000353 Limerick, PA (21 MI NW of Philadelphia, PA)
 5000369 Huntsville, NC (17 MI N of Charlotte, NC)
 5000370 Huntsville, NC (17 MI N of Charlotte, NC)
 5000336 Waterford, CT (3.2 MI WSW of New London, CT)
 5000423 Waterford, CT (3.2 MI WSW of New London, CT)
 5000263 Monticello, MN (30 MI NW of Minneapolis, MN)
 5000220 Scriba, NY (6 MI NE of Oswego, NY)
 5000410 Scriba, NY (6 MI NE of Oswego, NY)
 5000338 Louisa, VA (40 MI NW of Richmond, VA)
 5000339 Louisa, VA (40 MI NW of Richmond, VA)
 5000269 Seneca, SC (30 MI W of Greenville, SC)
 5000270 Seneca, SC (30 MI W of Greenville, SC)
 5000287 Seneca, SC (30 MI W of Greenville, SC)
 5000219 Forked River, NJ (9 MI S of Toms River, NJ)
 5000255 Covert, MI (5 MI S of South Haven, MI)
 5000528 Wintersburg, AZ (50 MI W of Phoenix, AZ)
 5000529 Wintersburg, AZ (50 MI W of Phoenix, AZ)
 5000530 Wintersburg, AZ (50 MI W of Phoenix, AZ)
 5000277 Delta, PA (17.9 MI S of Lancaster, PA)
 5000278 Delta, PA (17.9 MI S of Lancaster, PA)

Perry Nuclear Power Plant, Unit 1
 Pilgrim Nuclear Power Station
 Point Beach Nuclear Plant, Unit 1
 Point Beach Nuclear Plant, Unit 2
 Prairie Island Nuclear Generating Plant, Unit 1
 Prairie Island Nuclear Generating Plant, Unit 2
 Quad Cities Nuclear Power Station, Unit 1
 Quad Cities Nuclear Power Station, Unit 2
 River Bend Station, Unit 1
 R.E. Ginna Nuclear Power Plant
 St. Lucie Plant, Unit 1
 St. Lucie Plant, Unit 2
 Salem Nuclear Generating Station, Unit 1
 Salem Nuclear Generating Station, Unit 2
 San Onofre Nuclear Generating Station, Unit 2
 San Onofre Nuclear Generating Station, Unit 3
 Seabrook Station, Unit 1
 Sequoyah Nuclear Plant, Unit 1
 Sequoyah Nuclear Plant, Unit 2
 Shearon Harris Nuclear Power Plant, Unit 1
 South Texas Project, Unit 1
 South Texas Project, Unit 2
 Surry Nuclear Power Station, Unit 1
 Surry Nuclear Power Station, Unit 2
 Susquehanna Steam Electric Station, Unit 1
 Susquehanna Steam Electric Station, Unit 2
 Three Mile Island Nuclear Station, Unit 1
 Turkey Point Nuclear Generating, Unit 3
 Turkey Point Nuclear Generating, Unit 4
 Vermont Yankee Nuclear Power Plant, Unit 1
 Virgil C. Summer Nuclear Station, Unit 1
 Vogtle Electric Generating Plant, Unit 1
 Vogtle Electric Generating Plant, Unit 2
 Waterford Steam Electric Station, Unit 3
 Watts Bar Nuclear Plant, Unit 1
 Wolf Creek Generating Station, Unit 1

Perry 1
Pilgrim 1
Point Beach 1
Point Beach 2
Prairie Island 1
Prairie Island 2
Quad Cities 1
Quad Cities 2
River Bend 1
Ginna
Saint Lucie 1
Saint Lucie 2
Salem 1
Salem 2
San Onofre 2
San Onofre 3
Seabrook 1
Sequoyah 1
Sequoyah 2
Shearon Harris 1
South Texas 1
South Texas 2
Surry 1
Surry 2
Susquehanna 2
Susquehanna 1
Three Mile Island 1
Turkey Point 3
Turkey Point 4
Vermont Yankee
Summer
Vogtle 1
Vogtle 2
Waterford 3
Watts Bar 1
Wolf Creek 1

5000440 Perry, OH (35 MI NE of Cleveland, OH)
 5000293 Plymouth, MA (38 MI SE of Boston, MA)
 5000266 Two Rivers, WI (13 MI NNW of Manitowoc, WI)
 5000301 Two Rivers, WI (13 MI NNW of Manitowoc, WI)
 5000282 Welch, MN (28 MI SE of Minneapolis, MN)
 5000306 Welch, MN (28 MI SE of Minneapolis, MN)
 5000254 Cordova, IL (20 MI NE of Moline, IL)
 5000265 Cordova, IL (20 MI NE of Moline, IL)
 5000458 St. Francisville, LA (24 MI NNW of Baton Rouge, LA)
 5000244 Ontario, NY (20 MI NE of Rochester, NY)
 5000335 Jensen Beach, FL (10 MI SE of Ft. Pierce, FL)
 5000389 Jensen Beach, FL (10 MI SE of Ft. Pierce, FL)
 5000272 Hancock Bridge, NJ (18 MI SE of Wilmington, DE)
 5000311 Hancock Bridge, NJ (18 MI SE of Wilmington, DE)
 5000361 San Clemente, CA (45 MI SE of Long Beach, CA)
 5000362 San Clemente, CA (45 MI SE of Long Beach, CA)
 5000443 Seabrook, NH (13 MI S of Portsmouth, NH)
 5000327 Soddy-Daisy, TN (16 MI NE of Chattanooga, TN)
 5000328 Soddy-Daisy, TN (16 MI NE of Chattanooga, TN)
 5000400 New Hill, NC (20 MI SW of Raleigh, NC)
 5000498 Bay City, TX (90 MI SW of Houston, TX)
 5000499 Bay City, TX (90 MI SW of Houston, TX)
 5000280 Surry, VA (17 MI NW of Newport News, VA)
 5000281 Surry, VA (17 MI NW of Newport News, VA)
 5000388 Salem Township, Luzerne Co., PA (70 MI NE of Harrisburg)
 5000387 Salem Township, Luzerne Co., PA (70 MI NE of Harrisburg)
 5000289 Middletown, PA (10 MI SE of Harrisburg, PA)
 5000250 Homestead, FL (20 MI S of Miami, FL)
 5000251 Homestead, FL (20 MI S of Miami, FL)
 5000271 Vernon, VT (5 MI S of Brattleboro, VT)
 5000395 Jenkinsville, SC (26 MI NW of Columbia, SC)
 5000424 Waynesboro, GA (26 MI SE of Augusta, GA)
 5000425 Waynesboro, GA (26 MI SE of Augusta, GA)
 5000382 Killona, LA (25 MI W of New Orleans, LA)
 5000390 Spring City, TN (60 MI SW of Knoxville, TN)
 5000482 Burlington, KS (3.5 MI NE of Burlington, KS)

3	First Energy Nuclear Operating Co.	BWR-MARK 3	GE 6	GIL	KAIS	5/3/1977	11/13/1986	11/18/1987
1	Entergy Nuclear Operations, Inc.	BWR-MARK 1	GE 3	BECH	BECH	8/26/1968	6/8/1972	12/1/1972
3	FPL Energy Duane Arnold, LLC	PWR-DRYAMB	WEST 2LP	BECH	BECH	7/19/1967	10/5/1970	12/21/1970
3	FPL Energy Duane Arnold, LLC	PWR-DRYAMB	WEST 2LP	BECH	BECH	7/25/1968	3/8/1973	10/1/1972
3	Northern States Power Co. Minnesota	PWR-DRYAMB	WEST 2LP	FLUR	NSP	6/25/1968	4/5/1974	12/16/1973
3	Northern States Power Co. Minnesota	PWR-DRYAMB	WEST 2LP	FLUR	NSP	6/25/1968	10/29/1974	12/21/1974
3	Exelon Generation Co., LLC	BWR-MARK 1	GE 3	S&L	UE&C	2/15/1967	12/14/1972	2/18/1973
3	Exelon Generation Co., LLC	BWR-MARK 1	GE 3	S&L	UE&C	2/15/1967	12/14/1972	3/10/1973
4	Entergy Nuclear Operations, Inc.	BWR-MARK 3	GE 6	S&W	S&W	3/25/1977	11/20/1985	6/16/1986
1	R.E. Ginna Nuclear Power Plant, LLC	PWR-DRYAMB	WEST 2LP	GIL	BECH	4/25/1966	9/19/1969	7/1/1970
2	Florida Power & Light Co.	PWR-DRYAMB	CE	EBSO	EBSO	7/1/1970	3/1/1976	12/21/1976
2	Florida Power & Light Co.	PWR-DRYAMB	CE	EBSO	EBSO	5/2/1977	6/10/1983	8/8/1983
1	PSEG Nuclear, LLC	PWR-DRYAMB	WEST 4LP	PUBS	UE&C	9/25/1968	12/1/1976	6/30/1977
1	PSEG Nuclear, LLC	PWR-DRYAMB	WEST 4LP	PUBS	UE&C	9/25/1968	5/20/1981	10/13/1981
4	Southern California Edison Co.	PWR-DRYAMB	CE	BECH	BECH	10/18/1973	2/16/1982	8/8/1983
4	Southern California Edison Co.	PWR-DRYAMB	CE	BECH	BECH	10/18/1973	11/15/1982	4/1/1984
1	FPL Energy Seabrook, LLC	PWR-DRYAMB	WEST 4LP	UE&C	UE&C	7/7/1976	3/15/1990	8/19/1990
2	Tennessee Valley Authority	PWR-ICECND	WEST 4LP	TVA	TVA	5/27/1970	9/17/1980	7/1/1981
2	Tennessee Valley Authority	PWR-ICECND	WEST 4LP	TVA	TVA	5/27/1970	9/15/1981	6/1/1982
2	Carolina Power & Light Co.	PWR-DRYAMB	WEST 3LP	EBSO	DANI	1/27/1978	10/24/1986	5/2/1987
4	STP Nuclear Operating Co.	PWR-DRYAMB	WEST 4LP	BECH	EBSO	12/22/1975	3/22/1988	8/25/1988
4	STP Nuclear Operating Co.	PWR-DRYAMB	WEST 4LP	BECH	EBSO	12/22/1975	3/28/1989	6/19/1989
2	Virginia Electric & Power Co.	PWR-DRYSUB	WEST 3LP	S&W	S&W	6/25/1968	5/25/1972	12/22/1972
2	Virginia Electric & Power Co.	PWR-DRYSUB	WEST 3LP	S&W	S&W	6/25/1968	1/29/1973	5/1/1973
1	PPL Susquehanna, LLC	BWR-MARK 2	GE 4	BECH	BECH	11/3/1973	7/17/1982	6/8/1983
1	PPL Susquehanna, LLC	BWR-MARK 2	GE 4	BECH	BECH	11/3/1973	3/23/1984	2/12/1985
1	Exelon Generation Co., LLC	PWR-DRYAMB	B&W LLP	GIL	UE&C	5/18/1968	4/19/1974	9/2/1974
2	Florida Power & Light Co.	PWR-DRYAMB	WEST 3LP	BECH	BECH	4/27/1967	7/19/1972	12/14/1972
2	Florida Power & Light Co.	PWR-DRYAMB	WEST 3LP	BECH	BECH	4/27/1967	4/10/1973	9/7/1973
1	Entergy Nuclear Operations, Inc.	BWR-MARK 1	GE 4	EBSO	EBSO	12/11/1967	3/21/1973	11/30/1972
2	South Carolina Electric & Gas Co.	PWR-DRYAMB	WEST 3LP	GIL	DANI	3/21/1973	11/12/1982	1/1/1984
2	Southern Nuclear Operating Co.	PWR-DRYAMB	WEST 4LP	SBEC	GPC	6/28/1974	3/16/1987	6/1/1987
2	Southern Nuclear Operating Co.	PWR-DRYAMB	WEST 4LP	SBEC	GPC	6/28/1974	3/31/1989	5/20/1989
4	Entergy Nuclear Operations, Inc.	PWR-DRYAMB	COMB CE	EBSO	EBSO	11/14/1974	3/16/1985	9/24/1985
2	Tennessee Valley Authority	PWR-ICECND	WEST 4LP	TVA	TVA	1/23/1973	2/7/1996	5/27/1996
4	Wolf Creek Nuclear Operating Corp.	PWR-DRYAMB	WEST 4LP	BECH	DANI	5/17/1977	6/4/1985	9/3/1985

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Renewed Operating License Issued	Operating License Expires	Licensed MWt	2009 Net Summer Capacity (MWe)	2009 Capacity Factor (Percent)	2008 Capacity Factor (Percent)	2007 Capacity Factor (Percent)	2006 Capacity Factor (Percent)	2005 Capacity Factor (Percent)	2004 Capacity Factor (Percent)	2003 Capacity Factor (Percent)
6/20/2001	5/20/2034	2568	843	99%	83%	94%	102%	78%	92%	92%
6/30/2005	7/17/2038	3026	995	90%	91%	99%	90%	91%	99%	90%
11/5/2009	1/29/2036	2900	940	92%	101%	95%	78%	101%	93%	83%
11/5/2009	5/27/2047	2900	940	84%	87%	103%	87%	93%	100%	91%
	10/17/2026	3586.6	1178	95%	101%	92%	96%	100%	95%	97%
	12/18/2027	3586.6	1152	93%	92%	100%	95%	94%	101%	96%
5/4/2006	12/20/2033	3458	1065	94%	88%	49%				
5/4/2006	6/28/2034	3458	1104	94%	98%	78%	94%	90%	100%	86%
5/4/2006	7/2/2036	3458	1115	95%	81%	93%	89%	94%	89%	96%
6/26/2006	9/8/2036	2923	938	98%	85%	96%	87%	94%	86%	101%
6/26/2006	12/27/2034	2923	937	80%	95%	87%	90%	86%	98%	99%
	10/31/2024	3586.6	1164	94%	95%	98%	91%	94%	102%	94%
	11/6/2026	3586.6	1136	102%	96%	89%	102%	96%	96%	101%
	10/18/2024	3565	1236	98%	90%	90%	97%	77%	78%	97%
3/23/2000	7/31/2034	2700	867	98%	93%	99%	84%	100%	92%	102%
3/23/2000	8/13/2036	2700	867	93%	99%	90%	98%	94%	100%	82%
12/5/2003	12/5/2043	3411	1129	91%	89%	102%	82%	93%	98%	83%
12/5/2003	12/5/2043	3411	1129	90%	103%	84%	89%	102%	89%	94%
	9/29/2026	3473	1065	97%	99%	101%	90%	94%	88%	97%
	12/20/2023	3486	1190	67%	93%	82%	94%	83%	91%	79%
	2/8/2030	3612	1200	100%	96%	85%	102%	92%	90%	101%
	2/2/2033	3458	1150	94%	95%	102%	95%	92%	99%	83%
	1/18/2014	2419	830	72%	90%	100%	89%	89%	93%	68%
	12/3/2016	2609	838	95%	95%	91%	95%	87%	99%	90%
	4/22/2017	2817	893	99%	97%	99%	82%	94%	75%	-1%
	11/2/2024	3411	1151	84%	98%	90%	101%	87%	76%	101%
	8/26/2025	3411	1149	84%	74%	99%	87%	99%	84%	81%
8/30/2005	10/25/2034	3304	1009	3%	64%	103%	81%	91%	99%	74%
8/30/2005	12/23/2037	3468	1060	87%	101%	86%	89%	100%	84%	75%
10/28/2004	12/22/2029	2957	867	91%	98%	92%	96%	87%	78%	90%
10/28/2004	1/12/2031	2957	867	97%	93%	100%	94%	93%	85%	94%

	2/21/2014	1912	640	92%	103%	89%	100%	89%	100%	81%
1/15/2002	8/6/2034	2804	876	94%	84%	98%	84%	91%	90%	95%
1/15/2002	6/13/2038	2804	883	67%	96%	87%	99%	87%	97%	90%
	3/20/2025	3430	1122	75%	98%	85%	76%	90%	87%	83%
11/4/2003	8/9/2033	1500	482	100%	83%	104%	74%	70%	97%	84%
	11/1/2024	3898	1297	100%	86%	84%	94%	91%	92%	99%
4/19/2004	7/31/2030	2339	710	104%	87%	92%	104%	93%	92%	104%
	4/11/2026	3840	1061	95%	108%	87%	92%	83%	65%	79%
	9/28/2013	3216	1020	98%	91%	99%	89%	99%	88%	99%
	12/12/2015	3216	1025	85%	107%	87%	100%	90%	101%	88%
9/8/2008	10/17/2034	2536	852	99%	89%	93%	91%	95%	87%	96%
5/12/2005	6/25/2037	2775	851	90%	97%	88%	86%	99%	86%	91%
5/12/2005	3/31/2041	2775	860	96%	90%	87%	101%	84%	89%	100%
	12/21/2013	1772	556	93%	90%	95%	75%	63%	79%	88%
	4/17/2022	3489	1118	99%	100%	99%	93%	100%	92%	92%
	12/16/2023	3489	1120	93%	94%	95%	102%	91%	101%	91%
	10/26/2024	3458	1134	101%	95%	101%	93%	99%	95%	101%
	6/22/2029	3458	1134	94%	101%	91%	100%	91%	99%	94%
12/5/2003	6/12/2041	3411	1100	104%	87%	79%	103%	93%	85%	103%
12/5/2003	3/3/2043	3411	1100	94%	90%	103%	87%	89%	103%	94%
11/28/2005	7/31/2035	2700	884	81%	86%	100%	84%	88%	98%	80%
11/28/2005	11/25/2045	3650	1227	105%	88%	86%	100%	86%	88%	101%
11/8/2006	9/8/2030	1775	572	83%	97%	84%	101%	89%	101%	92%
10/31/2006	8/22/2029	1850	621	92%	98%	88%	98%	85%	92%	80%
10/31/2006	10/31/2046	3467	1140	99%	90%	92%	90%	100%	86%	96%
3/20/2003	4/1/2038	2893	981	92%	101%	89%	88%	95%	91%	81%
3/20/2003	8/21/2040	2893	973	100%	82%	85%	100%	87%	92%	90%
5/23/2000	2/6/2033	2568	846	85%	84%	99%	79%	91%	98%	71%
5/23/2000	10/6/2033	2568	846	103%	86%	91%	100%	90%	76%	102%
5/23/2000	7/19/2034	2568	846	94%	102%	87%	91%	98%	77%	85%
4/8/2009	4/9/2029	1930	619	92%	83%	94%	86%	99%	89%	97%
1/17/2007	3/24/2031	2565	778	90%	99%	86%	98%	79%	92%	95%
	12/31/2024	3990	1335	101%	86%	77%	42%	63%	85%	97%
	4/24/2026	3990	1335	83%	74%	95%	85%	82%	92%	72%
	11/25/2027	3990	1335	83%	97%	64%	86%	84%	75%	88%
5/7/2003	8/8/2033	3514	1112	102%	89%	101%	93%	98%	91%	95%
5/7/2003	7/2/2034	3514	1112	89%	99%	93%	102%	91%	102%	91%

	3/18/2026	3758	1261	67%	98%	75%	97%	71%	94%	79%
	6/8/2012	2028	685	90%	97%	85%	97%	91%	99%	83%
12/22/2005	10/5/2030	1540	512	98%	87%	85%	100%	81%	81%	97%
12/22/2005	3/8/2033	1540	514	84%	89%	99%	91%	72%	97%	83%
	8/9/2013	1650	551	97%	84%	92%	85%	99%	79%	101%
	10/29/2014	1650	545	97%	85%	93%	84%	84%	102%	93%
10/28/2004	12/14/2032	2957	882	82%	96%	92%	89%	83%	85%	90%
10/28/2004	12/14/2032	2957	882	91%	86%	99%	86%	93%	81%	92%
	8/29/2025	3091	989	113%	82%	85%	88%	93%	87%	89%
5/19/2004	9/18/2029	1775	498	91%	109%	113%	95%	92%	99%	89%
10/2/2003	3/1/2036	2700	839	100%	91%	85%	102%	83%	86%	102%
10/2/2003	4/6/2043	2700	839	80%	99%	70%	82%	86%	92%	80%
	8/13/2016	3459	1174	99%	91%	89%	99%	92%	72%	94%
	4/18/2020	3459	1130	93%	83%	98%	92%	90%	88%	82%
	2/16/2022	3438	1070	60%	91%	89%	72%	95%	86%	104%
	11/15/2022	3438	1080	104%	69%	94%	72%	100%	74%	91%
	3/15/2030	3648	1295	81%	89%	99%	86%	89%	100%	91%
	9/17/2020	3455	1148	89%	101%	87%	90%	100%	92%	73%
	9/15/2021	3455	1126	89%	89%	100%	90%	90%	96%	84%
12/17/2008	10/24/2046	3900	900	94%	99%	94%	89%	101%	89%	92%
	8/20/2027	3853	1410	90%	95%	105%	91%	88%	99%	61%
	12/15/2028	3853	1410	101%	95%	93%	100%	89%	92%	79%
3/20/2003	5/25/2032	2546	799	94%	98%	89%	90%	96%	92%	76%
3/20/2003	1/29/2033	2546	799	92%	94%	101%	88%	93%	101%	79%
11/24/2009	7/17/2042	3952	1149	101%	89%	95%	86%	95%	80%	96%
11/24/2009	3/23/2044	3952	1140	90%	100%	88%	93%	89%	100%	86%
10/22/2009	4/19/2034	2568	786	86%	107%	97%	105%	98%	102%	90%
6/6/2002	7/19/2032	2300	693	86%	101%	97%	92%	96%	78%	90%
6/6/2002	4/10/2033	2300	693	99%	89%	86%	100%	89%	70%	
	3/21/2012	1912	620	99%	89%	87%	115%	92%	87%	100%
4/23/2004	8/6/2042	2900	966	81%	87%	85%	89%	88%	97%	87%
6/3/2009	1/16/2047	3625	1109	91%	93%	99%	86%	91%	100%	93%
6/3/2009	2/9/2049	3625	1127	101%	88%	83%	92%	85%	91%	97%
	12/18/2024	3716	1157	87%	89%	98%	92%	78%	101%	89%
	11/9/2035	3459	1123	94%	82%	102%	68%	90%	100%	87%
11/20/2008	3/11/2045	3565	1166	86%	83%	102%	92%	86%	99%	87%

From: OST01 HOC
Sent: Friday, April 29, 2011 11:18 AM
To: Skeen, David
Subject: responder email attached
Attachments: Japan Event Shift Stand Down this Weekend On Call Only.oft

Please review and click send. Thanks.

JJJ/469

Attachment Japan Event Shift Stand Down this Weekend On Call
Only.oft(168448 bytes) cannot be converted to PDF format.

From: HOO Hoc
Sent: Friday, April 29, 2011 7:16 PM
To: LIA07 Hoc; LIA08 Hoc; OST01 HOC
Subject: FW: NARAC WRF Forecast for Fukushima Daiichi 1 for 29 Apr, 2011
Attachments: WRF_Fukushima_Forecast_2011-04-29-12z(5km).xlsx; image001.jpg

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



From: Vogt, Phil [<mailto:vogt4@llnl.gov>]
Sent: Friday, April 29, 2011 5:54 PM
To: CMHT@nnsa.doe.gov; nitops@nnsa.doe.gov; PMT02 Hoc; PMT01 Hoc; HOO Hoc; na30ecc@nr.doe.gov; 'McMichael, Lukas C CIV SEA 08 NR'; Guss, Paul P CTR USFJ; alan.remick@nnsa.doe.gov; Hanson, Christopher M Capt USAF PACAF 374 OSS/OSW
Cc: narac@llnl.gov
Subject: NARAC WRF Forecast for Fukushima Daiichi 1 for 29 Apr, 2011

A spreadsheet is attached containing the latest forecast wind conditions at the Fukushima Power Plant.
The forecast time series is derived from the latest NARAC WRF simulation with 5 km horizontal grid spacing.

National Atmospheric Release Advisory Center (NARAC)
24/7 Emergencies and Exercises: 925-424-6465
Routine business: 925-424-2722
NARAC Web: <http://narac.llnl.gov>

JJJ/470

1st (5-km Resolution) for Fukushima Daiichi 1

Date	Hour (UTC)	Speed (m/s)	Dir	Stability	T (°C)	Precip
29-Apr	18	3.5	191	E	5	0
29	19	5.5	217	D	6	0
29	20	5.7	223	D	7	0
29	21	5.8	214	D	8	0
29	22	6.1	206	C	12	0
29	23	6.4	190	C	13	0
30-Apr	0	6.4	202	C	14	0
30	1	6.5	203	C	16	0
30	2	7.1	220	C	17	0
30	3	5.4	245	C	17	0
30	4	2.5	215	C	17	0
30	5	5.4	163	D	14	0
30	6	7.9	175	D	13	0.06
30	7	6.9	174	D	13	0
30	8	5.2	177	D	13	0
30	9	6.3	184	D	13	0
30	10	7.2	192	D	13	0
30	11	7.9	205	D	13	0
30	12	9.8	218	D	14	0
30	13	11.2	228	D	14	0
30	14	9.5	228	D	14	0
30	15	7.7	224	D	14	0
30	16	4.4	191	D	14	0
30	17	5.2	148	D	12	0
30	18	4.2	169	D	12	0
30	19	4.3	180	D	11	0
30	20	3.3	183	E	11	0
30	21	6	237	D	16	0
30	22	7.5	227	D	17	0
30	23	6.4	214	D	18	0
1-May	0	5.2	184	C	19	0
1	1	8	189	C	20	0
1	2	10.1	194	C	21	0
1	3	15.6	212	D	20	0
1	4	15.9	205	D	17	0
1	5	11.8	191	D	16	0.01
1	6	14	193	D	15	0
1	7	14.1	200	D	14	0
1	8	14.5	204	D	14	0
1	9	12.7	195	D	14	0
1	10	10.5	174	D	13	0
1	11	11.1	182	D	14	0
1	12	10.2	177	D	15	0.01

From: OST01 HOC
Sent: Thursday, April 28, 2011 6:49 PM
To: Hoc, PMT12
Cc: FOIA Response.hoc Resource
Subject: FW: NARAC WRF Forecast for Fukushima Daiichi 1 for 27 Apr, 2011
Attachments: WRF_Fukushima_Forecast_2011-04-28-12z(5km).xlsx; image001.jpg

From: HOO Hoc
Sent: Thursday, April 28, 2011 6:25 PM
To: LIA07 Hoc; LIA08 Hoc; OST01 HOC
Subject: FW: NARAC WRF Forecast for Fukushima Daiichi 1 for 27 Apr, 2011

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



From: Vogt, Phil [<mailto:vogt4@llnl.gov>]
Sent: Thursday, April 28, 2011 5:59 PM
To: CMHT@nnsa.doe.gov; nitops@nnsa.doe.gov; PMT02 Hoc; PMT01 Hoc; HOO Hoc; na30ecc@nr.doe.gov; 'McMichael, Lukas C CIV SEA 08 NR'; Guss, Paul P CTR USFJ; alan.remick@nnsa.doe.gov; Hanson, Christopher M Capt USAF PACAF 374 OSS/OSW
Cc: narac@llnl.gov
Subject: NARAC WRF Forecast for Fukushima Daiichi 1 for 27 Apr, 2011

A spreadsheet is attached containing the latest forecast wind conditions at the Fukushima Power Plant. The forecast time series is derived from the latest NARAC WRF simulation with 5 km horizontal grid spacing.

National Atmospheric Release Advisory Center (NARAC)
24/7 Emergencies and Exercises: 925-424-6465
Routine business: 925-424-2722
NARAC Web: <http://narac.llnl.gov>

WRF Forecast (5-km Resolution) for Fukushima Daiichi 1

Date	Hour (UTC)	Speed (m/s)	Dir	Stability	T (°C)	RAIN
28-Apr	18	2.4	119	E	4	0
28	19	1.2	132	F	5	0
28	20	2.3	348	E	5	0
28	21	2.1	296	F	5	0
28	22	4.6	275	D	8	0
28	23	2.9	268	C	9	0
29-Apr	0	2.7	252	C	11	0
29	1	2	214	C	13	0
29	2	0.4	205	C	14	0
29	3	6.5	166	C	12	0.01
29	4	7.8	163	C	11	0.06
29	5	6.7	163	C	10	0.06
29	6	4	206	C	14	0
29	7	3.9	274	C	14	0
29	8	5.3	272	D	12	0
29	9	5.5	262	D	10	0
29	10	3.6	263	E	8	0
29	11	5.5	266	D	7	0
29	12	6.1	283	D	7	0
29	13	5.1	262	D	7	0
29	14	4.1	136	E	6	0
29	15	2.4	205	E	6	0
29	16	2.2	246	F	7	0
29	17	4.4	170	E	5	0
29	18	4.9	185	D	5	0
29	19	5.5	196	D	6	0
29	20	6.2	219	D	6	0
29	21	6.4	222	D	8	0
29	22	6.5	231	D	11	0
29	23	6.8	225	C	13	0
30-Apr	0	7	224	C	15	0
30	1	4.7	199	C	16	0
30	2	4.2	168	C	17	0
30	3	9.6	155	C	15	0
30	4	10.4	161	C	15	0
30	5	7.3	168	C	16	0
30	6	7.1	171	C	16	0
30	7	5.6	180	D	15	0
30	8	6.5	182	D	15	0
30	9	6.7	180	D	14	0
30	10	6.9	183	D	14	0
30	11	5.5	179	D	13	0
30	12	4.1	184	E	13	0

From: HOO Hoc
Sent: Thursday, April 28, 2011 6:25 PM
To: LIA07 Hoc; LIA08 Hoc; OST01 HOC
Subject: FW: NARAC WRF Forecast for Fukushima Daiichi 1 for 27 Apr, 2011
Attachments: WRF_Fukushima_Forecast_2011-04-28-12z(5km).xlsx; image001.jpg

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



From: Vogt, Phil [<mailto:vogt4@llnl.gov>]
Sent: Thursday, April 28, 2011 5:59 PM
To: CMHT@nnsa.doe.gov; nitops@nnsa.doe.gov; PMT02 Hoc; PMT01 Hoc; HOO Hoc; na30ecc@nr.doe.gov; 'McMichael, Lukas C CIV SEA 08 NR'; Guss, Paul P CTR USFJ; alan.remick@nnsa.doe.gov; Hanson, Christopher M Capt USAF PACAF 374 OSS/OSW
Cc: narac@llnl.gov
Subject: NARAC WRF Forecast for Fukushima Daiichi 1 for 27 Apr, 2011

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Routine business: 925-424-2722
NARAC Web: <http://narac.llnl.gov>

WRF Forecast (5-km Resolution) for Fukushima Daiichi 1

Date	Hour (UTC)	Speed (m/s)	Dir	Stability	T (°C)	RAIN
28-Apr	18	2.4	119	E	4	0
28	19	1.2	132	F	5	0
28	20	2.3	348	E	5	0
28	21	2.1	296	F	5	0
28	22	4.6	275	D	8	0
28	23	2.9	268	C	9	0
29-Apr	0	2.7	252	C	11	0
29	1	2	214	C	13	0
29	2	0.4	205	C	14	0
29	3	6.5	166	C	12	0.01
29	4	7.8	163	C	11	0.06
29	5	6.7	163	C	10	0.06
29	6	4	206	C	14	0
29	7	3.9	274	C	14	0
29	8	5.3	272	D	12	0
29	9	5.5	262	D	10	0
29	10	3.6	263	E	8	0
29	11	5.5	266	D	7	0
29	12	6.1	283	D	7	0
29	13	5.1	262	D	7	0
29	14	4.1	136	E	6	0
29	15	2.4	205	E	6	0
29	16	2.2	246	F	7	0
29	17	4.4	170	E	5	0
29	18	4.9	185	D	5	0
29	19	5.5	196	D	6	0
29	20	6.2	219	D	6	0
29	21	6.4	222	D	8	0
29	22	6.5	231	D	11	0
29	23	6.8	225	C	13	0
30-Apr	0	7	224	C	15	0
30	1	4.7	199	C	16	0
30	2	4.2	168	C	17	0
30	3	9.6	155	C	15	0
30	4	10.4	161	C	15	0
30	5	7.3	168	C	16	0
30	6	7.1	171	C	16	0
30	7	5.6	180	D	15	0
30	8	6.5	182	D	15	0
30	9	6.7	180	D	14	0
30	10	6.9	183	D	14	0
30	11	5.5	179	D	13	0
30	12	4.1	184	E	13	0

From: HOO Hoc
Sent: Wednesday, April 27, 2011 8:44 PM
To: LIA07 Hoc; LIA08 Hoc; OST01 HOC
Subject: FW: NARAC WRF Forecast for Fukushima Daiichi 1 for 27 April, 2011
Attachments: WRF_Fukushima_Forecast_2011-04-27-12z(5km).xlsx; image001.gif

Headquarters Operations Officer
U.S. Nuclear Regulatory Commission
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Secure Email: hoo@nrc.sgov.gov



From: Vogt, Phil [<mailto:vogt4@llnl.gov>]
Sent: Wednesday, April 27, 2011 5:30 PM
To: CMHT@nnsa.doe.gov; nitops@nnsa.doe.gov; PMT02 Hoc; PMT01 Hoc; HOO Hoc; na30ecc@nr.doe.gov; 'McMichael, Lukas C CIV SEA 08 NR'; alan.remick@nnsa.doe.gov; Guss, Paul P CTR USFJ; Hanson, Christopher M Capt USAF PACAF 374 OSS/OSW
Cc: narac@llnl.gov
Subject: NARAC WRF Forecast for Fukushima Daiichi 1 for 27 April, 2011

A spreadsheet is attached containing the latest forecast wind conditions at the Fukushima Power Plant.
The forecast time series is derived from the latest NARAC WRF simulation with 5 km horizontal grid spacing.

National Atmospheric Release Advisory Center (NARAC)
24/7 Emergencies and Exercises: 925-424-6465
Routine business: 925-424-2722
NARAC Web: <http://narac.llnl.gov>

WRF Forecast (5-km Resolution) for Fukushima Daiichi 1

Date	Hour (UTC)	Speed (m/s)	Dir	Stability	T (°C)	Precip
27-Apr	18	10.7	172	D	15	0.01
27	19	12.6	180	D	15	0.04
27	20	12.3	184	D	15	0.02
27	21	7.9	261	D	11	0.59
27	22	1.2	325	D	11	0.25
27	23	1.5	209	D	11	0.31
28-Apr	0	1.8	234	C	13	0.02
28	1	2.8	299	C	17	0
28	2	5.2	290	C	18	0
28	3	7.5	291	C	18	0
28	4	6.8	295	C	18	0
28	5	8.6	288	C	18	0
28	6	9.6	278	D	15	0
28	7	16.6	277	D	13	0
28	8	14.9	272	D	11	0
28	9	15.1	269	D	10	0
28	10	15.1	272	D	8	0
28	11	17.3	277	D	7	0
28	12	18.2	271	D	7	0
28	13	15.6	271	D	6	0
28	14	10.6	282	D	6	0
28	15	7	294	D	6	0
28	16	8	284	D	6	0
28	17	6.6	278	D	6	0
28	18	5.6	276	D	6	0
28	19	7.1	283	D	6	0
28	20	6.6	284	D	6	0
28	21	7.1	285	D	6	0
28	22	7.4	287	C	9	0
28	23	7.7	286	C	10	0
29-Apr	0	8.2	281	C	11	0
29	1	8.5	279	C	12	0
29	2	7.7	272	C	13	0
29	3	7.8	272	C	14	0
29	4	6.6	277	C	14	0
29	5	6.3	286	C	14	0
29	6	6	292	C	14	0
29	7	5.7	292	C	13	0
29	8	4.8	288	D	12	0
29	9	2.7	266	E	10	0
29	10	2.8	248	E	8	0
29	11	4	235	E	7	0
29	12	5.1	262	D	7	0

From: Correia, Richard
Sent: Friday, April 29, 2011 5:26 PM
To: Weber, Michael; OST01 HOC
Cc: Hoc, PMT12; LIA08 Hoc; Virgilio, Martin; Merzke, Daniel; Brock, Kathryn; Burnell, Scott; Casto, Chuck; Reynolds, Steven
Subject: Re: FYI - ASAHI-SHIMBUN ARTICLE ON ACADEMIA ENGAGEMENT IN MAPPING RADIOACTIVE CONTAMINATION NEAR FUKUSHIMA-DAIICHI

Thank you Mike. I'll share it with Dave Skeen and Glenn Tracy as my co-ET directors this weekend.
Richard Correia, Director
Division of Risk Analysis
RES

Sent from a Blackberry

From: Weber, Michael
To: Correia, Richard; OST01 HOC
Cc: Hoc, PMT12; LIA08 Hoc; Virgilio, Martin; Merzke, Daniel; Brock, Kathryn; Burnell, Scott; Casto, Chuck; Reynolds, Steven
Sent: Fri Apr 29 16:58:09 2011
Subject: FYI - ASAHI-SHIMBUN ARTICLE ON ACADEMIA ENGAGEMENT IN MAPPING RADIOACTIVE CONTAMINATION NEAR FUKUSHIMA-DAIICHI

Good afternoon. Just wanted to be sure that you are aware of this article from the Japanese media on plans to use academia in Japan to assist in mapping radioactive contamination in the vicinity of Fukushima-Daiichi.

Scientists to map radioactive contamination in Fukushima

2011/04/29

Researchers are planning to create a detailed map showing levels of radioactive contamination around the Fukushima No. 1 nuclear power plant.

About 300 experts from Osaka University, Hiroshima University, the University of Tokyo and other academic and research institutions will start collecting soil samples in May at up to 10,000 locations in 1,500 designated areas, mainly in Fukushima Prefecture, to create a soil-pollution map.

The map will be designed primarily to help designate evacuation areas.

The science ministry intends to use the map as a picture of the situation concerning radioactive pollution in areas around the crippled plant

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The project was formed on the initiative of three scientists: Mamoru Fujiwara, associate professor, Osaka University Research Center for Nuclear Physics; Masaharu Hoshi, professor, Hiroshima University Research Institute for Nuclear Medicine and Biology; and Takaharu Otsuka, professor, University of Tokyo Center for Nuclear Study.

In response to a call by the researchers, experts nationwide in nuclear physics, environmental radioactivity and meteorology have offered to help.

The group will also receive support from a Russian research institute of radiation medicine, which carried out environmental surveys in areas contaminated by the 1986 Chernobyl accident.

Around mid-May, the team will start its work by dividing the area around the stricken nuclear power plant spanning 100 kilometers north-south and 60 kilometers east-west into 1,500 2-kilometer square zones. The researchers will collect soil samples at five to seven points in each zone to measure levels of such radioactive isotopes as iodine-131, cesium-137 and strontium-90. The level of radiation in each zone will be shown on the pollution map.

The group also plans to conduct a radiation survey in the 20-kilometer off-limits zone around the plant, and is holding talks with the government for the survey.

Levels of soil pollution are affected by such factors as topographical and meteorological conditions. Measurements at two points in the same area can differ widely.

Detailed pollution data are essential for careful planning of evacuation zones.

The group plans to carry out the survey every few months to update the map.

Regular updates are important because, compared with the areas around the Chernobyl plant, those around the Fukushima plant are more undulating and rainy, according to the researchers. Rain causes soil drainage and significant changes in radiation levels over time.

The group will also study the effects of soil contamination on human health by using data from health checkups of local residents.

It was three years after the Chernobyl accident that a detailed map of cesium-137 contamination was completed.

Since the measurements of iodine-131, which has a short half life of about eight days, in areas around the Chernobyl plant were not sufficient, it was impossible to make an accurate assessment of the effects of this radioactive material on the health of local residents, in particular the correlation between levels of iodine-131 contamination and the incidence of thyroid cancer. Exposure to iodine-131, which is concentrated in the thyroid when absorbed by the body, is believed to increase the risk of thyroid cancer.

The science ministry is also developing its own soil pollution map, but it is currently measuring radiation levels at only 53 locations.

"We hope to work with the researchers and make effective use of the map," said an official at the ministry.

"An early radiation survey is indispensable for accurately estimating the risk of developing cancer due to exposure to radioactive materials," said Osaka University's Fujiwara. "Basic data about soil pollution will also help develop convincing evacuation plans for local residents."

Mike

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

301-415-1705
Mail Stop O16E15

From: HOO Hoc
Sent: Wednesday, April 27, 2011 10:16 AM
To: LIA07 Hoc; LIA08 Hoc; OST01 HOC
Subject: FW: [METI Japan](Apr_27)Update on Recovery from Seismic and Tsunami Damage
Attachments: Apr_27 Radioactivity Level Map Chart.pdf

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

From: meti-info@meti.go.jp [mailto:meti-info@meti.go.jp]
Sent: Wednesday, April 27, 2011 10:15 AM
To: meti-info@meti.go.jp
Subject: [METI Japan](Apr_27)Update on Recovery from Seismic and Tsunami Damage

For your information, Ministry of Economy, Trade and Industry is providing information on Japan's recovery from Great East Japan Earthquake.

This Wednesday, the following information has been updated.

---- Today's news ----

1. METI uploaded the English version of the report on the impact of Great East Japan Earthquake on supply chain. [Please refer to 3.]
2. METI updated a presentation on the current situation of Fukushima Dai-ichi Nuclear Power Station and Japanese Government's challenges and efforts toward it. [Please refer to 4.]

---- Updates from METI ----

3. [METI] Apr 27_METI uploaded the English version of the report on the impact of Great East Japan Earthquake on supply chain. (English version) http://www.meti.go.jp/english/press/2011/pdf/0426_01a.pdf
4. [METI] Apr 27_METI updated a presentation on the current situation of Fukushima Dai-ichi Nuclear Power Station and Japanese Government's challenges and efforts toward it.
http://www.meti.go.jp/english/earthquake/nuclear/japan-challenges/pdf/japan-challenges_full.pdf
5. [METI] Apr 27_Radioactivity Level Map Chart [Please refer to the attached file]

---- Updates from NISA ----

6. [NISA] Apr 27 1200_Current Situation of Onagawa, Fukushima Dai-ichi, Fukushima Dai-ni, Tokai Dai-ni NPSs (only Japanese version is now available. English version will be uploaded.)
<http://www.meti.go.jp/press/2011/04/20110427006/20110427006-1.pdf>

[NISA] Apr 22 0800_Current Situation of Onagawa, Fukushima Dai-ichi, Fukushima Dai-ni, Tokai Dai-ni NPSs (English version) <http://www.nisa.meti.go.jp/english/files/en20110422-4-1.pdf>

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7. [NISA] Apr 26 0100_Fukushima Dai-ichi Major Parameters of the Plant
<http://www.nisa.meti.go.jp/english/files/en20110427-1-3.pdf>

---- Major Updates from other agencies of Japanese Government --- 8. [MLIT] Apr 27 PM_Measurement of Radiation Doses in the Ports around Tokyo Bay http://www.mlit.go.jp/kowan/kowan_fr1_000041.html
Currently, the level of radiation in Tokyo City, Yokohama City, Kawasaki City and Ichikawa City (Chiba) were as shown in the attachment at very safe level to health.

9. [MLIT] Apr 27 PM_Measurement of radiation doses around the Metropolitan Airports
http://www.mlit.go.jp/koku/koku_tk7_000003.html
The current level of radiation does not have any effects on human health.

10. [NSC] Apr 26 1645_Assessment of the result of environment monitoring (only Japanese version is available)
http://www.nsc.go.jp/nsc_mnt/110426_1.pdf

If you need to add other e-mail address to this mailing list or do not need our information mail any more, please contact at meti-info@meti.go.jp

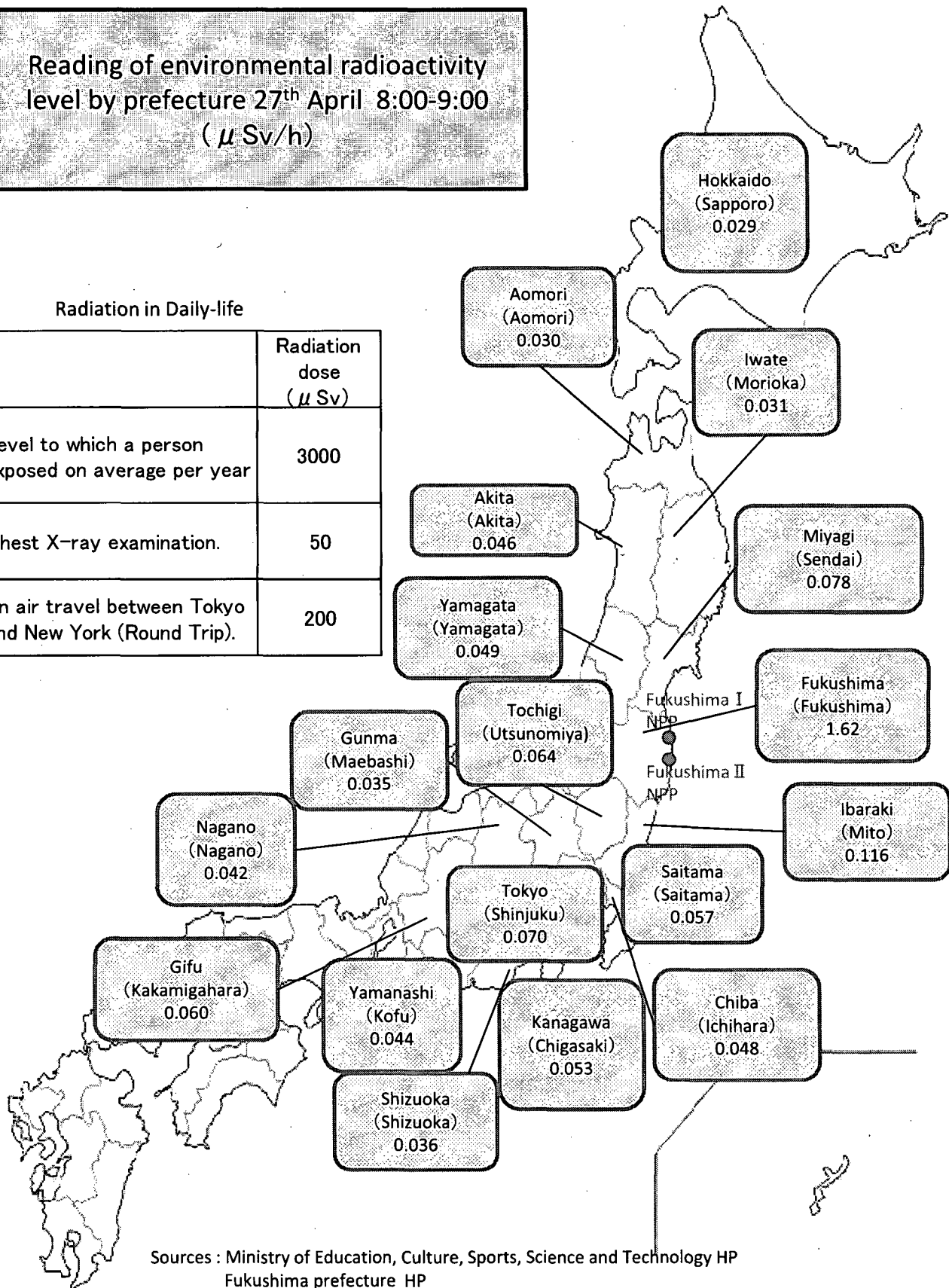
=====
International Public Relations Team
Ministry of Economy, Trade and Industry (METI)
1-3-1 Kasumigaseki, Chiyoda-ku, Tokyo 100-8901, Japan E-mail : meti-info@meti.go.jp
=====

(See attached file: Apr_27 Radioactivity Level Map Chart.pdf)

Reading of environmental radioactivity
level by prefecture 27th April 8:00-9:00
(μ Sv/h)

Radiation in Daily-life

	Radiation dose (μ Sv)
Level to which a person exposed on average per year	3000
Chest X-ray examination.	50
An air travel between Tokyo and New York (Round Trip).	200



From: Skeen, David
Sent: Saturday, April 30, 2011 3:42 PM
To: LIA08 Hoc; LIA07 Hoc; OST01 HOC
Cc: Casto, Chuck; Mitchell, Matthew; Young, Francis; Tracy, Glenn; Correia, Richard; Reynolds, Steven; RST01 Hoc; Marksberry, Don
Subject: RE: Question from NISA on reporting to the IAEA

Liaison Team,

Please create a task assigned to the LT, to provide the TMI information requested by NISA to the Site Team by Wednesday evening (5/4/11). Don Marksberry, in RES, is a good point of contact on this issue. In addition, you may want to ask OIP to contact IAEA to see if they can help pull together information on who/when/how the US reported the TMI accident.

Don Marksberry has some preliminary information that could be provided to Steve Reynolds and the site team by Monday evening, and then a final response could be provided to the Site Team on Wednesday evening.

Thanks!

From: Reynolds, Steven
Sent: Friday, April 29, 2011 10:05 PM
To: RST01 Hoc; LIA08 Hoc; LIA07 Hoc
Cc: Casto, Chuck; Mitchell, Matthew; Young, Francis; Skeen, David; Tracy, Glenn; Correia, Richard
Subject: Question from NISA on reporting to the IAEA

We received the following question from NISA.

After the TMI accident, what was reported to the IAEA about the accident, who reported it (e.g., NRC, TMI operator, other US government agency), when was it reported (how long after the accident), and how was it reported?

Can you have someone get back to us with the answer?

Thanks,
Steve

JJJ/473

From: LIA08 Hoc
Sent: Thursday, April 28, 2011 3:49 PM
To: Wright, Lisa (Gibney); Ragland, Robert; Murray, Charles; Franovich, Rani; Chazell, Russell; Rivers, Joseph; Reed, Elizabeth; Jessie, Janelle; Kellum, Jim; Libby, Earl; Tabatabai, Omid; Lising, Jason; Smith, Theodore; Wright, Ned; Temple, Jeffrey; Dudek, Michael
Subject: extended Liaison Team coverage
Attachments: LT Coordinator Schedule Rev 21Apr 1200.docx
Categories: FOIA Forwarded

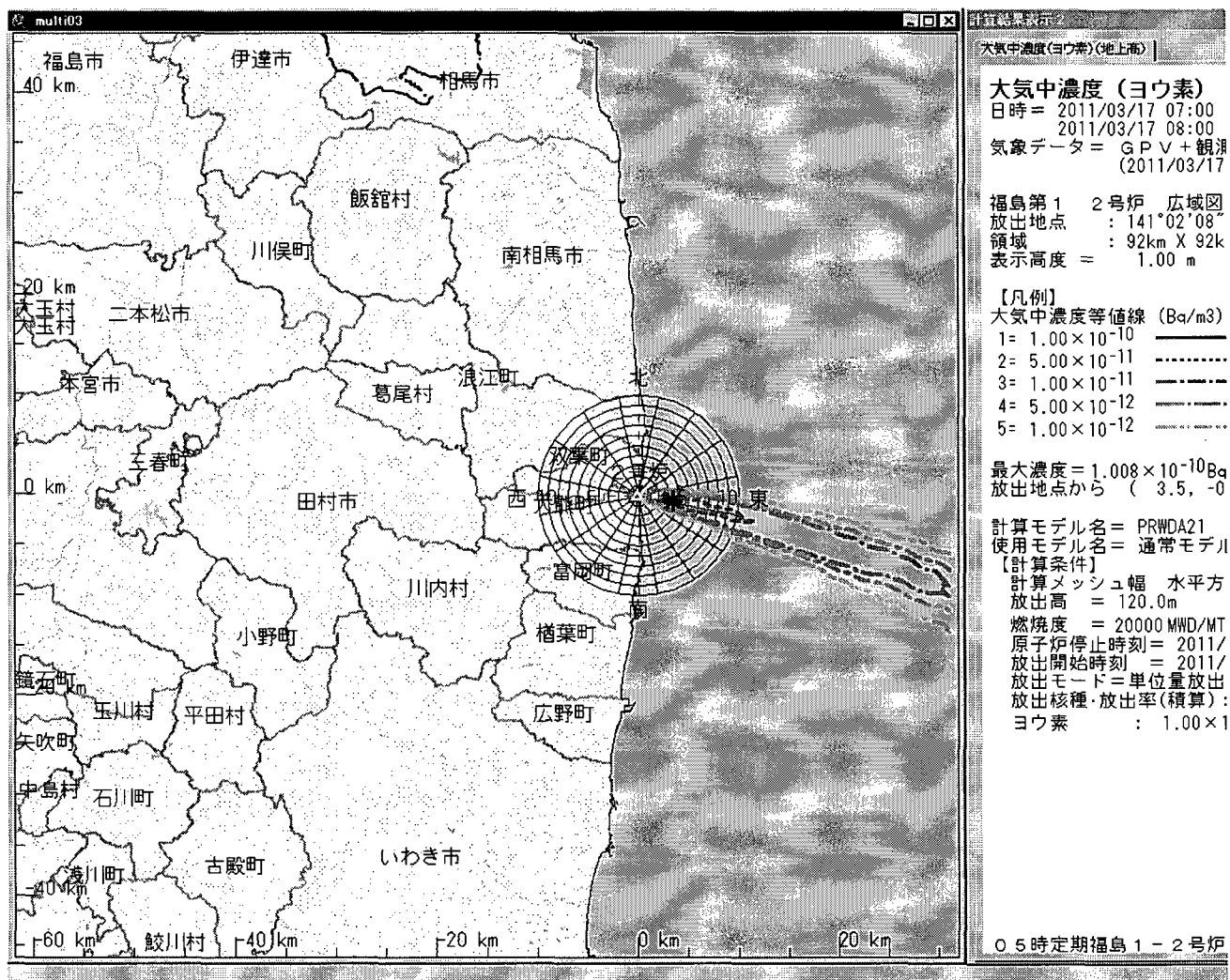
We are still not sure how much longer we will be staffing the LT position for the Japanese earthquake response, but I have been asked to plan for perhaps a few more weeks of day shifts and evening shifts (no overnight shifts). Please let me know if you can help with any of these shifts. Again, if everyone can take 2-4 shifts, we can cover this with limited pain for everyone. Thanks for any help you can provide.

Jeff Temple
Liaison Team Coordinator
US Nuclear Regulatory Commission
email: lia08.hoc@nrc.gov
Desk Ph: 301-816-5185

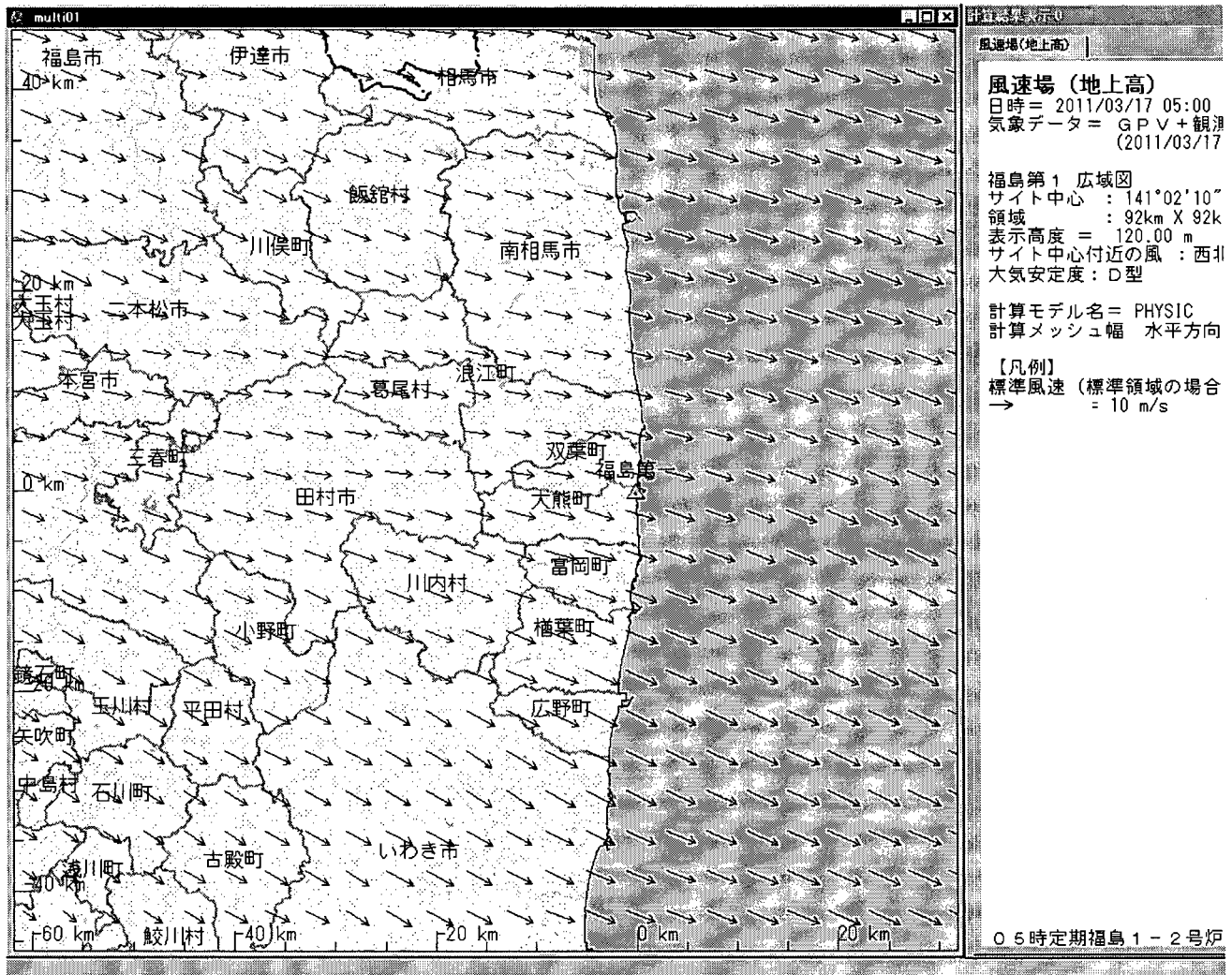
555/474

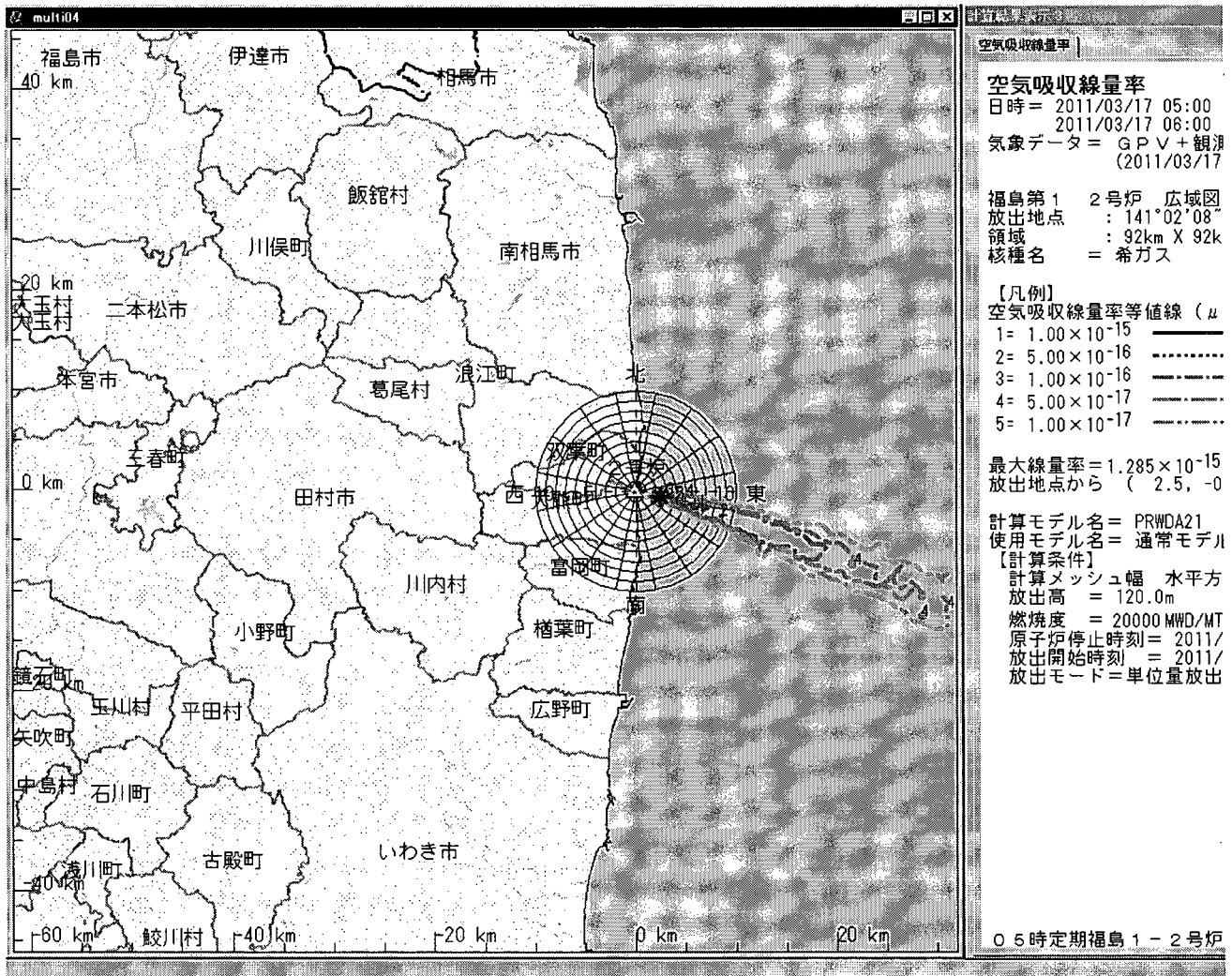
Liaison Team Coordinator Schedule 04/28/2011, 1600 hrs
(file is on the LIA08 Desktop, under Team Toolbox)

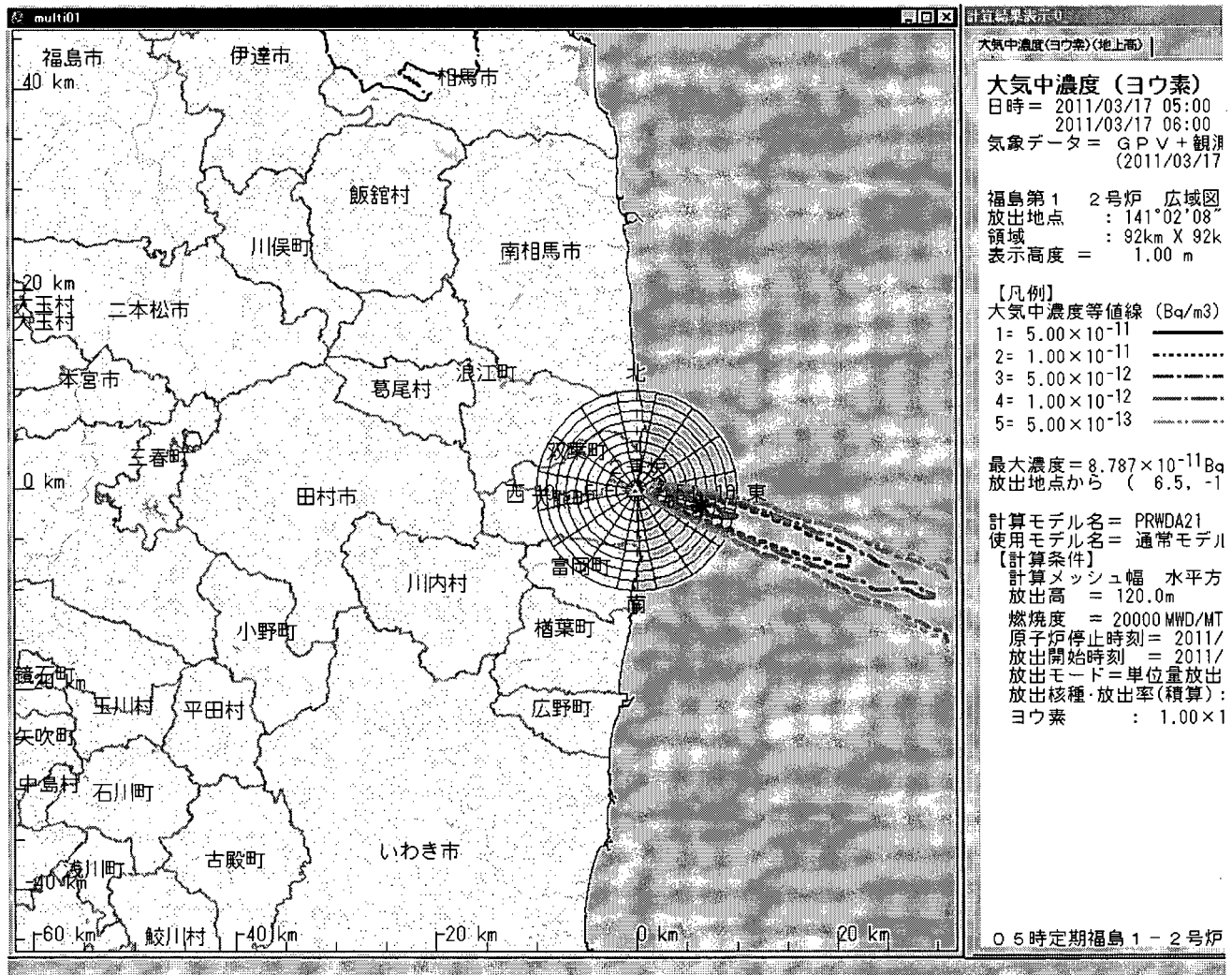
Day	Date	0700 - 1500	1500 - 2300	2300 - 0700
Sun	4/10	Lisa Wright	Milt Murray	Jeff Temple
Mon	4/11	Lisa Wright	Clyde Ragland	Jeff Temple
Tues	4/12	Lisa Wright	Joe Rivers	Jeff Temple
Wed	4/13	Joe Rivers	Lisa Wright	Jeff Temple
Thurs	4/14	Clyde Ragland	Rani Franovich	Russ Chazell
Fri	4/15	Milt Murray	Clyde Ragland	Rani Franovich
Sat	4/16	Clyde Ragland	Jeff Temple	Milt Murray
Sun	4/17	Russ Chazell	Jeff Temple	Milt Murray
Mon	4/18	Ned Wright	Jeff Temple	Milt Murray
Tues	4/19	Ned Wright	Jeff Temple	Milt Murray
Wed	4/20	Jeff Temple	Janelle Jesse	Joe Rivers
Thurs	4/21	Clyde Ragland (in by 0730)	Janelle Jesse	Joe Rivers
Fri	4/22	Clyde Ragland (in by 0730)	Ned Wright	Rani Franovich
Sat	4/23	Lisa Wright	Ned Wright	Rani Franovich
Sun	4/24	Lisa Wright	Mike Dudek	Omid Tabatabai
Mon	4/25	Lisa Wright	Jim Kellum	Earl Libby
Tues	4/26	Beth Reed	Jim Kellum	Earl Libby
Wed	4/27	Beth Reed	Jim Kellum	Earl Libby
Thurs	4/28	Ned Wright	Mike Dudek	Earl Libby
Fri	4/29	Janelle Jessie	Rich Turtill	NA
Sat	4/30	Lisa Wright	Jeff Temple	NA
Sun	5/1	Ned Wright	Jeff Temple	NA
Mon	5/2	Rani Franovich	Jeff Temple	NA
Tues	5/3	Rani Franovich	Jeff Temple	NA
Wed	5/4	Jeff Temple	Earl Libby	NA
Thurs	5/5	Rani Franovich	Gene Carpenter	NA
Fri	5/6	Jeff Temple	Gene Carpenter	NA
Sat	5/7	Russ Chazell	Jeff Temple	NA
Sun	5/8	Russ Chazell	Jeff Temple	NA
Mon	5/9			NA
Tues	5/10			
Wed	5/11			

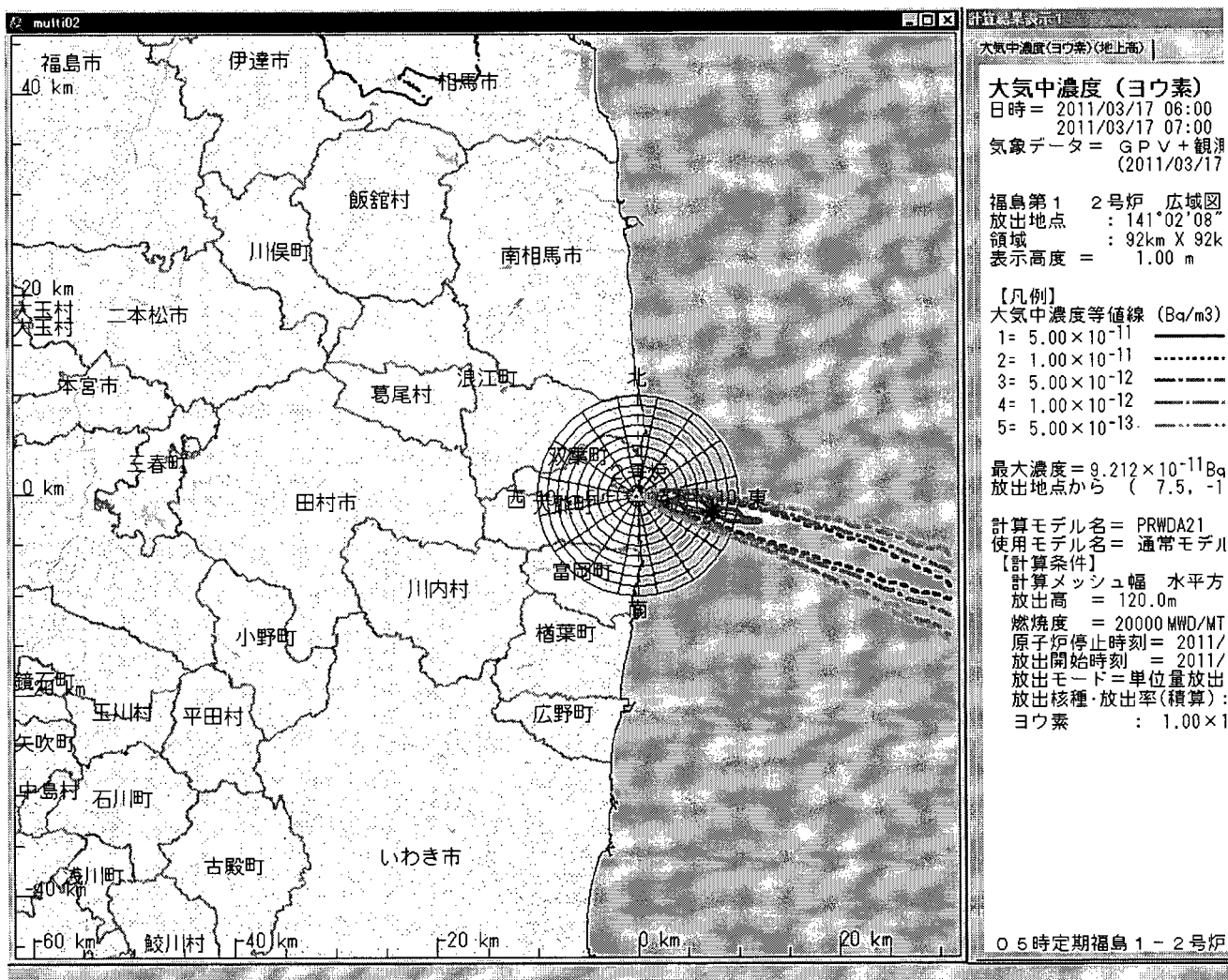


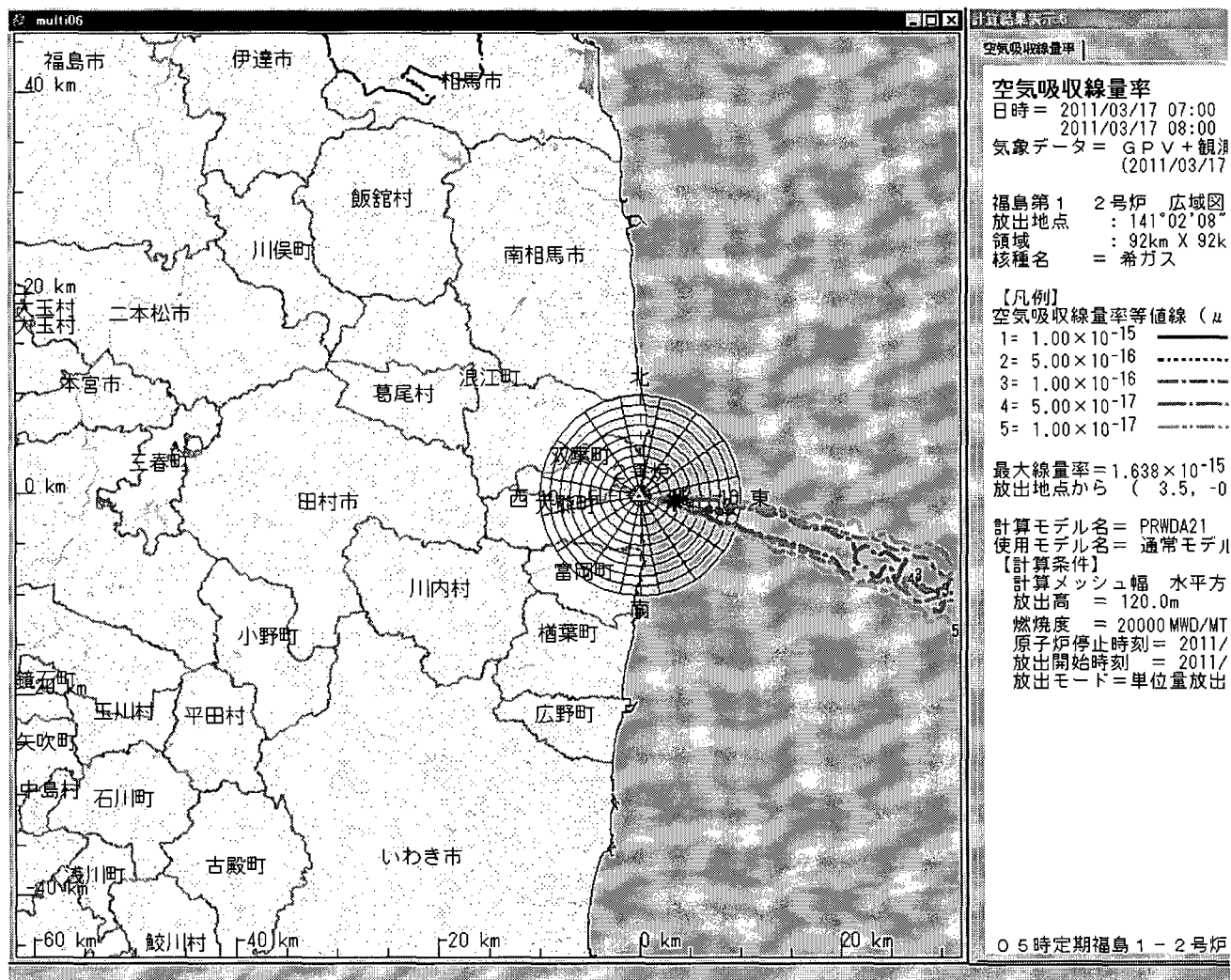
JJJ/475

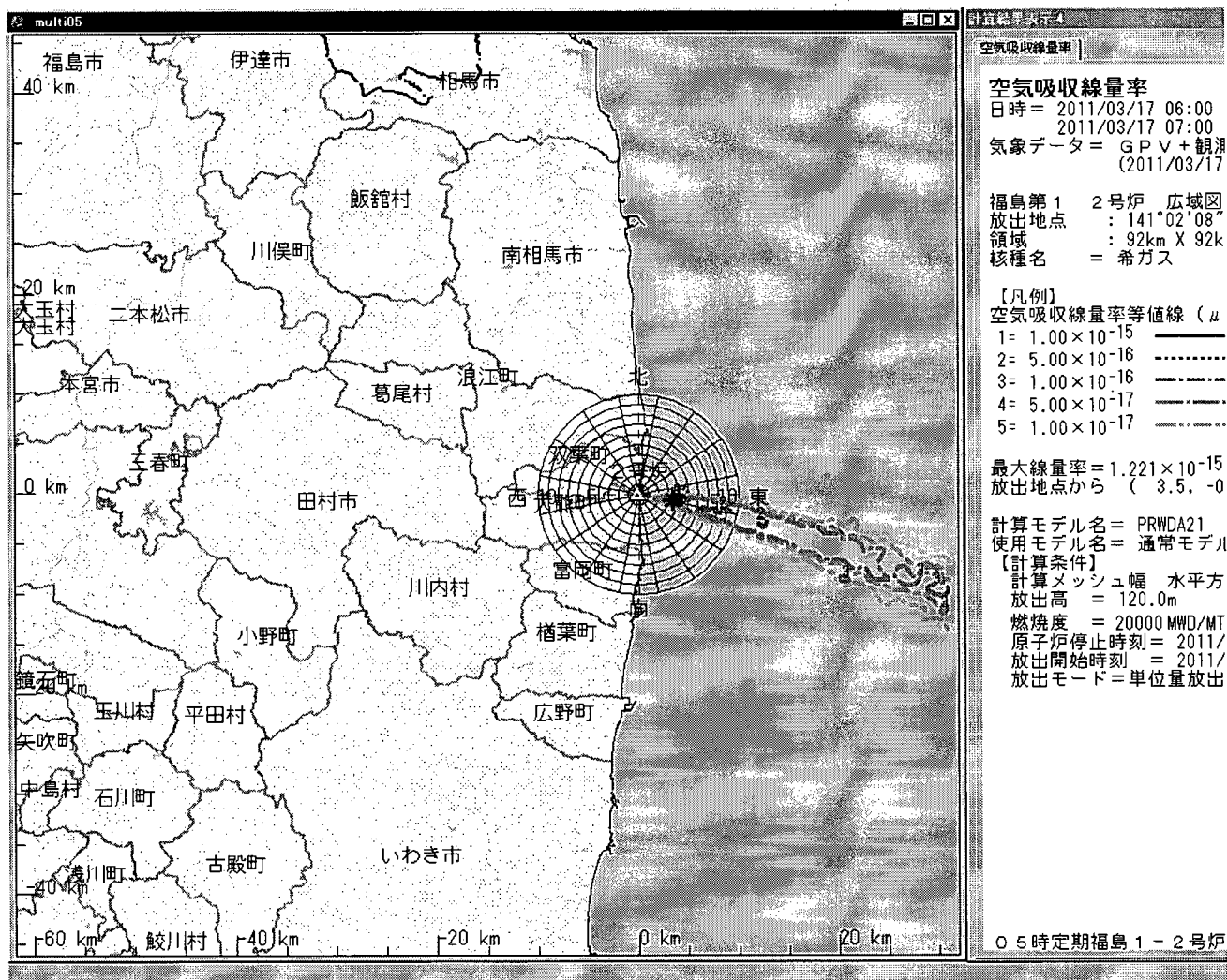












Appendix D to Part 835--SURFACE CONTAMINATION VALUES

The data presented in appendix D are to be used in identifying and posting contamination and high contamination areas in accordance with § 835.603(e) and (f) and identifying the need for surface contamination monitoring and control in accordance with § 835.1101 and 1102.

Surface Contamination Values¹ in dpm/100 cm²

Radionuclide	Removable ^{2,4}	Total (Fixed + Removable) ^{2,3}
U-nat, U-235, U-238, and associated decay products	⁷ 1,000	⁷ 5,000
Transuranics, Ra-226, Ra-228, Th-230, Th-228, Pa-231, Ac-227, I-125, I-129	20	500
Th-nat, Th-232, Sr-90, Ra-223, Ra-224, U-232, I-126, I-131, I-133	200	1,000
Beta-gamma emitters (nuclides with decay modes other than alpha emission or spontaneous fission) except Sr-90 and others noted above ⁵	1,000	5,000
Tritium and tritiated compounds ⁶	10,000	N/A

¹ The values in this appendix, with the exception noted in footnote 5 below, apply to radioactive contamination deposited on, but not incorporated into the interior or matrix of, the contaminated item. Where surface contamination by both alpha- and beta-gamma-emitting nuclides exists, the limits established for alpha- and beta-gamma-emitting nuclides apply independently.

² As used in this table, dpm (disintegrations per minute) means the rate of emission by radioactive material as determined by correcting the counts per minute observed by an appropriate detector for background, efficiency, and geometric factors associated with the instrumentation.

³ The levels may be averaged over one square meter provided the maximum surface activity in any area of 100 cm² is less than three times the value specified. For purposes of averaging, any square meter of surface shall be considered to be above the surface contamination value if: (1) from measurements of a representative number of sections it is determined that the average contamination level exceeds the applicable value; or (2) it is determined that the sum of the activity of all isolated spots or particles in any 100 cm² area exceeds three times the applicable value.

JJJ/476

77A ← 5000年5月10日

※太枠箇所が更新箇所

福島第一(1F) 体育館付近(MP-5東側)(2号機より西北西約0.9キロ) ※高圧注水活動の作業者のための放射線管理を行うため移動

3月17日							
モニタリングカー	7:50	8:00	8:30	8:40	8:50	9:00	9:10
測定値($\mu\text{Sv/h}$)	381.3	379.0	373.0	372.6	372.7	373.7	371.9
中性子	ND	ND	ND	ND	ND	ND	ND
風向	西	南西	西南西	南西	南西	南西	南西
風速(m/s)	3.7	3.7	3.2	3.8	3.4	3.7	3.0

福島第一(1F) 事務本館北(2号機より北西約0.5キロ) ※注水活動による効果を測定するためにより近傍へ移動

3月17日									
モニタリングカー	8:30	9:40	9:50	10:00	10:10	10:20	10:30	10:40	10:50
測定値($\mu\text{Sv/h}$)	3785.0	3782.0	3763.0	3759.0	3755.0	3754.0	3750.0	3753.0	3743.0
中性子	ND	ND	ND	ND	ND	ND	ND	ND	ND
風向	西	西南西	西	北西	北西	西	西	西南西	南西
風速(m/s)	5.1	5.0	5.8	5.2	5.6	5.2	7.0	4.5	2.2

福島第一(1F) 正門付近前(MP-6付近)(2号機より西南西約1.0キロ) ※入構者のための放射線管理を行うため移動

3月17日		
モニタリングカー	11:00	11:10
測定値($\mu\text{Sv/h}$)	647.3	646.2
中性子	ND	ND
風向	北西	北北西
風速(m/s)	4.8	2.3

福島第一(1F) 西門(MP-5付近)(2号機より西約1.1キロ) ※定点で測定するため移動

3月17日								
モニタリングカー	11:15	11:20	11:30	12:00	12:30	13:00	13:10	13:20
測定値($\mu\text{Sv/h}$)	312.1	312.5	312.2	311.0	310.7	309.7	308.3	308.1
中性子	ND	ND	ND	ND	ND	ND	ND	ND
風向	北西	西	西北西	西	西	西	西	西
風速(m/s)	4.7	4.4	2.9	3.5	3.5	3.8	3.5	3.1

福島第一(1F) 事務本館北(2号機より北西約0.5キロ) ※注水活動による効果を測定するためにより近傍へ移動

3月17日			
モニタリングカー	13:30	13:40	14:00
測定値($\mu\text{Sv/h}$)	4175.0	4165.0	3810.0
中性子	ND	ND	ND
風向	北西	西	西
風速(m/s)	4.5	4.7	5.2

経済産業省

番号 180000

41295 → 41296, 2F

555/477

受領時刻 3月18日 0時35分

出力時刻 3月18日 0時37分

11年03月18日(金) 0時26分 宛先: 055018281

発信: 定時管理センター-L4

R. 869

P. 02

福島第一(1F) 西門(MP-5付近)(2号機より西約1.1キロ) ※定点で測定するため移動

3月17日				
モニタリングカー	14:10	14:30	15:00	15:30
測定値($\mu\text{Sv/h}$)	311.1	310.3	309.1	308.7
中性子	ND	ND	ND	ND
風向	北西	西	西	西
風速(m/s)	6.8	3.5	3.2	3.1

福島第一(1F) 事務本館北(2号機より北西約0.5キロ) ※注水活動による効果を測定するためにより近傍へ移動

3月17日																								
モニタリングカー	15:50	15:55	16:00	16:05	16:10	16:15	17:00	17:05	17:10	17:15	17:20	17:25	17:30	17:35	17:40	17:45	17:50	17:55	18:00	18:05	18:10	18:15	18:20	
測定値($\mu\text{Sv/h}$)	3700.0	3699.0	3698.0	3695.0	3695.0	3691.0	3676.0	3676.0	3675.0	3675.0	3672.0	3670.0	3667.0	3665.0	3639.0	3633.0	3650.0	3649.0	3648.0	3645.0	3641.0	3641.0	3645.0	
中性子	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
風向	西	西	西	西	西	西	西	北西	北西	北西	北西	西	北西	北西	西北西	西	西	西	西北西	西	北西	西	西	
風速(m/s)	5.2	4.7	4.3	4.1	4.3	4.1	3.1	3.3	2.8	2.7	3.3	3.2	3.4	3.7	3.6	3.3	2.7	2.4	2.1	2.2	2.4	2.4	2.6	

3月17日											
モニタリングカー	18:25	18:30	18:35	18:40	18:50	19:00	19:10	19:20	19:50	20:00	20:10
測定値($\mu\text{Sv/h}$)	3643.0	3643.0	3637.0	3638.0	3638.0	3630.0	3626.0	3623.0	3588.0	3601.0	3586.0
中性子	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
風向	西	西北西	北西	北西	西北西	西南西	西北西	西	北西	北東	西北西
風速(m/s)	2.8	2.7	2.7	2.9	2.4	2.7	2.7	2.3	4.8	1.5	1.4

福島第一(1F) 西門(MP-5付近)(2号機より西約1.1キロ) ※放水が終了し、定点で測定するため移動

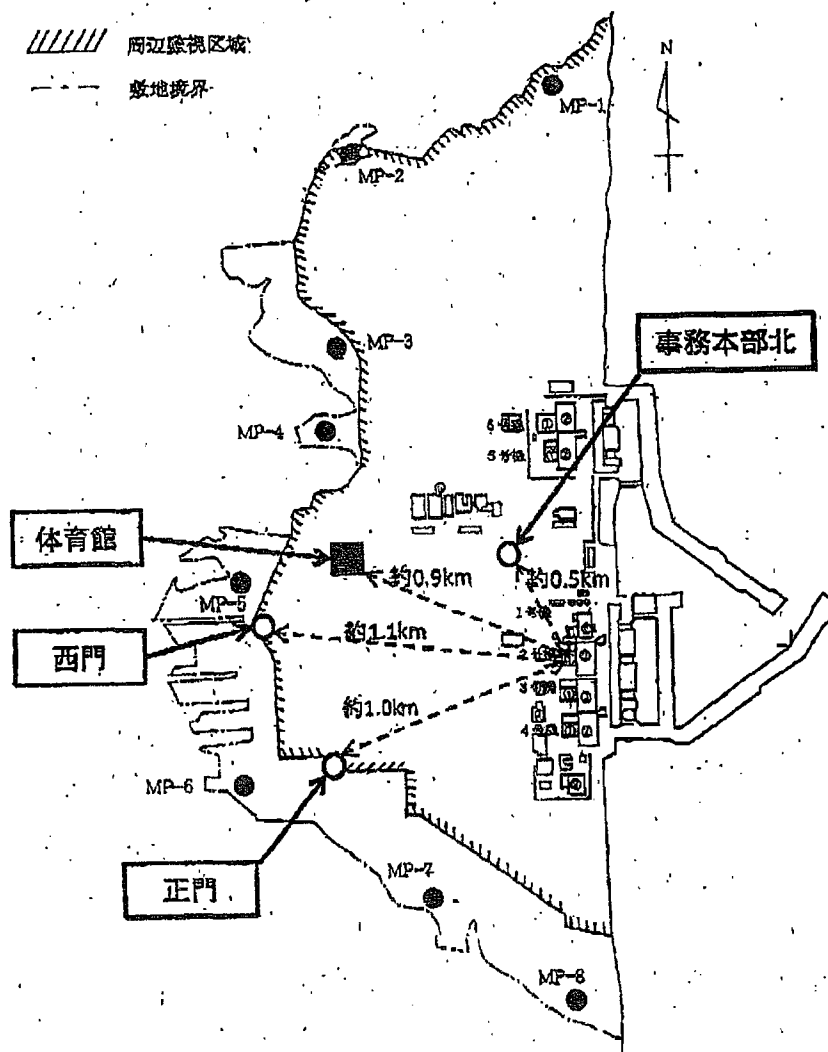
3月17日													
モニタリングカー	20:40	21:00	21:10	21:20	21:30	21:40	21:50	22:00	22:10	22:20	22:30	22:40	22:50
測定値($\mu\text{Sv/h}$)	282.2	291.9	291.7	291.3	291.2	291.1	290.9	290.4	290.4	289.9	289.7	289.6	289.5
中性子	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
風向	西北西	北西	北西	西	北西	北西	北西	北西	北西	西北西	北西	北西	北東
風速(m/s)	1.2	0.9	1.5	1.7	1.8	1.5	1.5	1.4	1.5	1.3	1.0	1.3	0.9

Near

2011/3/17

福島第一原子力発電所

//// 周辺監視区域
 --- 敷地境界



福島第二(2F) (事業者のモニタリングポスト)

3月17日	0:00	0:10	0:20	0:30	0:40	0:50	1:00	1:30	1:40	1:50	2:00	2:10	2:20	2:30	2:40	2:50	3:00	3:10	3:20	3:30	3:40	3:50
モニタリングポスト																						
MP1(μ Sv/h)	25.0	24.9	24.9	24.8	24.7	24.8	24.7	24.5	24.5	24.4	24.3	24.4	24.3	24.2	24.2	24.2	24.1	24.1	24.0	24.0	24.0	23.8
MP2(μ Sv/h)	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中
MP3(μ Sv/h)	25.2	25.0	25.0	25.0	25.0	25.0	25.1	24.9	24.7	24.7	24.8	24.6	24.7	24.5	24.6	24.5	24.5	24.4	24.3	24.2	24.3	24.3
MP4(μ Sv/h)	17.4	17.4	17.4	17.4	17.4	17.3	17.3	17.2	17.2	17.2	17.2	17.2	17.2	17.2	17.2	17.2	17.1	17.1	17.1	17.1	17.1	17.0
MP5(μ Sv/h)	15.6	15.5	15.5	15.6	15.6	15.5	15.5	15.5	15.5	15.5	15.5	15.6	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5
MP6(μ Sv/h)	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測
MP7(μ Sv/h)	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測
風向	西北西	西北西	北西	西	西北西	西	西北西	西北西	西北西	西北西	西北西	西	西	西北西	西	西	西	西	西	西	西	西
風速(m/s)	6.9	6.1	4.2	4.3	5.5	5.2	5.8	6.8	7.3	6.8	6.0	7.2	5.9	5.0	6.0	8.7	10.0	9.6	10.9	9.6	12.6	12.4

3月17日																						
モニタリングポスト	4:00	4:10	4:20	4:30	4:40	4:50	5:00	5:10	5:20	5:30	5:40	5:50	6:00	6:10	6:20	6:30	6:40	6:50	7:00	7:10	7:20	7:30
MP1(μSv/h)	23.9	23.8	23.7	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.5	23.5	23.5	23.5	23.4	23.4	23.4	23.3	23.3	23.3	23.3
MP2(μSv/h)	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中
MP3(μSv/h)	24.2	24.2	24.2	24.0	23.9	24.0	23.9	23.9	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.6	23.6	23.7	23.6	23.6	23.5	23.5
MP4(μSv/h)	17.0	17.0	16.9	16.9	16.8	16.8	16.8	16.7	16.7	16.8	16.7	16.6	16.6	16.6	16.6	16.5	16.5	16.5	16.5	16.5	16.5	16.5
MP5(μSv/h)	15.5	15.5	15.4	15.4	15.4	15.4	15.4	15.2	15.1	15.2	15.1	15.1	15.1	15.0	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9
MP6(μSv/h)	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測
MP7(μSv/h)	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測
風向	西	西	西	西	西	西	西北西	西	西	西	西	西	西	西	西	西	西	西	西北西	西	西	西
風速(m/s)	11.4	12.3	11.7	11.3	12.6	8.7	9.5	9.4	8.6	10.5	11.7	10.8	11.0	10.5	11.2	15.2	12.8	13.1	13.0	15.1	17.2	16.9

福島第二(2F) (事業者のモニタリングポスト)

3月17日	7:40	7:50	8:00	8:10	8:20	8:30	8:40	8:50	9:00	9:10	9:20	9:30	9:40	9:50	10:00	10:10	10:20	10:30	10:40	10:50	11:00	11:10
モニタリングポスト																						
MP1(μ Sv/h)	23.3	23.2	23.2	23.2	23.2	23.1	23.0	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.8	22.8	22.8	22.7	22.8	22.7	22.6	22.6
MP2(μ Sv/h)	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中
MP3(μ Sv/h)	23.5	23.5	23.5	23.5	23.4	23.4	23.5	23.4	23.3	23.4	23.2	23.2	23.2	23.1	23.2	23.1	23.1	23.1	23.1	23.1	23.1	23.1
MP4(μ Sv/h)	16.4	16.4	16.4	16.3	16.3	16.3	16.3	16.3	16.3	16.2	16.1	16.1	16.1	16.1	16.0	16.1	16.1	16.0	16.0	16.1	16.0	16.0
MP5(μ Sv/h)	14.8	14.8	14.8	14.8	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.6	14.6	14.6	14.6	14.6	14.6	14.5	14.5	14.5	14.5
MP6(μ Sv/h)	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測
MP7(μ Sv/h)	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測
風向	西	西	西	西	西	西	西	西	西	西	西	西	西	西	西	西	西	西	西	西	西	西
風速(m/s)	18.1	16.5	18.8	19.1	19.0	16.8	16.1	16.7	19.2	17.3	14.5	16.7	14.8	14.3	16.7	17.6	16.4	16.8	17.8	14.2	13.6	11.9

3月17日	11:20	11:30	11:40	11:50	12:00	12:10	12:20	12:30	12:40	12:50	13:00	13:10	13:20	13:30	13:40	13:50	14:00	14:10	14:20	14:30	14:40	14:50
モニタリングポスト																						
MP1(μ Sv/h)	22.4	22.5	22.5	22.5	22.4	22.4	22.3	22.4	22.4	22.2	22.2	22.2	22.2	22.2	22.1	22.0	22.2	22.1	22.2	22.1	22.1	22.0
MP2(μ Sv/h)	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中
MP3(μ Sv/h)	23.0	23.0	22.9	22.9	22.8	22.8	22.9	22.8	22.8	22.7	22.6	22.7	22.6	22.6	22.5	22.6	22.6	22.6	22.6	22.5	22.5	22.4
MP4(μ Sv/h)	16.0	15.9	15.9	15.9	15.9	15.9	15.9	15.7	15.8	15.8	15.8	15.7	15.7	15.7	15.7	15.7	15.7	15.6	15.6	15.6	15.5	15.6
MP5(μ Sv/h)	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.3	14.3	14.3	14.3	14.3	14.3	14.3	14.3	14.2	14.2	14.2	14.2	14.2
MP6(μ Sv/h)	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測
MP7(μ Sv/h)	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測
風向	西	西北西	北西	西	北西	西	西	西	西	西	西北西	西北西	西北西	西	北西	北西	北西	北西	北西	北西	西	北西
風速(m/s)	11.6	7.9	7.9	7.9	6.0	9.2	11.2	9.2	8.2	8.7	9.1	7.5	8.6	7.3	8.5	8.4	8.7	8.2	8.1	8.0	7.4	3.2

11年3月18日(金) 0時26分 宛先:055018281

第3: 総管理279-L4

R:869

P:05

受信時刻 3月18日 0時35分

出力時刻 3月18日 0時37分

11年3月18日(金) 0時27分 宛先: 055018281

宛先: 055018281

R: 869 P: 06

3月17日	15:00	15:10	15:20	15:30	15:40	15:50	16:00	16:10	16:20	16:30	16:40	16:50	17:00	17:10	17:20	17:30	17:40	17:50	18:00	18:10	18:20	18:30
モニタリングポスト	21.9	21.9	21.9	21.8	21.5	21.8	21.8	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.6	21.6	21.4	21.6	21.4	21.4
MP1(μ Sv/h)	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中
MP2(μ Sv/h)	22.5	22.4	22.4	22.4	22.4	22.4	22.4	22.3	22.3	22.3	22.2	22.1	22.2	22.1	22.0	22.0	22.0	22.0	21.9	22.0	21.9	22.0
MP3(μ Sv/h)	15.6	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.4	15.5	15.4	15.3	15.4	15.3	15.3	15.3	15.3	15.3	15.3	15.2	15.3
MP4(μ Sv/h)	14.2	14.2	14.2	13.5	13.6	14.2	14.1	14.1	14.1	14.1	14.1	14.2	14.1	14.1	14.0	14.1	14.0	14.0	14.0	14.0	14.0	14.0
MP5(μ Sv/h)	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測
MP6(μ Sv/h)	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測
MP7(μ Sv/h)	西	北西	西	西	西	西	西	北西	北西	北北西	西北西	西	西	西	西	西	西	西	西北西	西	西	西
風速(m/s)	5.3	3.6	6.3	6.9	8.4	9.2	7.8	4.6	2.5	4.2	3.7	2.0	5.0	10.6	11.2	14.5	12.3	11.4	13.9	14.2	13.5	12.1

3月17日	18:40	18:50	19:00	19:10	19:20	19:30	19:40	19:50	20:00	20:10	20:20	20:30	20:40	20:50	21:00	21:10	21:20	21:30	21:40	21:50	22:00	22:10
モニタリングポスト	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.2	21.2	21.2	21.2	21.2	21.1	21.1	21.1	21.1	21.1	21.0	21.0
MP1(μ Sv/h)	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中	点検中
MP2(μ Sv/h)	21.9	21.9	21.9	21.9	21.9	21.7	21.8	21.8	21.8	21.6	21.6	21.6	21.7	21.7	21.6	21.5	21.6	21.6	21.5	21.5	21.5	21.5
MP3(μ Sv/h)	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.1	15.2	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.0	15.0
MP4(μ Sv/h)	14.0	14.0	14.0	13.9	14.0	13.9	13.9	13.9	13.8	13.9	13.8	13.8	13.8	13.8	13.8	13.7	13.7	13.7	13.7	13.7	13.6	13.6
MP5(μ Sv/h)	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測
MP6(μ Sv/h)	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測
MP7(μ Sv/h)	西	西北西	西北西	西	西	西	西北西	西	北西	西北西	西北西	西北西	北北西	北	西北西	西	北西	北西	北西	北西	北西	西北西
風速(m/s)	11.0	9.5	9.2	11.4	10.3	9.5	8.7	8.1	6.2	6.7	5.2	4.1	2.6	5.1	4.0	3.9	1.5	0.9	2.6	3.1	3.7	2.8

3月17日	22:20	22:30	22:40	22:50	23:00
モニタリングポスト	21.1	21.0	21.0	21.0	20.9
MP1(μ Sv/h)	点検中	点検中	点検中	点検中	点検中
MP2(μ Sv/h)	21.5	21.5	21.5	21.4	21.4
MP3(μ Sv/h)	15.1	15.0	15.0	14.9	15.0
MP4(μ Sv/h)	13.6	13.5	13.5	13.5	13.4
MP5(μ Sv/h)	欠測	欠測	欠測	欠測	欠測
MP6(μ Sv/h)	欠測	欠測	欠測	欠測	欠測
MP7(μ Sv/h)	北西	北西	西北西	北西	西北西
風速(m/s)	2.5	2.3	1.7	2.8	6.7

New

受信時刻 3月18日 0時27分

送信時刻 3月18日 0時27分

3-18-11 Eastern Idaho community leaders

Hearing opportunities

Board members to follow

NRC staff did well at hearing

3-18-11 3:00 Call

Mike, Gary, Trish Milligan, Jennifer Gule

Benny Shipman - Bill Howard - IPEEE - ^{for Indian Point} response to generic letter

Karen Wayland - ^{common} ^{informal} - Radiat - Risk - to share w/ other leaders

Michael Mehoff - radiat. reading & status of plant

JFF Bann - Status of spent fuel pools
Mehol

Measuremet - Maxey's

Radiological Risk Communication NUREG

What are we monitoring?
monitoring techniques

JJJ/478

7:45 call - status

Marty Vingillo -

Based on conditions. - Meeting w/ Ambassador

Chairman - Naval Reactors / INPO
industry/gov't consortium

2:00 p.m. Kick-off meeting

Briefing - plant site
- Regulatory makeup

Ellis - commitment from Japan they will follow recommendations

NRC role

Room for 3:00 p.m. call?

Website - links to other agencies

"What do I need to do to protect myself?" - Pelosi's request - sent to her

JSS/479

Establish on ongoing basis
set time

over weekend

next week

7:00 - 7:00 - Ops. Center

Mike Johnson

seismic expert - MSNBC

coordinating w/ other Fed.

no harmful effects from radiation from Japan.

U.S. public / reactors are safe

4 Units - Fukushima

spent fuel in ~~the~~ out of core

Plume - develop single model - DOE has lead
information from Japan - 6 am 6 pm.

Seismic - conservative analysis - additional information

Q's & A's

Gillibrand

Ben Rosenbaum - 9/2/10 Brian Sherrin

MF Repko - testimony -

Steven Lertman - Sen. Prior - NRC as site Spent Fuel Pools

Fuel in pools - DOE

Gary Shapiro - Sen. Gillibrand - monitor seismic - 55-6 withstand

Karen Wray - Pelosi - starting point - a range including hypothetical worst case

Drew Wallace - Sen. Vitter - confident in information coming from TEPCO

Chris Griffin - Lickenman

Jeff Berman - Energy + Commerce

Mahel - Energy + Commerce

JJS/480

Avenel, Joseph @ mail.house.gov.

#15

Annie Caputo

Samie - Senator Murray

17 on call

Laura Haynes - workers - evacuated.

Eliot - Sacramento #

Avenel - reports of smoke from Unit 3.
- pump system

JSS/KM

Blumenthal
EPA letter

Cindy Peterson - Friday

Tues. Santa Cruz - member boat - Barch - Lyons

Wed. Hawk Transported - EP and unknown - Wals/Virginia

Wed./Thurs. Cont. App. E+Water

March 31. HAC - 1

April 12 - EPW - Japan - looking forward

W

VG

DI

555/482

W

3-21-11 TA briefing

Smoke

1230 sea water - fresh water - containment

EDO - opening program

V.S. plants continue to operate safely
no reduction in oversight

Defense-in-depth
conservative assumptions

operating experience

support Japan govt & NISA

inputs on implications to U.S. plants

support U.S. Ambassador

Don't expect radiation to have harmful effects

EDO - ^{channels} status of units

3-4 spent fuel pools

- defective cable

123 stabilizing

NRC response

ERA - not identified anything - natural 100x more
all Japanese

90 day review - excluded all reactors - natural hazards, severe accident
generic communications - regulatory action in order - 30 day report
generic report - limited stakeholder involvement - no industry involvement

Domestic - top priority

systems & methods review - GRS

6/5/99 - earthquake

Interagency response - industry to industry reports

Generic letter - regulatory input on industry initiatives

BEA - Mark I BWRs - same design as V.S. - hardened vent? don't know

hydrogen explosion. Extra equipment after 9/11 - 65.5 - Don't know

5/5/483

Why don't Germany shut down? (Procedural)

Earthquakes 7.7 - 9 - Annix/Kammern - probabilities - defences don't consider 1-2 punch - secondary events.

Maynard. what moment? It has not occurred to B:11 Benefit of over conservative approach

Large issues - survived earthquake - tsunami - back up power - difficulty
biting resonance to prevent B53 - E20 - station blackout rule.
US industry - inventory of spare parts. Hydrogen from spent fuel don't know
Ostendert - model for new sensors - Benefit - need to be sure - not
every good idea makes sense - some could be counterproductive

JJS/484

3-23-11 Conference Call

■ Laura Haines - why unit 3?

Michael Freedl - radioactive iodine - source of iodine - from core as opposed to spent fuel pools - units 3+2.

Visit 3 - reactor pressure.

restore electricity - how long to test equipment? no clear

3-24-11 Conference Call

Laura Haines - Carper - workers exposed?

Michael - workers - too much time in water

- Tokyo water readers - below - don't know - wind patterns

- Black & gray smoke - Unit 3 - smoke - signs of melting.

no breach of vessel - leakage somewhere - sea water

Mary Francis - Task Force

- confirmation of 4 industrial actions

JJS/485