



## ASIA-PACIFIC

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4 April 2011 Last updated at 10:26 ET

# Japan nuclear plant releases radioactive water into sea

**Workers at Japan's quake-hit nuclear plant have begun dumping water with low levels of contamination into the sea to free up room to store more highly radioactive water leaking at the site.**

About 11,500 tonnes of water will be released into the sea at the crippled Fukushima Daiichi nuclear plant.

Water with a higher level of radioactivity leaking from the No 2 reactor can then be stored.

Efforts to tackle that leak are continuing.

The source of the leak was identified at the weekend as a 20cm (8in) crack in a concrete pit at reactor 2.

Workers are now using dye to try to trace the route of the water, after earlier efforts to plug the hole using a highly absorbent polymer failed.

### **'No choice'**

Operator Tepco has been struggling for more than three weeks to regain control at the plant after the huge earthquake and tsunami knocked out the cooling systems.

Workers face a dilemma - they must keep feeding water into the reactors to stop them

overheating, but must then deal with the accumulation of waste water.

Top government spokesman Yukio Edano said that there was no choice but to release some water.

"We are already aware that the water at the No 2 unit is highly radiated," he said.

"So as to prioritise to stop the leakage of this water into the sea... we will release the water stored in the exterior building of the unit, which also unfortunately contains radioactivity but far lower than the highly contaminated water."

The water to be released into the sea contains some 100 times the legal limit of radiation - a relatively low level, says the BBC's Roland Buerk in Tokyo.

"As it is not harmful to people's health and as it is necessary to avert an even bigger danger, we decided it was inevitable," said Hidehiko Nishiyama of Japan's Nuclear and Industrial Safety Agency (Nisa).

Stopping the leak from reactor 2 remains the priority, Mr Edano said earlier.

Tepco says it will inject the polymer again to try to block the flow of radioactive water as soon as it has identified the path of the leak.

As a temporary measure, Nisa is considering building embankments of silt near reactor No 2 to stem the leak into the ocean.

### **Search operations**

The official death toll from the 9.0-magnitude earthquake and tsunami which struck north-east Japan on 11 March stands at 12,157, with nearly 15,500 people still unaccounted for.

More than 80% of the victims have been identified and their bodies returned to their families.

Search operations within the 20km exclusion zone around the Fukushima Daiichi power plant have been suspended because of radiation concerns.

More than 161,000 people from quake-ravaged areas are living in evacuation centres, officials say.

A three-day joint operation by Japan's Self-Defense Forces and the US military to find the

missing recovered 78 bodies.

The operation, which ended on Sunday, involved about 25,000 troops, more than 60 ships and 120 aircraft.

It covered Pacific coastal areas of Iwate, Miyagi and Fukushima prefectures.

## **More Asia-Pacific stories**



### **France, Germany in artist appeal**

[\[/news/world-asia-pacific-12963468\]](#)

France and Germany call for the release of Chinese artist and dissident Ai Weiwei, detained by authorities in Beijing as he tried to board a flight.

### **Saudi acquittal angers Indonesia**

[\[/news/world-asia-pacific-12962400\]](#)

### **Kazakh leader storms to poll win**

[\[/news/world-asia-pacific-12949853\]](#)



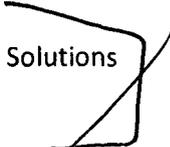
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**Deavers, Ron**

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**From:** Shannon, Valerie  
**Sent:** Monday, April 04, 2011 12:20 PM  
**To:** Bonaccorso, Amy; Deavers, Ron  
**Subject:** Call

6  
Name: Terri Hartfell  
From: Power Plus Professional Cleaning Solutions  
Phone: 714-635-9264  
E-mail: [Terrih@powerplusonline.com](mailto:Terrih@powerplusonline.com)  
Re: Want's to help with Japan situation



**From:** [Bonaccorso, Amy](#)  
**To:** [Harrington, Holly](#)  
**Subject:** FW: public questions  
**Date:** Monday, April 04, 2011 1:40:00 PM

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This one doesn't look Japan related.

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**From:** Royer, Deanna  
**Sent:** Thursday, March 31, 2011 3:47 PM  
**To:** Deavers, Ron; Bonaccorso, Amy  
**Subject:** public questions

Shawn Burke  
UBS Securities  
203-719-4748 ✓ *to*  
Re: 6 plants under serious safety review

Deanna Royer  
Contract Secretary  
Division of New Reactor Licensing  
(301) 415-7158  
Deanna.Royer@nrc.gov

*4/4/27*

**From:** Bonaccorso, Amy  
**To:** vic@innovative-designs.biz  
**Subject:** REPLY: FP&L  
**Date:** Monday, April 04, 2011 3:13:00 PM

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Hello Mr. Lohmann:

The U.S. Nuclear Regulatory Commission just put together a Task Force to examine the events in Japan, try to identify lessons learned, and also recommend any improvements to our system here in the U.S.

The press release is available here:  
<http://pbadupws.nrc.gov/docs/ML1109/ML110910479.pdf>

If you are interested, a public meeting is scheduled in May to review the progress of the Task Force and that meeting is open to the public.

**Week of May 9, 2011 - Tentative**

05/12/11 9:30 Briefing on the Progress of the Task Force Review of NRC Processes and  
A.M. Regulations Following the Events in Japan  
(PUBLIC MEETING)  
(Contact: Nathan Sanfilippo, 301-415-3951)  
Webcast

This information is located on this page: <http://www.nrc.gov/public-involve/public-meetings/schedule.html>

In addition, we have a website dedicated to news involving Japan and the NRC's follow-up actions:

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

I'm sorry that we don't have time to research specific questions at the moment, but hope that this information will be helpful to you.

Thank you,

Amy

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**From:** vic@innovative-designs.biz [mailto:vic@innovative-designs.biz]  
**Sent:** Monday, April 04, 2011 2:21 PM  
**To:** OPA Resource  
**Subject:** FW: FP&L

gentlemen;

In light of the recent tragedy in Japan and the unfolding nuclear contamination I believe there are many lessons that we may learn thru the failures there and how we can benefit from these experiences. Here in South Florida we have two nuclear facilities on the coast well within the reach of storm surges. although the tectonic fault lines in this region are less likely to produce earth

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quakes or resulting tsunamis it is very likely that at some point we will encounter another major hurricane that will bring with it a significant storm surge. In recent decades the storms that have lashed our shores have manifested themselves largely absent significant storm surges when contrasted with what each were capable of unleashing. Although a Tsunami and storm surges each have unique characteristics they share a common threat to our nuclear facilities and that being the ability to potentially knock out the primary and back up cooling systems by flooding the facilities and electrical equipment.

we should not pass up this opportunity to re-evaluate the potential threat this poses and act now to re-engineer the power sources, control systems and pump motors to elevate them all too well above potential sea levels at the height of storm surges. While we have been extremely fortunate in years past that we have not had to deal with this kind of cascading failure. Looking back to 1992 and the rath that Hurricane "Andrew" left in its wake, it could have easily been far more devastating than we have ever known. "Andrew" was originally predicted to have a storm surge of 15-18 feet and fortunately picked up speed in the hours before land fall that surge was muted to less than 10 feet. With the benefit of hindsight we may have passed far closer to a real nuclear disaster than we ever knew.

What specific steps has the NRC taken to reexamine the threat of storm flooding at our coastal nuclear facilities in the past and armed with information about the height of the water levels in Japan's recent tsunami how does that compare with the analysis that have been done previously to address this risk analysis?

sincerely,

Vic Lohmann  
Innovative Designs  
1404 Nautilus Isle  
Dania Beach, FL 33004

954-921-4318

954-929-2535 FAX

[www.innovative-designs.biz](http://www.innovative-designs.biz)

CRC 057000

**From:** [Bonaccorso, Amy](#)  
**To:** [Bonaccorso, Amy](#)  
**Subject:** FW: Safe installation and operation of PV - Join PHOTON's PV SAFETY Conference in Berlin  
**Date:** Monday, April 04, 2011 3:28:44 PM

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This is an advertisement - no response.

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

From: Janbergs, Holly On Behalf Of OPA Resource  
Sent: Monday, April 04, 2011 3:03 PM  
To: Bonaccorso, Amy  
Subject: FW: Safe installation and operation of PV - Join PHOTON's PV SAFETY Conference in Berlin

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

From: [wiebke.gottschalk@photon.de](mailto:wiebke.gottschalk@photon.de) [<mailto:wiebke.gottschalk@photon.de>]  
Sent: Monday, April 04, 2011 2:56 PM  
To: OPA Resource  
Subject: Safe installation and operation of PV - Join PHOTON's PV SAFETY Conference in Berlin

Dear Ms. Lois,

At a time ordinary media channels increasingly report about fire safety issues of PV systems and the solar industry and insurance companies increasingly working on related new standards and guidelines, PHOTON has invited leading experts to discuss this hot topic at the 2nd PV SAFETY Conference in Berlin on April 13, 2011 ([www.photon-expo.com/en/sthcs\\_2011\\_europe/conferences/pvsafe\\_info.htm](http://www.photon-expo.com/en/sthcs_2011_europe/conferences/pvsafe_info.htm)).

At the 2nd PV SAFETY Conference, representatives from PV companies, associations, insurance industry, testing organizations and fire fighters will discuss the challenges and threats of potential safety issues around solar, provide updates on guidelines and standards in preparation, as well as present solutions - from high quality control programs during production to technical devices for solar systems.

The 2nd PV SAFETY Conference in Berlin on April 13, 2011 includes presentations from:

#### PV SAFETY - THE PROBLEMS

Gernot Pfafferott, Berlin Fire Department, Germany  
»PV and fire safety - view from a firefighter«

Adrian Häring, German Solar Energy Association (BSW), Germany  
»Safety activities of the German solar industry«

Philippe Welter, PHOTON Europe, Germany  
»Overview on safety problems for solar systems«

Bill Brooks, Brooks Engineering, USA  
»Classifying the level of safety - identification and verification«

#### UNDERSTANDING THE PROBLEM

N.N., Schneider Electric, France  
»How a global energy management company handles quality control to keep products safe«

N.N., Renewable Energy Corporation (REC), Norway  
»Quality control of a fully integrated PV company«

4/4/29

Andreas Lietz, BDJ Versicherungsmakler, Germany  
»PV system safety - view from an insurance broker«

#### PV SAFETY REGULATIONS & STANDARDS - WHERE SHOULD WE GO?

Florian Reil, TÜV, Germany  
»Testing system safety in Europe«

Liang Ji, UL, USA  
»Fire safety system tests in the US«

Udo Siegfriedt, German Solar Energy Society (DGS), Germany  
»Guidelines for fire-safe PV system planning in Germany«

Thies Wernicke, Solon, Germany  
»Why intelligent modules already make sense today«

John Berdner, SolarEdge, Israel  
»Solar systems safety standards - from the view of an inverter manufacturer«

#### TECHNICAL SOLUTIONS TO ENSURE PV SAFETY

Patrick Betz, ABB, Switzerland  
»Case study: Reaction from the PV industry on the introduction of a product for system safety«

Sebastian Bieniek, SMA, Germany  
»Measures against arching - view from a large-scale string/central inverter maker

Olivier Jacques, Enphase, USA  
»Safety experience from deploying thousands of microinverters in the field«

Amedeo La Scala, STMicroelectronics, Italy  
»Active bypass diodes for solar modules«

Ralf Münster, National Semiconductor, USA  
»DC optimizers to control safety on the module level«

#### AGENDA:

To read the conference agenda, please go to: [www.photon-expo.com/en/sthcs\\_2011\\_europe/conferences/pvsafe\\_program.htm](http://www.photon-expo.com/en/sthcs_2011_europe/conferences/pvsafe_program.htm)

#### AUDIENCE:

As new fire safety guidelines will affect many in the solar sector, the conference addresses everybody involved and interested in quality control and safety in PV production and installations - from decision makers at module, inverter and installation companies, research organizations, insurance companies and project developers to electric utilities and investors.

#### FURTHER EVENTS:

The 2nd PV SAFETY Conference will take place on April 13 as part of the Solar Terawatt-hours Conference Series Europe from April 12-14, 2011, which includes six conferences - Solar Silicon, Inverters, PV SAFETY, PV Investors, PV Production Equipment and Solar Electric Utility Conference.

#### REGISTRATION:

To register for the 2nd PV SAFETY Conference please go to: [www.photon-expo.com/en/sthcs\\_2011\\_europe/ticket\\_registration/fax\\_email\\_registration.htm](http://www.photon-expo.com/en/sthcs_2011_europe/ticket_registration/fax_email_registration.htm).

I look forward to seeing you soon in Berlin.

Best regards,

Michael Schmela

Chairman of the Solar Terawatt-hours Conference Series Organizing Committee

PHOTON Europe GmbH  
Jülicher Straße 376  
52070 Aachen - Germany

~~Phone +49-241-4003-0~~  
~~Fax +49-241-4003-300~~

6

PHOTON International  
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CEO Annegret Kreutzmann

**From:** [Burnell, Scott](#)  
**To:** [Harrington, Holly](#)  
**Cc:** [Bonaccorso, Amy](#)  
**Subject:** RE: Can you call this person?  
**Date:** Monday, April 04, 2011 2:18:32 PM

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Done.

---

**From:** Harrington, Holly  
**Sent:** Monday, April 04, 2011 1:51 PM  
**To:** Burnell, Scott  
**Subject:** Can you call this person?

**From:** Royer, Deanna  
**Sent:** Thursday, March 31, 2011 3:47 PM  
**To:** Deavers, Ron; Bonaccorso, Amy  
**Subject:** public questions

Shawn Burke  
UBS Securities  
~~203-719-4748~~

Re: 6 plants under serious safety review

Deanna Royer  
Contract Secretary  
Division of New Reactor Licensing  
(301) 415-7158  
[Deanna.Royer@nrc.gov](mailto:Deanna.Royer@nrc.gov)

4/4/30

**From:** [Bonaccorso, Amy](#)  
**To:** [Terrih@powerplusonline.com](mailto:Terrih@powerplusonline.com)  
**Subject:** REPLY: Call  
**Date:** Monday, April 04, 2011 2:17:00 PM

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Hello Mr. Hartfell:

I got your message. Unfortunately, the U.S. Nuclear Regulatory Commission is not accepting volunteers. If you have an idea that your company is proposing that could help resolve the situation in Japan, the Institute of Nuclear Power Operations might be interested: [inpoercassistance@inpo.org](mailto:inpoercassistance@inpo.org).

Thanks,

Amy

---

**From:** Shannon, Valerie  
**Sent:** Monday, April 04, 2011 12:20 PM  
**To:** Bonaccorso, Amy; Deavers, Ron  
**Subject:** Call

Name: Terri Hartfell  
From: Power Plus Professional Cleaning Solutions  
Phone: ~~714-635-9264~~  
E-mail: [Terrih@powerplusonline.com](mailto:Terrih@powerplusonline.com)  
Re: Want's to help with Japan situation



4/4/31

**From:** [Bonaccorso, Amy](#)  
**To:** [Harrington, Holly](#)  
**Subject:** FW: public questions  
**Date:** Monday, April 04, 2011 1:40:00 PM

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This one doesn't look Japan related.

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**Sent:** Thursday, March 31, 2011 3:47 PM  
**To:** Deavers, Ron; Bonaccorso, Amy  
**Subject:** public questions

Shawn Burke  
UBS Securities  
203-719-4748  
Re: 6 plants under serious safety review

Deanna Royer  
Contract Secretary  
Division of New Reactor Licensing  
(301) 415-7158  
Deanna.Royer@nrc.gov

L/432

**From:** [Bonaccorso, Amy](#)  
**To:** [inpoercassistance@inpo.org](mailto:inpoercassistance@inpo.org)  
**Subject:** Inquiry from NRC Public Affairs - Okay to Refer Public to This Email Address?  
**Date:** Monday, April 04, 2011 9:18:00 AM

---

Hello:

I am helping the U.S. Nuclear Regulatory Commission's Office of Public Affairs with responding to inquiries from the public regarding the crisis in Japan. We just got a note saying that we could refer people with suggestions or with offers to assist to this email address: [inpoercassistance@inpo.org](mailto:inpoercassistance@inpo.org).

We want to confirm that you want to receive these emails because I can promise you that you will be getting them daily if we start referring them in your direction!

Thank you,

Amy

L/433

**From:** [Bonaccorso, Amy](#)  
**To:** [Harrington, Holly](#)  
**Subject:** FW: NEW TAC'S ASSOCIATED WITH SUPPORTING THE EVENTS IN JAPAN  
**Date:** Monday, April 04, 2011 9:43:00 AM

---

Holly:

The old Japan TAC is no longer in existence..... Do you agree that I should use an OPA TAC for my time here? (see below)

---

**From:** Matheson, Mary  
**Sent:** Monday, April 04, 2011 9:43 AM  
**To:** Bonaccorso, Amy  
**Cc:** Donaldson, Leslie; Pope, Tia  
**Subject:** RE: NEW TAC'S ASSOCIATED WITH SUPPORTING THE EVENTS IN JAPAN

You should use a TAC that is set up for OPA activity. Someone that currently is in OPA has a TAC that they use, this is the TAC you should be using.

Thanks Mary

---

**From:** Bonaccorso, Amy  
**Sent:** Monday, April 04, 2011 9:31 AM  
**To:** Matheson, Mary  
**Cc:** Donaldson, Leslie; Pope, Tia  
**Subject:** FW: NEW TAC'S ASSOCIATED WITH SUPPORTING THE EVENTS IN JAPAN

Hi Mary:

I am not sure where my work fits in.

I am working for Public Affairs for the next two weeks to answer Japan-related public and media inquiries. Me being in their office is 100% Japan related and I had used the old TAC ending in "61" previously.

Which TAC should I use to cover my work?

Thanks,

Amy

---

**From:** HRMSBulletin Resource  
**Sent:** Friday, April 01, 2011 1:59 PM  
**To:** HRMSBulletin Resource  
**Cc:** HRMSBulletin Resource  
**Subject:** NEW TAC'S ASSOCIATED WITH SUPPORTING THE EVENTS IN JAPAN

2/434

NRC will need to provide information relating to the costs associated with supporting the events in Japan that directly relates to the Earthquake and Tsunami. For pay periods 6 and 7 we created TAC ZG0061, this was used by all staff that directly performed duties that supported the Japan event. Going forward starting with pay period 8(March 27 – April 9), we will need to track any costs associated with support of the Japan event relating to the earthquake and tsunami in greater detail. Please do not use TAC ZG0061 after pay period 7 (PP 7 ended March 26, 2011). The separation into multiple TAC's for different activities is necessary for appropriate fee billing.

The new TAC's are listed below with a brief description.

**ZG0064** – Japan Support Team (In Japan). This TAC is to be used to record hours worked while employees are in Japan, for those employees who traveled to Japan to support the earthquake and tsunami.

**ZG0063** – Japan Event HQ Operations Watchstanders. This TAC is to be used to record hours worked when employees are working in the Operations Center. This is for employees who are working directly on activities that are supporting the Japan events relating to the earthquake and tsunami and who did not travel to Japan.

**ZG0062** – Work Performed, Lessons Learned relating to the Japan Event. This TAC is to be used for work that will be performed by staff in the agency as a lessons learned approach to improve the NRC's ability relating to operating reactors. This TAC is not to be used for any work that is described in the TAC's above.

It will not be necessary to do corrected cards for pay periods prior to pay period 8, the Division of the Controller will make all necessary corrections.

If you have any questions on these new TAC's please send an e-mail to [mary.matheson@nrc.gov](mailto:mary.matheson@nrc.gov).

**From:** [Matheson, Mary](#)  
**To:** [Bonaccorso, Amy](#)  
**Cc:** [Donaldson, Leslie](#); [Pope, Tia](#)  
**Subject:** RE: NEW TAC'S ASSOCIATED WITH SUPPORTING THE EVENTS IN JAPAN  
**Date:** Monday, April 04, 2011 9:42:46 AM

---

You should use a TAC that is set up for OPA activity. Someone that currently is in OPA has a TAC that they use, this is the TAC you should be using.

Thanks Mary

---

**From:** Bonaccorso, Amy  
**Sent:** Monday, April 04, 2011 9:31 AM  
**To:** Matheson, Mary  
**Cc:** Donaldson, Leslie; Pope, Tia  
**Subject:** FW: NEW TAC'S ASSOCIATED WITH SUPPORTING THE EVENTS IN JAPAN

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**From:** HRMSBulletin Resource  
**Sent:** Friday, April 01, 2011 1:59 PM  
**To:** HRMSBulletin Resource  
**Cc:** HRMSBulletin Resource  
**Subject:** NEW TAC'S ASSOCIATED WITH SUPPORTING THE EVENTS IN JAPAN

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**From:** [Harrington, Holly](#)  
**To:** [Bonaccorso, Amy](#)  
**Subject:** RE: NEW TAC'S ASSOCIATED WITH SUPPORTING THE EVENTS IN JAPAN  
**Date:** Monday, April 04, 2011 9:58:28 AM

---

Check with Beth or Brenda. Not sure of TAC actions

---

**From:** Bonaccorso, Amy  
**Sent:** Monday, April 04, 2011 9:44 AM  
**To:** Harrington, Holly  
**Subject:** FW: NEW TAC'S ASSOCIATED WITH SUPPORTING THE EVENTS IN JAPAN

Holly:

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**From:** Matheson, Mary  
**Sent:** Monday, April 04, 2011 9:43 AM  
**To:** Bonaccorso, Amy  
**Cc:** Donaldson, Leslie; Pope, Tia  
**Subject:** RE: NEW TAC'S ASSOCIATED WITH SUPPORTING THE EVENTS IN JAPAN

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**To:** Matheson, Mary  
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**Sent:** Friday, April 01, 2011 1:59 PM  
**To:** HRMSBulletin Resource

**Cc:** HRMSBulletin Resource

**Subject:** NEW TAC'S ASSOCIATED WITH SUPPORTING THE EVENTS IN JAPAN

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**From:** Bonaccorso, Amy  
**To:** [operations@asapinteriors.com](mailto:operations@asapinteriors.com)  
**Subject:** NRC Response to Email Dated March 17, 2011  
**Date:** Monday, April 04, 2011 11:35:00 AM

---

Hello Mr. Giunta:

Thank you for contacting us about your ideas. We appreciate suggestions that work toward resolving the situation in Japan; it's reassuring to see how helpful and dedicated private citizens have been in light of this disaster. Unfortunately, we are currently unable to consider each suggestion that comes in.

Please understand that the NRC has some of the most expert people in the world available to assist the Japanese authorities in whatever way they request. We are fully staffed in all our response teams at this time and working 24-hours a day.

Thank you,

Amy

L/435

**From:** [Harrington, Holly](#)  
**To:** [Bonaccorso, Amy](#)  
**Subject:** RE: I'm in!  
**Date:** Monday, April 04, 2011 8:45:37 AM

---

Sure, get your inbox under control. We also have Bethany here for media desk work.

Let's talk later about how to deal with the ongoing requests.

---

**From:** Bonaccorso, Amy  
**Sent:** Monday, April 04, 2011 8:36 AM  
**To:** Harrington, Holly  
**Subject:** I'm in!

Hey Holly:

I am in and know you need help with media inquiries, but my inbox right now is out of control full with stuff. Is it okay if I try to work it down a bit before switching over to media inquiries?

I also need to stop into Church Street at some point to get an SSN for an honorarium. Maybe I could do that over lunch – I don't know – I need to coordinate that with someone.

Anyway – I was thinking over the weekend and a lot of the stuff we are getting is still suggestions...or just general concerns. We could probably refer those people to a website. Like, have an email address for suggestions and an automated response. Some people don't have internet unfortunately, but I am trying to think of a way to reduce the burden on you all after I am gone. Some of it depends on the sensitivity that your office has to members of the public wanting in person attention and conversations. If they can get their answer online – is it bad PR in your view to politely tell them that we don't have time to talk to them and refer them to a website? Just something to think about.

Thanks,

Amy

1/4/36

**From:** [Bonaccorso, Amy](#)  
**To:** [Harrington, Holly](#)  
**Subject:** RE: I'm in!  
**Date:** Monday, April 04, 2011 9:13:00 AM

---

Okay – good timing – I was about to refer this “phil” guy we keep hearing from to it.

---

**From:** Harrington, Holly  
**Sent:** Monday, April 04, 2011 9:13 AM  
**To:** Bonaccorso, Amy  
**Subject:** RE: I'm in!

In that case, can you send an email to the address saying that we plan to direct people to it? See what response you get . . .

---

**From:** Bonaccorso, Amy  
**Sent:** Monday, April 04, 2011 8:58 AM  
**To:** Harrington, Holly  
**Subject:** RE: I'm in!

They have a very basic website that seems geared towards recruiting. But if they want the info, it's nice to be able to give people an email address and say “Good luck.”

---

**From:** Harrington, Holly  
**Sent:** Monday, April 04, 2011 8:50 AM  
**To:** Bonaccorso, Amy  
**Subject:** RE: I'm in!

I just got this e=mail:

send any suggestions and offers of assistance to [inpoercassistance@inpo.org](mailto:inpoercassistance@inpo.org), an email account that was set up by INPO for just this kind of input.

Can you jump on the INPO Web site and check this out? This would solve many problems for us . . .

---

**From:** Bonaccorso, Amy  
**Sent:** Monday, April 04, 2011 8:36 AM  
**To:** Harrington, Holly  
**Subject:** I'm in!

Hey Holly:

I am in and know you need help with media inquiries, but my inbox right now is out of control full with stuff. Is it okay if I try to work it down a bit before switching over to media inquiries?

I also need to stop into Church Street at some point to get an SSN for an honorarium. Maybe I could do that over lunch – I don't know – I need to coordinate that with someone.

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Thanks,

Amy

**From:** [Bonaccorso, Amy](#)  
**To:** [Harrington, Holly](#)  
**Subject:** RE: I'm in!  
**Date:** Monday, April 04, 2011 9:19:00 AM

---

Well – no auto-response from that email address – so we'll see.

---

**From:** Harrington, Holly  
**Sent:** Monday, April 04, 2011 9:13 AM  
**To:** Bonaccorso, Amy  
**Subject:** RE: I'm in!

In that case, can you send an email to the address saying that we plan to direct people to it? See what response you get . . .

---

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**Sent:** Monday, April 04, 2011 8:58 AM  
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**To:** Bonaccorso, Amy  
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send any suggestions and offers of assistance to [inpoercassistance@inpo.org](mailto:inpoercassistance@inpo.org), an email account that was set up by INPO for just this kind of input.

Can you jump on the INPO Web site and check this out? This would solve many problems for us . . .

---

**From:** Bonaccorso, Amy  
**Sent:** Monday, April 04, 2011 8:36 AM  
**To:** Harrington, Holly  
**Subject:** I'm in!

Hey Holly:

I am in and know you need help with media inquiries, but my inbox right now is out of control full with stuff. Is it okay if I try to work it down a bit before switching over to media inquiries?

I also need to stop into Church Street at some point to get an SSN for an honorarium. Maybe I could do that over lunch – I don't know – I need to coordinate that with someone.

Anyway – I was thinking over the weekend and a lot of the stuff we are getting is still

suggestions...or just general concerns. We could probably refer those people to a website. Like, have an email address for suggestions and an automated response. Some people don't have internet unfortunately, but I am trying to think of a way to reduce the burden on you all after I am gone. Some of it depends on the sensitivity that your office has to members of the public wanting in person attention and conversations. If they can get their answer online – is it bad PR in your view to politely tell them that we don't have time to talk to them and refer them to a website? Just something to think about.

Thanks,

Amy

**From:** phil  
**To:** [OPA Resource](#)  
**Subject:** Fw: Chelation of water already IN the reactors ?  
**Date:** Monday, April 04, 2011 12:43:49 PM  
**Attachments:** [Chelation Nuclear and Environmental chemistry.pdf](#)

---

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

**From:** [phil](#)  
**To:** [R4ALLEGATION Resource](#)  
**Sent:** Thursday, March 31, 2011 6:48 AM  
**Subject:** Chelation of water already IN the reactors ?

Attached

4/4/11

If you pre-treat the water now exposed to radiation and containing radioactive elements with chelation agents, you might be able to reduce environmental damage from present and future leaks of water and heavy metal salted steams. If a new leak overlaps an old leak, you might also reduce the overlapped initial hazards, if the solution concentrations have a sufficiently surplus amount of chelating agents in the solution. If you make the future design (see below, BTW, let's avoid anything but Liquid Thorium reactors) nuclear reactor containers chelation tolerant (even if only with a safety layer of chelate filled double lining), it might be a useful admix for the water, reducing occupational hazard factors BEFORE exposures. There are people trying to deactivate radiation, but even IF they ever discover a loophole, the only hazard reduction strategy now used that works well should be used. EDTA is plentiful and cheap, medically approved, and is a waste byproduct of paper production, so huge volumes can be made more available than is presently marketable. We don't need any bacterial Godzillas. Even though chelates can be bracketed as pollutants, making toxic elements excretable versus unexcretable is the overwhelming benefit. These type people

(<http://www.gdr.org/deactivationofradiation.htm>) might eventually find other ways, but I'd try creating an alloy of radioactive elements with absorbers, that is self-semi-neutralized instead of encased/clad, but let's not hold our breath. I personally wonder if a porous pellet can be immersed in or drained of a Wood's Metal, would depend on the evaporation/sublimation factors of the Wood's metal.

<http://www.google.com/search?hl=en&q=%22Prussian+Blue%22+radioactive>

<http://www.google.com/search?hl=en&q=%22Prussian+Blue%22+chelation>

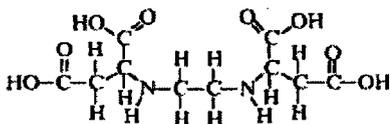
<http://www.google.com/search?hl=en&source=hp&q=%22Prussian+Blue%22&btnG=Google+Search>

Of course, I wonder why the fuels aren't pre-chelated, to make them easier to bio-excrete, since I can't think of any chemical binding factors that would alter the chain reaction factors, though, some of the chelates might not be able to stay chelated at operating or disaster temperatures, in which case, chelating agents should be applied as soon as temperatures reduce, maybe as a constituent of coolants. Maybe the fire trucks should be washing everything down with chelating coolants.

Environmental chemistry By Stanley E. Manahan p69

### 3.10.1 Occurrence and Importance of Chelating Agents in Water

Chelating agents are common potential water pollutants. These substances can occur in sewage effluent and industrial wastewater such as metal-plating wastewater. In addition to pollutant sources, there are natural sources of chelating agents. One such chelating agent is ethylenediaminedisuccinic acid,



a metabolite of the soil actinomycete, *Amycolatopsis orientalis*. Unlike a number of common synthetic chelating agents, such as EDTA (see below), ethylenediaminedisuccinic acid is biodegradable and has been used as an extractant for phytoremediation of sites contaminated with heavy metals.<sup>4</sup>

The most important pollutant chelating agents are aminopolycarboxylates, of which the most common examples are nitrilotriacetate (Figure 3.10) and ethylenediaminetetraacetate (EDTA) (structure illustrated at the beginning of Section 3.13). EDTA has been reported as a common pollutant in river water.<sup>5</sup> Because of their strong bonding to metal ions, the aminopolycarboxylate chelating agents are almost always encountered in the bound form, which has a strong effect on their chemistry and environmental fate and transport. To the extent that EDTA is present in wastewater, it prevents some metals from binding to and settling out with biomass sludge in biological wastewater treatment processes. Therefore, EDTA chelates compose most of the copper, nickel, and zinc in wastewater effluents<sup>6</sup> (most of these metals in excess of strong chelating agents present are incorporated into the sludge).

Chelation by EDTA has been shown to greatly increase the migration rates of radioactive <sup>60</sup>Co from pits and trenches used by the Oak Ridge National Laboratory in Oak Ridge, TN, for disposal of intermediate-level radioactive waste.<sup>7</sup> EDTA was used as a cleaning and solubilizing agent for the decontamination of hot cells, equipment, and reactor components. Analysis of water from sample wells in the disposal pits showed EDTA concentrations of  $3.4 \times 10^{-3}$  M. The presence of EDTA 12 to 15 years after its burial attests to its low rate of biodegradation. In addition to cobalt, EDTA strongly chelates radioactive plutonium and radioisotopes of Am<sup>243</sup>, Cm<sup>247</sup>, and Th<sup>232</sup>. Such chelates with negative charges are much less strongly sorbed by mineral matter and are vastly more mobile than the unchelated metal ions.

Contrary to the above findings, only very low concentrations of chelatable radioactive plutonium were observed in groundwater near the Idaho Chemical Processing Plant's low-level waste disposal well.<sup>8</sup> No plutonium was observed in wells at any significant distance from the disposal well. The waste processing procedure used was designed to destroy any chelating agents in the waste prior to disposal, and no chelating agents were found in the water pumped from the test wells.

The fate of radionuclide metal chelates that have been discarded in soil is obviously important. If some mechanism exists to destroy the chelating agents, the radioactive metals will be much less mobile. Although EDTA is only poorly biodegradable, NTA is degraded by the action of *Chlatobacter heintzii* bacteria. In addition to uncomplexed NTA, these bacteria have been shown to degrade NTA that is chelated to metals, including cobalt, iron, zinc, aluminum, copper, and nickel.<sup>9</sup>

Complexing agents in wastewater are of concern primarily because of their ability to solubilize heavy metals from plumbing and from deposits containing heavy metals. Complexation may increase the leaching of heavy metals from waste disposal sites and reduce the efficiency with

If you pretreat the radioactive water with chelation agents, persons with already undiscovered heavy metal buildups will incidentally lower their levels when exposed, but will also be subject to other essential critical metabolic mineral level changes, which, with this advance knowledge, can be corrected with common supplemental over the counter nutritional supplements. Blood panels used for monitoring all those potentially exposed, should be adjusted to monitor these usually ignored blood factors. Garden hoses are now required to have warning labels that advise people to wash their hands after use due to the lead and carcinogens now known to be in them (incidentally turning lawns, gardens and driveways into toxic residue collectors). Those who drink water infected with such lead would benefit from chelation, as indicated by blood tests with otherwise inexplicable lead levels.

You might want to use a few tons of EDTA or other chelation agents IN THE WATER, that will precede any future leak or exposure to the contaminated water. If stored IN the water, it might make the radioactive materials more able to be biologically discharged from anyone exposed to it, without hospital treatment. It might also be able to help make removal of the in-tank radioactive residues easier if the chelates can be induced to precipitate, and safer, so that storage reduces to a few gallons of just the residues, and not the bulk of the water it is now dissolved/diffused into. I don't know what it will do to the concrete, but it might affect the materials used for containers, so, thought needs to not be neglected. It might reduce the thickness of the piping and containers of the systems now containing it, but it should significantly reduce the proximity hazards.

EDTA has been used as a preservative for human blood evidence, and for common supermarket breads, since it can compensate over time as a small dose chelation that helps remove the radioactive residues that are in all our foods from crops, milk products from grazing animals, and their meats. However, EDTA also takes out some of the lesser weight elements, such as vanadium and chromium, so that these are taken to levels that reduce insulin production, and unless these "minerals" are replaced, processed breads can thus contribute to diabetic results.

<http://www.google.com/search?hl=en&source=hp&q=edta+chelation>  
<http://www.google.com/search?hl=en&q=edta+chelation+radioactive>  
<http://compmed.com/family-care/healthy-living-after-radiation-fallout/>

Also worth review: <http://www.oralchelation.com/LifeGlowBasic/technical/p83.htm> a blog debate about the Difference Between CALCIUM EDTA and MAGNESIUM EDTA

2008/08/11

**RADIO**

**18.01 Introduction**

The importance of radioactive substances in fallout from nuclear weapons testing has been considered the major source of radionuclides in children and contains measurable amounts of strontium-90, iodine-131, barium-140, and cesium-137. These radionuclides require their careful separation from natural milk ash components.

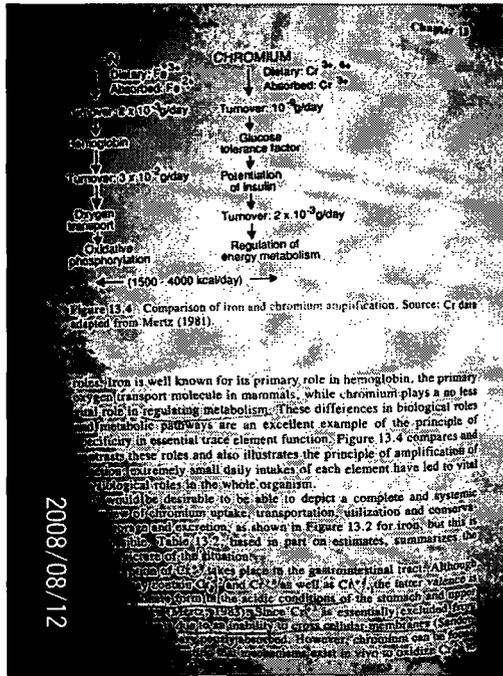
**18.02 Sample Preparation—Rapid Ashing**

An initial step in most radiochemical analyses of biological samples is the removal of organic materials, generally by wet or dry ashing. The low concentration of radionuclides requires a large sample (about 1 liter). One analyst requires eight samples of milk to which one work day by the method (18.03-18.04). An alternative nonashing ion-exchange method suitable for determination of radionuclides in milk are also described (18.15, 18.19).

**18.03 Apparatus**

18.031. "Vycor" silica evaporating dish—350 ml capacity  
 18.032. Blast burner—Suitable for use with compressed air  
 18.033. Variable flow pump—Low volume, 0 to 20 ml/min  
 18.034. Rotating evaporating dish holder—Although a 600 ml unit must be built to operate under high vacuum  
 18.035. Separator funnel—2 liter capacity

2008/08/12



...will be discussed at further length in Chapter 14, measurements of serum concentrations and urinary excretion of metals, while useful, do not provide a true picture of either of these effects. Unfortunately, with the advent of modern, highly sensitive techniques for determining metal content of biological materials (atomic absorption spectroscopy, neutron activation analysis, inductively coupled plasma-mass spectroscopy, etc.), a number of commercial concerns have become involved in diagnostic studies of trace element profiles in patients and in normal individuals. Homeostasis may permit a broad range of concentrations about the optimal concentration for any essential trace element (c.f. Figure 13.1); thus, in the absence of a metallic implant which could produce elevated concentrations and/or different valence states, small changes in serum metal concentrations to this assertion may be chromium: increasing dietary intake of refined sugar which contains less chromium than raw sugar but requires less chromium (Mertz, 1983) may lead to progressive...

2008/08/12

Nuclear reactor workers who might have been subjected to multiple chelations to compensate for multiple suspect exposures might show a higher statistical level of diabetes. Also, if viewed under Ultraviolet Light flashes on camera, might also show a much lower skin bacteria count, which I suggested a decade ago might help airports detect not only nuclear submarine and other nuclear industry employed persons, but also clandestine exposed persons of the terrorist kind.

<http://www.google.com/search?hl=en&q=chromium+vanadium+diabetes&btnG=Search>  
<http://www.google.com/search?hl=en&q=vanadium+metabolism+diabetes&btnG=Search>

My mom died of diabetic complications, her glucose was always way above 400, until I got her on chromium and vanadium supplements, within a day she was regulating to 100+/- 5, even with some ice cream splurges. And that was in spite of her undiagnosed Polident metals poisonings, (<http://www.google.com/search?hl=en&q=Polident+Poisoning>). But, it was too late, too much vascular damage had occurred, since when the blood sugar goes that high, all the normally docile beneficial bacteria go on a picnic, and don't have healthy bathrooms to send their toxic wastes into. She got Gangrene in her kidneys, if I had known, I would have tried zappers to kill those bacteria. These stopped my knee infections in just a few minutes, ear infections in just 30 minutes instead of 3 days, without antibiotics. Too bad I won't be able to legally use them on strangers in a plague disaster until after all the doctors are dead.  
<http://www.google.com/search?hl=en&q=paradevices+zappers&btnG=Search>

<http://www.google.com/search?hl=en&source=hp&q=chelation+boron>

Still a neutron absorber.

<http://www.google.com/search?hl=en&q=chelation+lead>

<http://www.google.com/search?hl=en&q=chelation+cadmium>

<http://www.google.com/search?hl=en&q=chelation+iodine>

<http://www.google.com/search?hl=en&q=chelation+cesium>

<http://www.google.com/search?hl=en&q=chelation+uranium>

<http://www.google.com/search?hl=en&q=chelation+dtpa>

DTPA comes in two forms: calcium (Ca-DTPA) and zinc (Zn-DTPA). Both forms work by tightly chelating (holding on to) **plutonium**, americium, and curium. These radioactive materials (bound to DTPA) are then passed from the body in the urine. When given within the first day after internal contamination has occurred, Ca-DTPA is about 10 times more effective than Zn-DTPA at chelating **plutonium**, americium, and curium. After 24 hours have passed, Ca-DTPA and Zn-DTPA are equally effective in chelating these radioactive materials.

If the normal chelating agents can't take operating temperatures, are there any other elements or compounds that can make otherwise unchelated radioactive elements more easily excretable ?

Some lateral thinking about what would be required for future reactors, design-wise, that makes up for present deficiencies of human or electronic control systems.

Use floats to hold up rods when there is enough water. When the water level drops, the rods drop into lead and cadmium lined holes. AND, they are released to drop if the temperature rises too high, even if the water level doesn't drop, since with high enough pressure, water won't turn to steam and drop the level, no matter what the temperature.

Unroll a blanket/carpet of rods down a slope, whenever temperature rises or water level drops, a simple mechanical system with a de-scientific complexity factor that needs NO electronics to function in self-protective safety mode. It would involve a higher volume of water maybe, which would take longer to rise to steam temperature, and longer to cool, but would have a more inertial heat factor, a possible advantage.

The central rods would deplete the fastest, and be in the middle of the least spent rods whose life can be extended, and maybe breed a longer life for the most internal rods. This ladder-like chain of rods, would unroll into channels of lead/cadmium, that would isolate them from adjacent rods, while making any residual chain reaction 2D instead of 3D. This would make the rods lie on their sides, so there isn't any collapse of the stack of pellets. In case higher heat capacity is needed, the base where the rods will lie might benefit from Tungsten, or something like that. This would increase the volume/displacement of the water for some geometries, which could be beneficial, since the temperature rise and falls would be averaged over a larger mass of molecules.

Computer programs for calculation of chelation factors:

<http://www.google.com/search?hl=en&q=free+chelator+calculator+program&btnG=Google+Search>

EDTA shouldn't be allowed to induce diabetes

<http://www.google.com/search?hl=en&q=%28chelation%2Cchelating%29+%28nickel%2Cni%29>

<http://www.google.com/search?hl=en&q=antidote+nickel&btnG=Google+Search>

[http://72.14.203.104/search?q=cache:JE6pbBMr58IJ:www.coldcure.com/html/stability\\_constants.html+\(chelation,chelating\)+\(nickel,ni\)&hl=en&gl=us&ct=clnk&cd=9](http://72.14.203.104/search?q=cache:JE6pbBMr58IJ:www.coldcure.com/html/stability_constants.html+(chelation,chelating)+(nickel,ni)&hl=en&gl=us&ct=clnk&cd=9)

Fw: selective reconstitution of chelation excreted essential minerals? attachment is the program calculator

Also worth review: <http://www.oralchelation.com/LifeGlowBasic/technical/p83.htm> a blog debate about the Difference Between CALCIUM EDTA and MAGNESIUM EDTA

CHELATOR Users Manual  
version 1.00  
20/02/1992

Theo J.M. Schoenmakers  
General

PLEASE READ THE README FILE (CHELREAD.ME) ON THE DISKETTE!

CHELATOR is intended to be freeware (public domain). You may freely copy and distribute it, but I urge you to include all the files (or, as a failsafe alternative, copy only PACKCHEL.EXE and run it).

Although I've done my best to include only well-established stability constants and double-checked all constants in the default datafile, I cannot guarantee that what this program calculates is the absolute truth under all imaginable conditions. A fact is that the default datafile primarily contains constants measured near 37 degrees C. In such a way I do not have to extrapolate constants determined at 25 degrees C too much for my own experiments. If you mainly perform experiments at 20 degrees C or so, you are probably better off changing the stability constants in your personal datafile (more on this later).

At run-time, you need CHELATOR.EXE and your datafile .DAT (default: CHELDFLT.DAT) in the current directory.

An introductory explanation about the program may be obtained by typing a question mark after the program name (separated by a space) at the DOS prompt. In order to obtain the requested information, the CHELATOR.TXT file must be present in the current directory.

The terms 'metal' and 'chelator' should be self-explanatory to the users of this program. The term '(pH )buffer' might need some elaboration: if a compound acts as a pH buffer, BUT BINDS METAL IONS AS WELL, it should be entered as a 'chelator'. The H<sup>+</sup> binding action of such compounds will be accounted for when stability constants for binding of H<sup>+</sup> have been entered (which, by the way, is obligatory!). Only when a compound has no known affinity for the metal ions in the system should it be entered as 'pH buffer'.

NOTE: CHELATOR was implemented in Borland Turbo Pascal 5.5.

---

#### Introduction

CHELATOR is a menu-driven calculation program written in Turbo Pascal 5.5p for use on IBM-PC compatible computers.

CHELATOR is a greatly enhanced version of a previous program for calculating free metal cation concentrations based on the method used by van Heeswijk, Geertsen and van Os, J. Membrane Biol. 79, 19-31 (1984). Some errors in this routine have now been corrected. Also, ten other possible equilibria can be considered per metal-chelator pair. We reported on this program in Biotechniques.

The program automatically recalculates metal-chelator stability constants for effects of ionic strength, temperature, and pH. All ion activities are converted to their respective concentrations using the activity coefficient derived for the ionic strength. Where possible, temperature effects are calculated by Van 't Hoff's Isochore. A detailed description of the methods used can be found in Biotechniques.

#### Menu's

CHELATOR uses a menu-based structure much like that of popular programs such as PC SHELLp6 or Borland Turbo Pascalp5.5. The menus may be operated by cursor keys or a Microsoftp compatible mouse. When you use a mouse, please remember that the left button is confirmative (ENTER), while the right button cancels (ESC). You may drag the menus (i.e. moving through the menus with the left mouse button pressed), but double-clicking is not supported (and not necessary). Note that dragging is not supported in any of the dialog boxes! Dialog boxes only support cursor keys, or simple mouse clicks.

When you use CHELATOR, you generally should proceed through the main menu from left to right.

## File

The option 'Load' in the 'File' menu will give you a listing of .DAT files in the CURRENT directory from which you may pick one file. The datafile will be read. This file contains information on metals, chelators, stability constants, pH buffers, media composition and special program options. Once you are familiar with the program you can save your personal named datafile with the 'Save' option in the 'File' menu. It is not allowed to overwrite the default datafile. The 'Edit' option further expands this flexibility.

## Edit

The 'Edit' option of the main menu should NOT be used until you are thoroughly familiar with CHELATOR. You normally skip this menu item. It serves to configure datafiles. You may add, delete or change metals, chelators, pH buffers, or specify stability constants regarding a specific combination of metals and chelators. In this way, you may formulate a datafile containing only those data you are concerned with. Please be familiar with the theoretic background of stability constants before changing any constants!

The maximum number of entries for chelators, metals and pH-buffers is 15. You may freely delete entries you will never use from your personal datafile. However, CHELATOR will not permit you to delete H<sup>+</sup>. Also, you MUST enter K1 and K2 for binding of H<sup>+</sup> when you add a new chelator to the list.

When you add a chelator, you are asked for its name (maximally 5 characters long), the stability constant for self-association ( $C + C \leftrightarrow C_2$ ), and its valence (usually negative). Then, the program proceeds through the list of available metals to allow you to enter stability constants for several equilibria. You must add the first two constants K1 and K2 for H<sup>+</sup>. If you do not do this, 'Prepare calculations' will abort with an error. You proceed to the next metal by pressing F9 (Accept) or clicking the left mouse button when the mouse cursor is on the Accept-field.

Metals are added in a similar way. You are asked to enter a name (maximally 4 characters; I suggest you use 'Xx?+', where 'Xx' is the commonly used mnemonic for this metal and '?' is its valence). Next, CHELATOR asks for the valence of the metal. After this, the program proceeds through the list of chelators in order to let you provide stability constants. When adding a pH-buffer to the datafile, one must enter its name (up to 15 characters), its kind (see below), its pKa at 25 degrees C, and its delta pKa at 25 degrees C. We describe the kind by two terms: Cationic is used when the pH-buffer is positively charged at pH < pKa, and anionic when the pH-buffer is not charged at pH < pKa.

Please remember that changes made in the datafile are only made in the computer's memory. They are not saved automatically! You must use 'Save' in the 'File' menu to save the modified datafile to disk.

## Media

The 'Media' option of the main menu is used to inform the program about the composition of your assay media and the experimental conditions. Here you may enter which chelators, metals and pH buffers you choose to use in your experiment. The program will ask for the total concentrations of the chelators and pH buffers. Furthermore, you are asked to enter pH, temperature and final ionic strength of your media.

The latter option requires some explanation: the figure is entered in ionic equivalents.

Total ionic strength = summation( $c \cdot |z|$ )/2;

where c = concentration and z = valence of anion or cation. So CHELATOR wants you to add up concentration times valence, not concentration times valence<sup>2</sup>, as in 'classical' ionic strength. The figure you enter in 'ionic strength' represents the total ionic strength of the media. The program then computes the contribution to ionic strength of pH buffers, free chelators, free metals and all complexes. In calculating the contribution to ionic strength of the added metal salts involved in the calculation, the program assumes that these salts have MONOVALENT counter-anions!!

The program calculates the degree of ionization of pH buffers by (re)calculating their pKa's as a function of temperature (according to Good et al. Biochemistry 5: 467-477 (1966), correction for ionic strength in the physiological range is semi-absent), and thereby the buffers' contribution to the final ionic strength.

When calculating free metal cation concentrations, the program will subtract contributions of complexes, free metal cations, ionized pH buffers, etc. from the figure of 'total ionic strength' and will end up with a 'medium ionic strength', representing the actual ionic strength of the monovalent ions in your assay medium. E.g. for a typical assay medium with 150 mM NaCl, some 1 mM of chelating substances, about 1 mM total CaCl<sub>2</sub> and 1 mM total MgCl<sub>2</sub>, plus some 25 mM pH buffers, your final ionic strength would be around 160 ionic equivalents. So, you should enter this figure in the final ionic strength box, and modify it when the metal calculations yield medium ionic strengths differing from 150. Usually, you only need one iteration to come to a value that is valid for all media you want to test. An iterative procedure would solve this of course, but calculation times would increase.

## Calculate

The 'Calculate' option of the main menu contains the actual computing of the program. After you have selected a media composition, the program first needs to calculate a number of coefficient arrays and the effects of the experimental conditions on the stability constants. Therefore, you have to choose 'Prepare calculations'.

Once the preliminary calculations have been performed, the program offers the possibilities to calculate total metal cation concentrations from wanted free concentrations, and the other way around. The latter procedure is iterative and you may enter a precision in the 'Special' option of the main menu. Please note that CHELATOR also gives a medium ionic strength, which has to be equal to the ionic strength of the monovalent cations in your solutions (see above).

## Special

The 'Special' option of the main menu offers four items. Two of these ("Complex conc.'s shown" and "Beeping") are toggles (ON/OFF). 'Printer' can also be toggled ON and you will have to specify whether you are using an Epson-type printer or a HP-type. If you activate this option and then prepare calculations, a listing of stability constants and medium conditions will be printed. Otherwise, only calculation results will be printed. Note: the program tries to perform a page feed if you toggle the printer option OFF. If the printer is not connected to the computer at that moment, this may lead to a 'semi-hangup' of the computer lasting several seconds (depending on the type and speed of the computer)! "Complex conc.'s shown" (if ON) results in the display of concentrations of the metal-chelator complexes. 'Iteration tolerance' allows you to specify a tolerance for the calculation of free from total metal cation concentrations. 'Beeping' may be toggled OFF if you are not amused by a musical PC.

## The default datafile, CHELDFLT.DAT

Some peculiarities might need further explanation.

- Beware of metals with many water molecules in their hydration shell (e.g.  $Al^{3+}$  or  $Cu^{2+}$ ). CHELATOR offers some ways to account for the equilibria involved, but these might be inadequate. Look up as many stability constants as you can and try to reduce some equilibria to those included in CHELATOR.

- Citrate is listed as having a charge of -3. This represents citrate with one bound proton. All constants listed refer to binding of ions to the  $H^+$ -citrate form. The reason is that citrate binds its first proton with a  $K$  around 16. This first proton will always be bound under normal physiological conditions. Care should be observed when multivalent metal ions are to be used: such ions (e.g.  $Cu^{2+}$ ) might be able to remove this bound proton, in which case you have to deal with completely different binding characteristics.

- Amino acids (e.g. aspartate or glutamate) are included in the default file, but should not be used at high concentrations. Free metal ion concentrations should be controlled by more specific chelators. Apart from their non-selectiveness these compounds suffer from a tendency to form a double complex ( $MC + C \leftrightarrow MC_2$ ) when their concentration is high. Since CHELATOR does not account for such reactions yet, calculations regarding the above conditions may yield incorrect results.

- Some stability constants of the reaction  $M + HC \leftrightarrow MHC$  ( $K_d$ ) are listed as "calculated" in the stability constant table. These had to be computed from the tabulated stability constants for  $C + H \leftrightarrow HC$  ( $K_a$ ), for  $C + M \leftrightarrow MC$  ( $K_b$ ) and for  $MC + H \leftrightarrow MHC$  ( $K_c$ ) by the formula  $K_d = K_b + K_c - K_a$ . Note that (as everywhere else in the program) logarithms of the actual stability constants are used; this is why the constants are added, not multiplied.

## Last remarks

This should cover most of the operation of CHELATOR. If you have questions or suggestions, do not hesitate to contact me. An update with suggested changes will become available to registered users (please remember: no fees are involved in registering!) in about one year. Apart from the suggested improvements it will certainly implement much improved windowing (it will be implemented in Turbo Pascal<sup>®</sup> 6.0 using Turbo Vision).

## DISCLAIMER

I seem to have to write the following lines in order to avoid any unwanted consequences of distributing my little creation. I will not be liable for any damages, including lost profits, lost savings, lost time, lost data, wrong experiments, or other incidental or consequential damages arising out of the use of or inability to use CHELATOR, even if I have been advised of the possibility of such damages, or for any claim by any other party.

Th. Schoenmakers

These search terms have been highlighted: packchel zip

-----  
>Subject: EDTA-Magnesium relationship  
>From: Michael Allen (m3allen at sciborg.uwaterloo.ca)  
>Date: Thu 30 Mar 2000 - 20:33:02 BST

>I was wondering if any of you could tell me how many divalent cations  
>(Mg<sup>2+</sup> specifically) a single EDTA (ethylenediaminetetraacetic acid)  
>molecule can bind at one time.  
>I have searched high and low for this, but could not find a good answer.  
>Thanks in advance

>Mike Allen  
>University of Waterloo  
>Ontario, Canada

Chelation of magnesium by EDTA occurs at a 1:1 molar ratio. The stability constants of EDTA for Ca<sup>++</sup> and Mg<sup>++</sup> are 10.61 and 8.83. The log<sub>10</sub> of the difference (1.78) is approximately 60, therefore the ratio of complexed Ca<sup>++</sup> to Mg<sup>++</sup> in an equimolar mix is about 60:1. EGTA has a lower stability constant for Mg<sup>++</sup>, so the ratio is about 4 e 5.

The K<sub>i</sub> at pH 7 or 8 is the "apparent" value at a particular pH which considers all forms of complexing species, rather than only the most anionic. EDTA has 4 pK<sub>a</sub> values (1.99, 2.67, 6.16 and 10.26) and, at pH 7.0, a = 2.08 e 3, so that log a = 3.3. For Mg<sup>++</sup>:EDTA at pH 7.0: log K<sub>i</sub> (apparent) = 8.7 - 3.3 = 5.4. See R. M. C. Dawson, D. C. Elliot, W. H. Elliot and K. M. Jones 1969, Data for Biochemical Research. Oxford Univ. Press, New York.

[www.biotechniques.com/](http://www.biotechniques.com/) has a free chelator calculator program available to subscribers:

PACKCHEL.ZIP &nbsp;Size: 54521 byte(s).  
Chelator Calculation of total and free divalent cations obtained using metal chelators. The program automatically recalculates metal-chelator stability constants for effects of ionic strength, temperature, and pH. By editing the datafile, one may add/delete/change chelators, metals, or pH buffers present in the original CHELDFLT.DAT datafile or any other datafiles created with CHELATOR.

Tim Fitzwater  
Gilead Sciences

#### MAGNESIUM DEFICIENCY AND DIABETES

Jerry L. Nadler, MD - The link between diabetes mellitus and magnesium deficiency is well known. A growing body of evidence suggests that magnesium plays a pivotal role in reducing cardiovascular risks and may be involved in the pathogenesis of diabetes itself. While the benefits of oral magnesium supplementation on glycemic control have yet to be demonstrated in patients, magnesium supplementation has been shown to improve insulin sensitivity. Based on current knowledge, clinicians have good reason to believe that magnesium repletion may play a role in delaying type 2 diabetes onset and potentially in warding off its devastating complications -- cardiovascular disease, retinopathy, and nephropathy.  
more

The International Medical Veritas Association (IMVA) introduces a much needed medical intervention for the prevention and treatment of diabetes and the many complications that come from it. The treatment is very much linked to the hidden realities of the causes of diabetes. In this particular case the cause and the cure are intimately connected.

There are two mammoth factors that the IMVA has discovered are linked to the horrendous rise in diabetes in adults and children that the western medical establishment has not paid attention to. The first is deficiency in magnesium, and the other is chemical poisoning. The convergence of large drops in cellular magnesium, which offers protective coverage against chemical toxicity, and increasing poisoning of people's blood streams with heavy metals like arsenic and mercury, as well as a literal host of other chemical toxins in the environment, are teaming up to create a literal pandemic. Eating junk food fits right into this alarming picture for poor diet translates immediately into massive magnesium deficiencies, and modern processed food is also high in chemical preservatives and pesticides that are also harmful to health.

Diabetes gives us a clear picture of how the human race is being caught between a rock and a hard place, a kind of devils anvil of our own corporate making. The human body is failing to deal with massive chemical exposure in the face of hugely increasing deficiencies in basic nutrients like magnesium. Malnutrition is now in full bloom in the first world even among the obese.

Magnesium deficiency is a predictor of diabetes; diabetics both need more magnesium and lose more magnesium than most people. In two new studies, in both men and women, those who consumed the most magnesium in their diet were least likely to develop type 2 diabetes, according to a report in the January 2006 issue of the journal *Diabetes Care*. Until now, very few large studies have directly examined the long-term effects of dietary magnesium on diabetes. Dr. Simin Liu of the Harvard Medical School and School of Public Health in Boston says, "Our studies provided some direct evidence that greater intake of dietary magnesium may have a long-term protective effect on lowering risk," said Liu, who was involved in both studies. See *Magnesium and Diabetic Neuropathy*, which introduces the concept of administering mega doses of magnesium to heal Diabetic Neuropathy.

Prolonged use of Magnesium will prevent chronic complications from diabetes.[iv]

"The current "party line" on this subject is not universally accepted, but many of us believe the establishment is too conservative and will some day change. While admitting its importance, for some unknown reason they remain reluctant to recommend magnesium supplements. They just do not know how poor the American diet is in Mg and the frequency of magnesium deficiency" says Dr. Mansmann.[v]

Magnesium for Diabetes is Critical Magnesium affects carbohydrate metabolism by influencing the release and activity of insulin, the hormone that controls blood sugar levels, by influencing the resistance and sensitivity to insulin. Magnesium for diabetics is critical. At least twenty five percent of diabetics have hypomagnesemia[i] and this is likely an underestimate. One group has recently suggested that the effects of reduced glutathione on glucose metabolism may be mediated, at least in part, by intracellular magnesium levels

Poorly controlled diabetes increases loss of magnesium in urine.

It would be prudent for physicians who treat diabetic patients to consider magnesium deficiency as a contributing factor in many diabetic complications and as a main factor in exacerbation of the disease itself. Recent research from many sources suggests that magnesium for the treatment of diabetes should be paramount in physicians' minds. The most recent example, after only 8 weeks of oral magnesium, thermal hyperalgesia was normalized and plasma magnesium and glucose levels were restored towards normal in rats.[vi]

Repletion of the deficiency with transdermal magnesium chloride mineral therapy[vii] is the ideal way of administering magnesium in medically therapeutic doses. Such treatments will, in all likelihood, help avoid or ameliorate such complications as diabetic peripheral neuropathy, arrhythmias, hypertension, and sudden cardiac death and will even improve the course of the diabetic condition in general.[viii]

Once doctors, primary healthcare providers and the public are made aware of the role of magnesium in diabetes there will be no excuse to not increase public magnesium consumption, which can even be added to water supplies[ix] instead of poisonous fluoride[x] and dangerous statins[xi],[xii],[xiii] which are also known to cause peripheral neuropathy with long term use. During a stroke or heart attack it would be cruel, medically incompetent and life threatening to not use magnesium chloride or magnesium sulfate immediately. The same kind of treatment that saves lives in dramatic life threatening situations is urgently needed in the treatment of diabetes and diabetic neuropathy.

Rapid increase of magnesium stores are necessary in some cases and may be lifesaving for diabetics as they are for other patients in emergency rooms.

Preventative effects of magnesium may go a long way to protecting the children of the future from early onset of both diabetes and the complications that come from it. The safety profile of magnesium chloride is extraordinary compared to today's pharmaceutical drugs. It is only with severe renal insufficiency that problems have been observed with magnesium treatments. The elderly are at risk of magnesium toxicity only because of possible decreased renal function so caution is necessary.

**Diabetic Children and Magnesium** Is a lack of magnesium related to type 2 Diabetes in Obese Children?

On Monday, November 7, 2005, The Associated Press said that "About 2 million U.S. children ages 12 to 19 have a pre-diabetic condition linked to obesity and inactivity that puts them at risk for full-blown diabetes and cardiovascular problems, government data suggest." One in 14 boys and girls in a nationally representative sample had the condition. Among the overweight adolescents, it was one in six. The study in question appears in November's Pediatrics. It is based on data involving 915 youngsters who participated in a 1999-2000 national health survey.[i]

The autism disaster is happening at a rate of one child in approximately 166, though if one counts all the severe learning disabilities it is one in six. What is happening to the nation's children? The CDC does not know because it has its head stuck in the bird flu sand. And the FDA does not know because it has been too busy allowing the pharmaceutical companies to poison children.

Dr. Teresa A. Hillier has reported, "Diabetes increased the risk of heart attack and stroke in both age groups, but the increased risk was much larger in younger people. People who had been diagnosed before age 45 were 14 times more likely to have a heart attack and 30 times more likely to have a stroke than their non-diabetic peers. In contrast, older people with diabetes were four times more likely than their peers to have a heart attack and three times more likely to have a stroke." Hillier and a colleague, Kathryn L. Pedula, based their findings on a study of nearly 8,000 people who were newly diagnosed with type 2 diabetes.[ii]

While type 2 diabetes used to be primarily a problem of middle and old age, new cases of the illness among people 30 to 39 have risen 70 percent in the last decade.

What is happening to our children is a disaster and no words can express the pain and agony that millions of parents are facing in the United States alone. Some day the medical authorities will be held responsible for their failure to address these issues. In the area of autism spectrum disorders the government just does not want to admit that hundreds of thousands of children have been damaged by vaccines laden with mercury. Poisoned is the word but no one at the FDA or CDC knows anything about the dangers of low level toxicity because knowledge in those areas brings guilt and criminal prosecution.

Diabetes has risen by over 14 percent in the last two years. The CDC estimates that 20.8 million Americans -- 7 percent of the U.S. population -- have diabetes, up from 18.2 million in 2003. [iii][iii] Centers for Disease Control

Is a lack of magnesium related to type 2 Diabetes in Obese Children? Dr. Huerta and colleagues say yes in their study titled Magnesium deficiency is associated with insulin resistance in obese children.[iv] Insulin resistance occurs when the body does not use insulin, a protein made by the pancreas, to turn glucose into energy. Children who are obese (seriously overweight) are more likely to have insulin resistance. This might be because they have low magnesium levels in their blood. This study was done to see if obese children get enough magnesium in their diets and if a lack of magnesium can cause insulin resistance and eventually type 2 diabetes. This is the first study linking low magnesium levels to insulin resistance in obese children. Researchers found that 55% of obese children did not get enough magnesium from the foods they ate, compared with only 27% of lean children. Obese children had much lower magnesium levels in their blood than lean children. Children with lower magnesium levels had a higher insulin resistance.

The results of the diet survey showed that obese children got 14.4% less magnesium from the foods they ate than lean children, even though obese and lean children ate about the same number of calories per day. Obese children eat more calories from fatty foods than lean children. In addition to not eating enough foods rich in magnesium, obese children seem to have problems using magnesium from the foods they eat. Extra body fat can prevent the body's cells from using

magnesium to break down carbohydrates.

When it comes to diabetes there is no lack of information pointing to magnesium deficiency and chemical poisoning converging on the young but medical authorities find it too difficult to address magnesium deficiencies and warn parents of the chemical dangers. The United States government seems to be involved in a huge cover up of medical and pharmaceutical wrong doings and will just keep on letting things slide as hundreds of thousands of kids each year get sick.

Medical science has discovered how sensitive the insulin receptor sites are to chemical poisoning. Metals such as cadmium, mercury, arsenic, lead, fluoride[ii] and possibly aluminum may play a role in the actual destruction of beta cells through stimulating an auto-immune reaction to them after they have bonded to these cells in the pancreas. It is because mercury[iii] and lead attach themselves at highly vulnerable junctures of proteins that they find their great capacity to provoke morphological changes in the body. Changes in pancreatic function are among the pathogenetic mechanisms observable during lead intoxication.[iv] Chemical Causes of Diabetes

Lead exposure has been associated with an increased risk of hypertension, and is a well-established risk factor for kidney disease. Whether lead affects blood pressure indirectly through alterations in kidney function or via more direct effects on the vasculature or neurologic blood pressure control is unknown though. Researchers at Harvard Medical School state, "Our findings support the hypothesis that long-term low-level lead accumulation (estimated by tibia bone lead) is associated with an increased risk of declining renal function particularly among diabetics or hypertensives, populations already at risk for impaired renal function." more ---- Childhood Immunization ---- Where to buy Magnesium Chloride

Childhood Vaccinations and Juvenile-Onset (Type-1) Diabetes by Harris Coulter, Ph.D.

#### Magnesium and Diabetic Neuropathy

Diabetic neuropathy, a complication of both type one and type two diabetes, is probably the most common complication of the disease.[i] Studies suggest that up to 50% of people with diabetes are affected to some degree. Diabetic neuropathy is a nerve disorder caused by diabetes. The two main classifications of neuropathy are peripheral neuropathy, affecting the extremities, arms, legs, hands and feet, and autonomic neuropathy, affecting the organ systems, mainly affecting the nerves of the digestive, cardiovascular systems, urinary tract and sexual organs.

Symptoms of peripheral nerve damage (neuropathy) are basically weakness, usually in the arms and hands or legs and feet, often with pain burning, tingling, or other abnormal sensations. Numbness or decreased sensation, difficulty walking and difficulty using the arms and hands or legs and feet are all common. Peripheral sensory neuropathy can initiate physiologic events that lead to distal extremity ulceration and eventual amputation.

Nerve damage caused by diabetes can also lead to problems with internal organs such as the digestive tract, heart, and sexual organs, causing indigestion, diarrhea or constipation, dizziness, bladder infections, and impotence.[ii] Diabetic neuropathy is a major cause of impotence in diabetic men.[iii] Autonomic neuropathies are believed to be implicated in "silent heart attacks" of diabetes, where the full symptoms of myocardial infarction are not felt by the person.

In some cases, neuropathy can flare up suddenly, causing weakness and weight loss. Neuropathy may cause both pain and insensitivity to pain in the same person. Often, symptoms are slight at first, and since most nerve damage occurs over a period of years, mild cases may go unnoticed for a long time. In some people, mainly those afflicted by focal neuropathy, the onset of pain may be sudden and severe

Magnesium is necessary for the production, function & transport of insulin.

Magnesium is known to be necessary for nerve conduction; deficiency is known to cause peripheral neuropathy symptoms and studies suggest that a deficiency in magnesium may worsen blood glucose control in type 2 diabetes. Scientists believe that a deficiency of magnesium interrupts insulin secretion in the pancreas and increases insulin resistance in the body's tissues.

Magnesium deficiency played a role in the constriction of arteries and enhanced injury to the cellular tissues lining the blood vessels. Peripheral artery disease, or peripheral vascular disease, refers to diseases of the arteries and veins of the

extremities, especially atherosclerosis with narrowing of the arteries. This opens the door to the development and progression of atherosclerosis and sets the stage for the development of neurological events such as strokes. These same conditions set the stage for the development of peripheral diabetic neuropathy.[i] This entire scenario described here also sets the stage for the development of peripheral neuropathy even when diabetes is not present.

A recent analysis showed that people with higher dietary intakes of magnesium (through consumption of whole grains, nuts, and green leafy vegetables) had a decreased risk of type 2 diabetes.[ii] Magnesium has potentially beneficial effects at several key steps of glucose and insulin metabolism. In animal studies, dietary magnesium supplementation can prevent fructose-induced insulin resistance and elevations of blood pressure in rats. [iii]

Magnesium deficiency is associated with insulin resistance and increased platelet reactivity.

Magnesium deficiency creates resistance to insulin, Insulin resistance increases levels of insulin, which may result in a form of diabetes. Additionally, insulin resistance by itself can disrupt intracellular magnesium levels, as PubMed studies explains.

Dr. Mansmann "I have had diabetic neuropathy for over 10 years. The most significant symptom is my neuropathic pain of burning feet, called erythromelalgia. With the aid of Mg (Magnesium Chloride) I can completely suppress the symptom, but if my blood glucose level is acutely elevated, because of a dietary indiscretion, the pain flares in spite of an apparent adequate dose of Mg. It goes away with extra Mg gluconate (Magonate) in an hour or so in either case. Without the Mg it will last for six plus hours, even though the blood glucose level is normal in about two hours." "It is my belief that every one with diabetes should be taking Mg supplementation to the point of one's Maximum Tolerated Dose, which is until one has soft-semi, formed stools. In addition, anyone with neuropathy, without a known cause, must be adequately evaluated for diabetes and especially those with poorly, slowly, healing foot sores of any kind. Since the use of Mg is safe I see no reason that this should not be "the standard of care". Dr. Herbert Mansmann Jr., Director of the Magnesium Research Lab,[xi] who is a diabetic with congenital magnesium deficiency and severe peripheral neuropathy, shares that he was able to reverse the neuropathy and nerve degeneration with a year of using oral magnesium preparations at very high doses.

Special Note: While Dr. Mansmann makes a strong case for high doses of magnesium, it cannot be ignored that GLA has also been recognized for its ability to stop and/or reverse peripheral neuropathy and is endorsed by Dr. Atkins, of the famous Atkins diet, which many diabetics follow. Dr. Atkins says, "Science has established rather conclusively that GLA halts the otherwise inevitable advance of nerve damage caused by diabetes. GLA helps the nerves to heal. As one study of 111 patients showed, people with either form of diabetes, Type I or Type II, can benefit, using a dose as small as 480 mg of GLA per day.[xxviii] Other research suggests that the fatty acid may even prevent the nerve deterioration from starting up.[xxix] Some kind of abnormality in fatty acid metabolism is very likely involved in the development of diabetic complications and maybe even the development of diabetes itself. People who have the disease seem unable to make GLA from dietary fats and therefore may suffer from an insufficiency of PGE1, (Prostaglandin E1, a beneficial hormone-like compound). Coincidentally enough, this substance can potentiate the work of insulin and exerts insulin like actions of its own. Therefore diabetics need all the PGE1 that GLA can help them make." Spirulina as another basic natural medicine ideal for diabetics as it is for almost all people. Spirulina is very high in both magnesium and GLA.

Where to buy Magnesium Chloride

MAGNESIUM ONLINE LIBRARY 300 articles discussing magnesium and magnesium deficiency

Magnesium for Diabetes is Critical

Magnesium affects carbohydrate metabolism by influencing the release and activity of insulin, the hormone that controls blood sugar levels, by influencing the resistance and sensitivity to insulin. Magnesium for diabetics is critical. At least twenty five percent of diabetics have hypomagnesemia[i] and this is likely an underestimate. One group has recently suggested that the effects of reduced glutathione on glucose metabolism may be mediated, at least in part, by intracellular magnesium levels.[ii]

Dr. Carolyn Dean indicates that magnesium deficiency may be an independent predictor of diabetes and that diabetics both need more magnesium and lose more magnesium than most people. Magnesium is necessary for the production,

function & transport of insulin. Magnesium deficiency is associated with insulin resistance and increased platelet reactivity. According to Dr. Jerry L. Nadler, "The link between diabetes mellitus and magnesium deficiency is well known. A growing body of evidence suggests that magnesium plays a pivotal role in reducing cardiovascular risks and may be involved in the pathogenesis of diabetes itself. While the benefits of oral magnesium supplementation on glycemic control have yet to be demonstrated in patients, magnesium supplementation has been shown to improve insulin sensitivity. Based on current knowledge, clinicians have good reason to believe that magnesium repletion may play a role in delaying type 2 diabetes onset and potentially in warding off its devastating complications -- cardiovascular disease, retinopathy, and nephropathy."

A separate Gallup survey (in 1995) of 500 adults with diabetes reported that 83 percent of those with diabetes are consuming insufficient magnesium from food, with many by significant margins.[iii] One group has recently suggested that the effects of reduced glutathione on glucose metabolism may be mediated, at least in part, by intracellular magnesium levels.[iv]

The mechanism of hypomagnesemia in diabetic patients still remains unsolved but there is enough evidence to suggest that Mg levels drop in the course of recovery from ketoacidosis, during insulin therapy[v] or with severe retinopathy[vi] or proteinuria.[vii] Diabetic patients, especially those with poor glucose control, develop hypomagnesemia from a glucose-induced osmotic diuresis.

Insulin resistance and magnesium depletion may result in a vicious cycle of worsening insulin resistance and decrease in intracellular Mg(2+) which may limit the role of magnesium in vital cellular processes. Diabetic ketoacidosis (DKA)[viii] is a state of inadequate insulin levels resulting in high blood sugar and accumulation of organic acids and ketones in the blood. Increased blood acids (ketoacidosis) can be an acute complication of diabetes. It occurs when your muscle cells become so starved for energy that your body takes emergency measures and breaks down fat, a process that forms acids known as ketones.[ix]

Hyperglycemia initially causes the movement of water out of cells, with subsequent intracellular dehydration, extracellular fluid expansion and hyponatremia (sodium loss). It also leads to a diuresis in which water losses exceed sodium chloride losses. It is believed that magnesium is also lost by osmotic action. Urinary losses then lead to progressive dehydration and volume depletion, which causes diminished urine flow and greater retention of glucose in plasma. The net result of these alterations is hyperglycemia with metabolic acidosis.[x]

Proteinuria is protein in the urine, caused by damaged kidneys and a declining ability of the kidneys to protect the body from protein loss. This is frequently seen in longstanding diabetes, hypertension, as well as other chronic renal conditions. In the United States, diabetes is the leading cause of end-stage renal disease (ESRD), the result of chronic kidney disease. In both type 1 and type 2 diabetes, the first sign of deteriorating kidney function is the presence of small amounts of albumin in the urine, a condition called microalbuminuria. As kidney function declines, the amount of albumin in the urine increases, and microalbuminuria becomes full-fledged proteinuria. Lower serum magnesium levels are associated with more rapid decline of renal function. During insulin treatment, neither magnesium nor potassium can be metabolized properly, so these essential minerals must be replaced.

Severe symptomatic hypermagnesemia is relatively rare. But high levels of magnesium can develop in people, most commonly those with renal insufficiency or renal failure.[xi] (diabetes, chronic renal insufficiency). Kidney disease, rather than diet, is the usual cause of magnesium overload, because the kidneys lose the ability to remove excess magnesium.

Magnesium is regulated and excreted primarily by the kidneys where various ATPase enzymes are responsible for maintaining homeostasis.[xii] However hypermagnesemia can also occur in people with hypothyroidism, those using magnesium containing medications such as antacids, laxatives, cathartics, and in those with certain types of gastrointestinal disorders, such as colitis, gastroenteritis and gastric dilation, which may cause an increased absorption of magnesium.

Sent: Friday, April 04, 2008 1:47 AM

From: rstill  
To: OPA Resource  
Subject: Fw: non-browser internet info leak - secure data risk  
Date: Monday, April 04, 2011 12:27:09 PM  
Attachments: res2.png  
res3.png  
res4.png  
res5.png  
res6.png

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

From: phil  
To: R4ALLEGATION.Resource@nrc.gov  
Sent: Wednesday, March 23, 2011 1:33 PM  
Subject: Fw: non-browser internet info leak - secure data risk

You guys might need this too !....

Attention:

Nick Taylor

Senior Allegations Coordinator

USNRC Region IV

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

From: phil  
To: DARPA-BAA-10-84@darpa.mil  
Sent: Friday, November 05, 2010 12:55 AM  
Subject: Fw: non-browser internet info leak - secure data risk

to insider threat detection that greatly increase the accuracy

Personality (training retention) criteria for threat detection, 100% accurate, AND local computer user traffic viewers attached, displays instantly at PC, not just distant net control room, all alien TCP and UDP traffic monitored, used to be open source, which could be modified to show other network protocols.

Deliberate, or fumble-laught computer user threats of bungle-opened access.

Maybe YOU are smart enough to do something about this.  
Maybe not.

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

From: phil  
To: Stephen Smalley : ewalsh@tycho.nsa.gov  
Sent: Monday, November 01, 2010 1:39 PM  
Subject: non-browser internet info leak - secure data risk

Please keep this off the list until you think it is safe.

After a couple of suspected leaks, I think I have discovered a plain vanilla leak that everyone, maybe even Panetta is missing. I included a video, and screen shots proving it in the OpenOffice document.

It seems particularly prevalent after any eBay pages have been accessed, sometimes disappears, but is normally quite consistent.

Sometimes I am just relating a known problem, but the NSA didn't know about shorting. I was the first one to let the NSA know about stocks shorting right after 9/11 and have several requested 20-minute fax bills on my phone to NSA faxes to prove it. I heard that, as I suspected, that they were able to catch some people trying to make a lot of money shorting companies targeted in the WTC. terrorist money people.

So, even if this feels far off your job description, the NSA needs to know from someone inside, what I have shown. I elect YOU.

Keeping it secret to a small group will allow salting that internet connection, and follow-up tracing what happens where in the world, with that disinformation.

regards

phil marx

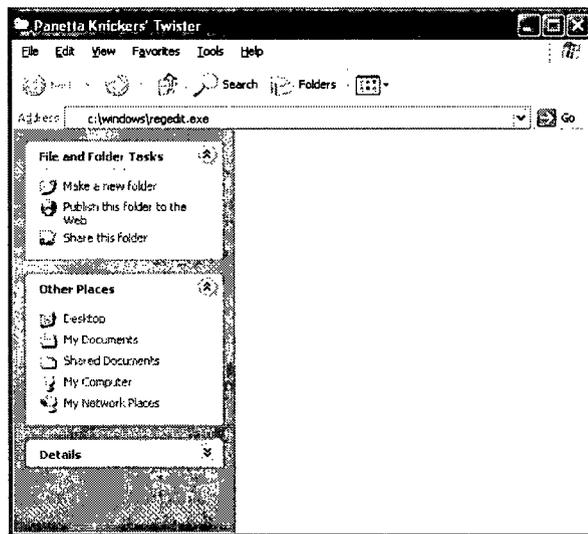
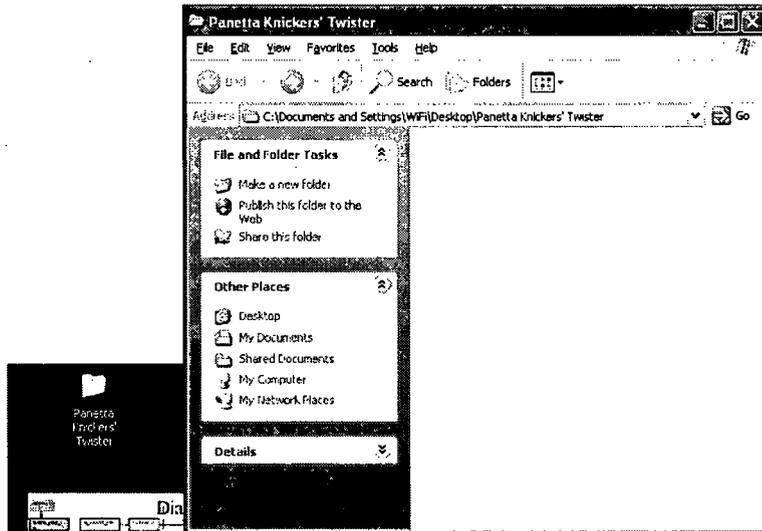
DARPA too.



2/438

## Panetta Knickers' Twister

Check your overall outbound traffic on 65.55.11.179 (used on all the Windows XP computers I've checked, and check for matching traffic to other IPs under other operating systems, and then block those IPs at your corporate firewalls, since it's traffic pierces HOSTS file blocking). That destination IP will seem trusted until you analyze the traffic. **DO NOT BE FOOLED.** When your expert comes up blank, I'll tell Leon what's up. After you block it, some computers with operating system updates will begin to cause them to want to send diagnostics in, they are trying to write a patch that I suspect will just mean a less visible protocol than TCP or UDP, since there are so many protocols available, they can just use one of the regular ones, or invent one of their own, as so many hackers are doing.



The problem, is that most government computers are NOT secure. When on the phone with Dell downloading some patches, I had to unwind most of my internet security in order to do so. When I asked him how often he had to do that for government computers, he said NEVER. He said government computers had no security settings set. My feeling is that most admins just use the zero money they get for that, and just set up the Swiss Cheese default Microsoft Setups. Granted, this is a report on an ignored Windows vulnerability, and you are Linux SE, but I have many thousands of emails from your list reporting many problems, that continue. Nevertheless, you can use what I show next to properly panic the government into the simple security fixes I show here, as a pitch for how what you pitch is superior. Granted, everyone knows that Windows is leaky, but for some reason, the reason it is leaky is always bracketed with implications that it is too hard to understand the details.

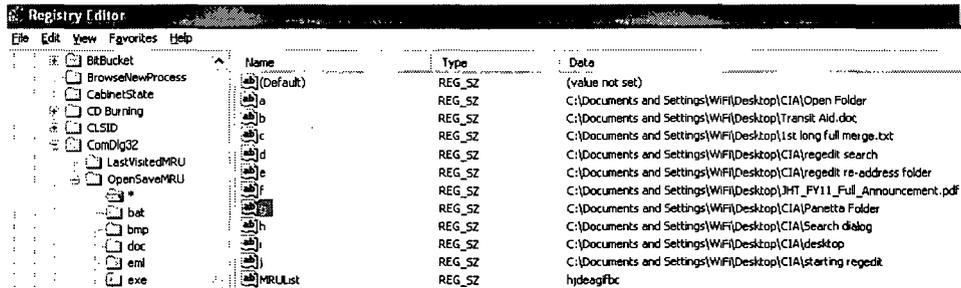
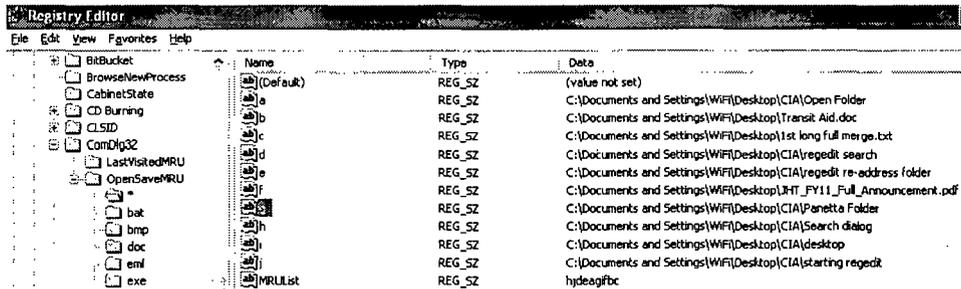
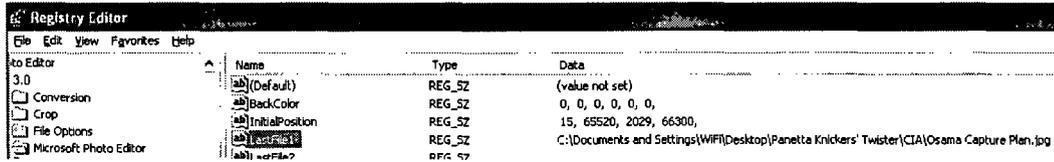
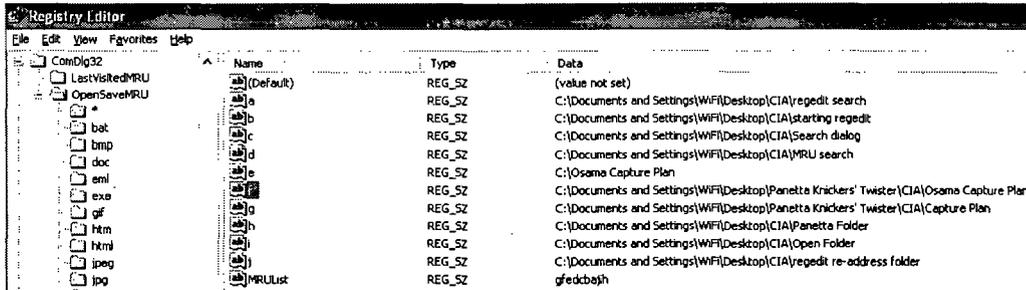
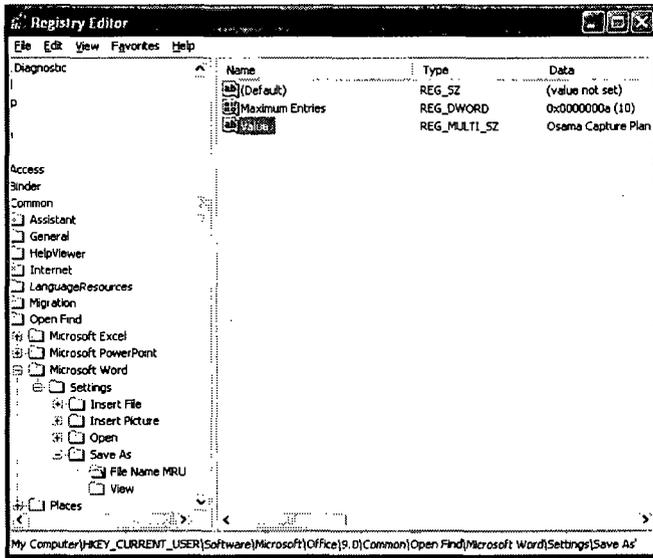
Here I show how to scare your typing pools, NSA, CIA, NIA, SS, DoD, White House and others.

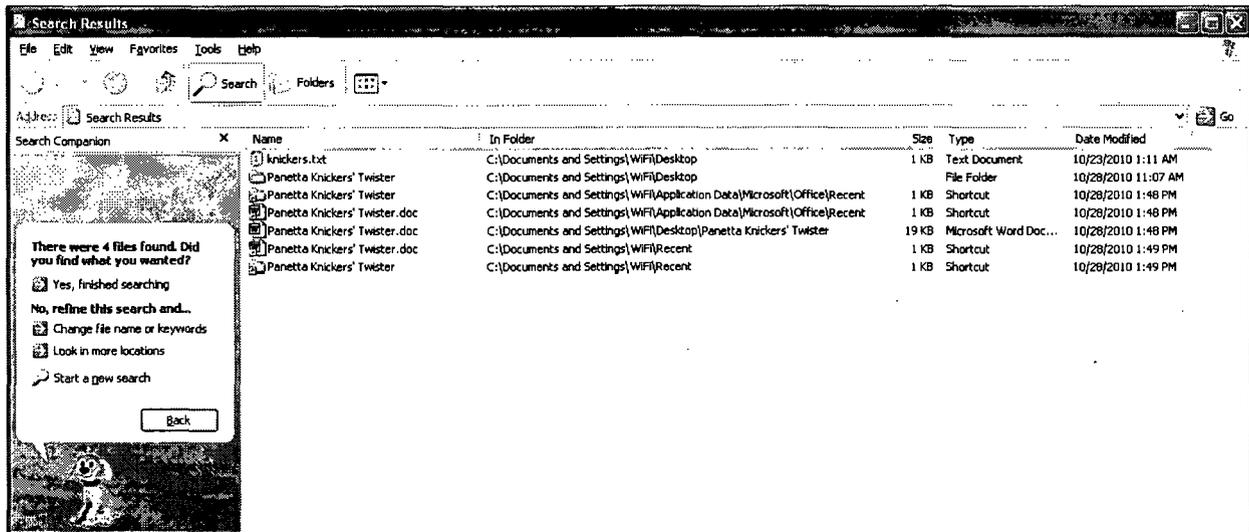
Summary of two main points: The registry is regularly accessed by programs authorized to automatically update, and thus have access to all the latest file names, and their directories. So, ah, pshaww, some will say, because they might not think they are on the net when they are in just their Microsoft Office programs. The worst thing is that every time they search for a file name, a connection opens up to a Microsoft IP and that traffic should be analyzed for degree of leak. Firefox, Open Office, and many of their BHOs are allowed to access the heart of computers regardless of what country they originate from. So, if Panetta has a file called Osama Capture Plan, any of the common sub-software providers will know it. So, someone will say to use the scrubbers before you enable updates. NOT ENOUGH. Tested on many computers, might be different on others, is a connection started every time that the Search function is started, with their being no other reason for such a thing than to send to Microsoft and all eavesdroppers whatever is being searched for. So, if Panetta wants to find a file to update, there is only a connection that no one usually checks that makes sure that Panetta isn't the only one who knows it. I blocked that IP on our company firewall, and some of the computers started getting BSODs blue screens. After a couple of Microsoft updates, that reduced, but it can't be long before they deduce that they've been detected, and re-route a detoured method or destination. So, someone needs to watch and test for what happens whenever a file search is started. NSA also.

Quick check, go to Windows desktop, create a new folder. Open that folder and start the registry editor by typing "c:\windows\regedit.exe" in the address bar. Then search (F2) for any recent files. Also, search for .com all the way through to discover that your browsing history is available to the world via anyone with normal registry update access, or anyone with JavaScript vulnerabilities enabled, instead of JavaScript security enabled. I have provided screenshots for those too timid, or who haven't got a reasonable admin to do it for them. Make sure that relevant security and document handling department heads find out about this. I am providing a copy of a TCPview version prior to the many suspect versions that you can download from Microsoft, and also Aports, which has an advantage of showing which directory the connected program is running from. I had to learn how to do this at the users computer for one that we couldn't re-format, but that had acquired hundreds of Warcraft piggyback users. Blocking everything at the firewall still left it's CPU half tied up with internet connection attempts. Now it stays clean, isolated it from the net, gave that engineer a second computer that we could re-format whenever, and anything that tries to

get in or out of that first computer can't do it without letting me know about it so I can stop those slow clock trojans.

You may wonder why the Knickers's Twister jabs, I was trying to make extra sure that this got past any internet security keystone cops and trolls. More on that to follow. In addition, I might have been the one who sent in the trigger to Chris Cox that is the reason that the whole world still has banks.





Why am I bothering to try to inform someone who will do something ?

Because so many lives are at stake. I was an engineer on many of the crucial circuits that enabled our rapid success in the first Gulf War, tiny successes compared to the following incomplete excerpts.

Anyway, BBC and other foreign news services were strongly implying that worries that Israel would attack Iran were worth much concern. Iran still uses a locally upgraded Phoenix missile, presumably to at least the AIM-54C(+), that I was the test and development engineer on many of its circuits. I was also the pricing engineer in charge of pricing it, before and after Raytheon got into the picture. I was the one who caused one of the delays when vendor quality problems forced me to recall many of my circuits whose MTBF had fallen below 3 weeks, due to internal circuit wiring welding degeneration. I also was the one who forced Harris Semiconductor to admit to delivering far cheaper commercial grade sample and hold integrated circuits, and another of the Phoenix Missile's delays while they replaced them all. The extra problem there was that the inferior parts failed so drastically at 125 degrees C, that they overheated and cracked the substrates, thus the entire subcircuits had to be rebuilt, new factory build of custom substrates, and all other parts. Google Phoenix missile delays Hughes. I worked at the Newport Beach facility, where we brought up the designs to production worthiness. Proof of all that is in emails I sent to John McCain's Senate office, received by Fulton Taylor, and Leah Geach. I think some of them are stuck in their SPAM filters, as I attempted to include graphic and photo proofs. I was attempting to reach someone with how to teach American or Israeli combat flights how to best evade even one of those Phoenix missiles. I helped get Maverick, GBU-15, Tow, AMRAAM, AAMRAAM, anti-satellite, and many other (never-named) systems ready for production. The standard tactics you use as shown in the movies will not work. I intend to also show how easy it is to SEE stealth aircraft, using sensor technology I wrote into a NASA report started in '90 (Google 19940008652\_1994008652.pdf Phillip Marx). I was not the engineer on this report, but I did manage the production and proofing, and contributed to the incorporated future options for improved designs. The Russians have written about the problem since at least the 70s Google r1243nhx776jq917 If you take anything black, and place it in front of your face like an LCD screen, take that as your control. Then put it in front of your face in a flat position, as in a book on a table. Note the halo of white light around it. Regardless of whether front, or back lit. All but that edge creates a shadow, or ghost. That is diffraction light. The Chinese are using broadcast stations to back illuminate passive radar systems. Stealth aircraft diffract even if they don't reflect (much). They diffract electromagnetic waves, which includes IR, visible, and radar frequencies. I propose using that halo as a ghost-buster.

Anyway, the Russians have apparently taken the panic out of the Iran situation. A (Russian, I think) Tech Close-up type show had a demonstration of that Silicon Valley startup with it's tabletop touch screen showing all the construction phases for years back at least a year ago.

So, that wasn't my panic, it was the BBC and other foreign country news agencies practically egging Israel to attack. I told the government years ago that it would be far better to decommission that site with a radiation accident than to blow it up and contaminate all Iran, noting that ALL America's prior enemies have become our friend, no good reason to ruin that track record (er, diplomacy edge).

That takes the pressure off my rescue disclosure alternatives, but I want to get down more of all that adrenaline thinking before I have to work it back up all from near scratch again someday, if ever. I doubt that they have a security clearance anywhere near what would be needed for it, so, I'll try these other channels, if they still work. So, I'll finish the Phoenix missile aversion tactics after I get some more overdue sleep, with both a probable suite, and a way to test and train pilots and RPVs for evolving changes, as current systems are barely pass/fail, instead of productively reflex conditioning.

Nevertheless, watch out. I heard that Mueller had to explain to Justice why evidence was being planted in order to get tap orders. Now the

evidence must be more suspect than ever, especially when planted against parties for which such evidence is incongruent, and out-of-character. Ask Mueller for details.

INCIDENTALLY:

1. I was the guy who wrote in that half of America would be uninhabitable for centuries if they didn't move all those above ground nuclear waste storage drums at Los Alamos to someplace safer. Within hours, sweating Senators were shown on TV working to fund the relocation. GOOD WORK. Thus half of America was saved, and hundreds of trillions of dollars were too. Ask Panetta for details.

2. I was the guy who wrote in after that sergeant tossed a grenade into his commanders' tent. I asked that the Russians be asked to review the security clearances for those authorized near all those suitcase bombs. Next morning, Bush called Putin under cover of an extremely flimsy cover story. Putin looked miserable for at least two weeks. Thus (maybe) half (the rest) of America was saved, and hundreds of trillions of dollars were too. Based on Putin's announcement right after that, I deduce that he knew about the second half of my email to you. I had already talked the CIA out of leaving cookies as evidence on computers that would get informants killed. AND, for a few days, to stop doing the same with VeriSign signatures. Those have come back, and I suspect that merely tapping the VeriSign traffic gives foreign nations all they need to read everything. Tapping into the Verisign traffic enables both sides of a secure email dialog to be seen, since it echoes screens. Ask Panetta for details.

3. I was the guy who wrote in repeatedly with additionally necessary details until downer cows were taken out of even the pet food supply. The Ag dept. seems to have resisted every step. MY goal was to keep prion pooping puppies from exposing finger-licking babies. Funny, one of my warnings was to ask them what they'd do if the President's dog died. Soon thereafter it did. Ask Panetta for details.

4. I was the guy who reported that PBS was showing chicken farmers hosing out their chicken transport trucks into roadside ravines where all the insect and avian disease vectors would naturally quench their thirst. A day later Bush announced the marvelously fortuitous pre-emptive research start to develop bird flu vaccines. Residual death tolls quoted/predicted now are far less. That saves ????? million lives and ?????? trillions of dollars. Ask Panetta for details.

5. I wrote in that a field emergency First Aid tactic needs to be implemented that would save thousands of casualties from permanent handicap, by immediately bagging the injuries with the same life extending fluids used to keep transplant organs alive for tens of hours. I later also disclosed it to General Boykin, formerly of DELTA FORCE fame, and he said that he wished such treatments were available for himself and his people. You can probably track him down to verify that at 303-408-9992 or through kingdomwarriors.net. Because nothing has happened, thousands of innocent American Warriors have been unnecessarily permanently maimed, handicapped, crippled and worse. Not to undervalue the loss to the soldiers, but probably many tens of thousands of other accident victims have also been unnecessarily permanently maimed, handicapped, crippled and worse. Ask Panetta for Details.

**6. I mailed in a lot of graphs and rationale to Chris Cox a day before he and Paulson stormed into Congress and started the rescue that now is the only reason that there are any surviving banks in America. Ask Chris Cox for details.**

**7. A quarter of America was destroyed twice because the following suggestion was ignored. Ask Panetta for details.**

(INSERT: that doesn't count how much was lost via consumption of America's emergency readiness and financial margins. Nor the crisis fatigue that has set in. I also forwarded suggestions that we use the supermarket salt and vinegar (technology that preceded Columbus) to preserve the food supplies, instead of using up America's reserves. Those hurricanes were only single quadrant attacks, so many billions of dollars worth of food shouldn't be allowed to be so carelessly wasted again, especially if any real expected attack is all quadrants, and not one of these simple-minded missile attacks by nations playing you with diversionary tactics, when real attacks need be no more than by mule wagon or shrimp boat.)

I submitted earlier versions of this to apparently deaf ears before Rita, and before Katrina. Afterwards, I discovered that the U.S. Government had lapsed the type of research desperately needed now, I think it should be resurrected. Google it over.

Google NOAA project stormfury

They thought they had failed because they tried to kill hurricanes with single planes. The math shows that it takes many, unavailable back then. However, now, hundreds are available, with self-preservation financials to gain, from helping save all their business partners and customers. AIG and banks who lost equity and borrowers to under-insured flooded homes would be wise to underwrite the insurance for the effort, buy the fuel, and do whatever it takes to make sure that catastrophe insurance is never consumed like that again. The Government would have to contribute little more than it is qualified to do, namely traffic control. Letting Tom Cruise and John Travolta embed in the effort could result in free documentary creation and movie revenues.

A category 6 (effective) hurricane is inevitable. Stopping such completely is unnecessary, dropping it down to a category 3 would be more than sufficient to preserve America.

Anyway, cutting past the chase to the endgame of the chase:

Again, from before Rita, almost unchanged:

Strategically seeding Rita's clouds might cripple Rita more easily than you'd think.

Rita is a big storm, with two major danger factors. The massive amount of rain is one, and the high wind speed is the second. **However, if the storm can be forced to dump its water content prematurely, you also diminish the wind inertia forces from the mass of the water in the air.** The whole storm can be seeded with traditional cloud seeding materials, and looking past the awe, it doesn't really take much compared to the 200 plus billion cost if you don't. There are several materials used, the most expensive being the silver-iodide-in-acetone, but smoke, dry ice, dirt dust, sea salt, and even seawater can trip the clouds into supersaturated self-seeding water dumping while safely still out to sea. These seeding materials needn't be contaminating, indeed, just using Forest Fire Fighting Scooper planes watering the clouds would cool them as the water evaporated while descending, leaving the perfect size salt crystals best suited for rain drop nucleation. At those air temperatures, it might take up to three aircraft in series, but we have enough aircraft. If the storm arms and armpits are attacked with focus, the storm might be disarmed with much less effort and materials. Just squirting air show smoke oil into the patrol and research aircraft engine exhaust ports can make visible dents in the cloud deck, as should the seeding aircraft. Any soot will shade and cool, and nucleate water drops. The differences between each category of hurricane between cat 1 and 5 is just 15 to 25 MPH. That's only about 10%, and since the storms are already dropping rain, forcing them to rain more, faster, shouldn't be the struggle it is in dryer drought area air. Google cloud-seeding in quotes, and Google rain-making in quotes. There is a lot of public research available for fast refs.

#### **Simplified math factors for conference table bull start sessions, strongly hedged:**

A 300-mile wide hurricane has a 150-mile radius. **It covers 70,000 square miles**, with a very uneven dangerousness gradient. 600 MPH airspeed aircraft have a 400 MPH ground speed into a 200 MPH headwind. With a typical cloud seeding dispersal of 2-5 miles wide, **you can cover 800 to 2,000 square miles per hour per plane with cloud seeding.** It would thus **only take 35 to 90 planes to cover the whole storm every hour**, or 105 to 270 planes to cover every inch of the entire storm every 20 minutes. Dropping the seeding particles into the wind maximizes the collision velocity, and the water removal. Each plane would cover 4,800 to 12,000 square miles per 6-hour flight. It would thus take **only 6 to 15 planes to cover the entire storm once every 6 hours**, which should be started immediately, so that we can mop up Rita more than she mops up us. **Far more area can be seeded in far less time from fewer aircraft if able to fly above the headwinds.**

**Just a mere few pounds of seeding per aircraft mile are productive, maybe less than 14,000 to 35,000 pounds per whole pass over the whole storm**, well within the range of many larger single cargo aircraft. Less might be needed during colder nights, and the silver iodide solutions work longest without sunlight exposure. **Only 36 grams of silver iodide per aircraft mile is productive, or 35 square miles per pound, or 2,000 pounds per 70,000 square miles for complete storm coverage, sounds cheap compared to 200 plus billion dollars.** But, until that much can be readied, let's go ahead and use dirt, salt, and seawater. A full court press with all most expeditiously acquired materials should be mounted, and it will just be too bad if only a million dollars worth of excess is used.

#### **Here are the tasks to target intellectual and McGyver resources against.**

1. Reduce the total potential of Rita's rainfall after landfall, by making her rain as much as possible as far off shore as implementation constraints allow.
2. Reduce Rita's wind-speeds, by de-watering the clouds, and detaching Rita's arms.
3. Trick Rita into imploding.
4. Trick Rita into exploding her arms, like an ice skater's twirl, to reduce speed diameters. Dismember Rita.
5. Decide if taller or shorter mid-storm clouds are most worth productive modification

#### **Here I pose some attack pattern options.**

1. **Alpha:** De-water the most vulnerable of Rita's underarms, kick her in her crotches.
2. **Beta:** Attack the strongest ridges of Rita's arms. Strong-arm the strongest arms.
3. **Gamma:** Detach/Cut off the strongest arms from their axis of rotation.
4. **Delta:** Attack the eye-wall symmetry nearest the most vulnerable pressure point(s) to an arm or an armpit. In doubt, test attack one of each type to try to make it break down and suck itself into itself. Goal is to cascade an eye-wall avalanche.
5. **Epsilon:** Concentrate on crippling a whole pie slice instead of the whole storm, thus ending its spin.
6. **Zeta:** Stripe attack every few degrees creating a new underarm/arm-pit on every attack.
7. **Eta:** Seed every few minutes with the most last minute available aircraft the approaching half of the storm, with the fastest reload and desperate over-seeding ever.
8. **Theta:** Some storm steering away from population centers, if applied early enough, might be achieved with some aggressive collapsing of the rim at calculated orientations..
9. **Iota:** That storm isn't always round, assess geometrical vulnerability factors, and optimize attack strategies.
10. **Kappa:** Fill in.

#### **Extended seeding options:**

Add oil to aircraft exhaust systems to add carbon-black soot seeding, and satellite coordinating tracking and spiral spacing for that many aircraft, and to up the un-instrumented storm wind-speed estimation accuracies, and give the pilots and other authorities tenuous grids to command and control.

Triple-strike forces can triple-dump coal or dirt-dust, followed by seawater, and then finish off with the silver-iodide for maximum drying.

Use great-circle routes to avoid running out of seed materials far from refilling points. There is NO reason, except for surgical strikes, to spend any time in non-productive (non-seeding) flight.

A one-percent total storm crippling would only be good for storm countermeasures' strategies data collection, but shouldn't be diverted from until surgically most effective strikes can be devised.

Strategically seeding Rita's clouds might cripple Rita more easily than you'd think.

Continued attacks on the storm after landfall can be much appreciated by those who would otherwise also be **victims of the more severe kind**. Make it rain the most where least populated, and avoid critical crop destructions, though, refilling the great aquifers of the Midwest would be highly beneficial.

Many strikes to storm armpits should strive to leak as many millibars as possible into Rita's eye.

Now might be a good time to dump that Louisiana mud and silt. You need to remove and dump it anyway, why not where and when it will get most even with **Ogre Nature**.

Also, any pre-existing, or now most opportune incineration waste ash dumping.

Shredded garbage from anywhere, an admission of cognitive desperation.

Crushed coal dust, heck, almost anything that we can get airborne. Dirt dust, any kind, every percent fraction will count towards accumulated effect. Other concrete/rock crushings' dust, and even sawdust.

Other silicates, especially silica gels, used to dry things out.

Any acid, or vinegar, or vitamin C powders are very hygroscopic. Every few thousand pounds cover the entire storm.

It might not take much to supersaturate the rain clouds, but it will take a lot of effort to pre-dry the air in front of the storm to starve it from replenishing its moisture. Not a non-critical factor to be neglected, however.

This might be the time for a timely oil spill to also make it harder for the storm to renew its water. What do we have for self-dissipating and harmless oil/water surface separators?

Regular magnesium flare smoke.

Probably, electrostatically pre-charging the particles could provide beneficial phenomena with a little research.

#### OTHER OPTIONS TO CONSIDER

An additional option is to use fire-fighting seawater scooping planes to drop it at altitudes to create artificial sun reflecting clouds in areas that would then alter the pressure gradient across the Gulf, and effect some mild steering, which, like asteroids, requires less at first than later. The same tactic could be used to pre-dry the air with premature precipitation ahead of Rita's path. It may be best to use a combination of both.

If your ordinance people can amass their skills fast enough, they can use cheap terrorist bomb technologies and endothermic zip-lock baggy bombs made with the endothermic instead of exothermic explosion materials. The percussion concussion compression collapse cooling would cause water condensation/precipitation, though even gasoline bombs would do that too. If the baggy had dirt or salt added, further seeding spread efficiency would be obtained. There probably isn't time this time, but acid is a very hygroscopic favorite of cloud seeding researchers, and might be a compact cloud seeder for the few full-time dedicated aircraft that time might eventually justify.

You should mobilize existing commercial and research cloud seeders and give them access to as many Ag spray planes as practical, instead of just writing off more of the Gulf Coast. The short-range but **extremely rugged crop dusters** can be used as a last resort coastal battle front if needed to keep parked cars and houses from going airborne if they can effect wind speed and rainfall decreases of any useful degree.

The wind speed is differential, between temperature and resultant barometric differential points. Cheaper gasoline seeding dispersal bombs full of seedings can go into the cold spots, and endothermics into the hot spots to kill some of that differential. Remembering that only a 10% change of an already small millibar difference is needed to drop a whole hurricane category, maybe just concentrated at Rita's armpits.

Even squirting cold water into a cloud will cool it, as from an aircraft from a water chilling altitude, and it would be especially advantageous here for it to come down as frozen on the way down ice crystals into the clouds. Someone might want to backburner what the cost/emergency

benefit ratios are for liquid nitrogen squirting aircraft/RPV/rocket fleets.

The US Forest service, especially its old project SkyFire, researched rainmaking. All of its fire-fighting borate dumping aircraft can dump water, salt and dirt just as well over bad spots of the storm, where the turbulence would be a seed dispersal aid.

The University of Chicago once had a B-17 with a mere 400-gallon water tank that made clouds disappear into rain wherever sprayed with that water. Cutting or criss-crossing swaths through the clouds might be one strategy, but checker-boarding them with holes that grow might be more efficient. (CLOUD PHYSICS AND CLOUD SEEDING, by Louis J. Battan, 1962, Anchor Books, Doubleday, 62-14693 shown in photo PLATE XVI, just before p.66)

I suspect that regular Air Force fuel tankers can dump dirtied seawater into those clouds for hours and hours and hours, at the trickle rate needed for seeding already saturated clouds. How many do we have nearby? Too bad we don't have de-clustering mini-bombs.

FedEx, UPS, USPS, DHL and such air cargo carriers and such have hundreds of planes, mostly idle during the day. These companies might love to contract to deliver cloud seeding cargo over the safer airspaces over hurricane Rita, especially since it could protect large areas of their customer base. Maybe many of the near-bankrupt and downsized companies might have many un-booked aircraft with totally free cargo compartments willing to have temporary holes punched through their cargo doors.

Politicians should begin some rain dancing with weather scientists.

Please forward to anyone you know who might mentor this.

The TV news just said that Rita's leading edge must be encountering dryer air, since it is breaking up there.

Olive oil evaporates harmlessly, I wonder how much of that type or better oil is available in storage to cripple ocean water uptake into the storm ?

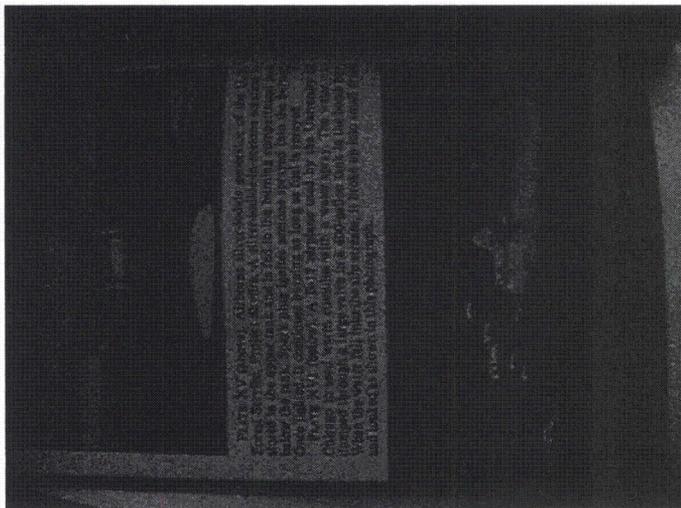
I might add, that the same scans could locate crowds in market districts, er, looter zones.

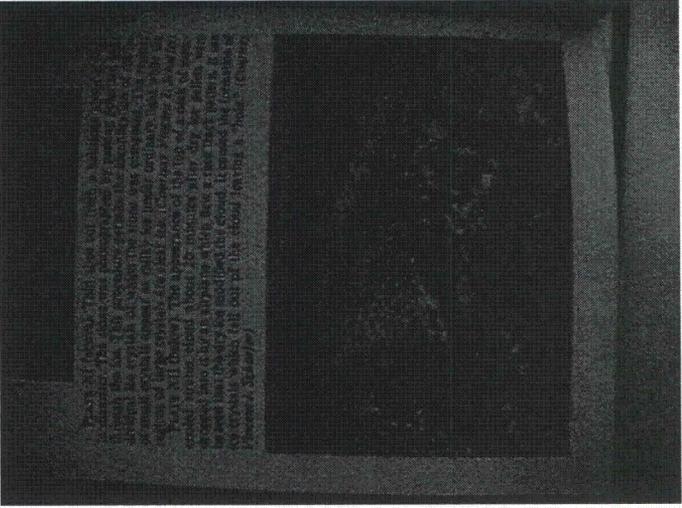
I don't see on the news any reference to ANY infrared scanning for attic-locked survivors?

Just blind boat patrols.

Does anyone need the hint reminder?

Phillip Marx





400  
done  
through  
rain seeding  
clouds. The  
clouds were  
the seeded  
half the time  
back-seeded  
clouds.

This series of experiments clearly showed that water-spray seeding could start precipitation in tropical cumuli. It represented an important step forward. However, it did not answer the question, can cloud seeding increase rainfall at the ground?

**INCREASING RAINFALL AT THE GROUND**

A few articles in scientific literature and many reports of cloud-seeding companies have claimed that silver-iodide particles dispersed from ground-based silver-iodide generators caused increases of rain or snow. Nevertheless, the scientific community in the early 1950s was still uncertain whether the claims could be accepted, because many details of the work were not known.

In 1953, the President of the United States appointed a board called the Advisory Commission on

149  
B-17  
As many  
seeded  
by  
and that in  
in about  
in the

# Registry Editor

File Edit View Favorites Help

	Name	Type	Data
ComDlg32	(Default)	REG_SZ	(value not set)
LastVisitedMRU	a	REG_SZ	C:\Documents and Settings\WiFi\Desktop\CIA\regedit search
OpenSaveMRU	b	REG_SZ	C:\Documents and Settings\WiFi\Desktop\CIA\starting regedit
*	c	REG_SZ	C:\Documents and Settings\WiFi\Desktop\CIA\Search dialog
bat	d	REG_SZ	C:\Documents and Settings\WiFi\Desktop\CIA\MRU search
bmp	e	REG_SZ	C:\Osama Capture Plan
doc	f	REG_SZ	C:\Documents and Settings\WiFi\Desktop\Panetta Knickers' Twister\CIA\Osama Capture Plan
eml	g	REG_SZ	C:\Documents and Settings\WiFi\Desktop\Panetta Knickers' Twister\CIA\Capture Plan
exe	h	REG_SZ	C:\Documents and Settings\WiFi\Desktop\CIA\Panetta Folder
gif	i	REG_SZ	C:\Documents and Settings\WiFi\Desktop\CIA\Open Folder
htm	j	REG_SZ	C:\Documents and Settings\WiFi\Desktop\CIA\regedit re-address folder
html	MRUList	REG_SZ	gfedcbajih
jpeg			
jpg			

# Registry Editor

File Edit View Favorites Help

- Registry Editor
- 3.0
- Conversion
- Crop
- File Options
- Microsoft Photo Editor

Name	Type	Data
(Default)	REG_SZ	(value not set)
BackColor	REG_SZ	0, 0, 0, 0, 0, 0,
InitialPosition	REG_SZ	15, 65520, 2029, 66300,
LastFile	REG_SZ	C:\Documents and Settings\WiFi\Desktop\Panetta Knickers' Twister\CIA\Osama Capture Plan.jpg
LastFile?	REG_SZ	

# Registry Editor

File Edit View Favorites Help

- BitBucket
- BrowseNewProcess
- CabinetState
- CD Burning
- CLSID
- ComDlg32
  - LastVisitedMRU
  - OpenSaveMRU
    - \*
    - bat
    - bmp
    - doc
    - eml
    - exe

Name	Type	Data
(Default)	REG_SZ	(value not set)
a	REG_SZ	C:\Documents and Settings\WiFi\Desktop\CIA\Open Folder
b	REG_SZ	C:\Documents and Settings\WiFi\Desktop\Transit Aid.doc
c	REG_SZ	C:\Documents and Settings\WiFi\Desktop\1st long full merge.txt
d	REG_SZ	C:\Documents and Settings\WiFi\Desktop\CIA\regedit search
e	REG_SZ	C:\Documents and Settings\WiFi\Desktop\CIA\regedit re-address folder
f	REG_SZ	C:\Documents and Settings\WiFi\Desktop\JHT_FY11_Full_Announcement.pdf
g	REG_SZ	C:\Documents and Settings\WiFi\Desktop\CIA\Panetta Folder
h	REG_SZ	C:\Documents and Settings\WiFi\Desktop\CIA\Search dialog
i	REG_SZ	C:\Documents and Settings\WiFi\Desktop\CIA\desktop
j	REG_SZ	C:\Documents and Settings\WiFi\Desktop\CIA\starting regedit
MRUList	REG_SZ	hjdeagifbc

# Results

View Favorites Tools Help



## Search Results

Name	In Folder	Size	Type	Date Modified
knickers.txt	C:\Documents and Settings\WiFi\Desktop	1 KB	Text Document	10/23/2010 1:11 AM
Panetta Knickers' Twister	C:\Documents and Settings\WiFi\Desktop		File Folder	10/28/2010 11:07 AM
Panetta Knickers' Twister	C:\Documents and Settings\WiFi\Application Data\Microsoft\Office\Recent	1 KB	Shortcut	10/28/2010 1:48 PM
Panetta Knickers' Twister.doc	C:\Documents and Settings\WiFi\Application Data\Microsoft\Office\Recent	1 KB	Shortcut	10/28/2010 1:48 PM
Panetta Knickers' Twister.doc	C:\Documents and Settings\WiFi\Desktop\Panetta Knickers' Twister	19 KB	Microsoft Word Doc...	10/28/2010 1:48 PM
Panetta Knickers' Twister.doc	C:\Documents and Settings\WiFi\Recent	1 KB	Shortcut	10/28/2010 1:49 PM
Panetta Knickers' Twister	C:\Documents and Settings\WiFi\Recent	1 KB	Shortcut	10/28/2010 1:49 PM

Found 4 files. Did you want what you wanted?

Finished searching.

Click this search and...

to enter file name or keywords.

Click more locations

to start a new search

Back

**From:** [Janbergs, Holly](#) on behalf of OPA Resource  
**To:** [Bonaccorso, Amy](#)  
**Subject:** FW: Assisting Japan with stopping leak into ocean  
**Date:** Monday, April 04, 2011 3:38:53 PM

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**From:** Sharon Hodge [mailto:[shodge@ngi.msstate.edu](mailto:shodge@ngi.msstate.edu)]  
**Sent:** Monday, April 04, 2011 3:34 PM  
**To:** OPA Resource  
**Subject:** Assisting Japan with stopping leak into ocean

Dear NRC,

I'm sure y'all have many experts trying to assist in the emergency in Japan, but thought I would write just in case this idea had not been considered. I heard this story about considering using corn starch to stop the Deepwater Horizon spill.

<http://www.npr.org/2011/03/05/134268980/could-cornstarch-have-plugged-bps-oil-well?ft=1&f=1007>

The shortfalls in the plan to use corn starch at the Deepwater Horizon spill might not be a limitation to its application in trying to stem the flow of nuclear water into the ocean in Japan. Best to you in your efforts.

Sharon Hodge

L/439

**From:** [Bonaccorso, Amy](#)  
**To:** [Harrington, Holly](#)  
**Subject:** Today was Busy  
**Date:** Monday, April 04, 2011 3:58:00 PM

---

Hey Holly:

I will be leaving in a few, but wanted to let you know that I have been very busy today, probably because we had a little bit from the weekend. A ton of suggestions. And – a lot of time on the phone – just listening to people go on about their solutions.

Brenda has some papers that she wants to give me, but I just have not had the time to transition to a new stack! I still have a few from the old stack, although only a few. Some of the people probably don't need a reply, but I am trying to get to everyone if I can.

I want to run one of the letters by you because they refer to something the Chairman reportedly said – only I don't think he said it.

Maybe I can do some time here tomorrow and then go to Church Street to try to get a handle on the FOIA request – which won't be easy!

Thanks,

Amy

2/440

**From:** Sharon Hodge  
**To:** Bonaccorso, Amy  
**Subject:** Re: REPLY: Assisting Japan with stopping leak into ocean  
**Date:** Monday, April 04, 2011 4:02:35 PM

---

Thank you, Amy

>>> On 4/4/2011 at 3:00 PM, in message  
<9B0F2FAB6002B64EAABF7FE5FA27BC6C3B09FC168D@HQCLSTR01.nrc.gov>, "Bonaccorso, Amy"  
<amy.Bonaccorso@nrc.gov> wrote:

Hello Ms. Hodge:

Thank you for contacting us about your idea about cornstarch. We appreciate suggestions that work toward resolving the situation in Japan; it's reassuring to see how helpful and dedicated private citizens have been in light of this disaster. Unfortunately, we are currently unable to consider each suggestion that comes in.

Please understand that the NRC has some of the most expert people in the world available to assist the Japanese authorities in whatever way they request. We are fully staffed in all our response teams at this time and working 24-hours a day.

Thank you,

Amy

---

**From:** Sharon Hodge [mailto:shodge@ngi.msstate.edu]  
**Sent:** Monday, April 04, 2011 3:34 PM  
**To:** OPA Resource  
**Subject:** Assisting Japan with stopping leak into ocean

Dear NRC,

I'm sure y'all have many experts trying to assist in the emergency in Japan, but thought I would write just in case this idea had not been considered. I heard this story about considering using corn starch to stop the Deepwater Horizon spill.

<http://www.npr.org/2011/03/05/134268980/could-cornstarch-have-plugged-bps-oil-well?ft=1&f=1007>

The shortfalls in the plan to use corn starch at the Deepwater Horizon spill might not be a limitation to its application in trying to stem the flow of nuclear water into the ocean in Japan. Best to you in your efforts.

Sharon Hodge

2/4/11

**From:** [Bonaccorso, Amy](#)  
**To:** [shodge@ngi.msstate.edu](mailto:shodge@ngi.msstate.edu)  
**Subject:** REPLY: Assisting Japan with stopping leak into ocean  
**Date:** Monday, April 04, 2011 4:00:00 PM

---

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The shortfalls in the plan to use corn starch at the Deepwater Horizon spill might not be a limitation to its application in trying to stem the flow of nuclear water into the ocean in Japan. Best to you in your efforts.

Sharon Hodge

**From:** Janbergs, Holly on behalf of OPA Resource  
**To:** Harrington, Holly  
**Subject:** FW: Request for basis for the NRC's Protective Action Recommendations for Japan of 16 March 2011  
**Date:** Monday, April 04, 2011 7:32:00 AM

---

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

From: Frank N. von Hippel [<mailto:fvhippel@Princeton.EDU>]  
Sent: Saturday, April 02, 2011 7:18 PM  
To: OPA Resource  
Cc: Frank von Hippel; Edwin Lyman  
Subject: Request for basis for the NRC's Protective Action Recommendations for Japan of 16 March 2011

Dear Office of Public Affairs staff,

The calculated downwind doses are provided at <http://www.nrc.gov/reading-rm/doc-collections/news/2011/11-050.pdf> but not the assumed releases or their duration.

I would appreciate it if you would refer this request to those who did the calculations.

Thank you!

Frank von Hippel, Professor of Public and International Affairs, Princeton University  
[fvhippel@princeton.edu](mailto:fvhippel@princeton.edu)  
Co-chair, International Panel on Fissile Materials  
<[www.fissilematerials.org](http://www.fissilematerials.org)>

2/442

**From:** phil  
**To:** [OPA Resource](#)  
**Subject:** Fw: Emergency: cadmium and lead (from NiCad and lead batteries) can stop/block the radiation  
**Date:** Monday, April 04, 2011 12:21:27 PM

---

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

**From:** phil  
**To:** [Fulton\\_Taylor@mccain.senate.gov](mailto:Fulton_Taylor@mccain.senate.gov)  
**Sent:** Monday, March 14, 2011 7:57 AM  
**Subject:** Emergency: cadmium and lead (from NiCad and lead batteries) can stop/block the radiation

Fulton: this is an easy lookup in a science book, but your communications systems leaves a lot up to you to remind these people about what can be done in such an unexpected emergency. I don't have access to the correct email addresses to get this through, but you might, and get a bonus pat on your back while at it.

**Emergency: cadmium and lead (from NiCad and lead batteries) can stop/block the radiation**

Better than boron in water, cadmium is used for isolation rods, so DUMP ALL THE CADMIUM YOU CAN GET FROM THE BATTERY COMPANIES, AND/OR DUMP ACTUAL BATTERIES IN THERE, actually, lead acid car batteries, from all those destroyed cars, and or lead shot from a factory, will melt and flow between the rods, decreasing neutron mobility,

SO WHAT IF YOU HAVE TO QUARANTINE THE NICKEL AND ELECTROLYTE AND STEEL (BATTERY SHELLS) and lead and calcium and manganese and etc.

GET THE CADMIUM or lead IN THERE, NOTHING ELSE IS EN MASSE expected to be in SUFFICIENT accessible supply, GOOD LUCK.

Tokyo Electric Power company doesn't have any functioning servers to relay this to, so, YOU ARE ON POINT, if you don't know what I just said, ask someone important that does.

pm

Thank you for contacting the CIA

Your question or comment has been successfully submitted. Your confirmation number is GACNU13.

2/443

**From:** phil  
**To:** OPA Resource  
**Subject:** Most original submission, I think Fw: Water Absorbing Polymer keeps the water from soaking into concrete floors, even sucks it out, can be homemade, shovelled, handled, cardboard boxed and shipped  
**Date:** Monday, April 04, 2011 12:34:54 PM

---

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

**From:** phil  
**To:** [r4allegation@nrc.gov](mailto:r4allegation@nrc.gov)  
**Sent:** Tuesday, March 29, 2011 4:42 PM  
**Subject:** Fw: Water Absorbing Polymer keeps the water from soaking into concrete floors, even sucks it out, can be homemade, shovelled, handled, cardboard boxed and shipped

Video wouldn't go through, too big@ 10 Meg

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

**From:** phil  
**To:** [r4allegation@nrc.gov](mailto:r4allegation@nrc.gov)  
**Sent:** Tuesday, March 29, 2011 4:33 PM  
**Subject:** Water Absorbing Polymer keeps the water from soaking into concrete floors, even sucks it out, can be homemade, shovelled, handled, cardboard boxed and shipped

Nick Taylor  
Senior Allegations Coordinator  
USNRC Region IV  
Toll Free: (800) 695-7403  
Office: (817) 276-6520  
Fax: (817) 276-6525  
Email: [r4allegation@nrc.gov](mailto:r4allegation@nrc.gov)

You might have the so-called best people in the world on your staffs, but it is highly evident that best is not equivalent to sufficient.

So, here's some more high suspicions that I and the general public deserve calming clarifications on.

These same simple emergency handling tricks can overnight be setup on all America's reactors, Just in case, allows some claims of reduced forward-thinking disaster risks.

Someone should analyze that soil plutonium better.

Why isn't there any uranium in it ?

Is there an highly personally profitable under the table production of dirty bomb materials going on ?

*You can tell by the isotope decay proportions how long ago it got there.*

In other words, .....

Maybe someone should analyze the water to see where else it came from, as in maybe someone was making dirty bomb materials under the table ?

Or someone was making medical radioactive materials ?

Or smoke alarm radioactive materials ? Or thorium camp light elements ?

Or radioactive samples for various international university research wholesale or retail ?

Or any too-secret nuclear bomb materials for the Japanese military, under the undersight of the Internationals ?

If such can be estimated, it might help to know how much raw materials and how much finished materials would have been there in inventory stock, for emergency assessment purposes.

2/444

Where I did nuclear radioactive total dose testing of integrated circuits for rad hardness, we used a Cesium source parked on a table right next to the primary reactor (see video if attached).

My local university research reactor also had "stores" of materials irradiated for research purposes, and probably materials for off-site radiation research.

If Japan was making radioactive materials for secondary markets, they might not have been stored safely enough for these disaster scales.

A spill of those materials would show a lot of contamination, but it would level off, as it seems to have.

They admit to making the plutonium, but they need to advise if they are/were "extracting" any of the other byproducts,

that otherwise would be self-recycled in the reactions or stored in the spent fuel pools.

HOW are they storing, packaging those extracted radioactive byproducts for shipment, and storage, and were those means safe enough to survive known explosions ?

Or were they on shelves or tables that have toppled ?

I would lean over the reactor while it was pulsing, but the water wasn't radioactive. See video if it comes through in spite of size.

Typically, such production would be nearly invisible in a small "business unit" that only forwarded their bottom lines to top management, not details.

Search the local marketing channels for such medical and research nuclear materials to get a better picture than the company would give you.

Or, local management might remember that stuff, if pointedly reminded. The manager of my local research reactor was also a campaign manager for Congressman Sonny Bono, of Sonny and Cher Fame. At a local Republican convention, he introduced me to Sonny, and my hand was the first hand that Sonny shook when he came into his convention headquarters that day. That manager is the type you had better hope that Japan had.

Mine was the last handshake for the day at another event just a few years ago from Arnold Schwarzenegger. I've talked to Chris Cox, former SEC Chairman several times in the last couple of months, I'm the one that sent in the triggers that got Paulson running to Congress just in time to save all the banks in the world.

So, having gotten addicted to long shot suggestions that have saved millions of lives, I keep going at it.

Water Absorbing Polymer and on the sidebar, suggestions for making it out of almost anything handy.

<http://www.youtube.com/watch?v=U9rXaGaDweM&feature=related>

This can solve the cleanup issues, no pumps needed, can be left in place until next spill, can be put in plastic lined cardboard boxes, not tanks.

Allows for easy analysis, and being unspillable, can't be tread on, and CAN be dumped in plastic lined trenches, without leaching into soil or ocean.

It can be long term containment, OR, it can be electrolyzed, then burned back into heavy water and returned to the reactors, with the deposits thus removed, cleaning the water. Also, there are several ways to get the salt out of the pools. Just hanging wicks in there will wick up the water, which will then evaporate, leaving the contaminations on the wick, which can then be changed, dried, and re-processed to

recover the valuables with far less difficulty than otherwise.

That can be done in the pools. If you need a more closed loop system, leak the water into barrels or drums, insert wick materials, and then apply a vacuum to it, and burn the output of the vacuum pump to convert the heavy hydrogen back into non-flammable water vapor, cool it condense it and return it safely to the pool.

I missed the company name, but there is a company in Germany that specializes in converting radioactive hydrogen back into water on a program shown on a local PBS station, KCET, on a German produced program clip about converting nuclear problem hydrogen back into water, on DW tv 3-26-2011 Ch 28-4 KCET

Concrete, such as the likely materials used to make the turbine basement floors, is highly hygroscopic. Which means that just draining the radioactive materials contaminated water won't be enough. Evaporating the water out of that concrete will leave the radioactive elements in it. Using a vacuum or osmotic wick like that water absorbing polymer, will not only take out the water, but also a lot of everything dissolved or colloid in it.

All the concrete has to be removed, and isolated.

Maybe used to create a toxic waste dump superstructure admix for the concrete in a future radioactivity containment.

There are aquarium water pumps on eBay that run on flashlight batteries, slow, but that would allow the barrel to be isolated from the power supplies and from arcing to any convenient ground. Wicks can be made from newspapers, ropes, contaminated uniforms, anything which can be later incinerated to recover the valuable residues.

As things get hot, thermionic emission will reduce their HiPot safety margin.

Sharp points will tend to "emit" electrons, usually with sparks, sometimes with slower hopping conduction, seriously reducing the insulation value of insulators.

A re-analysis of conductivities when so hot might be in order, and not on the safe side of this safety issue.

Hot gasses seem to be frequently ionized. Clean room air **deionizers** might be warranted, if there is now, or expected to be, any further hydrogen generation.

Some gasses are especially easy to ionize at temperature, such as mercury and "sodium" vapor as used in lighting because of that.

Maybe some spectrometry can determine the ionization levels there, and how much salt water sodium is getting ionized.

Once those chemicals have vapor deposited on surfaces, the conductivity changes, even if deposited on high voltage insulators.

So, what seems like spontaneous electrical discharges might have predictability factors, in the lose-lose category.

Analyze the floor water for salinity, and evaluate whether it is a leak, or overflow of the applied water, washing out explosion products.

Wicks can start extracting salts and "hard" water components without electricity or power.

Problem is what happens to soluble uranium salts and fluorides when the ionic compatible media (water) evaporates ?

Do those become a part of a hard salt "air" as in ocean front salty air ? Or radioactive gasses, as in the centrifuges ?

[http://www.washingtonpost.com/national/robots-designed-to-deal-with-nuclear-accidents-await-duty-in-europe-while-japan-asks-where-are-ours/2011/03/25/AF2A3CIB\\_story.html?hpid=z2](http://www.washingtonpost.com/national/robots-designed-to-deal-with-nuclear-accidents-await-duty-in-europe-while-japan-asks-where-are-ours/2011/03/25/AF2A3CIB_story.html?hpid=z2)

<http://www.csmonitor.com/USA/2011/0326/Radioactive-seawater-in-Japan-raises-new-fears-of-reactor-crack>

<http://www.csmonitor.com/USA/2011/0325/Do-US-nuclear-plants-have-defective-parts-NRC-finds-reporting-flaws>

**Subject:** YouTube - How to make a nuclear reactor at home <http://www.youtube.com/watch?v=dwRt74nzRmY&feature=related>

Maybe also: <http://www.google.com/search?hl=en&q=%22smart+sponge%22&btnG=Search>

TUESDAY 29 MARCH 2011

- Japanese Crews Scramble to Contain Radioactive Water at Nuclear Plant

Tuesday 29 March 2011

by: [Julie Makinen and Ralph Vartabedian, The Los Angeles Times | Report](#)

Tokyo - Japanese emergency crews are scrambling to contain rising levels of extremely radioactive water that has leaked into tunnels and basement equipment rooms at the Fukushima Daiichi nuclear power plant, putting up dangerous new obstacles to workers trying to bring the reactors under control.

Workers were using sandbags and concrete panels Tuesday in a desperate attempt to prevent the contaminated water from further spreading through the plant or into the nearby soil and ocean.

Their challenge is compounded by the fact that they must continue to douse water on the nuclear reactors and the spent fuel pools that would otherwise overheat and release additional radiation. Japanese officials warned Tuesday morning that temperatures in one of the reactors was again rising.

Chief Cabinet Secretary Yukio Edano said that cooling the reactors would remain the top priority, though workers would try to reduce the amount of water being used in order to reduce the potential for wider contamination. "We have to prioritize cooling," Edano said.

In addition, deposits of plutonium — a long-lived radioactive element — were found in the soil around the plant. The government said some of the plutonium may have seeped from damaged fuel rods inside the plant, with Edano calling the situation "very grave."

The problems represent further setbacks for Japanese authorities, demonstrating that more than two weeks after the earthquake, they still do not know the extent of damage and continue to improvise as they learn more about the state of the damage and the radiation leaks.

"Everything is being done by the seat of their pants," said Edwin Lyman, a nuclear physicist with the Union of Concerned Scientists, a U.S. watchdog group. "They are solving each problem, until the next one comes along."

Japanese and American nuclear industry experts have offered several conflicting explanations of where the water came from: runoff from water cannons fired into the damaged plant, leakage from pools holding spent fuel rods or even coolant from the damaged reactor vessels that overheated in the early days of the disaster.

The presence of highly radioactive water was complicating work at the site already hindered by mechanical problems and damage from the quake and tsunami. Engineers have run a crucial new power line to the plant from the electrical grid, but radioactivity was keeping workers from getting close enough to hook it up throughout the complex.

The radiation level of the water in the tunnel at the No. 2 reactor was reported at 1,000 millisieverts per hour; four times a worker's limit for a full year, meaning even brief exposure could be harmful.

Plant authorities were exploring ways to capture and store the contaminated water. But experts say it could take days to weeks to work out a way to remove all the water safely, further slowing efforts to bring the stricken facility under control. The engineers must also figure out where the contaminated water originated and how it got into the tunnels that house pipes connecting the reactor to the turbines.

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If not, the tunnels could simply flood again even as water is pumped out.

A U.S. nuclear design engineer said he believes the water accumulating in the tunnels and turbine rooms comes from water cannons and helicopters that attempted to spray water into the spent fuel pools but missed their mark. The water then accumulated radioactivity washed off the plant structure, and coursed downhill through the plant until reaching the tunnels.

"All that seawater they have been spraying on the reactors, tons of seawater, it basically had to go somewhere," said University of Southern California nuclear safety expert Najmedin Meshkati.

Even if the water is pumped out, radioactivity may remain behind, leaving the site still dangerous to work in. Lyman said porous concrete walls and floors could absorb the radioactive material and leave the structure still contaminated.

The Japanese also face the problem of what to do with the contaminated water.

Much of the tank space at the site is already full. And simply pumping massive quantities of contaminated water into the ocean may have unknown consequences and violate international law.

"There is a duty to protect the marine environment and that extends to their own borders," said David Caron, a University of California-Berkeley law professor and president of the American Society of International Law. "The question is whether they adequately prepared and that is in question."

Caron and many other experts said they doubted the contamination would be severe, because the sea would dilute the radioactivity before it could harm another nation's coast or marine environment.

High levels of radiation were found over the weekend in the ocean near the plant, though Japanese authorities said there was no risk to human health.

But the evidence coming out of the plant is contradictory and statements by senior Japanese officials have only added to the confusion. Japanese officials said over the weekend that they measured high levels of iodine-134, an isotope created during fission with a half-life of about 53 minutes. They later backtracked on their measurement.

Iodine-134 should have virtually disappeared after the first day of the accident.

Apart from ocean contamination, plant officials said that tests last week found trace levels of plutonium in soil outside the plant.

The origin of that material could be from a spent fuel pool or from reactor No. 3, which is loaded with plutonium fuel.

Plutonium is highly carcinogenic if particles become embedded in the lungs. Officials of the company that operates the plant said the element was found in two of five samples taken from the grounds of the facility, suggesting that contaminated water from reactor No. 3 had seeped into the soil. That reactor is fueled with a mixture of plutonium and uranium.

Concern about other radioactive substances had already led the government to order people living within 12 miles of the facility to evacuate. Those living between 12 and 18 miles from the plant have been urged to leave voluntarily, or remain indoors if they do not evacuate.

But Edano said evacuees were increasingly breaching the 12-mile perimeter without authorization to retrieve personal items from their homes. He urged them to stop, saying there is a "big risk" to human health.

On a positive note, operators are injecting fresh water into three reactors at the plant, instead of the corrosive seawater that has been used over the last two weeks.

The head of the U.S. Nuclear Regulatory Commission, Gregory Jaczko, arrived in Tokyo on Monday to meet with Japanese authorities and to get a firsthand look at the situation, according to a statement from the U.S. Embassy.

And Yukiya Amano, head of the International Atomic Energy Agency, warned that the crisis could go on for months. "The difficult situation has not been overcome and it will take time to stabilize the reactors," he said. "Radioactivity in the environment, foodstuffs and water is a matter of concern in the vicinity of the Fukushima plant and beyond."

In another sign of trouble, a pumper truck that had been spraying water into the plant broke down.

Japanese officials said it should be back in service by the end of the month.

*This article "[Japanese Crews Scramble to Contain Radioactive Water at Nuclear Plant](#)" originally appeared at *The New York Times*.*

(Makinen reported from Tokyo and Vartabedian from Los Angeles. Staff writer Thomas Maugh contributed to this report.)

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- BUZZFLASH DAILY HEADLINES
- » Report: US Stores Spent Nuclear Fuel Rods at Four Times Pool Capacity- Inteldaily
- » » Why Don't 200,000 Americans Turn Out to Protest Nuclear Power? They Did This Weekend in Germany. - BuzzFlash
- » Workers Suffer Daily Living Hardships in Effort to Stabilize Fukushima Plant, Not to Mention Likely Threat of Radioactive Contamination - The Los Angeles Times

**From:** Janbergs, Holly  
**To:** Medina, Veronika  
**Subject:** Interview - WSJ  
**Date:** Monday, April 04, 2011 12:41:00 PM

---

Ben Casselman from the Wall Street Journal would like to interview someone about the reactor license renewal process and whether there will be any holdups or changes to the process in light of the situation in Japan. He would like to speak to someone today if possible.

214-951-7123  
Ben.casselman@wsj.com

Beth Janbergs  
Public Affairs Assistant  
301-415-8211

4/4/11

**From:** [Janbergs, Holly](#) on behalf of [OPA Resource](#)  
**To:** [Bonaccorso, Amy](#)  
**Subject:** FW: FP&L  
**Date:** Monday, April 04, 2011 2:22:00 PM

---

---

**From:** [vic@innovative-designs.biz](mailto:vic@innovative-designs.biz) [mailto:[vic@innovative-designs.biz](mailto:vic@innovative-designs.biz)]  
**Sent:** Monday, April 04, 2011 2:21 PM  
**To:** OPA Resource  
**Subject:** FW: FP&L

gentlemen;

In light of the recent tragedy in Japan and the unfolding nuclear contamination I believe there are many lessons that we may learn thru the failures there and how we can benefit from these experiences. Here in South Florida we have two nuclear facilities on the coast well within the reach of storm surges. although the tectonic fault lines in this region are less likely to produce earth quakes or resulting tsunami's it is very likely that at some point we will encounter another major hurricane that will bring with it a significant storm surge. In recent decades the storms that have lashed our shores have manifested themselves largely absent significant storm surges when contrasted with what each were capable of unleashing. Although a Tsunami and storm surges each have unique characteristics they share a common threat to our nuclear facilities and that being the ability to potentially knock out the primary and back up cooling systems by flooding the facilities and electrical equipment.

we should not pass up this opportunity to re-evaluate the potential threat this poses and act now to re-engineer the power sources, control systems and pump motors to elevate them all too well above potential sea levels at the height of storm surges. while we have been extremely fortunate in years past that we have not had to deal with this kind of cascading failure. looking back to 1992 and the rath that Hurricane" Andrew" left in its wake, it could have easily been far more devastating than we have ever known. "Andrew" was originally predicted to have a storm surge of 15-18 feet and fortunately picked up speed in the hours before land fall that surge was muted to less than 10 feet. With the benefit of hindsight we may have passed far closer to a real nuclear disaster than we ever knew.

What specific steps has the NRC taken to reexamine the threat of storm flooding at our coastal nuclear facilities in the past and armed with information about the height of the water levels in Japan's recent tsunami how does that compare with the analysis that have been done previously to address this risk analysis?

sincerely,

2/446

Vic Lohmann  
Innovative Designs  
1404 Nautilus Isle  
Dania Beach, FL 33004  
954-921-4318  
954-929-2535 FAX  
[www.innovative-designs.biz](http://www.innovative-designs.biz)  
CRC 057000

**From:** [Janbergs, Holly](#) on behalf of [OPA Resource](#)  
**To:** [Bonaccorso, Amy](#)  
**Subject:** FW: Assisting Japan with stopping leak into ocean  
**Date:** Monday, April 04, 2011 3:38:00 PM

---

**From:** Sharon Hodge [<mailto:shodge@ngi.msstate.edu>]  
**Sent:** Monday, April 04, 2011 3:34 PM  
**To:** OPA Resource  
**Subject:** Assisting Japan with stopping leak into ocean

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<http://www.npr.org/2011/03/05/134268980/could-cornstarch-have-plugged-bps-oil-well?ft=1&f=1007>

The shortfalls in the plan to use corn starch at the Deepwater Horizon spill might not be a limitation to its application in trying to stem the flow of nuclear water into the ocean in Japan. Best to you in your efforts.

Sharon Hodge

4/4/11

**From:** Janbergs, Holly  
**To:** Medina, Veronika  
**Subject:** Interview - Insur.com  
**Date:** Monday, April 04, 2011 2:54:00 PM

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Emmet Pierce from Insur.com (consumer-oriented website mainly focusing on insurance issues) would like to have a quick interview with someone discussing how practical it would be to evacuate an area around nuclear power plants in light of a situation such as is unfolding in Japan. He'd like to talk about emergency preparedness as well. His deadline is Weds at noon.

858-231-4955  
communications@emmetpierce.com

Beth Janbergs  
Public Affairs Assistant  
301-415-8211

L/448

**From:** [Joseph Deihl II](#)  
**To:** [OPA Resource](#)  
**Subject:** Japan did not have to happen.  
**Date:** Monday, April 04, 2011 2:51:40 PM

---

## **Nuclear radiation from Japan did not have to happen. Two Safety items are missing from all nuclear power plants.**

By: Joseph Deihl II of AZ

With the addition of two safety items the Fukushima nuclear power plant in Japan would be intact today, with little or no leakage of radiation. These safety items need to be added to all nuclear power plants around the world ASAP.

All nuclear power plants are next a water source, an ocean, a lake, river, stream or man made pond (like Palo Verde Nuclear Generating Station). The water next to nuclear plants is a backup supply of water in case of an emergency, if the main source of water is unable to be used. When the power goes out and the back up generators don't work to pump the water from these back up water sources, then a whole ocean of water next to your nuclear power plant doesn't do much good. As we have currently seen at the Fukushima nuclear power plant.

In the mid-western United States, large towns and small cities have been using giant water towers for their water pressure and supply. These water towers hold as much as 1,500,000 gallons of drinking water. These towers are so tall that they have plenty of water pressure that does not need or use any electrical power. Just gravity.

Using Japan's building knowledge on how to build buildings and towers to withstand large major earthquakes, we need to build water towers next to the nuclear power plants to supply the plants with gravity fed water and water pressure that does not use electricity. So when the power goes out and the back up generator's go out, then just turn a valve and you have a temporary fix of water for about a week. Enough time to get the other electrical power sources back up and working.

Now if the power is out at the nuclear power plant and using up its back up water supply. Then the nuclear power plant is producing a lot of steam pressure (like a pressure cooker) that has to be released or it will explode. The steam is radio active and you don't want that released into the outside air. Like they are doing at the Fukushima nuclear power plant in Japan. OK, then just put a copper dome over the steam release openings to capture the steam and run it through a coiled curved pipe to an empty holding tank. (like a still) Later the radio active distilled captured water can be recycled back through the nuclear power plant to cool it again. And we didn't use any electrical power to capture the steam and distill it. The radiation is contained.

These two safety items have to be done ASAP. As everyone is talking about something bad happening in December 2012. Well how about this, the perfect solar storm. (From NASA science news) A solar flare hits the earth straight on. The sun's

2/449

coronal mass ejection overwhelms Earth's own magnetic field, allowing charged particles to penetrate into Earth's upper atmosphere. This happened in September 1-2, 1859, telegraph wires in both the United States and Europe spontaneously shorted out, causing numerous fires, while the Northern Lights, were documented as far south as Rome, Cuba and Hawaii, with similar effects at the South Pole. This solar flare only took about 18 hours to hit the earth.

In March 1989, a solar storm much less intense than the perfect solar storm of 1859 caused the Hydro-Quebec (Canada) power grid to go down for over nine hours.

Solar storms can last for up to three days. Now if the perfect solar storm hit the earth in 2012 then hundreds of nuclear power plants would be without power and melting down. Those water towers would sure come in handy keeping the water running over those nuclear reactors for a week. And the distillers capturing all that steam would be mighty nice too. So lets start implementing these upgrades today.

**From:** [Janbergs, Holly](#) on behalf of [OPA Resource](#)  
**To:** [Medina, Veronika](#)  
**Subject:** FW: Trade press question: NRC and government shutdown?  
**Date:** Monday, April 04, 2011 2:39:00 PM

---

---

**From:** Wayne Barber (SNL: 703-373-0160) [<mailto:WBarber@snl.com>]  
**Sent:** Monday, April 04, 2011 2:36 PM  
**To:** Burnell, Scott; OPA Resource  
**Subject:** Trade press question: NRC and government shutdown?

**Is NRC's operation center still being staff around-the-clock due to Japan's Fukushima crisis?**

**Will that operational center continue to stay open in the event of a federal government shutdown?**

**What about the just-announced NRC task force? Will it continue its work in the event of a government shutdown? What about the support staff for the task force?**

**Many thanks.**

**Wayne B.**

---

**Wayne Barber**  
Generation Markets Week Editor  
SNL Energy  
703-373-0160 *p*  
703-373-0159 *f*  
[wbarber@snl.com](mailto:wbarber@snl.com)

2/450

**From:** Nuclear Plant Journal [anu@goinfo.com]  
**Sent:** Monday, April 04, 2011 6:27 PM  
**To:** Panicker, Mathew  
**Subject:** NPJ E-News April 4, 2011 Fukushima Update

Having trouble viewing this email? [Click here](#)



## Nuclear Plant Journal E-News

**Japan Update**  
**April 4, 2011**

Dear MATHEW,

In this issue of NPJ E-News you'll find an update of the Fukushima Nuclear Plants in Japan. Information is current as of April 4, 2011, 17:00 CDT. All items are directly quoted, without any editing.

### In this issue

[TEPCO Update](#)

[Status Document](#)

[US NRC FAQs](#)

### TEPCO Update

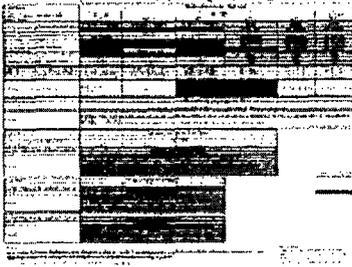
From the [TEPCO website](#):

- **Improvement Plan for Nuclide Analysis**

At the site of Fukushima Daiichi Nuclear Power Station, as part of our investigation for the pathway and the volume of emission, which contains radioactive material, we have been conducting nuclide analysis for air inside the plant, seawater near the plant and water puddle in the turbine building. We have been informing you the result of the nuclide analysis. It is ascertained that the result of nuclide analysis of tellurium 129 (half life : about 70 minutes) conducted on March 30th, for water puddle collected near the trench and ground water collected near the turbine building are doubtful. [Click for more.](#)

- Plant status update: [Click for more](#)

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## JAIF Status Update

Update 62, April 4, 2011

A [PDF document](#) provides a simple summary of each of the units at Fukushima nuclear power plants. This is a multi-page document that also provides a chronology of events and a map that details the status of each of the Japanese nuclear units.

## Earthquake Update 42.

### US NRC FAQs related to Fukushima earthquake and subsequent events



NRC [frequently asked questions](#) related to the March 11, 2011 Japanese Earthquake and Tsunami. Some sample questions:

- Can an earthquake and tsunami as large as happened in Japan also happen here?
- Did the Japanese underestimate the size of the maximum credible earthquake and tsunami that could affect the plants?
- How high was the tsunami at the Fukushima nuclear plants?
- Was the damage to the Japanese nuclear plants mostly from the earthquake or the tsunami?

### Quick Links...

- [NPJ Website](#)
- [Cost-free Subscription](#) (to NPJ)
- [JAIF](#)
- [TEPCO](#)
- [NISA](#)
- [U.S. NRC Actions on Japan](#)

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#### Contact Information

phone: 630-313-6739

email: [NPJ@goinfo.com](mailto:NPJ@goinfo.com)

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Nuclear Plant Journal · 1400 Opus Place, Suite 904 · Downers Grove · IL · 60515

**From:** phil  
**To:** OPA Resource  
**Subject:** Fw: FastMo  
**Date:** Monday, April 04, 2011 12:24:51 PM

---

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

**From:** phil  
**To:** [Bonaccorso, Amy](#)  
**Sent:** Monday, March 21, 2011 1:07 AM  
**Subject:** Fw: FastMo

What's wrong with them, I'm no chemist but I know that even antifreeze raises the boiling/boil-off point. though they should choose something less flammable than ethylene glycol, that has non-toxic vapors. What do they have in volume near there in Japan ? The water doesn't have to be pure to cool.

Anything that increases the surface tension at the air/water interface will reduce steam transition, not just pressure.

It doesn't have to have a 100°C regulation point, anything, even wood's metal would work, even electronics' solder,

anything that melts below 1,000°C can absorb heat, and displace water or other fluid higher.

[http://www.engineeringtoolbox.com/dowtherm-a-physical-properties-d\\_1591.html](http://www.engineeringtoolbox.com/dowtherm-a-physical-properties-d_1591.html)

<http://www.google.com/search?hl=en&q=heat+transfer+fluid>

If you need the water phase change to self-extract the heat, then float it over one of those.

If the water is (steam)seep leaking through the concrete or any other cracks, there are lots of stop-leak/block seal type additives, even for winter weather areas.

At Hughes Aircraft we invented the use of ping pong balls for reducing the evaporation of fluorocarbons in liquid burn-in stations,

but, anything that floats heat exchange fins into and above the water line, while reducing water surface area will do better here.

### WaterWetter super coolant Features & Benefits

Waterwetter is a unique wetting agent for cooling systems which reduces coolant temperatures by as much as 30° F. This liquid product can be used to provide rust and corrosion protection in plain water for racing engines, which provides much better heat transfer properties than glycol-based antifreeze. Or it can be added to new or used antifreeze to improve the heat transfer of ethylene and propylene glycol systems. Designed for modern aluminum, cast iron, copper, brass and bronze systems.

They could have thrown enough rocks in there by now to displace the water level higher, or poured in enough lead paint,

how much water separation is needed anyway ? What's keeping them from running hoses in there ? they've got no blood in their brains when fear adrenaline scares all the blood into the arm or leg muscles.

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Or, floated in enough water sponge mats, or injected cold air to prevent steaming.

Or, by now, brought in a ski-resort type snow maker, since ice has two high calorie absorbing transition points, to water, then to steam, per gram.

Ahhh, now I know what they are trying to prove, weak contingency competence.

**Norato, Michael**

**From:** OECD Nuclear Energy Agency [nea@oecd-nea.org]  
**Sent:** Tuesday, April 05, 2011 12:32 PM  
**To:** OECD Nuclear Energy Agency  
**Subject:** OECD Nuclear Energy Agency: Monthly News Bulletin - April 2011



# NEA MONTHLY NEWS BULLETIN

Nuclear Energy Agency



April 2011 | [www.oecd-nea.org](http://www.oecd-nea.org)

## New at the NEA

### New at the NEA

#### Nuclear safety and regulation

#### Radiological protection

#### Nuclear law

#### Nuclear science

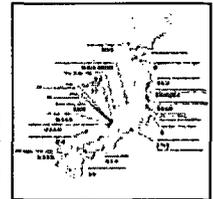
#### New publications

#### Data Bank



### Responding to the nuclear accident at Fukushima

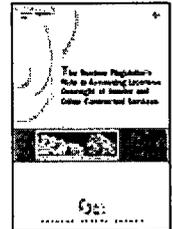
On 11 March 2011, Japan experienced a major earthquake followed by a tsunami of cataclysmic magnitude. The OECD Nuclear Energy Agency (NEA) wishes to express its condolences to all those who have been affected by this disaster. It has offered its assistance to the Japanese authorities as they address the very challenging situation at the Fukushima nuclear power plant. The NEA will be playing a key role in the evaluation of the accident and the dissemination of lessons learnt based on its various areas of expertise and its competence in addressing emergency and accident management issues. The following updates provide initial insights into some of the steps being taken by the NEA.



## Nuclear safety and regulation

### Flashnews activated to share accurate emergency information among nuclear regulators

On 11 March the NEA Working Group on Public Communication of Nuclear Regulatory Organisations (WGPC) activated the Flashnews system in response to the Fukushima accident. Flashnews allows for the fast exchange of information among national nuclear regulators and is used to help inform the public about nuclear events occurring around the world.



### New and existing nuclear safety groups consider Fukushima implications

The NEA Committee on Nuclear Regulatory Activities (CNRA) will establish a senior-level task group to exchange information, co-ordinate activities and examine implications in relation to the Fukushima accident. Once established, members of the group will immediately begin exchanging information prior to the first meeting to be held in Paris in early May. The NEA Committee on the Safety of Nuclear Installations (CSNI) will focus on the technical aspects of safety questions raised by the accident. It will identify issues that could require in-depth evaluation by existing or new nuclear safety task groups. The Fukushima accident will be a special topic for discussion during the June CNRA and CSNI meetings and subsequent working group sessions. Please visit the NEA website for more information on nuclear safety.

## Radiological protection

### INEX-4 and CRPPH meetings present opportunities to discuss Fukushima

The Fukushima accident will have a significant impact on NEA work in radiological protection. A meeting of the Working party on Nuclear Emergency Matters (WPNEM) on May 3-4 that *inter alia* will discuss the 4th International Nuclear Emergency Exercise (INEX-4) and the annual meeting of the Committee on Radiation Protection and Public Health (CRPPH) on 17-19 May will present the first international opportunities for experts in this field to discuss the preliminary feedback from emergency measures taken in Japan. A further INEX workshop is planned for 6-7 December 2011. During the May meeting, the CRPPH will submit for



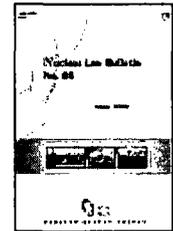
4/453

approval a report summarising the resources needed to implement the International Commission on Radiological Protection (ICRP) Publication 60 recommendations into national law and an assessment of the resources that will be needed to implement the new ICRP 103 recommendations. This will provide member countries with information important for implementing these new recommendations as detailed in the International Basic Safety Standards for Protection Against Ionizing Radiation and for the Safety of Radiation Sources. More on NEA work in radiological protection can be found [here](#).

## Nuclear law

### The legal aspects of the Fukushima accident

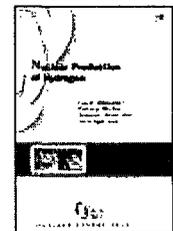
NEA Legal Affairs will dedicate a special session of the Nuclear Law Committee (NLC) on 15-16 June to discuss the accident at Fukushima and how the Japanese government intends to deal with liability and compensation for the resulting nuclear damage. In its capacity as secretariat, the NEA is prepared to accommodate discussions on member country initiatives in the field of third party liability for nuclear damage, especially where signatories to the 2004 protocols enhance their efforts for the entry into force of those protocols to provide better protection to potential victims of a nuclear accident. Legal questions related to the accident will be addressed in the June issue of the Nuclear Law Bulletin. Furthermore, the 2011 session of the International School of Nuclear Law will provide an opportunity for the most renowned international nuclear lawyers to exchange on the impacts, lessons learnt and consequences of this accident as it relates to international nuclear law. More information on nuclear law can be found [here](#).



## Nuclear science

### Nuclear science groups prepared to reassess predictive capabilities

NEA nuclear science working parties and expert groups carry out technical studies in the areas of fuel cycle physics and chemistry, reactor physics, criticality safety, materials performance and radiation shielding. A key focus in each area is on the development, application and validation of modelling tools and their associated nuclear data. These tools are used by the nuclear industry in the design, operation and safety assessment of nuclear facilities including commercial nuclear power plants (NPPs). As details of the Fukushima accident emerge, and as the safety cases and emergency procedures for NPPs are reappraised, NEA nuclear science working parties and expert groups may be required to analyse new scenarios which characterise the evolution of the reactor core and the spent fuel ponds during such an event. Some of these scenarios might challenge the predictive capability of current modelling methods. In that case, new activities could be proposed and discussed by various nuclear science technical groups with the aim of targeting any shortfall in predictive capability, identifying possible methods developments to address the shortfall and providing the means to assess the accuracy of new methods developed. For more information on nuclear science, please visit the [NEA website](#).



## New publications

Free publications are available [at this link](#). Paper copies may be requested by [sending an e-mail](#).

The Nuclear Regulator's Role in Assessing Licensee Oversight of Vendor and Other Contracted Services  
ISBN: 978-92-64-99157-6, 38 pages.

Publications on sale can be ordered at the [OECD bookshop](#).

## Data Bank

[NEA Data Bank newsletter](#)

### Computer program services

[New computer programs available](#)

31-MAR-11	<a href="#">CSNI2017</a>	MCCI-2 PROJECT, Melt Coolability and Concrete Interaction Phase 2 Project (Arrived)
29-MAR-11	<a href="#">NEA-1857</a>	PHITS-2.24, Particle and Heavy Ion Transport code System (Tested)
28-MAR-11	<a href="#">CCC-0295</a>	ELGATL, Calculation of Energy Spectra from Coupled Electron-Photon Slowing Down (Arrived)

22-MAR-11	<u>USCD1240</u>	VIM_NC, VIM color syntax for Nuclear Codes: NJOY, DRAGON, PARTISN, TORT, MONK, and MCNP (Tested)
16-MAR-11	<u>IAEA1287</u>	SHIELD, Monte-Carlo Code for Simulating Interaction of High Energy Hadrons with Complex Macroscopic Targets (Tested)
16-MAR-11	<u>IAEA0970</u>	STOPOW, Stopping Power of Fast Ions in Matter (Tested)
15-MAR-11	<u>USCD1238</u>	ALICE2011, Particle Spectra from HMS precompound Nucleus Decay (Tested)
07-MAR-11	<u>CCC-0767</u>	SWORD 3.2, SoftWare for Optimization of Radiation Detectors (Arrived)
03-MAR-11	<u>NEA-1856</u>	VESTA 2.0.3, Monte Carlo depletion interface code (Arrived)
03-MAR-11	<u>NEA-1210</u>	ZZ HATCHES-19, Database for radiochemical modelling (Tested)

**About the NEA**

NEA membership consists of 29 OECD countries. The mission of the NEA is to assist its member countries in maintaining and further developing, through international co-operation, the scientific, technological and legal bases required for a safe, environmentally friendly and economical use of nuclear energy for peaceful purposes. It provides authoritative assessments and forges common understandings on key issues, as input to government decisions on nuclear energy policy and to broader OECD policy analyses in areas such as energy and sustainable development. The information, data and analyses it provides draw on one of the best international networks of technical experts.

To unsubscribe from this bulletin, **please use this link.**

## Norato, Michael

---

**From:** ANS Broadcasts [broadcasts@ans.org]  
**Sent:** Tuesday, April 05, 2011 8:59 PM  
**To:** Norato, Michael  
**Subject:** ALERT: Corradini to testify for ANS on Fukushima

On Wednesday, April 6, Dr. Michael Corradini will be appearing on behalf of the American Nuclear Society before the U.S. House Energy and Commerce Subcommittee on Oversight and Investigations. The hearing—which will begin at 9:00 am ET—is entitled “The U.S. Government Response to the Nuclear Power Plant Incident in Japan.” A live webcast and additional information about the Hearing will be available via the [Committee website](#).

Dr. Corradini is currently chair of the Nuclear Engineering and Engineering Physics program at the University of Wisconsin, Madison. He is also involved in a number of nuclear energy activities for the National Academies, the Department of Energy (DOE) and the Nuclear Regulatory Commission (USNRC). Specifically, Dr. Corradini is a member of the DOE Nuclear Energy Advisory Committee and Chair of its Reactor Technology Subcommittee. In addition, he is a member of the French Atomic Energy Scientific Committee and the NRC’s Advisory Committee for Reactor Safeguards.

In his prepared testimony, Dr. Corradini announces that he has been asked by ANS leadership to serve as co-chair of an ANS Special Commission on Fukushima Daiichi. This ANS Commission will examine the major technical aspects of the event to help policymakers and the public better understand its consequences and its lessons for the US nuclear industry.

Dr. Corradini's prepared testimony will be posted in its entirety at the [ANS Nuclear Cafe](#) and will be made available via the [ANS website](#) following his testimony.

## Nelson, Robert

---

**From:** Nelson, Robert *ink*  
**Sent:** Tuesday, April 05, 2011 3:02 PM  
**To:** DiFrancesco, Nicholas; Pickett, Douglas; Broaddus, Doug; Campbell, Stephen; Carlson, Robert; Chernoff, Harold; Kulesa, Gloria; Markley, Michael; Pascarelli, Robert; Salgado, Nancy; Simms, Sophonia; Wall, Scott  
**Cc:** Howe, Allen; Giitter, Joseph  
**Subject:** Query: Near term Task Group requests

See below. Any suggestions??

NELSON

---

**From:** Westreich, Barry *ink*  
**Sent:** Tuesday, April 05, 2011 2:57 PM  
**To:** Hiland, Patrick; Brown, Frederick; McGinty, Tim; Blount, Tom; Holian, Brian; Galloway, Melanie; Giitter, Joseph; Howe, Allen; Nelson, Robert; Bahadur, Sher; Lubinski, John; Thomas, Brian; Skeen, David; Cheok, Michael; Lee, Samson  
**Cc:** Ruland, William; Boger, Bruce; Collins, Timothy; Leeds, Eric  
**Subject:** Near term Task Group requests

I have been speaking with the Task Force conducting a near term evaluation for Agency Actions following the events in Japan. They are beginning their efforts to understand the current status of a number of areas that may be require additional review. We are speaking with them today on the Temporary Inspection Instruction being conducted as a follow- up to Fukushima events.

They have also indicated a desire to the speak to knowledgeable staff next week in the following areas:

- Hydrogen Control and/or BWR hardened vents. Currently scheduled for Monday April 11, 2011 at 2-3:30pm.
- SAMGs. Currently scheduled for Tuesday, April 12, 2011 9:30 AM-11:30 AM.

In order to support the Task Group effort, I would appreciate your identification of any knowledgeable staff that you feel can discuss the current status of requirements, or other voluntary activities, that have been implemented to address these areas. These are being conducted as informal discussions and no additional presentation material is being requested to support these activities.

**Nelson, Robert**

---

**From:** Nelson, Robert *ink*  
**Sent:** Tuesday, April 05, 2011 3:06 PM  
**To:** Westreich, Barry  
**Subject:** RE: Near term Task Group requests

I'm checking with our BCs

NELSON

---

**From:** Westreich, Barry *ink*  
**Sent:** Tuesday, April 05, 2011 2:57 PM  
**To:** Hiland, Patrick; Brown, Frederick; McGinty, Tim; Blount, Tom; Holian, Brian; Galloway, Melanie; Giitter, Joseph; Howe, Allen; Nelson, Robert; Bahadur, Sher; Lubinski, John; Thomas, Brian; Skeen, David; Cheok, Michael; Lee, Samson  
**Cc:** Ruland, William; Boger, Bruce; Collins, Timothy; Leeds, Eric  
**Subject:** Near term Task Group requests

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**Nelson, Robert**

---

**From:** Nelson, Robert *ink*  
**Sent:** Tuesday, April 05, 2011 3:26 PM  
**To:** Campbell, Stephen; Carlson, Robert; Chernoff, Harold; Broaddus, Doug; Kulesa, Gloria; Markley, Michael; Pascarelli, Robert; Salgado, Nancy; Simms, Sophonia; Howe, Allen; Meighan, Sean; Perch, Libby  
**Cc:** Cox, Linda  
**Subject:** Reminder: Don't use TAC ZG0061

See HRMS Bulletin on 4/1/11 for new TACs

NELSON

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**From:** Cox, Linda *ink*  
**Sent:** Tuesday, April 05, 2011 3:07 PM  
**To:** Campbell, Stephen; Carlson, Robert; Chernoff, Harold; Broaddus, Doug; Kulesa, Gloria; Markley, Michael; Pascarelli, Robert; Salgado, Nancy; Simms, Sophonia; Cox, Linda; Howe, Allen; Meighan, Sean; Nelson, Robert; Perch, Libby  
**Subject:** Please complete your T&A in HRMS for PP#A8 (Mar 27- Apr 9) by COB on Thu, April 7, 2011. Thank you, (eom)

**Nelson, Robert**

---

**From:** Nelson, Robert | *NRK*  
**Sent:** Tuesday, April 05, 2011 4:12 PM  
**To:** Leeds, Eric; Boger, Bruce; Steger (Tucci), Christine; Landau, Mindy; Croteau, Rick; Roberts, Darrell; Kennedy, Kriss; Lara, Julio; Bahadur, Sher; Blount, Tom; Brown, Frederick; Cheok, Michael; Evans, Michele; Ferrell, Kimberly; Galloway, Melanie; Giitter, Joseph; Givvines, Mary; Hiland, Patrick; Holian, Brian; Howe, Allen; Lee, Samson; Lubinski, John; McGinty, Tim; Ruland, William; Skeen, David; Thomas, Brian; Westreich, Barry  
**Cc:** Shear, Gary; West, Steven; Hay, Michael; Broaddus, Doug; Campbell, Stephen; Carlson, Robert; Chernoff, Harold; Kulesa, Gloria; Markley, Michael; Pascarelli, Robert; Salgado, Nancy; Simms, Sophonia; Wall, Scott; Guzman, Richard; Lyon, Fred; Meighan, Sean; Nguyen, Quynh; Oesterle, Eric; Polickoski, James; Tam, Peter; Thomas, Eric; Wertz, Trent  
**Subject:** FYI: NRR Comm Team SitRep - 4/5

1. Reviewed and commented on Marty Virgilio's draft Congressional testimony.
2. Trent Wertz will work with Bill Ruland to identify Qs & As to support the ACRS meeting on Thursday. Comm Team will provide support as needed.
3. NRR staff worked with OPA to respond to Qs from a Wall Street Journal reporter.
4. In support of Region I, developing Qs & As to clarify the basis for the dose analyses attached to the March 16, 2011, NRC press release.
5. Screened four potentially sensitive licensing actions (5 TACs) resulting in normal processing.
6. In response to a request from OCA, provided a list of Part 73 compliance date exemptions approved within the last year.
7. Provided a summary of decommissioning funding assurance requirements to OEDO to support responses to two Congressional inquiries re: decommissioning at VY. NMSS/FSME is providing info regarding the regulations for the decommissioning process.
8. Finalized Qs & As re: SBO coping capability.

NELSON

**Jimenez, Manuel**

---

**From:** Shoop, Undine *UN*  
**Sent:** Tuesday, April 05, 2011 4:10 PM  
**To:** Jimenez, Manuel  
**Subject:** FW: 4-7-2011 ACRS Thorp Presentation Slides Items 1 & 2 + Back-up Slides  
**Attachments:** ACRS Presentation - JET BACK-UP SLIDES.pptx; ACRS Presentation - John Thorp-jet review.pptx

**Importance:** High

---

**From:** Thorp, John *UN*  
**Sent:** Tuesday, April 05, 2011 3:07 PM  
**To:** Brown, Frederick  
**Cc:** Garmon, David; Thomas, Eric; Kobetz, Timothy; Shoop, Undine; Westreich, Barry  
**Subject:** 4-7-2011 ACRS Thorp Presentation Slides Items 1 & 2 + Back-up Slides  
**Importance:** High

Fred,

Today, Dave Garmon and I have finalized a set of draft slides for use in tomorrow's ACRS Dry Run presentation. I've tried to keep these high level; information is up to date as of today. Please send any comments/changes to me and Dave, if you can, before 6pm this evening.

Also attached is a set of Back-up slides that provide a couple sketches and overhead photo views of the plants at Fukushima Dai-ichi.

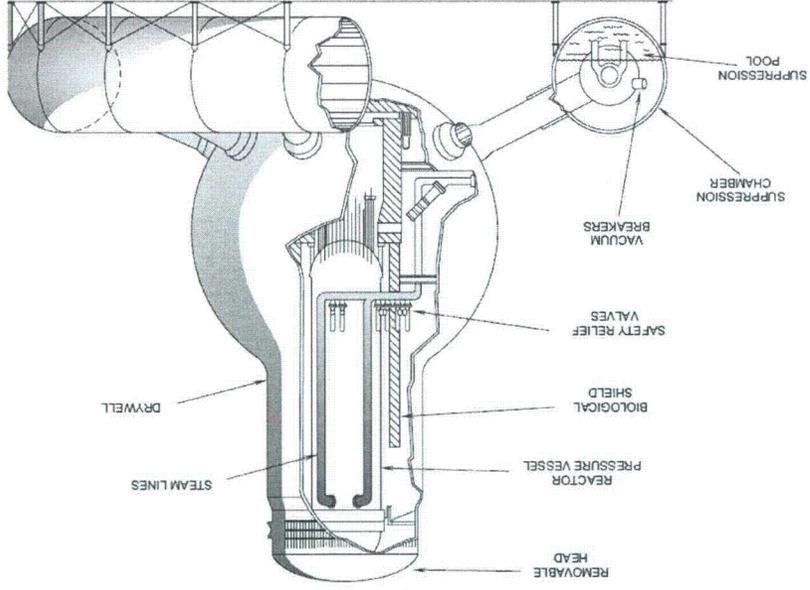
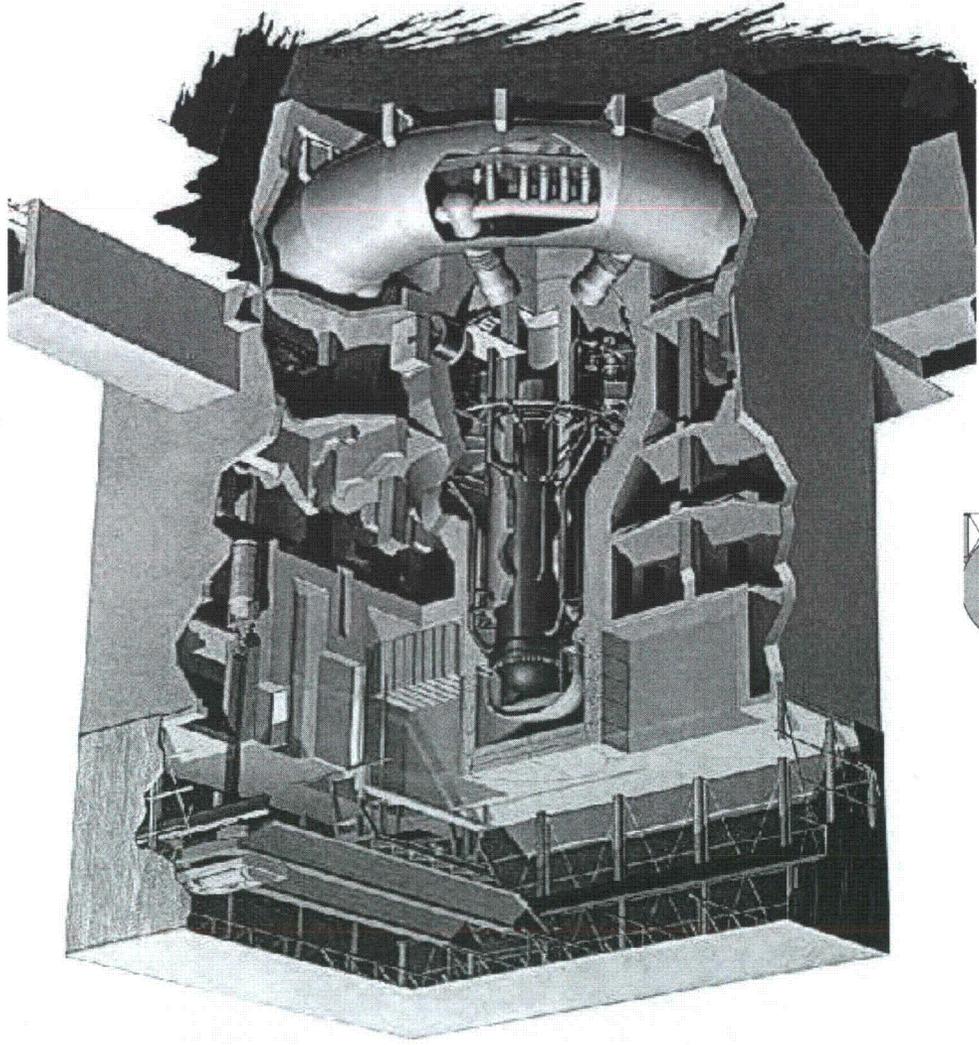
If no feedback on these slides and speaker notes by this evening, I'll then pass them to Trent Wertz and Bill Ruland in preparation for the dry run.

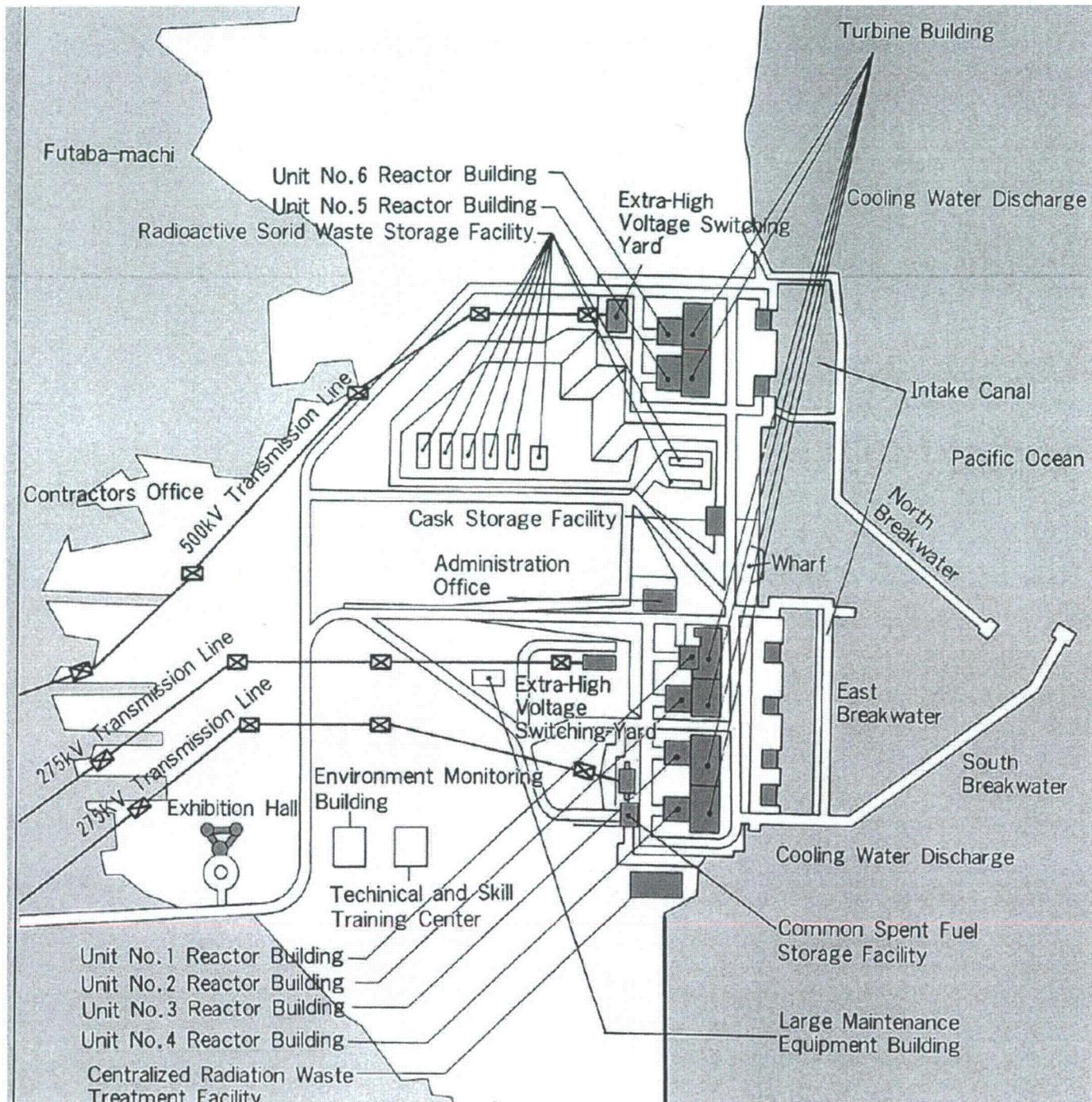
Thanks,

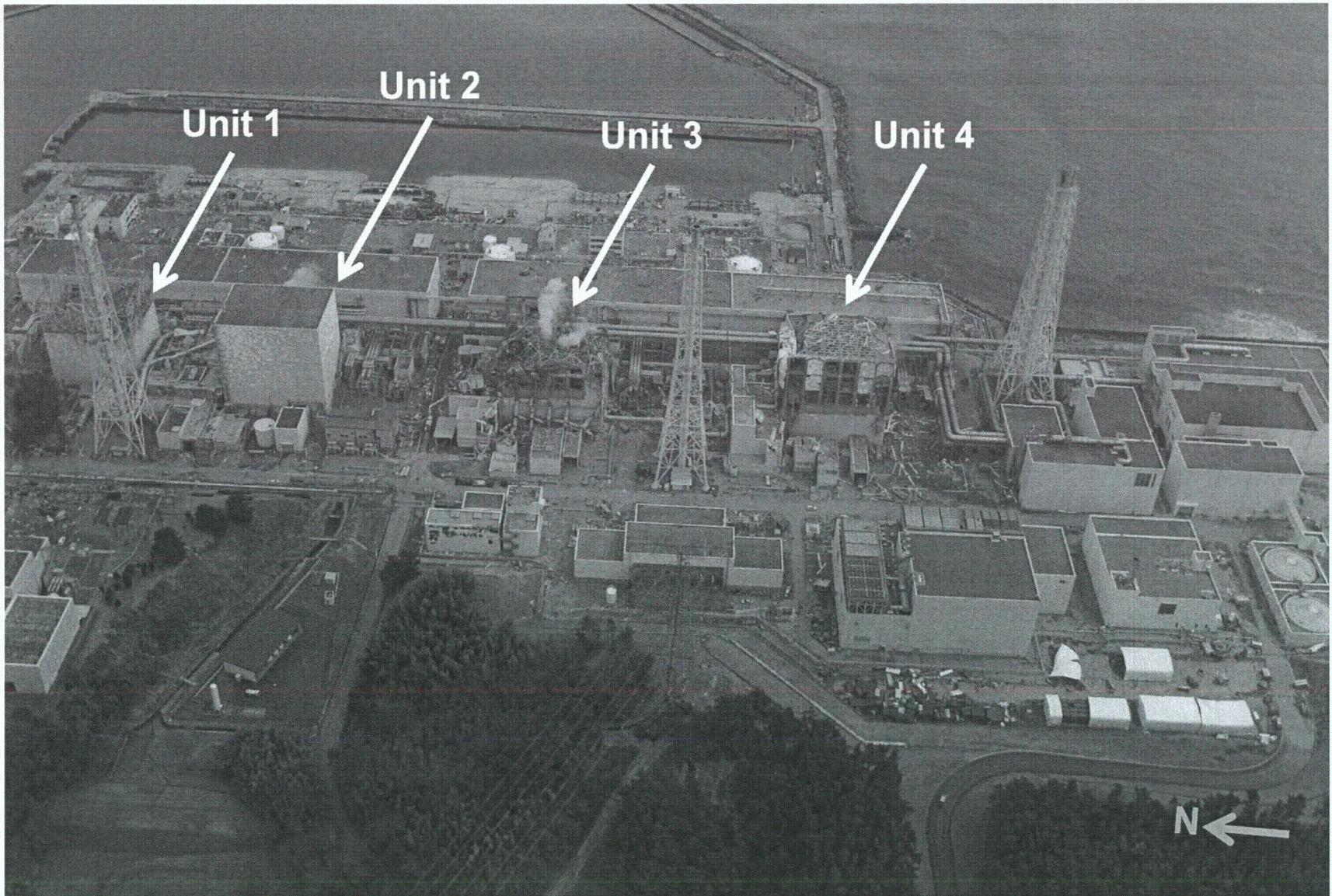
John

**4/7/2011**  
**ACRS Presentation**  
**Items 1 & 2**  
**Back Up Slides**

# Mark I Containment

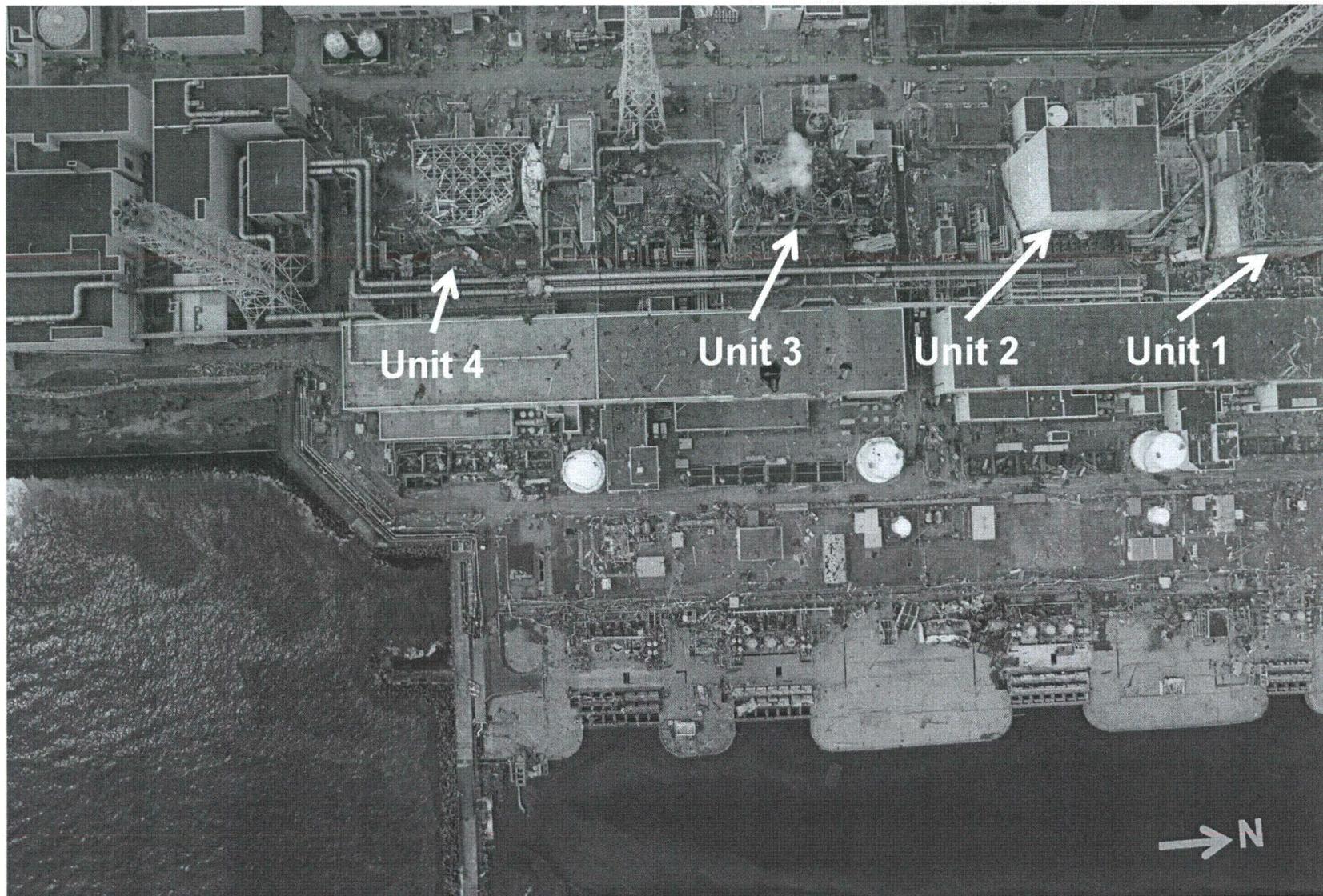






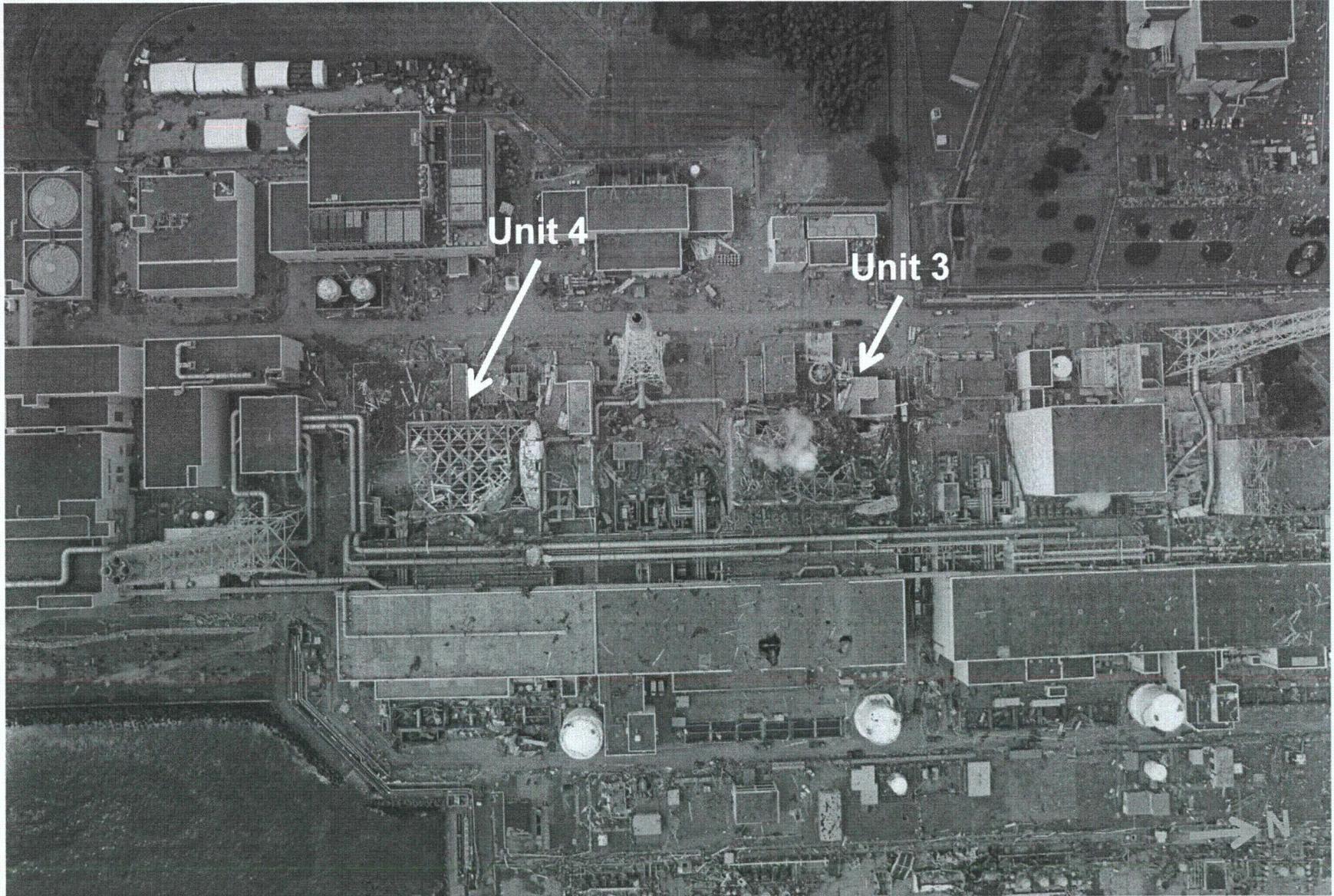
**Fukushima Dai'ichi Nuclear Power Station**

U.S. NRC – For Official Use Only



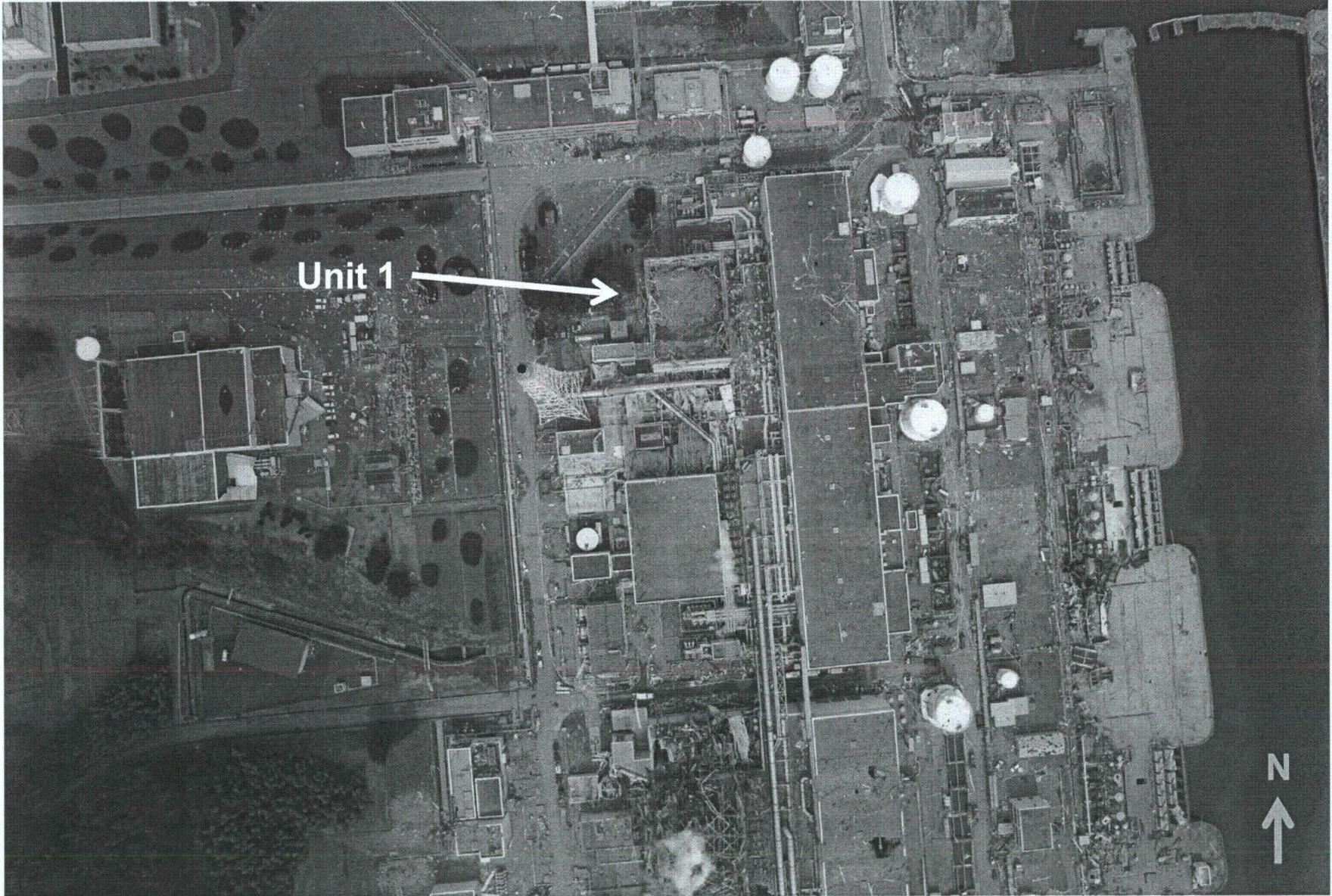
**Fukushima Dai'ichi Nuclear Power Station**

**U.S. NRC – For Official Use Only**



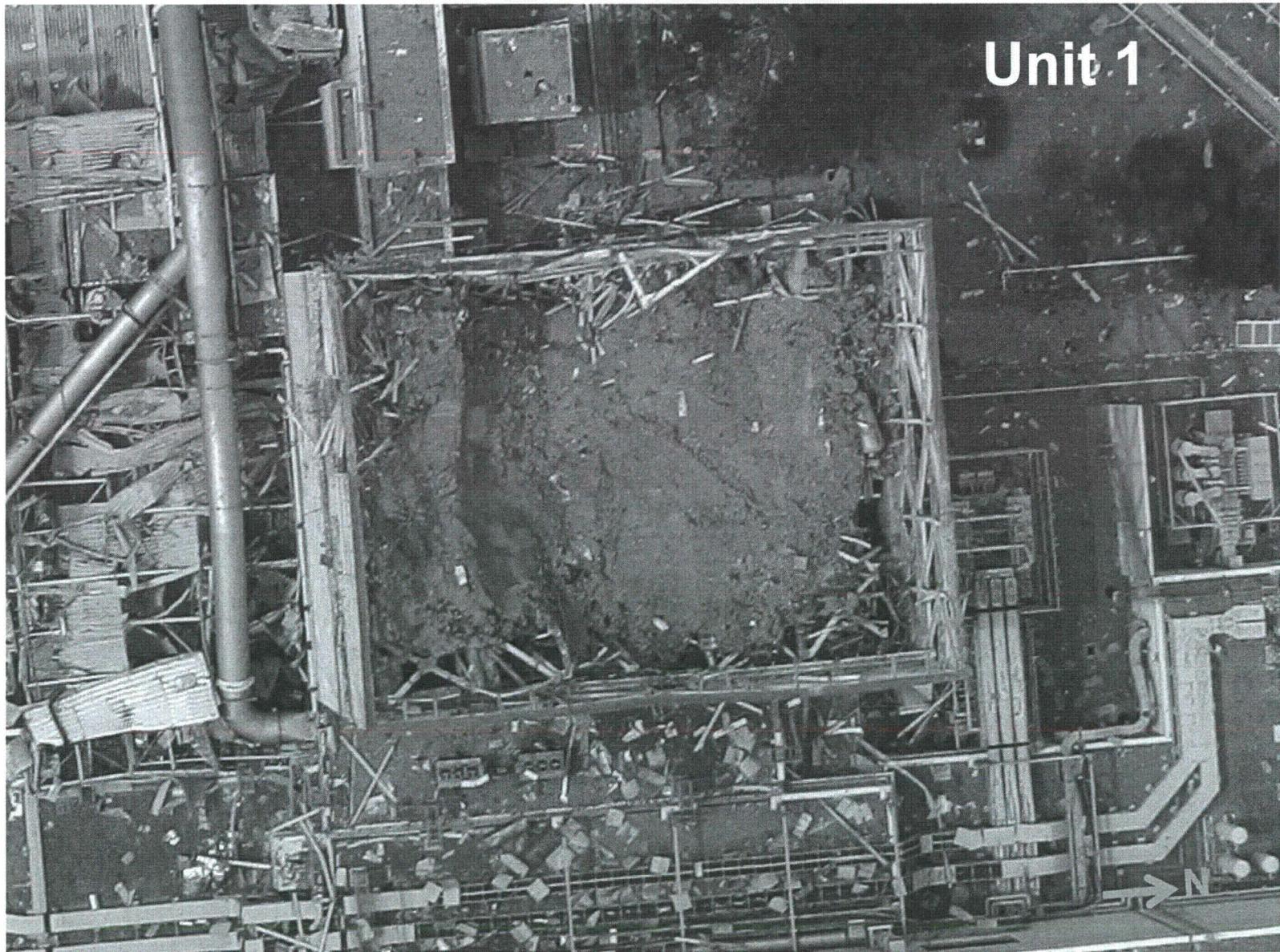
Fukushima Dai'ichi Nuclear Power Station

U.S. NRC - For Official Use Only



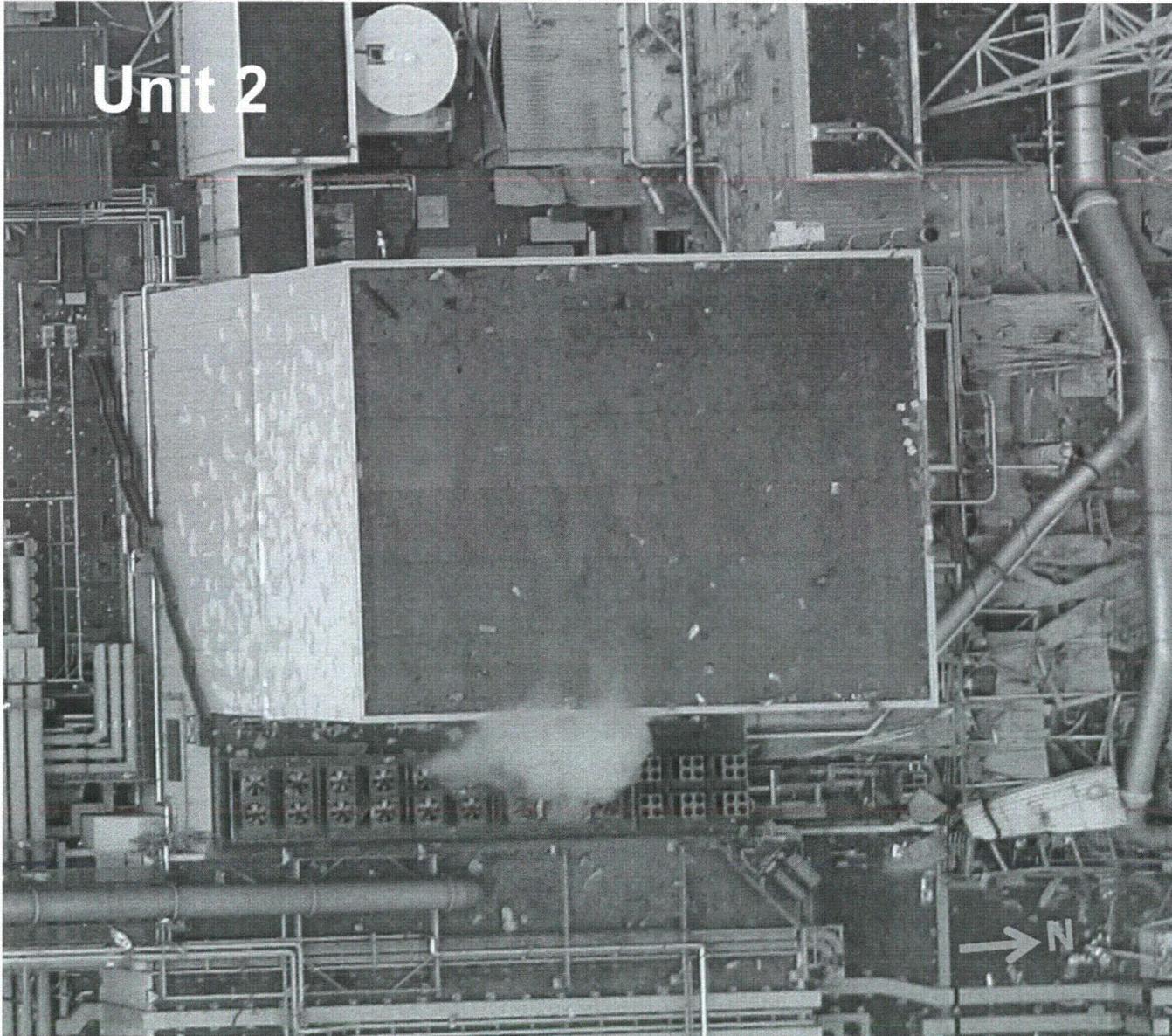
**Fukushima Dai'ichi Nuclear Power Station**

**U.S. NRC – For Official Use Only**



Fukushima Dai'ichi Nuclear Power Station

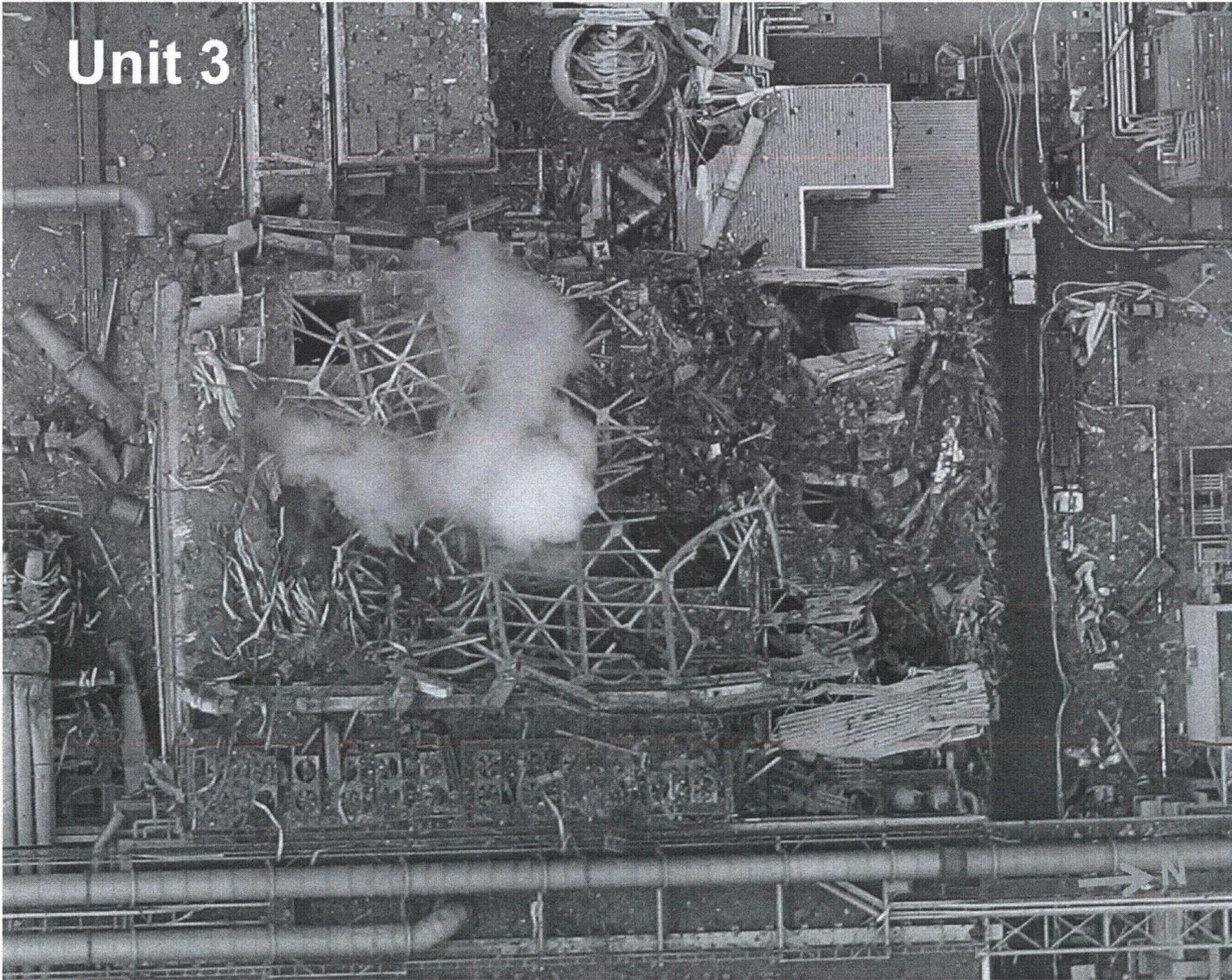
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Unit 2

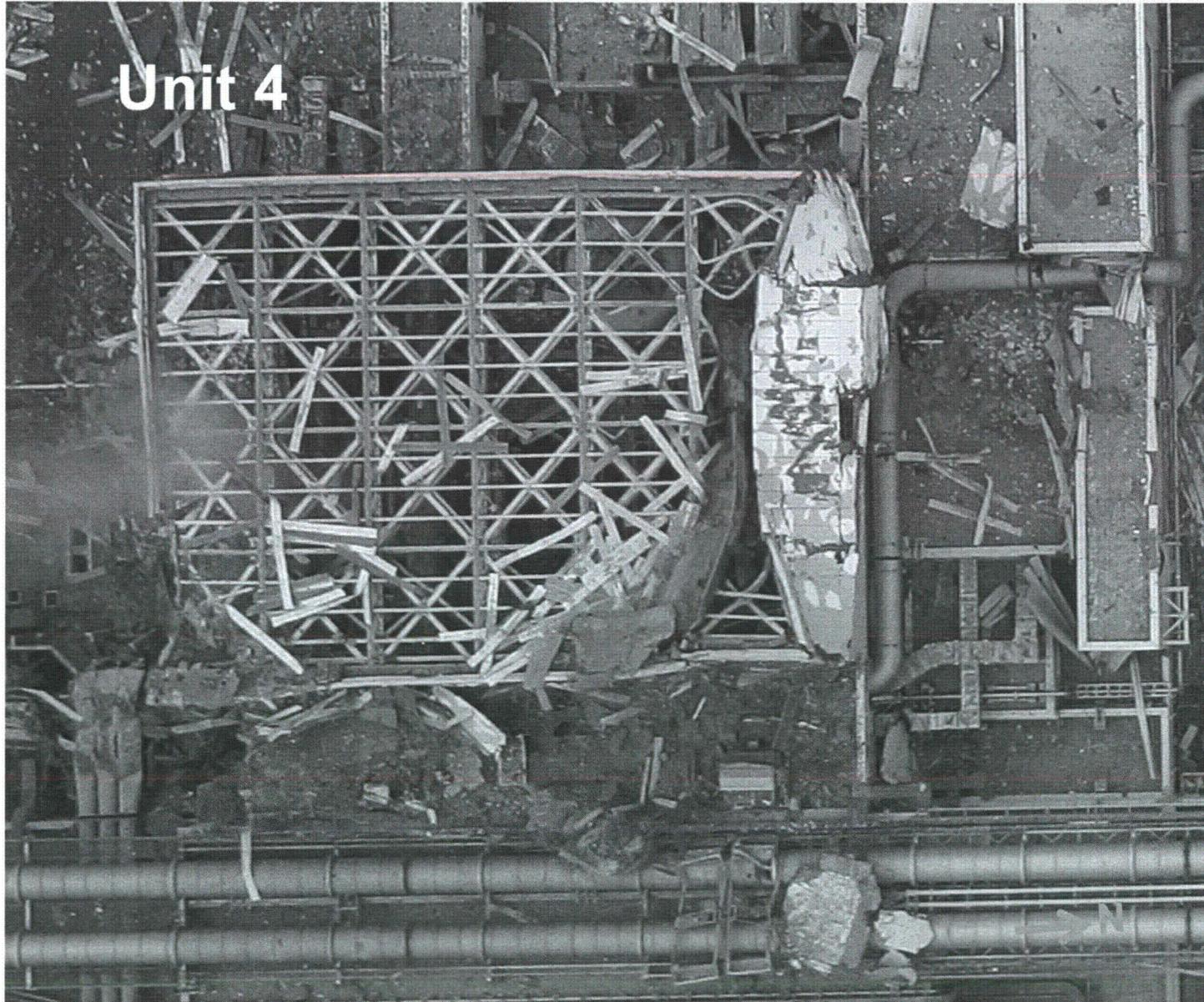
Fukushima Dai'ichi Nuclear Power Station

U.S. NRC – For Official Use Only



**Fukushima Dai'ichi Nuclear Power Station**

**U.S. NRC – For Official Use Only**



Unit 4

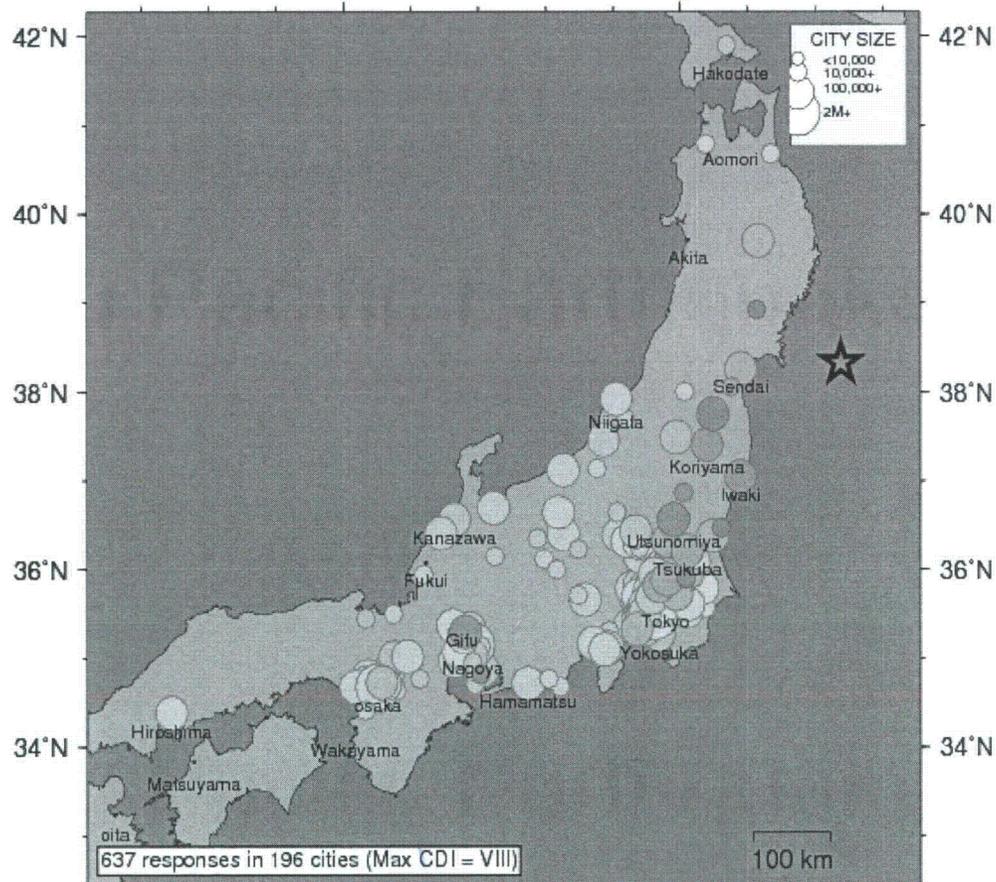
Fukushima Dai'ichi Nuclear Power Station

U.S. NRC – For Official Use Only

# Tohoku Pacific Earthquake

- 14:46 (Local) March 11, 2011
- Magnitude 9.0 Earthquake
  - 4th largest in the world since 1900 (USGS)
  - Largest in Japan since modern instrument recordings began 130 years ago (USGS)
- Resulted in a Tsunami that is estimated to have exceeded 32 feet in height (NISA)

USGS Community Internet Intensity Map  
 NEAR THE EAST COAST OF HONSHU, JAPAN  
 Mar 11 2011 14:46:23 local 38.322N 142.369E M9.0 Depth: 32 km ID:usc0001xgp



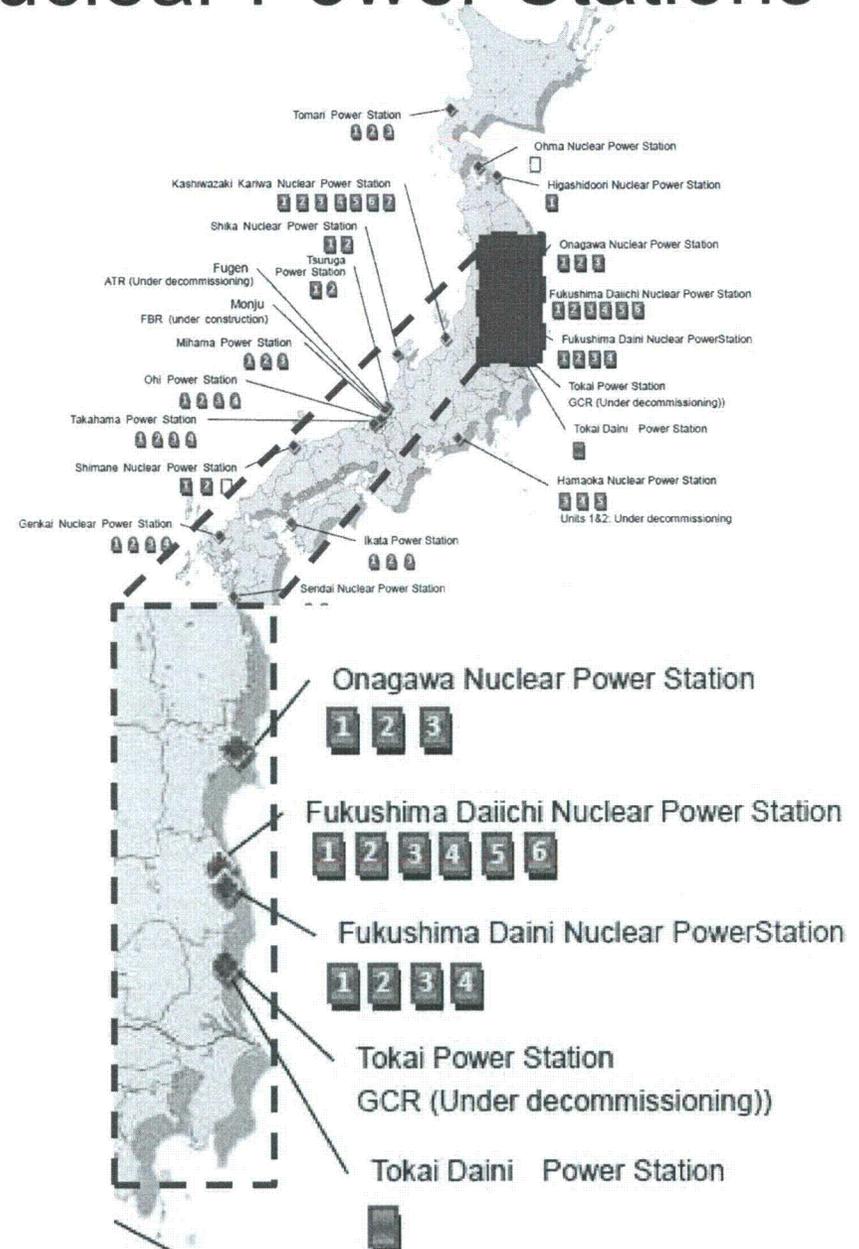
INTENSITY	I	II-III	IV	V	VI	VII	VIII	IX	X+
SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
DAMAGE	none	none	none	Very light	Light	Moderate	Moderate/Heavy	Heavy	V. Heavy

Processed: Thu Mar 31 06:47:13 2011

# Affected Nuclear Power Stations

- **Onagawa NPS**
  - All 3 units scrammed
- **Fukushima Dai-ichi (I) NPS**
  - Units 1, 2, 3 scrammed
  - Units 4, 5, 6 already shutdown
- **Fukushima Dai-ni (II) NPS**
  - All 4 units scrammed
- **Tokai**
  - Scrammed (single unit site)

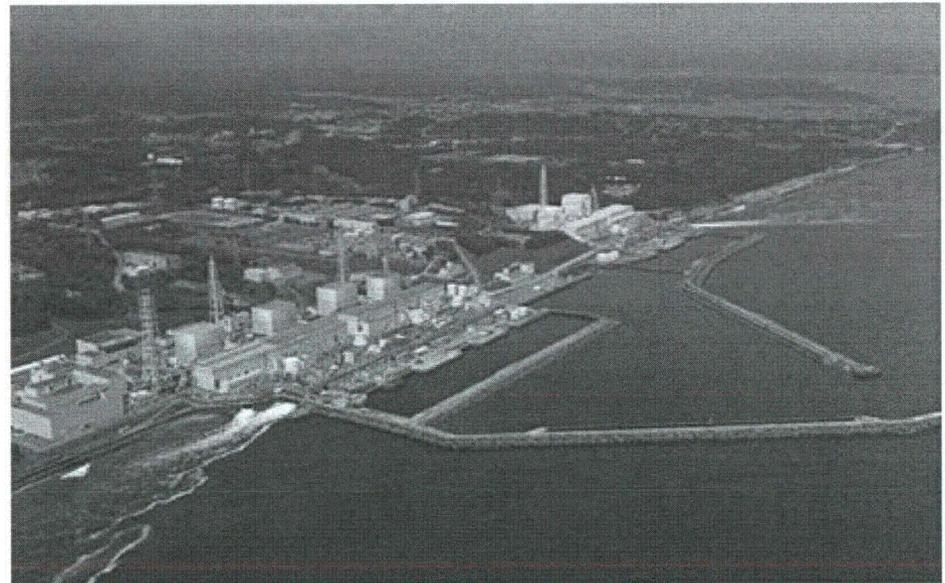
Source: NISA





## Extended SBO at Fukushima Dai-ichi

- Earthquake
  - Reactor Units 1, 2, and 3 scram
  - Loss of offsite power to all 6 units
- Tsunami
  - Loss of emergency AC power
- Extended Station Blackout

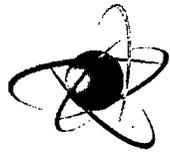




# Accident Sequence

- Reactor coolant flow after SBO
  - Reactor isolation makeup water systems
  - Intermittent seawater injection for Units 1, 2 and 3
- Loss of coolant inventory
  - Core becomes uncovered
  - Elevated primary containment pressure
  - Fuel temperature continues to increase
  - Core damage and Zirc-water reaction
  - Hydrogen formation
- Explosions
  - Damaged reactor buildings for Units 1, 3 and 4\*
  - Unit 2 explosion in primary Containment- reactor building not damaged, possible torus damage

\* Unit 4 spent fuel pool was at least partially emptied resulting in an explosion



**U.S.NRC**  
UNITED STATES NUCLEAR REGULATORY COMMISSION  
*Protecting People and the Environment*

## 5 April Status: Units 1,2 and 3

- Cores damaged but contained within RPV
  - Damaged fuel may have relocated to bottom of core
  - Likely salt crystal buildup from seawater injection
  - Core flows likely restricted in some regions
- All units on offsite AC power (Not all equipment functional)
- Freshwater injection via:
  - Feedwater line
  - Low pressure coolant injection
- Radiation levels are on the order of 3000R/hr in drywell and 11mR/hr at the site gate
- Worker Dose—several >10R, none >25R limit



## Status: Units 4, 5, and 6

- Unit 4 Spent Fuel Pool (SFP)
  - Possibility of some fuel uncovering in the days following the earthquake
  - Hydrogen explosion caused significant damage to Unit 4 reactor building
  - SFP being cooled periodically by injection of fresh water from a concrete truck pump
- Units 5 and 6
  - On external AC power with core cooling functional
  - SFP cooling is functional on both units

**Hughey, John**

---

**From:** Hughey, John *NR*  
**Sent:** Tuesday, April 05, 2011 12:07 PM  
**To:** 'Krohn, Paul'  
**Subject:** RE: Draft Region I Q&As

Paul,

Sorry - my e-mail was not worded well and was very confusing. NRR's input to Darrell is complete. However, the input NRR provided is subject to revision by Darrell's staff and he is (his folks are) maintaining the master list of Q&A's.

John

John Hughey  
Peach Bottom & Millstone Project Manager  
NRR / Division of Operating Reactor Licensing  
Phone: 301-415-3204  
e-mail: [John.Hughey@nrc.gov](mailto:John.Hughey@nrc.gov)

---

**From:** Krohn, Paul *RC*  
**Sent:** Tuesday, April 05, 2011 11:27 AM  
**To:** Hughey, John  
**Subject:** RE: Draft Region I Q&As

John,

When will NRRs answers on Darrell's questions be done? Do you have another draft answer for the one question you said there were differences in?

paul

---

**From:** Hughey, John *NR*  
**Sent:** Tuesday, April 05, 2011 9:36 AM  
**To:** Krohn, Paul  
**Subject:** RE: Draft Region I Q&As

Hi Paul,  
The questions we received from Darrell are attached. I only saw one of them in your list and our preliminary answer was different. I haven't included any of the answers as they were being revised over the phone Friday evening and have probably had changes since then. (Don't want to perpetuate different sets of answers)

However, my understanding is that Darrell will have the completed list.

Thanks,  
John

John Hughey  
Peach Bottom & Millstone Project Manager  
NRR / Division of Operating Reactor Licensing  
Phone: 301-415-3204  
e-mail: [John.Hughey@nrc.gov](mailto:John.Hughey@nrc.gov)

*2/460*

**From:** Krohn, Paul  
**Sent:** Tuesday, April 05, 2011 7:53 AM  
**To:** Hughey, John  
**Subject:** Draft Region I Q&As

John,

As discussed. All Draft. Appreciate any updates.

Paul

**King, Mark**

---

**From:** King, Mark *mark*  
**Sent:** Tuesday, April 05, 2011 10:46 AM  
**To:** Garmon, David; Thorp, John  
**Subject:** RE: AGENCY TASK FORCE TO CONDUCT NEAR-TERM EVALUATION OF THE NEED FOR AGENCY ACTIONS FOLLOWING THE EVENTS IN JAPAN - can Dave work with the task force?

Dave / John

RE: <http://www.internal.nrc.gov/announcements/yellow/2011/2011-042.html> <-- this task force announcement

Is there any way for you as the IOEB IFR owner for this subject response could be **included / work with this task force...** to:

- 1) supply them with OpE info, as needed/ support the task force and
- 2) keep us informed, and I'm sure it would be a good learning experience for you.

Talk / **check with John Thorp first** and then maybe discuss with the Task Force team leader or Jack Grobe (the NRR rep); about you attending / supporting some of their meetings (as the IOEB rep) and closely following the evaluation actions being directed - so that our IFR can be dispositioned properly /appropriately and in a timely manner.

Note: per the announcement –

The task force will report to Martin Virgilio, Deputy Executive Director for Reactor and Preparedness Programs.

Members of the task force include:

**Lead:** Charles Miller, FSME

Daniel Dorman, NMSS

**Jack Grobe, NRR**

Gary Holahan, NRO

Senior Staff Amy Cabbage, NRO

Nathan Sanfilippo, OEDO

Administrative Asst. Cynthia Davidson, OGC

For the near-term review, other staff members may be consulted for technical expertise on a part-time basis.

**We may want to consider adjusting the IFR to also follow the short term actions and close it out, and then open another IFR for tracking the longer term actions.**

The announcement states that: the task force will update the Commission on the near-term review at approximately 30 and 60 days, and provide its observations, findings, and recommendations in the form of a written report and briefing at the completion of the near-term effort occurring at approximately 90 days.

*2/4/61*

**Weaver, Tonna**

---

**From:** Karipineni, Nageswara *INRR*  
**Sent:** Monday, April 04, 2011 1:49 PM  
**To:** Dennig, Robert  
**Cc:** Lobel, Richard; Walker, Harold; Raval, Janak; Sallman, Ahsan; Torres, Roberto; Lee, Brian; Bettle, Jerome  
**Subject:** FW: FYI - GOOD SITE FOR HIGH RESOLUTION PHOTOS OF FUKUSHIMA

**From:** Lingam, Siva *INRR*  
**Sent:** Monday, April 04, 2011 1:41 PM  
**To:** Wolfgang, Robert  
**Cc:** Karipineni, Nageswara  
**Subject:** FW: FYI - GOOD SITE FOR HIGH RESOLUTION PHOTOS OF FUKUSHIMA

**From:** Nelson, Robert *INRR*  
**Sent:** Monday, April 04, 2011 12:59 PM  
**To:** NRR\_DORL Distribution  
**Subject:** FYI - GOOD SITE FOR HIGH RESOLUTION PHOTOS OF FUKUSHIMA

NELSON

**From:** Weber, Michael *EDD*  
**Sent:** Saturday, April 02, 2011 5:02 PM  
**To:** LIA06 Hoc; LIA08 Hoc  
**Cc:** Brenner, Eliot; Hayden, Elizabeth; Ellmers, Glenn; Nelson, Robert  
**Subject:** FYI - GOOD SITE FOR HIGH RESOLUTION PHOTOS OF FUKUSHIMA

In case you are looking for a good site for high resolution photographs of the damaged Fukushima-Daiichi NPPs, you might find this site handy... <http://cryptome.org/eyeball/daiichi-npp/daiichi-photos.htm>

*4/4/11*

**Weaver, Tonna**

---

**From:** Mendiola, Anthony *AM*  
**Sent:** Tuesday, April 05, 2011 8:51 AM  
**To:** Bahadur, Sher; Uises, Anthony  
**Subject:** ACTING BC in NRO

**Importance:** High

Something else that you may hear from NRO is the need for a knowledgeable acting branch Chief while Joe Donoghue is out for 5 weeks in July and August.

Joe was hoping for Amy Cabbage to act for him, but she is now on the Japan team so he is looking for another source. He asked me yesterday if anyone from SNPB or SRXB could do it. I think in general we are too busy to spare anyone, but I told him I would ask.

Any thoughts?

Anthony Mendiola  
Chief, Nuclear Performance and Code Review Branch  
SNPB/DSS/NRR/NRC  
(301) 415-1054

*2/463*

**Valentine, Nicholee**

---

**From:** McGinty, Tim *INRR*  
**Sent:** Tuesday, April 05, 2011 9:39 AM  
**To:** Tsoufanidis, Nicholas; Kennedy, Michael  
**Cc:** Boger, Bruce; Nguyen, Quynh; Meighan, Sean  
**Subject:** FW: Eric Leeds NGA presentation as per your request. eom  
**Attachments:** Presentation to NGA (Energy Panel) April 2011.ppt.ppt

See attached.

Also see NRR Sharepoint site with a lot of information.

<http://portal.nrc.gov/edo/nrr/default.aspx>

If you need additional information, I recommend that you contact the NRR TA's that are CC'd (Sean and Quynh). Tim McGinty

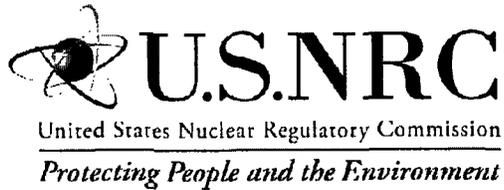
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**From:** Meighan, Sean  
**Sent:** Tuesday, April 05, 2011 9:29 AM  
**To:** Boger, Bruce; McGinty, Tim  
**Cc:** Nguyen, Quynh  
**Subject:** Eric Leeds NGA presentation as per your request. eom



# **Presentation on Fukushima to NGA Center for Best Practices**

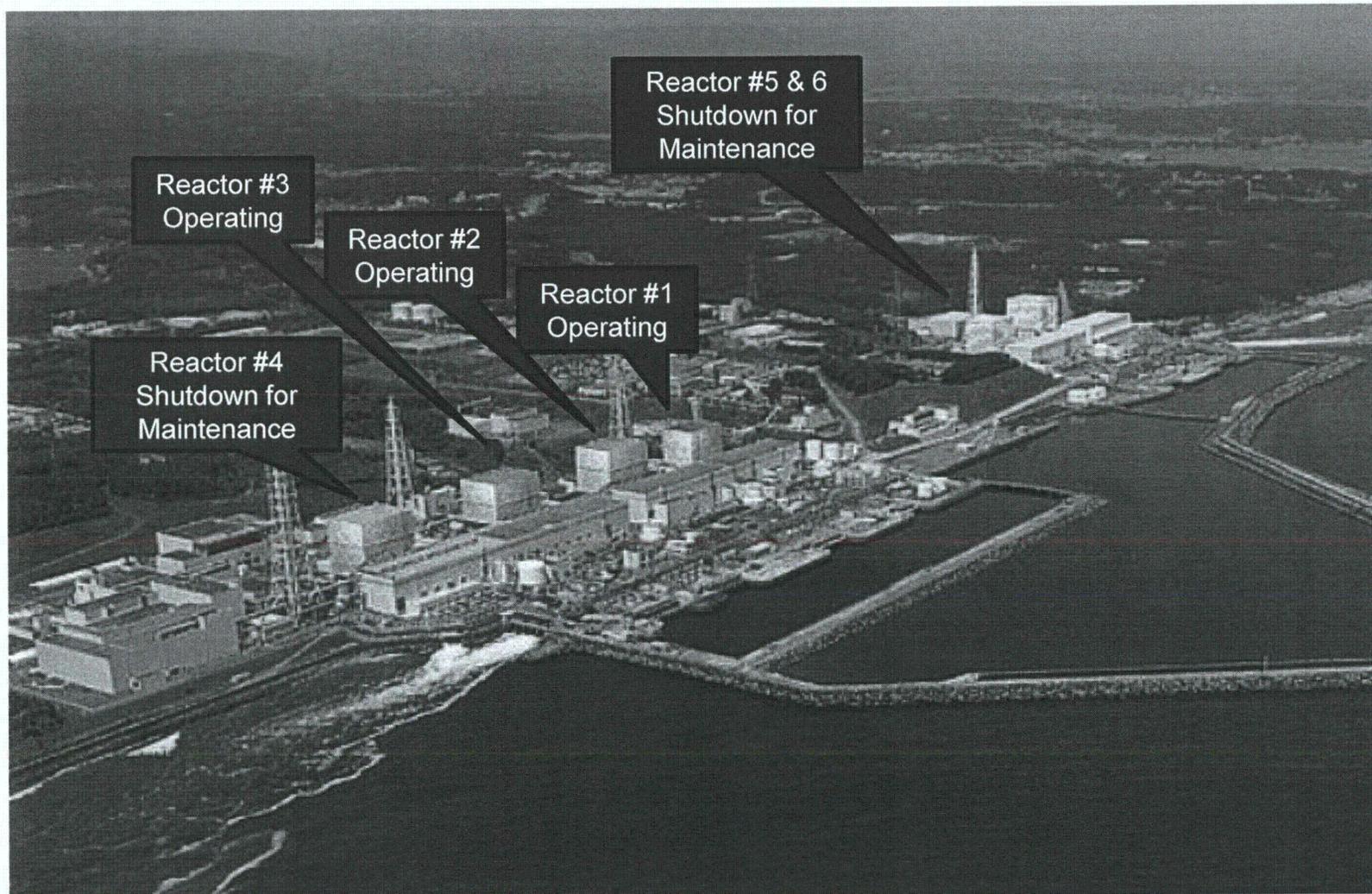
Eric Leeds, Director  
Office of Nuclear Reactor Regulation  
(NRR)

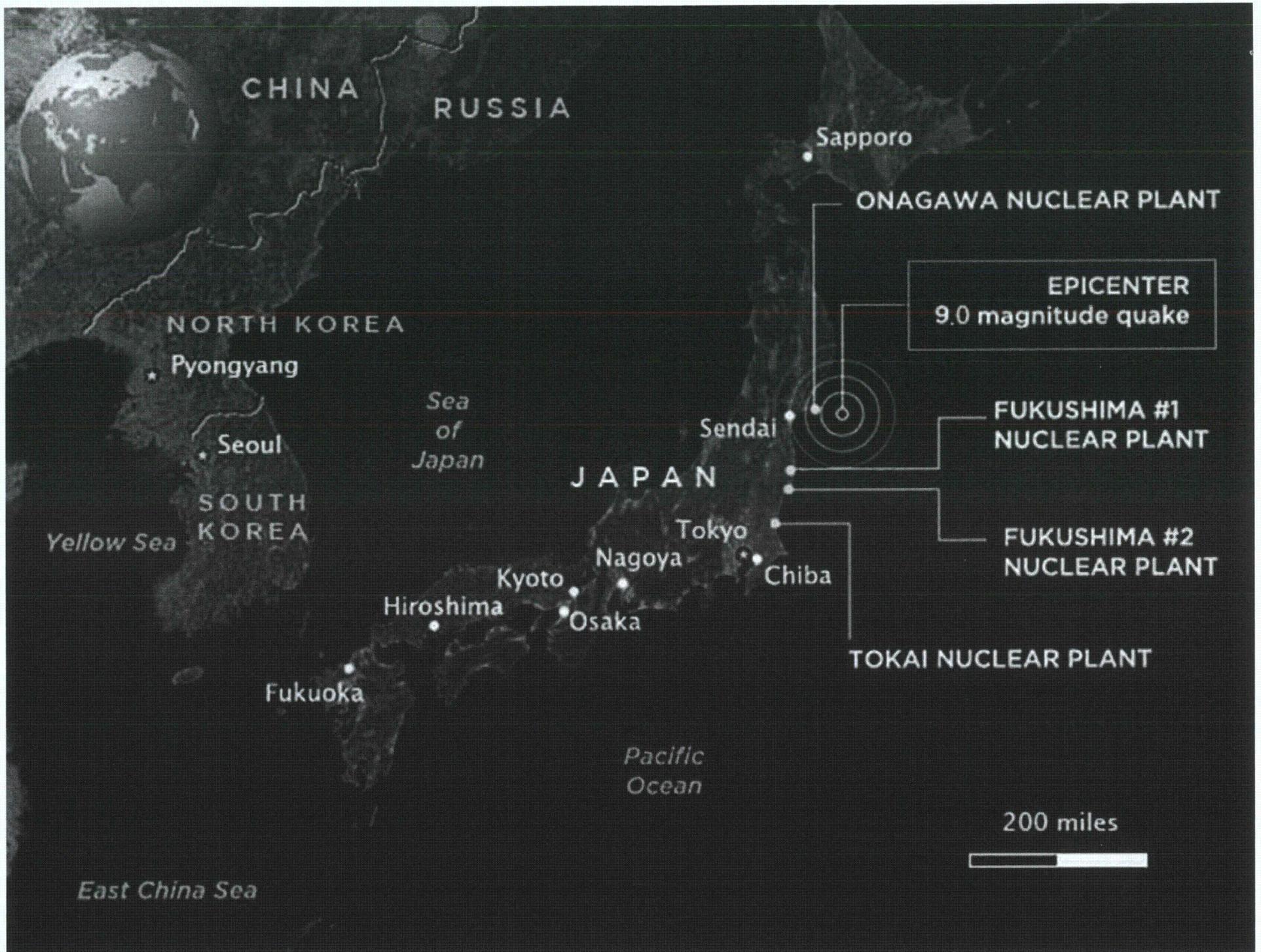


## **NRC Mission – What Do We Do?**

- The mission of the NRC is to license and regulate the Nation'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.**

## Overview of Fukushima Daiichi Nuclear Power Station

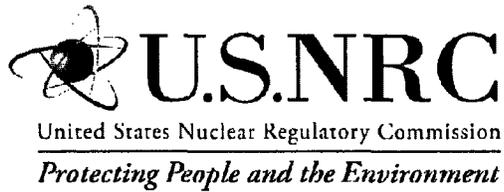




# Earthquake & tsunami sequence of events

Friday March 11<sup>th</sup> @ 2:36 pm local

- Magnitude 9.0 earthquake 231 miles northeast of Tokyo.
- Quake is fifth largest in the world (since 1900).
- Earthquake generated a 14m Tsunami



# Plant Response

## Earthquake

- Earthquake Caused Automatic Shutdown of 3 Operating Units
- Offsite Power Lost
- Initial indications were that Emergency Diesels operated

## 14m Tsunami (less than 1 hour later)

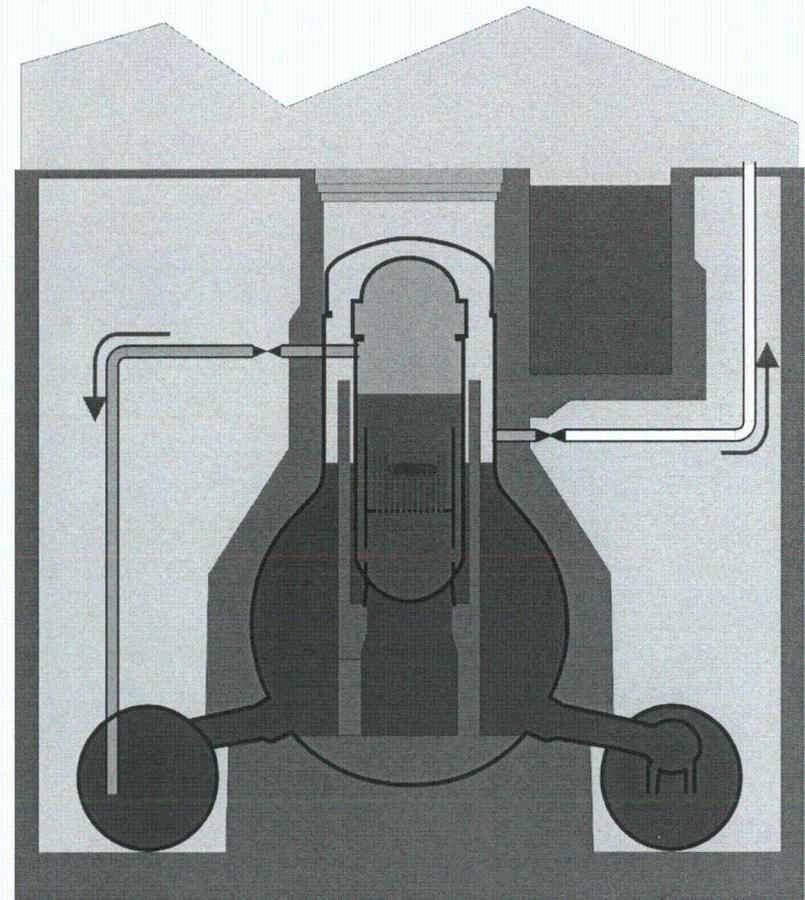
- All Emergency Back-up Power Lost
- 8-10 hours later Station Batteries Depleted

- **Current status of the Reactors**

- Core Damage in Unit 1,2, 3
- Electrical Power Restored
- Fresh Cooling Water supplied to All Units

- **Spent Fuel Pool Status**

- Suspect Fuel Damage in Pools 3 & 4
- Providing periodic make up water





## **NRC Response**

- **Ops Center 24/7**
- **Team of experts to Tokyo**
- **Support to U.S. Ambassador and Japanese**
- **Coordinating Environmental Monitoring with DOE & EPA**



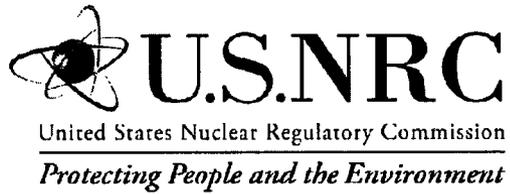
## **Domestic Considerations**

- Harmful Levels of Radiation Not Expected in the U.S.
- U.S. Plants Designed for External Events
- U.S. Industry Initiated Review
- NRC has initiated additional inspections at all U.S. Plants
- NRC conducting Near-Term and Long-Term Reviews.



## **NRC Near Term Actions**

- Evaluate Fukushima Daiichi Events
- Domestic Operating Reactors and Spent Fuel Pools
  - External Events
  - Station Blackout
  - Severe Accident Mitigation
  - Emergency Preparedness
  - Combustible Gas Control
- Near Term Review due in 90 days (mid June)



## **NRC Longer Term Actions**

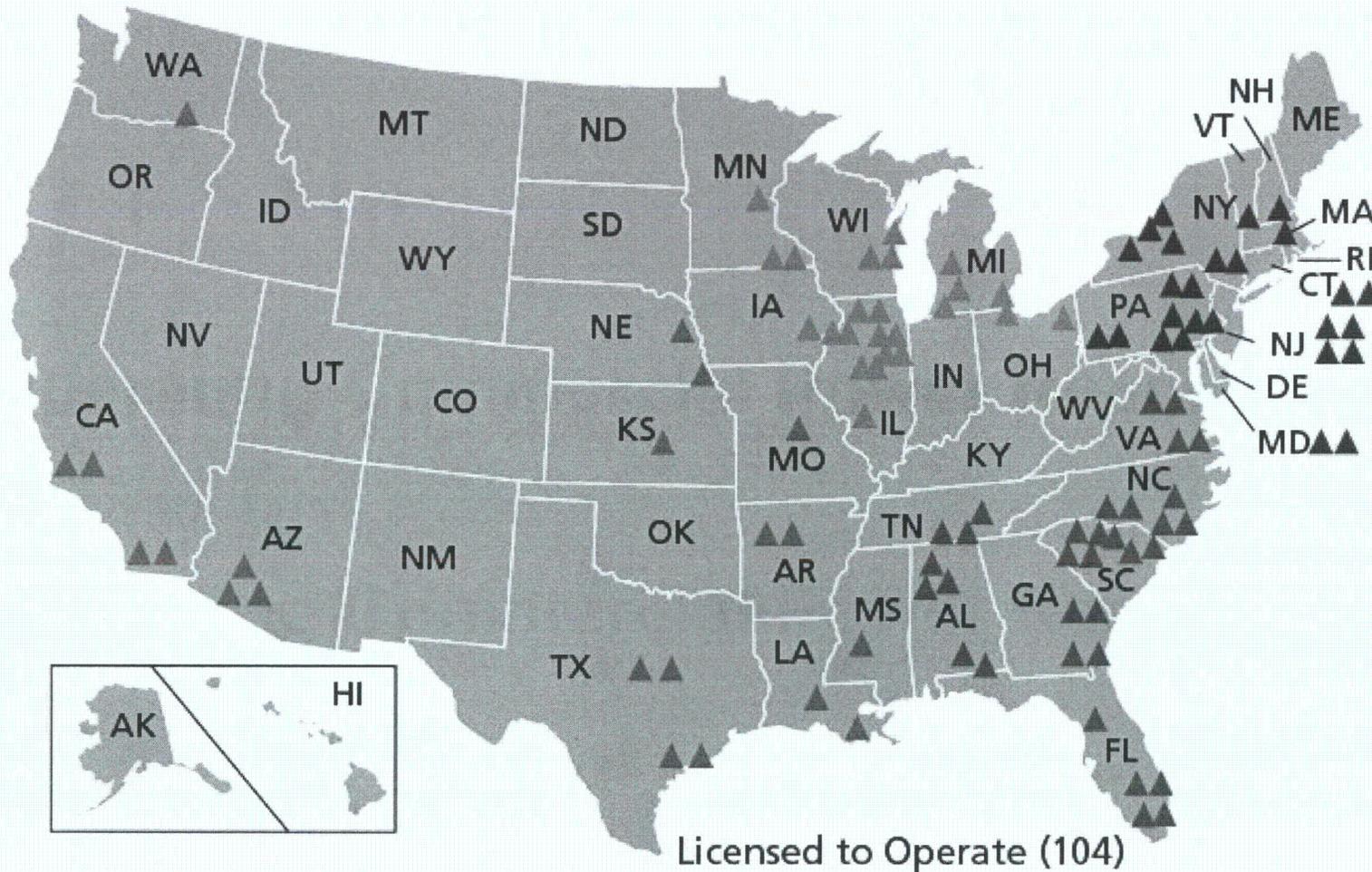
- Based on Near Term Review and Additional Insights from Fukushima Event
- Identify Potential Technical and Policy Issues
  - Research Activities
  - Generic Issues
  - Reactor Oversight Process
  - Regulatory Framework
  - Interagency Emergency Preparedness



United States Nuclear Regulatory Commission

*Protecting People and the Environment*

# Operating Commercial Power Reactors





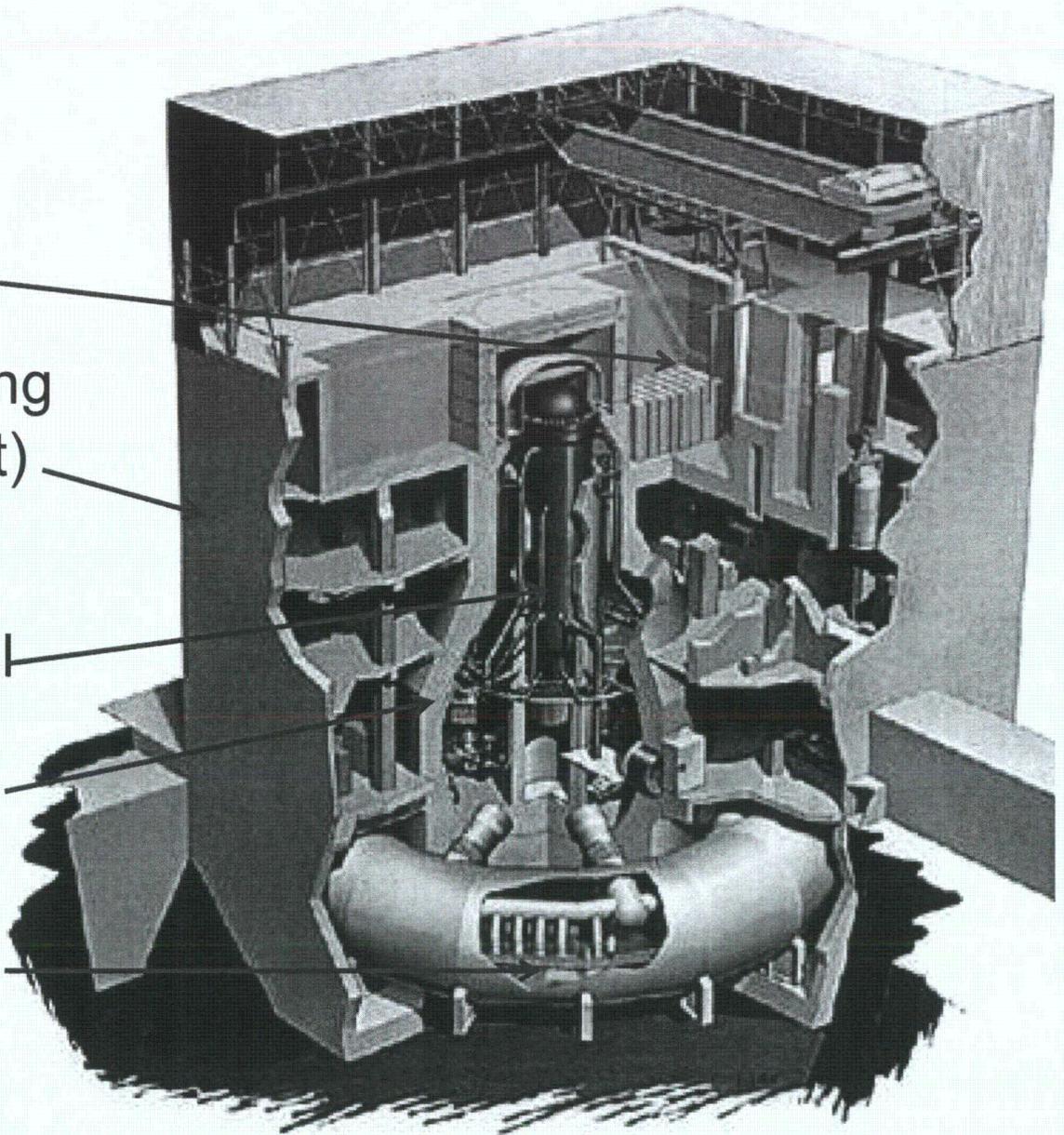
**Questions?**

# PARS

- NRC Regulations have 2 Emergency Planning Zones (EPZs) 10/50 miles
- EPZs are not limits, but frameworks that allow for expansion as needed
- 50 miles in Japan due to extraordinary situation
  - 4 units severely challenged
  - Unclear information as to state of reactors, mitigative strategies, radiological releases
  - Decision to evacuate conservative, better to err on conservative
- Precautionary evacuation occurred days before fuel melt.

## BWR Mark I

- ▶ Spent Fuel Pool
- ▶ Concrete Reactor Building (secondary Containment)
- ▶ Reactor Pressure Vessel
- ▶ Containment (Drywell)
- ▶ Containment (Wet Well)



▶ Reactor Service Floor  
(Steel Construction)

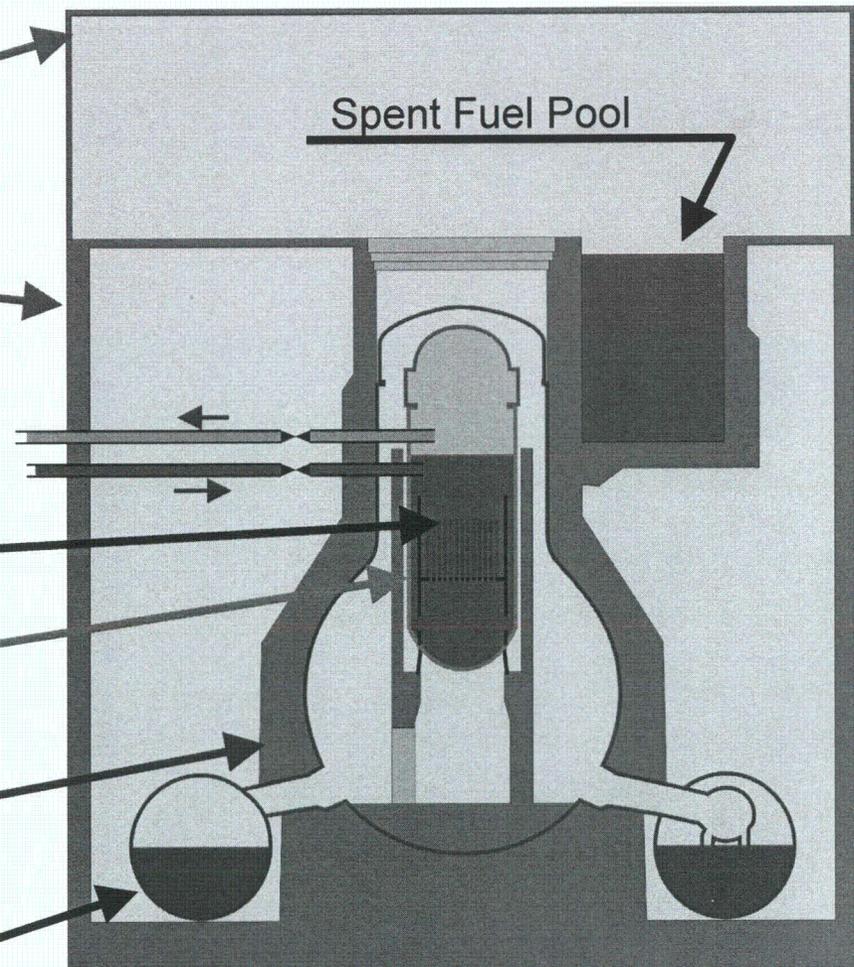
▶ Concrete Reactor Building  
(secondary Containment)

▶ Reactor Core

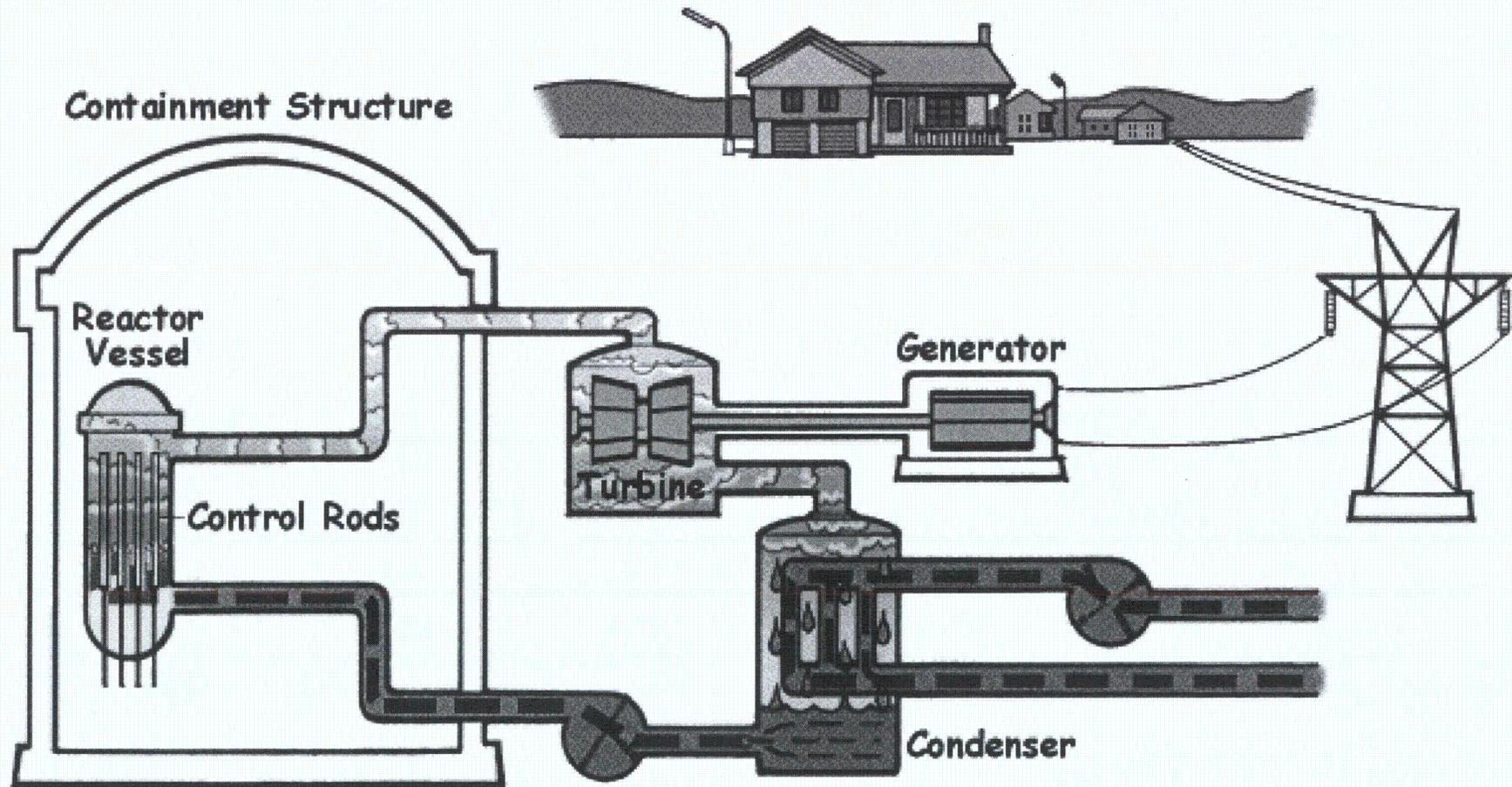
▶ Reactor Pressure Vessel

▶ Containment (Dry well)

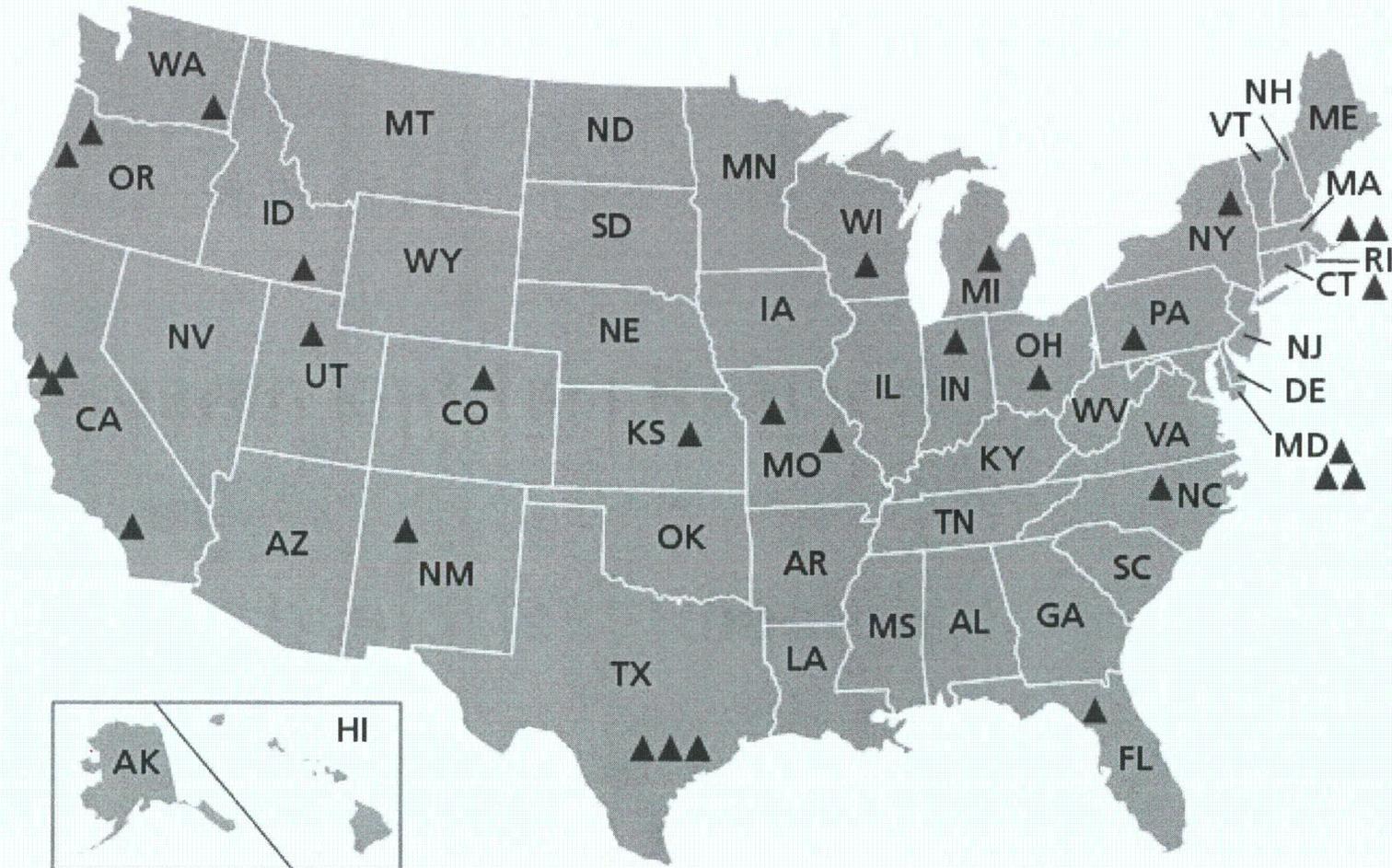
▶ Containment (Wet Well)



# Generic BWR



# Research and Test Reactors



▲ Licensed/Currently Operating (31)

**Weaver, Tonna**

**From:** NRC Announcement [nrc.announcement@nrc.gov]  
**Sent:** Tuesday, April 05, 2011 9:52 AM  
**To:** NRC Announcement  
**Subject:** General Interest: Agency Task Force to Conduct Near-Term Evaluation of the Need for Agency Actions Following the Events in Japan

NRC Daily  
Announcements



**Tuesday April 5, 2011 -- Headquarters Edition**

→ **General Interest: Agency Task Force to Conduct Near-Term Evaluation of the Need for Agency Actions Following the Events in Japan**

**General Interest: Agency Task Force to Conduct Near-Term Evaluation of the Need for Agency Actions Following the Events in Japan**

Yellow Announcement No. 042, "Agency Task Force to Conduct Near-Term Evaluation of the Need for Agency Actions Following the Events in Japan," is now available on the internal Web site under Yellow Announcements.

This announcement can also be found in the ADAMS 2011 Yellow Announcements folder in the Main Library of the ADAMS Document Manager. In the folder, Yellow Announcements are arranged in report number order.

-----  
If you have difficulty accessing a Web link in this announcement, contact the NRC Announcement Coordinator, Beverly Martin, ADM/DAS, 301-492-3674.

(2011-04-05 00:00:00.0)

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2/465

**Weaver, Tonna**

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**From:** Monninger, John *OCM*  
**Sent:** Tuesday, April 05, 2011 7:37 PM  
**To:** LIA03 Hoc; Liaison Japan  
**Cc:** LIA02 Hoc  
**Subject:** RE: Notification of your arrival in the U.S.

I arrived back in the U.S. about 3:30 pm EDT on Tuesday, 4/5/11.

John Monninger

---

**From:** LIA03 Hoc  
**Sent:** Thursday, March 31, 2011 7:10 PM  
**To:** Liaison Japan  
**Cc:** LIA02 Hoc  
**Subject:** Notification of your arrival in the U.S.

Dear NRC Japan Team - Upon your return, please "reply All" to this email and let the International Liaison Team know that you're back in the U.S.

Thank you in advance.

Mugeh

On behalf of the International Liaison Team

*2/4/11*

**Valentine, Nicholee**

---

**From:** McGinty, Tim *1/17/11*  
**Sent:** Tuesday, April 05, 2011 7:46 AM  
**To:** Couret, Ivonne; Burnell, Scott  
**Subject:** Query: NY Times Article on Possible Radiation Exposure

Hi Ivonne/Scott: I'm in the Ops Center as the ET Response Advisor. I was handed a "graphic", which is a map of Japan with populations and distance "rings", with a table delineating possible radiation exposure, possible effects, etc. I was told it was from an article in the NY Times (I do not have the article, just the graphic), and that we may have already addressed the article in the form of Q's and A's or a rebuttal.

Can you help shed any light on this so I can share it with Bruce Boger? Thanks, Tim

**Nelson, Robert**

---

**From:** Nelson, Robert *NRK*  
**Sent:** Tuesday, April 05, 2011 7:56 AM  
**To:** Markley, Michael; Oesterle, Eric  
**Subject:** Action: Today's Headlines: Retreat for Rebels; Libyan Foreign Minister Quits  
**Attachments:** QAs on Yahoo graph.docx; image001.png; image002.jpg

I suggest clearly this thru OPA & adding to our data base.

NELSON

---

**From:** McDermott, Brian *INSIK*  
**Sent:** Tuesday, April 05, 2011 6:08 AM  
**To:** Barkley, Richard; Nelson, Robert  
**Cc:** Roberts, Darrell  
**Subject:** RESPONSE: Today's Headlines: Retreat for Rebels; Libyan Foreign Minister Quits

Rich,

Attached is a response prepared by the PMT to support OPA's response to an inquiry about an online graphic that was similarly based on the NRC's dose projection data. The data was published in conjunction with the 16 March press release about the 50 mi evacuation recommendation. Specifically, the projected doses used in the NYT graphic match the second simulation.

Regards,  
Brian

---

**From:** Barkley, Richard *RC*  
**Sent:** Thursday, March 31, 2011 5:36 PM  
**To:** Nelson, Robert  
**Cc:** Roberts, Darrell; McDermott, Brian  
**Subject:** FW: Today's Headlines: Retreat for Rebels; Libyan Foreign Minister Quits

Nelson,

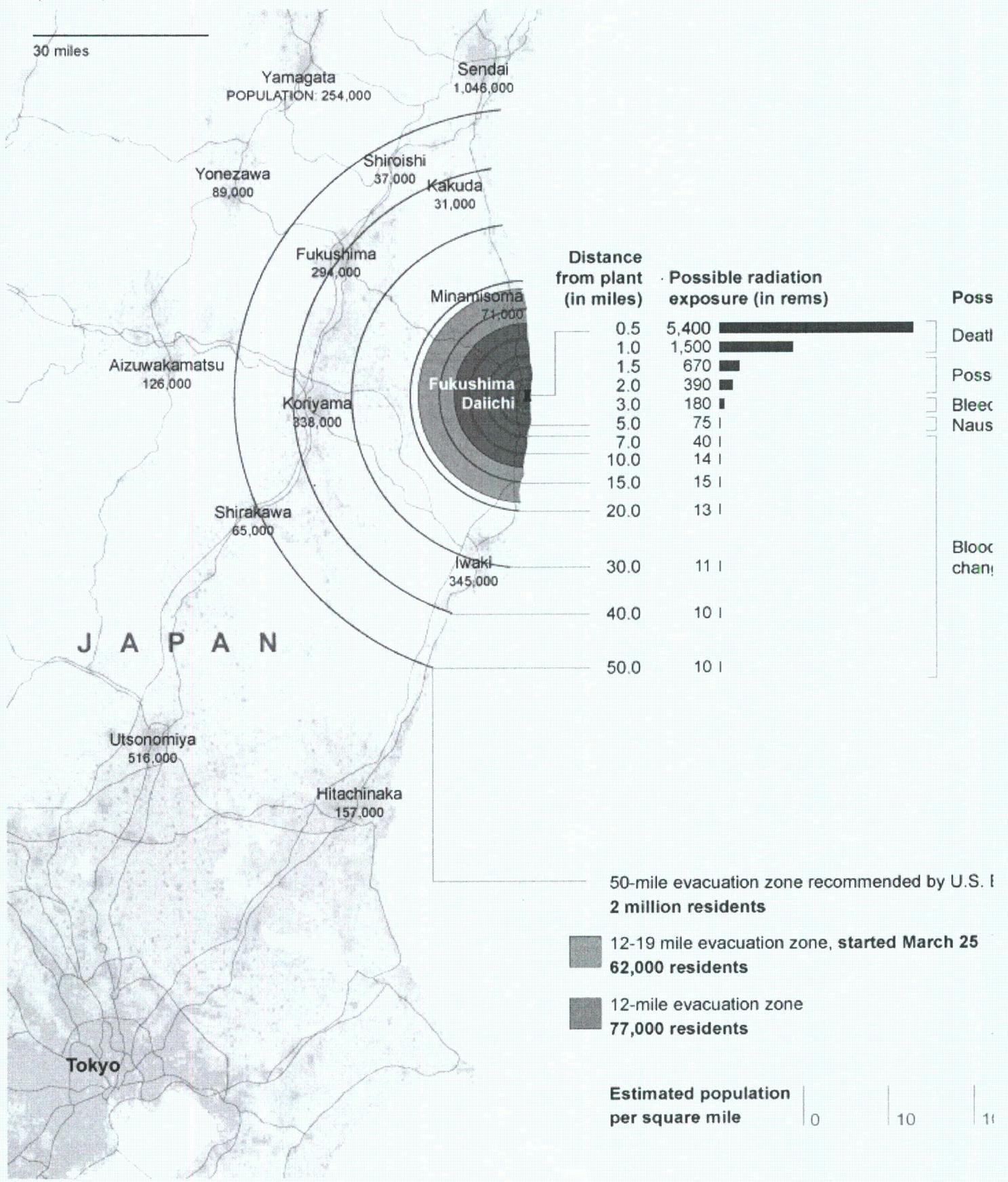
The New York Times conveyed a considerable amount of information today regarding radiation exposures to citizens near Fukushima (assuming they had remained in their homes). The article claimed some very high exposure numbers. The quoted sources for this information included the Nuclear Regulatory Commission.

Have we prepared any type of equivalent information along these lines? I am anticipating seeing these graphics show up at public meetings in the months ahead. Anything that would suggest the kind of exposures being received by the public would be helpful – My guess is that very few members of the public got anywhere near these amounts because they left the area promptly due to the evacuation order, or because the earthquake/tsunami made their home uninhabitable.

Thanks – Maybe Brian's staff have prepared such a document.

**The Evacuation Zones Around the Fukushima Daiichi Nuclear Plant**

*2/4/68*



**Estimates of Possible Exposure Define U.S. Evacuation Zone**

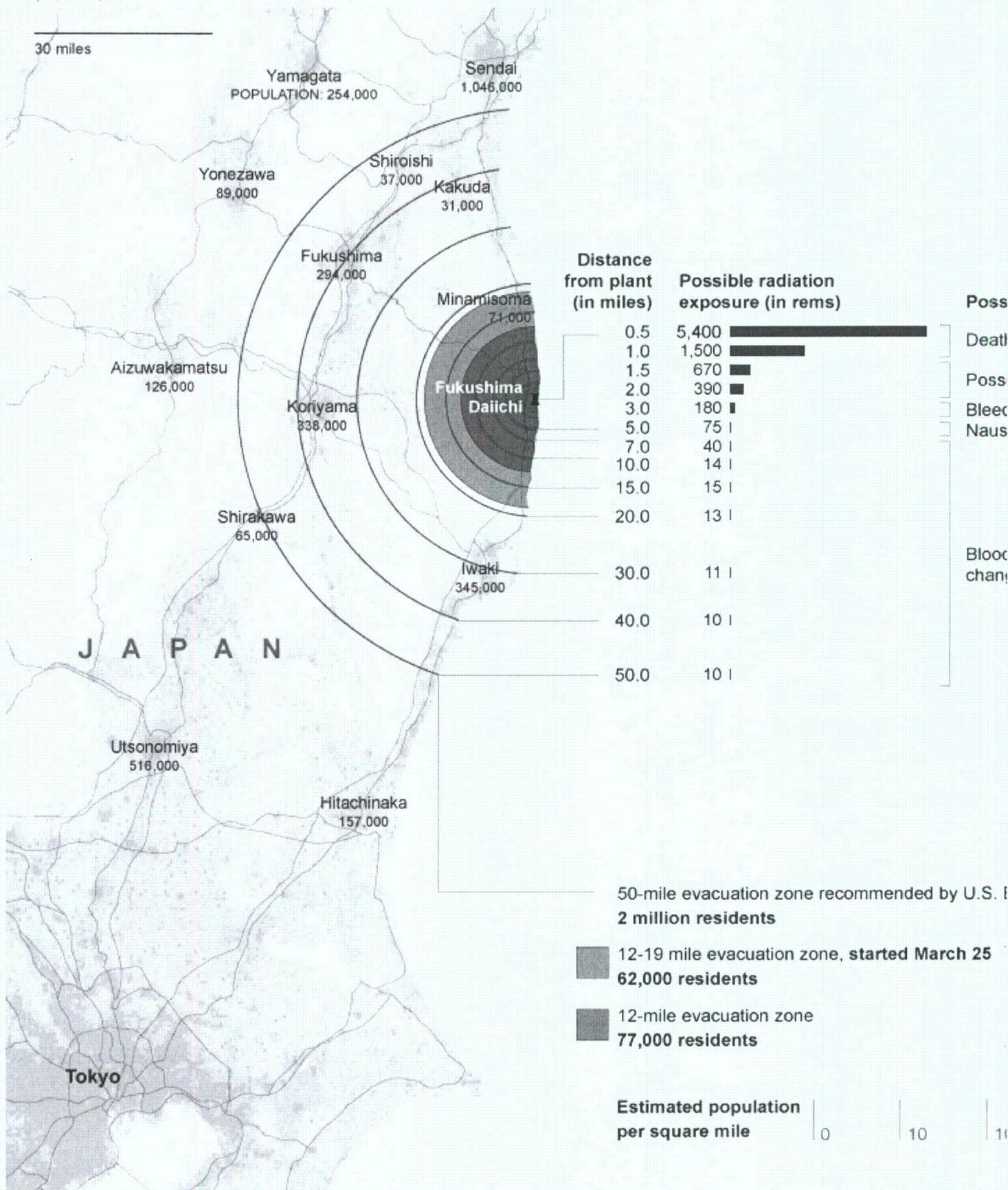
The American Embassy recommended on March 17 that Americans within 50 miles of the Fukushima reactors evacuate. The recommendation was based on an analysis by the Nuclear Regulatory Commission that predicts possible radiation levels assuming conditions at the plant degrade. It is not based on current radiological conditions. It includes factors like whether containment vessels remain intact and weather patterns, among others. Here are the results of the analysis on March 16.

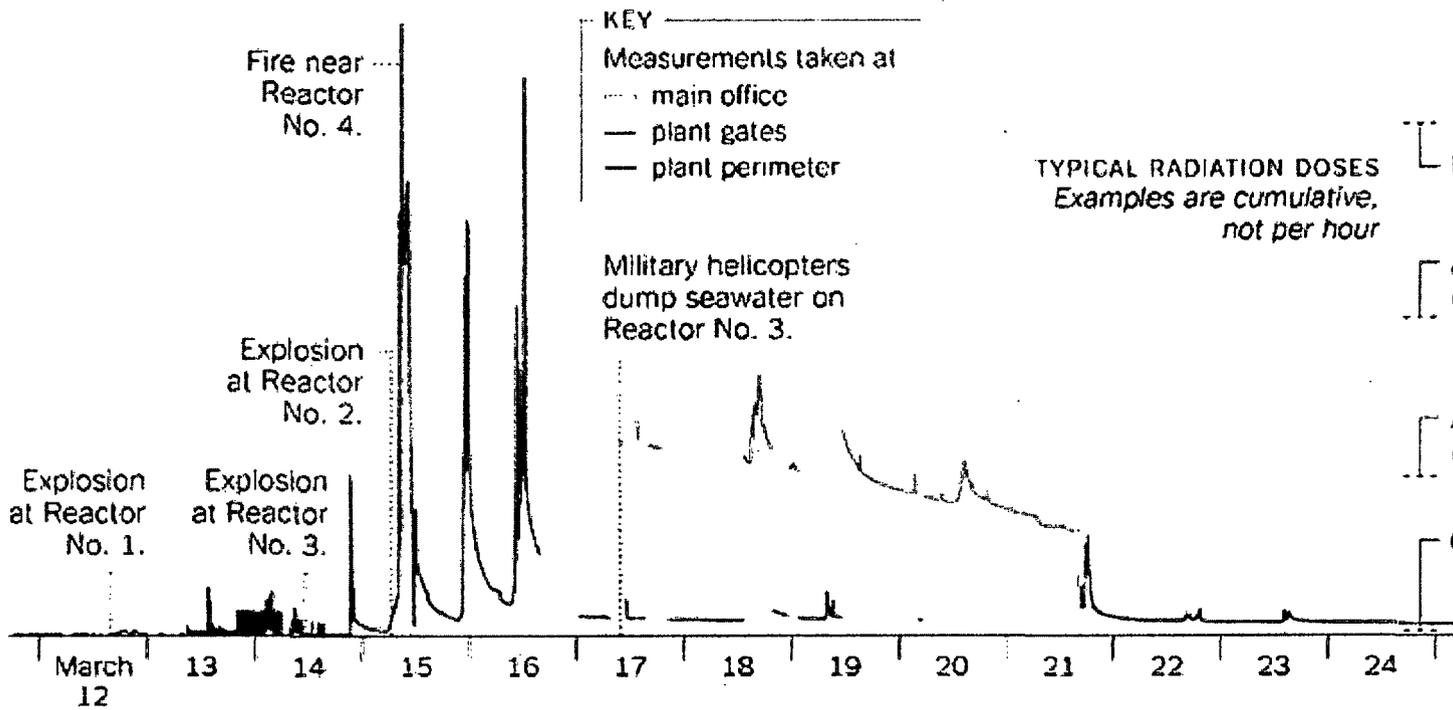
## **Japanese and American Evacuation Zones**

About 2 million people live within 50 miles of the plant. This is a much larger than the area established by the Japanese, who have advised everyone within 19 miles to evacuate.

By AMANDA COX, MATTHEW ERICSON and ARCHIE TSE |

[Send Feedback](#)





**Nelson, Robert**

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**From:** Nelson, Robert *NR*  
**Sent:** Tuesday, April 05, 2011 8:12 AM  
**To:** Watson, Bruce  
**Subject:** RE: GTs 20110141 and 20110169

Thanks!

NELSON

---

**From:** Watson, Bruce *FSME*  
**Sent:** Tuesday, April 05, 2011 8:12 AM  
**To:** Rihm, Roger; Meighan, Sean; Pickett, Douglas; Guzman, Richard; Kim, James  
**Cc:** Nelson, Robert; Wertz, Trent; Nguyen, Quynh; Felsner, Harry; Deegan, George; McConnell, Keith  
**Subject:** RE: GTs 20110141 and 20110169

Roger,  
We will provide a brief generic write up that you can extract information for the response letter.

Bruce A. Watson, CHP  
Chief - Reactor Decommissioning Branch  
US Nuclear Regulatory Commission  
Rockville, MD 20852  
301-415-6221 Office

---

**From:** Rihm, Roger *RO*  
**Sent:** Monday, April 04, 2011 4:31 PM  
**To:** Meighan, Sean; Pickett, Douglas; Guzman, Richard; Kim, James; Watson, Bruce  
**Cc:** Nelson, Robert; Wertz, Trent; Nguyen, Quynh  
**Subject:** RE: GTs 20110141 and 20110169

Just to clarify, I don't need a VY-specific discussion, but rather a more general discussion of decommissioning process/rules. Perhaps this should be done by Bruce Watson's Branch in FSME? I guess I initially thought this was an NRR topic, but perhaps not.

---

**From:** Meighan, Sean *MS*  
**Sent:** Monday, April 04, 2011 3:55 PM  
**To:** Pickett, Douglas; Guzman, Richard; Kim, James  
**Cc:** Rihm, Roger; Nelson, Robert; Wertz, Trent; Nguyen, Quynh  
**Subject:** RE: GTs 20110141 and 20110169

Good Afternoon Region I PMs:

Please see below tasking from OEDO. Please let me know if you cannot answer by requested time.

(FYI,,,, and I am not saying this just because OEDO is on CC,,,, Roger has blocked **A LOT** of work for NRR over the past couple of weeks. Let's do our best to deliver on this one)

s

*2/2/69*



---

**From:** Rihm, Roger  
**Sent:** Monday, April 04, 2011 3:33 PM  
**To:** Meighan, Sean; Nguyen, Quynh  
**Cc:** Landau, Mindy  
**Subject:** GTs 20110141 and 20110169  
**Importance:** High

These are 2 letters about decommissioning at VY. They were on hold pending a 3/29 meeting between the chairman and the VT congressional delegation. I have been advised by OCA that we now need to send a fairly brief response to these letters that basically lays out the "ground rules" for decommissioning (including the SAFSTOR option) and what the NRC can and cannot control. I gather the point is that this is pretty much out of our hands.

Can I get perhaps a couple of paragraphs from NRR that do the above and I will turn it into letters responsive to the two GTs? Any chance I could get this by Weds/Thursday AM????? (SECY only gave me a short extension.)

Let me know what you can do for me. Thanks!

**Nelson, Robert**

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**From:** Nelson, Robert *NRK*  
**Sent:** Tuesday, April 05, 2011 11:15 AM  
**To:** Giitter, Joseph; Howe, Allen  
**Subject:** FYI: LT Meeting Results - 4/5

1. PMDA will take over the LT chair for April & May. Cheok will redo the chair rotation schedule.
2. The candidates for the NEA Sr Level Task Group on Fukushima are: Giitter, Evans, Howe, Westreich, Lee & Cheok. Mike will forward this list to the ET with the first three identified as priority candidates.
3. PMDA reported that NRR currently has approx \$2.2M excess funds. Each division was tasked with revising its unfunded list by Friday of this week. Funding should include needed carryover thru Dec. The LT will decide how to allocate the funds on Tuesday.
4. DEDO FY13 budget brief has been rescheduled to Friday, 4/8, at 8:30 in O-17B4. Ruland will represent Eric. Joe is asked to attend.

NELSON

**Nelson, Robert**

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**From:** Nelson, Robert *NR*  
**Sent:** Tuesday, April 05, 2011 12:29 PM  
**To:** Markley, Michael; Oesterle, Eric  
**Cc:** Boger, Bruce; Leeds, Eric  
**Subject:** Action: Testimony\_April6\_2011\_Rev4.docx

**Importance:** High

See Bruce's comment below.

NELSON

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**From:** Boger, Bruce *NR*  
**Sent:** Tuesday, April 05, 2011 12:18 PM  
**To:** Nelson, Robert; Leeds, Eric  
**Subject:** RE: Testimony\_April6\_2011\_Rev4.docx

Thanks, Nelson. One comment, on page 7 a discussion is provided on combustible gas control and EQ. There's a phrase on mixing on page 8 that appears after the EQ portion, but it seems to me that it belongs on page 7 after the gas control portion.

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**From:** Nelson, Robert  
**Sent:** Tuesday, April 05, 2011 10:58 AM  
**To:** Leeds, Eric; Boger, Bruce  
**Subject:** FYI: Testimony\_April6\_2011\_Rev4.docx

NELSON

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**From:** Markley, Michael *NR*  
**Sent:** Tuesday, April 05, 2011 10:49 AM  
**To:** Rihm, Roger  
**Cc:** Oesterle, Eric; Meighan, Sean; Mahoney, Michael; Nelson, Robert; Glitter, Joseph; McDermott, Brian  
**Subject:** FW: Testimony\_April6\_2011\_Rev4.docx

Roger,

Attached are the NRR Communications Team's suggested enhancements to Marty's proposed testimony.

Mike

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**From:** Lent, Susan  
**Sent:** Tuesday, April 05, 2011 10:43 AM  
**To:** Markley, Michael  
**Subject:** Testimony\_April6\_2011\_Rev4.docx

**Jimenez, Manuel**

**From:** Garry, Steven *NSR*  
**Sent:** Tuesday, April 05, 2011 8:36 AM  
**To:** Jimenez, Manuel  
**Subject:** FW: EPA News Release (HQ): EPA STATEMENT: Update on Ongoing Monitoring

Manny,  
Here is some data on Fukushima release environmental monitoring results

Steve

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**From:** Nimitz, Ronald  
**Sent:** Tuesday, April 05, 2011 8:13 AM  
**To:** Garry, Steven; Conatser, Richard  
**Subject:** FW: EPA News Release (HQ): EPA STATEMENT: Update on Ongoing Monitoring

Don't know if you get these.. you can sign up

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**From:** U.S. EPA [<mailto:usaepa@govdelivery.com>]  
**Sent:** Monday, April 04, 2011 8:34 PM  
**To:** Nimitz, Ronald  
**Subject:** EPA News Release (HQ): EPA STATEMENT: Update on Ongoing Monitoring

**CONTACT:**  
EPA Press Office  
[press@epa.gov](mailto:press@epa.gov)

**FOR IMMEDIATE RELEASE**  
April 4, 2011

## **EPA STATEMENT: Update on Ongoing Monitoring**

**WASHINGTON** – As a result of the incident with the Fukushima nuclear plant in Japan, several EPA air monitors have detected very low levels of radioactive material in the United States consistent with estimated releases from the damaged nuclear reactors. EPA has stepped up monitoring of precipitation, milk, and drinking water in response to the Fukushima events. The detections in air, precipitation, and milk were expected, and the levels detected have been far below levels of public-health concern.

Today, EPA released its latest RadNet results, which include the first results for drinking water. Drinking water samples from two locations, Boise, Idaho and Richland, Washington, showed trace amounts of Iodine-131 – about 0.2 picocuries per liter in each case. An infant would have to drink almost 7,000 liters of this water to receive a radiation dose equivalent to a day's worth of the natural background radiation exposure we experience continuously from natural sources of radioactivity in our environment.

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

To see results from these samples, please visit:  
<http://www.epa.gov/japan2011/docs/rert/RadNet-Drinking-Water-Data-Public-Release-4-2-2011.pdf>

In addition, results of EPA's precipitation sampling and air filter analyses continue to detect very low levels of radioactive material consistent with estimated releases from the damaged nuclear reactors. These detections were expected and the levels detected are far below levels of public-health concern. For the latest sample results please visit:

*2/472*

For the latest air monitoring filter data: <http://epa.gov/japan2011/docs/rert/radnet-cart-filter-final.pdf>

For the latest milk sampling data: <http://epa.gov/japan2011/docs/rert/radnet-milk-final.pdf>

For the latest precipitation sampling data: <http://epa.gov/japan2011/docs/rert/radnet-precipitation-final.pdf>

R116

Note: If a link above doesn't work, please copy and paste the URL into a browser.



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