

**Howell, Art**

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**From:** Maier, Bill  
**Sent:** Saturday, April 09, 2011 1:12 PM  
**To:** Howell, Art; Howell, Linda  
**Subject:** HUGE FILE ATTACHED - FUKUSHIMA SLIDE SHOW FROM NISA  
**Attachments:** Fukushima status 4-6-11.pdf

Art/Linda,

Don't know if you've seen this or not, but it's very comprehensive. 4MB pdf format.

Bill

HHHHH/152

# **The 2011 off the Pacific coast of Tohoku Pacific Earthquake and the seismic damage to the NPPs**

4<sup>th</sup> April, 2011

Nuclear and Industrial Safety Agency (NISA)  
Japan Nuclear Energy Safety Organization (JNES)

Japan

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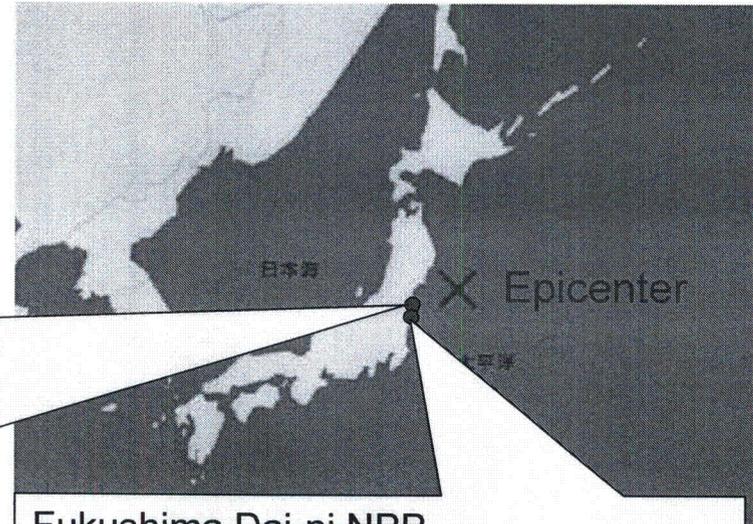
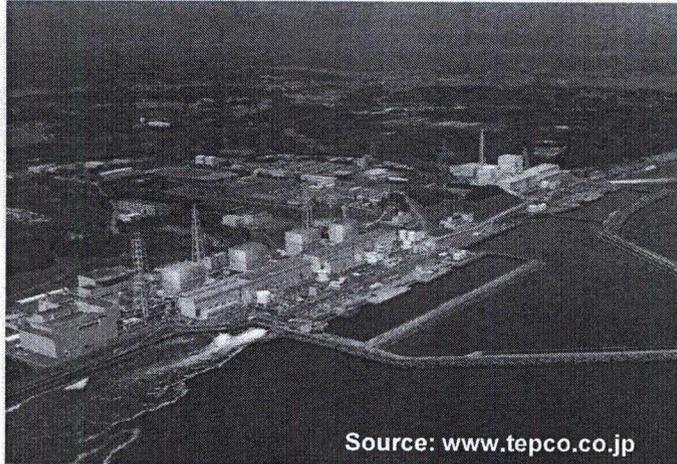
Note: Some date in this material may be incorrect. Especially, all the plant parameters were lost during some period in the accident and some parameters are apparently inconsistent among them.

# 1. Outline of earthquake and nuclear reactors

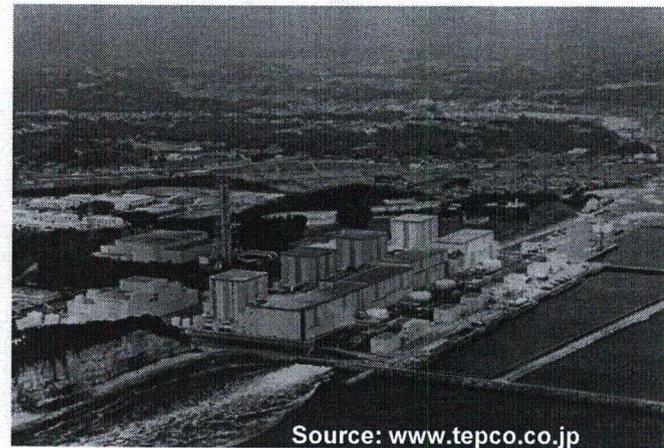


## 1-1. 2011 off Tohoku Pacific Earthquake

Fukushima Dai-ichi NPP



Fukushima Dai-ni NPP



- Occurred 14:46 March 11, 2011
- Magnitude: 9.0 Mw
- Epicenter location: 38° 6''N and 142° 51''E, and 24km in depth
- It is said that the height of tsunami attacked Fukushima NPP was more than 14m

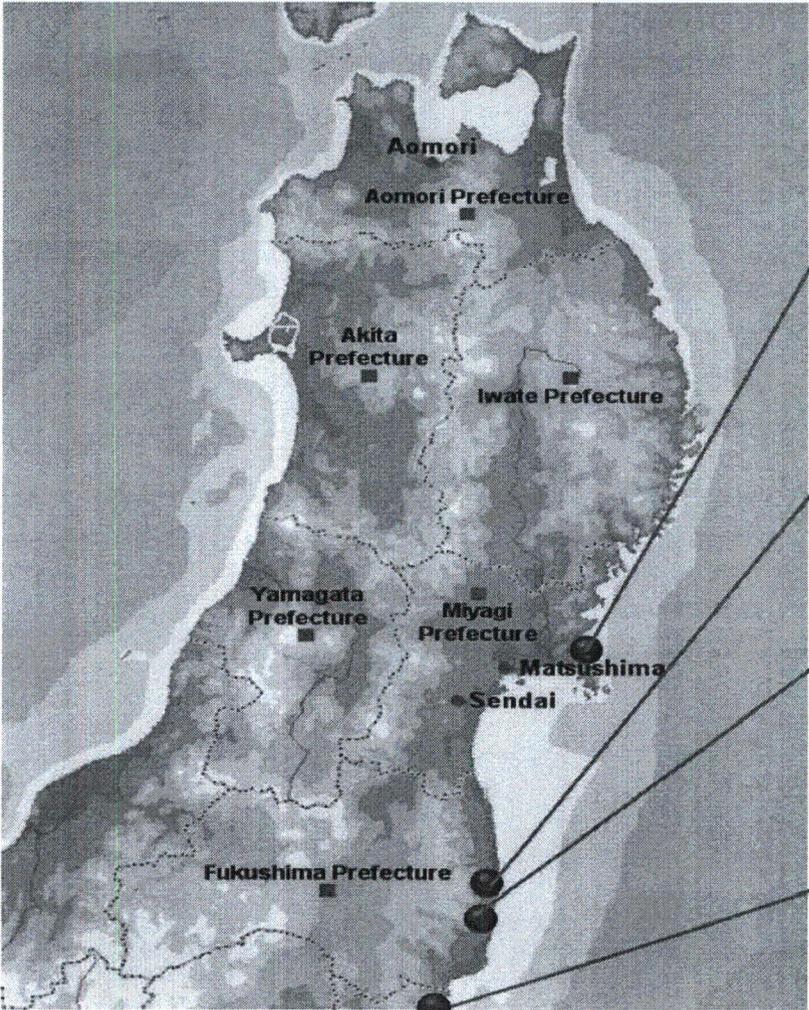
## 1-2. Tsunami after the earthquake

- East coast of northern area in the main island of Japan is seriously damaged
- As of April 4, 12,175 people are dead and 15,489 people are missing



# 1-3. Nuclear reactors near epicenter of the earthquake

## Location of the Nuclear Installations



Onagawa  
( Unit1: 524 MW, 1984-  
Unit2: 825 MW, 1995-  
Unit3: 825 MW, 2002- )

Fukushima I  
( Unit1: 460 MW, 1971-  
Unit2: 784 MW, 1974-  
Unit3: 784 MW, 1976-  
Unit4: 784 MW, 1978-  
Unit5: 784 MW, 1978-  
Unit6: 1,100 MW, 1979- )

Fukushima II  
( Unit1: 1,100 MW, 1982-  
Unit2: 1,100 MW, 1984-  
Unit3: 1,100 MW, 1985-  
Unit4: 1,100 MW, 1987- )

Tokai II (1,100 MW, 1978-)

## 1-4. Automatic shut-down of nuclear reactors

### ● 11 reactors were automatically shut-down

- Onagawa Unit 1,2,3
- Fukushima Dai-ichi (I) Unit 1,2,3
- Fukushima-Dai-ni (II) Unit 1,2,3,4
- Tokai Dai-ni (II)

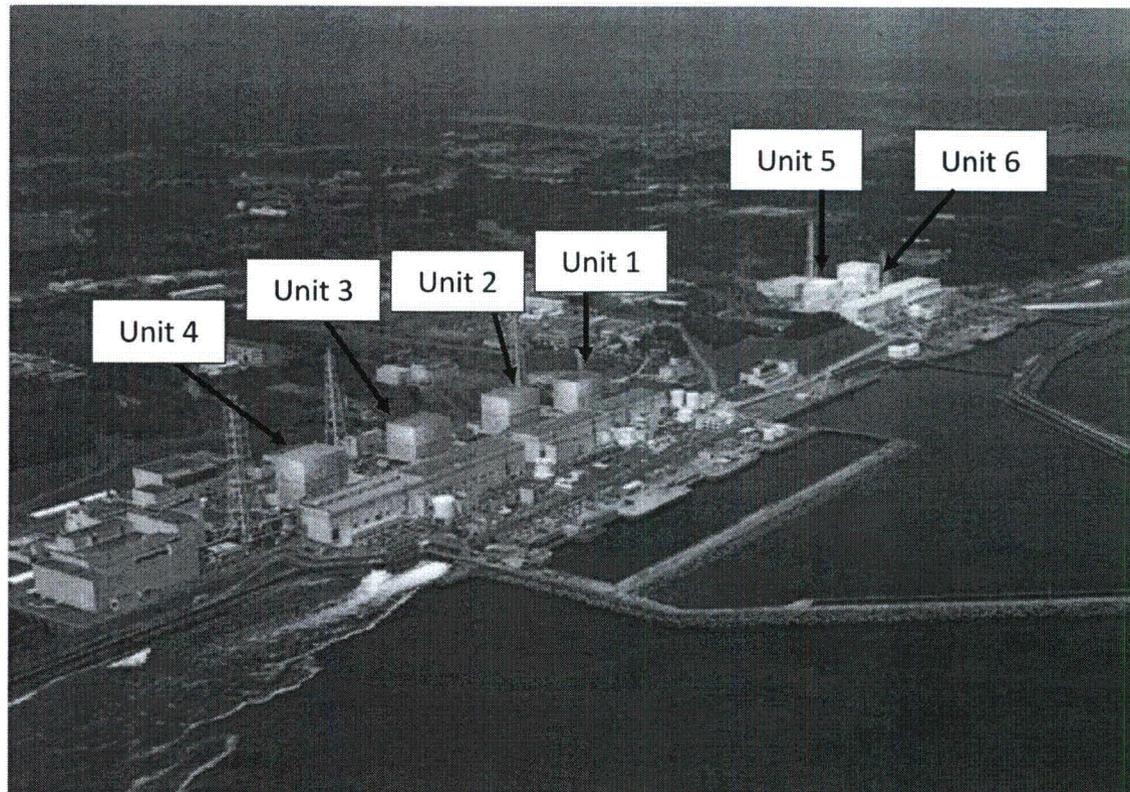
### ● 3 reactors were under periodic inspection

- Fukushima Dai-ichi (I) Unit 4,5,6

-After the automatic shut-down, the Unit 1-3 at Onagawa Nuclear Power Station, the Unit 3 at Fukushima II Nuclear Power Station, and the Unit at Tokai II Nuclear Power Station have been cold shut down safely.

-As for the unit 1,2,4 at Fukushima II Nuclear Power Station, the operator of the station reported NISA nuclear emergency situation because the temperature of the suppression pools became more than 100 °C, but afterward the three units have been cold shut down.

## 2. Outline of Fukushima Dai-ichi NPS

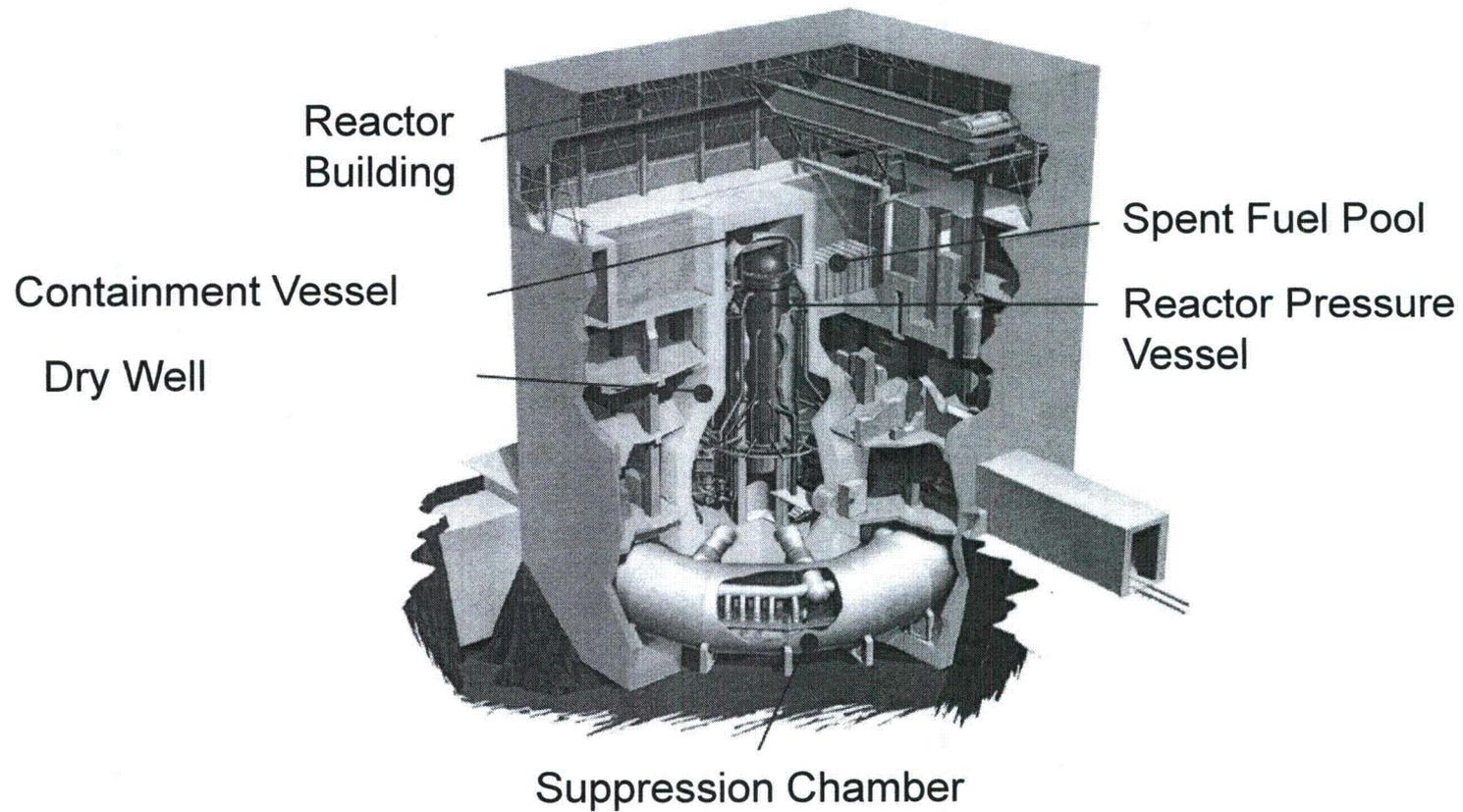


## 2-1. Summary of Fukushima Dai-ichi NPS

	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
	BWR-3	BWR-4	BWR-4	BWR-4	BWR-4	BWR-5
PCV Model	Mark-1	Mark-1	Mark-1	Mark-1	Mark-1	Mark-2
Electric Output (MWe)	460	784	784	784	784	1100
Max. pressure of RPV	8.24MPa	8.24MPa	8.24MPa	8.24MPa	8.62MPa	8.62MPa
Max. Temp of the RPV	300°C	300°C	300°C	300°C	302°C	302°C
Max. Pressure of the CV	0.43MPa	0.38MPa	0.38MPa	0.38MPa	0.38MPa	0.28MPa
Max. Temp of the CV	140°C	140°C	140°C	140°C	138°C	171°C(D/W) 105°C(S/C)
Commercial Operation	1971,3	1974,7	1976,3	1978,10	1978,4	1979,10
Emergency DG	2	2	2	2	2	3*
Electric Grid	275kV × 4				500kV × 2	
Plant Status on Mar. 11	In Operation	In Operation	In Operation	Refueling Outage	Refueling Outage	Refueling Outage

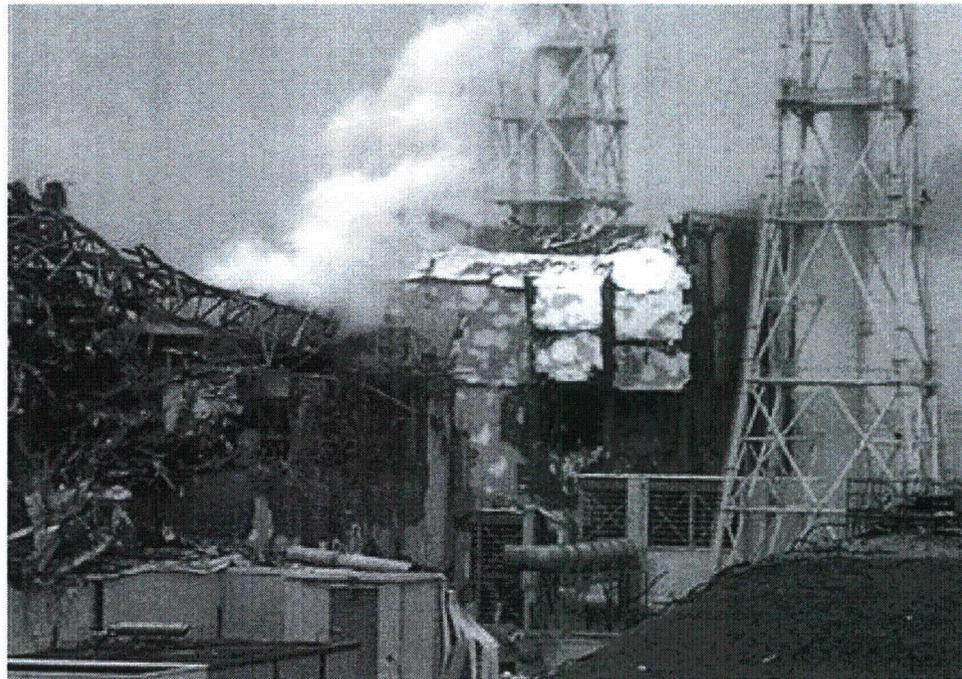
\* One Emergency DG is Air-Cooled

## 2-2. Overview of Mark-1 Type BWR (Unit 1,2,3 and 4)

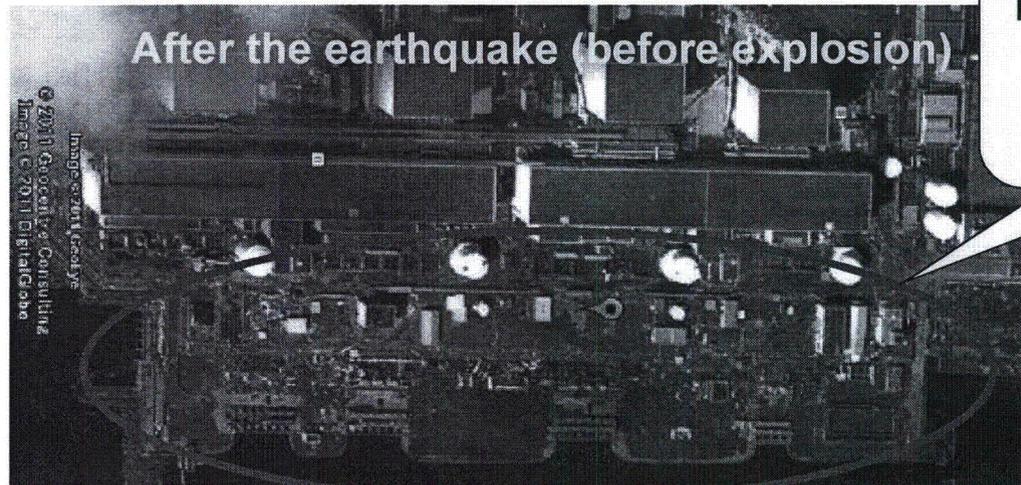
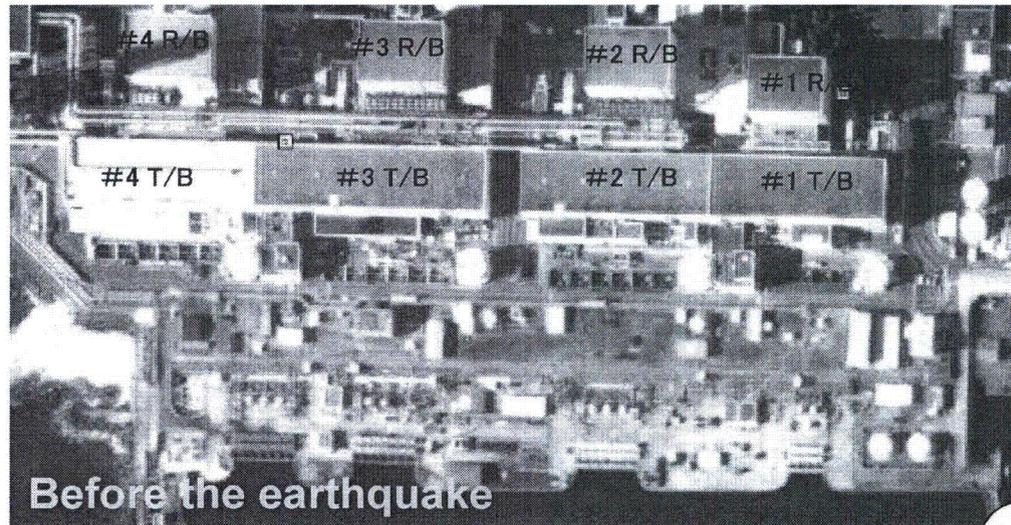


出典 : [http://nei.cachefly.net/static/images/BWR\\_illustration.jpg](http://nei.cachefly.net/static/images/BWR_illustration.jpg)

### **3. Report concerning incidents at Unit 1 through 6 in the Fukushima Dai-ichi NPS**



### 3-1. Satellite view of Fukushima Dai-ichi NPP

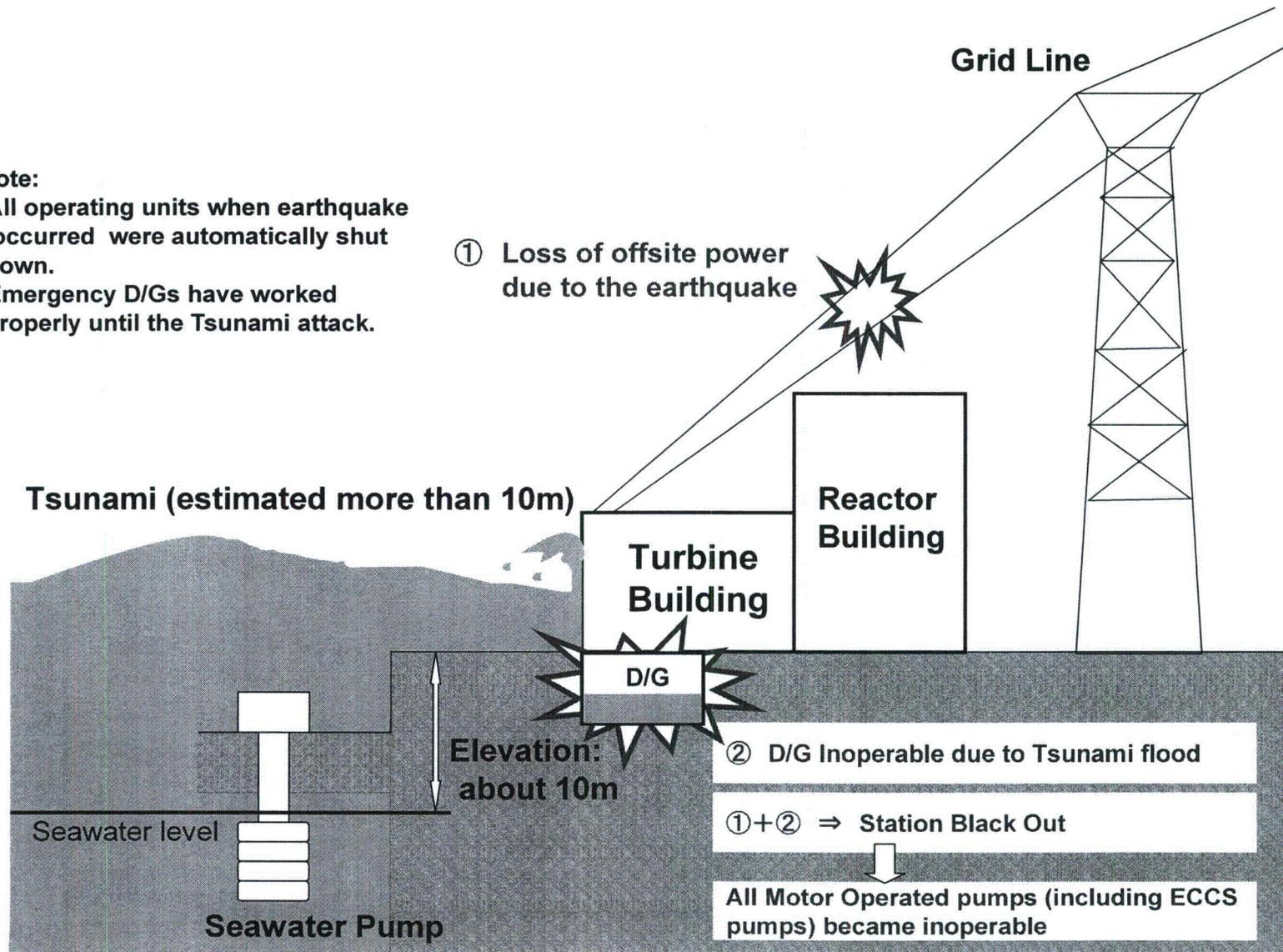


Many structures facing the bay are destroyed

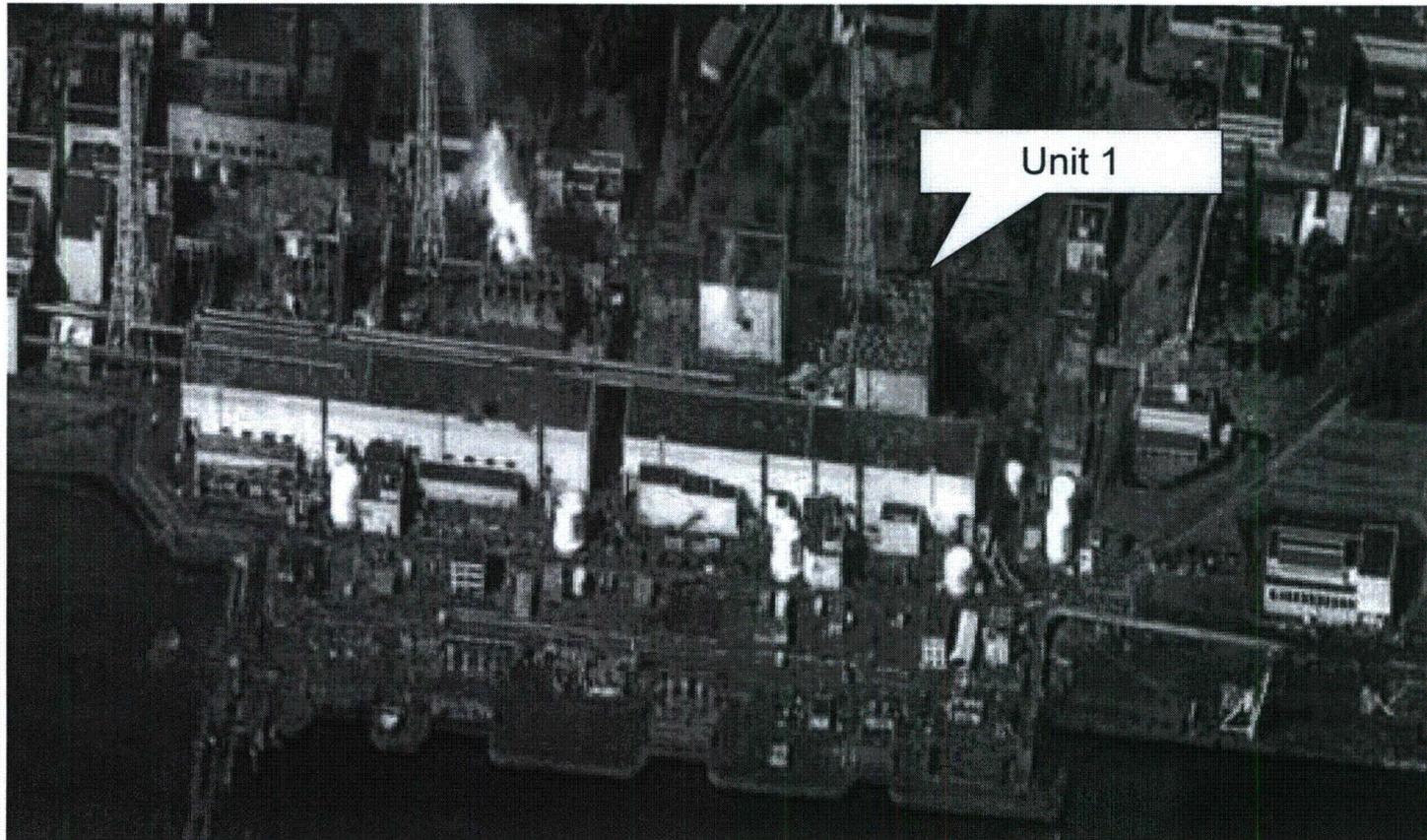
## 3-2. Major root cause of the damage

**Note:**

- All operating units when earthquake occurred were automatically shut down.
- Emergency D/Gs have worked properly until the Tsunami attack.



### 3-3. Accident Progression at Unit 1 Reactor

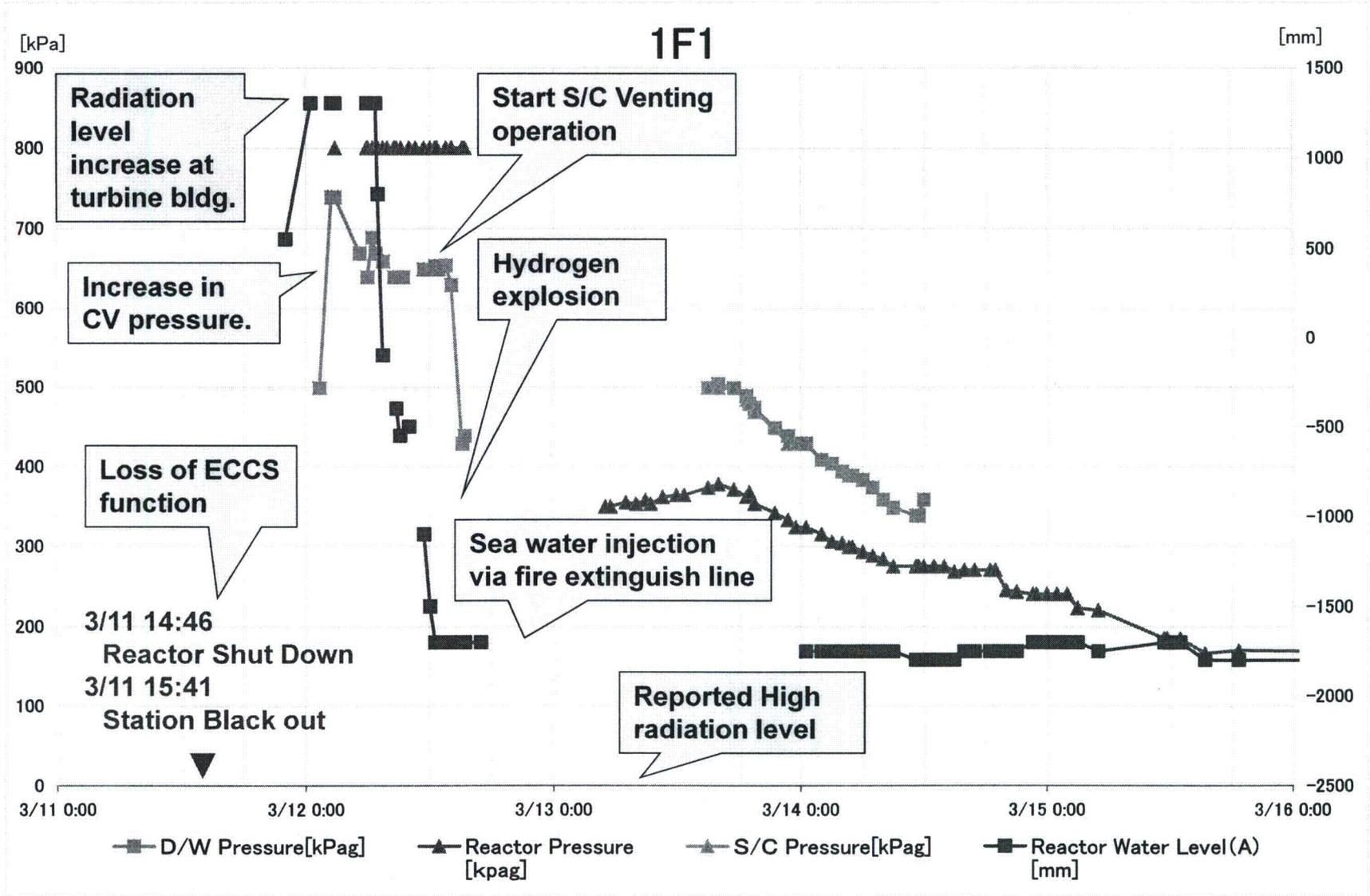


## 3-4. Chronology of Unit 1 after the earthquake

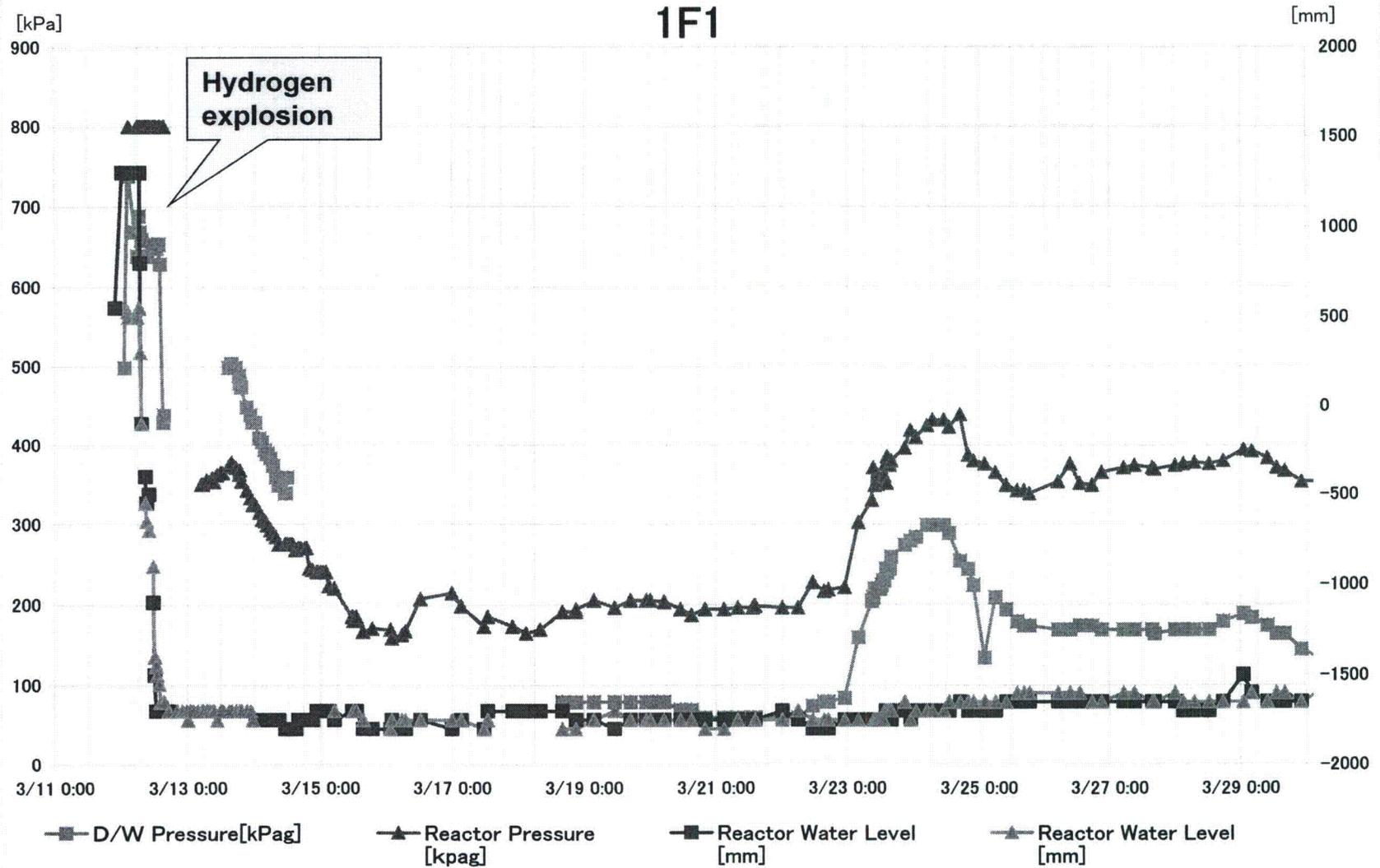
### ● **Unit 1**

- 11<sup>th</sup> ● Under operation, Automatic shutdown by the earthquake
  - Loss of A/C power
  - Loss of water injection function
- 12<sup>th</sup> ● Unusual increase of PCV pressure
  - Started to vent
  - Sound of explosion
  - Started of injection of seawater and borated water to the core
- 22<sup>nd</sup> ● Rise of reactor temperature (383°C) → Drop (26th 05:00 144.3°C)
- 23<sup>rd</sup> ● Water supply line in addition to the Fire Extinguish line. Switched to water supply line only.(Flow rate: 7m<sup>3</sup>/h)
- 24<sup>th</sup> ● Lighting in the Central Control Room was recovered.
- 25<sup>th</sup> ● Started fresh water injection
- 29<sup>th</sup> ● Switched to the water injection to the core using a temporary motor operated pump.
- 31<sup>st</sup> ● White smoke was confirmed to generate continuously
  - Freshwater is being injected into the RPV

# 3-5. Trend data of Unit 1 until March 15

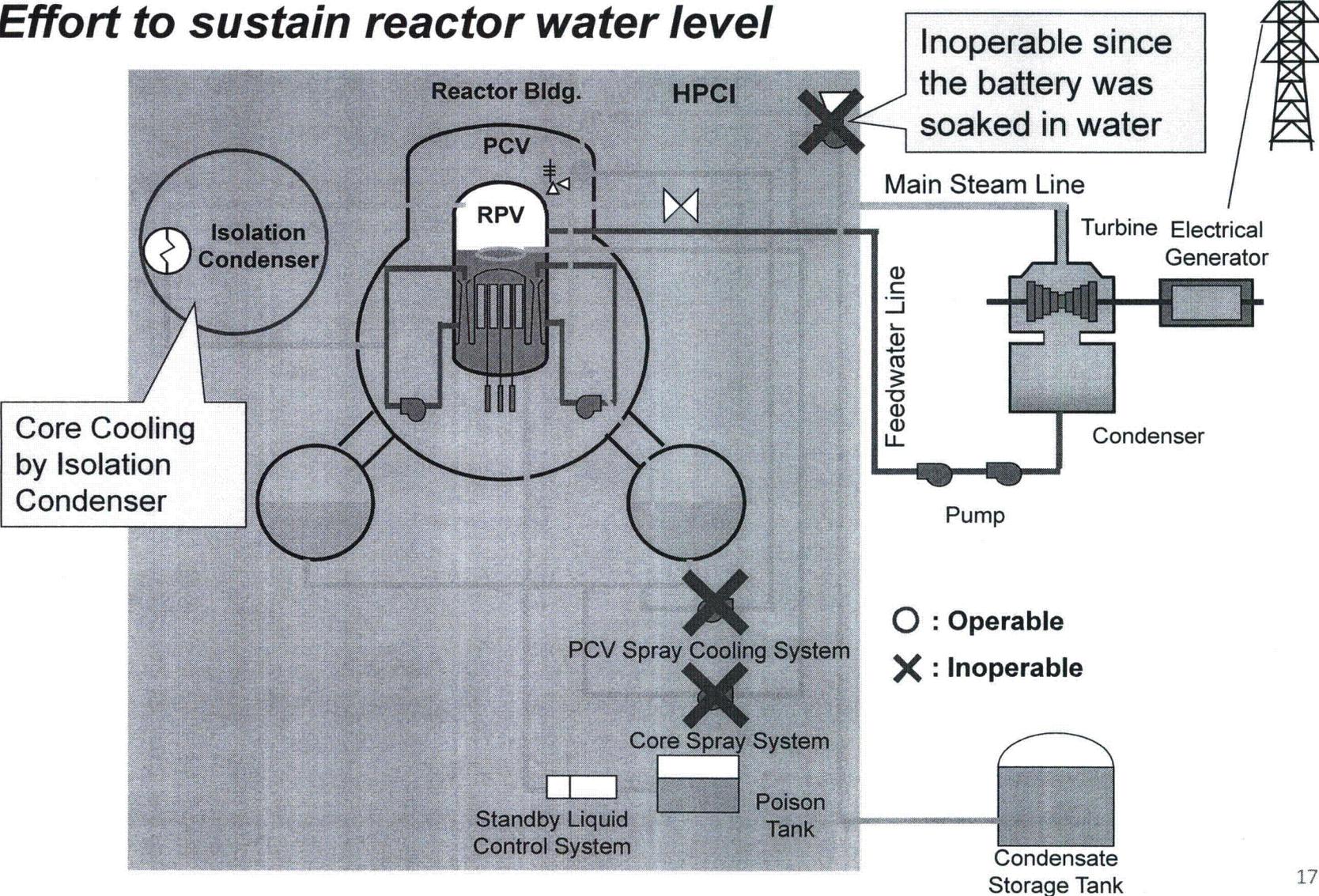


### 3-6. Trend data of Unit 1 until March 30



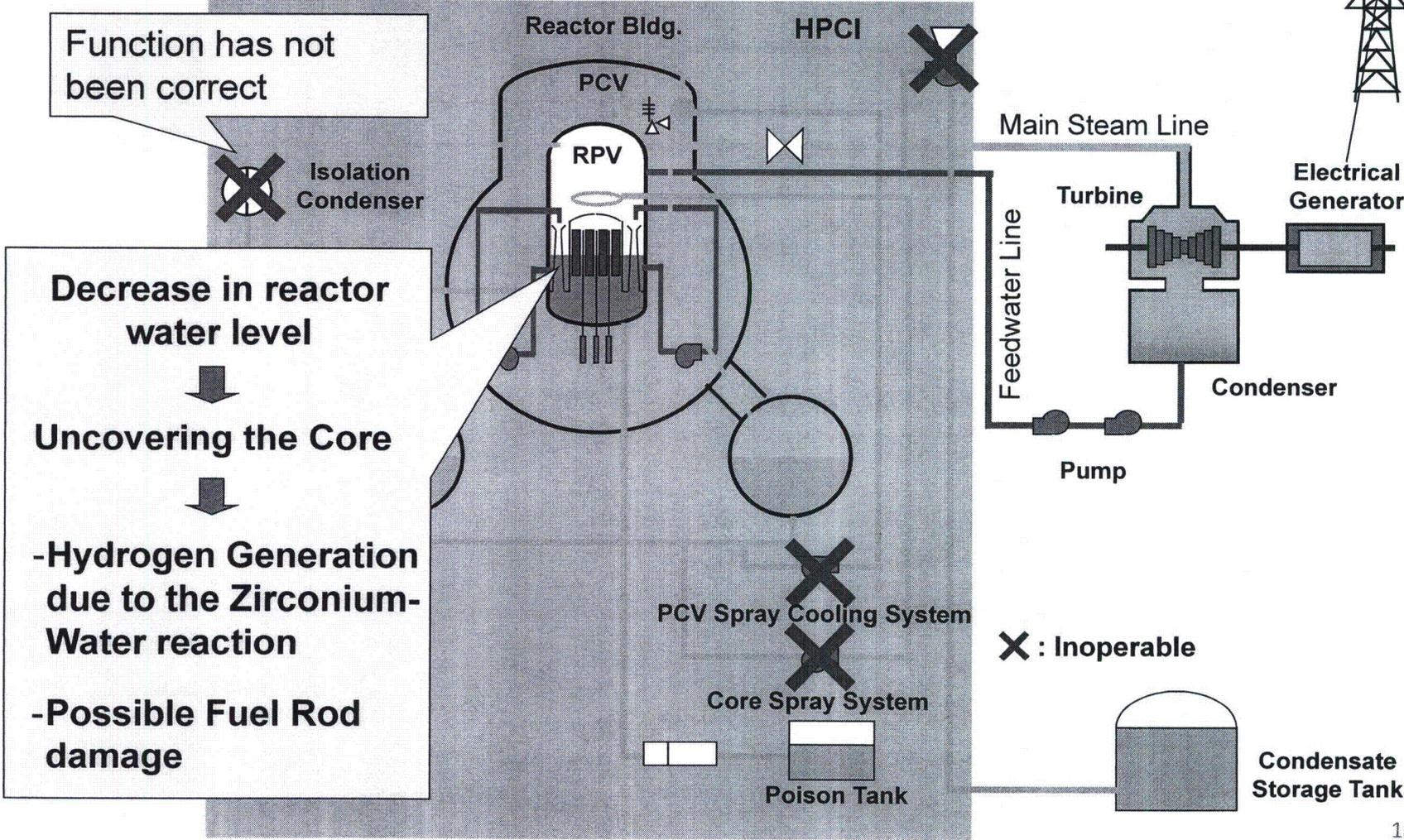
# 3-7. Major event progression at Unit 1 (1/4)

## Effort to sustain reactor water level



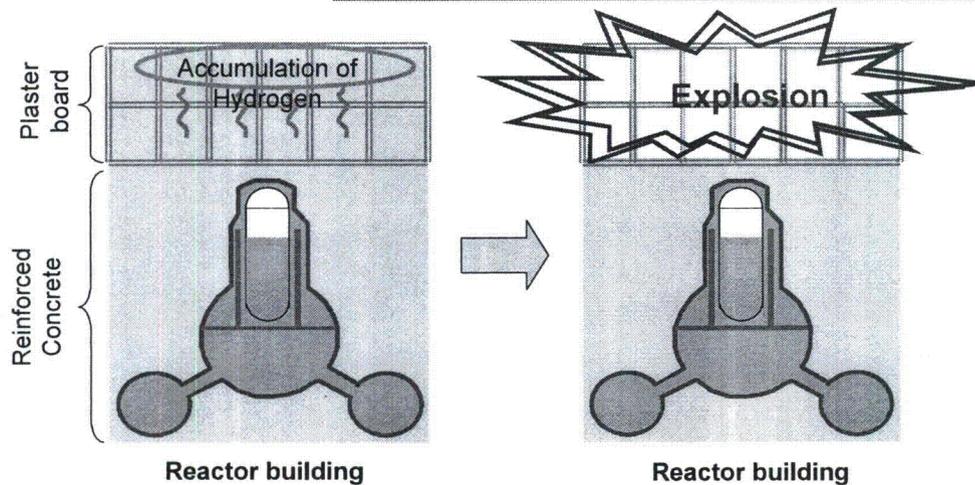
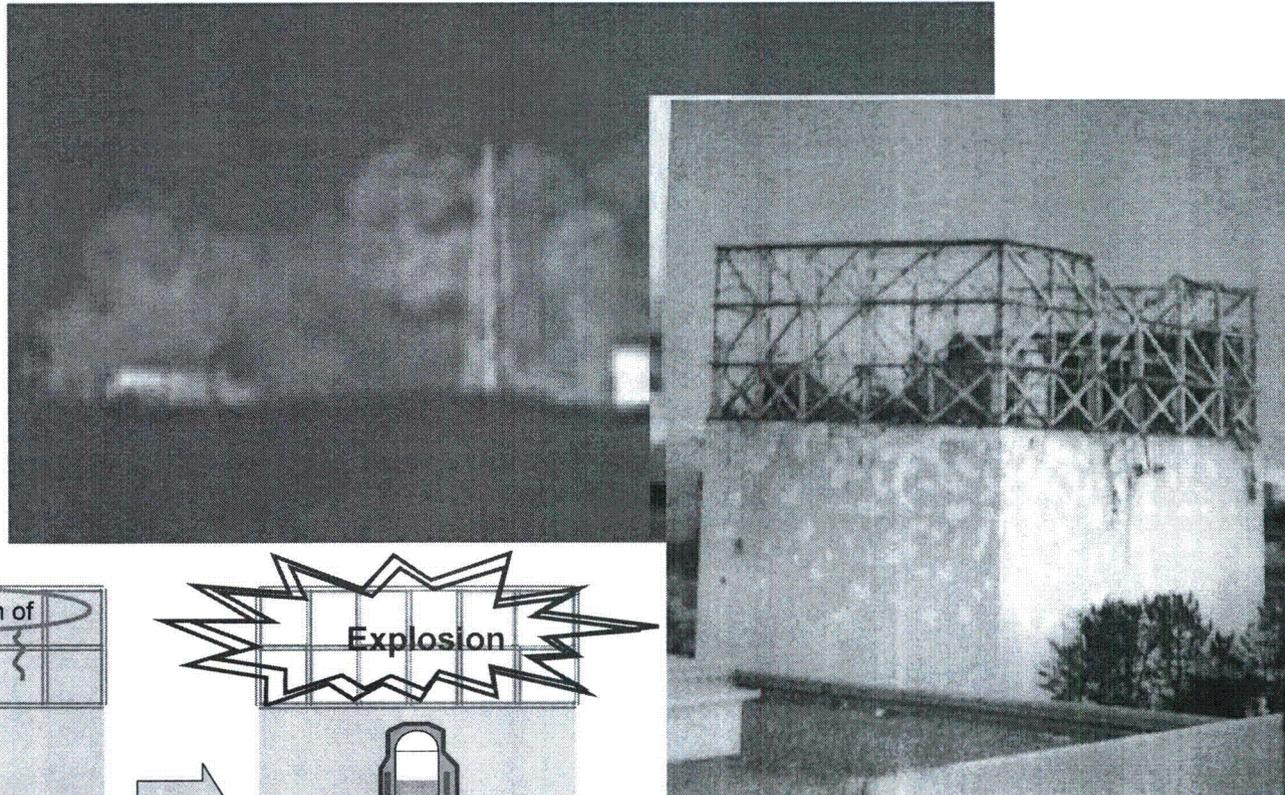
# 3-7. Major event progression at Unit 1 (2/4)

***Decrease in reactor water level due to loss of cooling capability of emergency condenser, followed by uncovering the core***



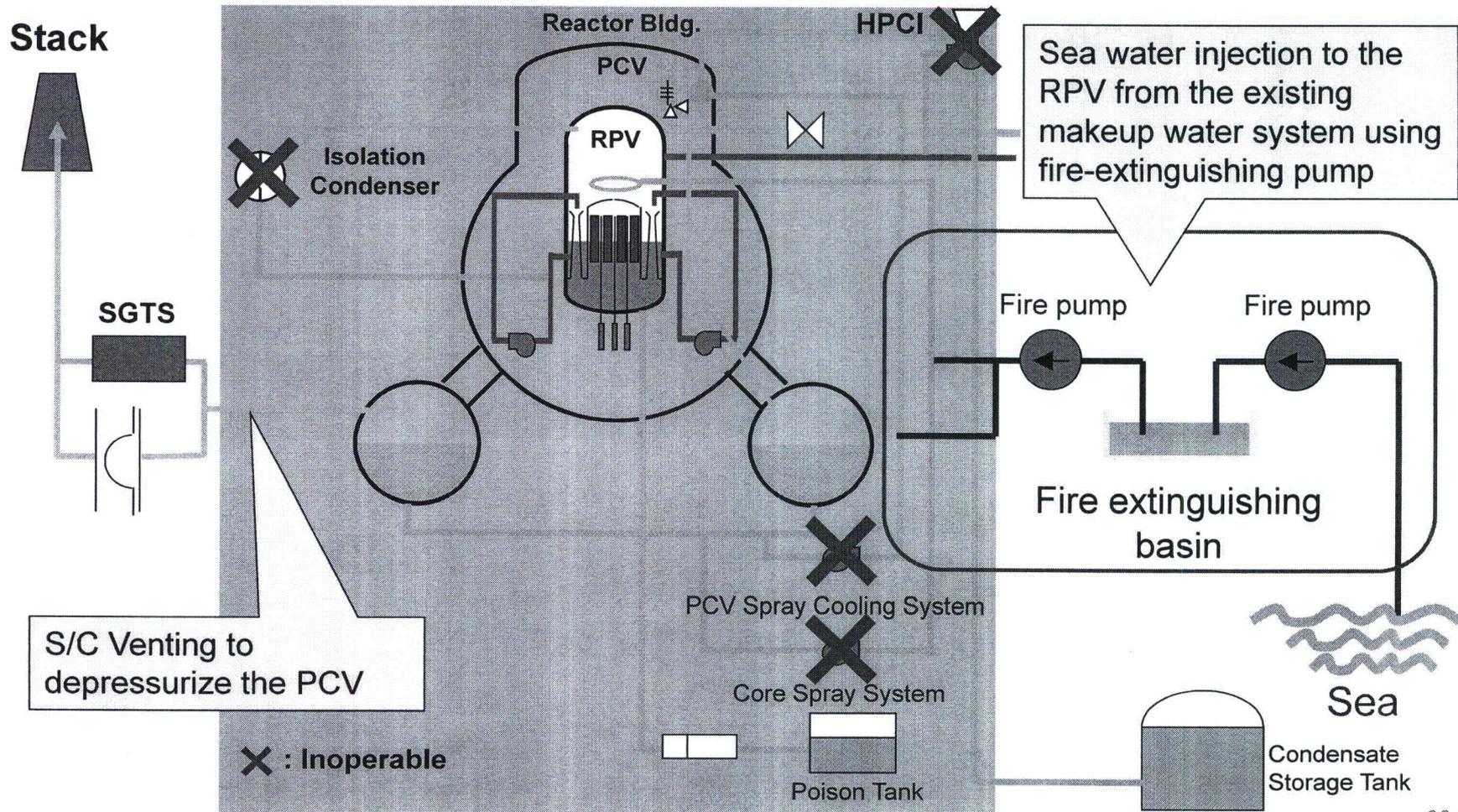
## 3-7. Major event progression at Unit 1 (3/4)

### *Hydrogen explosion in the operation floor*

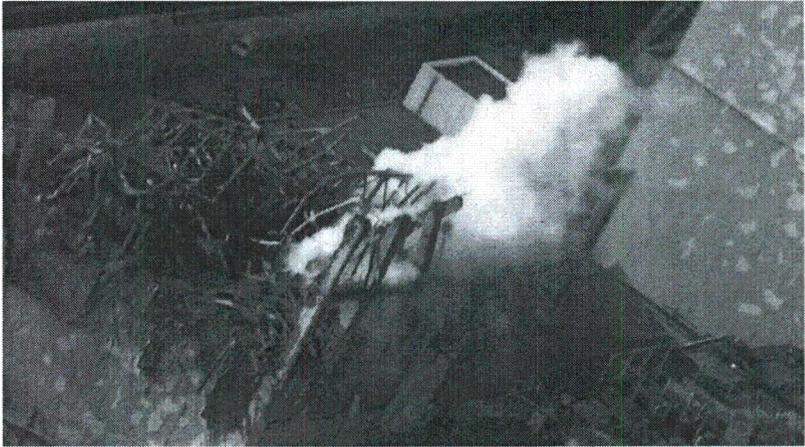
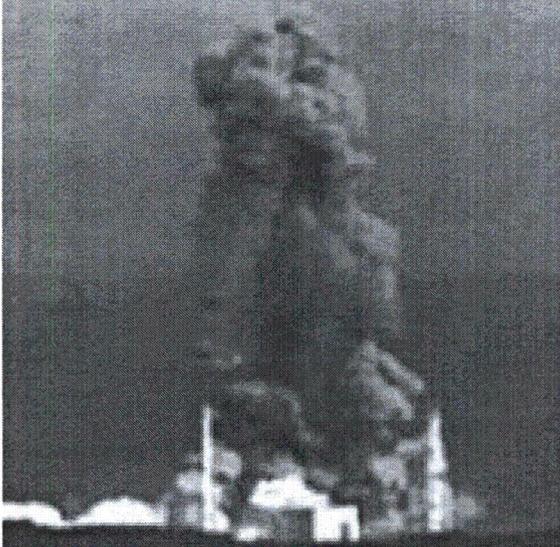
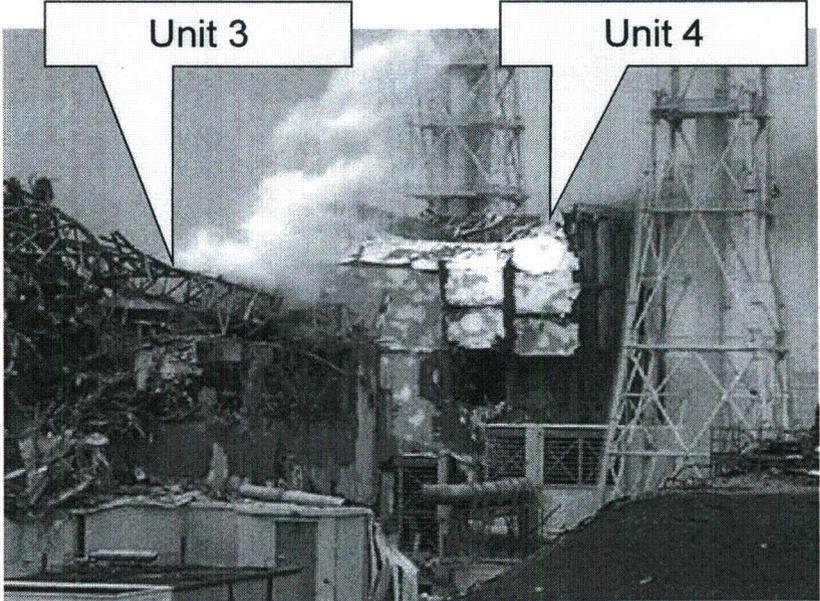
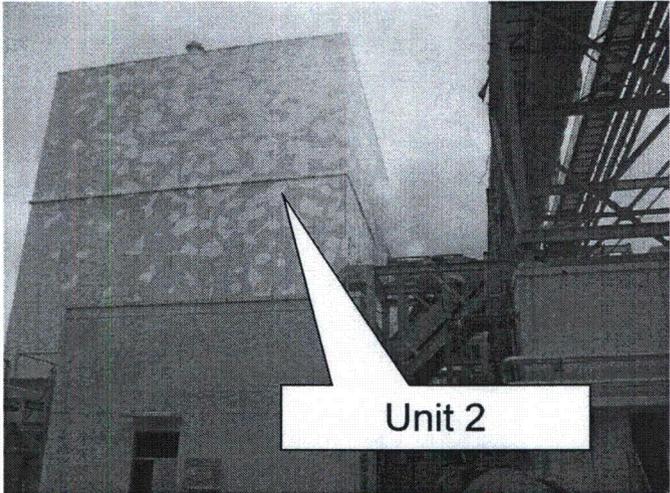


### 3-7. Major event progression at Unit 1 (4/4)

- **Sea water injection using fire water pump**
- **S/C Venting to depressurize the PCV**



3-8. Accident Progression at Unit 2 through 4 reactors



## 3-9. Chronology of Unit 2 after the earthquake (1/2)

### ● *Unit 2*

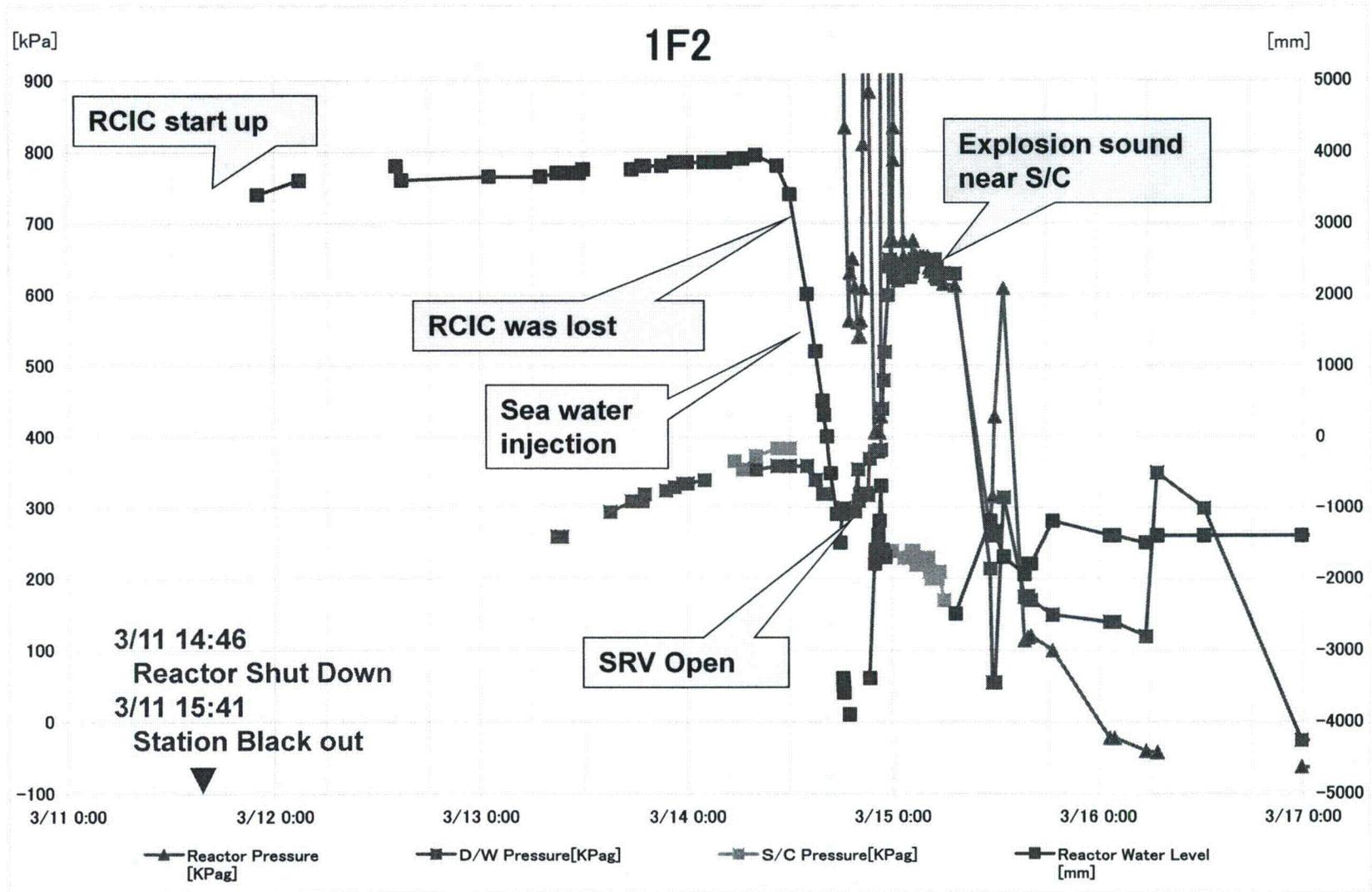
- 11<sup>th</sup> ● Under operation, Automatic shutdown by the earthquake
  - Loss of A/C power
  - Loss of water injection function
- 14<sup>th</sup> ● Loss of water cooling function
  - Unusual increase in PCV pressure
- 15<sup>th</sup> ● Sound of explosion
  - Possible damage of the suppression chamber
- 20<sup>th</sup> ● Injection of about 40 tons of seawater into SFP through fire extinguishing system.
  - Injection of seawater to the Spent Fuel Pool (SFP)
- 21<sup>st</sup> ● White smoke generated
- 22<sup>nd</sup> ● Injection of seawater to the Spent Fuel Pool (SFP)
- 25<sup>th</sup> ● Injection of seawater to SFP

## 3-9. Chronology of Unit 2 after the earthquake (2/2)

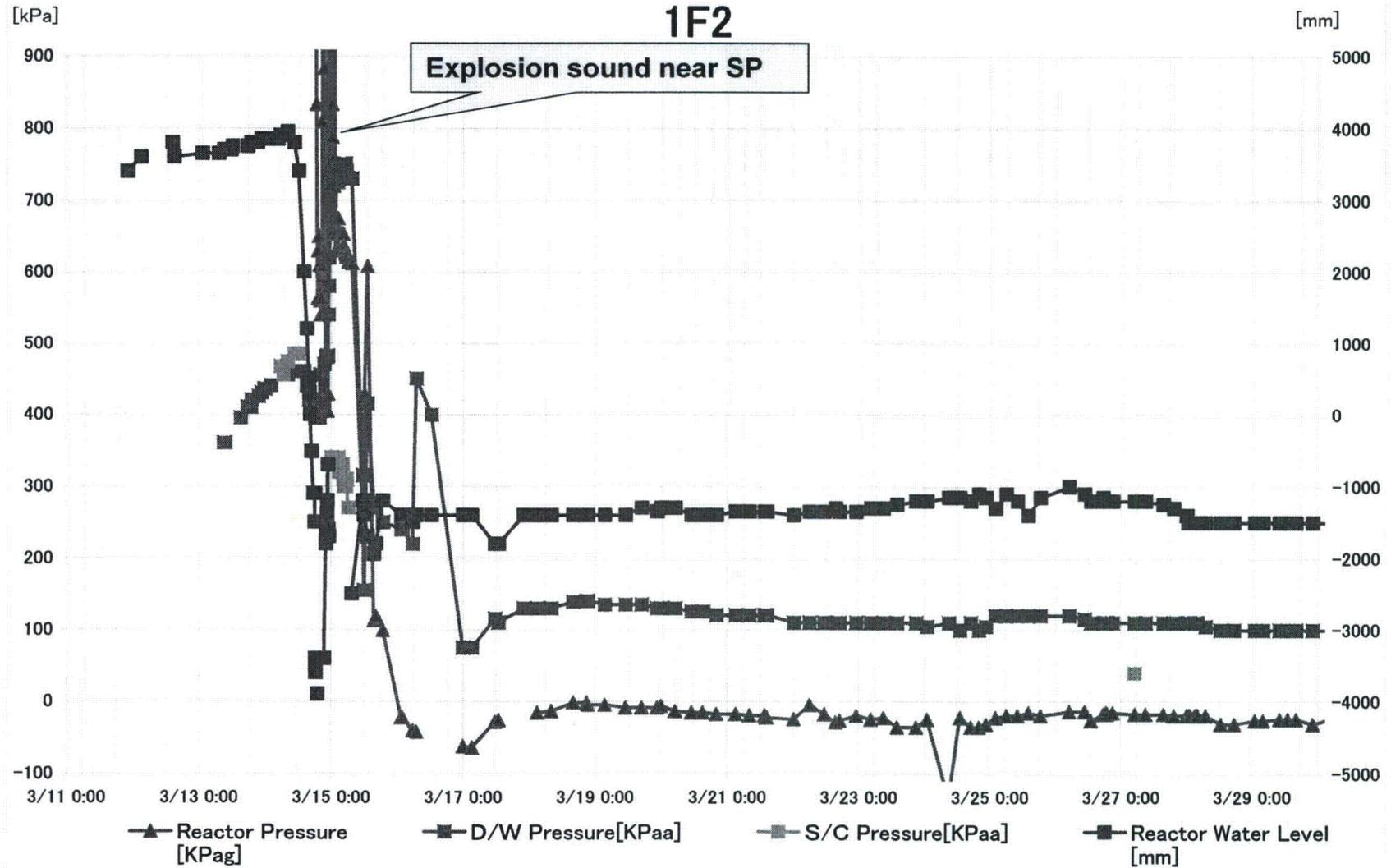
### ● **Unit 2(Continued)**

- 26<sup>th</sup> ● Lighting in the Central Control Room was recovered
- 27<sup>th</sup> ● Switched to the water injection to the core using a temporary motor-driven pump.
- 29<sup>th</sup> ● The Seawater injection to the Spent Fuel Pool using the Fire Pump Truck was switched to the fresh water injection using the temporary motor-driven pump
  - In order to prepare for transferring the stagnant water on the basement floor of turbine building to the Condenser, the water in the Condensate Storage Tank is being transferred to the Surge Tank of Suppression Pool Water.
- 30<sup>th</sup> ● The injection pump was switched to the Fire Pump Truck. However, because cracks were confirmed in the hose (12:47 and 13:10 March 30th), the injection was suspended. The injection of fresh water resumed at 19:05 March 30th.
- 31<sup>st</sup> ● White smoke was confirmed to generate continuously.
  - Fresh water is being injected to the spent fuel pool and the RPV

# 3-10. Trend data of Unit 2 until March 17



# 3-11. Trend data of Unit 2 until March 30



## 3-12. Chronology of Unit 3 after the earthquake (1/2)

### ● **Unit 3**

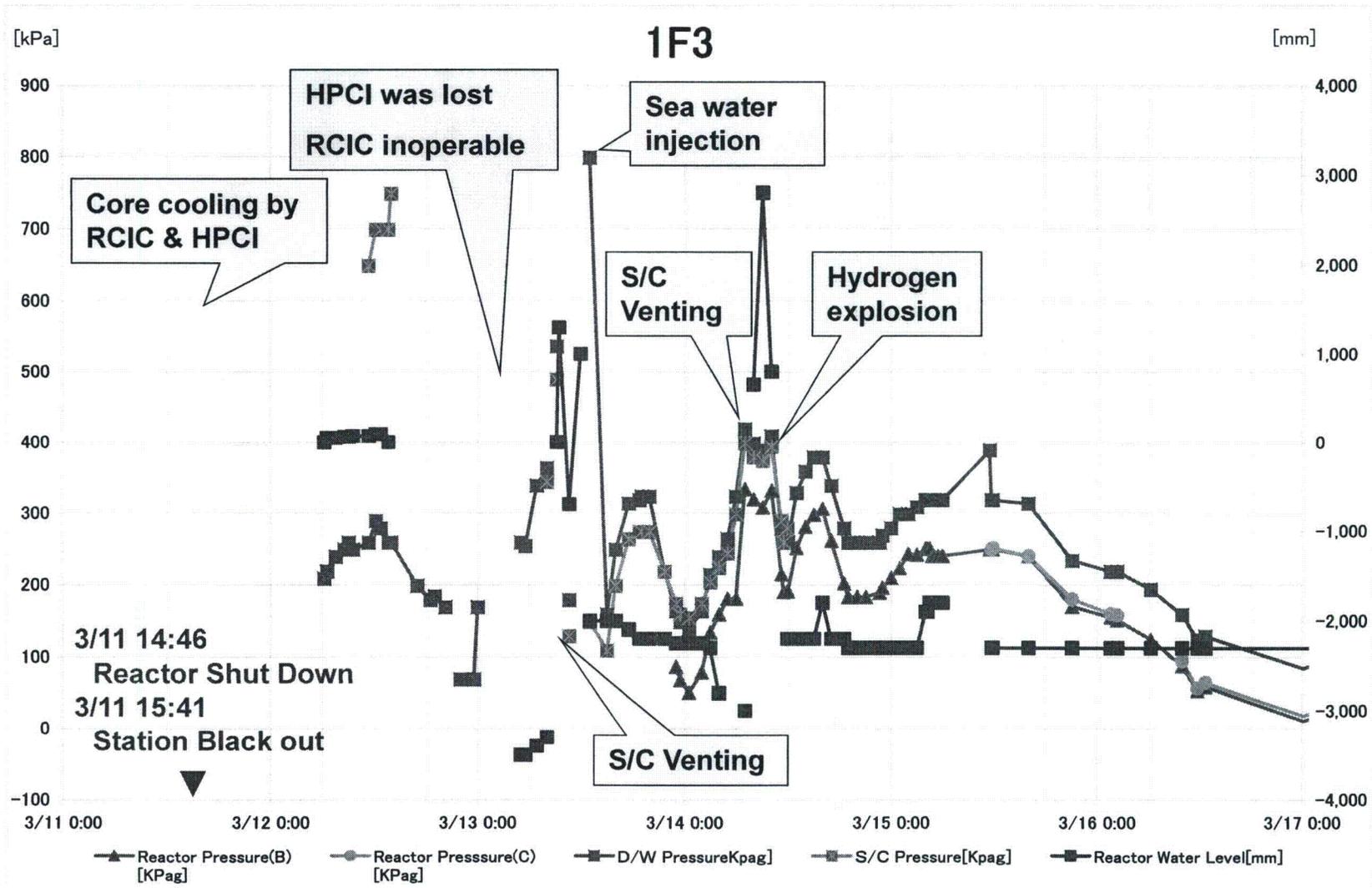
- 11<sup>th</sup> ● Under operation, Automatic shutdown by the earthquake
  - Loss of A/C power
- 13<sup>th</sup> ● Loss of water injection function
  - Started to vent
- 14<sup>th</sup> ● Unusual increase in PCV pressure
  - Sound of explosion
- 16<sup>th</sup> ● White smoke generated
- 17<sup>th</sup> ● Water discharge by the helicopters of Self-Defense Force(4 times)
  - Water spray from the ground by High pressure water-cannon trucks  
(Police: once, Self-Defense Force: 5 times)
- 18<sup>th</sup> ● Water spray from the ground by same trucks (Self-Defense Force: 6 times)  
Water spray from the ground by US water-cannon trucks  
(US armed force:1 time)
- 19<sup>th</sup> ● Water spray from the ground by High pressure water-cannon trucks by  
Hyper Rescue Unit of Tokyo Fire Department.

## 3-12. Chronology of Unit 3 after the earthquake (2/2)

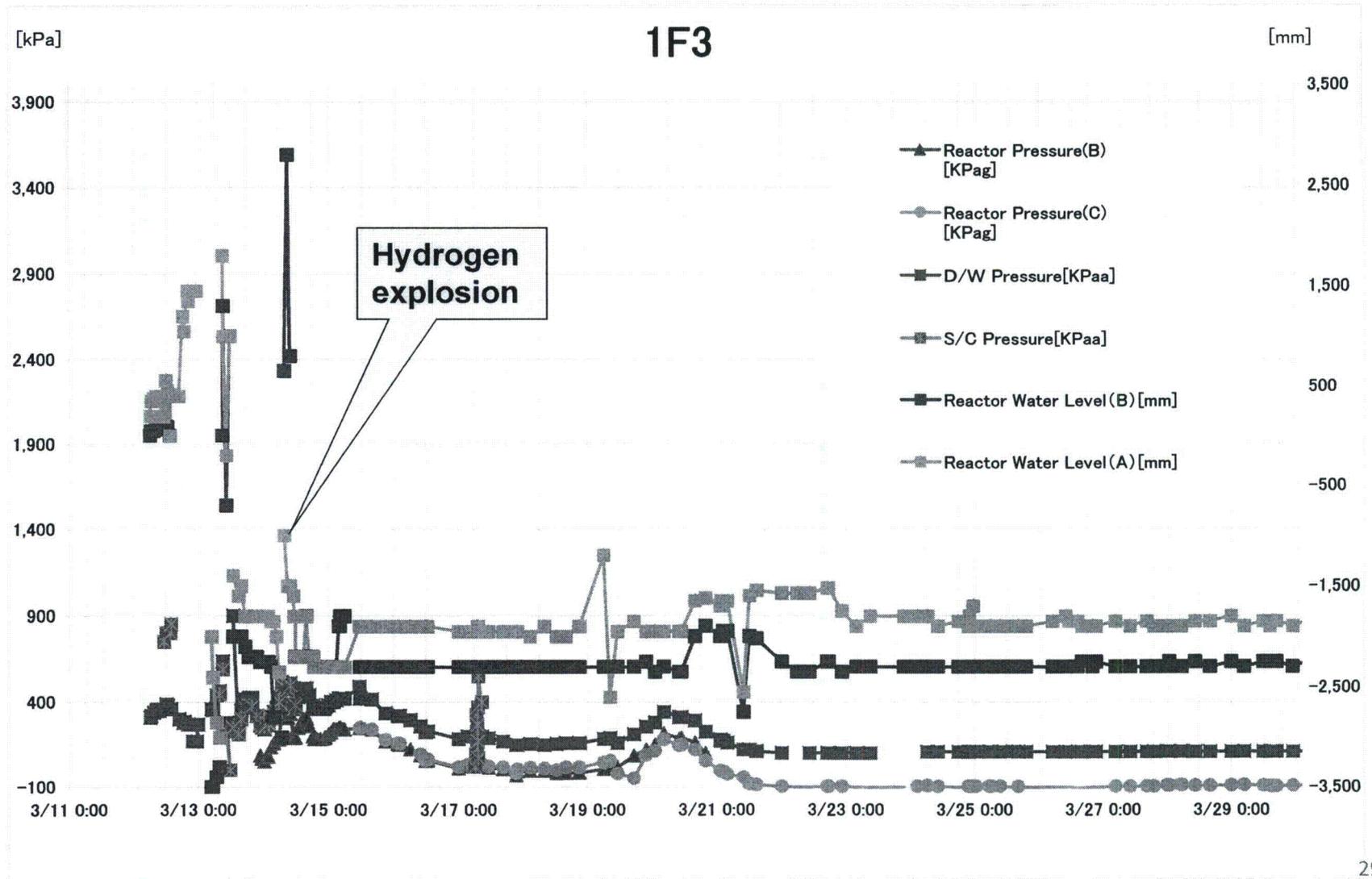
### ● **Unit 3(Continued)**

- 20<sup>th</sup> ● Sprayed by Hyper Rescue Unit of Tokyo Fire Department
- 22<sup>nd</sup> ● Lighting in the Central Control Room was recovered.
- 23<sup>rd</sup> ● Injection of seawater to the SFP
- 24<sup>th</sup> ● Injection of seawater to the SFP
- 25<sup>th</sup> ● Water spray (Emergency fire support team)  
● Started fresh water injection
- 27<sup>th</sup> ● Water spray by Concrete Pump Truck
- 28<sup>th</sup> ● Switched to the water injection to the core using a temporary motor-driven pump  
● In order to prepare for transfer the stagnant water on the basement floor of turbine building to the Condenser, the water in the Condensate Storage Tank is being transferred to the Surge Tank of Suppression Pool Water
- 29<sup>th</sup> ● Started to spray freshwater by Concrete Pump Truck
- 31<sup>st</sup> ● White smoke was confirmed to generate continuously  
● Fresh water is being injected to the spent fuel pool and the RPV

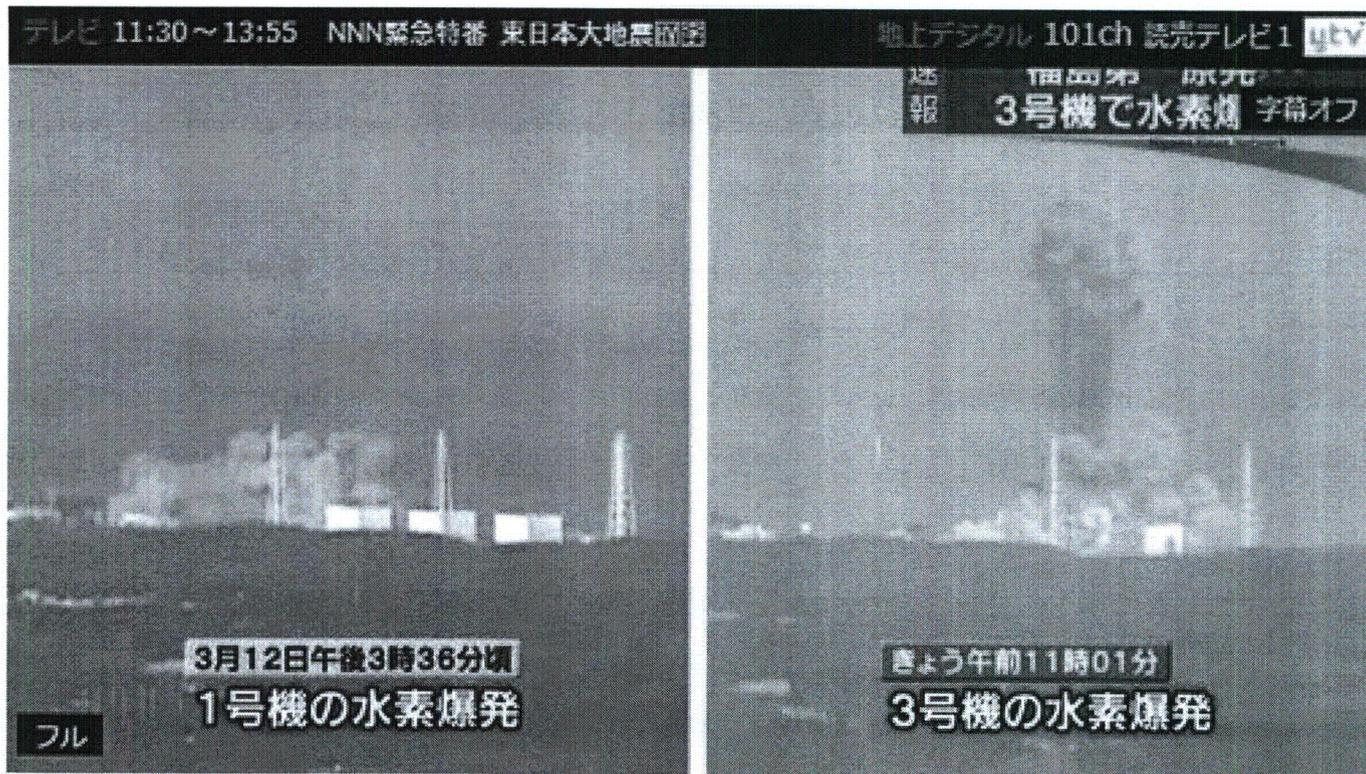
# 3-13. Trend data of Unit 3 until March 17



# 3-14. Trend data of Unit 3 until March 30



### 3-15. Hydrogen explosion at Unit 1 & 3



Unit 1

Unit 3

## 3-16. Chronology of Unit 4 after the earthquake

### ● *Unit 4*

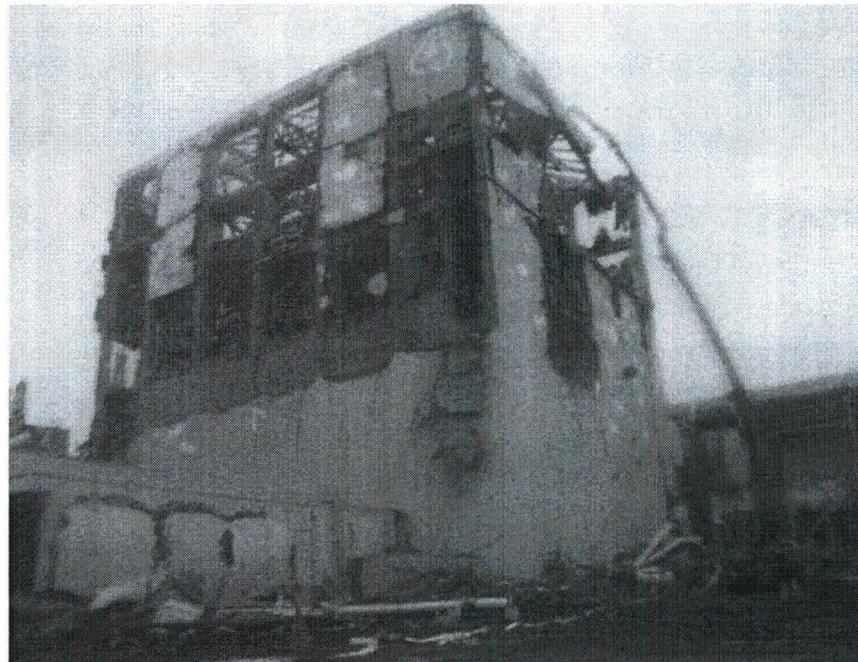
- 14<sup>th</sup> ● Water temperature in the Spent Fuel Pool, 84°C
- 15<sup>th</sup> ● Damage of wall in the 4<sup>th</sup> floor confirmed  
● Fire occurred in the 3<sup>rd</sup> floor (12:25 extinguished)
- 16<sup>th</sup> ● Fire occurred. TEPCO couldn't confirm any fire on the ground.
- 20<sup>th</sup> ● Water spray over the spent fuel pool by Self Defense Force
- 21<sup>st</sup> ● Water spray over the spent fuel pool by Self Defense Force
- 22<sup>nd</sup>-24<sup>th</sup> ● Water spray (Concrete Pump Truck (3 times)
- 25<sup>th</sup> ● Injection of seawater to SFP via the Fuel Pool Cooling Line (FPC)  
● Water spray (Concrete Pump Truck)
- 27<sup>th</sup> ● Water spray (Concrete Pump Truck)
- 29<sup>th</sup> ● Lighting in the Central Control Room was recovered.
- 30<sup>th</sup> ● White smoke was confirmed to generate continuously.  
● Spray of fresh water (Around 140t) over the Spent Fuel Pool using Concrete Pump Truck (50t/h) was carried out.  
● Fresh water is being injected to the spent fuel pool

## 3-17. Chronology of Unit 5 & 6 after the earthquake

### ● **Unit 5&6**

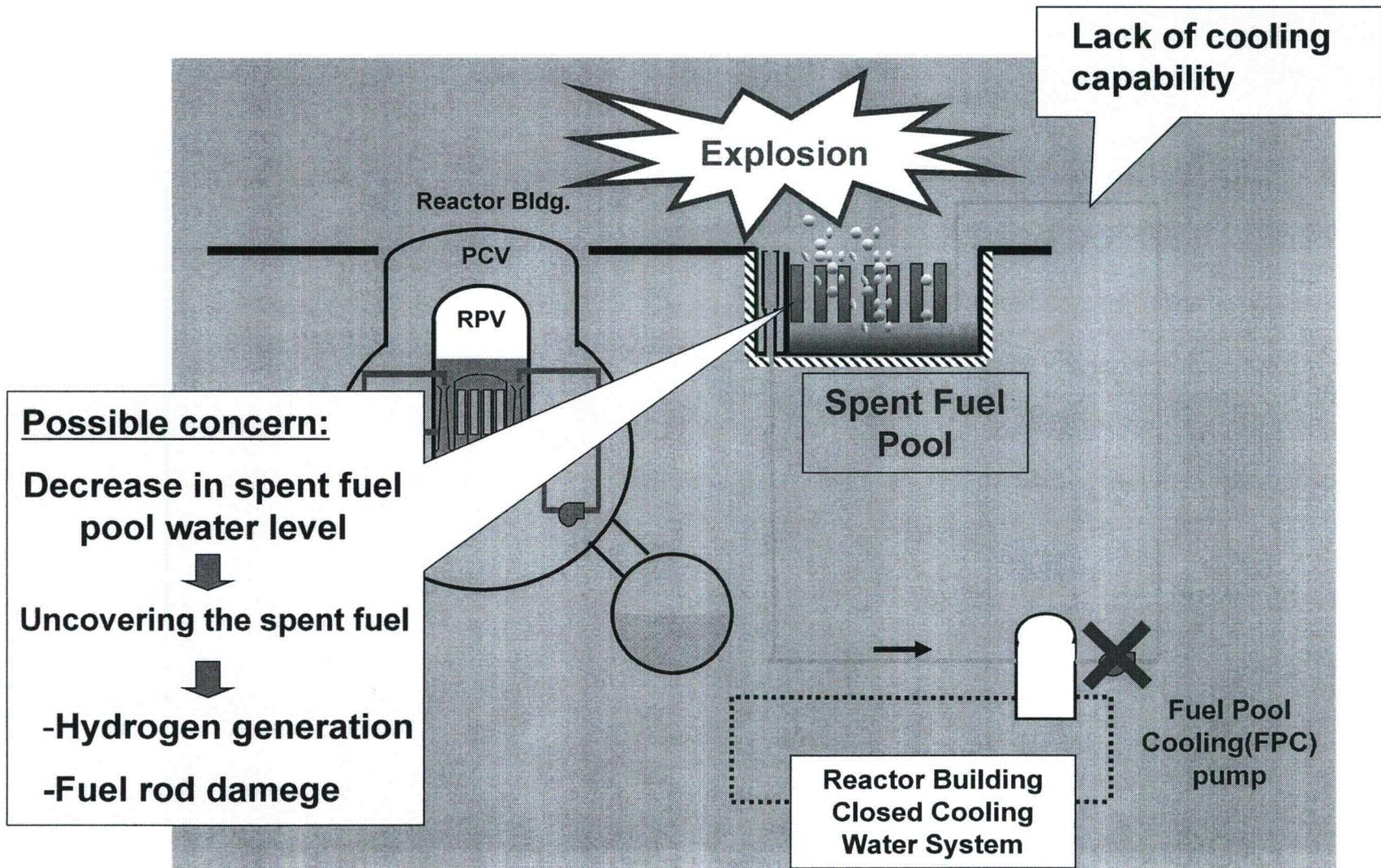
- 20<sup>th</sup> ● Unit 5 under cold shutdown (Water temperature of reactor water is less than 100°C)
- Unit 6 under cold shutdown (Water temperature of reactor water is less than 100°C)
- 21<sup>st</sup> ● Water spray over the Common Spent Fuel Pool started
- 22<sup>nd</sup> ● Recovering power supply of unit 5 and 6 is completed.
- 24<sup>th</sup> ● The power was started to be supplied. Cooling also started
- 30<sup>th</sup> ● Backup power of Unit 6 is in working condition and external power was supplied to Unit 5 as of March 30<sup>th</sup>

#### 4. Report concerning incidents at spent fuel pools in the Fukushima Dai-ichi NPS



**Photo: Water spray into the SFP in Unit 4 using concrete pump truck**

## 4-1. Possible concerns about Spent Fuel Pool



## 4-2. Status of the Fuel as of March 11, 2011

Unit	1	2	3	4	5	6
Number of Fuel Assembly in the Core	400	548	548	-	548	764
Number of Spent Fuel Assembly in the Spent Fuel Pool	292	587	514	1,331	946	876
Number of New Fuel Assembly in the Spent Fuel Pool	100	28	52	204	48	64
Water Volume (m <sup>3</sup> )	1,020	1,425	1,425	1,425	1,425	1,497

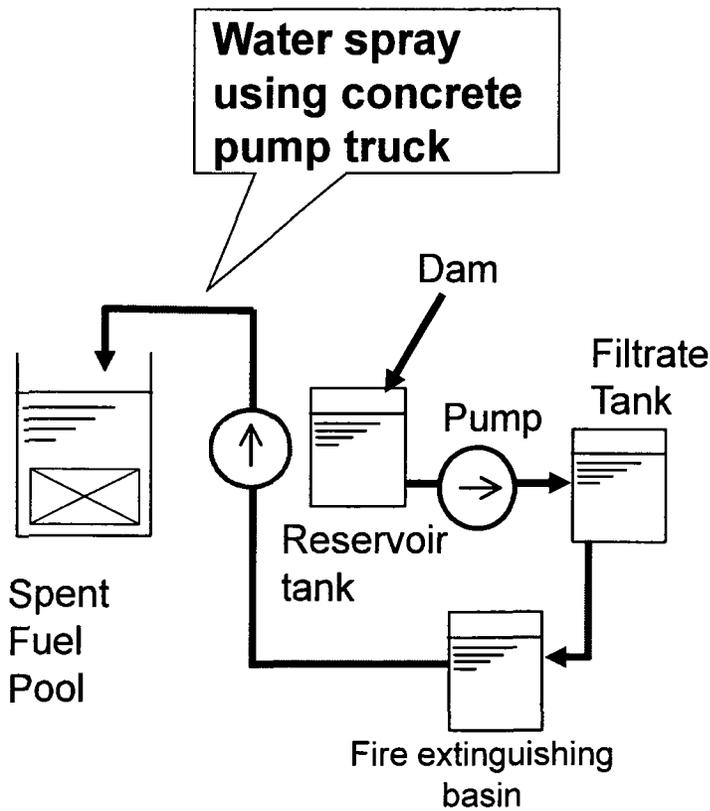
### Condition of the fuel in the Spent Fuel Pool

Unit 1	Unit 2	Unit 3	Unit 4
-Most recent shut down was on Sep.27,2010	- Most recent shut down was on Nov.18,2010	- Most recent shut down was on Sep.23,2010	-Most recent shut down was on Nov.29,2010 -All fuel assembly was removed from the core and located in the pool due to the core shroud replacement

# 4-3. Measures taken to cool the Spent Fuel Pool (1/4)

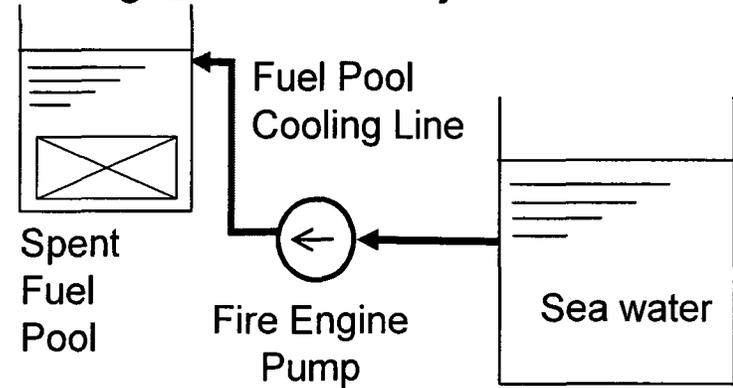
## Unit 1

Fresh water injection

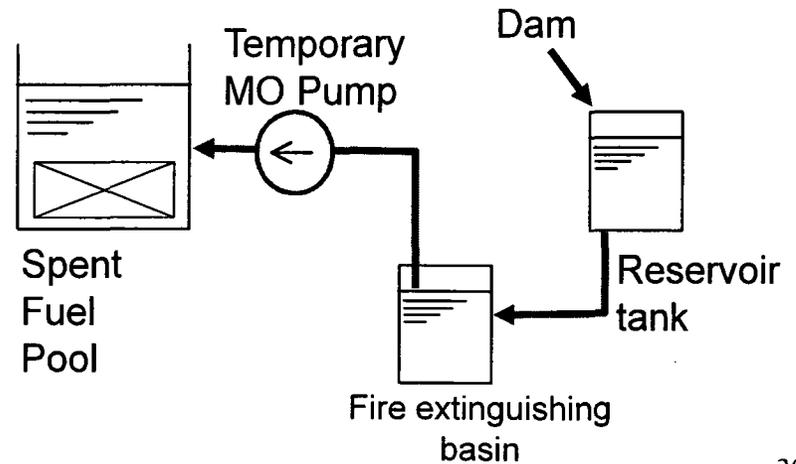


## Unit 2

【1st Stage】 Sea water injection



【2nd Stage】 Fresh water injection



# 4-3. Measures taken to cool the Spent Fuel Pool (2/4)

## Unit 3

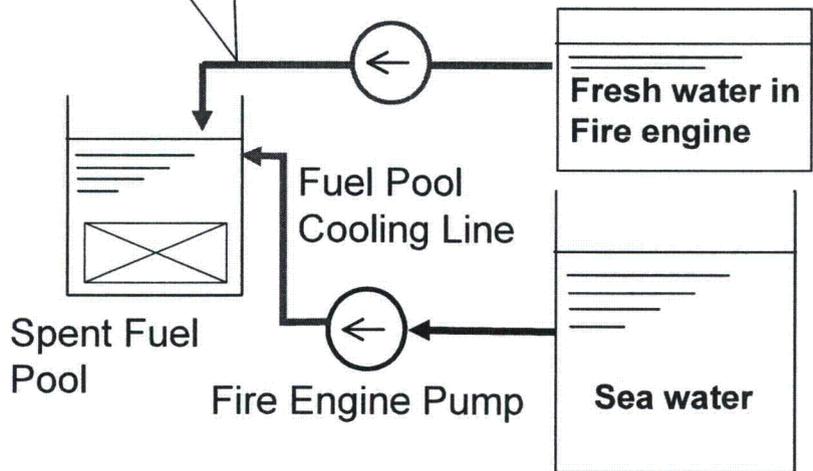
【1st Stage】 Sea water injection

【2nd Stage】 Fresh water injection

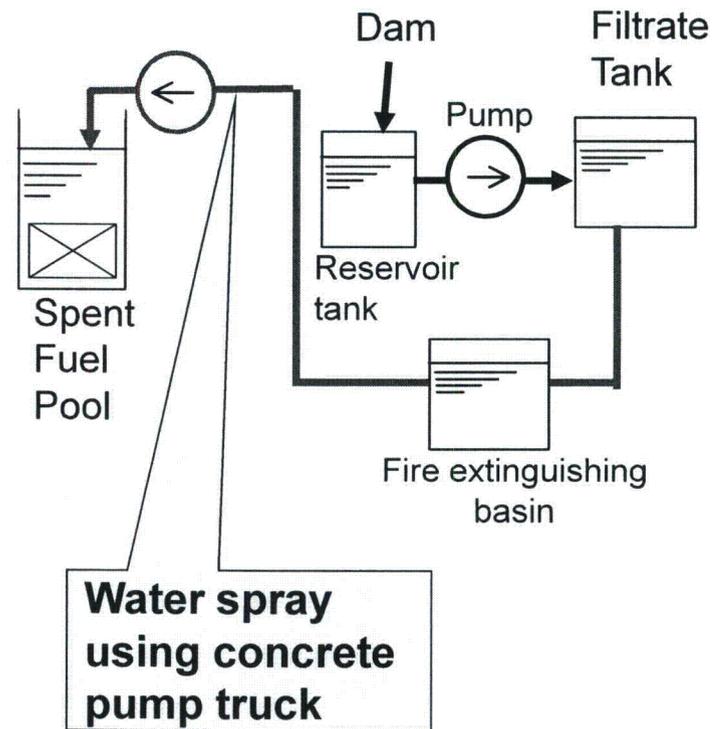
**Water Spray**  
by  
-Self-Defense Force  
-Fire Department  
-Police



Source: Asahi.com



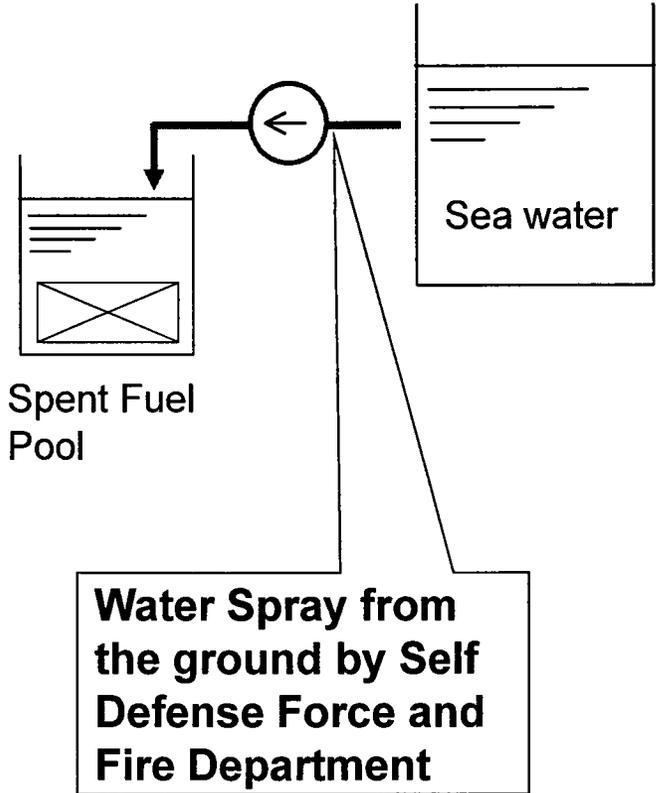
\* Sea water discharge by helicopters of the Self Defense Force



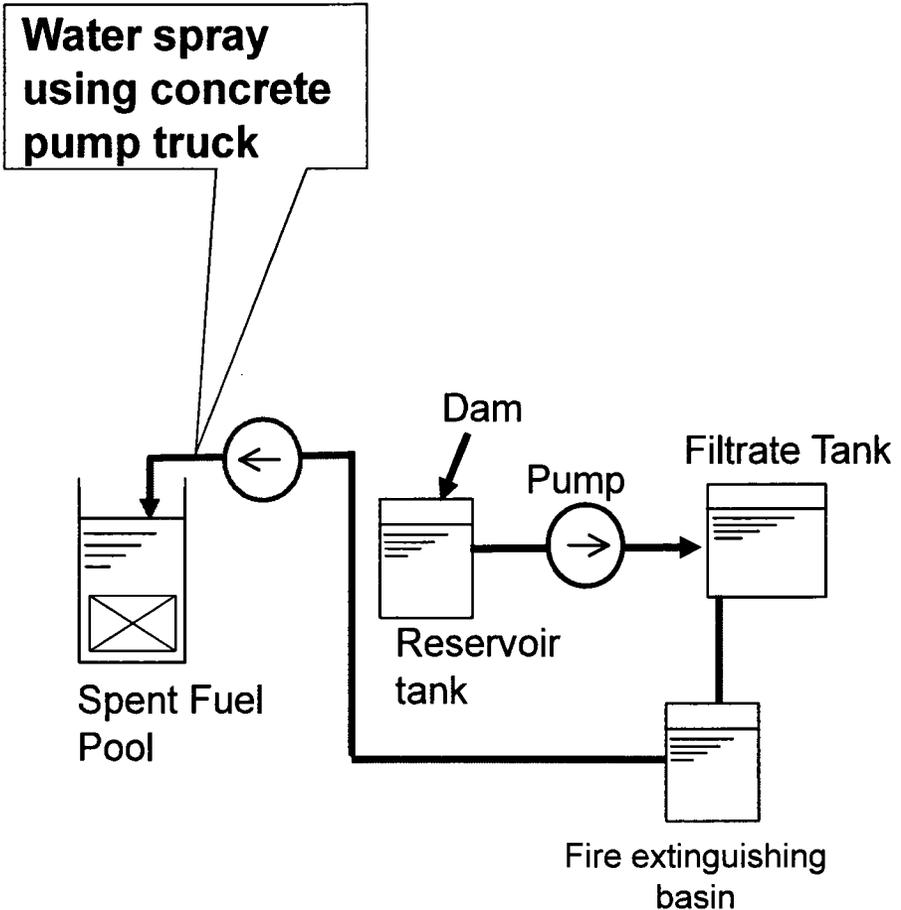
# 4-3. Measures taken to cool the Spent Fuel Pool (3/4)

## Unit 4

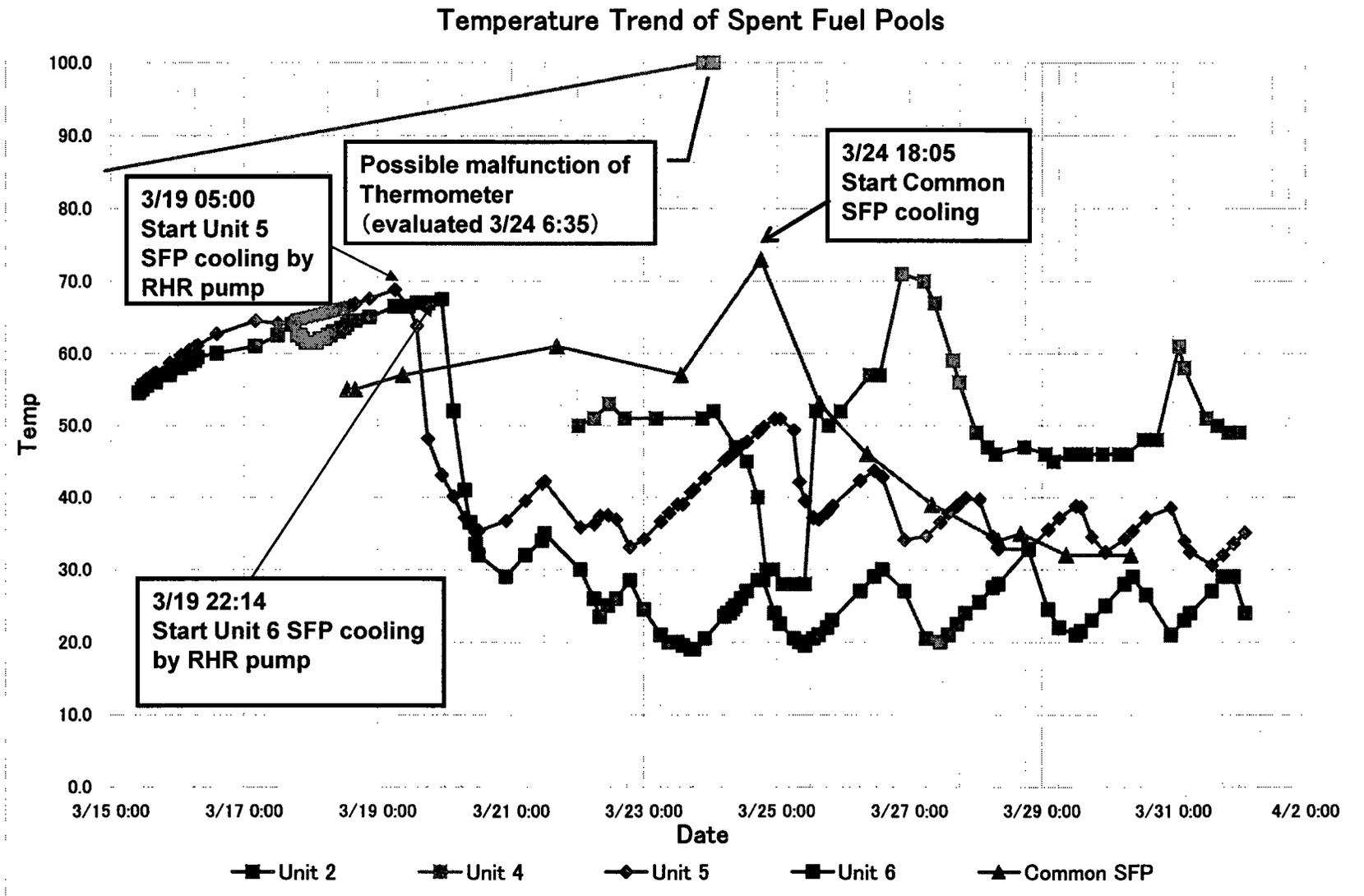
【1st Stage】 Sea water injection



【2nd Stage】 Fresh water injection



# 4-3. Measures taken to cool the Spent Fuel Pool (4/4)



## 4-4. INES Rating

- NISA issued temporary INES ratings 3 times. Those provisional ratings are provided based on “What is known” at the time.
- The first temporary rating was issued at 0:30 on March 12 (About 10 hours later from the earthquake attack)  
At that moment, Following units were rated as Level 3 since all heat removal function became inoperable based on “Defense in Depth” criteria.
  - Fukushima dai-ichi unit 1, 2 and 3
  - Fukushima dai-ni Unit 1, 2 and 4
- In the evening on March 12, the rating of Fukushima dai-ichi Unit 1 was re-evaluated to Level 4 base on the “Radiological Barriers and Control” criteria, since the radiation level in the site increased.
- On March 18, re-evaluation was carried out. The rating of Fukushima dai-ichi Unit 1, 2 and 3 were re-rated to Level 5 based on “Radiological Barriers and Control” criteria because the fuel damage was highly possible. Fukushima dai-ichi Unit 4 was evaluated to Level 3 based on the “Defense in Depth” criteria.

## **5. Action taken by the government**

## 5. Action Taken by the Government(1/5)

### March 11<sup>th</sup>, 2011

- 14:46 ●Set up of the NISA Emergency Preparedness Headquarters (Tokyo) immediately after the earthquake
- 19:03 ●Government declared the state of nuclear emergency. (Establishment of Government Nuclear Emergency Response Headquarters and Local Emergency Response Headquarters)
- 21:23 ●Directives from Prime Minister to the Governor of Fukushima Prefecture and heads of towns were issued regarding the event occurred at Fukushima Daiichi NPS, TEPCO, in accordance with the Act on Special Measures Concerning Nuclear Emergency Preparedness as follows:
  - Direction for the residents within 3km radius from Unit 1 to evacuate
  - Direction for the residents within 10km radius from Unit 1 to stay in-house
- 24:00 ●Vice Minister of Economy, Trade and Industry, Ikeda arrived at the Local Emergency Response Headquarters

## 5. Action Taken by the Government(2/5)

**March 12<sup>nd</sup>, 2011**

- 05:44 ●Residents within 10km radius from Unit 1 of Fukushima Dai-ichi NPS shall evacuate by the Prime Minister Direction
- 07:45 ●Directives from Prime Minister to the Governor of Fukushima Prefecture and heads of towns were issued regarding the event occurred at Fukushima Dai-ni NPS, TEPCO, pursuant to Act on Special Measures Concerning Nuclear Emergency Preparedness as follows:
  - Direction for the residents within 3km radius from Fukushima Dai-ni NPS to evacuate
  - Direction for the residents within 10km radius from Fukushima Dai-ni NPS to stay in-house
- 17:39 ●Prime Minister directed evacuation of the residents within the 10 km radius from Fukushima-Dai-ni NPS
- 18:25 ●Prime Minister directed evacuation of the residents within the 20km radius from Fukushima Dai-ichi NPS
- 20:05 ●Considering the Directives from Prime Minister and pursuant to the Nuclear Regulation Act, the order was issued to inject seawater to Unit 1 of Fukushima Dai-ichi NPS and so on.

## 5. Action Taken by the Government(3/5)

### March 13<sup>th</sup>, 2011

- 09:30 ● Directive was issued for the Governor of Fukushima Prefecture and heads of towns in accordance with the Act on Special Measures Concerning Nuclear Emergency Preparedness on the contents of radioactivity decontamination screening.

### March 15<sup>th</sup>, 2011

- 05:30 ● Prime Minister, Kan expressed to establish The Joint Headquarters to Fukushima Dai-ichi NPS accident
- 10:30 ● According to the Nuclear Regulation Act, Minister of Economy, Trade and Industry issued the directions as follows.
- For Unit 4: To extinguish fire and to prevent the occurrence of re-criticality
  - For Unit 2: To inject water to reactor vessel promptly and to vent Drywell
- 11:00 ● Prime Minister directed the in-house stay area. -In-house stay was additionally directed to the residents in the area from 20 km to 30 km radius from Fukushima Dai-ichi NPS considering reactor situation
- 22:00 ● According to the Nuclear Regulation Act, Minister of Economy, Trade and Industry issued the following direction.
- For Unit 4: To implement the injection of water to the Spent Fuel Pool.

### March 20<sup>th</sup>, 2011

- 23:30 ● Directive from Local Emergency Response Headquarters to the Prefectural Governor and the heads of cities, towns and villages was issued regarding the change of the reference value for the screening level for decontamination of radioactivity

## 5. Action Taken by the Government(4/5)

### March 21<sup>st</sup>, 2011

- 07:45 ● Directive titled as “Administration of the stable Iodine” was issued from Local Emergency Response Headquarters to the Prefectural Governor and the heads of cities, towns and villages.
- 16:45 ● Directive titled as “Ventilation for using heating equipments within the in-house evacuation zone” was issued from the Head of Local Emergency Response Headquarters to the Prefectural Governor and the heads of cities, towns and villages.
- 17:50 ● Directive from the Head of Government Nuclear Emergency Response Headquarters to the Prefectural Governors of Fukushima, Ibaraki, Tochigi and Gunma was issued, which directs the above-mentioned governors to issue a request to relevant businesses and people to suspend shipment of spinach, Kakina (a green vegetable) and raw milk for the time being.

### March 25<sup>th</sup>, 2011

- NISA directed orally to the TEPCO regarding the exposure of workers at the turbine building of Unit 3 of Fukushima Dai-ichi Nuclear Power Station occurred on March 24th, to review immediately and to improve its radiation control measures from the viewpoint of preventing a recurrence.

## 5. Action Taken by the Government(5/5)

### March 25<sup>th</sup>, 2011

- Since there was a mistake in the evaluation regarding the concentration measurement of radioactive materials, NISA directed TEPCO orally to prevent the recurrence of such a mistake
- 13:50 ● Receiving the suggestion by the special meeting of Nuclear Safety Commission, NISA directed TEPCO orally to add the sea water monitoring points and carry out the groundwater monitoring.
- Regarding the delay in the reporting of the water confirmed outside of the turbine buildings, NISA directed TEPCO to accomplish the communication in the company on significant information in a timely manner and to report it in a timely and appropriate manner.

### March 29<sup>th</sup>, 2011

- In order to strengthen the system to assist the nuclear accident sufferers, the “Team to Assist the Lives of the Nuclear Accident Sufferer” headed by the Minister of Economy, Trade and Industry was established

### March 30<sup>th</sup>, 2011

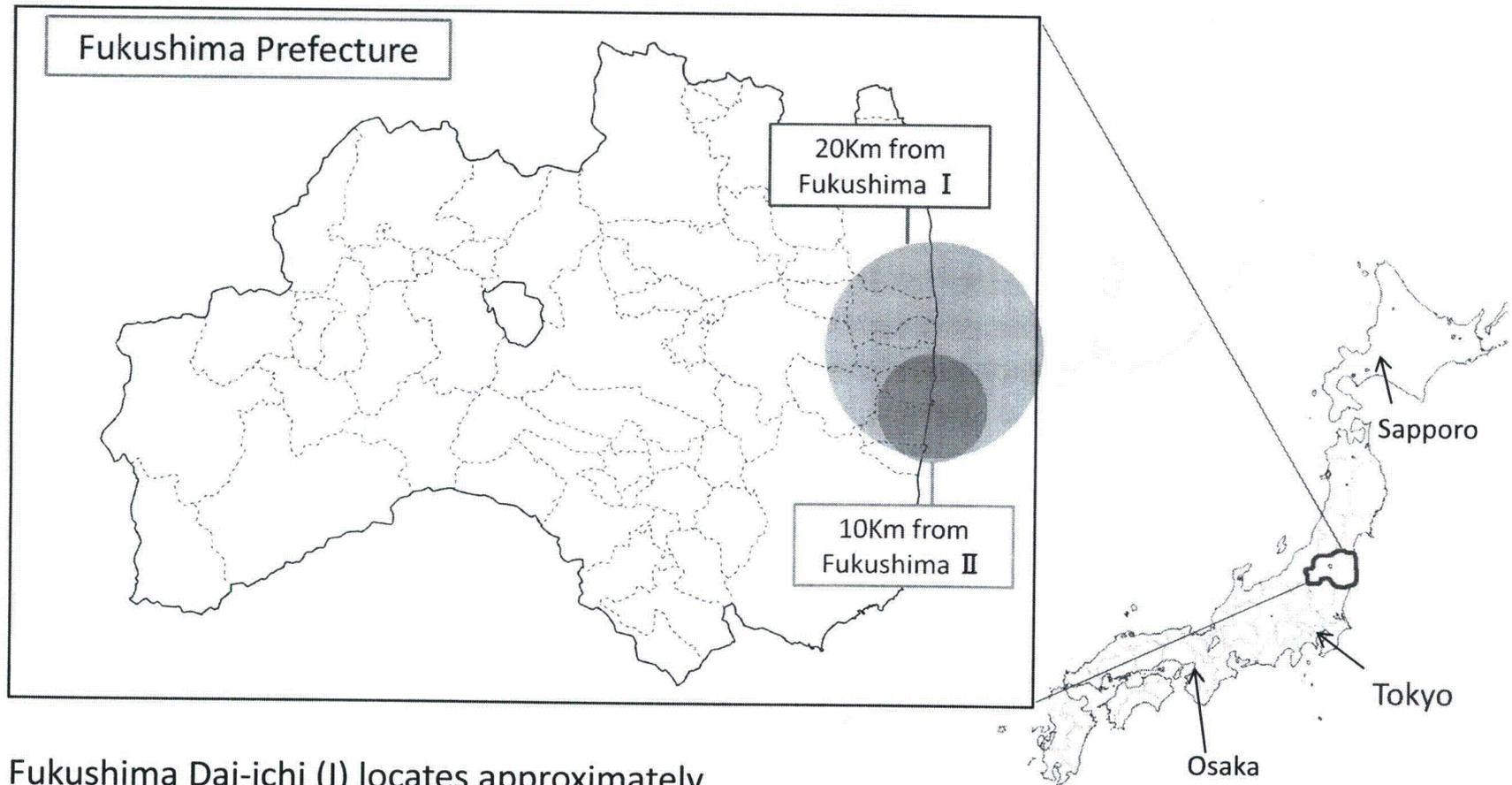
- Directions as to implement the emergency safety measures for the other power stations considering the accident of Fukushima Dai-ichi and Dai-ni NPSs in 2011 was issued and handed to each electric power company and the relevant organization.

## **6. Current situation on resident evacuation and radiation exposure, etc**

## 6-1. Current Situation on Resident Evacuation(1/2)

- At 5:44 on March 12, residents within 10km radius from Unit1 of Fukushima Dai-ichi NPS shall evacuate by the Prime Minister Directive.
- At 18:25 on March 12, Prime Minister directed evacuation of the residents within the 20 km radius from Fukushima Dai-ichi NPS.
- On March 15th, the Local Emergency Response Headquarter issued “the direction to administer the stable Iodine during evacuation from the evacuation area (20 km radius)” to the Prefecture Governors and the heads of cities, towns and villages.
- Regarding the evacuation as far as 20 km from Fukushima Dai-ichi NPS and 10 km from Fukushima Dai-ni NPS, necessary measures have already been taken.
  - The sheltering stay in the area from 20km to 30km from Fukushima Dai-ichi NPS is made fully known to the residents concerned.
  - Cooperating with Fukushima Prefecture, livelihood support to the residents in the sheltering area are implemented.
- On March 25th, Chief Cabinet Secretary, Edano promoted voluntary evacuations for the residents within the area from 20 km to 30 km from Fukushima Dai-ichi NPS in a press conference.

## 6-1. Current Situation on Resident Evacuation(2/2)



Fukushima Dai-ichi (I) locates approximately

- 230 km from Tokyo
- 580 km from Osaka
- 600 km from Sapporo

## 6-2. Major Possibility on radiation exposure to residents (As of 15:30 April 1st)

- 95 patients of Futaba Welfare Hospital transferred by JSDF helicopters and commercial buses. If explosion occurred while 60 patients to be transferred by JSDF helicopters were standing by on Futaba High School playground. No exposure suspected. (19:00, March 16)
- Screening started at Off-site Center on Sat. March 12. 162 screened as of March 15. Against initially-set decontamination threshold of 6,000cpm, 110 patients registered below the threshold, 41 above it. Of 162 screened patients, 5 were given decontamination measures and transferred to hospital.
- Fukushima Prefecture conducted screening at 4 locations in the prefecture. Some 30 people registered above 13,000cpm. After measuring for the second time following decontamination they showed low values, therefore they were returned to shelters without examination.
- 3 women who lived around 10km radius of Fukushima Dai-ichi until March 14 were examined at Iwate Medial University Hospital. Simple decontamination procedure was given without surveying. They were hospitalized for follow-up.

## 6-3. Major exposure of workers (As of 15:30 April 1st)

- To date a total of 21 people have registered exposure dose above 100mSv. Following measures were taken.
  - 17 people had facial contamination on March 12 (9 TEPCO employees, 8 support company employees). Exposure identified upon their measurement after returning from Controlled Area. However, the level of exposure would not affect their health.
  - At the time of ventilation operation at Unit 1 on March 12, one TEPCO employee registered above 100mSv (106.30mSv/h). As the level was below acute exposure he conducted work after self-air setting. As he afterwards complained of headache and other symptoms, he was transferred to hospital and placed at rest. He now has returned home.
  - On March 24, dosage above approx. 170mSv was confirmed on 3 workers who were laying cables on 1st floor and basement of Unit 3 Turbine Bldg. Attachment of radioactive substances on the skin of both legs was confirmed on two of them. Examination showed that none of the 3 had any major systemic risk. Exposure dose on the legs of the 2 was estimated to be 2~3Sv. While the level of leg and internal exposure did not require treatment, they were hospitalized. They were discharged on March 28.
- On April 1st, a worker fell into the sea when he got into a barge of US. He was rescued by workers, and was not injured etc. However, he was confirmed surface contamination and decontaminated by the shower. He was confirmed the non-contamination by nasal smears.

## 6-4. Major Situation of the injured (As of 15:00 April 3rd)

### <Death due to earthquake(Found on March 30)>

- Two employees found in the turbine building of Unit 4)

### <Injury due to earthquake(March11)>

- Two employees (slightly)
- Two subcontract employees (one fracture in both legs)

### <Injury due to the explosion of Unit 1 of Fukushima Dai-ichi NPS(March12)>

- Four employees were injured at the explosion and smoke of Unit 1 around turbine building (non-controlled area of radiation) and were examined by Kawauchi Clinic.

### <Injury due to the explosion of Unit 3 of Fukushima Dai-ichi NPS(March14)>

- Four TEPCO's employees
- Three subcontractor employees
- Four members of Self-Defence Force (The member was discharged from the institute on March 17th.)

### <Other injuries>

- Two subcontractor's employees were injured during working at temporary control panel of power source in the Common Spent Fuel Pool(March22,23)

## 6-5. Directive regarding foods and drinks

### (1) Agricultural Goods

- Ministry of Health, Labor and Welfare (MHLW) set provisional regulatory standards for foods detected with radioactive substances and notified prefectures, etc. as “Handling of food contaminated by radioactivity”.
- MHLW notified prefectures, etc. regarding points to be mindful of in examining foods detected with radioactive substances.
- Prime Minister instructed local governments concerned to restrict distribution and/or consumption of foods concerned in accordance with Special Law of Nuclear Emergency Preparedness.
  - Fukushima Pref. (Distribution restricted→spinach, kakina, raw milk, etc.)
  - Ibaraki, Tochigi, Gunma Prefs. (Distribution restricted→spinach, kakina)

### (2) Drinking Water

- MHLW notified water suppliers in prefectures concerned the followings regarding response to radioactive substances in tap water caused by the nuclear accident.
  - Refrain from drinking tap water exceeding index values (300Bq/kg for radioactive Iodine, 200Bq/kg for radioactive Cesium) .
  - In case radioactive Iodine exceeds 100Bq/kg, refrain from giving tap water to infants, including preparing infant formula.
  - There is no problem in using tap water for other domestic uses.
  - Lack of substitute drinking water.

## **7. Implementation Status of Radiation Monitoring**

## **7-1. Implementation Status of Radiation Monitoring(1/2)**

### **(1) On-site monitoring (1F) (conducted by TEPCO)**

#### **① Measurement of air dose rates**

- On site, air dose rates were measured at 1 point using monitoring car and at 3 points using portable dosimeter.

#### **② Analysis of soil samples**

- Soils were sampled at 5 on-site points and analyzed.

#### **③ Measurement of water in Turbine Bldg basement and Trench**

- Measured concentration of radioactive substances in Turbine Bldg basement and Trench.

#### **④ Sampling of seawater**

- Measured concentration of radioactivity around South Flood Gate.

## 7-1. Implementation Status of Radiation Monitoring(2/2)

### (2) Off-site Monitoring (conducted by MEXT and local nuclear emergency response HQ)

#### ① Measurement of air dose rate

Measurement by monitoring car

- MEXT measured air dose rate beyond 20km from 1F using monitoring cars in cooperation with Fukushima Pref., National Police Agency, Defense Ministry, Electric Utility and others concerned.
- local nuclear emergency response HQs measured air dose rate beyond 30km from 1F.

#### ② Measurement of cumulative dose

- MEXT measured cumulative dose rates by installing simplified dosimeters at 10 points.
- local nuclear emergency response HQs measured it by setting equipment 20~50km from 1F.

#### ③ Measurement of radioactive substance concentration in soil, etc.

- MEXT collected dust and soils beyond 20km from 1F and analyzed radioactive substance concentrations in the air and soils.
- local nuclear emergency response HQs measured concentrations in tap water, leaf vegetables, soil and dust in Fukushima Pref.

#### ④ Off-shore monitoring

- MEXT sampled seawater from surface water (1m from the sea surface) and sub-surface (10m above the sea bottom) around 30km off-shore Fukushima Pref. and measured radioactive substance concentrations and also measured air dose rates.

#### ⑤ Aerial monitoring

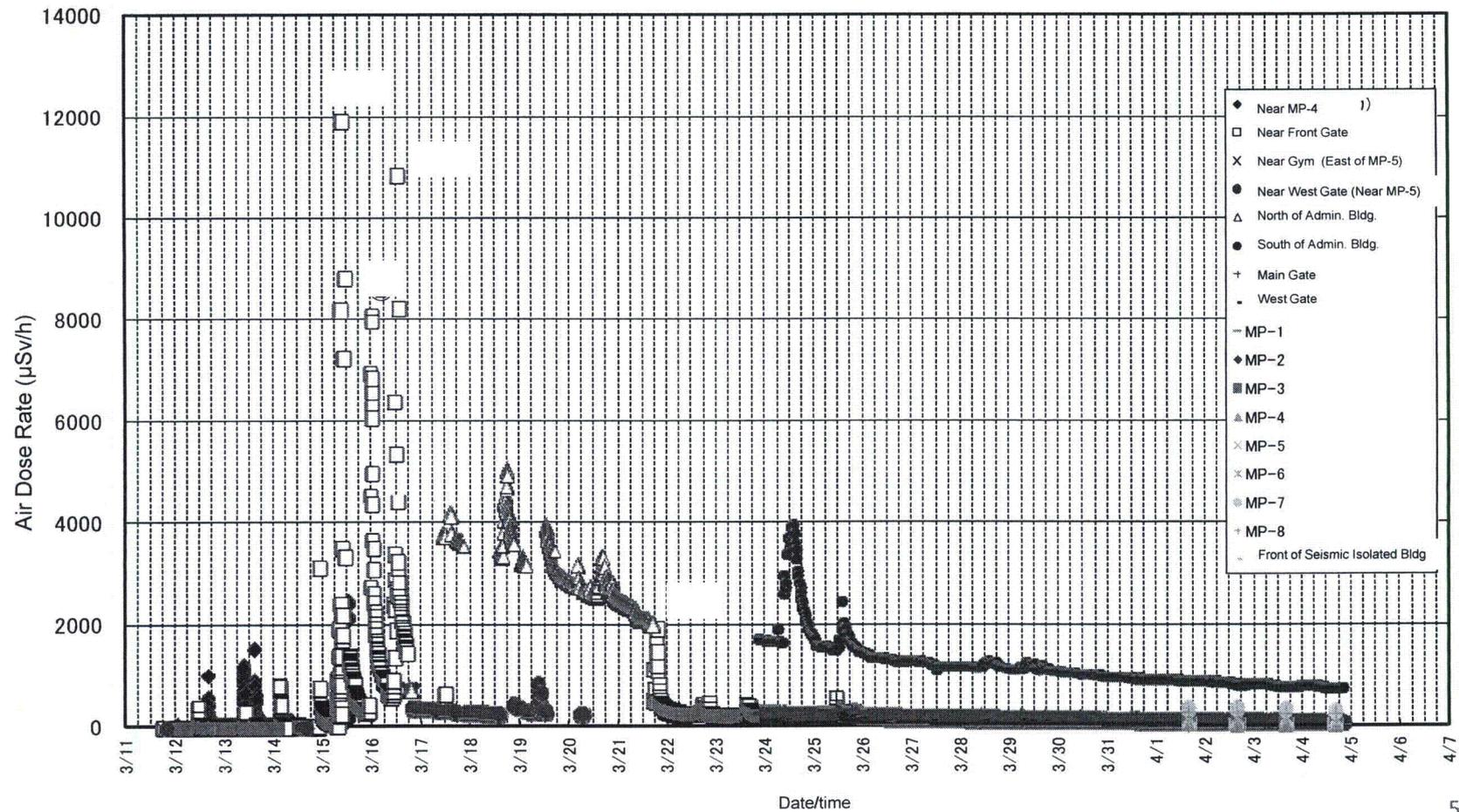
- MEXT measured radioactive substance concentrations and dose rates in the air using aircrafts.

## 7-2. Monitoring On-site(1F) (conducted by TEPCO)(1/7)

### ① Measurement of air dose rate

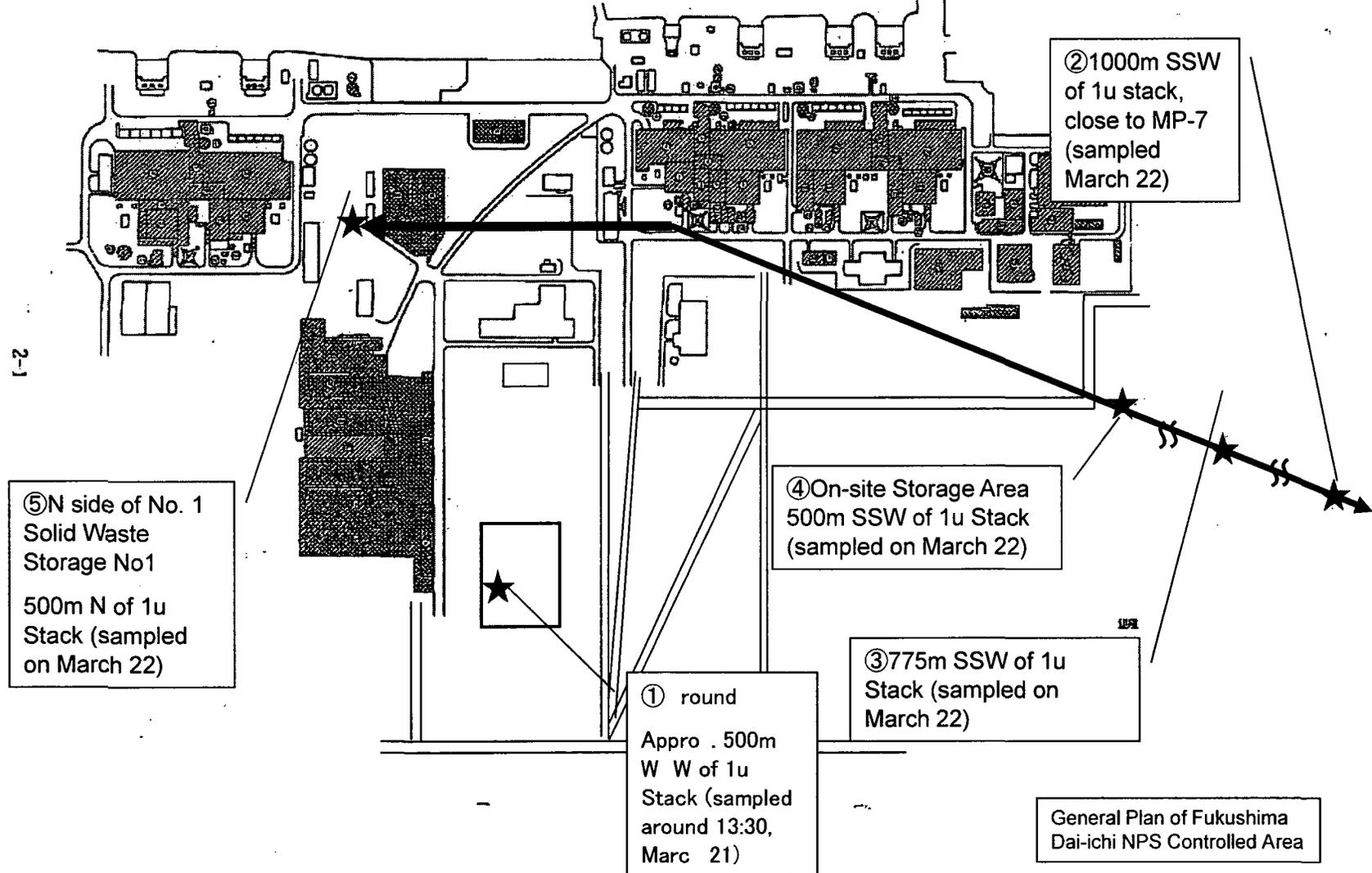
○ Registered 11930 $\mu$ Sv/h around Front Gate on March 15.

1F Monitoring Trend



## 7-2. Monitoring On-site(1F) (conducted by TEPCO)(2/7)

### ② Detection of radioactive material in the soil on the site of Fukushima Dai-ichi NPS



## 7-2. Monitoring On-site(1F) (conducted by TEPCO)(3/7)

### ② Detection of radioactive materials in the soils on the site of Fukushima Dai-ichi

- Density of detected Pu-238, Pu-239 and Pu-240 are within the same level of the fallout observed in Japan after the atmospheric nuclear test in the past.
- Activity ratio of Pu-238 detected at the site field and solid waste storage against Pu-239 and Pu-240 are 2.0 and 0.94 respectively. Those Pus are considered to come from the recent incident.

(Unit: Bq/km<sup>2</sup>•dry soil)

Sampling Spot	Time of sampling	Pu-238	Pu-239, Pu-240
① Site field	13:30, March 21	$(5.4 \quad 0.62) \times 10^{-1}$	$(2.7 \quad 0.42) \times 10^{-1}$
② 1km away from Unit 1/2 exhaust stack	7:00, March 22	N.D	$(2.6 \quad 0.58) \times 10^{-1}$
③ 0.75km away from Unit 1/2 exhaust stack	7:10, March 22	N.D	1.2 0.12
④ 0.5 km away from unit 1/2 exhaust stack	7:18 March 22	N.D	1.2 0.11
⑤ Solid waste storage	7:45 March 11	$(1.8 \quad 0.33) \times 10^{-1}$	$(1.9 \quad 0.34) \times 10^{-1}$
Ordinary domestic soil		N.D ~ $1.5 \times 10^{-1}$	N.D ~ 4.5

## 7-2. Monitoring On-site(1F) (conducted by TEPCO)(4/7)

### ③ Water in Turbine Bldg Basement (Results of nuclide analysis in the stagnant water in turbine building basement of each Unit)

- There is pool of water with high radioactive substance concentration in turbine bldg basement of Units 1~4. Above 1,000mSv/h dose has been measured at water surface in Unit 2.
- Water with approx. 100,000 times normal radioactivity concentration in reactor water was confirmed in turbine bldg basement of Unit 2.

Nuclide (half- life time)	Concentration of Radioactivity (Bq/cm <sup>3</sup> )			
	Unit 1 (2nd time) Sampled on March 26	Unit 2 Sampled on March 26	Unit 3 (2nd time) Sampled on March 26	Unit 4 Sampled on March 24
	Water level 195mm	Water level 1,000mm	Water level 1,500mm	Water level 940mm
	Dose rate on the surface of the water 60 mSv/h	Dose rate on the surface of the water >1,000 mSv/h	Dose rate on the surface of the water 750 mSv/h	Dose rate on the surface of the water 0.50 mSv/h
Co-56 (about 77 days)	N.D	N.D	N.D	N.D
Co-58 (about 71 days)	N.D	N.D	N.D	$2.7 \times 10^{-1}$
Co-60 (about 5 years)	N.D	N.D	$2.7 \times 10^2$	N.D
Mo-99 (about 66 hours)	N.D	N.D	N.D	$1.0 \times 10^0$
Tc-99m (about 6 hours)	N.D	$8.7 \times 10^4$	$2.2 \times 10^3$	$6.5 \times 10^{-1}$
Ru-106 (about 370 days)	N.D	N.D	N.D	$3.3 \times 10^0$
Ag-108m (about 418 years)	N.D	N.D	N.D	N.D
Te-129 (about 70 minutes)	N.D	N.D	N.D	$2.6 \times 10^1$
Te-129m (about 34 days)	N.D	N.D	N.D	$1.3 \times 10^1$
Te-132 (about 3 days)	N.D	N.D	N.D	$1.4 \times 10^1$
I-131 (about 8 days)	$1.5 \times 10^5$	$1.3 \times 10^7$	$3.2 \times 10^5$	$3.6 \times 10^2$
I-132 (about 2 hours)	N.D	N.D	N.D	$1.3 \times 10^1$
I-134 (about 53 minutes)	N.D	N.D	N.D	N.D
Cs-134 (about 2 years)	$1.2 \times 10^5$	$2.3 \times 10^6$	$5.5 \times 10^4$	$3.1 \times 10^1$
Cs-136 (about 13 days)	$1.1 \times 10^4$	$2.5 \times 10^5$	$6.5 \times 10^3$	$3.7 \times 10^0$
Cs-137 (about 30 years)	$1.3 \times 10^5$	$2.3 \times 10^6$	$5.6 \times 10^4$	$3.2 \times 10^1$
Ba-140 (about 13 days)	N.D	$4.9 \times 10^5$	$1.9 \times 10^4$	N.D
La-140 (about 2 days)	N.D	$1.9 \times 10^5$	$3.1 \times 10^3$	$7.4 \times 10^{-1}$

## 7-2. Monitoring On-site(1F) (conducted by TEPCO)(5/7)

### ③ Stagnant Water in Trench

- High level of radiation dose was measured at the surface of water in the vertical pit of the tunnel called “trench” which extends from turbine bldg towards the sea.
- In particular, at Unit 2 ambient dosage around the vertical pit is 100~300mSv/h and dosage in surface water 1,000mSv/h, which are far greater than in Units 1 and 3.

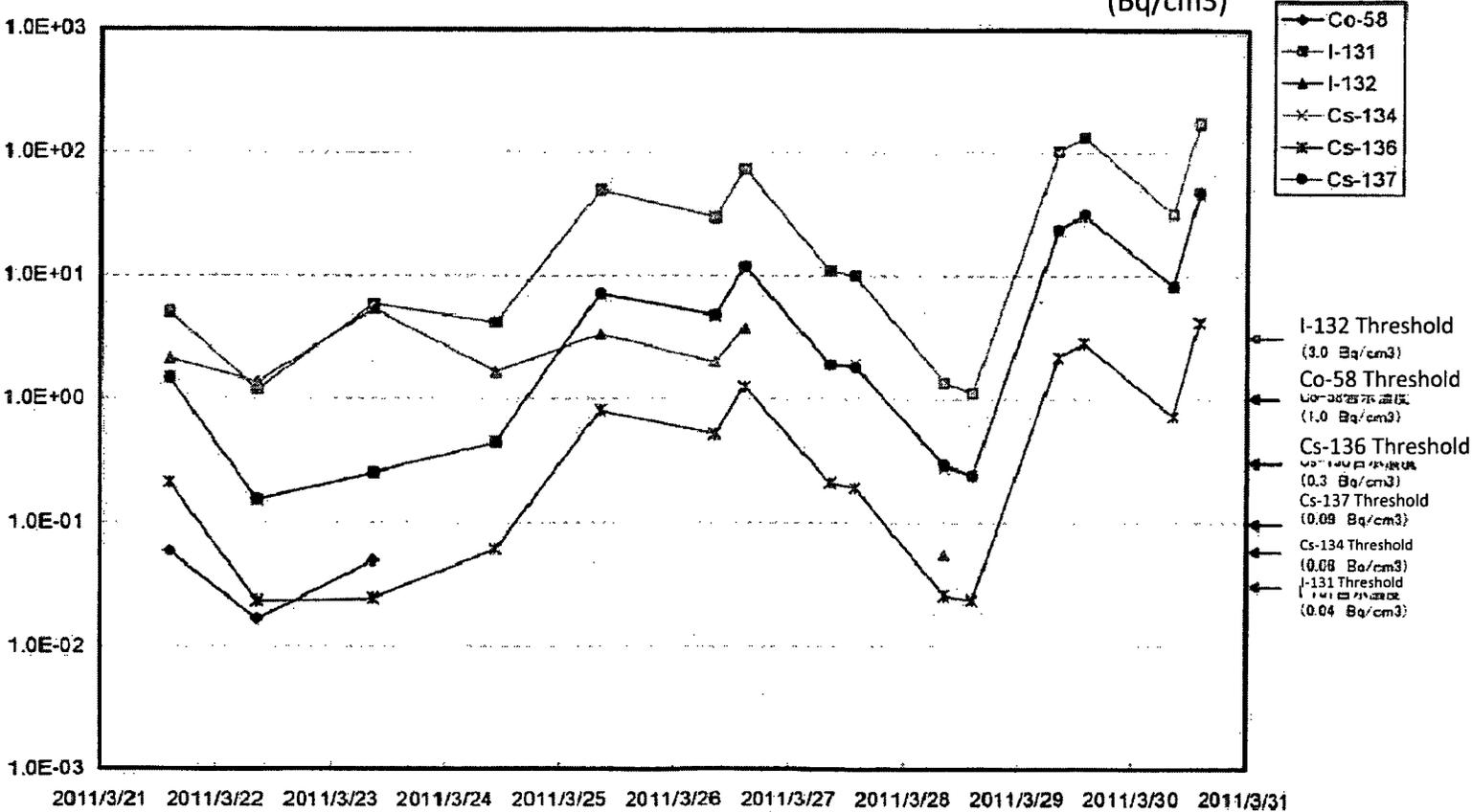
	Unit 1	Unit 2	Unit 3
Location of trench	○Approx. 56m to sea ○162m from turbine bldg (length of trench)	○Approx. 55m to sea ○76m from turbine bldg (length of trench)	○Approx. 69m to sea ○74m from turbine bldg (length of trench)
Trench volume (incl. vertical pit)	3,100m <sup>3</sup>	6,000m <sup>3</sup>	4,200m <sup>3</sup>
Depth of vertical pit	16.9m	16.3m	21.7m
Depth of water in vertical pit	16.8m	15.3m	20.2m
Dosage at water surface	0.4~1.9mSv/h	Above 1000mSv/h	Impossible to measure due to debris
Ambient dosage in vertical pit	0.4~1.0mSv/h	100~300mSv/h	0.8mSv/h

# 7-2. Monitoring On-site(1F) (conducted by TEPCO)(6/7)

## ④ Radioactivity Concentration of Seawater Samples Near 1 F South Outlet

- Concentration of radioactive iodine131 recorded on March 31<sup>th</sup> was approx. 4385 times the limit set for water outside the environmental monitoring area.

Concentration in Seawater near (1F South Outlet)  
(Bq/cm<sup>3</sup>)

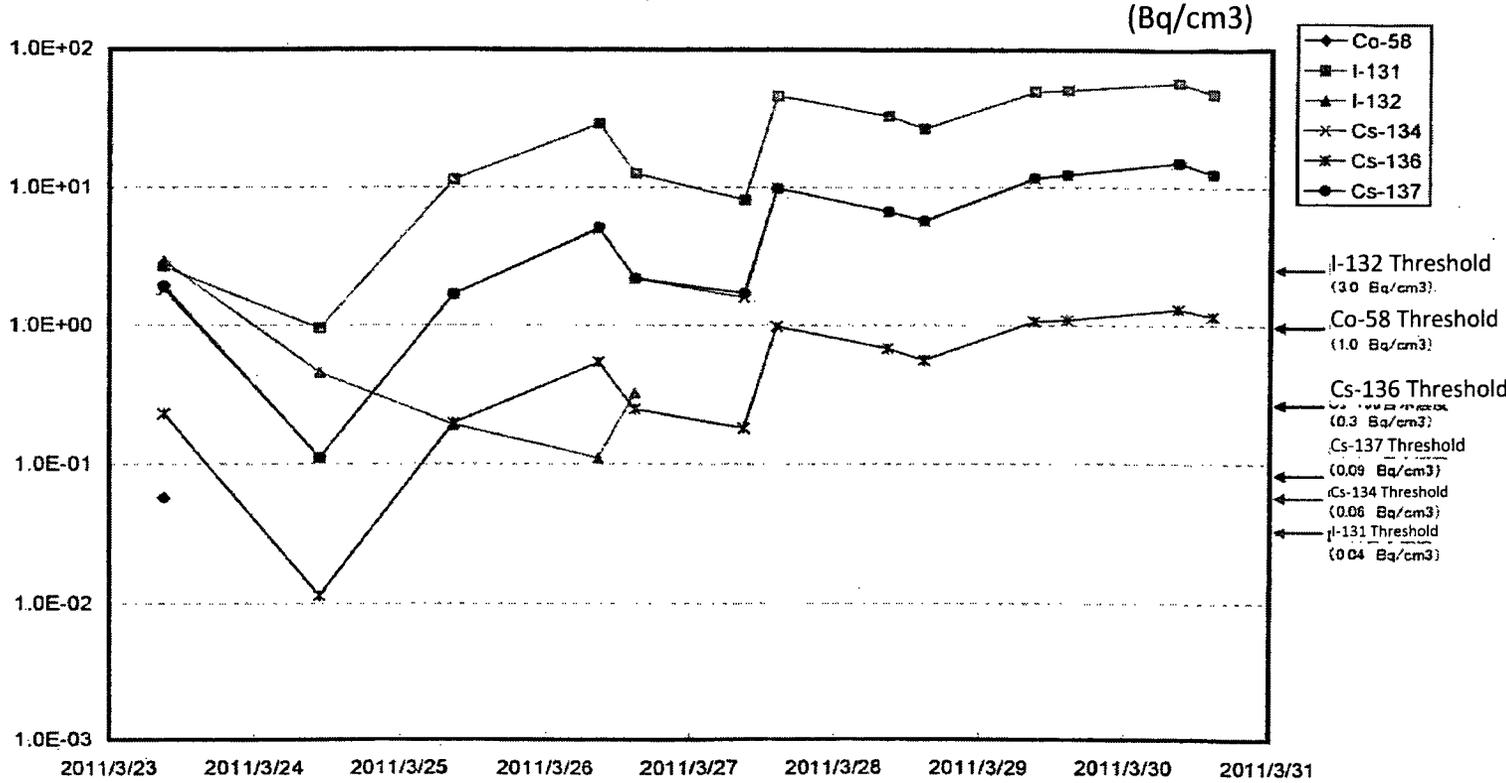


# 7-2. Monitoring On-site(1F) (conducted by TEPCO)(7/7)

## ⑤ Radioactivity Concentration of Seawater Samples Near Unit 5 and 6 of 1F in North Outlet

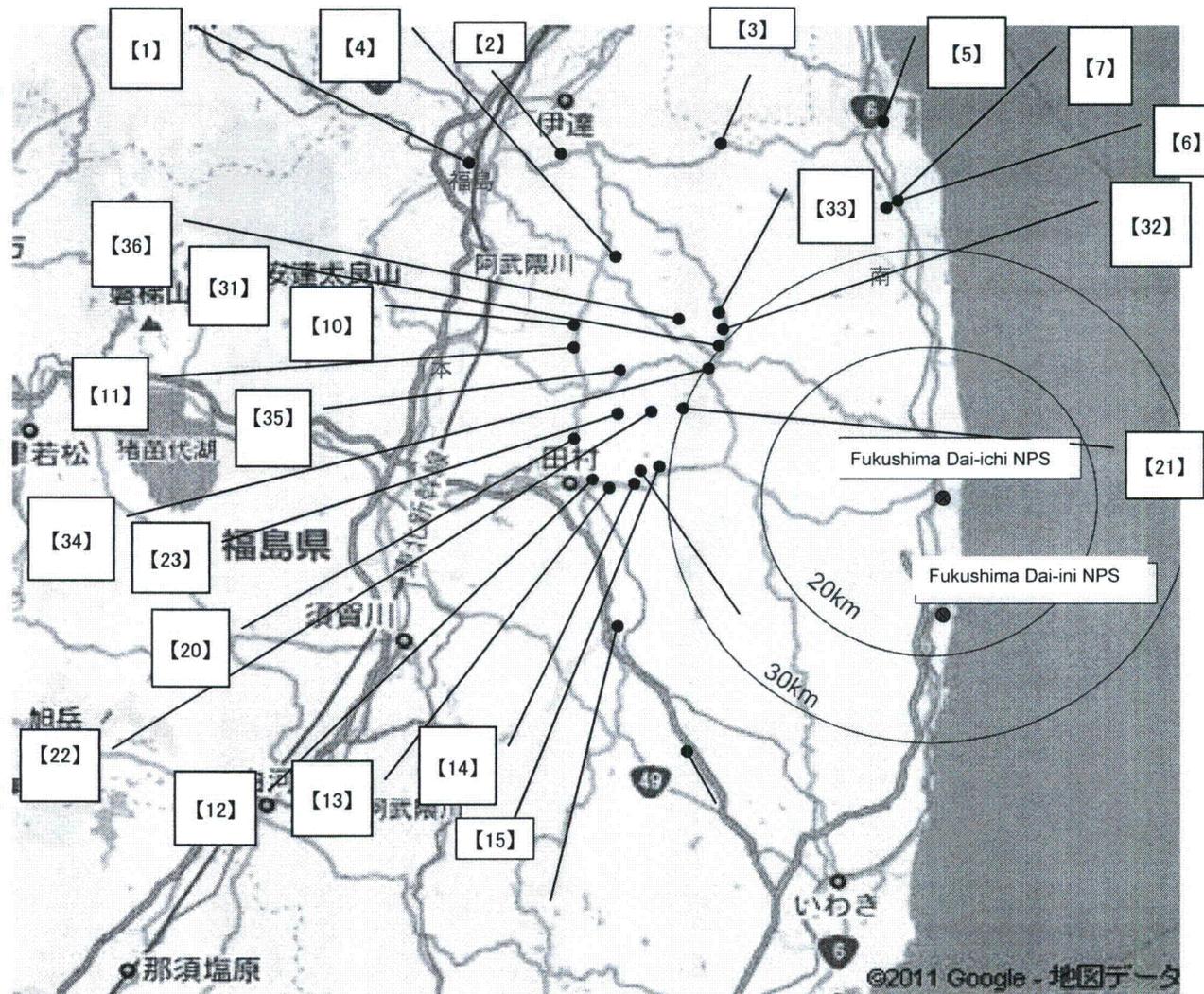
● Concentration of radioactive iodine 131 recorded on March 31<sup>th</sup> was approx. 1425 times the limit set for water outside the environmental monitoring area.

1F 5-6 Northern Water Discharge Canal (Around 30 m north of The 5-6u canal) Radioactive concentration



### 7-3. Monitoring by MEXT and local nuclear emergency response HQ(1/6)

#### ① Air Dose Rate Measuring Locations Using Monitoring Vehicles

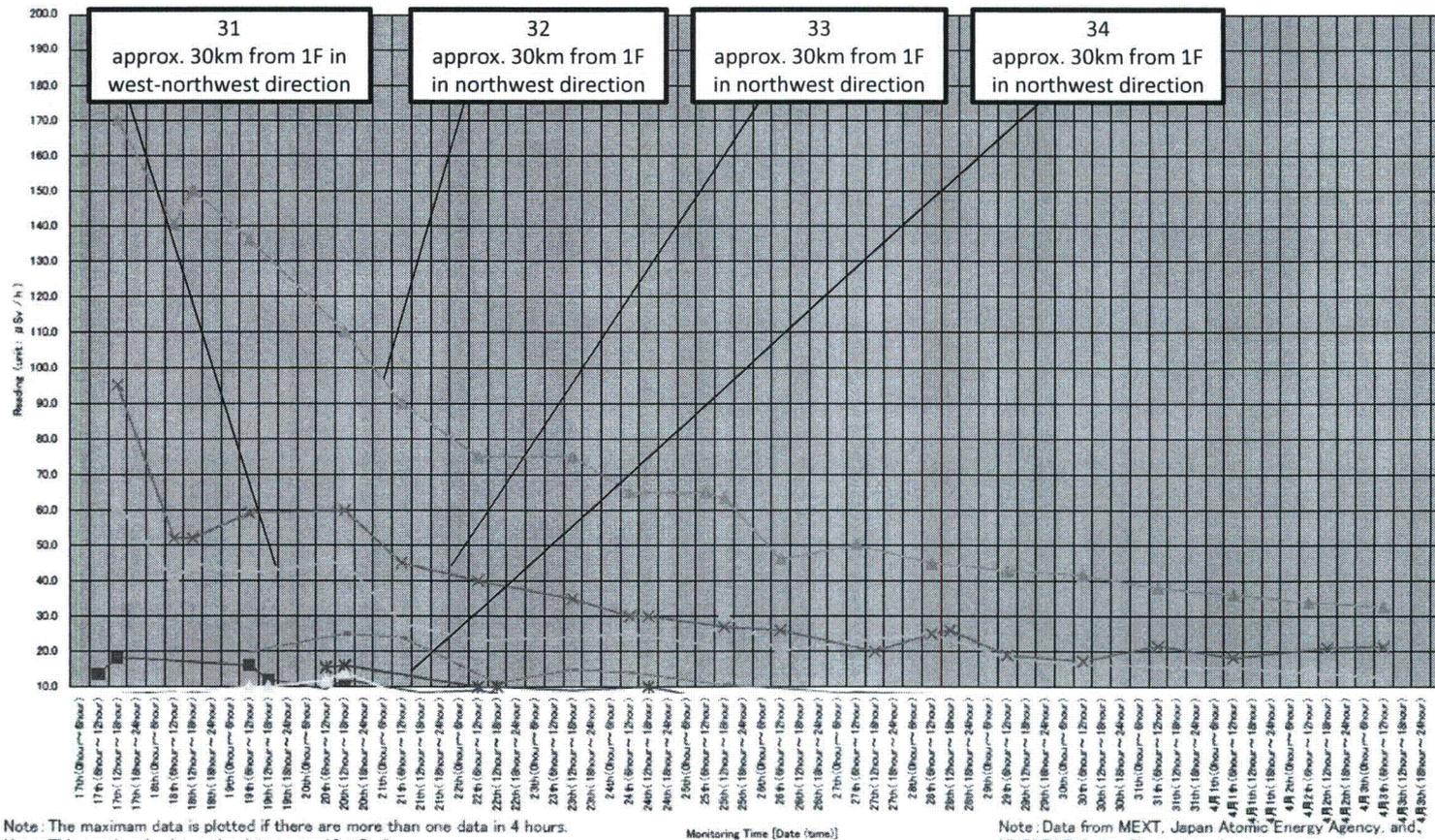


## 7-3. Monitoring by MEXT and local nuclear emergency response HQ(2/6)

### ① Air Dose Rate Measured Using Monitoring Vehicles

- Overall dose rate trending down since March 17<sup>th</sup>.
- E.g. The highest value recorded at Monitoring Point #32 has peaked out at approx. 170 $\mu$ Sv/h and has been declining since, rendering no immediate health hazard.

Readings at Monitoring Post out of 20 Km Zone of Fukushima Dai-ichi NPP



Note: The maximum data is plotted if there are more than one data in 4 hours.  
Note: This graph only shows the dates over 10  $\mu$ Sv/h.

Monitoring Time [Date (time)]

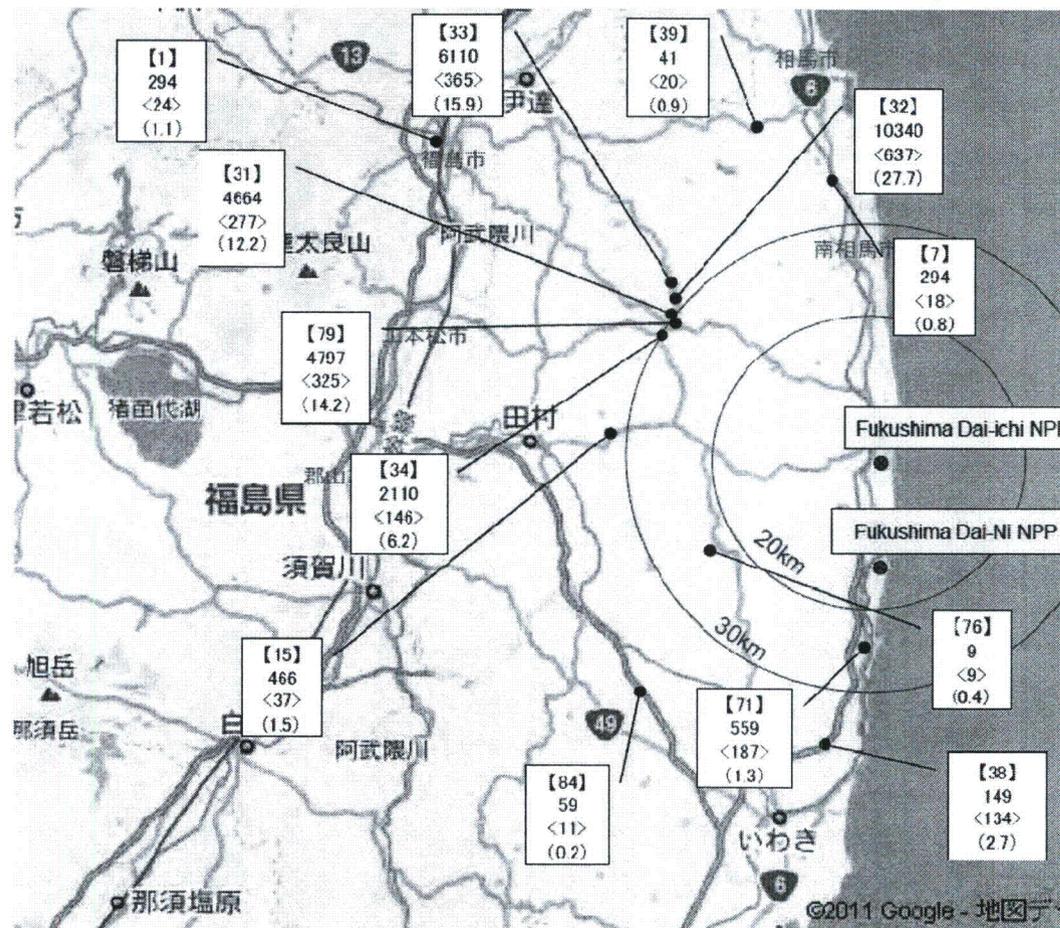
Note: Data from MEXT, Japan Atomic Energy Agency, and NUCLEAR Safety Technology Center

## 7-3. Monitoring by MEXT and local nuclear emergency response HQ(3/6)

### ② Cumulative Doses Measured

- Air dose rate cumulatively measured since April 3 topped 10,340 $\mu$ Sv at #32, approximately 30km North West from 1F.

Readings of Integrated Dose at Monitoring Post out of Fukushima Dai-ichi NPP



#### Monitoring Time

- March 23th~April 3rd  
(Monitoring Post: 7, 31~34, 79)
- March 23 th ~28th, April 3rd  
(Monitoring Post: 71)
- March 24 th ~April 3rd  
(Monitoring Post: 1, 15)
- March 25 th ~April 1 st, April 3 rd  
(Monitoring Post: 84)
- March 31 th ~April 1 st, April 3rd  
(Monitoring Post: 38)
- April 1 th ~April 3rd  
(Monitoring Post: 39)
- April 2 th ~April 3rd  
(Monitoring Post: 76)
- Monitoring Post

(explanatory note)

【 Monitoring Post number】  
Readings of Integrated Dose ※  
<increment from the last monitoring>  
(average dose per hour)

Readings of Integrated Dose  
indicate that accumulation of  
dose from each starting date till  
April 2nd, for 1 day to 10days.

Unit:  $\mu$  Sv per hour

## 7-3. Monitoring by MEXT and local nuclear emergency response HQ(4/6)

### ③ Concentration of Radioactive Materials

#### ● Soil Samples

Sampling Point	Address of Sampling Point	Sample	Sort or Region	Sampling Time and Date	Radioactivity Concentration (Bq/kg)	
					<sup>137</sup> I	<sup>137</sup> Cs
【2-1】 (About 40km North West)	litate Village	Land Soil	Soil	2011/3/19 11:40	300,000	28,100
	litate Village	Land Soil	Soil	2011/3/20 12:40	1,170,000	183,000
	litate Village	Land Soil	Soil	2011/3/21 12:32	207,000	39,900
	litate Village	Land Soil	Soil	2011/3/22 12:00	256,000	57,400
	litate Village	Land Soil	Soil	2011/3/23 12:25	135,000	32,200
	litate Village	Land Soil	Soil	2011/3/24 13:05	45,500	1,870
	litate Village	Land Soil	Soil	2011/3/25 13:05	265,000	27,900
	litate Village	Land Soil	Soil	2011/3/26 12:00	564,000	227,000
	litate Village	Land Soil	Soil	2011/3/26 15:20	82,000	28,000
	litate Village	Land Soil	Soil	2011/3/27 11:40	169,000	29,100
	litate Village	Land Soil	Soil	2011/3/27 12:00	69,800	20,800
	litate Village	Land Soil	Soil	2011/3/28 11:50	14,000	2,040
	litate Village	Land Soil	Soil	2011/3/28 12:10	23,100	860
	litate Village	Land Soil	Soil	2011/3/29 11:50	53,700	5,650
	litate Village	Land Soil	Soil	2011/3/29 12:10	58,400	25,100
	litate Village	Land Soil	Soil	2011/3/30 12:25	89,000	32,300
	litate Village	Land Soil	Soil	2011/3/30 12:45	11,900	408
	litate Village	Land Soil	Soil	2011/3/31 11:30	149,000	27,600
	litate Village	Land Soil	Soil	2011/3/31 11:45	60,800	26,500
	litate Village	Land Soil	Soil	2011/4/1 11:30	146,000	43,700
litate Village	Land Soil	Soil	2011/4/1 12:05	21,400	1,410	
litate Village	Land Soil	Soil	2011/4/2 11:24	55,500	8,140	
litate Village	Land Soil	Soil	2011/4/2 11:48	61,900	30,800	

## 7-3. Monitoring by MEXT and local nuclear emergency response HQ(4/6)

### ③ Concentration of Radioactive Materials

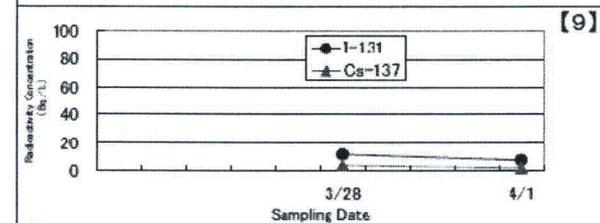
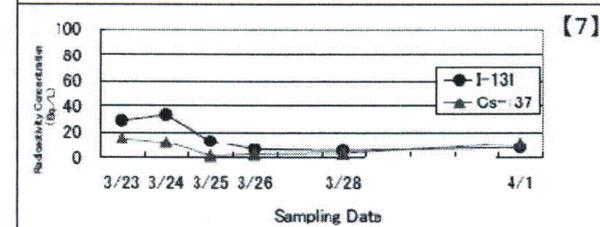
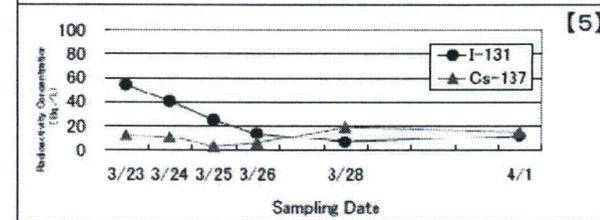
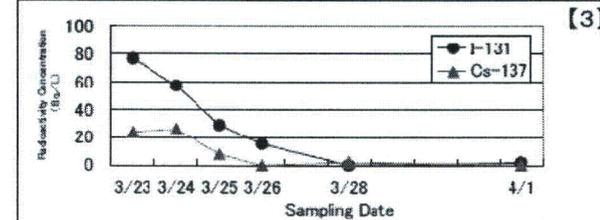
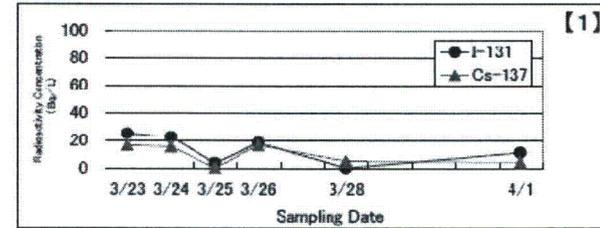
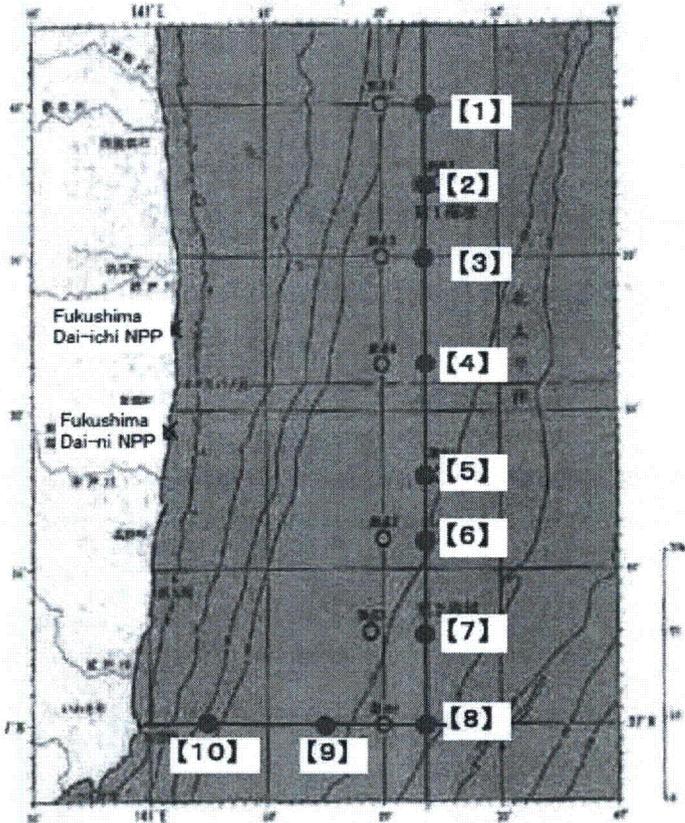
- Dust Samples

Sampling Point	Sampling Time and Date	Radioactivity Concentration (Bq/m <sup>3</sup> )		Reading (μSv/h)
		<sup>131</sup> I	<sup>137</sup> Cs	
【2-1】(About 40 km North West)	3/21 13:00~13:20	12.80	2.37	4.1
	3/22 12:26~12:46	5.87	ND	4.2
	3/23 12:50~13:10	2.99	ND	16.8
	3/24 13:30~13:50	5.80	1.51	10.0
	3/25 12:45~13:05	5.87	ND	12.3
	3/26 12:26~12:46	5.39	1.33	7.8
	3/27 12:06~12:26	2.22	ND	11.2
	3/28 12:05~12:25	1.66	ND	9.6
	3/29 12:07~12:27	2.42	6.79	9.2
	3/30 13:22~13:42	3.47	LTD	8.5
	3/31 11:50~12:10	1.74	LTD	8.0
	4/1 12:00~12:20	1.78	1.69	7.7
	4/2 11:46~12:06	0.84	ND	8.6

## 7-3. Monitoring by MEXT and local nuclear emergency response HQ(5/6)

### ④ Sea Water Monitoring Around Fukushima Dai-ichi NPS

● Concentration of radioactive materials at location #3 peaked at 76.8Bq/L, exceeding the limit for the environmental monitoring area.



Note: "Not Detectable" is illustrated as 0Bq/L.

## 7-3. Monitoring by MEXT and local nuclear emergency response HQ(6/6)

### ⑤ Aerial Monitoring

- Flight Details : April 1<sup>st</sup>, from 11:02 to 13:45, cloudless skies with S winds  
Average altitude 1070 meters above sea, average speed 220km/h

Main Reading Point	City	Latitude longitude	Altitude above sea level [ above ground level] (m)	Monitoring Time	Readings( $\mu$ Sv/h)
【 1 】	Shirakawa (Fukushima Prefecture)	37° 03. 39 ´ N 140° 17. 38 ´ E	1193 [851]	11:45	0. 0409
【 2 】	Iwaki (Fukushima Prefecture)	36° 32. 19 ´ N 140° 53. 19 ´ E	1209 [1203]	11:57	0. 0261
【 3 】	Tamura (Fukushima Prefecture)	37° 27. 16 ´ N 140° 34. 19 ´ E	1267 [844]	12:13	0. 0281
【 4 】	Shinchi-cho (Fukushima Prefecture)	37° 46. 46 ´ N 140° 52. 50 ´ E	1182 [1117]	12:23	0. 0275
【 5 】	Fukushima (Fukushima Prefecture)	37° 47. 12 ´ N 140° 29. 47 ´ E	900 [842]	12:37	0. 0234
【 6 】	Kooriyama (Fukushima Prefecture)	37° 26. 33 ´ N 140° 22. 46 ´ E	933 [691]	12:47	0. 0402
【 7 】	Shirakawa (Fukushima Prefecture)	37° 09. 40 ´ N 140° 12. 59 ´ E	898 [502]	12:56	0. 0402
【 8 】	Utunomiya (Tochigi Prefecture)	36° 35. 02 ´ N 140° 00. 49 ´ E	888 [737]	13:14	0. 0147

## **8. Provision of Relevant Information Overseas**

## 8. Provision of relevant information overseas(1/2)

### 1. Communication to IAEA and its Member States

#### (1) ENAC Website

NISA has constantly been providing facility-related and other relevant information on the Emergency Notification and Assistance Convention Website, designed for member states to exchange information on nuclear accidents.

#### (2) IEC (IAEA)

NISA has constantly been providing the Incident and Emergency Centre of IAEA with press releases and other relevant information, as well as responses to questions on such communication.

#### (3) Others

##### -March 21<sup>st</sup> Technical Briefing

Following the special meeting of the IAEA Board of Governors, NISA officials briefed the member state representatives on the overview of the earthquake itself as well as the status of and ongoing measures to address the Fukushima NPS accident.

##### -IAEA Expert Missions

The Government of Japan has been receiving IAEA expert missions to Japan.

## 8. Provision of relevant information overseas(2/2)

### 2. To International Media in Japan

#### (1) Foreign Media Briefing

- NISA joins relevant government agencies in daily foreign media briefings at the PM's official residence on March 14, 17 and every day afterwards.
- NISA officials give account to damages suffered at Fukushima NPSs and respond to questions.
- English documents distributed include updates on earthquake-related damage, status of F1 NPSs and monitoring results in the vicinity.

#### (2) Briefings for Diplomatic Representatives in Tokyo

- NISA joined the Ministry of Foreign Affairs in briefing sessions for Diplomatic representatives in Tokyo.
- Distributed press releases (English), provided explanations and answered questions.

#### (3) English information on the Web

- Nuclear and Industrial Safety Agency: <http://www.nisa.meti.go.jp/english/index.html>
- Office of Prime Minister <http://www.kantei.go.jp/foreign/index-e.html>

## 9. Remarks

## 9. Remarks

- Continue to make every possible efforts to bring the situation under control
- Will identify the cause of the accident completely and review safety assurance measures
- Offer the information as much as possible and share the experience and knowledge of the accident with the international community

**Baca, Bernadette**

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**From:** Call, Michel  
**Sent:** Saturday, April 09, 2011 4:09 AM  
**To:** Hay, Michael  
**Cc:** Miller, Marie  
**Subject:** Update - summary for the NR hot zone and warm zone item  
**Attachments:** Summary of Naval Reactors Warm and Hot Zone Dose Assessment.docx

Mike,

Attached is the discussion text for this item (the last one for PMT's list). I am still waiting to hear from the HQ PMT for the first item. I am sending an additional question to Will about the zones that I may want to add to the attached text. I can pass that along if/when I do.

Let me know if you have any questions.

Thanks.

Mike

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## **Summary of Naval Reactors Warm and Hot Zone Dose Assessment**

The military has established a radiological warm zone and hot zone around the Fukushima Daiichi nuclear station. The hot zone extends out to 25 miles from the plant. The warm zone extends out an additional 125 miles from the plant. The purpose of these zones is to control the dose to military personnel working as part of the humanitarian mission in the areas affected by the March 11<sup>th</sup> earthquake and tsunami. There have been some discussions regarding the sizes of the zones and what would be needed to reduce their sizes. One consideration for looking at the possibility of reducing the zone sizes would be to reduce the dosimetry needs for personnel; personnel entering into these zones are required to have dosimetry. At this time, the current size of these zones will not be reduced until there is field data to support reduction of the zone footprints. Currently, there does not appear to be any plan by the U.S. Navy to perform field measurements that could be used to support reduction of the zones' footprints.

**Baca, Bernadette**

---

**From:** Call, Michel  
**Sent:** Saturday, April 09, 2011 3:47 AM  
**To:** Hay, Michael  
**Cc:** Miller, Marie  
**Subject:** Question and comment on team briefing report PMT items

Mike,

I'm still waiting to hear back from the PMT at headquarters on the first item under the PMT.

Also, I forwarded on to you a file that was supposed to meet the last item under PMT on the warm and hot zones. It is my understanding, in talking with Will Knoll (Naval Reactors) that the draft report I forwarded to you does not address the warm and hot zones. It is their input on the bases for relaxing the 50 mile evacuation zone size. I did notice the point mentions DOE too. So, I am unclear about DOE being involved with the warm and hot zone task. So, if you could clarify what this last item is about, that would be great. At this time though, based on my discussion with Will, I am writing up a very brief discussion of the warm and hot zone item and will get that to you shortly.

Thanks.  
Mike

~~111111~~/154

**Baca, Bernadette**

---

**From:** Gauntt, Randall O [rogaunt@sandia.gov]  
**Sent:** Sunday, April 10, 2011 7:01 PM  
**To:** Salay, Michael  
**Cc:** Hay, Michael  
**Subject:** Any Important Status Changes ?

Mike or Mike,

Are there any new concerns in the NRC team that we should know about.

I have been wondering what signatures we might see or be seeing if one or more of the units had gone ex-vessel, or more specifically, if there was a MCCI ongoing. If so, one would expect hydrogen generation and CO2 generation, both being non-condensables, would pressurize the drywell and would also lead to renewed fission product releases. If taking place underwater, the fission products could be suppressed and scrubbed until water dryout takes place, but the release of hydrogen and CO2 would continue unless the MCCI somehow cools itself below the ablation temperature.

Randy

*147174 / 135*

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**From:** ET01 Hoc  
**Sent:** Sunday, April 10, 2011 8:33 AM  
**To:** ET02 Hoc  
**Subject:** FW: NRC's Daily Assessment of Conditions at Fukushima Daiichi  
**Attachments:** NRC Daily Assessment of Daiichi - 4-10-11.pdf

---

**From:** Weber, Michael  
**Sent:** Sunday, April 10, 2011 8:33:12 AM  
**To:** ET01 Hoc; ET05 Hoc  
**Cc:** OST02 HOC; LIA08 Hoc; LIA06 Hoc  
**Subject:** FYI - NRC's Daily Assessment of Conditions at Fukushima Daiichi  
**Auto forwarded by a Rule**

---

**From:** Salay, Michael  
**To:** Jaczko, Gregory  
**Cc:** Borchardt, Bill; Weber, Michael; Virgilio, Martin; Casto, Chuck; Leeds, Eric; RST01 Hoc  
**Sent:** Sun Apr 10 03:01:13 2011  
**Subject:** NRC's Daily Assessment of Conditions at Fukushima Daiichi

Dear Chairman,

Attached please find the NRC Japan Team's Daily Assessment of conditions at the Fukushima Daiichi nuclear power plants and spent fuel pools. There is one change of note today. Temperatures in the upper drywell and under the vessel of Unit 3 are slowly trending up. This is reflected by a down arrow in the attached for integrity of the Unit 3 containment. We will continue to discuss these issues with NISA and TEPCO.

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

Best regards,  
Mike Salay  
NRC Japan Team

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~~Official Use Only~~

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

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

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

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

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

		Today	Yesterday
Protective Measures	Exposure Risk	Low	Low
		↔	↔

## Methodology for Developing the Fukushima Daiichi Daily Assessment Report

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

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

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

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

## Staudenmeier, Joseph

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**From:** Masahiro Furuya [furuya@criepi.denken.or.jp]  
**Sent:** Monday, April 11, 2011 10:14 AM  
**To:** Staudenmeier, Joseph  
**Subject:** RE: BWR stability

Dear Joe

I appreciate your comment on CCFL. What do you think if the hottest rod fails as a result of CCFL?

I will try to modify Peach Bottom Turbine Trip mode for Fukushima's accident. So far, I could not find any other good example to apply a BWR.

Thank you for your help.

Best Regards,  
Masahiro

---  
Masahiro Furuya ([furuya@criepi.denken.or.jp](mailto:furuya@criepi.denken.or.jp)) Nuclear Technology Research Laboratory Central Research Institute of Electric Power Industry (CRIEPI)  
2-11-1 Iwado-kita, Komae, Tokyo 201-8511, JAPAN [Tel:+81-3-3480-2111x2031](tel:+81-3-3480-2111x2031), [Fax:+81-3-3488-2844](tel:+81-3-3488-2844) PhD dissertation (ISBN: 978-1-58603-605-8) is available at <http://www.iospress.nl/html/9781586036058.php>

> -----Original Message-----

> From: Staudenmeier, Joseph [<mailto:Joseph.Staudenmeier@nrc.gov>]

> Sent: Saturday, April 09, 2011 5:29 AM

> To: Masahiro Furuya

> Subject: RE: BWR stability

>

> Dear Masahiro,

>

> We don't know why TRACE predicts a lower natural frequency than the measured

> data. Most of the participants in the Ringhals benchmark also

> calculated

> low

> values for the natural frequency. The calculated benchmark results are

> in final report NEA/NSC/DOC(96)22.

>

> I don't think the CCFL model will have a big effect on calculation of

> the Fukushima accidents. You can find information about CCFL in BWR

> LOCAS in NUREG-1230, "Compendium of ECCS Research for Realistic LOCA

> Analysis". It is available through the NRC public online document system:

>

> <http://www.nrc.gov/reading-rm/adams.html>

>

> You should be able to scale down the BWR turbine trip model from the course

> to the smaller BWR4 Fukushima Unit 2 and 3 reactors by reducing the

> vessel size, number of fuel channels, CR guide tubes, etc. You will

> also need to add RCIC and other systems not currently in the model.

> Feel free to ask

> any

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> questions you may have.  
>  
> I hope your crisis will end soon and wish for your continued well being.  
>  
> Best wishes,  
>  
> Joe  
>  
> -----Original Message-----  
> From: Masahiro Furuya [mailto:[furuya@criepi.denken.or.jp](mailto:furuya@criepi.denken.or.jp)]  
> Sent: Thursday, April 07, 2011 10:45 AM  
> To: Staudenmeier, Joseph  
> Subject: RE: BWR stability  
>  
> Dear Joe:  
>  
> Thank you for the presentation. One quick question.  
> Do you know why the TRACE code predicts low frequency than that  
> acquired  
from  
> the reactor?  
>  
> P.S.  
> We are in a crisis mode. I am going to use TRACE code for the  
> accidents in Fukushima. Since I am beginner, I will modify the BWR  
> turbine trip model provided by the training course.  
>  
> You emphasize the CCFL model is the issue for BWR. What do you think  
> to be modeled to modify the weakness of CCFL model?  
>  
> If any model available to describe the accidents in Fukushima, please  
> let me know. It is fine, even if it is little closer.  
>  
> During this e-mail, I encounter the big earthquake. It was so large. I  
> am quite serious to analyze the accident for explanation.  
>  
> Thank you for your time and effort. I am looking forward to having  
> some  
models,  
> if it is available.  
>  
> Best Regards,  
> Masahiro  
> ---  
> Masahiro Furuya ([furuya@criepi.denken.or.jp](mailto:furuya@criepi.denken.or.jp)) Nuclear Technology  
> Research Laboratory Central Research Institute of Electric Power  
> Industry (CRIEPI)  
> 2-11-1 Iwado-kita, Komae, Tokyo 201-8511, JAPAN  
> [Tel:+81-3-3480-2111x2031](tel:+81-3-3480-2111x2031),  
> Fax:+81-3-3488-2844 PhD dissertation (ISBN: 978-1-58603-605-8) is  
available  
> at <http://www.iospress.nl/html/9781586036058.php>  
>  
>  
> From: Staudenmeier, Joseph [mailto:[Joseph.Staudenmeier@nrc.gov](mailto:Joseph.Staudenmeier@nrc.gov)]  
> Sent: Thursday, April 07, 2011 3:58 AM

> To: [furuya@criepi.denken.or.jp](mailto:furuya@criepi.denken.or.jp)

> Subject: BWR stability

>

> Dear Masahiro,

>

> It was good to talk to you at the TRACE training. The attached presentation

> discusses variable length nodding in the channel and semi-implicit vs.

> SETS in slides 35-47. I can assist you with any model problems you may

> be

having.

>

> Best wishes,

>

> Joe

>

> Joseph Staudenmeier

> Senior Reactor Systems Engineer

> United States Nuclear Regulatory Commission MS C - C07M Washington, DC

> 20555 [joseph.staudenmeier@nrc.gov](mailto:joseph.staudenmeier@nrc.gov)

> 301-251-7522

## Wittick, Brian

---

**From:** Wittick, Brian  
**Sent:** Monday, April 11, 2011 4:08 AM  
**To:** Emche, Danielle  
**Subject:** FW: Daily Meeting Schedule Template  
**Attachments:** Daily Meeting Schedule.xls

---

**From:** Lapp, Alison [<mailto:alapp@ofda.gov>]  
**Sent:** Sunday, April 10, 2011 9:11 PM  
**To:** Wittick, Brian  
**Subject:** Daily Meeting Schedule Template

Danielle and Brian,

To follow up on our conversation earlier, I have created a template for entering information about the daily (or regular) interagency or bilateral meetings or phone calls that the NRC and DoE element of the DART has been holding so far. As we move toward the stage when the Embassy will subsume the DART's functions, this list will allow us to capture the work that has been occurring to date and more efficiently hand it over. In the "purpose" category, could you please include general information on who participates in the each meeting? Additionally, in the "point of contact" column, it would be helpful if you could include contact information, as well as a name. If you're unsure as to whether to include a particular meeting, it's best to put it on the list, so that we can analyze the totality of activities at this point.

The DART team leader has asked us to compile this information by COB today. Please let me know if there's anything else I can do to help with this process.

Thank you,  
Alison

---

**Alison Lapp**  
Information Officer -- Japan Tsunami DART  
U.S. Agency for International Development (USAID)  
Office of U.S. Foreign Disaster Assistance (OFDA)  
Tel: (202) 509-5702  
[alapp@ofda.gov](mailto:alapp@ofda.gov)

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***DART Daily Meeting Schedule***

<b>Time</b>	<b>Meeting Title</b>	<b>Purpose</b>	<b>Location</b>	<b>Point of Contact</b>
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**Wittick, Brian**

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**From:** Wittick, Brian  
**Sent:** Monday, April 11, 2011 4:14 AM  
**To:** 'Lapp, Alison'  
**Cc:** Emche, Danielle  
**Subject:** RE: Daily Meeting Schedule Template

Alison,

We will not be able to get to this tasker today.

Thanks,  
Brian

---

**From:** Lapp, Alison [<mailto:alapp@ofda.gov>]  
**Sent:** Sunday, April 10, 2011 9:11 PM  
**To:** Wittick, Brian  
**Subject:** Daily Meeting Schedule Template

Danielle and Brian,

To follow up on our conversation earlier, I have created a template for entering information about the daily (or regular) interagency or bilateral meetings or phone calls that the NRC and DoE element of the DART has been holding so far. As we move toward the stage when the Embassy will subsume the DART's functions, this list will allow us to capture the work that has been occurring to date and more efficiently hand it over. In the "purpose" category, could you please include general information on who participates in the each meeting? Additionally, in the "point of contact" column, it would be helpful if you could include contact information, as well as a name. If you're unsure as to whether to include a particular meeting, it's best to put it on the list, so that we can analyze the totality of activities at this point.

The DART team leader has asked us to compile this information by COB today. Please let me know if there's anything else I can do to help with this process.

Thank you,  
Alison

---

**Alison Lapp**  
Information Officer -- Japan Tsunami DART  
U.S. Agency for International Development (USAID)  
Office of U.S. Foreign Disaster Assistance (OFDA)  
Tel: (202) 509-5702  
[alapp@ofda.gov](mailto:alapp@ofda.gov)

*Handwritten signature and date: 4/11/11*

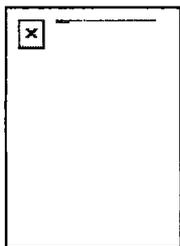
**From:** EDO Update <nrc.announcement@nrc.gov>  
**Sent:** Monday, April 11, 2011 2:27 PM  
**To:** Taylor, Renee  
**Subject:** EDO Update



## EDO Update



Monday, April 11, 2011



I am sure that you are all aware that a federal government shutdown was averted on Friday when the leadership of the House and Senate and the President agreed, in principle, to a budget outline for Fiscal Year (FY) 2011 and temporary budget funding until midnight April 14th. Of course, the details have not yet been made public, so we do not know at this point what the final impact of the budget reductions—if any—will be for the NRC. The final outcome should become clearer throughout this week as the Congress develops the appropriations law for FY 2011 before the current Continuing Resolution expires. In the meantime, of course, we will carry on normal operations, including travel and training. As always, I will share any significant new information about the budget as it becomes available.

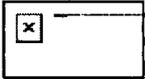
On a different topic, it has been more than a month since Northern Japan was struck by the devastating earthquake and tsunami and the resulting nuclear emergency. Although the situation at Fukushima Daiichi nuclear power station has improved, it still requires monitoring and NRC continues to provide assistance to our Japanese counterparts. We will continue to maintain a fully-engaged site team in Japan, but beginning this week we will be increasing the size and adjusting the skill set of the team to effectively support the work activities in Japan. Additional NRC employees are preparing to depart for Japan to replace current staff, allowing them to return home. The headquarters Operations Center, meanwhile, is realigning to better serve the changing needs of stakeholders in other parts of the U.S. Government and the Japanese Government.

Beginning today, the Ops Center will continue to have enhanced staffing around the clock, but will have fewer individuals per shift. Their focus will be coordination and communications, with most technical work

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associated with the Fukushima response shifting to the line organizations, such as NRR, RES, and NSIR. The line offices will be leveraged to perform the detailed analysis previously performed by the full Reactor Safety, Protective Measures, and Liaison Teams in the Operations (Ops) Center. Taskings to the line organizations will include specific expectations for internal coordination and schedules—with deadlines sometimes measured in hours—to reflect the needs and priorities of the response effort, especially the site team in Japan. I have asked that Office Directors and other supervisors recognize the importance of rapid response, when indicated, and authorize staff overtime as appropriate. This is a pilot approach to help shape our longer-term plans for staffing the Ops Center for this response, and will be re-evaluated at the end of the week.

I continue to encourage you to consult the multiple information resources available on the special section of our public website devoted to events in Japan: <http://www.nrc.gov/japan/japan-info.html>. Everything in this section, including testimony before Congress, is public information, so you can feel free to share the information from this website with interested friends and family.



Bill Borchardt, EDO

**Baca, Bernadette**

---

**From:** Collins, Elmo  
**Sent:** Monday, April 11, 2011 11:31 PM  
**To:** Hay, Michael  
**Cc:** Salay, Michael  
**Attachments:** Reactor and Spent Fuel Pool Safety Assessment.docx

Mike

Please use this version for intro comments and RST - you should be able to insert your PMT stuff to make a complete draft

Thanks

Elmo

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## **Purpose**

The purpose of this interim assessment is to consolidate, at a high level, the NRC's current assessment of Fukushima-Daiichi site based on supporting evaluations, to inform plans and actions moving forward for the NRC.

## **Overall Assessment**

Overall, the NRC is accomplishing the assigned tasks in the Charter dated March 14, 2011.

Since March 11, 2011 earthquake and tsunami, numerous steps have been taken by the Fukushima-Daiichi operator to control the situation and contain/minimize the consequences. Reactor temperatures and pressures have been reduced by cooling water and reactor heat generation rates are down because of radioactive decay. The site continues to require active accident mitigation actions and appears to some time away from reaching stable conditions. The high-level accident mitigation strategies provided by the U.S. Consortium of technical experts are on target for this accident.

Measures have been taken to protect U.S. Citizens that are fully protective. A protective action recommendation for Americans to evacuate within 50 miles of the Fukushima-Daiichi site has been implemented. The basis for this recommendation used a radioactive source term that assumed extreme conditions at the Fukushima-Daiichi site and showed negligible consequences for U.S. Citizens in Tokyo. While radioactive material has been detected some distance from the Fukushima-Daiichi site, the amounts have posed negligible or no health consequences. The Japanese government has imposed evacuations in the vicinity of the Fukushima Daiichi site.

The radiological consequences of the accidents are not yet determined. Several releases of radioactive material to the environment have occurred both air and liquid; and, although at a much lower level are continuing to occur. Some characterization of the amount and impact of the radioactive material in the environment has been done, but is not complete.

## **Reactor and Spent Fuel Pool Technical Assessments**

Events at Fukushima stemming from the March 11, 2011 earthquake and tsunami spawned reactor accident sequences for Units 1, 2, and 3; and for Spent Fuel Pools in Units 3 and 4.

Based on plant data and the trending of plant data, actions taken by the plant operator and Japanese government have apparently halted the accident progressions to a static, but fragile state. Reactor heat load, temperatures and pressures have significantly reduced since March 11, thus reducing the prospects for radioactive material release from in-vessel core melt.

The site remains in active accident mitigation phase. Core damage is estimated by the Fukushima operator at 70% for Unit 1, 30% for Unit 2, and 30% for Unit 3. These are consistent

with NRC estimates. Accordingly, the primary and most important recommendation from the Consortium, derived from the boiling water reactor severe accident guidelines, is to flood the drywell to a level equivalent to the top of the active fuel. Uncertainty exists with respect to the exact conditions of Unit 1, 2, and 3 reactor cores, reactor pressure vessels, and containments. Instrumentation is providing some useful trending information but is possibly unreliable. Available instrumentation is not definitive regarding the exact condition or location of the reactor cores.

The recommendation to flood the drywell has not been implemented by the Fukushima-Daiichi operator. For Unit 2, there is an active leaking flow path from the containment to the reactor building of highly radioactive water. The Unit 2 containment by-pass leakage has been a factor in the Fukushima operator's thinking in deciding not to flood the drywell in that adding water may create more liquid radioactive waste.

A high degree of uncertainty remains regarding the cooling, configuration, and location of Units 1, 2, 3 reactor cores. Units 1, 2, and 3 are being cooled with freshwater using temporary electric pumps and fire hoses. These methods are highly unconventional. The flow path is into Units 1, 2, 3 and water/steam exits into the drywell/wetwell. The Consortium has also provided accident mitigation actions for this cooling methodology are contained in "Option B." The primary accident mitigation recommendations for this are to ensure the proper injection flow rate (Minimum Debris Retention Injection Rate) and to put some water into the drywell (Minimum Debris Submergence Level). The current injection flow rates for the Fukushima Units are less than the recommended and no additional water has been added to the drywells. Some water is present in Units 2 and 3 drywells. The water level in Unit 1 drywell is unknown.

The Unit 2 Spent Fuel Pool is being cooled using a temporary pump. It is cool and does not pose a threat as long as cooling continues. Uncertainty remains with respect to the configuration of the fuel and conditions of the pools for the Units 3 and 4 Spent Fuel Pools. Some structural assessments of the spent fuel pools have been conducted but with limited information. Unit 1 spent fuel pool is not threatened in the near term because of an exceptionally low heat load.

The Units 3 and 4 spent fuel pools have water added periodically and appear to be cooled. Neither pool is understood to be holding water. During the accident sequences, both Units 3 and 4 spent fuel pools lost water and fuel was exposed. In addition, there is a likelihood that large pieces of debris fell into the pools with the explosions of either Unit 3 or 4 reactor buildings. It is uncertain whether or not Units 3 or 4 experienced a zirconium fire, but it seems likely given the amount of destruction in the Unit 4 reactor building. The configuration and status of the fuel and pool levels have not been determined. The Unit 4 spent fuel pool contains a large amount of fuel (Unit 4 reactor was completely off loaded for maintenance.) If the design configuration has been lost, and it almost certainly has, there is a possibility of criticality given the reactivity of the fuel bundles. Keeping water in the pools is apparently effective at preventing further damage. Steps to attain meaningful information are necessary to assess the risk and identify mitigation strategies.

Sandia National Laboratory model (MELCOR) is an appropriate model for these accident sequences. Preliminary results for Unit 1 show about 62% core damage, which is consistent with other damage assessments. Results are also consistent with the understanding that this core has not gone ex-vessel. The potential for radioactive release from additional core melt is exceedingly low since volatile materials are estimated to be 80% dissolved into the suppression pool. The MELCOR model estimated about 10 hours for Unit 1 reactor core to melt through the reactor pressure vessel if vessel injection flow is lost. With no water in the Unit 1 drywell, there is a prospect for melted core – concrete interaction to progress. This emphasizes the need for the Consortium recommendations to be implemented. Units 2 and 3 are less susceptible to this hazard since there is water in these drywells; however, there is a possibility that one or both have already gone ex-vessel further emphasizing the need for the Consortium recommendations to be implemented.

The Consortium has also produced consensus definitions for stability of reactor and spent fuel pools. The stability document emphasizes the importance of parameters such as water injection systems being functional and reliability and the water level inside the drywell.

### **Protective Measures**

Mike provide input

NRC items for Focus moving forward:

Continue headquarters and site team activities to convey the best technical insights to the Japanese government needs to occur with a focus on the technical details of the steps to mitigate the accident to the reactor and spent fuel pools, particularly with a view to measure progress toward stability. Specifically:

1. Understand and assess the implementation of steps to mitigate the accident.
2. Track the implementation of site conditions necessary for long term stability
3. Understand and assess the information used to characterize Units 3 and 4 spent fuel pools
4. Understand and assess actions to stop the release of radioactive material to the environment

(need PMT stuff)

**Baca, Bernadette**

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**From:** Carson, Louis  
**Sent:** Monday, April 11, 2011 9:38 AM  
**To:** Baca, Bernadette  
**Subject:** FW: REMP Reporting Levels and Fukushima

Fyi:

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**From:** Conatser, Richard  
**Sent:** Monday, March 21, 2011 11:00 AM  
**To:** Werner, Greg; Henderson, Pamela; Dickson, Billy; Bonser, Brian  
**Cc:** Garry, Steven; Pedersen, Roger; Jimenez, Manuel; Clemons-Webb, Candace; Shoop, Undine; Ricketson, Larry; Carson, Louis; Graves, Chris; Greene, Natasha; Alldredge, Casey  
**Subject:** RE: REMP Reporting Levels and Fukushima

Here is a link to the EPA RadNet Air Monitoring System. The graphs are updated daily.

<http://www.epa.gov/japan2011/rert/radnet-data.html#air-monitoring>

It has graphs of gross beta on air filters for various cities on the west coast.

Gross beta is more subject to background variability and it lacks the sensitivity of I-131 analysis, but it is still a good gross indicator.

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**From:** Werner, Greg  
**Sent:** Monday, March 21, 2011 1:45 PM  
**To:** Conatser, Richard; Henderson, Pamela; Dickson, Billy; Bonser, Brian  
**Cc:** Garry, Steven; Pedersen, Roger; Jimenez, Manuel; Clemons-Webb, Candace; Shoop, Undine; Ricketson, Larry; Carson, Louis; Graves, Chris; Greene, Natasha; Alldredge, Casey  
**Subject:** RE: REMP Reporting Levels and Fukushima

SONGS, Diablo, and Palo Verde are reporting air samples with I-131 at around 1 E-12 at this time. Over the weekend they were approximately 3 -5 E-13 at Diablo and SONGS.

Greg

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**From:** Conatser, Richard  
**Sent:** Monday, March 21, 2011 12:18 PM  
**To:** Werner, Greg; Henderson, Pamela; Dickson, Billy; Bonser, Brian  
**Cc:** Garry, Steven; Pedersen, Roger; Jimenez, Manuel; Clemons-Webb, Candace; Shoop, Undine  
**Subject:** REMP Reporting Levels and Fukushima

All,

You may want to pass this along to your Inspectors who will be on inspections during the next couple of months.

The NRC's REMP REPORTING LEVELS may be exceeded as a result of plumes from Fukushima passing over REMP sampling stations. This email contains some unit conversions for your use. The table below shows the default NRC REPORTING LEVEL for I-131 in REMP samples listed in NUREG-1301 (PWRs) and NUREG-1302 (BWRs). It also converts the REPORTING LEVELS to those units commonly used at the plant sites.

**I-131 Reporting Level in NUREG 1301 and NUREG-1302**

I-131 Units	I-131 Units
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HHHH/162

Drinking Water	2	pCi/L	2E-09	uCi/ml
Non-Drinking Water	20	pCi/L	2E-08	uCi/ml
Air	0.9	pCi/m <sup>3</sup>	9E-13	uCi/cc

These are default values, and the site-specific values will be in the licensees' ODCMs. The REMP REPORTING LEVELS may be exceeded as a result of plumes from Fukushima passing over REMP sampling stations. The REMP results may vary as various puffs/plumes traverse the US. If a nuclide concentration exceeds the REPORTING LEVELS (averaged over a calendar quarter), the licensee may be required to report the data to the NRC within 30 days. The licensee should take the actions listed in their ODCM.

Because the I-131 (and possibly other radionuclides) from Fukushima will elevate the "background," it will reduce the licensee's ability to differentiate releases from their site. Strong data evaluation and analyses are appropriate at all times, and are particularly applicable at this time. This is also a good verification of licensee's analytical detection capabilities.

Best Regards,

*Richard L. Conatser*  
 Health Physicist  
 Nuclear Regulatory Commission  
 301-415-4039  
[Richard.Conatser@NRC.gov](mailto:Richard.Conatser@NRC.gov)

**Baca, Bernadette**

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**From:** Carson, Louis  
**Sent:** Monday, April 11, 2011 9:33 AM  
**To:** Baca, Bernadette  
**Subject:** FW: Incident Rad Monitoring: Monday 3/21/11

FYI:

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**From:** Howell, Linda  
**Sent:** Tuesday, March 22, 2011 11:57 AM  
**To:** Carson, Louis  
**Subject:** RE: Incident Rad Monitoring: Monday 3/21/11

Thanks, I appreciate you sharing what you are getting from the plants.

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**From:** Carson, Louis  
**Sent:** Tuesday, March 22, 2011 8:56 AM  
**To:** Howell, Linda; Erickson, Randy  
**Cc:** Alexander, Ryan; Lantz, Ryan; Werner, Greg; Conatser, Richard  
**Subject:** FW: Incident Rad Monitoring: Monday 3/21/11

FYI Folk: Scroll down to the bottom.

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**From:** [Mike.Russell@sce.com](mailto:Mike.Russell@sce.com) [mailto:Mike.Russell@sce.com]  
**Sent:** Monday, March 21, 2011 7:06 PM  
**To:** Carson, Louis  
**Subject:** Fw: Incident Rad Monitoring: Monday 3/21/11

Louis,

Here is the note sent out to senior plant management today. We'll have more info on rainwater tomorrow.

Today's sample results show I-131 concentrations essentially unchanged from Sunday at about 2 E-12 uCi/cc. Today we did detect very low level Cs-137 for the first time.

Very low level I-131 was also detected in several water samples taken onsite and in Lot 4 following today's rain event.

Mark Lewis  
Health Physics Division Manager  
San Onofre Nuclear Generating Station (D1N)  
Work: (949) 368-1140  
[mark.lewis@sce.com](mailto:mark.lewis@sce.com)

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**24 hour environmental air sample results counted on Monday 3/21/11**

Unit 1 source room (sample #136628)  
1.8E-12 uCi/cc iodine 131  
3E-13 uCi/cc cesium 137

11/11/11/163

**Parking Lot 4 (PIC#1) (sample #136627)**

**1.7E-12 uCi/cc iodine 131**

**3E-13 uCi/cc cesium 137**

**Turbine Building (sample #136626)**

**1.3E-12 uCi/cc iodine 131**

**Baca, Bernadette**

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**From:** Carson, Louis  
**Sent:** Monday, April 11, 2011 9:23 AM  
**To:** Baca, Bernadette  
**Subject:** FW: Updated value for I-131

Fyi:

---

**From:** Somerville, Mark [<mailto:MOS3@pge.com>]  
**Sent:** Saturday, March 19, 2011 10:49 AM  
**To:** Carson, Louis  
**Subject:** Updated value for I-131

Louis.

Didn't like the statistics on the sample this morning.

Re-analysis shows 5.64 E-13 uCi/cc rather than 2 E-13.

Much better statistics. Also not much change from yesterday, although it looks like yesterday caught the first part of the "plume" and this sample caught the second half.

Mark

Mark O. Somerville Ph.D.  
Manager-Radiation Protection  
Certified Health Physicist  
Registered Environmental Assessor  
(805) 545-4007  
(805) 545-3459 - Fax  
[mos3@pge.com](mailto:mos3@pge.com)

*147777/1604*

## Baca, Bernadette

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**From:** Carson, Louis  
**Sent:** Monday, April 11, 2011 9:25 AM  
**To:** Baca, Bernadette  
**Subject:** FW: Update addendum

Fyi:

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**From:** Somerville, Mark [<mailto:MOS3@pge.com>]  
**Sent:** Tuesday, March 22, 2011 1:26 PM  
**To:** Conway, John; Welsch, James; Becker, James; Peters, Kenneth; Ginn, Michael A. (DCPP); Vardas, Tracey; Carson, Louis; Flake, Paul; 'INPOERCRP'; 'GE.HITACHINUCLEARRESPONSETEAM@ge.com'; 'EARLS, Chris'  
**Subject:** Update addendum

All,

After the morning update today, we received data from our environmental laboratory.

We found very low concentrations of **Cesium 137** at a supplemental sample station located on the coast and about 6 miles from the plant site.

The value was **4.31 E-15 micro-curies per cubic centimeter of air**.  
The sample was collected for about 2 days starting on 3/22 and stopped on 3/24.

This value is less than the prescribed lower limit of detection but above the minimum detectable for the laboratory's detectors that day.

This was an off site laboratory used for analyzing our environmental program samples.  
Other data from this off site laboratory will be made available when they are received and verified.

This sample data also verified Iodine 131 values found in site analysis and provided on Friday (3/18).  
This laboratory showed **4.79 E-12 micro-curies per cubic centimeter of air**

Mark

Mark O. Somerville Ph.D.  
Manager-Radiation Protection  
Certified Health Physicist  
Registered Environmental Assessor  
(805) 545-4007  
(805) 545-3459 - Fax  
[mos3@pge.com](mailto:mos3@pge.com)

111111/165

**Baca, Bernadette**

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**From:** Carson, Louis  
**Sent:** Monday, April 11, 2011 9:26 AM  
**To:** Baca, Bernadette  
**Subject:** FW: Update addendum

Fyi:

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**From:** Somerville, Mark [<mailto:MOS3@pge.com>]  
**Sent:** Tuesday, March 22, 2011 4:19 PM  
**To:** Somerville, Mark; Conway, John; Welsch, James; Becker, James; Peters, Kenneth; Ginn, Michael A. (DCPP); Vardas, Tracey; Carson, Louis; Flake, Paul; 'INPOERCRP'; 'GE.HITACHINUCLEARRESPONSETEAM@ge.com'; 'EARLS, Chris'  
**Subject:** RE: Update addendum

All,

Thanks to Tracey for pointing out the date problem.

Sampling began on 3/15 and was pulled on 3/17.

Mark

Mark O. Somerville Ph.D.  
Manager-Radiation Protection  
Certified Health Physicist  
Registered Environmental Assessor  
(805) 545-4007  
(805) 545-3459 - Fax  
[mos3@pge.com](mailto:mos3@pge.com)

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Somerville, Mark  
uesday, March 22, 2011 1:26 PM  
nway, John; Welsch, James; Becker, James; Peters, Kenneth; Ginn, Michael A. (DCPP); Vardas, Tracey; 'Carson, Louis'; Flake, Paul; 'INPOERCRP'; 'GE.HITACHINUCLEARRESPONSETEAM@ge.com'; 'EARLS, Chris'  
Update addendum

All,

After the morning update today, we received data from our environmental laboratory.

We found very low concentrations of **Cesium 137** at a supplemental sample station located on the coast and about 6 miles from the plant site.

The value was **4.31 E-15 micro-curies per cubic centimeter of air**.  
The sample was collected for about 2 days starting on 3/22 and stopped on 3/24.

This value is less than the prescribed lower limit of detection but above the minimum detectable for the laboratory's detectors that day.

This was an off site laboratory used for analyzing our environmental program samples.  
Other data from this off site laboratory will be made available when they are received and verified.

*Handwritten signature: HHHH/166*

This sample data also verified Iodine 131 values found in site analysis and provided on Friday (3/18).  
This laboratory showed **4.79 E-12 micro-curies per cubic centimeter of air**

Mark

Mark O. Somerville Ph.D.  
Manager-Radiation Protection  
Certified Health Physicist  
Registered Environmental Assessor  
(805) 545-4007  
(805) 545-3459 - Fax  
[mos3@pge.com](mailto:mos3@pge.com)

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**From:** HOO Hoc  
**Sent:** Tuesday, April 12, 2011 12:25 PM  
**To:** LIA07 Hoc; LIA08 Hoc; OST01 HOC; OST02 HOC; OST03 HOC  
**Subject:** FW: [METI Japan](Apr\_12)Update on Seismic and Tsunami Damage Information  
**Attachments:** [METI] Apr 9\_0800\_Tohoku-Pacific Ocean Earthquake and the Seismic Damages to the NPSs.pdf; Apr\_12 Radioactivity Level Map [Chart].pdf; 110412INES Rating.pdf

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

From: meti-info@meti.go.jp [mailto:meti-info@meti.go.jp]  
Sent: Tuesday, April 12, 2011 12:14 PM  
To: meti-info@meti.go.jp  
Subject: [METI Japan](Apr\_12)Update on Seismic and Tsunami Damage Information

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

This Tuesday, the following information has been updated.

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

1. Statement by Prime Minister Naoto Kan "Kizuna - The Bonds of Friendship -" [Please refer to 8. ]
2. The Rating of the International Nuclear and Radiological Event Scale (INES) on the events in Fukushima Dai-ichi Nuclear Power Station (NPS), Tokyo Electric Power Co. Inc. (TEPCO), caused by the Tohoku District - off the Pacific Ocean Earthquake is temporarily assessed as Level 7, considering information obtained after March 18th.  
However, the amount of discharged radioactive materials is approximately 10 percent of the Chernobyl accident which was assessed on the same level.  
[Please refer to the attached file]

---- Updates from METI ----

3. [METI] Apr 9\_0800\_Tohoku-Pacific Ocean Earthquake and the Seismic Damages to the NPSs [Please refer to the attached file]
4. [METI] Apr 12\_Radioactivity Level Map Chart [Please refer to the attached file]

---- Updates from NISA ----

5. [NISA] INES (the International Nuclear and Radiological Event Scale) Rating on the Events in Fukushima Dai-ichi Nuclear Power Station by the Tohoku District - off the Pacific Ocean Earthquake [Please refer to the attached file]

11/11/11/167

6. [NISA] Apr 12 0800\_Current Situation of Onagawa, Fukushima Dai-ichi, Fukushima Dai-ni, Tokai Dai-ni NPSs (only Japanese version is now available. English version will be uploaded.)  
<http://www.meti.go.jp/press/2011/04/20110412002/20110412002-1.pdf>

7. [NISA] Apr 9 0800\_Current Situation of Onagawa, Fukushima Dai-ichi, Fukushima Dai-ni, Tokai Dai-ni NPSs (English version) <http://www.nisa.meti.go.jp/english/files/en20110412-3-1.pdf>

8. [NISA] Apr 9 110200\_Fukushima Dai-ichi Major Parameters of the Plant (only Japanese version is available. English version will be uploaded.) <http://www.meti.go.jp/press/2011/04/20110412002/20110412002-2.pdf>

9. [NISA] Apr 9 0600\_Fukushima Dai-ichi Major Parameters of the Plant (English version)  
<http://www.nisa.meti.go.jp/english/files/en20110412-3-3.pdf>

---- Major Updates from other agencies of Japanese Government --- 10. [PM] Apr 11\_Statement by Prime Minister Naoto Kan "Kizuna - The Bonds of Friendship - "  
[http://www.kantei.go.jp/foreign/kan/statement/201104/11kizuna\\_e.html](http://www.kantei.go.jp/foreign/kan/statement/201104/11kizuna_e.html)

11. [MLIT] Apr 12 PM\_Measurement of Radiation Doses in the Ports around Tokyo Bay  
[http://www.mlit.go.jp/kowan/kowan\\_fr1\\_000041.html](http://www.mlit.go.jp/kowan/kowan_fr1_000041.html)

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

12. [MLIT] Apr 12 PM\_Measurement of radiation doses around the Metropolitan Airports  
[http://www.mlit.go.jp/koku/koku\\_tk7\\_000003.html](http://www.mlit.go.jp/koku/koku_tk7_000003.html)

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

13. [NSC] Apr 12 1645\_Assessment of the result of environment monitoring (Only Japanese version is available)  
[http://www.nsc.go.jp/nsc\\_mnt/110412\\_1.pdf](http://www.nsc.go.jp/nsc_mnt/110412_1.pdf)

14. [MHLW] Apr 8\_MHLW lifted the ban on the distribution of spinach and Kakina (a kind of leafy vegetable) harvested in Gunma Prefecture and of fresh raw milk produced in Kitakata City and six towns in Fukushima Prefecture based on the substantially reduced level of radioactive materials detected in the farm produce in the areas. (English version is uploaded) <http://www.mhlw.go.jp/english/topics/2011eq/dl/food-110410.pdf>

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

=====  
International Public Relations Team  
Ministry of Economy, Trade and Industry (METI)  
1-3-1 Kasumigaseki, Chiyoda-ku, Tokyo 100-8901, Japan E-mail : [meti-info@meti.go.jp](mailto:meti-info@meti.go.jp)  
=====

(See attached file: [METI] Apr 9\_0800\_Tohoku-Pacific Ocean Earthquake and the Seismic Damages to the NPSs.pdf)  
(See attached file: Apr\_12 Radioactivity Level Map [Chart].pdf)

(See attached file: 110412INES Rating.pdf)

April 12, 2011

INES (the International Nuclear and Radiological Event Scale) Rating on  
the Events in Fukushima Dai-ichi Nuclear Power Station  
by the Tohoku District - off the Pacific Ocean Earthquake

The Rating of the International Nuclear and Radiological Event Scale (INES) on the events in Fukushima Dai-ichi Nuclear Power Station (NPS), Tokyo Electric Power Co. Inc. (TEPCO), caused by the Tohoku District - off the Pacific Ocean Earthquake is temporarily assessed as Level 7, considering information obtained after March 18th.

However, the amount of discharged radioactive materials is approximately 10 percent of the Chernobyl accident which was assessed on the same level.

1. INES

INES is the rating, which International Atomic Energy Agency (IAEA) and Nuclear Energy Agency, Organization for Economic Cooperation and Development (OECD/NEA) established and proposed to the Member States in March 1992, in order to indicate the impact on safety by the individual event in a nuclear facility and so on. Japan has also utilized it since 1 August 1992.

2. Events in Fukushima Dai-ichi NPS, TEPCO, by the Tohoku District - off the Pacific Ocean Earthquake

On 18 March, the ratings of the events in Fukushima Dai-ichi NPS by the Tohoku District - off the Pacific Ocean Earthquake were informed to be temporarily assessed as Level 5, considering information obtained before March 18th. However, Nuclear and Industrial Safety Agency (NISA) estimated the total amount of discharged radioactive materials from the reactors of Fukushima Dai-ichi NPS to the air, making a trial

calculation using the result of analysis of the situation of the reactors and so on, which was carried out by Japan Nuclear Energy Safety Organization (JNES). This estimation resulted in the value corresponding to Level 7 of INES rating\*, as listed in the following table..

\* The value representing radiation impact, which is converted to the amount equivalent to <sup>131</sup>I (Iodine), exceeds several tens of thousands of tera-becquerel (of the order of magnitude as 10<sup>16</sup> Bq).

In addition, Nuclear Safety Commission of Japan (NSC) also estimated and announced the result of the trial calculation in the current stage regarding the total amount of discharged radioactive materials to the air, which had been being carried out in the Commission. This trial calculation is counted backward from the results of monitoring data of <sup>131</sup>I and <sup>137</sup>Cs (Caesium) as the total amount of the discharge from the Fukushima Dai-ichi NPS, This results in the value corresponding to Level 7 of INES rating as well.

	Assumed amount of the discharge from Fukushima Dai-ichi NPS		(Reference) Amount of the discharge from the Chernobyl accident
	Estimated by NISA	Announced by NSC	
<sup>131</sup> I ... (a)	1.3×10 <sup>17</sup> Bq	1.5×10 <sup>17</sup> Bq	1.8×10 <sup>18</sup> Bq
<sup>137</sup> Cs	6.1×10 <sup>15</sup> Bq	1.2×10 <sup>16</sup> Bq	8.5×10 <sup>16</sup> Bq
(Converted value to <sup>131</sup> I) ... (b)	2.4×10 <sup>17</sup> Bq	4.8×10 <sup>17</sup> Bq	3.4×10 <sup>18</sup> Bq
(a) + (b)	3.7×10 <sup>17</sup> Bq	6.3×10 <sup>17</sup> Bq	5.2×10 <sup>18</sup> Bq

(Notes) The conversion of the values to be equivalent to radiation impact of <sup>131</sup>I regarding the NISA's estimation and the NSC's

announcement were carried out by NISA in accordance with the INES User's Manual.

Although Level 7 is the highest level of INES rating, it is estimated that the amount of discharged radioactive materials to the environment in the current stage is approximately 10 percent of the Chernobyl accident, which was assessed on the same level in the past.

### 3. Procedures to be taken

This information is about the result of the total amount of the discharge from Fukushima Dai-ichi NPS in the current stage. As radioactive materials are being released to the environment, NISA will continuously gather and evaluate information.

In addition, the official level of INES will be determined, considering the technical evaluation from specialist view points made by INES Evaluation Subcommittee (Chairman: Dr. Naoto Sekimura, Professor of University of Tokyo, Nuclear Professional School Engineering, Department of Nuclear Engineering and Management), which set up in the Nuclear and Industrial Safety Subcommittee of the Advisory Committee for Natural Resources and Energy, after the recurrence prevention measures are confirmed based on the concrete causes found.

(Contact Person)

Mr. Toshihiro Bannai

Director, International Affairs Office,

NISA/METI

Phone: +81-(0)3-3501-1087

## Tohoku Pacific Earthquake and the seismic damage to the NPSs

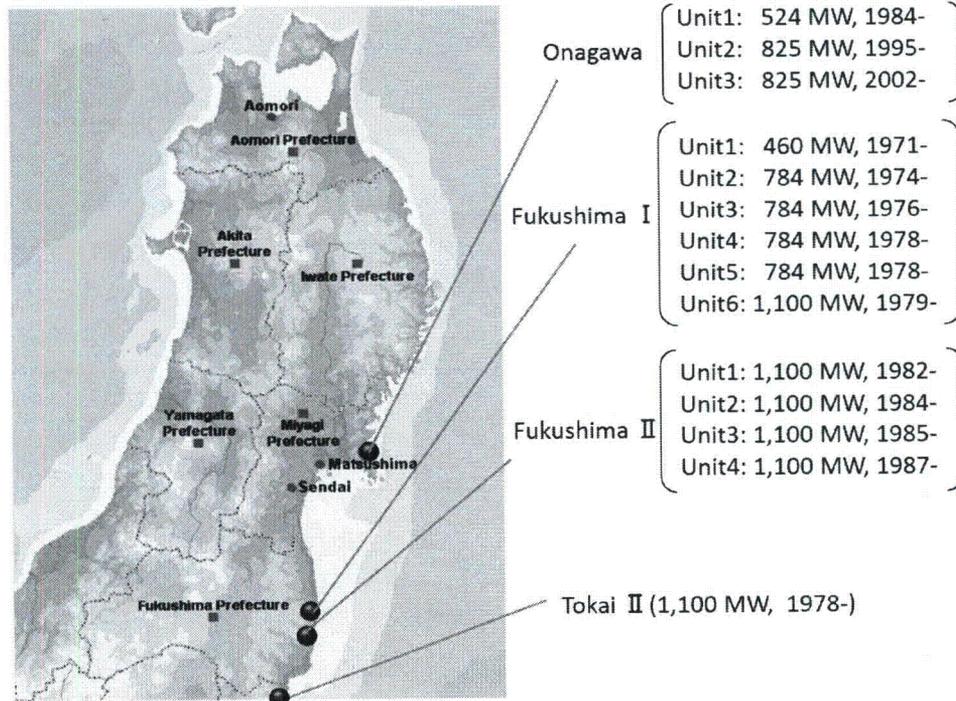
As of 8:00am April 9th, 2011 (JST)  
Ministry of Economy, Trade and industry

### Earthquake and automatic shut-down of nuclear reactors

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

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

After the automatic shut-down, Units 1, 2 and 3 at Onagawa, Unit 3 at Fukushima II, and the Unit at Tokai II have been cold shut down safely. As for the Units 1, 2 and 4 at Fukushima II, TEPCO operator of the station reported the nuclear emergency situation to Nuclear and Industrial Safety Agency (NISA), but afterward the three units have been cold shut down.



## Tsunami damaged the cooling systems at the Fukushima Dai-ichi (I)

Since the external power supply was cut off upon the earthquake occurrence at 14:46 on March 11th, the emergency diesel power generators at Fukushima I automatically started generating electricity and the cooling systems began their operation. Then, the massive earthquake triggered the devastating Tsunami wiping away houses, buildings, cars along the widespread areas of the northeast coast.

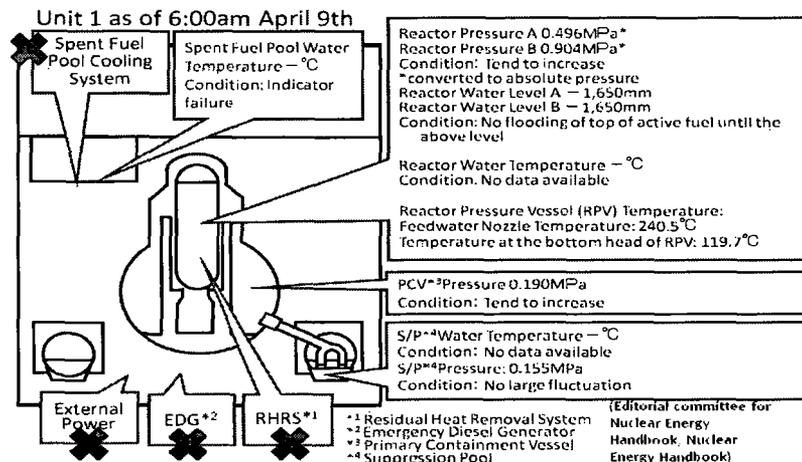
The emergency diesel power generators and the pumps supplying seawater to the cooling system were halted at 15:41 on March 11th due to the Tsunami estimated more than 10 meters high from the seawater level. Fukushima I lost the AC power sources for Unit 1, 2, 3 and 4 and lost function necessary for cooling down the reactor cores (Unit 1, 2 and 3) and spent fuel kept in the pools (Unit 1, 2, 3 and 4) inside reactor buildings. Consequently, the pressure and temperature of reactor cores and the water temperature of spent fuel pools went up.

For counter measures, water is being injected into the reactor pressure vessels of Units 1, 2 and 3. At the same time, police, fire brigade and the Self Defense Forces are attempting to pour water into the spent fuel pool of Units 3 and 4 by spraying seawater from helicopters, water cannon trucks and fire engine. Further, TEPCO engineers are working to restore external power supply to Units 1, 2, 3 and 4 (power supply to Units 5 and 6 was completed) by installing the electricity cable connecting to the transmission line of Tohoku Electric Power Co. Ltd. and other transmission route.

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

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

- After the reactor was automatically shut-down and the Tsunami disabled the equipments, the temperature of the reactor core went up and the water level inside the pressure vessel dropped and the reaction of cladding metal of fuel and water generated hydrogen. Vent of the primary containment vessel was operated at 10:17am on March 12th. The hydrogen leaked outside of the containment vessel and caused the explosion at the upper-part of a concrete building housing at 15:36 on March 12th.
- Seawater was being injected into the reactor pressure vessel; thereafter, fresh water is being injected as of 8:00am April 9th, instead of seawater. On March 29th, the pump for the fresh water injection was switched from the fire pump truck to the temporary motor-driven pump.
- On March 31st, spray of fresh water over the spent fuel pool of Unit 1 using the concrete pump truck was carried out. On April 2nd, a test water spray over the spent fuel pool was carried out in order to confirm the appropriate position for water spray.
- Lighting in the main control room was recovered on March 24th. On April 2nd, lighting in the turbine building was partially turned on. And the power supply for the fresh water injection to the reactor pressure vessel was switched to the external power supply on April 3rd.
- White smoke was confirmed to generate continuously as of 6:30am April 9th.
- As the result of concentration measurement, in the stagnant water on the basement floor of the turbine building,  $2.1 \times 10^5 \text{ Bq/cm}^3$  of  $^{131}\text{I}$  (Iodine) and  $1.8 \times 10^6 \text{ Bq/cm}^3$  of  $^{137}\text{Cs}$  (Caesium) were detected as major radioactive nuclides. Since around 17:00 March 24th, the stagnant water has been transferred to the condenser. As the condenser was confirmed to be almost filled with water, pumping out the water to the condenser was stopped at 7:30am on March 29th.
- In order to prepare to transfer the stagnant water on the basement floor of the turbine building to the condenser, the water in the condensate storage tank was transferred to the surge tank of suppression pool water (A) (12:00 March 31th). After switching the place where the water was to be transferred to the surge tank of suppression pool water (B) (15:25 March 31th), the transfer was restarted and finished. (15:26 April 2nd) Thereafter, the water in the condenser was transferred to the condensate storage tank at 13:55 on April 3rd.
- Aiming at reducing the possibility of hydrogen combustion in the primary containment vessel of Unit 1, the operations for the injection of nitrogen to the vessel were started at 22:30 on April 6th.
- The start of nitrogen injection to the primary containment vessel of Unit 1 was confirmed. (1:31am April 7th)



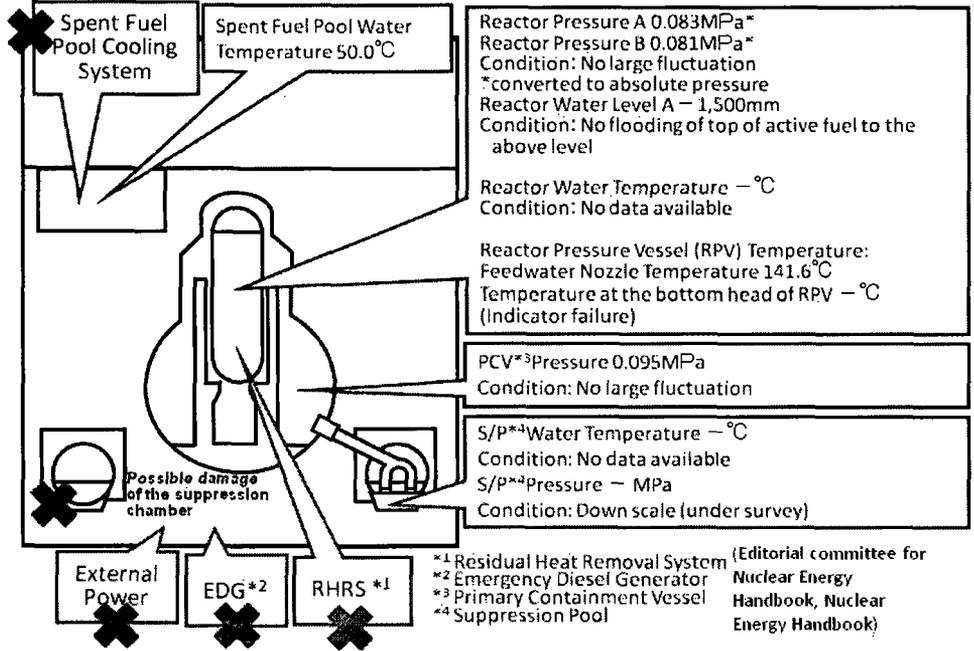
***Unit 2 Fresh water is being injected to the spent fuel pool and the reactor pressure vessel.***

- After the automatic shut-down of the reactor, the water injection function was sustained, but the reactor water level tended to decrease. And vent of the primary containment vessel was operated at 11:00am on March 13th and at 0:02am on March 15th.
- At 6:10am on March 15th, TEPCO reported that there was an explosion sound at Unit 2. Given the fact that the pressure in the suppression chamber decreased, it is presumed that there is possibility of certain damage on the suppression chamber.
- Seawater was being injected into the reactor pressure vessel; thereafter, fresh water is being injected as of 8:00am April 9th, instead of seawater. On March 27th, the pump for the fresh water injection was switched from the fire pump truck to the temporary motor-driven pump.
- The seawater injection to the spent fuel pool of Unit 2 using the fire pump truck was switched to the fresh water injection using the temporary motor-driven pump on March 29th. On March 30th, April 1st, 4th and 7th, the injection of fresh water to the spent fuel pool via the spent fuel cooling line were carried out. At 0:00am on April 9th, the temperature in the spent fuel pool was 50.0 degree centigrade.
- The power center of Unit 2 received electricity on March 20th. On March 26th, lighting of the main control room was recovered. On April 2nd, lighting in the turbine building was partially turned on. And the power supply for the fresh water injection to the reactor pressure vessel was switched to the external power supply on April 3rd.
- White smoke was confirmed to generate continuously as of 6:30am April 9th.
- In order to prepare for transferring the stagnant water on the basement floor of turbine building to the condenser, the water in the condensate storage tank was transferred to the surge tank of suppression pool water from 16:45 March 29th till 11:50am April 1st. Thereafter, the water in the condenser was transferred to the condensate storage tank at 17:10 on April 2nd, and 13:55 on April 3rd.
- One more pump for the transfer of the water in the condenser of Unit 2 to the condensate storage tank was installed at 15:40 April on 5th.
- The water, of which the dose rate was at the level of more than 1,000 mSv/h, was confirmed to be collected in the pit (a vertical portion of an underground structure) for laying electric cables, located near the intake channel of Unit 2. In addition, the outflow from the crack with a length of around 20 cm in the concrete portion of the lateral surface of the pit into the sea was confirmed. (as of around 9:30 April 2nd) In order to stop the outflow, concrete was started to be poured into the pit. (16:25 and 19:02 April 2nd)
- As the measure to prevent the outflow of the water accumulated in the pits for conduit in the area around the inlet bar screen of Unit 2, the upper part of the power cable trench for power source at the intake channel was crushed and sawdust, high polymer absorbent and cutting-processed newspaper were put inside. (From 13:47 till 14:30 April 3rd)
- The tracer solution was put in from the two holes dug around the pit for the conduit near the inlet bar screen of Unit 2 and was confirmed to be flowed out from the crack to the sea at 14:15 April 5th. The coagulant (soluble glass) started to be injected from the holes around the pit in order to prevent the outflowing of the water at 15:07 April 5th. The outflow of the water was confirmed to stop at around 5:38am April 6th. In addition, it was confirmed that the water level in the turbine building did not rise. Furthermore, the measures to stop water by means of rubber board and jig (prop) were implemented at the outflowing point. (Finished at 13: 15 April 6th)

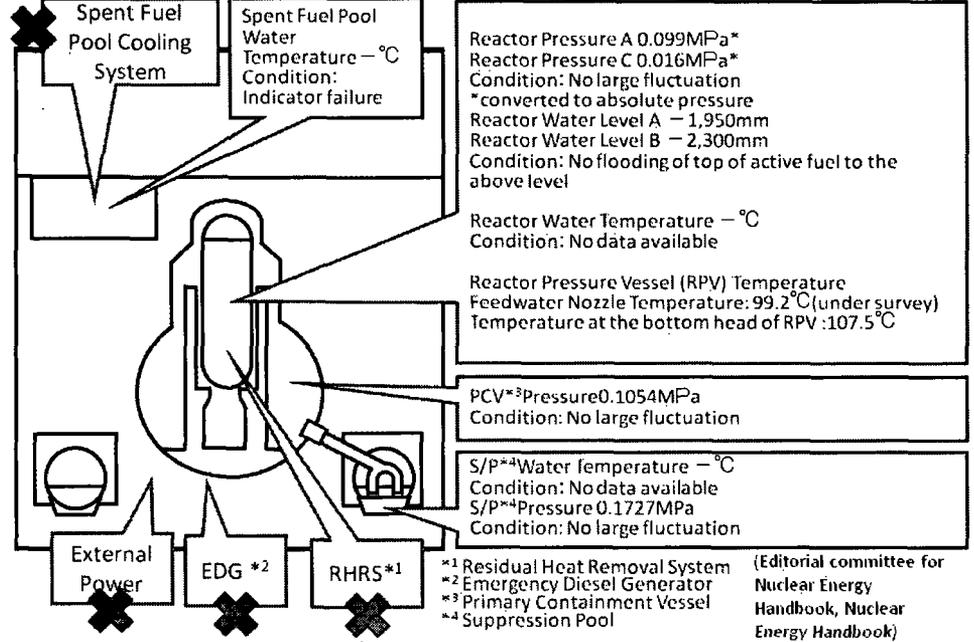
***Unit 3 Fresh water is being injected to the spent fuel pool and the reactor pressure vessel.***

- After the automatic shut-down of the reactor, fresh water and subsequently seawater were injected into the reactor pressure vessel through the fire extinguishing system line. And vent of the primary containment vessel was operated at 20:41 on March 12th, at 8:41am on March 13th and at 5:20am on March 14th. However, the pressure in the primary containment vessel rose up unusually and the explosion took place around the reactor building at 11:01am on March 14th.
- On March 16th, 21st and 23rd, the smoke (sometimes whitish, grayish or slightly blackish one) was generated from Unit 3 and died down. As of 6:30am April 8th, white smoke was confirmed to generate continuously.
- For counter measures, seawater was being injected into the reactor pressure vessel, thereafter; fresh water was being injected from March 25th, instead of seawater. On March 28th, the pump for the fresh water injection was switched from the fire pump truck to the temporary motor-driven pump. Fresh water is being injected as of 8:00am April 9th.
- At the same time, to pour water into the spent fuel pool, helicopters, water cannon trucks, fire engines and concrete pump trucks discharged water to the spent fuel pool of Unit 3 from sky and ground. Injection of seawater to the spent fuel pool via the cooling and purification line was carried out on March 23rd and March 24th. From March 29th till April 8th, fresh water spray over the spent fuel pool using the concrete pump truck had been carried out six times.
- The pressure in the primary containment vessel of Unit 3 rose. (320 kPa as of 11:00 March 20th) Judging from the situation, immediate pressure relief was not required, and monitoring of the pressure continues. (105.4 kPa as of 0:00am April 9th)
- Works for the recovery of external power supply is being carried out. At 22:43 on March 22nd, lighting in the main control room was recovered. On April 2nd, lighting in the turbine building was partially turned on. And the power supply for the fresh water injection to the reactor pressure vessel was switched to the external power supply at 12:18 on April 3rd.
- In order to prepare for transferring the stagnant water on the basement floor of turbine building to the condenser, the water in the condensate storage tank is being transferred to the surge tank of suppression pool water from 17:40 March 28th till around 8:40am March 31st.

Unit 2 as of 6:00am April 9th

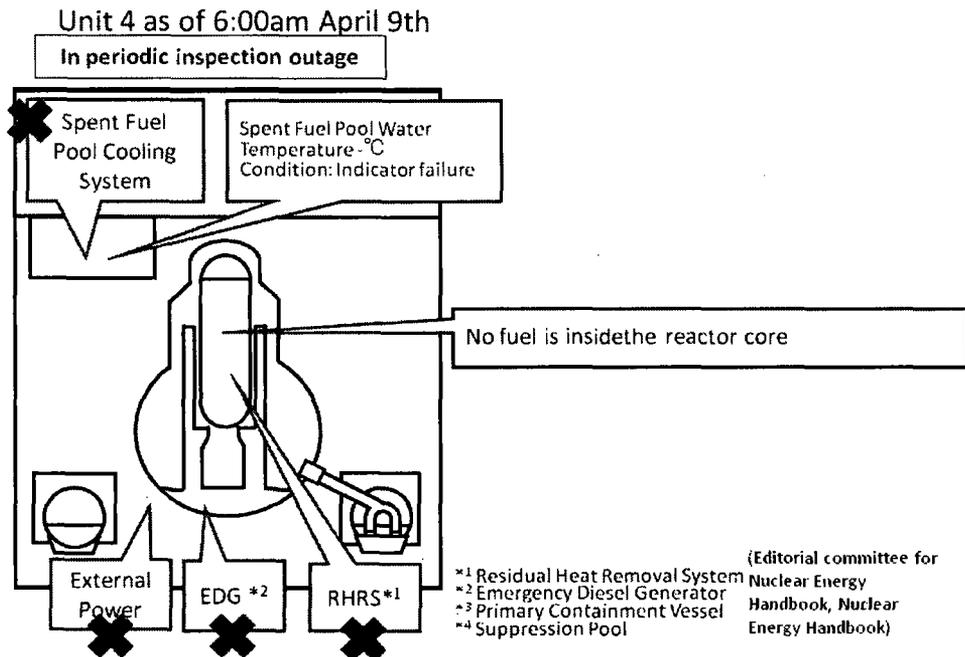


Unit 3 as of 6:00am April 9th



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

- There is no fuel in the reactor pressure vessel due to replacement work of the shroud.
- The temperature of water in the spent fuel pool went up. At 4:08am on March 14th, the temperature in the spent fuel pool of Unit 4 was 84 degree centigrade.
- It was confirmed that a part of wall of the operation floor of the reactor building of Unit 4 was damaged at 6:14am on March 15th. A fire took place at Unit 4 at 9:38am, but the fire was extinguished spontaneously as of 11:00am. And at 5:45am on March 16th, it was reported that a fire occurred at Unit 4; however, no fire was confirmed by TEPCO staff on the ground at 6:15am.
- White smoke was confirmed to generate continuously as of 6:30am April 9th.
- Water spray over the spent fuel pool of Unit 4 by Self-Defense Force was carried out three times from March 20th till March 21st. And water spray using a concrete pump truck had been carried out five times with seawater from March 22nd till March 27th and five times with fresh water from March 30th till April 7th. Injection of seawater to the spent fuel pool via the fuel pool cooling line was carried out on March 25th.
- The power center received electricity on March 22nd. On March 29th, lighting in the main control room was recovered. On April 2nd, lighting in the turbine building was partially turned on.
- From April 2nd, the stagnant water in the main building of radioactive waste treatment facilities was being transferred to the turbine building of Unit 4. As the water level in the vertical portion of the trench for Unit 3 rose from 3 April, by way of precaution, the transfer was suspended notwithstanding that the path of the water was not clear.(9:22am April 4th)



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

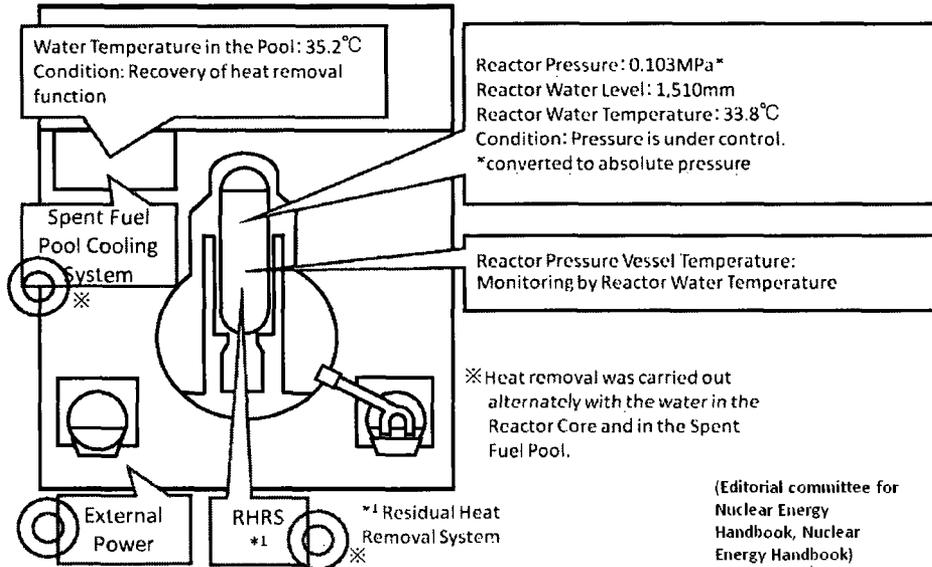
- The emergency generator (B) for Unit 6 was operating and supplying electricity to Unit 5 and Unit 6. Fresh water was being injected into the reactor pressure vessels and the spent fuel pools by make-up water condensate system.
- The pump for residual heat removal system (RHR) (C) for Unit 5 and RHR (B) for Unit 6 started up on March 19th and recovered heat removal function. (power supply: emergency diesel generators for Unit 6)
- Unit 5 was under cold shut down at 14:30 and Unit 6 was under cold shut down at 19:27 on March 20th.
- Unit 5 and Unit 6 received electricity reached to the starting transformer on March 20th. The power supply of Unit 5 and Unit 6 was switched from the emergency diesel generator to the external power supply on March 21st and March 22nd.
- The temporary pump of RHR seawater system (RHRS) for Unit 5 was automatically stopped at 17:24 on March 23rd when the power supply was switched from the temporary to the permanent. Thereafter, repair of the temporary pump of RHRS was completed at 16:14 and cooling was started again at 16:35 on March 24th.
- Power supply for the temporary pumps for RHRS of Unit 6 was switched from the temporary to the permanent at 15:38 and 15:42 on March 25th.
- The temperature of water in the spent fuel pool of Unit 5 and Unit 6 were 35.2 degree centigrade and 24.0 degree centigrade, respectively as of 6:00am April 9th.
- The groundwater with low-level radioactivity in the sub drain pits of Units 5 and 6 (around 1,500t) was started to be discharged through the water discharge canal to the sea at 21:00 April 4th.

***Common Spent Fuel Pool***

- The power supply was started at 15:37 and cooling was also started at 18:05 on March 24th. As of 7:20am April 8th, the water temperature of the pool was around 28 degree centigrade.

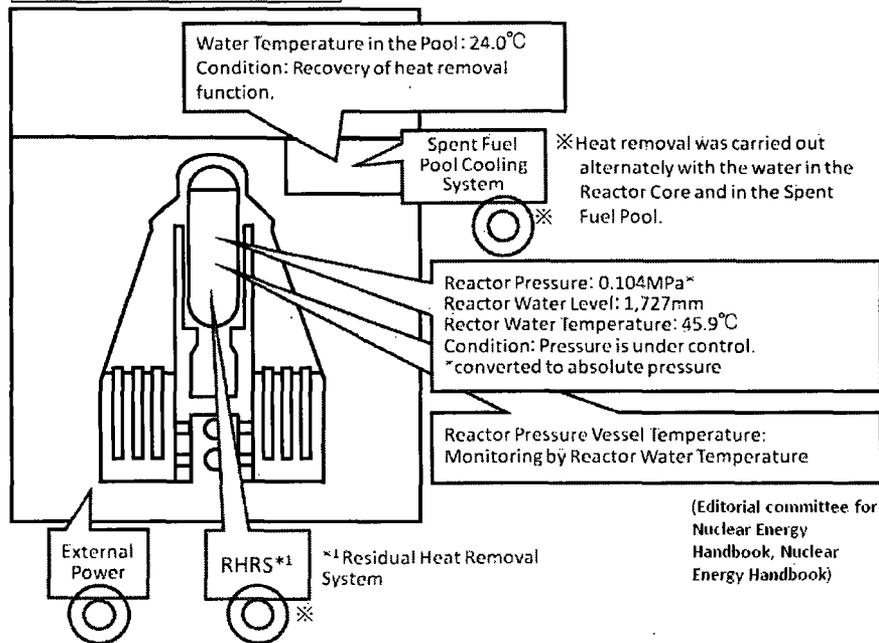
Unit 5 as of 6:00am April 9th

In periodic inspection outage



Unit 6 as of 6:00am April 9th

In periodic inspection outage



### *Other*

- As the result of nuclide analysis at around the southern water discharge canal,  $7.4 \times 10^1 \text{ Bq/cm}^3$  of  $^{131}\text{I}$  (1850.5 times higher than the limit of concentration of water outside the Environmental Monitoring Area) was detected as of 14:30 March 26th. (As the result of measurement on March 29th, it was detected as 3355.0 times higher than the limit in water.)
- As the result of the analysis at the northern water discharge canal,  $4.6 \times 10^1 \text{ Bq/cm}^3$  of  $^{131}\text{I}$  (1262.5 times higher than the limit) was detected as of 14:10 March 29th.
- The water was confirmed to be collected in the vertical parts of the trenches (an underground structure for laying pipes, shaped like a tunnel) outside of the turbine building of Units 1 to 3. The dose rates on the water surface were 0.4 mSv/h of the Unit 1's trench and 1,000 mSv/h of the Unit 2's trench. The rate of the Unit 3's trench could not measure because of the rubble. (Around 15:30 March 27th) The water of the Unit 1's was transferred to the storage tank in the main building of radioactive waste treatment facilities by the temporary pump. Thereafter the water level from the top of the vertical part went down from approximately -0.14m to approximately -1.14m. (From 9:20am till 11:25 March 31st)
- In the samples of soil collected on March 21st and 22nd on the site (at 5 points) of Fukushima I, plutonium 238, 239 and 240 were detected (23:45 March 28th announced by TEPCO). The concentration of the detected plutonium was at the equivalent level of the fallout (radioactive fallout) that was observed in Japan concerning the past atmospheric nuclear testing, i.e. at the equivalent level of the normal condition of environment, and was not at the level of having harmful influence on human body.
- In the samples of soil (7 samples in total) collected on 25 March (at 4 points) and 28 March (at 3 points) on the site of Fukushima Dai-ichi NPS,  $^{238}\text{Pu}$  (Plutonium),  $^{239}\text{Pu}$  (Plutonium) and  $^{240}\text{Pu}$  (Plutonium) were detected (18:30 April 6th announced by TEPCO). The concentration of the detected plutonium was, in the same as the last one (Announced on 28 March), at the equivalent level of the fallout (radioactive fallout) that was observed in Japan concerning the past atmospheric nuclear testing, i.e. at the equivalent level of the normal condition of environment, and was not at the level of having harmful influence on human body.
- On March 28th, the stagnant water was confirmed in the main building of radioactive waste treatment facilities. As the result of analysis of radioactivity, the total amount of the radioactivity  $1.2 \times 10^1 \text{ Bq/cm}^3$  in the controlled area and that of  $2.2 \times 10^1 \text{ Bq/cm}^3$  in the non-controlled area were detected in March 29th.
- The barge (the first ship) of the US armed forces carrying fresh water for cooling reactors, etc. landed in the exclusive port of the power station, being towed by the ships of Japan Maritime Self-Defense Force. (15:42 March 31st) The transfer of fresh water from the barge to the filtrate tank was started. (15:58 April 1st) Thereafter it was suspended due to the malfunction of the hose (16:25 April 1st), but was carried out from 10:20am till 16:40 April 2nd.
- The barge (the second ship) of the US armed forces carrying fresh water for cooling reactors, etc. landed in the exclusive port of the power station, being towed by the ships of Japan Maritime Self-Defense Force. (9:10am April 2nd)
- The spraying for test scattering of anti-scattering agent was carried out in the area of about 500 m<sup>2</sup> on the mountain-side of the Common Pool. (From 15:00 till 16:05 April 1st)
- The freshwater was transferred from the barge (the second ship) of the US armed force to the other barge (the first ship). (From 09:52 till 11:15 April 3rd)

- The stagnant water with low-level radioactivity in the main building of radioactive waste treatment facilities was started to be discharged from the southern side of the water discharge canal to the sea, using the first pump at 19:03 April 4th. Further, at 19:07 on the same day, the discharge using 10 pumps in total was carried out.
- Pumping out the water in the radioactive waste treatment facilities, which was suspended by the earthquake off the coast of Miyagi Prefecture occurred on April 7th, was resumed. (14:30 April 8th)
- The stagnant water with low-level radioactivity in the building of miscellaneous solid waste volume reduction processing was discharged from the southern side of the water discharge canal to the sea using 5 pumps. (From 17:20 April 6th till 18:20 April 7th)
- In order to prevent the contaminated water from outflowing from the exclusive port, the work for stopping water by means of large-sized sandbags was implemented around the seawall on the south side of the NPS. (From 15:00 till 16:30 April 5th)
- The test scattering of antiscattering agent to prevent the radioactive materials on the ground surface from being scattered was carried out on the mountain-side of the Common Pool. (April 5th, 6th and 8th)

#### Current Situation

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

#### Monitoring Data

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

[http://www.mext.go.jp/a\\_menu/saigaijohou/syousai/1303726.htm](http://www.mext.go.jp/a_menu/saigaijohou/syousai/1303726.htm)

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

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

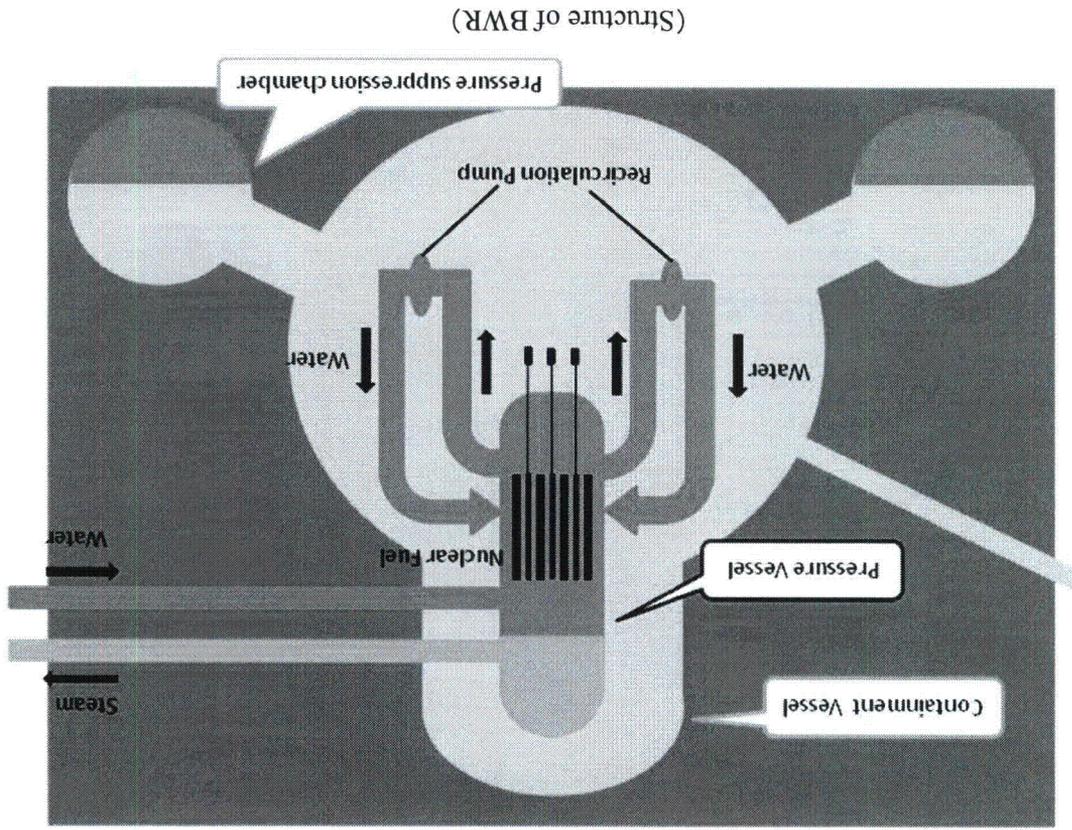
Outline of the Fukushima I Nuclear Power Station



(Fukushima Dai-ichi nuclear power station)

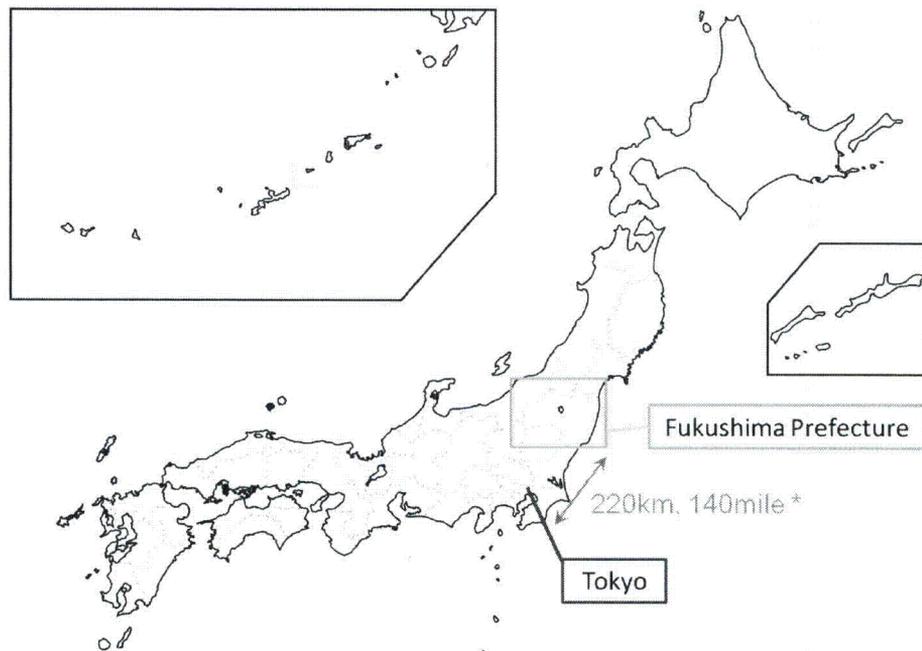


Concrete Building Housing

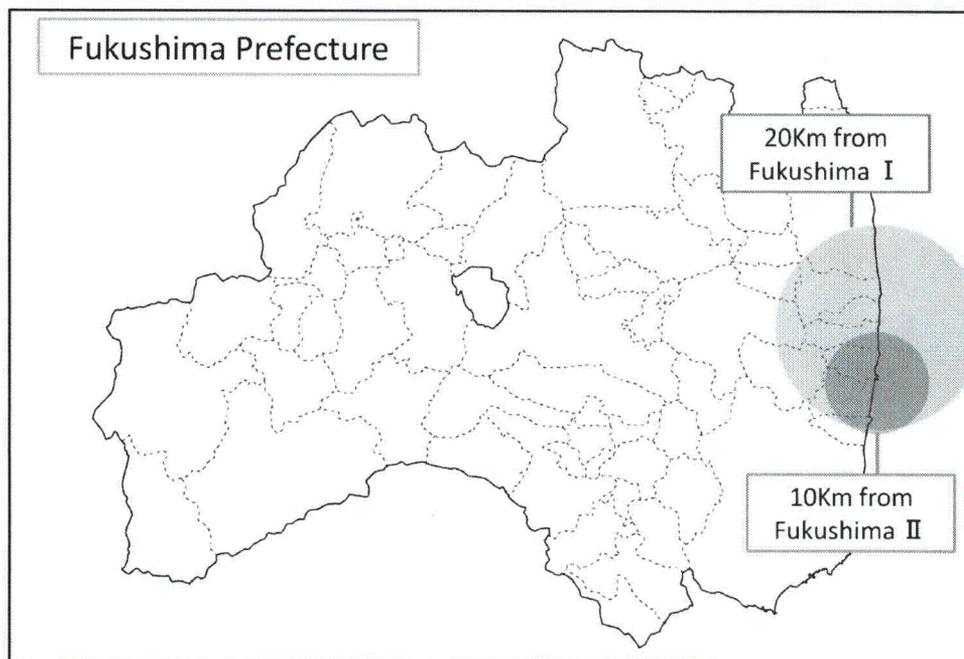


(Structure of BWR)

Location of Fukushima I and II in Japan

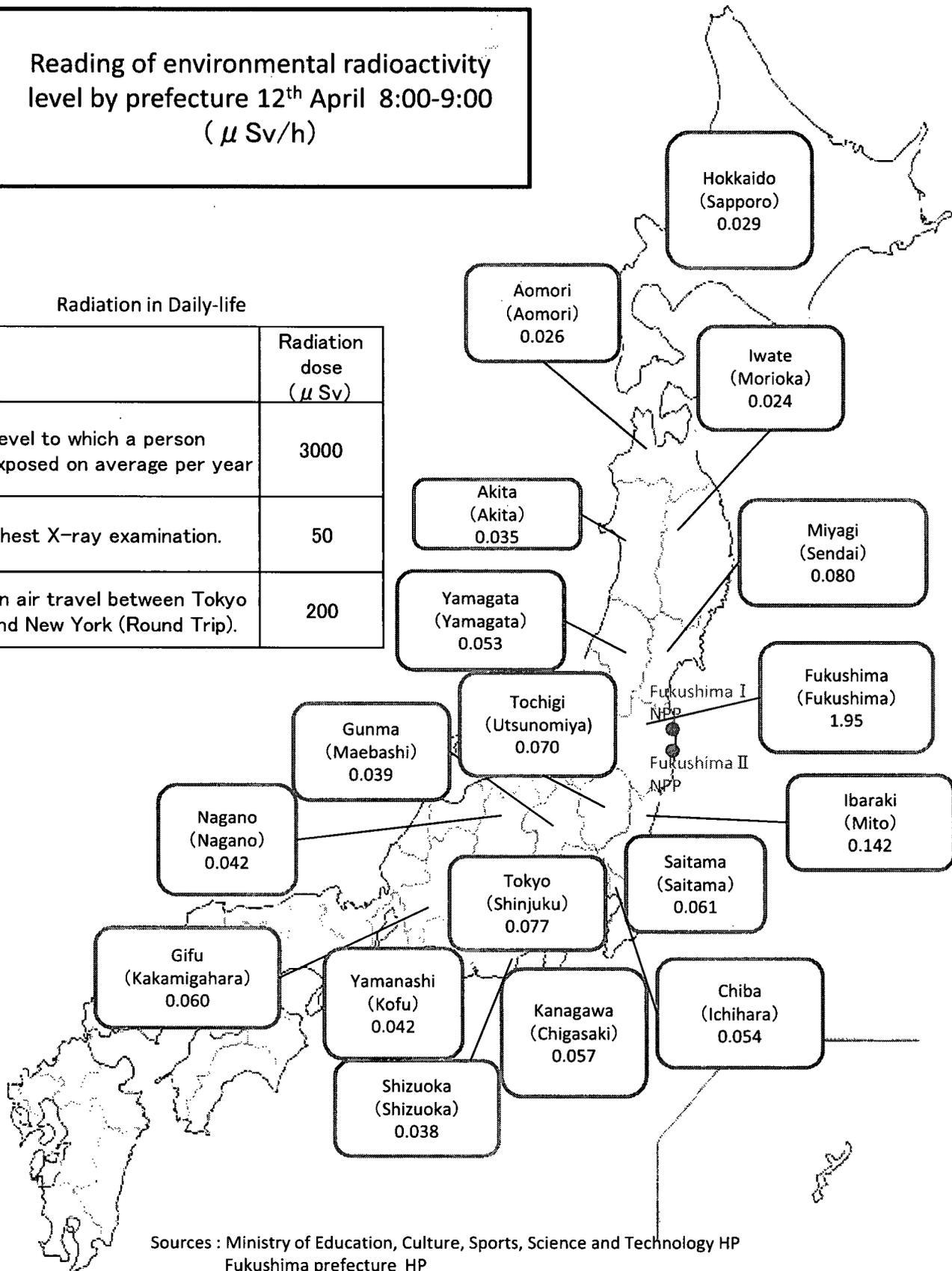


\*Distance between Three Mile Island and Washington D.C. 140km, 88mile



Reading of environmental radioactivity level by prefecture 12<sup>th</sup> April 8:00-9:00 ( $\mu$  Sv/h)

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



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

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**News**

**2 new results for Nuclear Regulatory Commission**

[Spent rods fill U.S. nuke pools, NRC says](#)

USA Today

In the US, more than 75% of the radioactive waste at the nation's 104 commercial nuclear reactors sits in pools, according to the **Nuclear Regulatory Commission**. The rest is in dry storage casks. The pools were intended as temporary rest stops before ...

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[USA Today](#)

[US begins to reconsider nuclear risks in light of Japan crisis](#)

McClatchy Washington Bureau

Germany responded to Japan's nuclear crisis by shutting down its seven oldest reactors for three months for safety checks. The US **Nuclear Regulatory Commission** and the industry say there's no need to do that here. "The next generation will be a safer ...

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**News**

**3** new results for **Nuclear Regulatory Commission**

[Senators Accuse \*\*NRC\*\* Chair Of Unnecessarily Invoking Emergency Powers](#)

Forbes (blog)

By JEFF MCMAHON Senate Republicans today accused **Nuclear Regulatory Commission** Chairman Gregory Jaczko of invoking emergency powers and taking authority away from other members of the **NRC**. Sen. Tom Udall (D-New Mexico) said banks will ultimately decide ...

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[Capps Testifies on Diablo](#)

Santa Barbara Edhat

Lois Capps (CA-23) testified before the Senate Environment and Public Works Committee and expressed her concerns about safety at the Diablo Canyon Nuclear Power Plant. Capps also renewed her call to the **Nuclear Regulatory Commission** to stay the ...

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[Fukushima crisis "static" but not stable-US \*\*NRC\*\*](#)

Reuters Africa

Japanese authorities continue to focus on ensuring they can keep reactors and spent fuel pools cooled at the damaged Fukushima Daiichi plant, said Gregory Jaczko, chairman of the **Nuclear Regulatory Commission**. "The efforts continue to ... transition ...

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**News**

**1** new result for **Nuclear Regulatory Commission**

**NRC** chairman: Reactor situation in Japan is static but not stable

CNN International

By Jim Barnett, CNN Senior Producer Washington (CNN) -- The chairman of the **Nuclear Regulatory Commission** said Tuesday that the situation in the wake of the Japanese nuclear reactor crisis is static but not yet stable. On the day that Japan bumped up ...

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[Inside This Issue:]

- \*\* Fukushima I accident now ranked at Level 7 severity
  - \*\* ERA suspends U processing through July
  - \*\* Spot uranium price appears to inch upward to roughly \$58/lb U3O8
  - \*\* US Senate Energy panel approves Lyons' nomination as DOE nuclear chief
  - \*\* PG&E asks NRC to postpone decision on Diablo Canyon license renewal
  - \*\* Senator reiterates call for more dry storage of spent fuel
  - \*\* IBC Advanced Alloys, Purdue, Texas A&M to research beryllium oxide fuel
- 
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\*\*\* Fukushima I accident now ranked at Level 7 severity

Japan's Nuclear and Industrial Safety Agency on April 12 provisionally

11/11/11

increased its assessment of the Fukushima I accident severity from Level 5 to Level 7, the highest level on the International Nuclear and Radiological Event Scale, or INES, the International Atomic Energy Association reported April 12. The action puts the ongoing crisis at Fukushima I on the same severity level as the 1986 Chernobyl accident, the only other nuclear power plant accident that has been rated Level 7.

The increased INES ranking was based on an analysis of the total radiological material released by the units since the March 11 magnitude 9.0 earthquake and tsunami inundated the plant, causing a loss of power used to cool the power reactors' cores and spent fuel pools, the IAEA reported. The safety agency's revised accident severity ranking was based on Japan's Nuclear Energy Safety Organization calculation that the units to date have released 630,000 terabecquerels of iodine-131 and cesium-137 combined, the IAEA said.

These emissions equal about 10% of those from the Chernobyl accident, the IAEA reported April 12.

Meanwhile, the Japanese government has begun evaluating daily radionuclide tests of soil, air and vegetation samples in an area within a roughly 20-kilometer to 30-km radius (12- to 18-mile radius) of the Fukushima I plant to determine which communities should be evacuated due to potential radiation risks, IAEA reported April 12. It said evacuations will be done over the next month or so. The government last month ordered people living within a roughly 20-km radius of the plant to relocate.

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\*\*\* ERA suspends U processing through July

Energy Resources of Australia has extended the suspension of uranium processing operations at its Ranger mine from the end of April through July.

The move, caused by heavy rainfall, is expected to cut 2011 uranium production from about 3,793 metric tons to 2,400 mt U3O8, the company said April 12. In 2009, ERA produced 5,240 mt U3O8 at the Ranger mine.

The uranium processing suspension means ERA, a Rio Tinto-owned company, will have to buy uranium to meet its 2011 sales contracts, which total 4,500 mt, although the company said the majority of those purchases have already been made.

ERA said it now expects a loss of A\$30 million to \$50 million (US\$31.64 million-\$52.73 million) in first-half 2011, compared to a net profit of \$22.7 million in first-half 2010.

Mining operations have been severely hampered by above-average rainfall that limited access to higher-grade ore at the bottom of the mine. ERA does not expect to obtain access to the high grade ore until at least late 2011, the company said.

A 12-week suspension of uranium processing operations began January 28 to help ensure that levels in the Tailings Storage Facility remained below the authorized operating limit throughout the wet season, which typically runs through the end of April.

Ranger recently exceeded the water level at which operations are able to recommence, the company said,

forcing the continued suspension of operations.

ERA said it was conducting a review of ERA's operations and future projects.

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\*\*\* Spot uranium price appears to inch upward to roughly \$58/lb U3O8

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In her April 8 letter, Feinstein cited a 2006 report by the National Research Council, part of the National Academy of Sciences, titled "Safety and Security of Commercial Spent Nuclear Fuel Storage." Most, if not all, of the US nuclear power plants are expected to eventually use storage casks to supplement the storage capacity of their spent fuel pools.

The NAS report said that storing spent fuel in casks at a secure site would put fewer spent fuel rods at risk from a terrorist attack or accident and would make it easier to respond in the event a cask or group of casks is damaged. Spent fuel in a cask is air cooled.

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Nuclear News Flashes

Tuesday, Apr 12, 2011

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\*\*\* Fukushima I accident now ranked at Level 7 severity

Japan's Nuclear and Industrial Safety Agency on April 12 provisionally increased its assessment of the Fukushima I accident severity from Level 5 to Level 7, the highest level on the International Nuclear and Radiological Event Scale, or INES, the International Atomic Energy Association reported April 12. The action puts the ongoing crisis at Fukushima I on the same severity level as the 1986 Chernobyl accident, the only other nuclear power plant accident that has been rated Level 7.

The increased INES ranking was based on an analysis of the total radiological material released by the units since the March 11 magnitude 9.0 earthquake and tsunami inundated the plant, causing a loss of power used to cool the power reactors' cores and spent fuel pools, the IAEA reported. The safety agency's revised accident severity ranking was based on Japan's Nuclear Energy Safety Organization calculation that the units to date have released 630,000 terabecquerels of iodine-131 and cesium-137 combined, the IAEA said.

These emissions equal about 10% of those from the Chernobyl accident, the IAEA reported April 12.

Meanwhile, the Japanese government has begun evaluating daily radionuclide tests of soil, air and vegetation samples in an area within a roughly 20-kilometer to 30-km radius (12- to 18-mile radius) of the Fukushima I plant to determine which communities should be evacuated due to potential radiation risks, IAEA reported April 12. It said evacuations will be done over the next month or so. The government last month ordered people living within a roughly 20-km radius of the plant to relocate.

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\*\*\* ERA suspends U processing through July

Energy Resources of Australia has extended the suspension of uranium processing operations at its Ranger mine from the end of April through July.

The move, caused by heavy rainfall, is expected to cut 2011 uranium production from about 3,793 metric tons to 2,400 mt U3O8, the company said April 12. In 2009, ERA produced 5,240 mt U3O8 at the Ranger mine.

The uranium processing suspension means ERA, a Rio Tinto-owned company, will have to buy uranium to meet its 2011 sales contracts, which total 4,500 mt, although the company said the majority of those purchases have already been made.

ERA said it now expects a loss of A\$30 million to \$50 million (US\$31.64 million-\$52.73 million) in first-half 2011, compared to a net profit of \$22.7 million in first-half 2010.

Mining operations have been severely hampered by above-average rainfall that limited access to higher-grade ore at the bottom of the mine. ERA does not expect to obtain access to the high grade ore until at least late 2011, the company said.

A 12-week suspension of uranium processing operations began January 28 to help ensure that levels in the Tailings Storage Facility remained below the authorized operating limit throughout the wet season, which typically runs through the end of April.

Ranger recently exceeded the water level at which operations are able to re-commence, the company said, forcing the continued suspension of operations.

ERA said it was conducting a review of ERA's operations and future projects.

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- \*\* Point Beach uprate clears NRC environmental review
- \*\* Westinghouse announces executive appointments
- \*\* Reactor report

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\*\*\* Criteria for EU nuclear stress tests to be put out for comment next week

Criteria for planned EU stress tests of nuclear power plants will be put out for public comment next week, the chairman of the European Nuclear Safety Regulators' Group, Andrej Stritar, said April 14

The tests are to be conducted on all EU nuclear power plants to determine their safety margins when faced with extreme challenges, in light of the ongoing accident at Japan's Fukushima I nuclear power plant. Test results are expected at year-end.

Stritar said on the sidelines of a conference in Vienna that the Western European Nuclear Safety Regulators Association, which is working out the details of the tests, will post the document on its website ([www.wenra.org](http://www.wenra.org)) "for all stakeholders to endorse it" or make comments.

The final document will be submitted to Ensreg at the regulators group's meeting May 12. Stritar said the next step after that is planned to be a "wider discussion" at the political level of the methodology for the stress tests before the tests are launched by the EU Council in June.

EU Energy Commissioner Guenther Oettinger had earlier said he wanted to convene a meeting involving regulators from EU countries, neighboring countries and even the US and other important nuclear countries before the May 12 Ensreg meeting to get broad input into the drafting of the stress test criteria. But Stritar said the plan now is to get any additional input after Ensreg approves the document.

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\*\*\* Nuclear safety treaty parties to review Fukushima lessons in 2012

Not enough is known about the accident at Japan's Fukushima I nuclear power plant to draw all the lessons learned and apply them worldwide, delegates to the Convention on Nuclear Safety review meeting in Vienna said in a summary report approved at the close of the 14-day meeting April 14.

They agreed to hold a special meeting in August 2012 about the Fukushima I accident. At the meeting, contracting parties will report on and debate measures taken in response to the Fukushima I events and decide whether the convention itself, which will then be 16 years old, needs revision. CNS members include all countries with operating nuclear power plants.

Bill Borchardt, executive director for operations of the US NRC and vice chairman of the CNS review meeting, said at the closing press conference that it would take up to 10 years to learn all the lessons from the Japanese accident.

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CNS parties said in their summary report that "many contracting parties reported difficulties to provide the media and the public with prompt and reliable information" on the accident as it was developing. They said the media's demands for immediate information on the events had "often led to speculative and unbalanced reporting."

Borchardt said the Japanese delegation to the CNS had provided all the information available on the accident, but "there is still a great deal to be learned on the details, and it will be quite some time until this information is available."

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\*\*\* Tepco to take measures aimed at ensuring power supply

Tokyo Electric Power Co. will relocate standby diesel power generators and a pump control switch panel to higher ground near its Fukushima I nuclear power plant April 15, as "countermeasures" to ensure cooling of units 1, 2 and 3 in case future earthquake-triggered tsunamis interrupt grid-supplied electricity, the utility said April 14.

Tepco also said it plans to begin construction of external power lines April 19 to mitigate the potential for a station blackout.

Tepco is taking the measures to prevent a recurrence of a total power loss at the plant, such as a 50-minute one April 11 after a magnitude 6.6 earthquake, NHK reported. The earthquake disrupted grid-supplied power and briefly halted the pumping of cooling water to the three units' reactors.

Tepco will move the equipment to an area about 30 meters (98.4 feet) above sea level, along with fire trucks and trucks with portable generators, the Japan Atomic Industrial Forum said April 14.

Toshiba President Norio Sasaki said April 14 his company has submitted a plan to Tepco at the request of Japanese Prime Minister Naoto Ka for decommissioning damaged Fukushima I units over a 10-year period, NHK reported. It did not say how many units would be affected. The three-phase plan would first require several months of work to stabilize damaged reactors and spent fuel pools, and prevent the further release of radioactive materials into the air and water.

Over the next five years or so, special cranes would be erected to remove nuclear fuel rods from the reactors and spent fuel pools, NHK said. Another five years would be required to dismantle the reactors and dispose of the highly radioactive wastes at a still-to-be-determined facility.

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\*\*\* House bill would impose new restrictions on nuclear trade pacts

Countries seeking civilian nuclear trade agreements with the US would have to forgo uranium enrichment and reprocessing activities and would be required to shield US suppliers of nuclear power reactors from liability in the event of an accident, under a bill approved April 14 by the House Committee on Foreign Affairs.

The bill (H.R. 1280) also would require countries seeking such agreements to comply with United Nations Security Council Resolution 1540, which requires controls be established for the export of nuclear materials and annual reports be made to a UN committee monitoring compliance.

No date has been set for full House consideration and there is no Senate companion bill.

The bill's ban on fuel enrichment and reprocessing, along with nuclear materials export controls, were contained in an agreement the US signed last year with the United Arab Emirates. US President Barack Obama's administration has said it would seek to include these provisions in future civilian nuclear trade agreements.

The bill would amend section 123 of the 1954 Atomic Energy Act to include the nonproliferation safeguards that are in the UAE accord. It also would require the president to submit such nuclear trade agreements to the House and Senate, which would have to approve them by a simple majority vote. Current law stipulates that 123 agreements take effect automatically 90 legislative days after the president submits the agreement to Congress, unless it adopts a disapproval resolution.

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\*\*\* International nuclear safety bill approved by committee for House vote

The House Committee on Foreign Affairs approved April 14 an international nuclear safety bill for a vote by the full House of Representatives.

The Furthering International Nuclear Safety Act of 2011, H.R. 1326, "directs the State Department to use and strengthen existing mechanisms for the international sharing of nuclear safety information and best practices" and to encourage nations to join the 1994 Convention on Nuclear Safety, according to an April 14 statement by the office of Representative Jeff Fortenberry, a Nebraska Republican. Fortenberry introduced the bill March 17.

The Senate version of the bill, S. 640, is awaiting action by the Senate Foreign Relations Committee. It was introduced last month by Senators Daniel Akaka of Hawaii and Thomas Carper of Delaware, both Democrats.

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\*\*\* Poll finds upturn in Chilean opposition to nuclear power

Opposition to nuclear power rose sharply in Chile following the Fukushima I nuclear power plant accident in Japan, according to a new survey.

About 84% of Chileans surveyed said they oppose the construction of nuclear power units in their country, according to an Ipsos poll released April 13. In the survey, 12% said they supported nuclear power in Chile, while 4% did not have an opinion or did not answer.

Chile does not have any operating nuclear power plants but the government has said it plans to decide in the next several years on whether to embark on a nuclear program.

Opposition increased from a similar survey in October 2009, when 55% of respondents opposed nuclear power, with 37% supporting it, according to Ipsos.

Chilean public opinion company Ipsos conducted the poll, with results based on a telephone survey of 912 people from March 15-April 3. The margin of error is 3 percentage points, Ipsos said.

Chileans ages 18 to 24 were twice as likely as those over 40 to support nuclear energy, the survey said.

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\*\*\* Fukushima I accident 'devastating' to nuclear industry: Worldwatch report

The consequences of the ongoing Fukushima I accident "will be devastating" for the international nuclear industry, according to a draft report released April 13 by Worldwatch Institute, a Washington-based environmental research organization.

But even before the March 11 accident began, the industry has been unable to stop the "slow decline" of nuclear energy, the report said. "Not enough new units are coming online, and the world's reactor fleet is aging quickly," it said. "Moreover, it is now evident that nuclear power development cannot keep up with the pace of its renewable energy competitors."

The Fukushima I accident "is likely to accelerate the decline" of the nuclear industry, it said.

The lead author of the report is Mycle Schneider, a Paris-based consultant who has worked on previous reports over the past few years, including for the Green group of the European Parliament, that also concluded nuclear power was on the decline. The report was released April 13 at an event in Berlin hosted by the Heinrich Boll Foundation, which describes itself as "part of the Green political movement."

The report is at [www.worldwatch.org/system/files/NuclearStatusReport2011\\_prel.pdf](http://www.worldwatch.org/system/files/NuclearStatusReport2011_prel.pdf).

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\*\*\* TVA board postpones decision on completing Bellefonte-1

The Tennessee Valley Authority board of directors April 14 postponed a decision on completing the Bellefonte-1 nuclear unit in Alabama, saying it will study the lessons of the Fukushima I nuclear accident in Japan before deciding whether to go forward.

TVA had previously said it planned to make a decision on the completion of Bellefonte-1 this spring. Last year, TVA approved \$248 million to be spent in fiscal 2011 toward advancing the completion of Bellefonte-1. The 2011 fiscal year ends September 30.

TVA will continue with engineering and ordering of some long-lead time components for the unit, spokeswoman Barbara Martocci said April 14. No decision on whether to proceed with construction will be made until a TVA task force reviewing lessons from the Fukushima I accident completes its review, she said.

TVA Chief Operating Officer Bill McCollum said in a statement April 14 that the federal utility "will incorporate lessons learned from Japan into the operations, designs and features of its nuclear plants,

including those under construction and projects that are under consideration."

Board member Tom Gilliland said during the board's April 14 meeting that TVA could budget money in fiscal 2012 to cancel the Bellefonte-1 completion project if it decides not to go ahead.

TVA staff concluded last year that completing the Bellefonte-1 Babcock & Wilcox reactor, on which work was stopped in 1988, is preferred over construction of a Westinghouse AP1000 reactor at the site.

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\*\*\* Ostendorff to be nominated for second term at NRC, says White House

President Obama intends to nominate William Ostendorff for a second term as an NRC commissioner, the White House said April 14.

Ostendorff was nominated by Obama to replace former NRC Chairman Dale Klein, who resigned in March 2010. His current term expires June 30. Full terms on the commission are for five years.

Some members of the US Congress, notably Senator James Inhofe of Oklahoma, the senior Republican on the subcommittee that oversees the NRC, have called on Obama to re-appoint Ostendorff and Commissioner Kristine Svinicki, whose current term expires June 30, 2012.

Prior to joining the commission, Ostendorff was director of the National Academies' Committee on Science, Engineering and Public Policy and director of the academies' Board on Global Science and Technology.

Ostendorff joined the National Academies after working as principal deputy administrator at the National Nuclear Security Administration from April 2007 to April 2009. Ostendorff retired in 2002 from the US Navy, where he had commanded a submarine squadron and, before that, the nuclear-powered attack submarine USS Norfolk.

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\*\*\* Groups petition NRC to suspend new reactor licensing

A coalition of 45 groups and individuals has petitioned the NRC to immediately suspend licensing of new nuclear power reactors and license renewals for operating reactors until the agency conducts a thorough examination of lessons from the ongoing accident at the Fukushima I plant in Japan.

Several of the groups are already involved in challenges to licensing of new plants and/or license renewals for operating plants. Groups signing the petition include Beyond Nuclear, Blue Ridge Environmental Defense League, and Nuclear Information and Resource Service.

The petitioners said during a press teleconference April 14 that the agency's reviews should be supplemented by an investigation by a presidential commission, similar to the Kemeny Commission, named after its chairman, that investigated the 1979 accident at Three Mile Island-2.

Diane Curran, a partner at the Harmon Curran law firm who is the attorney representing the petitioners, said the NRC is legally obligated under the National Environmental Policy Act to complete its review

of the Fukushima accident "before it allows another reactor to operate."

The petition is at [www.nuclearbailout.org](http://www.nuclearbailout.org).

NRC announced March 21 it would conduct a 90-day review of lessons learned from the Fukushima accident, followed by a six-month review that would begin when more solid information becomes available.

NRC Chairman Gregory Jaczko said last month he expects those reviews will be completed about the same time the first construction permit-operating license application reviews are winding up this summer or fall, but "if information tells us we need to make changes to our licensing process, we will do that."

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\*\*\* Nuclear energy fares 'relatively well' under CR, industry lobbyist says

The director of governmental affairs for the Nuclear Energy Institute said April 14 she believes nuclear energy fared "relatively well" under the funding agreement lawmakers reached April 8 for the remainder of fiscal 2011.

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prepared by NRC staff on the application. The board recommended to NRC Chairman Greg Jaczko in a March 23 letter that the application be approved.

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Nuclear News Flashes

Thursday, Apr 14, 2011

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[Inside This Issue:]

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- \*\* Nuclear safety treaty parties to review Fukushima lessons in 2012
- \*\* Tepco to take measures aimed at ensuring power supply
- \*\* House bill would impose new restrictions on nuclear trade pacts
- \*\* International nuclear safety bill approved by committee for House vote
- \*\* Poll finds upturn in Chilean opposition to nuclear power
- \*\* Fukushima I accident 'devastating' to nuclear industry: Worldwatch report
- \*\* TVA board postpones decision on completing Bellefonte-1
- \*\* Ostendorff to be nominated for second term at NRC, says White House
- \*\* Groups petition NRC to suspend new reactor licensing
- \*\* Nuclear energy fares 'relatively well' under CR, industry lobbyist says
- \*\* Point Beach uprate clears NRC environmental review
- \*\* Westinghouse announces executive appointments
- \*\* Reactor report

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\*\*\* Criteria for EU nuclear stress tests to be put out for comment next week

Criteria for planned EU stress tests of nuclear power plants will be put out for public comment next week, the chairman of the European Nuclear Safety Regulators' Group, Andrej Stritar, said April 14

The tests are to be conducted on all EU nuclear power plants to determine their safety margins when faced with extreme challenges, in light of the ongoing accident at Japan's Fukushima I nuclear power plant. Test results are expected at year-end.

Stritar said on the sidelines of a conference in Vienna that the Western European Nuclear Safety Regulators Association, which is working out the details of the tests, will post the document on its website ([www.wenra.org](http://www.wenra.org)) "for all stakeholders to endorse it" or make comments.

The final document will be submitted to Ensreg at the regulators group's meeting May 12. Stritar said the next step after that is planned to be a "wider discussion" at the political level of the methodology for the stress tests before the tests are launched by the EU Council in June.

EU Energy Commissioner Guenther Oettinger had earlier said he wanted to convene a meeting involving regulators from EU countries, neighboring countries and even the US and other important nuclear countries before the May 12 Ensreg meeting to get broad input into the drafting of the stress test criteria. But Stritar said the plan now is to get any additional input after Ensreg approves the document.

---

\*\*\* Nuclear safety treaty parties to review Fukushima lessons in 2012

Not enough is known about the accident at Japan's Fukushima I nuclear power plant to draw all the lessons learned and apply them worldwide, delegates to the Convention on Nuclear Safety review meeting in Vienna said in a summary report approved at the close of the 14-day meeting April 14.

They agreed to hold a special meeting in August 2012 about the Fukushima I accident. At the meeting, contracting parties will report on and debate measures taken in response to the Fukushima I events and decide whether the convention itself, which will then be 16 years old, needs revision. CNS members include all countries with operating nuclear power plants.

Bill Borchardt, executive director for operations of the US NRC and vice chairman of the CNS review meeting, said at the closing press conference that it would take up to 10 years to learn all the lessons from the Japanese accident.

CNS parties said in their summary report that "many contracting parties reported difficulties to provide the media and the public with prompt and reliable information" on the accident as it was developing. They said the media's demands for immediate information on the events had "often led to speculative and unbalanced reporting."

Borchardt said the Japanese delegation to the CNS had provided all the information available on the accident, but "there is still a great deal to be learned on the details, and it will be quite some time until this information is available."

---

\*\*\* Tepco to take measures aimed at ensuring power supply

Tokyo Electric Power Co. will relocate standby diesel power generators and a pump control switch panel to higher ground near its Fukushima I nuclear power plant April 15, as "countermeasures" to ensure cooling of units 1, 2 and 3 in case future earthquake-triggered tsunamis interrupt grid-supplied electricity, the utility said April 14.

Tepco also said it plans to begin construction of external power lines April 19 to mitigate the potential for a station blackout.

Tepco is taking the measures to prevent a recurrence of a total power loss at the plant, such as a 50-minute one April 11 after a magnitude 6.6 earthquake, NHK reported. The earthquake disrupted grid-supplied power and briefly halted the pumping of cooling water to the three units' reactors.

Tepco will move the equipment to an area about 30 meters (98.4 feet) above sea level, along with fire trucks and trucks with portable generators, the Japan Atomic Industrial Forum said April 14.

Toshiba President Norio Sasaki said April 14 his company has submitted a plan to Tepco "at the request of Japanese Prime Minister Naoto Ka" for decommissioning damaged Fukushima I units over a 10-year period, NHK reported. It did not say how many units would be affected. The three-phase plan would first require several months of work to stabilize damaged reactors and spent fuel pools, and prevent the further release of radioactive materials into the air and water.

Over the next five years or so, special cranes would be erected to remove nuclear fuel rods from the reactors and spent fuel pools, NHK said. Another five years would be required to dismantle the reactors and dispose of the highly radioactive wastes at a still-to-be-determined facility.

---

\*\*\* House bill would impose new restrictions on nuclear trade pacts

Countries seeking civilian nuclear trade agreements with the US would have to forgo uranium enrichment and reprocessing activities and would be required to shield US suppliers of nuclear power reactors from liability in the event of an accident, under a bill approved April 14 by the House Committee on Foreign Affairs.

The bill (H.R. 1280) also would require countries seeking such agreements to comply with United Nations Security Council Resolution 1540, which requires controls be established for the export of nuclear materials and annual reports be made to a UN committee monitoring compliance.

No date has been set for full House consideration and there is no Senate companion bill.

The bill's ban on fuel enrichment and reprocessing, along with nuclear materials export controls, were contained in an agreement the US signed last year with the United Arab Emirates. US President Barack Obama's administration has said it would seek to include these provisions in future civilian nuclear trade agreements.

The bill would amend section 123 of the 1954 Atomic Energy Act to include the nonproliferation safeguards that are in the UAE accord. It also would require the president to submit such nuclear trade agreements to the House and Senate, which would have to approve them by a simple majority vote. Current law stipulates that 123 agreements take effect automatically 90 legislative days after the president submits the agreement to Congress, unless it adopts a disapproval resolution.

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\*\*\* International nuclear safety bill approved by committee for House vote

The House Committee on Foreign Affairs approved April 14 an international nuclear safety bill for a vote by the full House of Representatives.

The Furthering International Nuclear Safety Act of 2011, H.R. 1326, "directs the State Department to use and strengthen existing mechanisms for the international sharing of nuclear safety information and best practices" and to encourage nations to join the 1994 Convention on Nuclear Safety, according to an April 14 statement by the office of Representative Jeff Fortenberry, a Nebraska Republican. Fortenberry introduced the bill March 17.

The Senate version of the bill, S. 640, is awaiting action by the Senate Foreign Relations Committee. It was introduced last month by Senators Daniel Akaka of Hawaii and Thomas Carper of Delaware, both Democrats.

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**\*\*\* Poll finds upturn in Chilean opposition to nuclear power**

Opposition to nuclear power rose sharply in Chile following the Fukushima I nuclear power plant accident in Japan, according to a new survey.

About 84% of Chileans surveyed said they oppose the construction of nuclear power units in their country, according to an Ipsos poll released April 13. In the survey, 12% said they supported nuclear power in Chile, while 4% did not have an opinion or did not answer.

Chile does not have any operating nuclear power plants but the government has said it plans to decide in the next several years on whether to embark on a nuclear program.

Opposition increased from a similar survey in October 2009, when 55% of respondents opposed nuclear power, with 37% supporting it, according to Ipsos.

Chilean public opinion company Ipsos conducted the poll, with results based on a telephone survey of 912 people from March 15-April 3. The margin of error is 3 percentage points, Ipsos said.

Chileans ages 18 to 24 were twice as likely as those over 40 to support nuclear energy, the survey said.

---

**\*\*\* Fukushima I accident 'devastating' to nuclear industry: Worldwatch report**

The consequences of the ongoing Fukushima I accident "will be devastating" for the international nuclear industry, according to a draft report released April 13 by Worldwatch Institute, a Washington-based environmental research organization.

But even before the March 11 accident began, the industry has been unable to stop the "slow decline" of nuclear energy, the report said. "Not enough new units are coming online, and the world's reactor fleet is aging quickly," it said. "Moreover, it is now evident that nuclear power development cannot keep up with the pace of its renewable energy competitors."

The Fukushima I accident "is likely to accelerate the decline" of the nuclear industry, it said.

The lead author of the report is Mycle Schneider, a Paris-based consultant who has worked on previous reports over the past few years, including for the Green group of the European Parliament, that also concluded nuclear power was on the decline. The report was released April 13 at an event in Berlin hosted by the Heinrich Boll Foundation, which describes itself as "part of the Green political movement."

The report is at [www.worldwatch.org/system/files/NuclearStatusReport2011\\_prel.pdf](http://www.worldwatch.org/system/files/NuclearStatusReport2011_prel.pdf).

---

**\*\*\* TVA board postpones decision on completing Bellefonte-1**

The Tennessee Valley Authority board of directors April 14 postponed a decision on completing the Bellefonte-1 nuclear unit in Alabama, saying it will study the lessons of the Fukushima I nuclear accident in Japan before deciding whether to go forward.

TVA had previously said it planned to make a decision on the completion of Bellefonte-1 this spring. Last year, TVA approved \$248 million to be spent in fiscal 2011 toward advancing the completion of Bellefonte-1. The 2011 fiscal year ends September 30.

TVA will continue with engineering and ordering of some long-lead time components for the unit, spokeswoman Barbara Martocci said April 14. No decision on whether to proceed with construction will be made until a TVA task force reviewing lessons from the Fukushima I accident completes its review, she said.

TVA Chief Operating Officer Bill McCollum said in a statement April 14 that the federal utility "will incorporate lessons learned from Japan into the operations, designs and features of its nuclear plants, including those under construction and projects that are under consideration."

Board member Tom Gilliland said during the board's April 14 meeting that TVA could budget money in fiscal 2012 to cancel the Bellefonte-1 completion project if it decides not to go ahead.

TVA staff concluded last year that completing the Bellefonte-1 Babcock & Wilcox reactor, on which work was stopped in 1988, is preferred over construction of a Westinghouse AP1000 reactor at the site.

---

\*\*\* Ostendorff to be nominated for second term at NRC, says White House

President Obama intends to nominate William Ostendorff for a second term as an NRC commissioner, the White House said April 14.

Ostendorff was nominated by Obama to replace former NRC Chairman Dale Klein, who resigned in March 2010. His current term expires June 30. Full terms on the commission are for five years.

Some members of the US Congress, notably Senator James Inhofe of Oklahoma, the senior Republican on the subcommittee that oversees the NRC, have called on Obama to re-appoint Ostendorff and Commissioner Kristine Svinicki, whose current term expires June 30, 2012.

Prior to joining the commission, Ostendorff was director of the National Academies' Committee on Science, Engineering and Public Policy and director of the academies' Board on Global Science and Technology. Ostendorff joined the National Academies after working as principal deputy administrator at the National Nuclear Security Administration from April 2007 to April 2009. Ostendorff retired in 2002 from the US Navy, where he had commanded a submarine squadron and, before that, the nuclear-powered attack submarine USS Norfolk.

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\*\*\* Groups petition NRC to suspend new reactor licensing

A coalition of 45 groups and individuals has petitioned the NRC to immediately suspend licensing of new nuclear power reactors and license renewals for operating reactors until the agency conducts a thorough examination of lessons from the ongoing accident at the Fukushima I plant in Japan.

Several of the groups are already involved in challenges to licensing of new plants and/or license renewals for operating plants. Groups signing the petition include Beyond Nuclear, Blue Ridge Environmental Defense League, and Nuclear Information and Resource Service.

The petitioners said during a press teleconference April 14 that the agency's reviews should be supplemented by an investigation by a presidential commission, similar to the Kemeny Commission, named after its chairman, that investigated the 1979 accident at Three Mile Island-2.

Diane Curran, a partner at the Harmon Curran law firm who is the attorney representing the petitioners, said the NRC is legally obligated under the National Environmental Policy Act to complete its review of the Fukushima accident "before it allows another reactor to operate."

The petition is at [www.nuclearbailout.org](http://www.nuclearbailout.org).

NRC announced March 21 it would conduct a 90-day review of lessons learned from the Fukushima accident, followed by a six-month review that would begin when more solid information becomes available.

NRC Chairman Gregory Jaczko said last month he expects those reviews will be completed about the same time the first construction permit-operating license application reviews are winding up this summer or fall, but "if information tells us we need to make changes to our licensing process, we will do that."

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**From:** [RST01 Hoc](#)  
**To:** [Brenner, Eliot](#); [Hayden, Elizabeth](#)  
**Subject:** FW: Request from OCA on WSJ Article  
**Date:** Tuesday, April 12, 2011 3:56:31 PM

---

Mr. Brenner,

Please see below paragraph developed by the RST. If you have any questions please give us a call at the HOO Reactor Safety Team.

Thanks,  
Antonios Zoulis  
Severe Accident Analyst

---

**From:** RST09 Hoc  
**Sent:** Tuesday, April 12, 2011 3:52 PM  
**To:** RST01 Hoc  
**Subject:** Request from OCA on WSJ Article

Eliot,

Regarding the statement from WSJ:

*Still, Fukushima Daiichi operator Tokyo Electric Power Co. warned Tuesday that since the Fukushima Daiichi plant is still releasing radioactive materials, the total level of radiation released could eventually exceed that of Chernobyl, a spokesman said.*

Considering that potentially three reactors and two spent fuel pools have damaged fuel, the quantity of radioactive material present may exceed that of Chernobyl. However, the duration and magnitude of releases of radioactive material cannot be accurately estimated. Certainly, the magnitude of the sudden Chernobyl release has not occurred at Fukushima Daiichi. Measures are being taken to suppress and control the release of materials but the potential for continued release still exists.

HHHHH/172

**From:** [Hayden, Elizabeth](#)  
**To:** [WebContractor Resource](#)  
**Subject:** RE: Addition to Japan page  
**Date:** Tuesday, April 12, 2011 5:19:00 PM

---

Fine. Need to add the Chairman's testimony from today to the Japan page above Marty's testimony.

*Beth Hayden*  
*Senior Advisor*  
*Office of Public Affairs*  
*U.S. Nuclear Regulatory Commission*  
*--- Protecting People and the Environment*  
*301-415-8202*  
*elizabeth.hayden@nrc.gov*

**From:** WebContractor Resource  
**Sent:** Tuesday, April 12, 2011 4:51 PM  
**To:** Hayden, Elizabeth  
**Cc:** WebWork Resource  
**Subject:** RE: Addition to Japan page

Good Afternoon Beth,

Please review and approve for live posting.

<http://webwork.nrc.gov:300/japan/japan-info.html>

Thank you,  
Michael

**From:** Hayden, Elizabeth  
**Sent:** Tuesday, April 12, 2011 4:47 PM  
**To:** WebWork Resource; WebContractor Resource  
**Cc:** Hardy, Sally  
**Subject:** Addition to Japan page

Please add Marty Virgilio's (April 6) testimony at <http://pbadupws.nrc.gov/docs/ML1109/ML110960045.pdf> at the top of the page under **Commission Activity-Recent Activities**

*Beth Hayden*  
*Senior Advisor*  
*Office of Public Affairs*  
*U.S. Nuclear Regulatory Commission*  
*--- Protecting People and the Environment*  
*301-415-8202*  
*elizabeth.hayden@nrc.gov*

11/11/11/173

**From:** [Hayden, Elizabeth](#)  
**To:** [WebContractor Resource](#)  
**Subject:** RE: Addition to Japan page  
**Date:** Tuesday, April 12, 2011 5:27:00 PM

---

Don't know. Nancy Belmore, OCA is responsible for getting testimony posted.

*Beth Hayden*  
*Senior Advisor*  
*Office of Public Affairs*  
*U.S. Nuclear Regulatory Commission*  
*--- Protecting People and the Environment*  
*301-415-8202*  
*elizabeth.hayden@nrc.gov*

**From:** WebContractor Resource  
**Sent:** Tuesday, April 12, 2011 5:27 PM  
**To:** Hayden, Elizabeth  
**Cc:** WebWork Resource  
**Subject:** RE: Addition to Japan page

What's the ML number for this?

Thank you,  
Michael

**From:** Hayden, Elizabeth  
**Sent:** Tuesday, April 12, 2011 5:24 PM  
**To:** WebContractor Resource  
**Subject:** RE: Addition to Japan page

Chairman's Testimony on the Fukushima Nuclear Plant Accident, April 12, 2012

*Beth Hayden*  
*Senior Advisor*  
*Office of Public Affairs*  
*U.S. Nuclear Regulatory Commission*  
*--- Protecting People and the Environment*  
*301-415-8202*  
*elizabeth.hayden@nrc.gov*

**From:** WebContractor Resource  
**Sent:** Tuesday, April 12, 2011 5:22 PM  
**To:** Hayden, Elizabeth  
**Cc:** WebWork Resource  
**Subject:** RE: Addition to Japan page

Beth,

What should the title be?

Thank you,  
Michael

**From:** Hayden, Elizabeth  
**Sent:** Tuesday, April 12, 2011 5:19 PM  
**To:** WebContractor Resource  
**Subject:** RE: Addition to Japan page

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*Office of Public Affairs*  
*U.S. Nuclear Regulatory Commission*  
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*301-415-8202*  
*elizabeth.hayden@nrc.gov*

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**Cc:** WebWork Resource  
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Michael

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**Cc:** Hardy, Sally  
**Subject:** Addition to Japan page

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**~~Commission Activity~~ Recent Activities**

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*Senior Advisor*  
*Office of Public Affairs*  
*U.S. Nuclear Regulatory Commission*  
*--- Protecting People and the Environment*

301-415-8202

*elizabeth.hayden@nrc.gov*

**From:** [Akstulewicz, Brenda](#)  
**To:** [Hayden, Elizabeth](#)  
**Cc:** [Shannon, Valerie](#)  
**Subject:** RE: Need press releas on Japan Task Force  
**Date:** Tuesday, April 12, 2011 2:07:17 PM

---

I know nothing about a press release on Japan Task Force, do you Val?

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

From: Hayden, Elizabeth  
Sent: Tuesday, April 12, 2011 1:59 PM  
To: Akstulewicz, Brenda  
Subject: Fw: Need press releas on Japan Task Force

Is Val working on this? We are about to end the mtg.

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

From: Hayden, Elizabeth  
To: Shannon, Valerie  
Sent: Tue Apr 12 13:50:41 2011  
Subject: Need press releas on Japan Task Force

Asap. Pls email me-in mtg

11/11/14

**From:** [Hardy, Sally](#)  
**To:** [Hayden, Elizabeth](#)  
**Subject:** RE: NRR Presentation on Fukushima- April 2011 ppt.pptx  
**Date:** Tuesday, April 12, 2011 3:53:11 PM

---

Try to access draft pages now...should work...let me know if it does not

Sally

**From:** Hayden, Elizabeth  
**Sent:** Tuesday, April 12, 2011 3:45 PM  
**To:** Hardy, Sally  
**Subject:** RE: NRR Presentation on Fukushima- April 2011 ppt.pptx

Title of bullet should be **Presentation on Fukushima**

*Beth Hayden*  
*Senior Advisor*  
*Office of Public Affairs*  
*U.S. Nuclear Regulatory Commission*  
*--- Protecting People and the Environment*  
*301-415-8202*  
*elizabeth.hayden@nrc.gov*

**From:** Hardy, Sally  
**Sent:** Tuesday, April 12, 2011 3:44 PM  
**To:** Hayden, Elizabeth  
**Subject:** RE: NRR Presentation on Fukushima- April 2011 ppt.pptx

Something is going on with the server we are looking into that now. Pages are loading really slow for some reason...I'll let you know when its back up

**From:** Hayden, Elizabeth  
**Sent:** Tuesday, April 12, 2011 3:42 PM  
**To:** Hardy, Sally  
**Subject:** NRR Presentation on Fukushima- April 2011 ppt.pptx

Please add this as last bullet in the right-hand box of current Japan Page. Also, move up bullets under "**FAQ**" so there's not so much space.

I can't bring up the test page.

HHHH/175

**From:** [Google Alerts](#)  
**To:** [Hayden, Elizabeth](#)  
**Subject:** Google Alert - Nuclear Regulatory Commission  
**Date:** Tuesday, April 12, 2011 4:05:11 PM

---

**News**

2 new results for **Nuclear Regulatory Commission**

[Spent rods fill U.S. nuke pools, NRC says](#)

USA Today

In the US, more than 75% of the radioactive waste at the nation's 104 commercial nuclear reactors sits in pools, according to the **Nuclear Regulatory Commission**. The rest is in dry storage casks. The pools were intended as temporary rest stops before ...

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[USA Today](#)

[US begins to reconsider nuclear risks in light of Japan crisis](#)

McClatchy Washington Bureau

Germany responded to Japan's nuclear crisis by shutting down its seven oldest reactors for three months for safety checks. The US **Nuclear Regulatory Commission** and the industry say there's no need to do that here. "The next generation will be a safer ...

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---

Tip: Use a minus sign (-) in front of terms in your query that you want to exclude. [Learn more.](#)

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[Create](#) another alert.

[Manage](#) your alerts.

HHHHH/176

**From:** [Google Alerts](#)  
**To:** [Hayden, Elizabeth](#)  
**Subject:** Google Alert - Nuclear Regulatory Commission  
**Date:** Tuesday, April 12, 2011 8:36:14 PM

---

**News**

**1** new result for **Nuclear Regulatory Commission**

**NRC chairman: Reactor situation in Japan is static but not stable**

CNN International

By Jim Barnett, CNN Senior Producer Washington (CNN) -- The chairman of the **Nuclear Regulatory Commission** said Tuesday that the situation in the wake of the Japanese nuclear reactor crisis is static but not yet stable. On the day that Japan bumped up ...

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---

Tip: Use a plus sign (+) to match a term in your query exactly as is. [Learn more.](#)

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[Create another alert.](#)

[Manage your alerts.](#)

11/11/11

**From:** [Google Alerts](#)  
**To:** [Hayden, Elizabeth](#)  
**Subject:** Google Alert - Nuclear Regulatory Commission  
**Date:** Tuesday, April 12, 2011 5:43:09 PM

---

**News**

**3** new results for **Nuclear Regulatory Commission**

[Senators Accuse \*\*NRC\*\* Chair Of Unnecessarily Invoking Emergency Powers](#)

Forbes (blog)

By JEFF MCMAHON Senate Republicans today accused **Nuclear Regulatory Commission** Chairman Gregory Jaczko of invoking emergency powers and taking authority away from other members of the **NRC**. Sen. Tom Udall (D-New Mexico) said banks will ultimately decide ...

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[Capps Testifies on Diablo](#)

Santa Barbara Edhat

Lois Capps (CA-23) testified before the Senate Environment and Public Works Committee and expressed her concerns about safety at the Diablo Canyon Nuclear Power Plant. Capps also renewed her call to the **Nuclear Regulatory Commission** to stay the ...

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[Fukushima crisis "static" but not stable-US \*\*NRC\*\*](#)

Reuters Africa

Japanese authorities continue to focus on ensuring they can keep reactors and spent fuel pools cooled at the damaged Fukushima Daiichi plant, said Gregory Jaczko, chairman of the **Nuclear Regulatory Commission**. "The efforts continue to ... transition ...

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# NUCLEAR REGULATORY COMMISSION NEWS SUMMARY

TUESDAY, APRIL 12, 2011 7:00 AM EDT

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## NRC NEWS:

**NRC Chairman Says Fukushima Situation Is Static But Not Stable.** The AP (4/12, Daly) reports, "The top US nuclear regulator said Monday he will not change

a recommendation that US citizens stay at least 50 miles away from Japan's crippled nuclear power plant, even as he declared that the crisis in that country remains 'static.'" NRC Chairman Gregory Jaczko said that while the "month-old crisis had not yet stabilized," conditions at the Fukushima Dai-ichi plant have not "changed significantly for several days."

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Jaczko called the situation "static but not yet stable," and suggested that while not much has changed in recent days, it will many weeks or months before the plant is stabilized. The NRC Chairman called his March 16 recommendation of a 50-mile evacuation zone for US citizens in Japan, "prudent," noting projections for continued deterioration at the stricken facility.

In an abbreviated version of its report, the AP (4/12) noted that Jaczko "said he personally made the decision to recommend that 50 miles was a safe distance from the crippled reactors." Jaczko's "recommendation raised questions about US confidence in Tokyo's risk assessments."

**NRC Leaked Memo Says Aftershocks Will "Continue To Be A Concern."** In continuing coverage of Japan's damaged Fukushima nuclear plant, CNN's "Anderson Cooper 360" (4/12, 2:06 a.m. EDT) notes criticism of Japanese officials' response. CNN's Jim Walsh refers to an NRC memo "that was leaked. It was a memo from late March that expressed concern about aftershocks because these plants have already been stressed," in predicting that continuing seismic aftershocks "are going to continue to be a concern."

**Feinstein Urges NRC To Require Faster Move To Dry Cask Storage.** Reuters (4/12, Rascoe) reports Sen. Dianne Feinstein (D-CA) called on the NRC Monday to require nuclear power plants to accelerate the move of radioactive waste from pools to dry cask storage. In a letter to NRC Chairman Gregory Jaczko, Feinstein wrote, "The lesson from Japan's disaster is that we must be prepared to respond to unanticipated threats," adding, "Therefore, any policy changes that further reduce risks of an unsafe situation catching the industry off-guard should be implemented." In her argument that dry cask storage was safer, Feinstein cited a 2006 study by the National Research Council that said an accident or terrorist attack involving used fuel in dry cask storage would be easier to contain and to recover from than if waste stored in pools was compromised.

E&E News PM (4/12, Northey) adds that Jaczko, when Feinstein raised this issue at a Senate hearing last month, said "that spent fuel can be stored safely in wet pools for up to 100 years and that wet storage is just as safe as dry storage systems."

**Vulnerabilities Seen In Spent Fuel Pool Storage.** The Tennessean (4/12, Paine, 129K) reports, "Tons of radioactive waste are piling up at the Tennessee Valley Authority's nuclear power plants and others around the country in water-filled pools that in many cases were not intended to hold so much." At TVA's Browns Ferry plant, some spent fuel has sat in the cooling pool for decades, and while TVA insists such pools are safe, traces of "radioactive

iodine linked to the damaged Fukushima plant were detected in the air and rainwater last week in Tennessee and other states," while the spent fuel "stored in dry casks at the Japanese nuclear plant remained secure." According to the NRC, 75 percent of spent fuel is stored in cooling pools designed to serve as a "temporary rest stop" to partially cool spent fuel before transport to a permanent repository.

**Whitman Says US Reactors Are "Enormously Safe."** Appearing on CNN Newsroom (4/11, 12:13pm EDT), former EPA Administrator Christine Todd Whitman spoke on nuclear safety in the wake of the Fukushima Daiichi plant crisis. She was asked whether US plants are safe from earthquake, tsunami and strategic attack. Todd Whitman said; "Well, I mean you can never say you're prepared for everything. Obviously you just can't predicate and predict everything that might happen. But certainly ours are enormously safe."

**NRC Investigating Workers Exposed To Radiation At Cooper Station.** In its "On Deadline" blog, USA Today (4/12, Eversley, 1.83M) reports that according to MSNBC, "Three workers have been exposed to radiation" at the Cooper Nuclear Station, near Brownsville, Nebraska. Monday the NRC announced "it was looking into the 'unplanned radiation exposures' on April 3" at Cooper Station, which "took place during a maintenance procedure during which the workers removed a tube contaminated with radioactive material through the bottom of the reactor vessel as opposed to through the top, which would normally be the procedure." When radiation alarms were triggered, the "workers set the tube down and immediately left the area, according to the NRC."

Bloomberg News (4/12, Lomax) reports, "The Nebraska Public Power District, which operates the Cooper Nuclear Station, doesn't believe the workers received higher doses than allowed under NRC regulations in the April 3 incident," but NRC Regional Administrator, Elmo Collins said the agency wants "to understand why normal work practices were not followed." NPPD spokesman Mark Becker said the company would "cooperate fully with the investigation."

According to CNN (4/12) NRC inspectors "began their work Monday," and "will 'look at the circumstances and decision-making by NPPD officials that led to the exposures, review the licensee's response to the event, calculate the exposures the workers received and review corrective actions taken to prevent a recurrence,' the commission statement said."

MSNBC (4/12, Dedman) notes that the "Cooper plant has a single boiling-water reactor of General Electric design."

The Wall Street Journal (4/12, Tracy, Subscription Publication, 2.02M) notes NPPD's Becker added, "We're not

happy with what transpired and we're doing a complete root-cause investigation." Reuters (4/12, Rampton, McCune) also reported on the incident and investigation.

KMTV-TV Omaha, NE (4/11, 10:17 p.m. CDT) reports that three workers in Nebraska "were exposed to higher than expected levels of radiation. The Nuclear Regulatory Commission says the incident happened a week ago Sunday at the Cooper nuclear station near Brownville. Regulators say the workers removed a contaminated tube from the bottom of a reactor vessel, instead of the top. A spokesman says the level of radiation did not exceed safety limits." KLKN-TV Lincoln, NE (4/11, Nicole, 10:05 p.m. CDT) also includes a phone interview with a Nebraska Public Power Distribution spokesman, and KETV-TV Omaha, NE (4/11, 6:06 p.m. CDT) notes that the Cooper plant is temporarily closed for maintenance, while the Fort Calhoun nuclear plant is closed for refueling.

**NRC Approves Power Uprate At Limerick Station.** The Philadelphia Inquirer (4/11, Maykuth, 357K) reports, "The Nuclear Regulatory Commission on Monday announced it has approved a 1.65 percent-power increase by the two units of the Limerick Generating Station in Montgomery County." Exelon had requested the increase so "it could more accurately measure feedwater flow into the reactors. The 'uprate' will allow the two boiling water reactors to increase output from 1,189 to 1,205 megawatts of electricity."

The Lansdale (PA) Reporter (4/11, 10K) adds that the "NRC staff's careful evaluation determined that Exelon could safely increase the reactors' power output primarily through more accurate means of measuring feedwater flow. As part of its evaluation, NRC staff reviewed the company's analysis showing the plant's design can accommodate the increased power level." The "NRC's safety evaluation of the plant's proposed power uprate focused on several areas, including the nuclear steam supply systems, instrumentation and control systems, electrical systems, accident evaluations, radiological consequences, fire protection, operations and training, testing, and technical specification changes." Power-Gen Worldwide (4/12) also covers the uprate.

**House Panel To Probe US Readiness For A Tsunami.** E&E Daily (4/12, Yehle) reports, "The House Oversight and Government Reform subcommittee on national security plans to meet Thursday to discuss whether the federal government is prepared to 'warn, respond and assist' state and local governments in the event of a tsunami, according to a committee staffer." The "Japanese earthquake – and resulting tsunami – has incited concerns over the United States' warning system in recent weeks. Such a disaster would necessitate the cooperation of several

agencies, including NOAA, the Federal Emergency Management Agency and local law enforcement agencies."

**Analyst: Investors Should Not Treat Nuclear-Related Stocks As Radioactive.** In an investment analysis on CNBC's (4/12) "Fast Money: Behind the Money" page, Executive Producer, John Melloy writes, "Nuclear power-related shares are taking a hit, Germany may abolish nuclear power altogether in 12 years and iodine tablets are selling fast on the US West Coast as radiation fears reach new heights." The "global overreaction" from the "rare 9.0 magnitude earthquake and massive tsunami" may "set back the safest and easiest way for this country to solve its energy crisis, investors said." Melloy points to John Downs of Euro Pacific Capital, who said investors "should not treat nuclear-related stocks as if they were radioactive," because eventually, "reason prevails," and "nuclear power is hands down the best option available for powering the 21st century."

**Senate Panel To Examine Safety Of US Nuclear Industry.** E&E Daily (4/11, Northey) reported, "Senators this week will delve into the implications of Japan's nuclear crisis for the safety and future" US nuclear plants as the "full Senate Environment and Public Works Committee and the committee's subpanel on clean air and nuclear safety [hears] from a host of top energy regulators tomorrow about the role nuclear energy will play in the country's energy portfolio going forward." NRC Chairman Gregory Jaczko and EPA Administrator Lisa Jackson will provide opening statements before the committee hears "from a host of state regulators and lawmakers, especially from California, as well as Exelon Generation Chief Operating Officer Charles Pardee."

**Senate Committee To Vote On Lyons Nomination To DOE Position April 12.** On its website, AllGov (4/11, Wallechinsky, Brinkerhoff) profiles Peter B. Lyons, "physicist and longtime member of the nation's premier research laboratory," who was "nominated to be the Department of Energy's assistant secretary for nuclear energy" in December 2010. The Senate Energy and Natural Resources Committee is to vote on his nomination April 12. AllGov notes that the "mission of the Office of Nuclear Energy is to promote nuclear power as an energy source" with an "annual budget of more than \$850 million."

**PG&E Asks NRC To Table Diablo Canyon Relicensing Review Pending Seismic Study.** The AP (4/12, Blood) reports, "The owner of the Diablo Canyon nuclear power complex asked federal regulators to delay issuing extended operating permits until comprehensive studies are completed on earthquake faults in the area,

officials said Monday." Pacific Gas and Electric Company's move came "after a public outcry over possible safety risks at the California plant, which were heightened by the huge earthquake and tsunami that plunged Japan into a nuclear crisis." Last month at a legislative meeting, PG&E officials said Diablo Canyon was safe and "gave no hint" that it would "agree to complete three-dimensional seismic studies before a renewal of the licenses." But, Monday, PG&E Senior Vice President John Conway issued a statement saying the company would be "responsive" to concerns many in the public have that the research to be completed prior to relicensing. The AP (4/12) also published an abbreviated version of its report.

The Los Angeles Times (4/12, Sarno, 657K) adds that the utility's decision came in light of "recent events at the Fukushima Daiichi Power Plant, and the considerable public concern regarding the need to assure the seismic safety at DCCP." The Times adds that Republican state Sen. Sam Blakeslee commended PG&E for "taking the responsible action of delaying relicensing" and added, "We respect that this is a difficult decision that demonstrates their willingness to prioritize the safety of Californians."

The San Luis Obispo (CA) Tribune (4/12, Sneed) reports, PG&E sent a letter to the NRC "asking it to delay final implementation of license renewal at Diablo Canyon" until the advanced seismic studies can be completed, an effort that "could delay license renewal through 2015."

The San Francisco Chronicle (4/12, Baker, 232K) reports, "Little is known about the fault, first identified in 2008" and since the earthquake and tsunami in Japan, "a growing number of California officials have demanded that PG&E conduct further studies on the Shoreline Fault before pressing ahead with license renewal. Diablo Canyon sits on a seismically active stretch of the Central California coast near San Luis Obispo."

The Santa Maria (CA) Times (4/12, Charlton, 16K) reports that the announcement came "less than 24 hours before the San Luis Obispo County Board of Supervisors was expected to hold a public hearing on the issue." Board Chairman Adam Hill said the board was still likely to meet and will probably still send a letter to PG&E. Hill "said he believes that PG&E should completely pull back from the relicensing process and focus all of its efforts on the safety of Diablo Canyon. 'I think it's a step in the right direction,'" he said, but said "they could do more."

The Wall Street Journal (4/12, Casselman, Power, Subscription Publication, 2.02M) adds that PG&E spokesman Paul Flake insisted the company had heard the concerns of the public, while Reuters (4/12, O'Grady) notes that an NRC official said the agency is reviewing PG&E's letter. More specifically, Bloomberg News (4/12, Chediak) says the NRC "is considering the potential impact PG&E's request might

have on the timing of the license renewal, Eliot Brenner, a spokesman for the commission, said in an e-mail statement."

US Rep. Lois Capps, D-Santa Barbara, welcomed the delay, according to the Pacific Coast Business Times (4/12, 3K), "but said a voluntary pause in the licensing proceedings wasn't enough. She said she was seeking a suspension of the relicensing by the Nuclear Regulatory Commission until a full range of earthquake risks are assessed. ... Republican State Sen. Sam Blakeslee and Capps have been vocal in calling for PG&E to complete extensive studies of seismic risk prior to any relicensing by the NRC."

Also covering the announcement were, among other sources, Santa Maria (CA) Times (4/11, 16K), Power-Gen Worldwide (4/12) and

KCOY-TV Santa Barbara, CA (4/11, Sanchez, 11:01 p.m. EDT) reports that PG&E "is asking the Nuclear Regulatory Commission to delay its license renewal application for the Diablo Canyon nuclear power plant." The plant operator "wants to submit 3-D seismic studies before the licensing process is completed."

KSBY-TV (4/11, 11:02 p.m. PDT) reports the story. It shows a PG&E spokesman saying that the company has "heard our customers' concerns and the concerns of our government partners" on the need for seismic research before action on the license renewal. But an opponent says that, "Three years after the state asked them to do these studies, and a month after a tragedy in Japan made the need terribly obvious, PG&E has finally agreed to do a small part of what's been required of them by the state." KSBY-TV San Luis Obispo, California (4/11) also ran the story on its website.

KBFXCD Santa Barbara, CA (4/11, 10:16 p.m. PDT) also reports the story.

**Coastal Commission Report Says Most California Faults Could Not Produce 9.0 Magnitude Quake.** The Capitol Weekly (4/12, Howard) reports, "Despite 1,100 miles of coastline and a history of powerful earthquakes, most of California is not susceptible to the kind of temblor and tsunami that devastated Japan, according to a report by the California Coastal Commission." However, the Cascadia Subduction Zone is a "jumble" of tectonic plates that "meet deep below the earth's continental crust," and "could produce a quake – and tsunami – on the scale of Japan's Tohoku Quake." But, according to a 21-page study by staff geologist Mark Johnsson, "the majority of faults in California, including the San Andreas fault, could not produce a magnitude 9.0 earthquake and that most of the state 'is not susceptible to an event on the scale' of the quake that struck Japan.

**Officials To Conduct Drill Of San Onofre Station's Emergency Response.** On its website, KGTV-TV San Diego, CA (4/11) reported, "Southern

California radiation experts and emergency workers will take part in a drill on Tuesday to test responses to an emergency at the San Onofre Nuclear Generating Station, an exercise that is done every other year but has taken on added significance because of the disaster in Japan." Edison spokesman Gil Alexander said, "drills are conducted at the San Onofre plant a few times a year, but this biennial one is a much more extensive test that is monitored by the Federal Emergency Management Agency." The "main difference this year is the interest from the media, according Tina Walker, a spokesman for the California Emergency Management Agency."

The Los Angeles Daily News (4/12, 91K) reports, "Radiation experts and emergency workers from Los Angeles to the Mexican border will pretend that a major radioactive gas leak has occurred at the San Onofre Nuclear Generating Station starting Tuesday." The "California Emergency Management Agency will coordinate the test at the two nuclear reactors starting Tuesday, and concluding Thursday." SCE spokesman Gil Alexander said there "are a total of about 200 of us associated with the plant that will drill." Half of those "will drill on plant procedures, and the other half will work on a pretend radiation leak with government officials, the news media and the general public."

On its website, KCBS-TV (4/11) noted that the "secret drill exercise" will "simulate a radioactive leak that goes beyond the plant's boundaries and into the community. Workers will test emergency shut-down procedures and practice securing radioactive fuel rods." The San Juan Capistrano Patch (4/11) also covers the exercise, as does the Encinitas Patch (4/11, Reed) and XETV-TV San Diego (4/10).

**NRC To Discuss San Onofre Station Performance At April 28 Meeting.** The San Clemente (CA) Times (4/12, 20K) runs an NRC news release in its entirety on the upcoming San Juan Capistrano meeting April 28 with Southern California Edison Co. "to discuss the agency's 2010 assessment of safety performance at the San Onofre Nuclear Generating Station."

**Massachusetts' Court Rules State May Regulate Pilgrim's Water Intake.** The AP (4/12) reports Massachusetts' Supreme Judicial Court has ruled that the state's environmental officials "have the power to regulate a water intake system used by the Pilgrim nuclear power plant in Plymouth," reversing a lower court ruling that the state Department of Environment lacked such authority. "Pilgrim employs a cooling system that pulls in water from Cape Cod Bay and later discharges heated water through outflow pipes. While the discharges are regulated by the state and federal governments, Entergy Corp., which owns Pilgrim, challenged whether the state also has the power to regulate the intake process."

The Boston Globe (4/12, Daley, 244K) explains that "environmental studies show the heated water can harm aquatic life. The state and environmentalists have also long argued that the sucking in of water can kill vast amounts of fish larvae, eggs, shellfish, and other aquatic organisms – larger creatures become trapped on screens covering the intake pipes, and smaller ones are sucked into the cooling system." Kenneth L. Kimmell, commissioner of the state DEP, said in response to the ruling, "This is great news for the Massachusetts environment," adding, "It clearly gives us the ability to protect our aquatic resources from the potential harms (of intake)."

The Boston Herald (4/12, 117K) adds that "officials for Entergy declined immediate comment on the ruling," saying that they "have received the decision and our attorneys are studying it." The Brockton, Massachusetts' Enterprise News (4/12) and Water World (4/12), a water and wastewater industry website, also cover this story.

**Safety, Tax Bill Discussed At Millstone Public Meeting.** The Norwich Bulletin (4/12, Mosher) reports, "Millstone Nuclear Power Station executives publicly reiterated their case against two tax bills being considered by the General Assembly." Around "100 people attended a meeting at Waterford Town Hall Monday night which featured presentations by executives of Dominion Resources Inc." According to Dominion's Daniel Weekley "a \$335 million tax on the plant's electricity output contained in Senate Bill 1176 would be a first nationally." He said, "Once this production tax starts it will never stop. ... It will hit every one of us."

Also at the meeting, the Greenwich Time (4/12, Cummings, 3.31M) reports, "the operators of the Millstone Nuclear Power Station on Monday attempted to assure nervous residents that the disaster now unfolding at a nuclear facility in Japan cannot happen here." Millstone's Skip Jordan told the audience, "Every meeting at Millstone station starts with a message about safety. Our number one priority is to protect the health and safety of the public."

The New London Day (4/12) adds, "Millstone's two operating reactors, which are pressurized water reactors, are safer, Jordan said, because they have primary and secondary cooling systems to keep the plants cool." Mystic resident Nancy Burton "wanted to know why Dominion isn't moving the spent fuel from Unit 1 immediately into an alternate type of storage known as dry cask storage." According to Jordan "the company is evaluating moving that fuel so that it is no longer housed above the reactor, where it is more vulnerable, but he and Weekley noted that if the tax is approved it will make it more difficult to invest in safety improvements like that." A separate New London Day (4/12, Daddona) article also reports on the meeting.

## **NRC Says UniStar Not Eligible To Build A New Calvert Cliffs Reactor.**

The Calvert Recorder (4/12, Russell) reports the NRC "released a report on Friday stating it could not issue UniStar Nuclear Energy a license for the proposed third reactor in Calvert County on the basis of foreign ownership." The company "submitted a combined license application and 'negation action plan' in January in an attempt to address the issue, citing U.S. individuals who would oversee the operations of Calvert Cliffs Nuclear Power Plant's third unit, since French company Electricite de France acquired Constellation Energy's 50 percent interest in UniStar, their joint U.S. nuclear venture." But the NRC ruled "that UniStar's plan is unsuitable for obtaining a license for CC3, on the grounds that: '1) UniStar is 100 percent owned by a foreign corporation (EDF), which is 85 percent owned by the French government; 2) EDF has the power to exercise foreign ownership, control, or domination over UniStar; and 3) the Negation Action Plan submitted by UniStar does not negate the foreign ownership, control or domination issues discussed above,' the report states."

The website World Nuclear News (4/11) and Nuclear Street (4/11) are also covering this story.

## **FEMA To Oversee Emergency Response Exercises At Three Mile Island.**

On its website, WHTM-TV Harrisburg, Pennsylvania (4/11) adds that the "week-long exercises are required by the federal government every two years. FEMA specifically will evaluate the response of state and local emergency agencies within the 10-mile emergency-planning zone of the nuclear plant." Preliminary findings of the "exercise will be presented during a public meeting Friday at 11:00 a.m. at the Hilton Garden Inn, at 3943 TecPort Drive, in Harrisburg."

On its website, WTAJ-TV Altoona, Pennsylvania (4/11) reports, "Emergency crews at and around Three Mile Island will be evaluated starting Monday. FEMA will be looking at how prepared state and local responders are to protect public health and safety. Preliminary findings of the emergency preparedness drills will be revealed on Friday." WFMZ-TV Allentown, Pennsylvania (4/11) also reported on its website.

## **Athens Seeks Grant To Improve Browns Ferry Evacuation Route.**

The Decatur (AL) Daily (4/12, Hollman) reports, "A multi-million project at Browns Ferry Nuclear Plant could help the city and county get a grant to improve one of the plant's evacuation routes." According to the article, "On Monday, the Athens City Council approved spending up to \$250,000 from its general reserve fund toward the project, contingent on it receiving a \$2 million grant." James Rich, the Public Works Director, indicated that the grant is "through the Alabama Industrial Access Road and

Bridge Corp." The city plans to make its request for the grant at the corporation's meeting in June.

## **AARP Faults New Reactor Plan For Iowa.**

According to the Cedar Rapids (IA) Gazette (4/12, Lynch, 51K), "AARP is firing back in a war of words over legislation it says would stick Iowans with the cost of developing future nuclear power generation even if the plants are never built." The group said at a Statehouse press conference Monday, that "it doesn't oppose the development of new power generation, including MidAmerican Energy's proposed nuclear plant, but objects to a pair of bills that would change the rules at the expense of Iowans, including its 370,000 50-and-older Iowa members." Bruce Koeppel, AARP state director, said that instead of relying on "shareholders and investors" to finance a new reactor, "the proposed legislation 'shifts the billion-dollar plus costs to ratepayers for a possible nuclear plant, years before the plant is built, or the plant design has even been approved.'"

The AP (4/12) notes that AARP "ads claim residents and businesses would pay more if the Legislature approves a bill backed by MidAmerican Energy that would let the utility charge customers in advance for the construction of a nuclear power plant. Democratic Sen. Swati Dandekar of Marion and others have called the ad misleading."

Radio Iowa (4/12) added Bruce Koeppel said the "proposal allows utility companies to force customers to continue paying accumulated costs to the utility even if the plant is cancelled."

The Des Moines Register (4/11, Petroski, 111K) also reports the story.

## **Shumlin Wants Lawmakers To Pass Tax On Vermont Yankee's Spent Fuel.**

The AP (4/12, Gram) reports, "Vermont Gov. Pete Shumlin on Monday unveiled his plan to pay for promoting renewable energy development without relying on a surcharge to customers." Shumlin said Monday "he still hoped to get money for the fund from Vermont Yankee's owner," Entergy and urged "lawmakers to pass a new tax on spent nuclear fuel being stored in the state. Vermont Yankee's spent fuel storage pool is nearly full and the plant has begun storing some of its spent fuel in concrete cask outside its reactor building in Vernon. Like other nuclear plants around the country, Vermont Yankee has been hard-pressed to find a place to send its highly radioactive waste."

On its website, WCAX-TV Burlington, Vermont (4/11, Thurston) reported, "Vermont now has a little more than \$8.5 million in its Clean Energy Development Fund," but "since the Vermont Yankee nuclear plant pays into the program, and since Yankee is scheduled to close next year, the Shumlin administration had to come up with a way to keep the

development money flowing.” Shumlin says “switching the way the state handles its Clean Energy Development Fund will ensure money’s in the pot to entice other projects to break ground.”

**Peace Walk Protestors Marching From Indian Point To Vermont Yankee.** Mid-Hudson (NY) News (4/12) reports, “Some two dozen people started their Peace Walk in Croton Sunday, stopped to pray outside the Indian Point nuclear power plant in Buchanan, before they set out for the 206-mile walk to the Vermont Yankee nuclear power plant.” Leading the walk, Japanese Buddhist nun Jun Yasuda of the Grafton Peace Pagoda, said, “People have been suffering from the earthquake; so many people died by the earthquake and also so many people are suffering under the nuclear situations.”

**Riverkeeper Says Tsunami Not Necessary To Damage Indian Point.** Westchester (NY) Journal News (4/12, Fitz-Gibbon) reports that Riverkeeper representative Paul Gallay also told the Westchester County board committee that it “wouldn’t take a tsunami to dangerously damage the Indian Point nuclear reactors.” Gallay also “told a county board committee that radioactive spent fuel pools at the Buchanan reactors are Indian Point’s ‘Achilles’ heel.” Gallay said, “All of these issues do not require a tsunami, which is one of the things that Indian Point says, and says that we should be easy in our minds because we won’t have a tsunami.” He suggested corroded piping, metal fatigue in the containment dome and embrittlement of the containment dome, could cause problems.

**Entergy, Riverkeeper Invited To Brief County Board On Indian Point Safety.** The Westchester (NY) Journal News (4/11, Fitz-Gibbon) reported, “The Westchester County Board of Legislators will hold its latest in a series of public meetings on the Indian Point nuclear power plants today at 3 p.m., seeking to shed light on safety issues at the Buchanan plant in the wake of the crisis facing Japan’s Fukushima nuclear plant.” The “county board’s committees on environment and energy, and public safety and security, which have hosted the meetings, said they have invited officials from the environmental group Riverkeeper as well as officials from Entergy Northeast, which owns the Indian Point reactors.”

**Plant Farley Unit 2 Reactor Reduces Output.** According to a Bloomberg News (4/12, McClelland) reactor output status story, “Southern Co. (SO) slowed the 860-megawatt Farley 2 reactor in Alabama to 56 percent of capacity from 100 percent on April 8.” Another unit at the site 18 miles east of Dothan, “the 851-megawatt Farley 1, is operating at full power.”

**Decision On Plant Vogtle Overruns Awaited.** ABC affiliate WSB-TV Atlanta (4/11, 4:57 am EDT) reported that this week “we may find out whether taxpayers or Georgia Power would pay if costs run over on a proposed expansion at Plant Vogtle. A state committee could resolve on Thursday and could resolve the two-year-old dispute. The utility said it should not lose profits if the project exceeds its \$6.4 billion budget.”

**Shimkus Plans To Proceed With Yucca Trip Despite Waxman’s Criticisms.** The St. Louis Post-Dispatch (4/12, Lambrecht, 232K) reports Rep. John Shimkus (R-IL) said in response to concerns raised by Rep. Harry Waxman (D-CA) that a trip to Yucca Mountain and its \$200,000 price tag was wasteful that “he is undeterred – and ‘appalled’ at the suggestion that the delegation would be wasting money.” Shimkus said, “We spent \$14 billion or \$15 billion to prepare this site for long-term storage. What are they trying to hide?” He went on to say that the DOE “is distorting the cost” of the trip, explaining that “the delegation is willing to ride a bus to the site and doesn’t need helicopters, he said. Nor is it a must that they see inside the mountain, meaning that expensive safety tests and other preparation is unnecessary.”

The Las Vegas Review-Journal (4/12, Tetreault, 178K) adds that Shimkus spokesman Steven Tomaszewski said the cost-cutting measures were decided upon before Waxman voiced his concerns. Said Tomaszewski, “Prior to Mr. Waxman’s letter on Friday, the decision was made to use buses and not require the opening of the underground portion.” Meanwhile, Senate Majority Leader Harry Reid (D-NV) also expressed concerns about the cost of the trip, saying that “taxpayers are getting ripped off.” He added, “What in the world could be accomplished by that?...The only thing that might be a good idea would be if they all traveled to Las Vegas and stayed in our hotels.”

**Shimkus Explains Support For Yucca Project.** In an op-ed for The Hill (4/12, 21K), Shimkus discusses his support for the Yucca Mountain nuclear waste repository project, writing, “While I agree with the government following its own law and taking control of nuclear waste, I question why we should throw away the \$14.5 billion already spent on Yucca Mountain. We don’t need regional sites; we already have designated a consolidated government storage site!” And because he believes “the administration is failing to carry out the current federal law,” referring to the Nuclear Waste Policy Act, he adds that he has joined with House Energy and Commerce Committee Chairman Fred Upton (R-MI) to investigate why the Administration has chosen to abandon the plans for the project.

**Reid Confident Yucca Is Dead After Rider Fails.** Under the headline, "Despite House GOP Push, Harry Reid Declares 'Yucca Is Dead,'" the Las Vegas Sun (4/12, Demirjian, 41K) reports that "Yucca Mountain, which hasn't received funding under any federal budget that's been passed since Obama came to office, came back on the agenda this past winter, when Republican House leaders included funding and a directive about the projected nuclear waste storage site in their budget bill, H.R. 1." But it was "one rider that fell off the table quietly that will likely resonate strongest for Nevada." When asked Monday whether "he was at all concerned that it might still be funded," Reid responded, "H.R. 1's history, man." Platts (4/12, Hiruo) also reports this story.

**Analyst Questions Safety Of Spent Fuel Storage.** The AP (4/11) reported that the TVA "stores spent fuel and fuel rods at its plants, just like other nuclear plant operators, but an industry analyst is questioning the safety of that storage." The utility has over "2,544 metric tons of radioactive spent fuel in cooling ponds at its Sequoyah and Watts Bar nuclear plants in Tennessee and Browns Ferry plant in Athens." The Union of Concerned Scientists' Edwin Lyman "said the amount of fuel from TVA's reactors represents about '100 reactor-years worth of discharges.'"

**Murkowski Talks Up Small Modular Reactors.** Politico (4/12, Goode, 25K) reports Sen. Lisa Murkowski (R-AK), the Senate Energy and Natural Resources Committee's ranking Republican, "thinks Congress will have more success taking a 'graduated' approach to energy legislation while keeping up the pressure to respond to last year's Gulf of Mexico spill." She "cited legislation increasing hydropower and addressing small-modular nuclear reactors as examples," saying that "there is 'probably much greater likelihood' of something like the latter bill moving 'than a full-on expanded nuclear piece, particularly in view of just the uncertainty that we're seeing after the earthquake in Japan.'"

**Higher MOX Fuel Concentration Weighed for US Reactors.** The Global Security Newswire (4/11), citing a New York Times article on Sunday, reported that "the federal Tennessee Valley Authority and Energy Department have conducted talks on potentially substituting mixed-oxide fuel derived from nuclear-weapon material for one-third of the low-enriched uranium in several US power reactors, a substantially higher proportion of MOX fuel than a crippled Japanese nuclear plant had used." However, "any TVA move on the proposal has been put off pending a review of the behavior of MOX fuel at Japan's Fukushima Daiichi nuclear power plant," the article said. "We are studying the ongoing events in Japan very closely," TVA spokesman Ray Golden

said. The National Review (4/11, Pollowitz, 193K) "Planet Gore - The hot blog" also cited the New York Times report.

**Shaw Group, Babcock & Wilcox Aim To Help Dismantle Japanese Reactors.** The Charlotte (NC) Business Journal (4/11, Downey, 14K), citing the New York Times, reported that "Babcock & Wilcox and the Shaw Power Group are working with Toshiba and Westinghouse on plans to dismantle the badly damaged nuclear reactors in northern Japan." The Journal said "Toshiba, the lead company involved in the work, has assembled a team of experts from the other companies to help with the plans."

**Shaw Group Profit Declines, Shares Fall.** The CNBC's Squawk on the Street (4/11) reported that "shares of Shaw Group have fallen after missing earnings expectations" and that "the company was banking on an expanding nuclear industry for growth." D. A. Davidson analyst John Rogers, who downgraded the engineering and construction firm, said on TV that Shaw hasn't "talked about loss of orders, but I think more they're talking about the strength of the new designs for nuclear power plants and the ability to continue to operate even if they" lose "backup power." Rogers said: "I think at this point they have not seen a significant change in the outlook for their market, but I think investors are concerned the whole process of new nuclear power plants in the US may be delayed."

The AP (4/12) reports, "Shaw Group Inc., an engineering and construction company whose projects include nuclear power, said on Monday that its second-quarter profit tumbled sharply mainly due to charges to cover big swings in the value of the dollar versus the yen." The company disclosed "a profit of \$1.2 million, or a penny a share, for the quarter that ended Feb. 28, compared with net income of \$61.5 million, or 72 cents per share, for the same period last year," AP adds.

**South Carolina House Speaker Briefed On SRNL, SRS' H Canyon.** The Augusta (GA) Chronicle (4/12) reports, "South Carolina House Speaker Bobby Harrell met with Savannah River Site managers and officials and members of the Aiken County legislative delegation Monday for a briefing on the Savannah River National Laboratory and the uncertain future of the site's plutonium-processing H Canyon." Clif Webb, the vice president of public affairs for Savannah River Nuclear Solutions, said, "The purpose of the meeting wasn't to create or ask for next steps but to inform." The article explains that "last month, the nine members of the Aiken County legislative delegation wrote to US Energy Secretary Steven Chu to lay out concerns about the effects of shifting funding away from H Canyon, as is proposed in the federal budget." A spokesman for the speaker said that he also planned to send a letter to Chu.

## **Former Joint Chiefs Chairman Says US Unprepared For Cyberattack.**

Marine Gen. Peter Pace, former chairman of the Joint Chiefs of Staff, told a cybersecurity conference in Colorado yesterday that the US is "hugely vulnerable" to cyberattacks and is "way late" in responding to the new threat, the AP (4/11) reported. Pace said the federal government should impose security regulations on private sector networks, including the banking and finance industries. Pace said a set of uniform regulations would prevent some firms from skirting the requirements in order to gain an advantage over their competitors. He "also said it would encourage innovation by creating demand for security measures."

**Alexander, Lawmakers Stress Importance Of Cybersecurity.** The Providence Journal (4/12, McKinney, 106K) reports NSA Director Gen. Keith Alexander "headlined a cyber-security conference at the University of Rhode Island on Monday that highlighted student and faculty research into such challenges as defending the power grid from cyber-attackers." Alexander told attendees that cybersecurity "is one of the most important issues facing our nation today." Also addressing the forum, Rhode Island Sen. Sheldon Whitehouse "said more legislation on cyber-security issues is expected," while Rep. James Langevin said that the nation "still stands largely unprepared to deal with various potential cyber-security threats."

Also reporting on yesterday's conference, NextGov (4/12, Stemstein) says Alexander "reaffirmed" that the US Cyber Command, which he commands, "cannot monitor civilian networks, noting its powerlessness over systems outside the .mil domain might require congressional action." Said the general, "I do not have the authority to look at what's going on in other government sectors, nor what would happen to critical infrastructures. That means that I can't stop [an assault on nonmilitary networks]." He noted that the Pentagon and DHS "are sharing information, security equipment and staff at an NSA office, under the guidance of legal counsel and privacy officers."

## **IN THE BLOGS:**

**Blog: Alternatives To Containing Nuclear Disaster Discussed.** On a blog entry for Energy Collective (4/11) Charles Barton wrote that "avoiding and mitigating nuclear accidents is not terribly expensive, nor does it make nuclear power impractical, but does require the nuclear industry to change the way it does business." The article said in case of a nuclear accident, "a better safety approach" is "to capture some nuclear materials and remove them to safe places outside the core, rather than preventing their escape." The writer noted, "The GE/Hitachi ESBWR

offers significant advances in passive safety." For instance, "coolant flow no longer relies on pumps. Rather the boiling water reactor design allows for the natural circulation of coolant water through the core."

## **INTERNATIONAL NUCLEAR NEWS:**

### **Japan Puts Nuclear Crisis On Par With Chernobyl Disaster.**

The AP (4/12) reports, "Japan's nuclear safety agency has raised the severity rating of the crisis at its nuclear plant to the highest level, on par with the 1986 Chernobyl disaster." The Washington Post (4/12, Harlan, 572K) notes that the reassessment came from "officials with Japan's Nuclear Safety Commission," which reclassified the crisis from "an 'accident with off-site risk,' to... a 'major accident.'"

The Wall Street Journal (4/12, A1, Dvorak, Osawa, Hayashi, Subscription Publication) reports despite the decision to raise the level, Japanese officials stressed that the crisis was not comparable to the Chernobyl disaster.

According to the New York Times (4/12, Tabuchi, Bradsher, Subscription Publication), Japan's Nuclear and Industrial Safety Agency said the elevated rating "resulted from new estimates that suggest that 'tens of thousands of terabecquerels' of radioactive material per hour were released from the plant in the aftermath" of last month's earthquake and tsunami. Still, the "total amount of radioactive material released so far is equal to about 10 percent of that released in the Chernobyl accident," the agency said.

Also yesterday, the CBS Evening News (4/11, story 10, 2:25, Couric, 6.1M) reported, "the evacuation zone around that crippled nuclear plant was expanded to include four towns some 30 miles away."

**Another "Strong Earthquake" Hits Japan.** The AP (4/12) reports, "A strong earthquake with a preliminary magnitude of 6.3 has jolted in Tokyo and its environs. ... The epicenter of the quake was located just off the coast of Chiba, east of Tokyo." There were no immediate reports of damage or injuries.

The New York Times (4/12, Tabuchi, Bradsher, Subscription Publication), meanwhile, reports that the "strong aftershock...briefly set off a tsunami warning and knocked out cooling at the crippled Fukushima Daiichi nuclear power plant for almost an hour, underscoring the vulnerability of the plant's reactors to continuing seismic activity along the coast a month after the devastating March 11 earthquake and tsunami."

ABC World News (4/11, story 4, 2:20, Stephanopoulos, 8.2M) reported, "A six minute aftershock struck the country not long after the Japanese observed a moment of silence for

the victims. Even rescuers searching for the more than 28,000 dead and missing paused to remember." ABC (Woodruff) added, "Fourteen thousand US troops" are still in Japan "to help speed up the recovery...clearing mud and debris from schools." Army Gen. Michael Harrison cautioned, "This is not going to be complete in another week or another month. The devastation in this area, it will take years to get it totally cleaned out."

NBC Nightly News (4/11, story 6, 2:45, Williams, 8.37M) reported, "The official death toll stands at more than 13,000," and "nearly 150,000 people are still without homes, living in evacuation centers."

**Clinton To Visit Japan In Show Of Support.** AFP (4/12) reports Secretary Clinton will visit Japan "in a show of support for the US ally as it recovers from a devastating earthquake, the State Department announced Monday." The Secretary, said spokesman Mark Toner, "will travel to Tokyo on Sunday, after stops in South Korea and in Germany where she is attending a NATO conference." Also reporting the Secretary's trip are the AP (4/12) and Reuters (4/12, Mohammed), which it calls a symbol of US support.

**Daunting Challenges Await Cleanup Of Fukushima Plant Disaster.** On its website, NPR (4/12) reports, "Nuclear engineers in Japan are dealing with two problems at the same time: They are working to fully stabilize the reactors at the Fukushima Dai-ichi plant, and they are trying to control the release of radioactive material." Containment and cleanup of the "radioactive material could take at least 10 years, at a cost of more than \$10 billion." According to nuclear engineer Lake Barrett, who coordinated cleanup at Three Mile Island for the NRC, the cleanup challenge can be broken down to energy, air, water and solids. NPR concludes that while engineers can "break the problem down to the basics, and they know how to do each individual step" nobody's "ever tried a nuclear cleanup on this scale before."

**Japan-Based Nuclear Hardware Companies Face Challenging Times.** The Wall Street Journal (4/12, 2.02M) reports that Japan's nuclear reactor industry faces challenging times because the country's reputation for quality products has taken a beating in view of the ongoing nuclear problems at the Fukushima Daiichi plant. The journal, citing several examples, says foreign interest in buying nuclear industry hardware from Japan has decreased significantly following the atomic plant disaster.

**Siemens, Areva Terminate Nuclear Joint Venture.** Reuters (4/11) reported that German industrial giant Siemens and French group Areva have terminated their nuclear joint venture. Siemens sold its 34 percent stake in Areva NP to Areva for 1.62 billion euros (\$2.34 billion). Reuters said the legal battle whether Siemens has broken its contract with Areva will, however, continue.

**Anti-Nuclear Activists Barricade Road Outside London Offices Of EDF.** Bloomberg News (4/11, Spillane) reported, "Activists barricaded a road outside the London offices of Electricite de France SA today to protest plans by Europe's biggest power producer to build a new generation of UK nuclear power plants." Bella Benson, a spokeswoman for Boycott EDF group said: "EDF has spent a massive amount of money marketing as an environment-friendly company." She added, "But the truth is that it's planning to lumber us with an outdated form of energy that is incredibly dangerous, extremely expensive and completely unnecessary."

**Iran Touts Gains In Nuclear Program, Announces Plans To Build More Reactors.** The Washington Post (4/12, Warrick, 572K) reports Iran is "proclaiming significant gains in its nuclear program, progress that Western officials and experts say could effectively erase setbacks from recent cyber attacks and shorten the timeline for acquiring nuclear weapons." In announcements "over the past three days," Iranian scientists "said they have successfully tested advanced centrifuges for enriching uranium and are less than a month away from starting the country's first commercial nuclear reactor." The announcements, says the Post, "underscore recent assessments by intelligence officials and Western nuclear experts suggesting that Iran is preparing to speed up its production of enriched uranium."

The AP (4/12) reports nuclear chief Fereidoun Abbasi announced Monday that Iran "will need more enriched uranium to fuel the 'four or five' new research reactors it is planning on building." Abbasi said Iran is planning to build the new research reactors "in the next few years" to produce medical radioisotopes.

**Germany Rejects Requests To Shutter Iranian Bank.** The Wall Street Journal (4/12, A6, Crawford, Subscription Publication, 2.02M) reports that despite international pressure, Germany is resisting calls to shutter the European-Iranian Trade Bank AG, arguing the bank is not engaged in illicit activities. The US, however, maintains that the sanctioned bank is a financial conduit for Iranian firms involved in weapons proliferation.

**Iranian Lawmaker Blames Western "Enemies" For Pipeline Explosion.** The New York Times (4/12, Yong, Subscription Publication, 950K) reports, "A member of the Iranian parliament has blamed Western 'enemies' for a blast on Friday that hit a major gas pipeline" near the city of Qom. The head of the parliament's national security committee, Parviz Sorouri, "told reporters on Sunday that Western-backed 'terrorists' were aiming to bring insecurity to Iran's national energy transfer routes."

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# NUCLEAR REGULATORY COMMISSION NEWS CLIPS

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**NRC NEWS:**

**NRC Chairman Says No Change In 50-mile Evacuation Zone For Japanese Nuclear Crisis (AP)**

By Matthew Daly

Associated Press, April 12, 2011

WASHINGTON - The top US nuclear regulator said Monday he will not change a recommendation that US citizens stay at least 50 miles away from Japan's crippled nuclear power plant, even as he declared that the crisis in that country remains "static."

Gregory Jaczko, the chairman of the Nuclear Regulatory Commission, acknowledged in an interview with The Associated Press that the month-old crisis in Japan has not yet stabilized. But he said conditions at the Fukushima Dai-ichi plant have not changed significantly for several days.

"We describe the situation as static but not yet stable," Jaczko said.

"It hasn't really changed too much in the last few days," he added, but it will be weeks or even months before the plant is stabilized.

The March 11 earthquake and tsunami knocked out power at the Fukushima plant and reactors have been overheating ever since. In Japan on Tuesday, the Nuclear Safety Commission of Japan raised the severity rating of the crisis from 5 to 7, the highest level and on par with the 1986 Chernobyl disaster.

Progress in stabilizing the complex comes slowly most days, or not at all, as new tremors and radiation repeatedly halt work. A new aftershock Monday briefly cut electricity to the plant and halted work while technicians took cover, but did not endanger operations, according to Japanese officials.

The Japanese government, meanwhile, added five communities Monday to a list of places people should leave to avoid long-term radiation exposure. A 12-mile radius has been cleared around the plant already.

Jaczkowski said the most important job at the plant still is keeping water in the spent fuel pools to cool the highly radioactive fuel rods, reducing the threat of a meltdown and a catastrophic release of radiation.

Jaczkowski, who traveled to Japan last month, said the NRC has begun a two-pronged approach to review the safety of the 104 commercial US nuclear reactors in the wake of the Japanese crisis. A 90-day review should be completed in June, with another report expected by the end of the year.

"We want this to be a very systematic and methodical review and make sure we identify all the important issues, and that we work with a sense of urgency and speed to address those issues in the appropriate way," he said, adding that he expects the reviews to result in recommendations for significant regulatory changes.

"Fundamentally, I expect that there will be some things we will want to change and need to change as a result of what comes out of this 90-day review and longer-term review, based on events in Japan," he said.

A task force made up of high-ranking NRC staff is conducting the two reviews, and the five-member commission will act quickly once the reports are released, Jaczkowski said.

On the 50-mile evacuation zone for US citizens in Japan, Jaczkowski called his March 16 recommendation "prudent" and said it was based on projections for continued deterioration at the plant. The Japanese government had set a 12-mile evacuation zone, and the US decision raised questions about US officials' confidence in Tokyo's risk assessments.

"I'm still very comfortable" with the decision, Jaczkowski said.

Asked whether he set up a double standard — one for nuclear plants in foreign countries and another for US plants, where a 10-mile evacuation zone is the current standard — Jaczkowski said no.

"I wouldn't say that's a contradiction," he said, noting that the 10-mile US evacuation zone refers to emergency planning prior to a nuclear disaster. If events warrant, a larger evacuation zone can be created.

"Ultimately, decisions about protective actions (in the event of a nuclear disaster) are made by state and local authorities," he said, not the NRC.

On another topic, Jaczkowski said he believes spent fuel can be stored safely either in pools or in dry cask storage. Sen. Dianne Feinstein, D-Calif., sent Jaczkowski a letter Monday urging the NRC to establish regulations that would encourage plant operators to move more quickly to store spent fuel in dry casks, rather than in pools that must be kept cooled.

Feinstein cited a 2006 study by the National Research Council indicating that dry cask storage systems have inherent safety advantages over spent fuel pools.

Jaczkowski disputed that, saying both methods are safe.

The United States has not had an accident involving spent fuel in decades, and spent fuel at commercial US reactors "continues to be safe and secure," even without a designated site to store nuclear waste, Jaczkowski said. The Obama administration has abandoned plans for a nuclear waste dump in Nevada, prompting sharp criticism from some lawmakers in both parties.

Jaczkowski declined to speculate on whether the Japanese crisis would cause a slowdown in a planned expansion of US nuclear reactors backed by President Barack Obama. Jaczkowski said the NRC has "a very robust system" to license reactors that takes into account a wide range of factors.

"Ultimately safety rests with the (plant operator)," he said. "It's our job to make sure they get there."

If the NRC considers plants unsafe, it will take corrective action, up to and including shutting down plants if necessary, Jaczkowski said.

Three US nuclear power plants — in South Carolina, Kansas and Nebraska — need increased oversight from federal regulators because of safety problems or unplanned shutdowns. But Jaczkowski said all 65 US nuclear plants in 31 states are operating safely.

## **Japan Nuke Crisis Not Yet Stable (AP)**

Associated Press, April 12, 2011

— The top US nuclear regulator says he will not change a recommendation that US citizens stay at least 50 miles away from Japan's crippled nuclear power plant, even as he declared that the crisis in that country remains "static."

Gregory Jaczko, who is chairman of the Nuclear Regulatory Commission, acknowledged in an interview with The Associated Press today that the month-old crisis in Japan has not yet stabilized. But he said conditions at the Fukushima Dai-ichi plant have not changed significantly for several days.

Jaczko said he personally made the decision to recommend that 50 miles was a safe distance from the crippled reactors. The Japanese government had set a 12-mile evacuation zone.

Jaczko's recommendation raised questions about US confidence in Tokyo's risk assessments.

## **US Lawmaker Calls For New Nuclear Waste Rules (REU)**

By Ayesha Rascoe

Reuters, April 12, 2011

Full-text stories from Reuters currently cannot be included in this document. You may, however, click the link above to access the story.

## **Feinstein Urges NRC To Revamp Wet-storage Waste Policy (EPPM)**

By Hannah Northey

E&ENews PM, April 12, 2011

Federal policies regarding the storing of spent nuclear fuel are flawed because they do not encourage reactor operators to move spent fuel rods from wet pools to dry storage systems, the chairwoman of a Senate Appropriations subcommittee told the Nuclear Regulatory Commission chairman.

In a letter sent Friday, Sen. Dianne Feinstein (D-Calif.) told NRC Chairman Gregory Jaczko that the commission should initiate a rulemaking to spur a "more rapid shift of spent fuel to dry casks."

NRC rules are out of step with 2006 safety recommendations from the National Academy of Sciences' National Research Council, said Feinstein, who leads the Subcommittee on Energy and Water Development.

The council issued a report that found moving spent fuel from wet pools to dry cask storage systems once they are sufficiently cool decreases the amount of fuel at risk during an accident or attack and increases operators' ability to safeguard the material, Feinstein said.

The dispersion of radioactive material is also more likely to be contained if the spent fuel rods are in dry storage casks, the council found, and radioactive material can be more easily recovered because the casks can be plugged temporarily with "radiation-absorbing materials" until permanent fixes are available.

"Containing radiation from a compromised spent fuel pool is likely to be much more difficult, particularly if the overlying building collapsed preventing workers from reaching the pool," the council's report says.

Jaczko told Feinstein at a hearing last month that spent fuel can be stored safely in wet pools for up to 100 years and that wet storage is just as safe as dry storage systems (Greenwire, March 31).

In the United States, the bulk of spent nuclear fuel rods are stored in pools under at least 20 feet of water, which provides a radiation shield, NRC says. Current NRC regulations allow fuel to be re-racked within the pool and consolidated, depending on the size of the pool. Operators can move cooled fuel into dry storage systems or casks, which are steel cylinders that are either welded or bolted shut and placed into concrete structures.

Concern over spent fuel storage has grown since the March 11 earthquake and tsunami crippled Japan's Fukushima Daiichi nuclear complex and spent fuel pool and caused radiation leaks.

Feinstein said the events in Japan show the United States must be prepared for any "unanticipated threats" and that spent fuel should be kept in smaller, easier to manage containers that are "distributed intelligently on a secure site."

## **Storage Of Used Nuclear Fuel Rods At TVA Plants, Elsewhere Stir Concern (TENN)**

By Anne Paine

Tennessean, April 12, 2011

Tons of radioactive waste are piling up at the Tennessee Valley Authority's nuclear power plants and others around the country in water-filled pools that in many cases were not intended to hold so much.

At TVA's Browns Ferry plant, 100 miles south of Nashville in Athens, Ala., some of the used fuel rods have been steeping in water for decades.

While industry officials say it's safe and that operations in the US have extra safeguards, similar pools of spent fuel have released radioactive materials to the air after last month's earthquake and tsunami in Japan. Traces of radioactive iodine linked to the damaged Fukushima plant were detected in the air and rainwater last week in Tennessee and other states.

In contrast, the radioactive waste stored in dry casks at the Japanese nuclear plant remained secure.

In the United States, more than 75 percent of the radioactive waste at the nation's 104 commercial nuclear reactors sits in pools, according to the Nuclear Regulatory Commission. The rest is in dry storage casks, mainly on site.

The pools nationwide were intended as a temporary rest stop where used fuel rods would partially cool before transport to a central location in the country for reprocessing or disposal.

With no such sites available, the used rods, which are in bundles called assemblies, have been placed closer together than planned and largely left in the pools.

The Nuclear Regulatory Commission permits such packing. Still, TVA, for one, is considering a change.

"We're likely to do more dry cask storage now," TVA spokesman Ray Golden said. "Exactly how much I think still needs to be determined."

Critics, including the Union of Concerned Scientists, have said for years that the pools were a vulnerable part of a nuclear plant, and that the fuller one is, the greater the risk.

The NRC should require the transfer to dry storage casks made of concrete and steel when the waste rods are cool enough, not when pools are nearly full, they say.

TVA has transferred some waste to dry storage, but the public power producer will give little information on how much, saying it's a security matter.

"Every year we do at least five to 10 canisters to catch up, to get even more room in there because we are somewhat filled," said Preston Swafford, TVA's chief nuclear officer, as he stood 30 feet from a pool at Browns Ferry during a tour last month. He was referring to the plant's three cooling pools.

About two dozen casks, each holding 68 used fuel assemblies, sat outside the building. That's a considerably smaller number than those in the pool nearby. It could hold an estimated 2,500 old assemblies, and it had 1,800-1,900.

It's unclear how many of the bundles of used fuel assemblies in pools nationwide are older than the five to eight years it takes to cool off enough to move.

NRC and Nuclear Energy Institute spokesmen said they did not have that information. TVA officials would not release the specific data on its plants.

Golden gave only the totals for each of TVA's plants. Browns Ferry has 1,771 metric tons of radioactive waste in pools and casks combined. Sequoyah, about 20 miles northeast of Chattanooga, has a combined 1,174 metric tons.

At Watts Barr, about 60 miles southwest of Knoxville, 317 metric tons of waste are on site, all in the one pool there, where there's plenty of room. The one reactor there opened in 1996, with enough pool space to handle fuel from two reactors. A second reactor is due for completion next year. Storage plan scrapped

The nuclear industry had been waiting at least two decades for the federal government to build a long-term repository inside Yucca Mountain in Nevada. Nuclear wastes, hauled there from around the country, could be held for hundreds of thousands of years.

There are no nuclear power plants in Nevada, and strong opposition came from that state as well as elsewhere. Plans were abandoned, with President Barack Obama cutting funding for the project.

Over the years, dry cask storage has been developed as an option.

The containers can run \$800,000 to \$1.5 million apiece, though some say the price is relatively insignificant to the expense of generating electricity.

A 2003 paper, "Reducing the Hazards from Stored Spent Power-Reactor Fuel in the United States," published in Science and Global Security, advised that dense packing in pools makes it possible in case of water loss for the newer fuel rods to heat up and catch fire. That could spew radioactivity and start a chain-reaction fire to the older rods, resulting in extensive land contamination.

The possibilities also could make the pools an attractive target for terrorists, it said.

The NRC disputed the report, saying it overestimated the potential danger as well as the cost-benefits of moving more waste to dry storage sooner.

A 2006 report that Congress, the NRC and the Department of Homeland Security requested from the National Academies of Sciences found inherent security advantages in cask storage. They don't need water, pumps or electricity. They are sturdy and give off heat slowly.

Some today are licensed for 60 years but are generally thought to be good for at least 100.

NRC Commissioner Gregory B. Jaczko, who told Congress last month that the nuclear plants and pools in this country are safe, also sees advantages. He said during a Nuclear Energy Institute Dry Storage Information Forum in 2008:

"The most clear-cut example of an area where additional safety margins can be gained involves additional efforts to move spent nuclear fuel from pools to dry cask storage. ... I believe the NRC should develop new regulations which require spent fuel be moved to dry cask storage after it has been allowed to cool for five years."

That has not happened, but the situation in Japan may spur it.

"The fact that we saw the problems we did with spent fuel pools at Fukushima, I think, will cause people to look at that and the cost-benefit analysis to see if there's more benefit than they might have seen in the past," said Steven L. Krahn, Vanderbilt University professor of nuclear environmental engineering.

Cask sales are looking up, too. It can take a year or two from ordering to receipt, but companies say they believe they could keep up — even with a rush.

Joy Russell with Holtec International, one of the country's few cask manufacturers, said her firm has received new inquiries since the crisis in Japan. The company has a contract with TVA.

Tara Neider, former head of Transnuclear Inc. and now with Areva Federal Services, said demand was already good.

"I anticipate there's going to be a lot more business with what's going on in Japan," she said.

Fukushima's reactors are of the same General Electric design as those at several plants in this country, including Browns Ferry.

Officials say the US plants have extra safeguards, and the main issue in Japan was a total loss of power, so pumps failed to keep cooling water moving. Water began heating up to extreme temperatures and evaporating, leaving fuel rods exposed.

At Browns Ferry a series of backup systems would keep water pumping around the waste, Swafford said during the media tour.

In the nearby 384,000-gallon pool, the tops of bundles of 12-foot-long rods could be seen sunken in square, metal cubbyholes to keep them separated.

They lay 27 feet below the surface of the water, which stops radioactive isotopes from poisoning those nearby. An industrial-style tin roof covers this part of the plant, the kind blown to pieces in an explosion in Japan.

The thick concrete and steel sides and bottom of a cooling pool make it strong, Swafford said, even if the roof gives way.

A pool must temporarily hold a reactor's entire fuel supply every couple of years during refueling, so extremely hot, fresh fuel rods are sometimes in the pool. That was the case at one of the problem Fukushima pools.

The spent fuel rods stay in the pool and the rest, which can be used for four to six years, go back in the reactor. Dry casks do the job

Of all the updates since March 11 on the website of the Tokyo Electric Power Co., which owns Fukushima, one hopeful note was about its dry storage casks:

"On March 17th, we patrolled buildings for dry casks and found no signs of abnormal situation for the casks."

The crisis in Japan, in fact, showed that a highly dangerous pool accident is possible, said Arjun Makhijani with the Institute for Energy and Environmental Research.

"The vast majority of spent fuel, 60, 70, 80 percent, can be moved to dry casks," he said.

"TVA can lead the way. TVA can do this for the public in its region, make it a lot safer. I think it will get enormous credit if it does, even from critics like me."

## **On Deadline: NRC: 3 Workers Exposed To Radiation At Neb. Nuclear Plant (USAT)**

By Melanie Eversley

USA Today, April 12, 2011

Three workers have been exposed to radiation at a nuclear plant near Brownsville, Neb., MSNBC is reporting.

The US Nuclear Regulatory Commission announced Monday it was looking into the "unplanned radiation exposures" on April 3 at Cooper Nuclear Station, the news organization reported.

According to a news release on the NRC website, the exposures took place during a maintenance procedure during which the workers removed a tube contaminated with radioactive material through the bottom of the reactor vessel as opposed to through the top, which would normally be the procedure. As a result, radiation alarms were triggered, the release said.

The workers set the tube down and immediately left the area, according to the NRC.

"We want to understand why normal work practices were not followed," said Elmo Collins, NRC Region IV administrator.

"We want to take a look at the decision making that contributed to this event."

MSNBC posted a link to a map of the plant, which is south of Omaha.

## **US Inspects Cooper Nuclear Plant After Radiation Exposures (BLOOM)**

By Simon Lomax

Bloomberg News, April 12, 2011

The US Nuclear Regulatory Commission is inspecting a reactor at a Nebraska power plant after three workers received "unplanned radiation exposures" last week, the agency said.

The Nebraska Public Power District, which operates the Cooper Nuclear Station, doesn't believe the workers received higher doses than allowed under NRC regulations in the April 3 incident, the agency said today in a statement on its website.

The workers were exposed while removing a radioactive tube from the bottom of the reactor, rather than following procedure and taking it from the top, the NRC said. When radiation alarms were triggered, the workers set down the tube and immediately left the reactor area, the regulator said.

"We want to understand why normal work practices were not followed," Elmo Collins, a regional administrator for the NRC in Arlington, Texas, said in the statement.

The NRC announced the inspection at the Cooper plant, 23 miles south of Nebraska City, while conducting a 90-day safety review of all US reactors. The examination was prompted by a partial meltdown at Tokyo Electric Power Co.'s Fukushima Dai-ichi plant in Japan, which was damaged by a March 11 earthquake and tsunami.

The Nebraska Public Power District will cooperate fully with the investigation, Mark Becker, a spokesman for the utility, said in an interview.

The plant was shut down on March 13 for refueling, Becker said. The plant is to restart later this month, he said. No radiation was released "external to the plant," he said.

## **3 Nuclear Plant Workers Exposed To Radiation; Feds Investigating (CNN)**

CNN, April 12, 2011

(CNN) – The Nuclear Regulatory Commission will investigate an incident at a Nebraska nuclear plant in which three workers were accidentally exposed to radiation, it said in a statement Monday.

The incident occurred April 3, when workers at the Cooper Nuclear Station near Brownville, Nebraska, "removed a long tube contaminated with highly radioactive material through the bottom of the reactor vessel, rather than through the top as is usually done, triggering radiation alarms." The workers put down the tube and immediately left the area, the statement said.

Officials at the facility do not believe the workers received radiation exposures over limits set by the NRC, the commission said.

The facility is operated by the Nebraska Public Power District. Commission inspectors, who began their work Monday, "will look at the circumstances and decision-making by NPPD officials that led to the exposures, review the licensee's response to the event, calculate the exposures the workers received and review corrective actions taken to prevent a recurrence," the commission statement said.

A report will be issued within 45 days, according to the commission.

A nuclear crisis at Japan's Fukushima Daiichi plant, triggered by a March 11 magnitude-9.0 earthquake and subsequent tsunami, has led to a renewed focus on nuclear power in the United States and abroad.

## **Blog: Open Channel: Three Workers Exposed To Radiation At Nebraska Nuclear Plant (MSNBC)**

By Bill Dedman

MSNBC, April 12, 2011

The US Nuclear Regulatory Commission announced Monday afternoon that it was investigating the "unplanned radiation exposures" of three workers on April 3, a week earlier, at the Cooper Nuclear Station near Brownville, Neb.

The NRC said it did not believe the exposure exceeded its limits.

"Workers removed a long tube contaminated with highly radioactive material through the bottom of the reactor vessel, rather than through the top as is usually done, triggering radiation alarms," the NRC reported. "The workers set the tube down and immediately left the area."

The Cooper plant has a single boiling-water reactor of General Electric design. (GE is a part owner of NBCUniversal, which owns half of msnbc.com.)

Here's a map of the plant, which is about 25 miles from Nebraska City, Neb., and south of Omaha.

The full release from the NRC:

**NRC SENDS SPECIAL INSPECTION TEAM TO COOPER NUCLEAR STATION**

The US Nuclear Regulatory Commission has begun a special inspection at the Cooper Nuclear Station to review the circumstances surrounding a maintenance procedure that led to unplanned radiation exposures to three workers. The plant, located near Brownville, Neb., is operated by the Nebraska Public Power District (NPPD).

Inspectors, who began their work Monday, will look at the circumstances and decision-making by NPPD officials that led to the exposures, review the licensee's response to the event, calculate the exposures the workers received and review corrective actions taken to prevent a recurrence.

The incident occurred on April 3, when workers removed a long tube contaminated with highly radioactive material through the bottom of the reactor vessel, rather than through the top as is usually done, triggering radiation alarms. The workers set the tube down and immediately left the area. The licensee does not believe the workers received radiation exposures in excess of NRC limits.

"We want to understand why normal work practices were not followed, resulting in unplanned radiation exposures to three workers," said Region IV Administrator Elmo E. Collins. "We want to take a look at the decision-making that contributed to this event."

The team consisting of two NRC inspectors, began work Monday and will probably spend several days at the plant. They will write an inspection report on their findings within 45 days of the end of the inspection that will be made publicly available.

### **Three Workers At Nebraska Plant Exposed To Radiation (WSJ)**

By Tennille Tracy

Wall Street Journal, April 12, 2011

Full-text stories from the Wall Street Journal are available to Journal subscribers by clicking the link.

### **Three Nebraska Nuclear Workers Exposed To Radiation (REU)**

By Roberta Rampton, Greg McCune

Reuters, April 12, 2011

Full-text stories from Reuters currently cannot be included in this document. You may, however, click the link above to access the story.

### **NRC Approves Power Increase At Limerick (PHILLY)**

By Andrew Maykuth

Philadelphia (PA) Inquirer, April 11, 2011

The Nuclear Regulatory Commission on Monday announced it has approved a 1.65 percent-power increase by the two units of the Limerick Generating Station in Montgomery County.

The NRC approved Exelon Generation Co.'s request to increase the output because it could more accurately measure feedwater flow into the reactors. The "uprate" will allow the two boiling water reactors to increase output from 1,189 to 1,205 megawatts of electricity.

### **Increased Power Output At Limerick Approved By NRC (LANREP)**

Lansdale (PA) Reporter, April 11, 2011

The Nuclear Regulatory Commission has approved a request by Exelon Generation Company to increase the power generating capacity of Limerick Generating Station, Units 1 and 2, by 1.65 percent each.

The NRC staff's careful evaluation determined that Exelon could safely increase the reactors' power output primarily through more accurate means of measuring feedwater flow. As part of its evaluation, NRC staff reviewed the company's analysis showing the plant's design can accommodate the increased power level.

The NRC's safety evaluation of the plant's proposed power uprate focused on several areas, including the nuclear steam supply systems, instrumentation and control systems, electrical systems, accident evaluations, radiological consequences, fire protection, operations and training, testing, and technical specification changes.

The power uprate for Limerick's boiling-water reactors, located approximately 21 miles northwest of Philadelphia, will increase each unit's power generating capacity from approximately 1,189 to 1,205 megawatts electric. Exelon intends to implement Unit 1's uprate within 90 days, and Unit 2's uprate within 90 days of the completion of its 2011 spring refueling outage.

The NRC previously published a notice about the power uprate application in the Federal Register (<http://edocket.access.gpo.gov/2010/pdf/2010-13617.pdf>, page 32512). The agency's Evaluation of the Limerick power uprate

will be available through the NRC's ADAMS electronic document database by entering ML110691095 under the "Simple Search" tab on this Web page:

<http://wba.nrc.gov:8080/ves/>.

## **Nuclear Power Plant Uprate Project Approved (POWGENWLD)**

Power-Gen Worldwide, April 12, 2011

The Nuclear Regulatory Commission (NRC) has approved a request by Exelon Generation Co. to increase the power generating capacity of Limerick Generating Station, Units 1 and 2, by 1.65 percent each.

The NRC staff's evaluation determined that Exelon could safely increase the reactors' power output primarily through more accurate means of measuring feedwater flow. As part of its evaluation, NRC staff reviewed the company's analysis showing the plant's design can accommodate the increased power level.

The NRC's safety evaluation of the plant's proposed power uprate focused on several areas, including the nuclear steam supply systems, instrumentation and control systems, electrical systems, accident evaluations, radiological consequences, fire protection, operations and training, testing, and technical specification changes.

The power uprate for Limerick's GE boiling water reactors will increase each unit's power generating capacity from approximately 1,189 to 1,205 MWe. Exelon intends to implement Unit 1's uprate within 90 days and Unit 2's uprate within 90 days of the completion of its 2011 spring refueling outage.

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## **Panel To Probe US Readiness For A Disaster Like Japan's (EED)**

By Emily Yehle

E&E Daily, April 12, 2011

Lawmakers will discuss the lessons learned from the recent tsunami in Japan at a hearing this week on tsunami preparedness and interagency cooperation.

The House Oversight and Government Reform subcommittee on national security plans to meet Thursday to discuss whether the federal government is prepared to "warn, respond and assist" state and local governments in the event of a tsunami, according to a committee staffer. The witness list was not available by publication time.

The Japanese earthquake – and resulting tsunami – has incited concerns over the United States' warning system in recent weeks. Such a disaster would necessitate the cooperation of several agencies, including NOAA, the Federal Emergency Management Agency and local law enforcement agencies.

Earlier this month, Rep. Frank Wolf (R-Va.), the chairman of the House Appropriations subcommittee that oversees NOAA, asked the agency to hold conferences on tsunami preparedness on both the Pacific and Atlantic coasts.

"The tragic events in Japan over the last month have made clear that we cannot afford to be unprepared for a tsunami," he wrote in a letter to NOAA Administrator Jane Lubchenco.

NOAA scientists, meanwhile, have pushed for a new tsunami warning center in Puerto Rico. The country's two existing centers – in Hawaii and Alaska – could be wiped out in the same natural disaster, they say, and they argue that the Caribbean is ripe for major seismic activity and deserves a closer facility.

Last July, Puerto Rico Gov. Luis Fortuño (R) offered \$6 million toward the construction of a facility at the University of Puerto Rico's Mayagüez campus. But NOAA would have to commit to staffing the center and contributing an additional \$5 million for its construction.

Schedule: The hearing is Thursday, April 14, at 1:30 p.m. in 2154 Rayburn.

Witnesses: TBA.

## **CNBC's Fast Money: Nuclear Power Fears At New Heights Despite Safety, Viability (CNBC)**

By John Melloy

CNBC, April 12, 2011

Japan may raise its nuclear crisis to a level seven from a level five, according to the Kyodo news agency. That level would equal Russia's Chernobyl disaster as the earthquake-plagued nation desperately tries to contain the amount of radiation admitted. The Three Mile Island accident in 1979 was a level 5.

Nuclear power-related shares are taking a hit, Germany may abolish nuclear power altogether in 12 years and iodine tablets are selling fast on the US West Coast as radiation fears reach new heights. The global overreaction from this rare 9.0

magnitude earthquake and massive tsunami that followed may set back the safest and easiest way for this country to solve its energy crisis, investors said.

"The Fukushima meltdown may mark a high point in anti-nuclear hysteria," said John Downs of Euro Pacific Capital, in a note to clients Monday. "As a result, investors should not treat nuclear-related stocks as if they were radioactive. Eventually, reason prevails, and the truth is that nuclear power is hands down the best option available for powering the 21st century."

Downs goes on to cite the rarity of these kinds of events in the 60-year history of the commercial nuclear energy, especially ones that cause civilian casualties.

"Although there may very well be deaths associated with the Japanese meltdown in the months and years to come, the only reactor incident to cause civilian deaths to date was Chernobyl, a poorly run facility in the bankrupt late-Soviet Union (amazingly built with no containment vessel)," said Downs.

But among the most intriguing stats that Downs includes in his report is that "the average coal plant releases 100 times more annual radiation than a comparable nuclear plant."

The analyst likely got this statistic from an article in "Scientific American" from three years ago, which used a similar statistic citing work from the Oak Ridge National Laboratory and a 1978 paper in the "Science" journal.

"The fly ash emitted by a power plant – a by-product from burning coal for electricity – carries into the surrounding environment 100 times more radiation than a nuclear power plant producing the same amount of energy," according to the article from the magazine.

An article in today's New York Times, gives a bad name to the supposed other "clean" alternative, natural gas. While this fuel burns cleaner than other fossil fuels, the article states that the "planet-warming" methane gas released during the unconventional drilling process used today offsets that eventual benefit.

Shares of Shaw Group [SHAW Loading... () ], which builds power plants including nuclear ones, have taken a hit since the Japan disaster on concern global demand will decrease. It said Monday that revenue this year may miss the company's previous guidance. Still the CEO sounded hopeful in the press release.

"While the devastating events in Japan have drawn significant attention to the nuclear power industry, work on our nuclear power units currently under construction continues as planned," said J.M. Bernhard, chairman and chief executive officer of Shaw. "Additionally, Shaw's experience in performing construction services at nuclear power plants and emergency response services after natural disasters, positions us to assist with the recovery efforts in Japan and any future modification needs to existing power plants in the US and internationally."

Flour and Babcock & Wilcox, two other power infrastructure companies, are due to report in early May and early June respectively. Both have taken a hit from the Japan disaster and the subsequent not-in-my-backyard attitude. Still, these companies may have one champion still left: a pragmatic President.

"Nuclear energy doesn't emit carbon dioxide into the atmosphere," said President Obama in a March 30th speech on clean energy following the Japan disaster. "To those of us concerned about climate change, we've got to recognize that nuclear power, if it's safe, can make a significant contribution to the climate change question. And I'm determined to ensure that it's safe."

For the best market insight, catch 'Fast Money' each night at 5pm ET, and the 'Halftime Report' each afternoon at 12:30 ET on CNBC.

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John Melloy is the Executive Producer of Fast Money. Before joining CNBC, he was an editor for Bloomberg News, overseeing the US Stock Market coverage team.

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Got something to say? Send us an e-mail at [comment@fastmoney.com](mailto:comment@fastmoney.com) and your comment might be posted on the Rapid Recap! If you'd prefer to make a comment, but not have it published on our Web site, send your message to [comment@fastmoney.com](mailto:comment@fastmoney.com).

Trader disclosure: On April 11, 2011, the following stocks and commodities mentioned or intended to be mentioned on CNBC's "Fast Money" were owned by the "Fast Money" traders; Adami owns (AGU); Adami owns (C); Adami owns (GS); Adami owns (INTC); Adami owns (MSFT); Adami owns (NUE); Adami owns (BTU); Weiss is short (X); Weiss is short (RTH); Weiss is short (IWM); Weiss owns (VZ); Weiss owns (QCOM); Weiss owns (DVN); Weiss owns (COP); Weiss owns (BTU); Weiss owns (JPM); Weiss owns (MSFT); Terranova owns (JPM); Terranova owns (C); Terranova owns (VRTS); Terranova owns (UPL); Terranova owns (TCK); Terranova owns (BAX); Terranova owns (XOM); Terranova owns (AKAM); Karabell owns (AAPL); Karabell owns (BHP); Karabell owns (BIDU); Karabell is long (GOOG); Karabell owns (GS); Karabell owns (MRVL); Karabell Owns (SINA); Seymour owns (AA); Seymour owns (AAPL); Seymour owns (F); Seymour owns (INTC)

For Tim Seymour:

Seygem Asset Management Is Short (FCX) Weiss Owns (VZ)

For Anthony Scaramucci  
SkyBridge Is A Fund Of Funds Manager  
Funds Held May Or May Not Own The Recommended Securities  
For Mike Khouw

Cantor Fitzgerald is a market maker in (CLX)  
For Zach Karabell:  
Karabell and River Twice Capital are long (CSCO)  
Karabell and River Twice Capital are long (MON)  
River Twice Capital is long (AMSC)  
River Twice Capital is long (EXPE)  
River Twice Capital is short (GS) puts  
River Twice Capital is short (QQQQ)  
River Twice Capital is short (XLF)  
River Twice Capital is short (AA)  
Karabell And River Twice Capital Own (MON), (NTES)

For Willie Williams  
Societe Genarale Facilitates Transactions In Tradable Currencies  
For Dennis Gartman  
Funds Managed by Dennis Gartman are long Canadian Dollars  
Funds Managed By Dennis Gartman are long crude  
Funds Managed by Dennis Gartman are long nat gas  
Funds Managed by Dennis Gartman are shot 10 yr canadian bonds  
Funds Managed by Dennis Gartman are short 10 yr US treas. Notes  
Funds Managed by Dennis GARTman are short euros.

For Joe Terranova  
Terranova is Chief Market Strategist of Virtus Investment Partners, LTD  
Virtus Investment Partners Owns More Than 1% Of (ABAX)  
Virtus Investment Partners Owns More Than 1% Of (AMKR)  
Virtus Investment Partners Owns More Than 1% Of (CCG)  
Virtus Investment Partners Owns More Than 1% Of (CASS)  
Virtus Investment Partners Owns More Than 1% Of (CSV1)  
Virtus Investment Partners Owns More Than 1% Of (EXR)  
Virtus Investment Partners Owns More Than 1% Of (FCFS)  
Virtus Investment Partners Owns More Than 1% Of (IGE)  
Virtus Investment Partners Owns More Than 1% Of (KRC)  
Virtus Investment Partners Owns More Than 1% Of (LDR)  
Virtus Investment Partners Owns More Than 1% Of (NCRI)  
Virtus Investment Partners Owns More Than 1% Of (DBV)  
Virtus Investment Partners Owns More Than 1% Of (XLB)  
Virtus Investment Partners Owns More Than 1% Of (XLV)  
Virtus Investment Partners Owns More Than 1% Of (XLP)  
Virtus Investment Partners Owns More Than 1% Of (XLY)  
Virtus Investment Partners Owns More Than 1% Of (XLE)  
Virtus Investment Partners Owns More Than 1% Of (XLF)  
Virtus Investment Partners Owns More Than 1% Of (XLI)  
Virtus Investment Partners Owns More Than 1% Of (XLK)  
Virtus Investment Partners Owns More Than 1% Of (XLU)  
Virtus Investment Partners Owns More Than 1% Of (WDFC)  
Virtus Investment Partners Owns More Than 1% Of (YDNT)  
Virtus Investment Partners Owns More Than 1% Of DOMINO'S PIZZA UK & IRL PLC

For Jon Najarian:  
I own AA Call Spreads, no positions in DRRX, but moving in post & I am posting about it.

DRRX Primary endpoint was not met in ELADUR Phase II Study for Chronic Low Back Pain- In this study of 263 patients suffering from chronic low back pain, the primary efficacy endpoint

For Brian Sozzi

\*\*No Disclosures

Stephen Weiss SOT from 3/22/11

\*\*No Disclosures

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## **Future Of Energy Source Under Scrutiny (EED)**

By Hannah Northey

E&E Daily, April 12, 2011

Senators this week will delve into the implications of Japan's nuclear crisis for the safety and future of nuclear power in the United States.

The full Senate Environment and Public Works Committee and the committee's subpanel on clean air and nuclear safety will hear from a host of top energy regulators tomorrow about the role nuclear energy will play in the country's energy portfolio going forward.

US EPA Administrator Lisa Jackson and Nuclear Regulatory Commission Chairman Gregory Jaczko will provide opening statements. The committee will then hear from a host of state regulators and lawmakers, especially from California, as well as Exelon Generation Chief Operating Officer Charles Pardee.

Although nuclear energy is seen as key to striking a balance between producing power and curbing greenhouse gases, regulators must now address heightened anxiety surrounding the operation and oversight of the reactors.

NRC has taken the lead role in reviewing the United States' fleet of 104 reactors following the March 11 earthquake and tsunami that crippled Japan's Fukushima Daiichi nuclear complex. Japanese officials are still struggling to gain control of the reactors on the country's east coast and US officials are trying to determine the status of the complex.

NRC is conducting a review of US reactors' safety systems, backup power and emergency response procedures through the coming summer. The commission has said lessons from the Japanese disaster will be incorporated into the safety of reactors across the nation.

Schedule: The hearing is tomorrow at 2:45 p.m. in the EPW Hearing Room, 406 Dirksen.

Witnesses: EPA Administrator Lisa Jackson; NRC Chairman Gregory Jaczko; California state Sen. Sam Blakeslee (R); James Boyd, vice chairman of the California Energy Commission; Lewis Schiliro, Cabinet secretary of the Delaware Department of Safety and Homeland Security; Curtis Sommerhoff, director of the Miami-Dade County Department of Emergency Management, Exelon Generation Chief Operating Officer Charles Pardee; and Thomas Cochran, a senior scientist for the Natural Resources Defense Council's nuclear program.

## **Assistant Secretary For Nuclear Energy: Who Is Peter Lyons? (AGOV)**

By David Wallechinsky

AllGov, April 12, 2011

A physicist and longtime member of the nation's premier research laboratory, Peter B. Lyons was nominated to be the Department of Energy

's assistant secretary for nuclear energy in December 2010. The Senate Energy and Natural Resources Committee

is scheduled to vote on his nomination on April 12. The mission of the Office of Nuclear Energy

is to promote nuclear power as an energy source. It does this with an annual budget of more than \$850 million.

Raised in Nevada, Lyons attended college in neighboring Arizona, receiving his bachelor's degree in physics and mathematics from the University of Arizona in 1964. Five years later, he earned his PhD in nuclear astrophysics from the California Institute of Technology.

After receiving his PhD, Lyons began his career at Los Alamos National Laboratory, and wound up spending 27 years at the renowned lab. He spent his first 15 years working on nuclear testing and other defense-related projects, and his next 10 years as a manager. Among the positions he led were group leader for transient plasma diagnostics, program director for nuclear

defense research, deputy associate director for defense research and applications and deputy associate director for energy and environment.

In late 1993 he was put in charge of the Industrial Partnership Office, which coordinated research between Los Alamos and private corporations.

In January 1997, Lyons was assigned by Los Alamos to take a leave of absence and serve as science advisor on the staff of US Senator Pete Domenici (R-New Mexico) and the Senate Energy and Natural Resources Committee, where, for six years, he focused on military and civilian uses of nuclear technology, national science policy and nuclear non-proliferation. He continued in this capacity after leaving the laboratory and officially joining the Senate staff in 2003.

President George W. Bush gave Lyons a recess appointment to serve as a commissioner of the Nuclear Regulatory Commission

(NRC). In May 2006, the Senate confirmed him for a full term, and he eventually served from January 25, 2005, until June 30, 2009. During this time he focused on the safety of operating reactors as new reactor licensing and possible construction emerged.

After his NRC term ended, Lyons worked briefly as a consultant to nuclear energy assistant secretary Warren "Pete" Miller. On September 14, 2009, Lyons was appointed to the position of principal deputy assistant secretary of the Office of Nuclear Energy

and served as acting assistant secretary upon Miller's retirement in November 2010. Miller and Lyons worked so closely together that Secretary of Energy Steven Chu referred to them as "Pete and Re-Pete."

Lyons has published more than 100 technical papers, holds three patents related to fiber optics and plasma diagnostics, and served as chairman of the NATO Nuclear Effects Task Group for five years. While at Los Alamos, Lyons served for 16 years on the Los Alamos School Board.

-David Wallechinsky, Noel Brinkerhoff

## **PG&E Wants Diablo Canyon Nuclear Plant License Delay For Seismic Study (AP)**

By Michael R. Blood

Associated Press, April 12, 2011

LOS ANGELES – The owner of the Diablo Canyon nuclear power complex asked federal regulators to delay issuing extended operating permits until comprehensive studies are completed on earthquake faults in the area, officials said Monday.

The move by Pacific Gas and Electric Co. came after a public outcry over possible safety risks at the California plant, which were heightened by the huge earthquake and tsunami that plunged Japan into a nuclear crisis.

Diablo Canyon, perched on an 85-foot bluff above the Pacific Ocean, sits within three miles of two earthquake faults. Lawmakers have been pushing the company to perform more thorough testing to assess earthquake risks before new licenses are granted.

More than 400,000 people live within 50 miles of the site, located midway between Los Angeles and San Francisco.

At a legislative hearing last month, company officials said the plant was safe and gave no hint that PG&E would agree to complete three-dimensional seismic studies before a renewal of the licenses.

But in a statement Monday, PG&E Senior Vice President John Conway referred to the Japanese crisis and said, "we recognize that many in the public have called for this research to be completed before the NRC renews the plants' licenses. We are being responsive to this concern." The company wants the NRC to extend the life of the complex for 20 years after its permits expire in 2024 and 2025.

In a letter to the NRC dated Sunday, PG&E said it would be prudent to complete the studies prior to granting new licenses. The company said it wanted the NRC to hold off issuing new licenses, even if approved by the agency, until the three-dimensional studies are finished.

State Sen. Sam Blakeslee, a Republican whose district includes the site, commended the decision and said in a statement that "it's our duty to learn and apply the lessons of Japan." Senate Majority Leader Ellen M. Corbett, D-San Leandro, said "it is unfortunate that it took a major catastrophe in Japan and a (legislative) hearing to prompt quicker action." NRC spokeswoman Lara Uselding said the agency will consider the company's request to see what, if any, impact it would have on the agency's review schedule.

In its letter, the company said it wanted to complete the research no later than December 2015, which would be long before the current licenses expire.

Diablo Canyon, where reactors began operating in the mid-1980s, has a long history of seismic issues.

The discovery of the offshore Hosgri Fault in 1971, after the plant was mostly completed, forced a major, costly redesign. Then, about two years ago, a geologic fault was discovered about a half-mile from the seaside reactor, raising new concerns about safety.

At issue at Diablo Canyon is not what is known, but what is not. Preliminary research at the site found its twin reactors could withstand a potential earthquake generated by the recently identified Shoreline Fault, just off the coast.

But California regulators say more study is needed on the new fault system. The fear is the two faults could begin shaking in tandem, creating a larger quake than either fault would be capable of producing on its own.

PG&E says the plant is built to withstand a magnitude-7.5 earthquake, the maximum considered possible for the site.

## **PG&E Wants Diablo Canyon Nuclear Plant License Delay For Seismic Study (AP)**

By Michael R. Blood

Associated Press, April 12, 2011

LOS ANGELES— The owner of California's Diablo Canyon nuclear power complex has asked federal regulators to delay issuing extended operating permits until comprehensive studies are completed on earthquake faults in the area.

There has been an outcry over possible safety risks since a fault was discovered less than a half-mile from the coastal site near San Luis Obispo, a concern heightened by the Japanese nuclear crisis.

Pacific Gas and Electric Co. wants the Nuclear Regulatory Commission to renew its license for 20 years to operate the twin reactors. The permits expire in 2024 and 2025. The company says the plants are safe.

In a letter to the NRC dated Sunday, the company says it would be "prudent" to complete the studies prior to granting new licenses for the site along the Central Coast.

## **PG&E Wants Diablo Canyon Nuclear Plant's Relicensing To Be Delayed For Seismic Testing (LAT)**

By David Sarno

Los Angeles Times, April 12, 2011

Pacific Gas & Electric Co. has asked federal authorities to delay the license renewal proceedings for its Diablo Canyon nuclear power plant until more thorough seismic testing of the area around the plant can be performed.

In the wake of the earthquake and nuclear crisis in Japan, people have been calling for advanced seismic testing around California's nuclear plants.

In 2009, PG&E applied to renew the licenses for its two nuclear reactors in San Luis Obispo County, which expire in 2024 and 2025. The renewal application process can take years.

"In light of recent events at the Fukushima Daiichi Power Plant, and the considerable public concern regarding the need to assure the seismic safety at DCP, PG&E has decided it is most prudent to have completed certain seismic studies at [Diablo Canyon] prior to issuance" of the renewed federal operating licenses," the utility said in a statement.

Though Diablo Canyon's engineers assured public officials in the late 1960s that the area around the plant had only "insignificant faults," at least two faults have been discovered since its construction, including one in 2008 less than a mile away.

That fault, called Shoreline, is thought by geologists to be capable of producing a magnitude 6.5 quake. The other fault, called Hosgri, is rated up to 7.3.

California energy authorities and legislators have asked PG&E to perform thorough studies of the seismic risks near the plant before it seeks a 20-year renewal of the licenses for its nuclear reactors.

"I commend PG&E for taking the responsible action of delaying relicensing until critical seismic questions are answered," said state Sen. Sam Blakeslee (R-San Luis Obispo). "We respect that this is a difficult decision that demonstrates their willingness to prioritize the safety of Californians."

## **PG&E Asks For Delay In License Renewal For Diablo Canyon Nuclear Power Plant (SLOT)**

By David Sneed

San Luis Obispo (CA) Tribune, April 12, 2011

Pacific Gas and Electric Co. has sent a letter to the federal Nuclear Regulatory Commission asking it to delay final implementation of license renewal at Diablo Canyon nuclear power plant until the utility can complete advanced seismic studies of the plant.

That could delay license renewal through 2015.

The California Public Utilities Commission has joined a chorus of agencies and elected officials who are calling for a closer look at the seismic safety of Diablo Canyon nuclear power plant after the nuclear emergency in Japan.

But the commission is different than other state and local government agencies. It wields indirect authority over Diablo Canyon because it controls PG&E's purse strings.

The federal Nuclear Regulatory Commission holds preemptive authority over all aspects of safety and operation of the nation's 104 nuclear reactors.

SLO County supervisors raise Diablo concerns

SLO County supervisors raise Diablo concerns

Three of five county supervisors Tuesday called on PG&E to voluntarily suspend its drive to renew operating licenses for Diablo Canyon nuclear power plant until extensive earthquake safety studies can be completed.

The decision came after hours of public testimony by nearly 50 people about the safety of Diablo Canyon in light of the recent earthquake and tsunami in Japan that caused radiation leaks from several crippled nuclear reactors.

Supervisor Adam Hill, whose district includes the nuclear plant, said the recent tragedy in Japan has sharpened the public's concern about earthquake safety and reduced the public's trust of PG&E's assurances of the plant's safety. He will draft a letter to be brought back for the board's approval asking PG&E for peer-reviewed seismic studies before the utility proceeds with license renewal.

Officials may seek Diablo license delay

Officials may seek Diablo license delay

As promised, county supervisors Tuesday will vote whether to send a letter to PG&E asking it to suspend the relicensing of Diablo Canyon nuclear power plant until seismic studies have been completed and verified.

The letter was put on the agenda by Supervisor Adam Hill, whose district includes the power plant. Approval of the letter is considered all but certain given that a majority of the board has already expressed support for it.

Addressed to PG&E President Chris Johns, the letter says that staying license renewal would be a good way for the utility to restore the trust of the community. The letter cites an interview Johns gave The Tribune shortly after the earthquake and nuclear disaster in Japan in which he admitted that the company needs to "earn its customers' trust."

The letter, dated Sunday, cites the nuclear accident in Japan as well as an outpouring of public concern over earthquake safety at Diablo Canyon as the reasons for the request. This is the first time the NRC has received such a request.

"PG&E therefore requests that the commission delay the final processing of the LRA (license renewal application) such that the renewed operating licenses, if approved, would not be issued until after PG&E has completed the 3-D seismic studies and submitted a report to the NRC addressing the results of those studies," wrote John Conway, PG&E's chief nuclear officer.

## **PG&E Delays Licensing To Study Diablo Canyon Fault (SFC)**

By David R. Baker, Chronicle Staff Writer

San Francisco Chronicle, April 12, 2011

Bowing to pressure from government officials, Pacific Gas and Electric Co. has asked federal regulators to delay relicensing the Diablo Canyon nuclear plant until the company finishes in-depth studies of a recently discovered earthquake fault.

The utility, California's largest, has asked the US Nuclear Regulatory Commission to postpone making a final decision on the company's request to extend the licenses of Diablo's two reactors.

The company plans to conduct advanced seismic studies of the nearby Shoreline Fault, studies that may take until December 2015 to complete.

Little is known about the fault, first identified in 2008. Ever since an earthquake and tsunami crippled a nuclear plant in Japan last month, a growing number of California officials have demanded that PG&E conduct further studies on the Shoreline Fault before pressing ahead with license renewal. Diablo Canyon sits on a seismically active stretch of the Central California coast near San Luis Obispo.

"We recognize that many in the public have called for this research to be completed before the NRC renews the plant's licenses," said John Conway, the San Francisco company's chief nuclear officer.

He said the studies would help assure regulators and the plant's neighbors that the facility is safe.

California state Sen. Sam Blakeslee, who trained as a geophysicist, had demanded that PG&E perform those studies before Diablo's operating licenses could be renewed. He wrote a bill in 2009 that would have forced PG&E to conduct the studies, but it was vetoed by then-Gov. Arnold Schwarzenegger.

"I commend PG&E for taking the responsible action of delaying relicensing until critical seismic questions are answered," said Blakeslee, R-San Luis Obispo.

The Diablo reactors' current licenses expire in 2024 and 2025.

E-mail David R. Baker at [dbaker@sfchronicle.com](mailto:dbaker@sfchronicle.com).

## **PG&E Puts Off Licensing To Study Faults (SANTAMAR)**

By April Charlton

Santa Maria (CA) Times, April 12, 2011

Pacific Gas and Electric Co. has agreed to undertake advanced 3-D seismic studies of the ocean's floor and earthquake faults near its Diablo Canyon nuclear power plant, delaying the relicensing process until completion of those studies.

Officials made the announcement late Monday afternoon, less than 24 hours before the San Luis Obispo County Board of Supervisors was expected to hold a public hearing on the issue.

"We are still going to do so and probably still going to send the letter," said board Chairman Adam Hill.

Hill, whose district includes the plant, said he believes that PG&E should completely pull back from the relicensing process and focus all of its efforts on the safety of Diablo Canyon.

"I think it's a step in the right direction," Hill said about PG&E's announcement. "But they could do more."

The supervisors agreed March 29 to hold a public hearing today to discuss sending a letter to PG&E requesting the electric company stop the relicensing process until the 3-D seismic studies are complete.

PG&E has applied to the NRC to extend the power plant's current operating licenses for an additional 20 years. One of Diablo's reactor's license expires in 2024 and the other in 2025.

Hill said "focusing solely on the seismic studies" is the most credible way for PG&E to move forward in its quest to extend the life of Diablo Canyon and show the public it is committed to safety at the plant.

"It's still about the message that you are sending to your people," Hill said.

PG&E officials have said publicly that they want to restore the public's trust in the company.

In a letter to the NRC dated Sunday, PG&E said it would be prudent to complete the studies prior to granting new licenses. The company said it wanted the NRC to hold off issuing new licenses, even if approved by the agency, until the three-dimensional studies are finished.

"We recognize that many in the public have called for this research to be completed before the NRC renews the plant's licenses," John Conway, PG&E's senior vice president of energy supply and chief nuclear officer, said in a statement issued Monday.

"We are being responsive to this concern by seeking to expeditiously complete the 3-D seismic studies and provide those findings to the commission and other interested parties so that they may have added assurance of the plant's seismic integrity," he added.

The county is willing to work with PG&E to expedite the permitting process for the seismic studies, Hill said.

"We want them to move forward," he added.

State Sen. Sam Blakeslee, a Republican whose district includes Diablo Canyon, commended the decision, and said in a statement that "it's our duty to learn and apply the lessons of Japan."

NRC spokeswoman Lara Uselding said the agency will consider PG&E's request to see what, if any, impact it would have on the agency's review schedule.

In its letter, the utility company said it wanted to complete the research no later than December 2015, which would be long before the current licenses expire.

At issue at Diablo Canyon is not what is known but what is not. Preliminary research at the site found its twin reactors could withstand a potential earthquake generated by the recently identified Shoreline Fault, just off the coast.

The Associated Press contributed to this report.

## **Diablo Plant Delays License Bid For Quake Study (WSJ)**

By Ben Casselman And Stephen Power

Wall Street Journal, April 12, 2011

Full-text stories from the Wall Street Journal are available to Journal subscribers by clicking the link.

## **PG&E Seeks Delay In Diablo Canyon Nuclear Renewal (REU)**

By Eileen O'Grady

Reuters, April 12, 2011

Full-text stories from Reuters currently cannot be included in this document. You may, however, click the link above to access the story.

## **PG&E Continuing Its Nuclear License Renewal Application (BLOOM)**

By Mark Chediak

Bloomberg News, April 12, 2011

PG&E Corp. (PCG), owner of California's largest utility, is continuing to seek license renewals for its Diablo Canyon nuclear plant while it conducts a study of the earthquake risks at the site.

If its application is approved, PG&E asked the US Nuclear Regulatory Commission to hold off issuing the final licenses until the company has received the results of the seismic analysis, the company said in a statement today. The utility will not suspend the renewal process as part of its request, spokesman Paul Flake said in a telephone interview.

PG&E applied in November 2009 to renew the reactor licenses, which expire in 2024 and 2025, according to the commission's website.

After a March 11 earthquake and tsunami knocked out power to a nuclear plant in Japan, triggering radiation releases and a partial meltdown, California lawmakers have called on PG&E to suspend its request to extend the life of its Diablo Canyon reactors until seismic studies can assess the risks. One reactor is 25 years old and the other 26 years. In August 2010, PG&E received funding from state regulators to conduct the risk analysis, which was recommended by the state in 2008, according to an April 10 letter sent by the company to the commission.

"We recognize that many in the public have called for this research to be completed before the NRC renews the plant's licenses," PG&E's Chief Nuclear Officer John Conway said in the statement.

PG&E expects to complete its seismic report no later than December 2015, the company said in its letter to the commission. The commission is considering the potential impact PG&E's request might have on the timing of the license renewal, Eliot Brenner, a spokesman for the commission, said in an e-mail statement.

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## **PG&E Halts Diablo Canyon Relicensing (PACBT)**

Pacific Coast Business Times, April 12, 2011

Moving quickly to short-circuit a potential conflict with political and business leaders, Pacific Gas & Electric on April 11 abruptly asked federal regulators to pause the relicensing of the Diablo Canyon nuclear plant near San Luis Obispo.

In seeking the delay, PG&E said it would not go forward with its effort to extend the life of the plant for an additional 20 years to 2045 until an assessment of seismic risk is completed.

US Rep. Lois Capps, D-Santa Barbara, welcomed the delay but said a voluntary pause in the licensing proceedings wasn't enough. She said she was seeking a suspension of the relicensing by the Nuclear Regulatory Commission until a full range of earthquake risks are assessed.

The Fukushima Daiichi earthquake-tsunami disaster in northeastern Japan has rocked what looked like a relatively smooth relicensing process for Diablo Canyon.

Republican State Sen. Sam Blakeslee and Capps have been vocal in calling for PG&E to complete extensive studies of seismic risk prior to any relicensing by the NRC. The discovery of a new fault less than a mile from the plant several years ago has raised fresh questions about earthquake risks in the vicinity of the plant.

PG&E officials have maintained they can operate the plant in a safe and sound manner despite the presence of earthquake faults. But some business leaders have questioned the wisdom of relicensing the facility before a risk assessment is made public. PG&E has outlined a plan to address them.

## **PG&E Will Do 3-D Seismic Studies Before Finalizing Nuclear Relicensing (SANTAMAR)**

Santa Maria (CA) Times, April 12, 2011

Pacific Gas & Electric Co. plans to undertake advanced 3-D seismic studies related to Diablo Canyon Power Plant before relicensing at the nuclear facility is finalized, the company announced today.

PG&E officials asked the Nuclear Regulatory Commission (NRC) today to delay final action on the utility's on-going license renewal application until the seismic studies findings are submitted to the commission.

"In the wake of the tragic accident at Japan's Fukushima Daiichi nuclear plant, we know that many of our customers and government partners are concerned and want to know more about the seismic characteristics surrounding the Diablo Canyon Power Plant," John Conway, PG&E's Senior Vice President of Energy Supply and Chief Nuclear Officer, said in a statement.

PG&E plans to undertake high-energy, offshore 3-D studies of the Shoreline fault's deeper regions as soon as the electric company obtains necessary permits from various regulatory agencies, including the state Lands Commission, California Coastal Commission and San Luis Obispo County.

"As PG&E works toward this objective, we are asking the Nuclear Regulatory Commission to withhold issuance of (the) renewed operating licenses, if approved, until after this research is completed and the findings are submitted to the commission," Conway added.

To address public concern regarding the seismicity of the area surrounding Diablo Canyon, PG&E is seeking to expedite the permitting process. PG&E also plans to conduct significant research of the faults in Los Osos Valley and in the Irish Hills.

## **Diablo Canyon Nuclear Reactor License Extension Delayed (POWGENWLD)**

Power-Gen Worldwide, April 12, 2011

Pacific Gas & Electric Co. has asked the US Nuclear Regulatory Commission to delay a license extension for its Diablo Canyon nuclear power plant until studies are complete on nearby earthquake faults.

Concern has been heightened following the March 11 earthquake and subsequent nuclear crisis in Japan, according to the Associated Press.

PG&E asked the NRC for a 20-year license renewal for the Diablo Canyon nuclear power plant near San Luis Obispo, where a fault was discovered less than a half-mile away. Licenses for both reactors expire in 2024 and 2025.

The company said the reactors are safe, but told the NRC it would be "prudent" to complete the studies.

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## **PG&E Addresses Community Concerns About Diablo Canyon (KSBY)**

By Bill Halter

KSBY-TV San Luis Obispo (CA), April 12, 2011

The nuclear crisis in Japan has many worried about the safety of Diablo Canyon Nuclear Power Plant. On Monday, PG&E responded to community concerns. PG&E has asked the Nuclear Regulatory Commission (NRC) to delay final action on the utility's license renewal application. It says it wants to complete a high energy, 3-D seismic study around Diablo Canyon before the license request is looked at. The power plant's current license runs through 2024.

"We've heard our customers concerns and the concerns of our government partners regarding PG&E conducting the seismic research prior to receiving the license renewal at Diablo Canyon. Now we've taken action to address those concerns" says PG&E spokesperson Kory Raftery.

David Weisman from the Alliance for Nuclear Responsibility says advanced seismic testing is a step in the right direction but not far enough. Weisman says they need more thorough testing to determine the areas safety and that the NRC can't be trusted to judge the safety of Diablo Canyon. "The last time that we allowed PG&E and the NRC to be the ones who determined the seismic fate of Diablo Canyon, in the 60's and the 70's and the 80's, it ended up costing us over \$4.5 billion. That's a mistake California can't afford to make this time around. There past history in this county shows that when they work together with PG&E alone and there was no independent monitoring of that, there were many seismic miscalculations" says Weisman.

PG&E geoscientists will conduct the seismic studies, the 3-D studies will help them better understand the topography underneath the ocean water.

## **Coastal Commission Eyes Implications Of Japanese Quake On California (CapWeekly)**

By John Howard

Capitol Weekly, April 12, 2011

Despite 1,100 miles of coastline and a history of powerful earthquakes, most of California is not susceptible to the kind of temblor and tsunami that devastated Japan, according to a report by the California Coastal Commission.

But there is a cautionary note: The area known as the Cascadia Subduction Zone, which runs from about 25 miles off Eureka to north of Vancouver, B.C. That zone, where a jumble of tectonic plates meet deep below the earth's continental crust, could produce a quake – and tsunami – on the scale of Japan's Tohoku Quake.

The 21-page study by staff geologist Mark Johnsson, released March 24 and presented to the commission members, noted that the majority of faults in California, including the San Andreas fault, could not produce a magnitude 9.0 earthquake and that most of the state "is not susceptible to an event on the scale of the Tohoku Earthquake" that struck Japan on March 11.

To produce a magnitude 9 quake, faults must be deep and wide, the study noted, and California's seismic faults are shallow.

"A magnitude 9 earthquake requires rupturing a fault surface thousands of square miles in area. The shallow faults making up most of California's fault systems, including the San Andreas, simply do not have sufficient area to generate such an earthquake."

"Nevertheless," the report noted, "it is important not to become complacent; large earthquakes are inevitable throughout coastal California, and could be devastating in their own right. There is a large population and much infrastructure at risk in central and southern coastal California."

But while most faults are shallow, the crucial exception is along the 800-mile-long Cascadia Subduction Zone, where a number of plates are moving and being thrust under the North America plate under the continental crust. There are two sets of fracture zones in the Cascadia Subduction Zone that are zones of weakness. "Most seismologists agree that a megathrust earthquake involving any of these plates would be in the magnitude 9 range, similar to the Tohoku quake," the report said.

The Japanese quake and tsunami killed about 13,000 people, a figure that includes a dozen people killed last week in a 7.4 magnitude aftershock. Much of the loss of life and property damage occurred when the quake-spawned tsunami averaging about 30-foot-high struck the northern Japanese coast and pushed inland about six miles.

The quake also damaged nuclear power plants at the Japan's Fukushima Daichi Nuclear Power Station, leading to explosions and radioactive leakage.

In California, that nuclear scenario appeared "extremely unlikely," according to the report.

"The combination of strong ground motion and massive tsunami that occurred in Japan cannot be generated by faults near the San Onofre Nuclear Generating Station and the Diablo Canyon Power Plant," the study said. "Nevertheless, the geologic conditions near those plants are very likely different than previously believed and ongoing study is warranted. This has been understood for at least the past three years, and some of these studies, and the environmental planning process for other such studies, are under way."

## **San Onofre Nuclear Plant To Hold Meltdown Drill (KGTV)**

KGTV-TV San Diego (CA), April 12, 2011

SAN ONOFRE, Calif. —

Southern California radiation experts and emergency workers will take part in a drill on Tuesday to test responses to an emergency at the San Onofre Nuclear Generating Station, an exercise that is done every other year but has taken on added significance because of the disaster in Japan.

The drills on site at the San Onofre plant will be done in secret, but other officials will gather at a Joint Information Center, where they will simulate news conferences as they practice how to disseminate information in case of a disaster.

Drills are conducted at the San Onofre plant a few times a year, but this biennial one is a much more extensive test that is monitored by the Federal Emergency Management Agency, Edison spokesman Gil Alexander said.

Alexander also said everyone is ready for both the drill and for a real emergency.

"We've worked hard at it. We have a plan. We work the plan. I think we're ready to swing into action," he said. "We drill constantly... three or four times a year. We meet every month. We've done that since 1982."

The main difference this year is the interest from the media, according Tina Walker, a spokesman for the California Emergency Management Agency. She said that is a positive change, because Southern California residents should know how to be prepared for an emergency.

"One of the key steps is to know the resources in your local jurisdiction," Walker said. "The best way someone can protect themselves and their family is to know your local resources. Speak to your local officials on emergency planning and once you get that information under your belt you'll be prepared for anything."

Alexander said Edison hopes the increased coverage of the drills will help calm some fears as the earthquake-crippled Fukushima reactor in Japan continues to stoke anxiety about radioactive leaks.

"We're hopeful the news stories this week will show our extensive planning efforts," Alexander said. "We hope the reports on all of this will be reassuring to the public."

The drill at San Onofre will simulate a radioactive leak that goes beyond the plant's boundaries and into the community, Alexander said. San Onofre has never had a radioactive gas leak in its 42 year history.

FEMA officials will hold a meeting at 4 p.m. Friday at the Capistrano Unified School District offices in San Juan Capistrano to give the public a "snapshot" view of how the drills went, said FEMA spokesman John Hamill.

In about three months, FEMA will issue its "report card" on the drill, Hamill said.

The California Emergency Management Agency will coordinate the test at the two nuclear reactors starting Tuesday, and concluding Thursday.

Workers will test emergency shut-down procedures and practice securing radioactive fuel rods.

San Onofre's two reactors generate 2.1 billion watts of electricity when operating at full capacity. Both units were returned to 99 percent operations this year, after extensive rebuilding projects.

Emergency and public health workers from Los Angeles, Orange, Riverside and San Diego counties will participate in the drill.

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## **Radioactive Gas Leak Drill Set For San Onofre Nuclear Plant This Week (LADN)**

Los Angeles Daily News, April 12, 2011

SANTA ANA - Radiation experts and emergency workers from Los Angeles to the Mexican border will pretend that a major radioactive gas leak has occurred at the San Onofre Nuclear Generating Station starting Tuesday.

The test is regularly-scheduled, but occurs as a major meltdown is threatened at an earthquake-crippled reactor complex in Japan, 5,500 miles across the sea.

The California Emergency Management Agency will coordinate the test at the two nuclear reactors starting Tuesday, and concluding Thursday.

Southern California Edison spokesman Gil Alexander told the San Diego Union-Tribune that workers will test emergency shut-down procedures, and practice securing radioactive fuel rods.

"There are a total of about 200 of us associated with the plant that will drill," Alexander told the San Diego newspaper. Half of those will drill on plant procedures, and the other half will work on a pretend radiation leak with government officials, the news media and the general public.

San Onofre's two reactors generate 2.1 billion watts of electricity when operating at full capacity. Both units were returned to 99 percent operations this year, after extensive rebuilding projects.

Emergency and public health workers from Los Angeles, Orange, Riverside and San Diego counties will participate in the drill.

## **Emergency Response Tests At San Onofre Nuclear Generating Station (KCBS)**

KCBS-TV Los Angeles, April 12, 2011

SANTA ANA (CBS) — Emergency and public health workers from Los Angeles, Orange, Riverside and San Diego counties will take part in a drill to test emergency responses at the San Onofre Nuclear Generating Station, tomorrow.

Southern California radiation experts and emergency workers will take part in a secret drill exercise that will simulate a radioactive leak that goes beyond the plant's boundaries and into the community. Workers will test emergency shut-down procedures and practice securing radioactive fuel rods. Other officials will gather at a Joint Information Center, where they will simulate news conferences and practice how to disseminate information in case of a disaster.

The exercise is done every other year but has taken on added significance this year because of the disaster in Japan.

"One of the key steps is to know the resources in your local jurisdiction," said Tina Walker, a spokesman for the California Emergency Management Agency. "The best way someone can protect themselves and their family is to know your local resources. Speak to your local officials on emergency planning and once you get that information under your belt you'll be prepared for anything."

The California Emergency Management Agency will coordinate the test at the two nuclear reactors starting Tuesday, and end Thursday. The organization hopes to calm public fear about radioactive leaks as the earthquake-crippled Fukushima reactor in Japan continues to stoke anxiety.

Officials from The Federal Emergency Management Agency (FEMA) will hold a meeting at 4 p.m. Friday at the Capistrano Unified School District offices in San Juan Capistrano to give the public a "snapshot" view of how the drills went, said FEMA spokesman John Hamill. In three months, FEMA will issue its "report card" on the drill, Hamill said.

San Onofre's two reactors generate 2.1 billion watts of electricity when operating at full capacity. Both units were returned to 99 percent operations this year, after extensive rebuilding projects.

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## **Emergency Drill Set For Tuesday At San Onofre Nuclear Plant (SJCP)**

San Juan Capistrano Patch, April 12, 2011

Southern California radiation experts and emergency workers will take part in a drill Tuesday to test responses to an emergency at the San Onofre Nuclear Generating Station, an exercise that is done every other year but has taken on added significance because of the disaster in Japan.

The drills on site at the San Onofre plant will be done in secret, but other officials will gather at a Joint Information Center, where they will simulate news conferences as they practice how to disseminate information in case of a disaster.

Drills are conducted at the San Onofre plant a few times a year, but this biennial one is a much more extensive test that is monitored by the Federal Emergency Management Agency, Edison spokesman Gil Alexander said.

The main difference this year is the interest from the media, according to Tina Walker, a spokesperson for the California Emergency Management Agency. She said that is a positive change, because Southern California residents should know how to be prepared for an emergency.

"One of the key steps is to know the resources in your local jurisdiction," Walker said. "The best way someone can protect themselves and their family is to know your local resources. Speak to your local officials on emergency planning and once you get that information under your belt, you'll be prepared for anything."

Alexander said Edison hopes the increased coverage of the drills will help calm some fears as the earthquake-crippled Fukushima reactor in Japan continues to stoke anxiety about radioactive leaks.

"We're hopeful the news stories this week will show our extensive planning efforts," Alexander said. "We hope the reports on all of this will be reassuring to the public."

The drill at San Onofre will simulate a radioactive leak that goes beyond the plant's boundaries and into the community, Alexander said.

FEMA officials will hold a meeting at 4 p.m. Friday at the Capistrano Unified School District offices in San Juan Capistrano to give the public a "snapshot" view of how the drills went, said FEMA spokesman John Hamill.

In about three months, FEMA will issue its "report card" on the drill, Hamill said.

The California Emergency Management Agency will coordinate the test at the two nuclear reactors starting Tuesday, and concluding Thursday.

Workers will test emergency shut-down procedures and practice securing radioactive fuel rods.

San Onofre's two reactors generate 2.1 billion watts of electricity when operating at full capacity. Both units were returned to 99 percent operations this year, after extensive rebuilding projects.

Emergency and public health workers from Los Angeles, Orange, Riverside and San Diego counties will participate in the drill.

## **San Onofre Nuclear Generating Station Holding Emergency Drill Tuesday (ENPTCH)**

By Jennifer Reed

Encinitas Patch, April 12, 2011

Radiation experts and emergency workers from Los Angeles, Orange County, Riverside and San Diego will pretend that a major radioactive gas leak has happened at the San Onofre Nuclear Generating Station starting Tuesday.

The test is regularly scheduled, but happens to be occurring as a major meltdown is threatened at an earthquake-crippled reactor complex in Japan, 5,500 miles across the sea.

The California Emergency Management Agency will coordinate the test at the two nuclear reactors starting Tuesday and concluding Thursday.

San Onofre's two reactors generate 2.1 billion watts of electricity when operating at full capacity. Both units were returned to 99 percent operations this year, after extensive rebuilding projects.

Southern California Edison spokesman Gil Alexander told the San Diego Union-Tribune that workers will test emergency shut-down procedures, and practice securing radioactive fuel rods. City News Service contributed to this report.

## **Nuclear Emergency Drill Planned For San Onofre Nuclear Power Plant (XETV-TV)**

XETV-TV San Diego, April 12, 2011

SAN ONOFRE - Radiation experts and emergency workers from to the Mexican border will pretend that a major radioactive gas leak has occurred at the San Onofre Nuclear Generating Station next week.

The test is regularly-scheduled, but occurs as a major meltdown is threatened at an earthquake-crippled reactor complex in Japan, 5,500 miles across the sea.

The California Emergency Management Agency will coordinate the test at the two nuclear reactors in north San Diego County starting Tuesday, and concluding Thursday.

Southern California Edison spokesman Gil Alexander says workers will test emergency shut-down procedures, and practice securing radioactive fuel rods.

"There are a total of about 200 of us associated with the plant that will drill," Alexander said. Half of those will drill on plant procedures, and the other half will work on a pretend radiation leak with government officials, the news media and the general public.

San Onofre's two reactors generate 2.1 billion watts of electricity when operating at full capacity. Both units were returned to 99 percent operations this year, after extensive rebuilding projects.

The oceanfront plant is located between the beach and I-5, west of Camp Pendleton.

Emergency and public health workers from Los Angeles, Orange, Riverside and San Diego counties will participate in the drill.

## **NRC Sets Capistrano Hearing On San Onofre Nuclear Generating Station Performance (SANCT)**

By David Zimmerle

San Clemente (CA) Times, April 12, 2011

The Nuclear Regulatory Commission staff will meet in San Juan Capistrano on April 28 with representatives of Southern California Edison Co. to discuss the agency's 2010 assessment of safety performance at the San Onofre Nuclear Generating Station.

The meeting, which will be open to the public, will begin at 6 p.m. at the Capistrano Unified School District Board Room, 33122 Valle Road, San Juan Capistrano.

Following the performance assessment, the NRC staff will be available to answer questions from the public concerning San Onofre, as well as the NRC's role in ensuring safe plant operation.

The NRC continually reviews the performance of San Onofre and the nation's other commercial nuclear power facilities, NRC Region IV Administrator Elmo Collins said. This meeting will provide an opportunity for a discussion of our annual assessment of safety performance with the company and with local officials and residents who live near the plant.

A letter sent from the NRC Region IV office to plant officials addresses the performance of the plant during 2010 and will serve as the basis for the meeting discussion. It is available on the NRC web site at: [http://www.nrc.gov/NRR/OVERSIGHT/ASSESS/LETTERS/sano\\_2010q4.pdf](http://www.nrc.gov/NRR/OVERSIGHT/ASSESS/LETTERS/sano_2010q4.pdf).

San Onofre operated safely in 2010. The licensee addressed longstanding concerns in the area of problem identification and resolution, but has not been fully successful in addressing several longstanding human performance issues, the NRC said. The NRC will conduct additional focused inspections in the human performance area, and also in the safety conscious work environment area to verify that corrective actions are effective and sustainable.

Inspections are performed by two NRC Resident Inspectors assigned to the plant and by specialists from the Region IV Office in Arlington, Texas.

Current performance information for San Onofre Unit Two is available on the NRC web site at: [http://www.nrc.gov/NRR/OVERSIGHT/ASSESS/SANO2/sano2\\_chart.html](http://www.nrc.gov/NRR/OVERSIGHT/ASSESS/SANO2/sano2_chart.html).

Current performance information for San Onofre Unit 3 is available at: [http://www.nrc.gov/NRR/OVERSIGHT/ASSESS/SANO3/sano3\\_chart.html](http://www.nrc.gov/NRR/OVERSIGHT/ASSESS/SANO3/sano3_chart.html)

## **Court: Mass. Can Regulate Nuke Water Intake System (BOS)**

Boston Globe, April 12, 2011

BOSTON—The state's highest court has ruled that Massachusetts environmental officials have the power to regulate a water intake system used by the Pilgrim nuclear power plant in Plymouth.

The Supreme Judicial Court's decision issued on Tuesday reverses a lower court ruling that said the state Department of Environment lacked such authority.

Pilgrim employs a cooling system that pulls in water from Cape Cod Bay and later discharges heated water through outflow pipes. While the discharges are regulated by the state and federal governments, Entergy Corp., which owns Pilgrim, challenged whether the state also has the power to regulate the intake process.

Environmental officials say the intake system uses underwater suction that can kill or injure marine life.

The SJC decision was written by Justice Judith Cowin before her retirement last week.

## **SJC Upholds State's Right To Regulate Water Intake At Pilgrim Nuclear (BOS)**

By Beth Daley

Boston Globe, April 12, 2011

The state Supreme Judicial Court has upheld Massachusetts' right to regulate the intake of vast amounts of water by the Pilgrim Nuclear Station and other power plants, which can harm fish and other marine organisms.

Power plants use the water to cool equipment then discharge it later -- and hotter -- into waterways. Environmental studies show the heated water can harm aquatic life. The state and environmentalists have also long argued that the sucking in of water can kill vast amounts of fish larvae, eggs, shellfish, and other aquatic organisms -- larger creatures become trapped on screens covering the intake pipes, and smaller ones are sucked into the cooling system.

The state Department of Environmental Protection has long regulated the intake and discharge of water used at power plants. But Entergy, the owner of Pilgrim, sued four years ago after the state issued specific regulations spelling out its authority to do so. Entergy argued that the state had authority to regulate only the discharge of water, not its intake.

"This is great news for the Massachusetts environment," said Kenneth L. Kimmell, commissioner of the state Department of Environmental Protection. "It clearly gives us the ability to protect our aquatic resources from the potential harms (of intake)."

The SJC, reversing a Superior Court decision, said Pilgrim took too narrow a view of the state's authority and that it has the right to regulate the water intake.

Entergy issued a statement saying, "This decision affirms that the State of Massachusetts has the legal authority to regulate cooling water intake structures within the state. ... According to both the court and the state, this is no new authority for the agency."

The ruling comes as the federal government develops final rules for water intake at power plants. The decision, according to Kimmell, made clear that Massachusetts will have the right to maintain stricter rules if the federal regulations turn out to be weaker.

Kimmell said the decision also recognized the state environmental agency's ability to regulate emerging problems that are not specifically spelled out in state law.

"The court makes clear that our agency has the authority to protect our natural resources from emerging environmental threats," he said.

The Pilgrim plant, which is seeking to be re-licensed for another two decades after its original license expires next year, has been in the spotlight in recent weeks because it has a similar design to the most crippled Japanese nuclear reactor. Entergy said the SJC decision has no impact on relicensing.

The state Attorney General's Office, which argued the case, issued a statement saying, "Power plants, such as Entergy's Pilgrim Station in Plymouth, withdraw billions of gallons of water from the nation's waterways each day to cool their facilities. We are pleased that the SJC recognized the important role that MassDEP plays in protecting our water resources at these power plants."

## **SJC: State Authorities May Regulate Water Intake At Nuclear Plants (BOSH)**

Boston Herald, April 12, 2011

SJC: State authorities may regulate water intake at nuclear plants

Environmental authorities, arguing that water intake systems used by nuclear facilities kill "billions" of aquatic organisms each year, scored a victory Monday in Massachusetts's highest court.

The Supreme Judicial Court, in a ruling authored by now-retired Justice Judith Cowin, said the Massachusetts Department of Environmental Protection has the authority to regulate water intake, rejecting an argument by Entergy Nuclear Generation Co. that the agency overstepped its authority.

Entergy, which operates Pilgrim Nuclear Power Station and draws water from Cape Cod Bay, had argued that DEP may only regulate nuclear “discharge” and other traditional forms of pollution, but that water intake was off limits. Entergy also claimed federal regulators pressured the state to regulate water intake.

“The emphasis on traditional threats to water resources cannot be read to deprive the department of authority to address atypical or novel threats that may also harm those resources,” Cowin wrote in the unanimous ruling. “The department’s authority to create a discharge and pollution reduction program does not limit its authority to deal with water quality issues other than discharges and traditional pollution under its broad statutory powers. Restricting the department’s authority to water pollution control, as Entergy suggests, would render superfluous the department’s parallel duty to protect ‘the quality and value of water resources.’”

“We conclude that the language of [state law] does not support, nor did the Legislature intend, such a narrow view of the department’s authority,” she continued.

The ruling overturned a Suffolk Superior Court ruling in Entergy’s favor.

At issue is a December 2006 regulation issued by the department declaring its authority to set standards for the intake systems used by nuclear plants to cool their reactors. The regulation emerged after years of urging by the US Environmental Protection Agency to expand DEP’s authority beyond water discharge and more traditional forms of pollution, according to DEP’s filings in the suit.

Officials for Entergy declined immediate comment on the ruling.

“We have received the decision and our attorneys are studying it,” said Jack Alexander, Entergy’s manager of government relations.

According to the ruling, Entergy purchased the Pilgrim plant in 1999. The facility includes a “cooling water intake system” that draws water from Cape Cod Bay and discharges heated water and other pollutants. The facility holds a “discharge permit” issued by the EPA and state environmental authorities.

Nuclear issues burst into public consciousness last month after an earthquake and tsunami in Japan disrupted a cluster of reactors, releasing radioactive material into the air and water. Last week, Gov. Deval Patrick and legislative leaders urged the Nuclear Regulatory Commission to halt any steps toward relicensing the Pilgrim plant until all of the lessons from the Japanese nuclear crisis have been learned.

In its lawsuit, Entergy argued that DEP’s decision to regulate water intake systems represented a “reversal” in policy and lacked the explicit backing of Massachusetts law.

“Indeed, in the thirty-plus years that MassDEP has administered [water quality laws], it consistently maintained, until 2006, that it lacked statutory authority to regulate withdrawal,” Entergy attorneys argued in a brief submitted to the SJC. “Only after concerted pressure by EPA did MassDEP change its long-held position, though offering no explanation for the change. That administrative capitulation is not entitled to judicial deference.”

Entergy argued that Massachusetts law lacked any specific reference to intake by nuclear cooling systems and that the EPA already regulated nuclear cooling systems.

“Therefore, notwithstanding any aspirational goals of the State Act or whatever force may be derived from its apologetic, policy-based arguments, MassDEP cannot evade the fundamental hurdle that it may not take any action unauthorized by statute,” according to the brief, signed by three attorneys from Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, a Boston-based firm representing the company.

But the SJC argued that in areas like Cape Cod Bay, “with a designated use as aquatic habitat,” nuclear cooling facilities “hinder the attainment of water quality standards.”

“Accordingly, authority to regulate [cooling facilities] reasonably may be implied as necessary to protect water quality in the Commonwealth,” Cowin wrote.

In February, the EPA issued a new permit for a power plant in Cambridge, ending longstanding litigation and requiring the facility to reduce its heat discharge and water withdrawal levels by 95 percent, a mandate that environmental regulators said would address “adverse impacts” on fish populations in the lower Charles River and Boston Harbor. The water discharge permit for the 256-megawatt Kendall Cogeneration Station plant requires the plant’s owner GenOn, formerly Mirant, to closely monitor river temperatures to make sure its discharges into the river do not cause excessive warming of the waters.

According to the EPA, Kendall Station’s cooling system withdraws an average of 70 million gallons a day from the Charles River and discharges it back into the river at temperatures increased by 20 degrees, up to a maximum discharge temperature of

105 degrees. Under a modified permit, station owners will be required to make facility upgrades that, in combination with a new steam pipeline to be built across the Longfellow Bridge in the next few years, will enable the plant to sell up to twice as much steam into Boston as is currently possible, resulting in a reduction in the station's heat discharge and cooling water withdrawals of about 95 percent. The modified permit requires Kendall Station to install and operate a back pressure steam turbine and an air-cooled condenser that will enable the plant to reduce its water flow to 3.2 million gallons a day, according to the EPA.

"Although the [SJC] seems to have rejected in silence a host of unsound statutory arguments that DEP made in support of its position, I was disappointed that the Court accepted DEP's argument that general statutory language permits it to control water intakes, despite the fact that the focus of the statutes clearly is elsewhere," said John Pagliaro, an attorney with the New England Law Foundation, which submitted a brief in support of Entergy. Article URL: <http://www.bostonherald.com/news/politics/view.bg?articleid=1329954> NRC defends Peach Bottom accident response, despite analyst's concern

[/news/national/northeast/view.bg?articleid=1329967](#) Governor names openly gay Barbara Lenk to SJC

[/news/politics/view.bg?articleid=1328294](#) SJC upholds '06 Casali murder conviction

[/news/regional/view.bg?articleid=1324110](#)

## High Court Restores State Oversight At Pilgrim Nuclear Plant (ENTNEWS)

Enterprise News, April 12, 2011

Environmental authorities, arguing that water intake systems used by nuclear facilities kill "billions" of aquatic organisms each year, scored a victory Monday in Massachusetts's highest court.

The Supreme Judicial Court, in a ruling authored by now-retired Justice Judith Cowin, said the Massachusetts Department of Environmental Protection has the authority to regulate water intake, rejecting an argument by Entergy Nuclear Generation Co. that the agency overstepped its authority.

Entergy, which operates Pilgrim Nuclear Power Station and draws water from Cape Cod Bay, had argued that DEP may only regulate nuclear "discharge" and other traditional forms of pollution, but that water intake was off limits. Entergy also claimed federal regulators pressured the state to regulate water intake.

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## **Court Decision Gives MA Power To Regulate Cooling Water Intake System At Nuclear Plant (WW)**

Water World, April 12, 2011

Court decision gives MA power to regulate cooling water intake system at nuclear plant

BOSTON, MA, Apr. 11, 2011 – The Supreme Judicial Court in Massachusetts has ruled that environmental officials have the authority to regulate a cooling water intake system at the Pilgrim nuclear power plant...

4/11/2011 12:00:00 AM

BOSTON, MA, Apr. 11, 2011 – The Supreme Judicial Court in Massachusetts has ruled that environmental officials have the authority to regulate a cooling water intake system at the Pilgrim nuclear power plant.

The cooling system at the Pilgrim plant in Plymouth, MA, pulls in water from Cape Cod Bay. Heated water is later discharged through outflow pipes. The effluent is regulated by the state and federal governments.

Pilgrim owners, Entergy Corp., challenged whether the intake process is also within the state’s regulatory jurisdiction. This latest court decision reverses a lower court ruling that said the state Department of Environment lacked such authority.

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## **Millstone Leaders Reiterate Case Against Tax Bills (NOB)**

Norwich (CT) Bulletin, April 12, 2011

Waterford, Conn. —

Millstone Nuclear Power Station executives publicly reiterated their case against two tax bills being considered by the General Assembly.

About 100 people attended a meeting at Waterford Town Hall Monday night which featured presentations by executives of Dominion Resources Inc., the Virginia-based company that owns the Waterford plant.

A \$335 million tax on the plant’s electricity output contained in Senate Bill 1176 would be a first nationally, said Daniel Weekley, Dominion’s vice president of governmental affairs.

"Once this production tax starts it will never stop," he said. "It will hit everyone of us."

Connecticut utility bills will skyrocket, he predicted. Connecticut already has the highest electricity rates in New England and the second highest nationally.

"The rate increases you will see will be unbelievable," Weekley said.

Gov. Dannel P. Malloy is supporting an alternative – Senate Bill 1007 – which would double Millstone current overall tax bill from its current \$33.6 million per year. Dominion is against that bill, too, although it hasn't said Millstone will shut down if that bill is passed. It has said a shutdown will occur if Bill 1176 becomes law.

"Some have reported that we're threatening to shut down," Weekley said. "That's wrong. The state will be forcing us to shut down."

Skip Jordan, Millstone's site vice president, opened the forum by saying the meeting's objective was "to talk about jobs." Yet the company said nothing new about the fate of the 1,080 Dominion workers at Millstone. Another 350 workers work at the plant that are employed by other companies. Dominion has said it might have to lay off or furlough workers in the event of a shutdown.

The company is airing radio ads this week stating its opposition to the bill, saying 1,000 Connecticut jobs are "in jeopardy."

State Sen. Andrea Stillman, D-Waterford, and Rep. Elizabeth "Betsy" Ritter, D-Waterford, introduced Weekley and Jordan, with Stillman calling the event "an opportunity to hear from the experts." Both lawmakers expressed their pleasure at the size of the crowd, which included Chamber of Commerce of Eastern Connecticut President Tony Sheridan, Southeastern Connecticut Enterprise Region Corp. Executive Director John Markowicz, and Waterford First Selectman Dan Steward.

The meeting was interrupted by members of the Connecticut Coalition Against Millstone, asking questions about spent fuel in the plant's decommissioned Unit 1 and carrying signs critical of Millstone. After a few tense minutes and urging from the crowd, Dominion executives resumed taking questions from the audience.

Jordan's presentation centered on Millstone safety procedures and differences between the Connecticut plant and the Japanese facility that was crippled by an earthquake last month. Dominion is offering technical assistance and advice to Japanese engineers, he said.

## **Millstone Owners Stress Safety, Oppose New Tax Proposal (GREENWICH)**

By Bill Cummings

Greenwich (CT) Time, April 12, 2011

WATERFORD – The operators of the Millstone Nuclear Power Station on Monday attempted to assure nervous residents that the disaster now unfolding at a nuclear facility in Japan cannot happen here.

They also tried to deflect a huge proposed tax on the plant that's now before legislators in Hartford struggling to balance the state budget.

"Every meeting at Millstone station starts with a message about safety. Our number one priority is to protect the health and safety of the public," said Skip Jordan, Millstone's site vice president, who has worked in the industry for 28 years.

An audience of approximately 150 gathered at Waterford Town Hall Monday evening to hear Millstone officials discuss safety and a proposed \$335 million state tax. Most appeared to be pro-Millstone, not surprising considering the plant provides or supports thousands of local jobs.

State Sen. Andrea Stillman, D-Waterford, and state Rep. Betsy Ritter, D-Waterford, hosted the meeting; they said they wanted to discuss safety issues and other concerns in the wake of the unfolding disaster at the Fukushima Daiichi nuclear power facility. They also made it clear they oppose the proposed state tax on coal, oil and nuclear power generators.

Millstone officials have promised to close the plant if the tax becomes law, saying it would make the plant economically unfeasible.

Dan Weekley, vice president of government affairs for Millstone, said the plant already pays millions in taxes a year and purchases tens of millions of dollars worth of supplies. He said a recent state poll conducted by Dominion, Millstone's owner, found most state residents support nuclear power.

"No company could come along and pay those types of taxes. The state would be forcing us to shut down," Weekley said. "We as ratepayers will eat this increase."

Safety was also on the minds of some of those attending the meeting.

"Do you really believe this plant is safe," said one woman in the audience.

"I do," Jordan answered. "We are doing walk downs of initial designs and our emergency equipment to make sure we have what we need and are capable of performing in a severe accident."

"It includes a total loss of power and tornado, earthquakes and hurricanes. We have redundancy in each one of our systems, including back up generators and flood gates."

Nancy Burton, director of the Connecticut Coalition Against Millstone, said, "There are differing points of view. Fukushima is an exploded reactor. It no longer exists. That event is still happening and it's still out of control."

But as Burton tried to make her point, the mostly pro-Millstone audience demanded she ask a question. They also shouted down another anti-nuclear activist who attempted to speak.

"Many people here derive income from Millstone. I don't. Why don't you move the spent fuel out of Millstone Unit 1?" Burton said.

Jordan said the fuel is safely stored in a spent fuel pool. Millstone has two operating reactors and a decommissioned one. It produces nearly half of the state's electricity.

"It's in a safe condition. It's a very low heat load and we are looking at moving that out of the pool," Jordan said. "That is not an immediate thing. It takes planning and approval and the company is looking at doing that."

"The people of Japan thought they were safe," said one woman, standing to make her point. "What are you going to say when you are proved wrong?"

"I have to differ with you. If I didn't believe that, I would not be here," Jordan said.

## **The Day - Big Crowd Packs Millstone Meeting Monday Night (NLDAY)**

New London (CT) Day, April 12, 2011

Waterford

- Several members of a packed crowd sought assurance from executives giving a presentation about the Millstone Power Station Monday night that owner Dominion will put spent fuel from one shuttered reactor into safe dry storage on the site.

Skip Jordan, site vice president, and Dan Weekley, Dominion vice president of governmental affairs, spent an hour first discussing safety and a proposed tax on electric production at Millstone before fielding questions about the used fuel that sits in Unit 1, a boiling water reactor not unlike those at the badly damaged Fukushima Dai-ichi station in Japan.

Millstone's two operating reactors, which are pressurized water reactors, are safer, Jordan said, because they have primary and secondary cooling systems to keep the plants cool.

But Nancy Burton, a Mystic resident speaking on her own behalf and not in her role as director of the Connecticut Coalition Against Millstone, wanted to know why Dominion isn't moving the spent fuel from Unit 1 immediately into an alternate type of storage known as dry cask storage.

John Markowicz, executive director of the Southeastern Connecticut Enterprise Region and a Waterford resident, echoed her concern.

"What's the chance of the spent fuel being moved" if the bill to tax Millstone goes through, he asked.

Jordan said the company is evaluating moving that fuel so that it is no longer housed above the reactor, where it is more vulnerable, but he and Weekley noted that if the tax is approved it will make it more difficult to invest in safety improvements like that.

The meeting was still going on at 8:45 p.m. at Waterford Town Hall.

## **Residents Question Safety At Millstone (NLDAY)**

New London (CT) Day, April 12, 2011

Waterford

- The owner of Millstone Power Station sought to reassure concerned residents Monday night that it is working to put potentially vulnerable spent fuel from one closed reactor into safe, dry storage on site.

A crowd of more than 150 people at Waterford Town Hall included an unidentified woman who said she wasn't convinced by Millstone owner Dominion executives' premise that the two operating Unit 2 and 3 reactors and the closed Unit 1 reactor could withstand a natural catastrophe like the earthquake and tsunami that wrecked still-troubled Fukushima Dai-ichi reactors in Japan.

And later, a former contractor with Dominion criticized company management for not protecting him when he reported an employee was abusing prescription drugs. The contractor said he was the unjustly fired, he said.

Skip Jordan, site vice president, and Dan Weekley, Dominion vice president of governmental affairs, spent an hour discussing safety and a proposed tax on electric production at Millstone before fielding questions in the Town Hall auditorium. The meeting was still going on late Monday night.

Jordan and Weekley started by discussing the used fuel that sits in Unit 1, a boiling water reactor not unlike those at the Fukushima station. Millstone's two operating reactors, which are pressurized water reactors, are safer, Jordan said, because they have primary and secondary cooling systems to keep the plants cool.

But Nancy Burton, a Mystic resident speaking on her own behalf and not in her role as director of the Connecticut Coalition Against Millstone, wanted to know why Dominion isn't moving the spent fuel from Unit 1 immediately into an alternate type of storage known as dry cask storage. She lives outside the 10-mile radius that would be evacuated in event of a major calamity at Millstone, she said.

The crowd at times attacked her for trying to ask five questions instead of one, but John Markowicz, executive director of the Southeastern Connecticut Enterprise Region and a Waterford resident, echoed her concern.

"What's the chance of the spent fuel being moved" if the bill to tax Millstone goes through, he asked.

A proposed state tax on nuclear electricity production would charge 2 cents a kilowatt hour to Dominion, or about \$335 million a year, Weekley said.

Jordan said the company is evaluating moving that fuel so that it is no longer housed above the reactor, where it is more vulnerable, but he and Weekley noted that if the tax is approved it will make it more difficult to invest in safety improvements like that.

State legislators including Sen. Andrea Stillman, Rep. Betsey Ritter and Rep. Ed Jutila said they and the entire delegation were opposed to the tax and fighting it.

The woman concerned for her family's safety in the event of a disaster by "Mother Nature," which is "damn good at creating catastrophes," wanted to know, "How do I protect my boys?"

Jordan said he has the same concern for his family and friends, many of whom live in nearby Groton, and his employees share those concerns also.

Steven Lavoie, the contractor and apparent whistleblower, said he was fired after reporting a co-worker's abuse of prescription medication.

"What is Dominion going to do about the liars in your company?" he asked. "There's corruption going on in upper management and all I was obligated to do was report it ... I've had a target on my back. I want to know what you people are going to do to restructure management because people are crooked."

Jordan said the company's practice is to go through "multiple channels ... (and) fully and thoroughly investigate that.

He told Lavoie his "commitment tonight is to go back and take another look at that."

One woman, Monica Rourke of Bristol, who said she was familiar with Millstone from when she worked in concrete repair in 2000, defended the nuclear complex as a well-run facility.

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## **NRC Denies License To UniStar For CC3 (SOMD)**

### **Asks company to better address foreign ownership issue**

By Meghan Russell

Southern Maryland Newspapers, April 12, 2011

The US Nuclear Regulatory Commission, which oversees license approval for new nuclear reactors, released a report on Friday stating it could not issue UniStar Nuclear Energy a license for the proposed third reactor in Calvert County on the basis of foreign ownership.

According to NRC regulations, a foreign entity cannot own, control or dominate a US nuclear plant's operations for security reasons. UniStar submitted a combined license application and "negation action plan" in January in an attempt to address the issue, citing US individuals who would oversee the operations of Calvert Cliffs Nuclear Power Plant's third unit, since French company Electricite de France acquired Constellation Energy's 50 percent interest in UniStar, their joint US nuclear venture. The hierarchy of control and oversight was restructured in a way that UniStar hoped would negate EDF's dominant presence in the venture.

However, the NRC now rules that UniStar's plan is unsuitable for obtaining a license for CC3, on the grounds that: "1) UniStar is 100 percent owned by a foreign corporation (EDF), which is 85 percent owned by the French government; 2) EDF has the power to exercise foreign ownership, control, or domination over UniStar; and 3) the Negation Action Plan submitted by UniStar does not negate the foreign ownership, control or domination issues discussed above," the report states.

NRC staff will meet publicly with UniStar to discuss the results of its review if requested, the report continues. Also, while UniStar considers its next steps for proceeding with CC3, the NRC will continue to finalize the company's environmental impact

statement and will continue to review the remaining sections of the combined license application that do not involve the foreign ownership question. But a license cannot be issued, the report states, unless the outstanding requirements are met.

"As we have consistently stated, Calvert Cliffs 3 will ultimately have a US partner," a spokesperson for EDF said. "While EDF and UniStar disagree with the Nuclear Regulatory Commission's conclusion regarding UniStar's present governance structure, we are pleased that the NRC will continue to review all other aspects of our pending application. This allows the project to continue moving forward as anticipated. UniStar and EDF will work with the NRC to resolve the governance issues prior to the issuance of the license."

Michael Mariotte, executive director of the Nuclear Information and Resource Service, an environmental group, called CC3 "the first US nuclear casualty of the post-Fukushima era" in a press release, referring to the nuclear disaster caused by the earthquake and tsunami at Japan's Fukushima Daiichi plant in March.

"The project already was on shaky ground with the withdrawal of Constellation Energy; it is impossible to imagine that Electricite de France will be able to find a new American partner to join in on a multi-billion dollar fiasco after the Fukushima nuclear disaster," he said in the release.

Mariotte also believes the ruling should end UniStar's chances of obtaining a Department of Energy loan guarantee for the project. "We would find it difficult to believe that the Energy Department could issue a loan guarantee for a project that is legally ineligible to obtain a construction license," Mariotte continued in the release, saying that if the DOE attempts to issue one anyway, "the matter would certainly be decided by the courts."

Calvert County Commissioners' President Susan Shaw (R), who has been among many local, state and federal leaders advocating for CC3, said she was not surprised by the NRC's ruling and believed UniStar has been actively searching for a US partner.

"We all knew that before they operated the plant they would have to have another owner," Shaw said. "All along we've believed they needed an American partner. This is supposed to be a prototype. ... My guess is they're going to have to find a partner sooner rather than later."

Shaw anticipates the construction of the third unit will create 5,000 temporary jobs and about 400 to 500 permanent positions, along with "millions of dollars" in tax revenue for the county. "Any way you look at it, it would be a huge boom," she said.

Contrary to Mariotte, Shaw said she hopes people will begin to see that the disaster that struck Japan last month could not occur at Calvert Cliffs because there is no shifting of the earth's plates in the region in which it is located. In addition, the troubled Japanese reactors were boiling water reactors, whereas the Calvert Cliffs units are pressurized water reactors, on top of other design differences that decrease the likelihood of a disaster at the US plant.

"I think a lot of that is becoming more clear and it will become even more clear as we learn more about what happened in Japan," she said. "... But I think as the price of oil continues to rise, the pressure will be on."

Shaw said she has heard the arguments regarding wind energy versus nuclear power, and she believes that while wind energy can provide peak power, it cannot always provide base generation power, or "power you count on for day-to-day needs" because "the wind does not blow all the time.

"Nuclear power is base load power," she said. "It's fairly reliable."

The irony of inventing more energy saving appliances, she added, is that there will be a greater need for electricity to power them. "Now we're going to have electric cars," she said. "Well where's that electricity supposed to come from?"

Once the events in Japan unfold, she said, more people may start to agree, "Nuclear is a way to go."

US House of Representatives Minority Whip Steny Hoyer (D-Md., 5th), another major supporter of CC3, also shared his views on the NRC's latest ruling and his desire to see the project continue.

"I have discussed with EDF their strong commitment to finding solutions to the challenges that confront the Calvert Cliffs 3 project," he said in a prepared statement. "I am very committed to the future of nuclear energy here in Maryland and am hopeful that EDF will find a US partner."

Neil Sheehan, spokesman for the NRC, said the agency will continue its review of the CC3 application. "For its part, UniStar will have to revisit its approach to satisfying our requirements on foreign ownership of US nuclear power plants," he said. "We will await word from the company as to how it plans to proceed."

## **NRC Will Not License French-owned Plant (WNN)**

World Nuclear News, April 12, 2011

Unistar's application to build a new nuclear power plant at Calvert Cliffs does not currently meet federal laws on foreign ownership, the US Nuclear Regulatory Commission (NRC) has said.

Unistar Nuclear Energy, originally a 50:50 joint venture between EDF and Constellation Energy, is planning to build a French-designed EPR reactor at the Calvert Cliffs site in Maryland where Constellation already operates two existing pressurised water reactors. EDF took 100% control of Unistar Nuclear Energy when it bought out its erstwhile partner in October 2010 after the financial burden of securing federal loan guarantees put the project beyond Constellation's commercial reach.

US federal regulation 10 CFR 50.38 prohibits the granting of a nuclear plant operating licence to foreign corporations. Unistar has made various revisions to the ownership and financial information in its combined construction and operation licence (COL) application for the plant, including what it called a negation plan which would see the company appoint a US citizen as CEO to assure US control over relevant matters, and various subcommittees of US citizens to ensure US control over safety, security and reliability matters. However, in a letter to Unistar president and CEO George Vanderheyden dated 6 April, the NRC said that the application still failed to meet the requirements of 10 CFR 50.38.

The regulator has said it will continue its review of the remaining portions of the COL application and to finalize the final environmental impact statement "while Unistar considers its options to move forward," leaving the door open for the company to secure a US partner. "However, a licence will not be issued unless the requirements of 10 CFR 50.38 are met," the regulator warns.

## **NRC Challenges Calvert Cliffs Reactor Project Ownership But Continues License Process (NUCSTR)**

Nuclear Street, April 12, 2011

The Nuclear Regulatory Commission has deemed that the ownership of a proposed third reactor for Maryland's Calvert Cliffs nuclear plant is illegal under US law, but the agency indicated it will move forward with the reactor's licensing as French-owned UniStar seeks a US partner.

UniStar began the project as a joint venture between French firm EDF and US-based Constellation Energy Group. The latter backed out, though, last year over uncertainty regarding a federal loan guarantee for the project. UniStar indicated it would continue to look for a US-based partner, as federal law prohibits non-US companies from owning nuclear power plants.

In a letter Friday, the NRC notified the company that it will continue the licensing process for the project, but a final license would not be granted under the reactor's current ownership. A spokeswoman for UniStar told the Baltimore Sun that the project would move forward as anticipated and that it continues to seek a US partner.

A company proposal forwarded to the NRC in December would place two US citizens on its board and appoint only US citizens as chairman and CEO, but the NRC letter indicates that plan still does not bring the project's ownership within US law.

Proposed in 2007, the \$9.6 billion Calvert Cliffs unit 3 project calls for a new Areva-designed Evolutionary Power Reactor 40 miles south of Annapolis, Md.

## **FEMA To Test Emergency Preparedness At TMI (WHTM)**

By Myles Snyder

WHTM-TV Harrisburg (PA), April 11, 2011

The Federal Emergency Management Agency will evaluate Three Mile Island's ability to respond to an emergency during a drill this week.

The week-long exercises are required by the federal government every two years.

FEMA specifically will evaluate the response of state and local emergency agencies within the 10-mile emergency-planning zone of the nuclear plant.

No sirens will be sounded during the drill.

Preliminary findings of the exercise will be presented during a public meeting Friday at 11:00 a.m. at the Hilton Garden Inn, at 3943 TecPort Drive, in Harrisburg.

Within 90 days, FEMA will send its evaluation to the Nuclear Regulatory Commission for use in licensing decisions.

The final report will be available to the public in July.

## **Three Mile Island Drill (WTAJ)**

By Kevin Flanigan

WTAJ-TV Altoona, PA, April 12, 2011

Middletown, Dauphin County - Emergency crews at and around Three Mile Island will be evaluated starting Monday.

FEMA will be looking at how prepared state and local responders are to protect public health and safety.

Preliminary findings of the emergency preparedness drills will be revealed on Friday.

## **Drills Being Held At Three Mile Island (WFMZ)**

WFMZ-TV Allentown (PA), April 11, 2011

Officials will be at Three Mile Island this week to judge how well crews would respond to a nuclear accident.

The Federal Emergency Management Agency will be monitoring drills at Three Mile Island.

The drills are held every two years.

They are meant to test the government ability to protect public health and safety.

FEMA will send its evaluation to the nuclear regulatory commission within 90 days.

FEMA will present its preliminary findings at a public meeting Friday morning.

## **Athens Seeking Grant For Evacuation Route (DECD)**

By Holly Hollman

Decatur (AL) Daily, April 12, 2011

ATHENS — A multi-million project at Browns Ferry Nuclear Plant could help the city and county get a grant to improve one of the plant's evacuation routes.

The only westward route from the plant, which is Nuclear Plant Road, is a narrow county road without striping.

The estimated cost to pave and widen it is \$2.5 million.

On Monday, the Athens City Council approved spending up to \$250,000 from its general reserve fund toward the project, contingent on it receiving a \$2 million grant. The city is asking the Limestone County Commission to also approve spending up to \$250,000.

Public Works Director James Rich said the grant is through the Alabama Industrial Access Road and Bridge Corp. The city will make a grant request at the corporation's June meeting.

Part of the city's request will include the \$160,000,000 cooling tower project at the nuclear plant that requires changes to roads by the plant. The project is bringing 175 jobs to the city.

"Crews coming in stay at our hotels here," said Council President Jimmy Gill, "and they use that road to get to and from the plant."

Councilman Harold Wales said if the city does not get the grant, the city should de-annex property on Nuclear Plant Road. Gill disagreed, saying he wanted to keep his constituents.

## **AARP Defends Opposition To Nuclear Power Development Plan (CRG)**

Cedar Rapids (IA) Gazette, April 12, 2011

An aerial view, looking southeast, of the 500-acre Duane Arnold Energy Center, located north of Palo, Iowa and northwest of Cedar Rapids. It is Iowa's only nuclear power plant.

AARP is firing back in a war of words over legislation it says would stick Iowans with the cost of developing future nuclear power generation even if the plants are never built.

At a Statehouse press conference Monday, AARP said it doesn't oppose the development of new power generation, including MidAmerican Energy's proposed nuclear plant, but objects to a pair of bills that would change the rules at the expense of Iowans, including its 370,000 50-and-older Iowa members.

AARP has been warning of "unnecessary and unknown" rate hikes that could hit ratepayers if Senate File 390 or House File 561 is passed into law.

The bills would help address hurdles MidAmerican might encounter in exploring the development of a 540-megawatt nuclear-powered facility costing \$1 billion to \$2 billion employing new technology that consists of a cluster of small modular reactors rather than the more typical large-scale nuclear power plants.

Rather than rely on shareholders and investors to finance a new power plant, Bruce Koeppel AARP state director, said the proposed legislation "shifts the billion-dollar plus costs to ratepayers for a possible nuclear plant, years before the plant is built, or the plant design has even been approved."

Koeppel said he was responding to questions lawmakers raised about an AARP advertising campaign urging people to tell legislators to "protect Iowans from unfair utility rater hikes."

Senate Commerce Committee Chairwoman Swati Dandekar, D-Marion, called the ads "deliberately misleading." in an op-ed piece that appeared in some Iowa newspapers "misleading."

"This state legislation is needed to continue consideration of nuclear power as a viable option for the state's future energy mix," Dandekar said.

She rejected AARP's argument that the legislation will increase utility costs.

"Not true. Nothing in this legislation increases electric rates or authorizes the construction of a nuclear facility," she said. "The legislation also does not alter the traditional role and responsibility of the Iowa Utilities Board or Consumer Advocate in deciding such matters."

Koeppel disputed that. AARP opposes the legislation because of "the lack of consumer protection – no comparison of alternatives, no cap on how much rates can increase no cost protection from cost overruns and no protection if the proposed plant is cancelled."

Those factors, "coupled with the unknowns about when, where and how much it will cost to build the new plant, demonstrates the need for Iowa lawmakers to study how to best increase the state's electric power generation," he said.

Dandekar insisted the proposed legislation includes a number of consumer protection measures, such as annual reporting and stringent accountability.

"The Iowa Utilities Board and the Office of Consumer Advocate always will keep Iowa's interests and economy at the forefront," she said. "Iowa needs to keep nuclear power in the mix in order to keep control of our electricity prices and continue to advance our economy."

Without taking a side, Gov. Terry Branstad said Monday that it's the Iowa Utilities Board's responsibility to answer many of those questions. When he appointed former Republican Rep. Libby Jacobs to chair the board it was with the understanding the board "would have the staff and wherewithal to protect the interests of the ratepayers and the state of Iowa."

At the same time, Branstad said, the state has to plan ahead to meet future energy needs.

"As we work to revitalize our economy, to bring jobs here, we want to make sure we have affordable and economical power available for our citizens and we want to do it in a way that environmentally safe as well," he said.

### **AARP Says Ad Opposing Nuclear Plan Is Accurate (AP)**

Associated Press, April 12, 2011

DES MOINES, Iowa (AP) - The senior advocacy group AARP is responding to criticism of an advertisement by the organization that argues a bill backed by utilities could cause rate increases.

AARP senior state director Bruce Koeppel argued at a news conference Monday that newspaper ads paid for by the group are accurate. The ads claim residents and businesses would pay more if the Legislature approves a bill backed by MidAmerican Energy that would let the utility charge customers in advance for the construction of a nuclear power plant.

Democratic Sen. Swati Dandekar of Marion and others have called the ad misleading.

AARP has more than 370,000 members in Iowa, and many of them have asked legislators to oppose the measure.

The bill has been approved by committees in both the House and Senate.

### **AARP Speaks Out Against Nuclear Plant Bill (RADIA)**

By Dar Danielson

Radio Iowa, April 12, 2011

A war of words continues at the statehouse between backers of proposed new nuclear power plants and a lobbying group which opposes it. An ad by the A.A.R.P. urges defeat of bill, saying it would force utility rates up. State Senator Swati Dandekar, a Democrat from Marion, says the A.A.R.P. ad misleadingly as it refers to higher electric rates from a large nuclear power plant in Florida.

A.A.R.P. state director Bruce Koeppel does admit the Iowa proposal involves much less expensive smaller plants. "However, the bill does not limit the plant build to that smaller technology," Koeppel says. Dandekar says the bill preserves the Consumer Advocates traditional role in rate hike requests, and nothing in the bill will raise rates or even authorize a new nuclear plant.

But Koeppel says the legislation breaks new ground by letting MidAmerican Energy raise rates ahead of plant construction. "This proposal allows utility companies to force customers to continue paying accumulated costs to the utility even if the plant is cancelled," Koeppel said. Statehouse switchboard operators report numerous calls from A.A.R.P. members to their lawmakers urging defeat of the bill.

Koeppel estimates that A.A.R.P. members have made thousands of calls to lawmakers opposing the legislation, and the organization is spending thousands on its ads. Governor Terry Branstad said today he's confident state regulators would have the ability to monitor the situation and protect rate-payers.

### **AARP Calls Iowa Nuclear Plant Bill "bad Public Policy" (DMR)**

By William Petroski

Des Moines Register, April 12, 2011

A state organization representing 378,000 older Iowans said today that thousands of its members have been contacting Iowa legislators to oppose bills that would help MidAmerican Energy construct a new nuclear electricity plant in Iowa.

"We oppose Senate File 390 and House File 961 because those bills substantially shift the cost and risk for nuclear power construction to ratepayers," said Bruce Koepl, AARP's state director. "Rather than rely on shareholders to finance a new power plant, this legislation shifts the billion-dollar-plus costs to ratepayers for a possible nuclear power plant, years before the plant is built, or the plant design has even been approved."

Koepl spoke to a reporters at an Iowa Statehouse news conference, remarking, "This is a bad bill, bad public policy." He distributed a letter from Florida State Sen. Mike Fasano, dated Feb. 17, 2011, to North Carolina Gov. Bev Perdue. Fasano, a Republican who describes himself as pro-business, told Perdue he regretted his support for a 2006 bill approved by the Florida Legislature which allowed utilities to charge ratepayers for new power plant construction costs before a plant is put in service.

Fasano wrote: "I believe that it is inherently unfair for utilities to ask their customers, our constituents, to front the costs of massive and expensive construction projects that are not even guaranteed to be completed. These risky investments ought to be the responsibility of utility shareholders and their investment partners, not the average ratepayer that is already struggling to pay their monthly utility bill or keep their business afloat."

AARP officials said the House version could be debated as soon as Tuesday on the House floor, while the Senate version could come up next week on the Senate floor. Both bills have already cleared House and Senate committees.

Koepl said the lack of consumer protections in the bills – no comparison of alternatives, no cap on how much rates can increase, no cost protection from cost overruns, and no protection if the proposed plant is cancelled, demonstrate the need for Iowa legislators to study how to best increase the state's electrical power generation.

William Fehrman, MidAmerican Energy's president, recently told legislators the company "certainly respects and appreciates" concerns about increased customer costs. But he added, "Costs are going to go up. That is just a fact of life." Consumers and legislators should also be aware that coal-fired power plants will be negatively affected in the future by "very strong and onerous regulations" linked to environmental issues, he said.

AARP has drafted an amendment to the proposed Iowa House bill aimed at developing an "informed plan" for expanding electrical generation in Iowa and is sharing it today with House members.

The pending Iowa bills would allow MidAmerican and its partners to recover "all prudent costs" associated with obtaining permits and licenses and to construct a proposed 540-megawatt plant to be located at an unspecified Iowa site. MidAmerican expects its share of the project's costs would be \$1 billion to \$2 billion, and partners would also contribute toward construction.

MidAmerican officials have said customers would see their electric bills rise 10 percent over a decade to pay for the investor-owned utility's share of the proposed plant. That doesn't include any other rate increases the company might seek to cover costs not related to plant construction.

Gov. Terry Branstad today indicated that he supports exploring further nuclear options in Iowa. He noted that the ultimate authority will go to the Iowa Utilities Board, which provides regulation for the state.

"I think there's a critical need for us to look at how we can in the future meet the additional energy needs in the state of Iowa," Branstad said. "And I think we should be open to considering things like clean coal and nuclear as well as natural gas and wind and the other sources that we have."

## **Vt. Gov Has Plan For 55-cent Charge (AP)**

By Dave Gram

Associated Press, April 12, 2011

MONTPELIER, Vt. (AP) — Vermont Gov. Pete Shumlin on Monday unveiled his plan to pay for promoting renewable energy development without relying on a surcharge to customers.

The governor said he wants to use money in the Clean Energy Development Fund to pay for the up-front grants, rather than tax credits.

Twenty-three Vermont renewable energy developers got a total of about \$8.5 million in tax credits to be taken over five years. Now, Shumlin said he wants to give them an option: the tax credit or half as much money in the form of an up-front cash payment when their project is up and running.

The governor and Administration Secretary Jeb Spaulding said they expected enough developers would take the up-front cash to save the fund between \$2.7 million and \$3 million. That's more than the \$2.38 million that would have been raised by a proposed 55-cent electric bill surcharge.

Shumlin said the fund would have sufficient cash "without raising 55 cents a month on Vermonters' electric bills at a time when Vermonters are hard-pressed to pay their bills and afford \$4-a-gallon gas."

Leigh Seddon, vice president of Alteris Renewables, a solar energy developer that has been working on a project in the southwestern Vermont of Pownal, said his company and its financing partners had welcomed the chance to take payment up front, even if smaller, rather than the tax credit over five years.

"When this proposal came to us from the administration, would you accept \$450,000 instead of the \$900,000 tax credit so you could get it this year when you want to build the plant, not over five years, the investment people ... said that works for us, financially. That works for us to have the cash up front and the certainty, and we will go along with it," Seddon said.

The scramble to find the right source of money comes as what has been the Clean Energy Development Fund's main funding source, the Vermont Yankee nuclear plant, is slated to close down next March. Shumlin and lawmakers had been looking for a one-year bridge to get from that funding source to a new one.

The governor said Monday he still hoped to get money for the fund from Vermont Yankee's owner, New Orleans-based Entergy Corp. Shumlin said he wants lawmakers to pass a new tax on spent nuclear fuel being stored in the state.

Vermont Yankee's spent fuel storage pool is nearly full and the plant has begun storing some of its spent fuel in concrete cask outside its reactor building in Vernon. Like other nuclear plants around the country, Vermont Yankee has been hard-pressed to find a place to send its highly radioactive waste. The federal government, so far, has not fulfilled a promise, made in a law passed by Congress two decades ago, to take the waste from reactors to a national disposal site.

The electric bill surcharge would have amounted to \$6.60 per year and became a hotly debated issue in the Legislature last week. Some lawmakers argued it would be an extra cost ratepayers don't need; others said it would be regressive, since both rich and poor ratepayers would be charged the same amount.

Shumlin told reporters on Monday the surcharge had been "not my idea," but Rep. Tony Klein, chairman of the House Natural Resources and Energy Committee, said it did come from the administration, in the person of now former Deputy Commissioner of Public Service Stephen Wark.

Told the governor was saying the idea didn't come from him, Klein scoffed.

"It didn't (come from Shumlin) but it came from his Department (of Public Service) and that's close enough for me," he said. "It came from the department and they work for him."

## **Shumlin Wants Energy Fund Redesign (WCAX)**

By Jack Thurston

WCAX-TV, April 12, 2011

Vermont now has a little more than \$8.5 million in its Clean Energy Development Fund. That fund grants tax credits to builders of solar parks and other renewable energy projects. But since the Vermont Yankee nuclear plant pays into the program, and since Yankee is scheduled to close next year, the Shumlin administration had to come up with a way to keep the development money flowing.

"I really think it's a win-win," said businessman Leigh Seddon. Seddon is one of the developers behind Alteris Renewables. The group wants to build Vermont's largest solar park at the old racetrack in Pownal, on the Massachusetts border. The state is encouraging him with \$900,000 in tax credits over five years when the project's done. But Governor Peter Shumlin, D-Vermont, instead wants to give the project a one-time cash payment of \$450,000 upon completion. "That works for us," Seddon said.

Shumlin says switching the way the state handles its Clean Energy Development Fund will ensure money's in the pot to entice other projects to break ground. Right now, 23 different businesses are up for credits for nearly 100 projects. The governor calls instant pay-outs of half what companies would get over time a far better way to fund the program than a previous proposal in the House. Lawmakers had been considering tacking a 55-cent surcharge onto Vermonters' monthly electric bills.

"My challenge as governor is the simple fact that Vermonters on average are making the same money they were making 10 years ago, and their bills have gone up," Shumlin said.

But some Republicans question Shumlin's motivation. The Williston company AllEarth Renewables, which makes and designs wind and solar systems, suggested the governor look at the idea. The head of that company was a big donor to Shumlin's campaign and his firm would get fast cash instead of long-term tax credits if the proposal goes through.

"We, up until last week, had no mention of any of this stuff," Turner said. "So having a new proposal within three days of the previous proposal is quite concerning to us."

"It's an example of government being smart," Shumlin insisted.

Shumlin says the idea first went through the public service and tax departments, and was floated to many of the companies taking advantage of the fund, not just AllEarth. Plus, the idea isn't really new: the Shumlin plan is a modified version of the way the federal government handles incentives. That system is already established law.

Some may wonder why developers would take money at 50-cents on the dollar of what they were promised as tax credits. The company that wants to put the solar park in Pownal says it's still very hard to get funding in this economy, so it thinks investors will be more likely to sign off if they know they'll get fast cash returns instead of long-term credits.

Again, the cash payments would not go to developers until their projects are complete. And nothing here's final, either. The change to the way the fund is administered still needs approval from Vermont lawmakers. Republican leader Don Turner says this is just one of the many headaches that will come when Vermont Yankee closes.

## **Peace Walk Extends From Indian Point To Vermont Yankee (MIDHUD)**

Mid-Hudson News, April 12, 2011

BUCHANAN – Some two dozen people started their Peace Walk in Croton Sunday, stopped to pray outside the Indian Point nuclear power plant in Buchanan, before they set out for the 206-mile walk to the Vermont Yankee nuclear power plant.

Japanese Buddhist nun Jun Yasuda of the Grafton Peace Pagoda in Petersburg, NY, led the walk.

"People have been suffering from the earthquake; so many people died by the earthquake and also so many people are suffering under the nuclear situations," she said.

Among those joining the walk was Gerry Katzpen of Putnam Valley.

"While it would be wonderful to think that nuclear energy can provide clean energy, carbon free energy, it seems sometimes that the risk may not be worth that benefit because should be a mishap, it endangers millions of lives for a very long term," he said.

Sr. Yasuda said the long walk was meant as a meditation for a nuclear free future world.

Debates rage over the future of both Indian Point and Vermont Yankee.

Licenses for the two Indian Point reactors are up in 2013 and 2015, respectively. Entergy, which owns Indian Point, is seeking 20-year renewals for both reactors. Gov. Andrew Cuomo wants the plant closed.

Vermont Yankee is scheduled to shut down in 2012, but the owners are trying to keep it open, an effort opposed by the state attorney general.

## **Riverkeeper Warns Lawmakers Of Risks At Indian Point (WESTJN)**

By Jorge Fitz-Gibbon

Westchester Journal News, April 12, 2011

WHITE PLAINS — It wouldn't take a tsunami to dangerously damage the Indian Point nuclear reactors, an environmentalist group told Westchester County legislators on Monday.

Speaking one month after an earthquake and tsunami set off a crisis at Japan's Fukushima nuclear plant, Hudson Riverkeeper Paul Gallay also told a county board committee that radioactive spent fuel pools at the Buchanan reactors are Indian Point's "Achilles' heel."

"All of these issues do not require a tsunami, which is one of the things that Indian Point says, and says that we should be easy in our minds because we won't have a tsunami," Gallay said. "Well, if this plant is not equipped to handle an earthquake without a tsunami, we could be in the situation we find ourselves in in Japan."

"There are issues associated with the age of the plant that have to do with corrosion of piping, that have to do with metal fatigue in the containment dome, that have to do with embrittlement of the containment dome," he said.

The public meeting, held at the Michaelian Westchester County Office Building in White Plains, is the last in a series held by Legislator Michael Kaplowitz, D-Somers, and Legislator Martin Rogowsky, D-Harrison.

Kaplowitz chairs the board's Committee on Environment and Energy ; Rogowsky chairs the Public Safety and Security Committee.

"Whether Indian Point is open or closed, we're going to need an evacuation plan because of the spent fuel that is at Indian Point," Kaplowitz said Monday.

"So we're going to deal with this issue for as much as 10,000 years, the scientists tell us," he said. "And certainly dry cask as much as 100 years in the current format, and the spent fuel as it currently exists for some period of time."

Kaplowitz said the continuing nuclear crisis at Japan's Fukushima plant warrants close scrutiny of Indian Point, which sits near an earthquake fault.

Federal and state officials have also made nuclear safety a priority, prompting the Nuclear Regulatory Commission to assure that Indian Point will top the list when the agency conducts more thorough seismic assessments of the nation's nuclear plants.

NRC spokesman Neil Sheehan said the agency was quick to react after the Fukushima incident, and is finalizing a stringent assessment of the plants. He said the agency has strict standards for earthquake resistance.

"We are hardly ignoring the lessons learned that came out of the Japan reactor events. We intend to look at them aggressively and make changes at US reactors wherever appropriate," Sheehan said. "We are not sitting back and remaining indifferent to the earthquake risks faced by Indian Point or any other plants."

Jerry Nappi, a spokesman for Entergy Nuclear Northeast, which owns Indian Point, added that plant officials "take the storage of used fuel very seriously and we store it through two very safe methods."

Nappi said Entergy also questioned legislators' motive for the county meetings.

"Legislator Kaplowitz has moved past addressing the understandable concerns people have following the earthquake and tsunami in Japan and on to his self-serving agenda to close Indian Point," Nappi said.

But Gallay and Phil Musegaas, Riverkeeper's Hudson River program director, contend that the plants' age — including underground pipes that carry cooling water and power lines required to operate backup systems, should be a concern at Indian Point.

Of particular concern, they said, is that the NRC does not evaluate evacuation plans, seismic resistance and the spent fuel pools when it re-licenses nuclear plants — something the agency is currently considering for Indian Point.

"What this process needs," Gallay said, "this relicensing process, the process of evaluating the safety of the nuclear power stations in the United States and Indian Point in particular — it requires independent, expert analysis prior to any decision whether to re-license the Indian Point power plants."

## **Entergy, Riverkeeper Officials Invited To Brief Lawmakers On Indian Point Safety; Watch At 3 P.m. (WESTJN)**

By Jorge Fitz-Gibbon

Westchester Journal News, April 12, 2011

WHITE PLAINS — The Westchester County Board of Legislators will hold its latest in a series of public meetings on the Indian Point nuclear power plants today at 3 p.m., seeking to shed light on safety issues at the Buchanan plant in the wake of the crisis facing Japan's Fukushima nuclear plant.

Watch the session live online at 3 p.m.

The county board's committees on environment and energy, and public safety and security, which have hosted the meetings, said they have invited officials from the environmental group Riverkeeper as well as officials from Entergy Northeast, which owns the Indian Point reactors. The board said in a press release that Entergy officials had not notified the committees if they would be able to attend.

County Legislators Michael Kaplowitz, D-Somers, and Martin Rogowsky, D-Harrison, who chair the two committees, said they began holding the public meetings to ensure that residents have complete information about Indian Point.

Federal and state officials, including Gov. Andrew Cuomo, have focused on the safety of the plant after the Japanese reactor was damaged during an earthquake and tsunami last month. Riverkeeper, a frequent critic of the Indian Point plant, has been among those raising concerns. The Buchanan plant lies close to an earthquake fault.

Entergy is awaiting word from federal officials on its application to extend the plant's operating license, a move opposed by Riverkeeper, among others.

Last week the Westchester County board announced legislation extending the federal evacuation zone around Indian Point from 10 miles to 50 miles in the wake of the Japanese nuclear crisis.

Today's meeting will be held at 3 p.m. on the eighth floor of the county office building at 148 Martine Ave., on the corner of Court Street in White Plains. The meeting is open to the public.

## **US Nuclear Output Falls As Units Shut In New Jersey, Nebraska (BLOOM)**

By Colin McClelland

Bloomberg News, April 12, 2011

US nuclear-power output fell 0.4 percent as reactors shut in New Jersey and Nebraska, the Nuclear Regulatory Commission said.

Power generation nationwide decreased 322 megawatts from April 8 to 75,969 megawatts, or 75 percent of capacity, according to an NRC report today and data compiled by Bloomberg. Twenty-four of the nation's 104 reactors were offline.

Public Service Enterprise Group Inc. (PEG) shut the 1,130- megawatt Salem 2 reactor located about 18 miles (29 kilometers) south of Wilmington, Delaware. It was operating at 95 percent of capacity on April 8. Another unit at the site, the 1,174- megawatt Salem 1, is operating at full power.

Omaha Public Power District idled the 482-megawatt Fort Calhoun reactor located on the Missouri River, 19 miles north of Omaha. It was operating at full capacity on April 8, the commission said.

Southern Co. (SO) slowed the 860-megawatt Farley 2 reactor in Alabama to 56 percent of capacity from 100 percent on April 8. Another unit at the site, the 851-megawatt Farley 1, is operating at full power. The plant is located about 18 miles east of Dothan.

FirstEnergy Corp. (FE) started the 940-megawatt Beaver Valley 2 reactor in Shippingport, Pennsylvania. It is operating at 25 percent of capacity.

While the unit was at 15 percent of capacity on April 9, the "A" auxiliary feedwater injection header was declared inoperable due to a water leak and the reactor was put in hot standby mode, meaning it was at operating pressure and temperature, the NRC said.

At about 4 a.m. local time yesterday, the unit was manually tripped offline because of a build-up of steam in one of its generators, the federal agency said.

The plant is located about 26 miles northwest of Pittsburgh. Another 940-megawatt unit at the site, Beaver Valley 1, is operating at 82 percent of capacity.

Entergy Corp. (ETR) started the 1,025-megawatt Indian Point 3 located on the Hudson River about 27 miles north of New York City. It is operating at 86 percent of capacity. The 1,020- megawatt Indian Point 2 reactor is operating at full capacity. Unit 1 was shut in 1974.

The Tennessee Valley Authority boosted output from the 1,104-megawatt Browns Ferry 2 reactor in Alabama to 68 percent of capacity from 19 percent on April 8.

Browns Ferry Units 1 and 3, which have respective capacities of 1,065 megawatts and 1,115 megawatts, are operating at full power. The plant is located 84 miles north of Birmingham on Wheeler Lake, near the Tennessee border.

FirstEnergy slowed the 893-megawatt Davis-Besse reactor to 91 percent of capacity from 100 percent on April 8. The unit is located on Lake Erie 21 miles east of Toledo, Ohio.

Some reactors close for maintenance and refueling during the spring and fall in the US, when demand for heating and cooling is lower. The outages can increase consumption of natural gas and coal to generate electricity.

The average US reactor refueling outage lasted 41 days in 2009, according to the Nuclear Energy Institute.

## **Shimkus Says Yucca Mountain Trip A Go Despite Cost Warnings (SLPD)**

By Bill Lambrecht

St. Louis Post-Dispatch, April 12, 2011

WASHINGTON – Even before the nuclear disaster in Japan, US nuclear operators and their allies in Congress were demanding that the Obama administration rethink its decision to put Yucca Mountain off limits to high-level reactor waste.

Two weeks ago, Rep. John Shimkus, R-Collinsville, who heads an Energy subcommittee dealing with atomic wastes, announced that the Energy Committee will investigate the decision.

And that meant Shimkus and other members would be traveling to Nevada this month to view Yucca Mountain for themselves, Shimkus said.

Fact-finding trips by Washington politicians are common, but this one is proving to be anything but.

On Friday, Rep. Henry Waxman, of California, urged Shimkus to cancel the trip, declaring that it would cost \$200,000, including the cost of helicopters to transport members from Las Vegas.

Citing an Energy Department letter, Waxman, the ranking Democrat on Shimkus's subcommittee, said the trip could turn into a big waste if unsafe levels of dangerous gas keep members from entering Yucca's storage tunnel.

The letter went on to say that "the environment within the tunnel will not be comfortable. There will be a lot of airborne dust and visitors will likely have to wear respirator masks...When riding in the 'mules', the entire group will not be able to hear well."

Waxman, hours before a budget deal averted a curtailment of government services, wrote: "At a time when the government is facing a shutdown over funding, it seems completely inappropriate to incur these needless expenses."

Shimkus said he is undeterred – and "appalled" at the suggestion that the delegation would be wasting money. "We spent \$14 billion or \$15 billion to prepare this site for long-term storage. What are they trying to hide?" he asked in an interview.

The Energy Department is distorting the cost, Shimkus contended. The delegation is willing to ride a bus to the site and doesn't need helicopters, he said. Nor is it a must that they see inside the mountain, meaning that expensive safety tests and other preparation is unnecessary.

"What I think has happened is that they have illegally closed Yucca Mountain," Shimkus asserted.

Nearly 30 years ago, Congress declared that the nation should have a single repository for the dangerous spent fuel from reactor cores. Five years later, Yucca Mountain, a volcanic ridge northwest of Las Vegas, was selected.

Since then, a combination of safety questions and political opposition has left the massive project on life-support. The Obama administration announced last year that it was committing no more money to Yucca Mountain and looking elsewhere for a location to permanently house some 60,000 tons of intensely hot material.

As part of its investigation, the House Energy Committee is demanding that the Energy Department and Nuclear Regulatory Commission provide documents and details about the Yucca decisions.

Shimkus said he had hoped that as many as a dozen House members, including Democrats, would be making the trip during a congressional recess at month's month. He worries now that the lack of cooperation might dissuade some colleagues from the travel.

"We think they're slow-stepping us to create a smaller group," Shimkus said. "There are just a lot of weird things going on."

After reading this blog post, Rep. Shelley Berkley, a Democrat who represents the Nevada area, remarked that perhaps the Energy Committee members "think there is an extra \$100 billion laying around inside Yucca Mountain to pay for their plan to turn Nevada into a radioactive graveyard."

She added in a statement: "Instead of parading around an empty hole in the Nevada desert for the cameras, why doesn't Congressman Shimkus call on the nuclear industry to quit putting profits over the safety of America's families and join me in demanding they secure waste in on-site dry-cask storage."

Shimkus observed that Energy Department officials told him no news media members would be permitted to cover the visit.

## **Lawmakers To Take Buses On Yucca Tour (LVSRJ)**

By Steve Tetreault

[Las Vegas Review-Journal](#), April 12, 2011

Full-text stories from this source currently cannot be included in this document. You may, however, click the link above to access the story.

## **US Needs Nuclear Waste Storage Site (HILL)**

By Rep. John Shimkus

[The Hill](#), April 12, 2011

The March 11 earthquake in Japan led to a tsunami that crippled the Fukushima Daiichi nuclear power plant. While a similar situation is not likely at any US nuclear plant, we must use this to look at our country's lack of a central storage facility for nuclear waste.

The first commercial nuclear power plant began operating in the United States in 1960. In 1982 the Nuclear Waste Policy Act made the federal government responsible for collecting nuclear waste.

In 1987, Yucca Mountain was named the sole site for a permanent repository of nuclear waste. The Department of Energy (DOE) confirmed the scientific side of this decision in 1994. In 2002, Congress and the President approved Yucca Mountain again. In 2008, DOE filed a license application with the Nuclear Regulatory Commission to build Yucca Mountain.

Obviously, the decision to move forward with a national nuclear waste repository has been supported by Republican- and Democrat-controlled Congresses and Republican and Democrat presidents for all these years.

I have visited Yucca Mountain. It is located on federal property. The storage site would be 1,000 feet below ground in a remote desert location. Earthquakes have had little impact on this area and even less of an impact underground.

Today, we store nuclear waste at 121 sites in 39 states. Nuclear power provides over 20 percent of our nation's electricity. That number is closer to 50 percent in Illinois.

In Illinois, eight pools house spent nuclear fuel rods from the 13 nuclear power plants, 11 of which are still operating. Two pools are within 40 miles of downtown Chicago. Is that really where we want to store nuclear waste?

In testimony before the Senate on March 30, Massachusetts Institute of Technology professor of physics Ernest Moniz called for these spent fuel rods to be stored in "dry" casks at regional government facilities. Sen. Dianne Feinstein (D-Calif.) agreed.

While I agree with the government following its own law and taking control of nuclear waste, I question why we should throw away the \$14.5 billion already spent on Yucca Mountain. We don't need regional sites; we already have designated a consolidated government storage site!

Also on March 30, President Obama called for an increase in nuclear power as part of a clean energy standard. While I may not agree with a mandated standard, I know that nuclear power will continue to be vital in our nation's electricity portfolio.

Unfortunately President Obama and his administration have unilaterally halted work on Yucca Mountain. They would rather see nuclear waste stored all over the country instead in Nevada – home of Senate Majority Leader Reid.

I believe the administration is failing to carry out the current federal law. In order to find out exactly why the administration halted work on Yucca Mountain, under our oversight authority House Energy and Commerce Committee Chairman Fred Upton (R-Mich.) and I are proceeding with an investigation. On March 31 we sent letters to the Secretary of Energy and to the Chairman of the Nuclear Regulatory Commission.

In addition, as part of our oversight and responsibility to rate payers and taxpayers, I will be leading a delegation of legislators to tour Yucca Mountain later this month.

Past Congresses and administrations have approved Yucca Mountain. And while it has taken too long to become reality, this administration cannot rewrite the law or pull already issued permits away from it.

Rep. John Shimkus (R-Ill.) is chairman of the House Energy and Commerce Subcommittee on Environment and the Economy.

## **Despite House GOP Push, Harry Reid Declares 'Yucca Is Dead' (LVS)**

By Karoun Demirjian

Las Vegas Sun, April 12, 2011

In the final days, the budget compromise came down to a faceoff over policy riders, with funding for Planned Parenthood, National Public Radio and the authority of the Environmental Protection Agency taking center stage.

But it's one rider that fell off the table quietly that will likely resonate strongest for Nevada.

"Yucca Mountain is dead," said Senate Majority Leader Harry Reid, who was the chief negotiator for Democrats. "And I think it's time for opponents to move on."

Yucca Mountain, which hasn't received funding under any federal budget that's been passed since Obama came to office, came back on the agenda this past winter, when Republican House leaders included funding and a directive about the projected nuclear waste storage site in their budget bill, H.R. 1.

That bill, which passed the House but failed in the Senate, would have made it illegal to use federal funds to derail ongoing activities at Yucca, including the siting process, now mired in the Nuclear Regulatory Commission's approvals process. Effectively, it would have kept the site open.

"H.R. 1's history, man," Reid said Monday when asked if he was at all concerned that it might still be funded.

Yucca Mountain's an emotional issue for many Nevadans, and one that members of the state delegation kept recalling, both as a matter of policy and politics, throughout the budget process.

Nevada Republican Rep. Dean Heller, who supported H.R. 1, tried to remove the Yucca rider from the bill by amendment before it passed. His attempt failed.

Nevada Democratic Rep. Shelley Berkley tried to paint the whole budget standoff in terms of the Yucca Mountain rider.

"Republicans say we have to make damaging budget cuts at the same time they are seeing these same Republicans push for \$100 billion in spending to turn Nevada into a nuclear waste dump," she said. "Nevadans reject Yucca Mountain ... and they are stunned that these same Republican lawmakers are willing to shut down the government over an amount that is less than half the cost of Yucca Mountain."

While Reid's efforts may have finally killed the Yucca rider in the budget process, enthusiasm for keeping the project alive doesn't seem to be waning in the House. Republican members of the House's Energy and Commerce Committee had been planning on taking an April recess vacation to view the site.

But because the site's been closed for two years, it would take some doing to ready it for inspection, and the extra effort is expected to run the government about \$175,000 – not to mention the cost of helicopters and lodging.

"To think that the House Republican members of the Energy and Commerce Committee are planning a trip to Yucca Mountain that will cost almost \$200,000 to get the tunnel ready so they can go look at it?" Reid said Monday. "The only thing that might be a good idea is if they all travel to Las Vegas and stay in one of our hotels, that's the only good part about it."

The proposed trip, spearheaded by Illinois' Rep. John Shimkus, has been canceled, in part because of spreading revelations that whatever they found, there's little chance that anything but a huge influx of political will and capital could get the project up and running again soon.

"The President of the United States opposed it. The Secretary of Energy opposed it," Reid said. "It has no money."

That last bit is key.

Yucca Mountain's potential funding lies in the Treasury's Nuclear Waste Fund, made up of annual fees charged to utility companies based on the amount of nuclear power plant-generated electricity they produce and sell. Money that comes in is considered mandatory spending, but money can only flow out as a result of a congressional authorization.

Thus, there's more coming in than going out – an imbalance that has grown the fund to nearly \$30 billion. Under the Nuclear Waste Policy Act, the Treasury Department can reinvest whatever money goes unspent (which it mostly does) as "non-marketable Treasury securities." Because it's sitting there, the money is treated as part of the general Treasury funds on the books, a categorization that lets the Treasury count what's in waiting toward deficit reduction.

The money hasn't yet been liquidated: Congress rejected an effort led by Sens. Lindsey Graham and John McCain in 2009, shortly after Obama indicated his intention to see to it that the Yucca project remain on ice.

But the project has never received enough political backing to make dipping into Treasury funds feasible – nor would it actually do much good until the Nuclear Regulatory Commission's Yucca evaluation is complete.

While the events at the Fukushima reactor in Japan have opened an intense season of discussion around nuclear energy, it doesn't seem like that's translating toward enthusiasm for re-opening Yucca so much as it is making lawmakers look toward safer ways of storing nuclear waste on site.

"Are we not in a world that has accepted reprocessing? Should we not be looking at ourselves as an alternative to a \$90 billion Yucca Mountain investment that might come online 10 years from now?" Sen. Dick Durbin asked a panel of the government's nuclear experts, including Nuclear Regulatory Commission chair Greg Jaczko and the acting assistant energy secretary Peter Lyons.

"The one thing that was proven to be safe [in Japan] was the spent fuel rods in the dry-cast storage," Reid said, stressing that carting off spent fuel rods to Nevada seemed a gratuitous step when safe storage procedures were available closer to plants themselves. "It's really not sensible for them to try to use this as an issue."

## **US Senate Majority Leader Reid Says Yucca Rider Removed From CR (PLATTS)**

Platts, April 12, 2011

US Senate Majority Leader Harry Reid said Monday that a rider barring the Nuclear Regulatory Commission from completing the closeout of the Yucca Mountain repository project was knocked out of a stop-gap spending measure last week. "I've said it before and will say it again, Yucca Mountain is dead," Reid, Nevada's senior senator and the state's leading opponent of the Yucca Mountain project, told reporters during a teleconference. The rider to the continuing resolution that lawmakers approved late Friday to avert a government shutdown did not contain any funding. It would have, however, barred the NRC from spending any money to further close out any agency activities associated with the Yucca Mountain repository project. President Barack Obama's administration canceled the program, citing Nevada's opposition to the facility. By the time fiscal 2011 began October 1, both the Yucca Mountain project and the DOE office that oversaw it had been dismantled. NRC Chairman Gregory Jaczko also had terminated NRC's licensing activities associated with the DOE's Yucca Mountain repository license application in October. –Elaine Hiruo, elaine\_hiruo@platts.com

## **Analyst Questions Safety Of Spent Fuel Storage (AP)**

Associated Press, April 12, 2011

CHATTANOOGA, Tenn. — The Tennessee Valley Authority stores spent fuel and fuel rods at its plants, just like other nuclear plant operators, but an industry analyst is questioning the safety of that storage.

TVA has more than 2,544 metric tons of radioactive spent fuel in cooling ponds at its Sequoyah and Watts Bar nuclear plants in Tennessee and Browns Ferry plant in Athens. That is far more than in the reactors themselves.

The Union of Concerned Scientists' Edwin Lyman said the amount of fuel from TVA's reactors represents about "100 reactor-years worth of discharges."

Nuclear industry analyst David Lochbaum told the Chattanooga Times Free Press that some storage pools are in buildings with sheet-metal siding.

TVA nuclear spokesman Ray Golden said the spent fuel pools at TVA's three nuclear plants are safe.

## **Murkowski: Smaller Steps On Energy (POLITCO)**

By Darren Goode

Politico, April 12, 2011

Alaska Sen. Lisa Murkowski thinks Congress will have more success taking a “graduated” approach to energy legislation while keeping up the pressure to respond to last year’s Gulf of Mexico spill.

While the Senate Energy and Natural Resources Committee, in which Murkowski is the top Republican, approved separate strategies last Congress addressing the historic oil spill and broader energy problems, the full Senate and Congress more generally did not follow suit.

“So more of a graduated approach to an energy policy, and I happen to believe that we will have greater likelihood of success in advancing something like that through the committee and getting it through the floor of the Senate and the House as well,” Murkowski told POLITICO in the video series “Powering America’s Future.”

Murkowski cited legislation increasing hydropower and addressing small-modular nuclear reactors as examples. There is “probably much greater likelihood” of something like the latter bill moving “than a full-on expanded nuclear piece, particularly in view of just the uncertainty that we’re seeing after the earthquake in Japan.”

Senate Energy and Natural Resources Committee Chairman Jeff Bingaman (D-N.M.) will start marking up energy measures Tuesday, with additional measures coming before Memorial Day.

In order to spur floor action in this Congress, Bingaman has said he hopes to pass everything out of committee by early summer, including legislation designed to ensure the Interior Department “has the authority and resources they need to maintain proper regulation of oil and gas drilling on the outer continental shelf,” he said at a March 30 POLITICO Pro event.

As the first anniversary of the April 20 explosion of the Deepwater Horizon rig that led to the biggest oil spill in history approaches, lawmakers also face a public both skittish on nuclear power after the damage to Japan’s Fukushima Daiichi reactor and frustrated by the rise of gas prices.

Some of the ideas Murkowski thinks the energy panel will take up may not sound like headline-grabbing proposals that would restore public confidence in how Capitol Hill is responding to their concerns.

“I wouldn’t suggest it’s kind of nibbling around the edges,” Murkowski said. “I would suggest to you that what we’re doing is being more focused in terms of those areas where we feel that we can reach consensus on some energy issues, work to utilize the committee process to build good, solid legislation in these areas, advance them through.”

She added, “It is a broader, more comprehensive” plan than just focusing on something like hydropower specifically. “But we haven’t gone about it in the same manner that we did in the last Congress. We took the ‘full-meal deal’ approach, and we weren’t able to sell it.”

The panel also wasn’t able to fully sell the strategy it passed last June to quickly respond to the Gulf spill, getting caught in the politics in the broader Senate on raising the per-spill liability limit for companies and cutting tax incentives for the oil industry.

At the time, “the explosion, the deaths, just the real tragedy that went on with that, the nation was fixated on what was happening in the Gulf of Mexico as we watched on our TVs, as we read about the efforts to plug that hole,” Murkowski said. “And then they find success and they plug the well and the cleanup continues, and no longer is this incident in the news. And then, it seems like the pressure is off of us here in the Congress to act legislatively.

“We shouldn’t allow the timing and the circumstances of what has happened down there to remove us from the responsibility of addressing the reforms that need to be made,” she added.

Last year’s failure of Congress to produce a spill-response bill showed “even if we were successful in building a bipartisan product, there’s no guarantee that it then becomes a priority,” she said, adding that Senate Majority Leader Harry Reid should make it a priority as well. “It needs to be made a priority by the administration, to say we need to have these structural reforms.”

The Interior Department has started separating safety and environmental oversight from approval of offshore drilling leases and collection of royalty relief.

Interior Secretary Ken Salazar “has done some things internally. But quite honestly, a lot of the fixes require a legislative fix,” Murkowski said.

One of those is largely out of the hands of Murkowski and the Senate energy panel.

Sens. Mary Landrieu (D-La.), Mark Begich (D-Alaska) and Bob Menendez (D-N.J.) are trying to find a compromise to raising the two-decade-old \$75 million-per-spill liability cap for companies.

Landrieu and Begich are meeting first to develop an idea that would need to pass muster with those like Menendez, who is one of the leading offshore drilling critics. “We’ve told our staffs to get back at it,” Begich told POLITICO. He met briefly with Landrieu to talk about it. “We both feel it’s time to re-engage.”

Murkowski said that's going to have to happen.

"One of the things that held us up ... was what happens with the liability issue and the cap," she said. "And so, maybe what you do [is] take people like Bob Menendez, who was leading on that issue, [Sen.] Frank Lautenberg [D-N.J.], and team them up with Mary Landrieu, myself, some of the others to make sure the commitment to fixing the systems is made while at the same time we can address the liability issue."

Meanwhile, Murkowski and Bingaman are also working on President Barack Obama's "clean energy standard," which promotes renewable power, nuclear sources and cleaner use of coal. She and Bingaman last month solicited public input on what a standard should entail. Responses are due Monday.

"There are those who suggested that a clean energy standard, in fact, may be nothing more than, you know, cap and trade under a different name," Murkowski said. "I don't think that that is the case, but if that is the case, then CES is not going to happen if that's how it is viewed. So ... we're looking to see just what is the temperature out there for an approach that would mandate a clean standard."

## **Higher MOX Fuel Concentration Weighed For US Reactors (GSN)**

Global Security Newswire, April 12, 2011

The federal Tennessee Valley Authority and Energy Department have conducted talks on potentially substituting mixed-oxide fuel derived from nuclear-weapon material for one-third of the low-enriched uranium in several US power reactors, a substantially higher proportion of MOX fuel than a crippled Japanese nuclear plant had used, the New York Times reported on Sunday (see GSN, April 5).

Any TVA move on the proposal has been put off pending a review of the behavior of MOX fuel at Japan's Fukushima Daiichi nuclear power plant, which was severely damaged last month by a 9.0-magnitude earthquake and tsunami (see related GSN story, today). The federal investigation would address the extent to which the MOX fuel – which comprised 6 percent of the material in the Japanese facility's No. 3 reactor – has heated and broken down since the March disasters.

"We are studying the ongoing events in Japan very closely," TVA spokesman Ray Golden said.

The Mixed-Oxide Fuel Fabrication Facility, a site under construction at the Savannah River Site in South Carolina, would convert 34 metric tons of excess weapons plutonium to nuclear power plant fuel, according to an earlier report. The facility's expense has reached almost \$5 billion since the government signed a contract for its creation, and no entity has officially stepped forward to buy the fuel.

A nuclear regulatory board this month called for new testimony on measures to manage and protect the plutonium the facility would house, noting "significant public safety and national security issues" (see GSN, April 4).

Some experts contend MOX fuel poses a greater risk of dangerous incidents than other nuclear fuel, but the administration has defended the material's safety profile. Six countries other than Japan have authorized the fuel's regular use, said Anne Harrington, deputy administrator for the US National Nuclear Security Administration.

Opponents of the fuel have made "an opportunistic attempt" to damage the material's reputation following the Fukushima disaster, Harrington said. "MOX is nothing new," she added.

"Proliferation causes a far greater danger to a far greater number of people than highly controlled use of this fuel in a reactor," she said.

"MOX was not the cause of [the Japanese] accident, and the consequences of it have not been impacted by MOX," said David Jones, a vice president with the French atomic firm Areva, a primary participant in the US MOX plant's construction. No firm indicators have emerged of plutonium escaping from the Japanese facility, the Times reported.

The MOX facility's detractors, though, suggested the project faced a growing prospect of being thwarted and becoming what Union of Concerned Scientists senior staff scientist Edwin Lyman called "a plant to nowhere." Such a development would scuttle Washington's plan for disposing of excess US weapons plutonium capable of powering as many as 10,000 nuclear weapons or a larger number of radiological "dirty bombs," according to the Times. The material might also power 43 reactors for one year, the newspaper said.

Releases of the converted weapon material could pose greater health risks than other nuclear fuel types, Lyman concluded in a 2001 study. Energy Department officials have acknowledged but played down the potentially greater health threat posed by MOX fuel.

MOX opponents said Washington has lessened the South Carolina plant's nonproliferation benefit by loosening certain regulations for the protection of plutonium. The material might be stolen ahead of its conversion into material too dangerous for human handling, they said.

The Nuclear Regulatory Commission has required fewer protective measures for MOX fuel inside larger components on grounds that the material would be of less interest to extremists.

Shaw Areva MOX Services, which is constructing the South Carolina plant, submitted and then canceled a formal call for the government to waive plutonium management and tracking requirements. Despite the revocation, the Atomic Safety Licensing Board responded with a call for additional testimony on the MOX site's ability to safely handle and transfer plutonium.

"We continue to believe that the MOX project meets all the regulatory requirements for licensing, and we welcome the opportunity to present our case," the entity said in a statement.

"I'd defy anyone to walk in and walk out with any of our plutonium," Harrington added (Becker/Broad, New York Times, April 10).

## **Shaw Group, Babcock & Wilcox To Help Dismantle Damaged Japanese Plants (CLTBIZJ)**

By John Downey

Charlotte (NC) Business Journal, April 12, 2011

Welcome to Power Weekend, catching up on stuff we've learned since Friday.

Babcock & Wilcox and the Shaw Power Group are working with Toshiba and Westinghouse on plans to dismantle the badly damaged nuclear reactors in northern Japan.

The New York Times reported last week Tokyo Electric Power Co., owner of the crippled Fukushima reactors, acknowledges the plants must be scrapped.

Toshiba, the lead company involved in the work, has assembled a team of experts from the other companies to help with the plans. Toshiba is the principal owners of Westinghouse. The parent company of Charlotte's Shaw Power Group, The Shaw Group, owns 20% of Westinghouse.

Westinghouse and Babcock & Wilcox, also based in Charlotte, dismantled the Three-Mile Island plant in Pennsylvania after it experienced the worst nuclear accident in US history in 1979.

The Times reports: The plans to take apart the reactors are complicated not only by the volatility of the situation but also by the uncertainty about the reactors' condition once they finally cool. No one has ever decommissioned four damaged reactors at one power plant, let alone reactors rocked by a powerful earthquake and swamped by a tsunami.

The American teams began arriving in Japan about two weeks ago, the paper reports. But work cannot start in earnest, it says, until TEPCO gets the reactors under control. "All things hinge on having safe access," David Richards, a president at Babcock & Wilcox told the Times. S.C. regulators let activist intervene in Duke nuclear proceeding

S.C. regulators have rejected Duke Energy's bid to prevent anti-nuclear activist Tom Clements from participating in hearings on allowing Duke to spend \$229 million more on planning for the proposed Lee Nuclear Station.

Clements, who is with S.C. Friends of the Earth, filed to intervene in the hearings as an individual. That allows him to participate — and represent his organization's viewpoint — without hiring a lawyer.

Duke objected. It noted Clements is not a Duke customer — living in Columbia, S.C. — and so had no direct interest in the outcome of the request.

The S.C. Public Service Commission voted unanimously Friday to let Clements participate.

Duke has already spent \$230 million on planning for the plant, which would be built near Gaffney, S.C. If the commission grants Duke's request, it would be possible for the company to add those costs into its rate base, regardless of whether the plant is built. Clements and his organization object to building the plant. N.C. cities still seek rate concessions from Duke in Progress merger

The city of New Bern has talked to federal regulators about reducing the costs for power from Progress Energy as part of its proposed acquisition by Duke Energy, the New Bern Sun Journal reports.

The city continues to seek allies among other eastern N.C. cities to help pay for a lawyer to represent the cities in merger hearings before the Federal Energy Regulatory Commission. New Bern would like other cities to chip in \$40,000 to \$100,000 for the effort.

Last week, New Bern Mayor Lee Bettis attended a meeting of the N.C. Municipal Power Agency that represents 20 eastern cities that have their own power utilities. He said his fellow city officials showed interest in the proposal, but no agreements have been made on providing money for a lawyer. John Downey covers the energy industry for the Charlotte Business Journal. Click here to read more recent postings on Power City. To get an RSS feed for Power City click here.

## **Shaw Net Income Falls On Yen-dollar Swings (AP)**

Associated Press, April 12, 2011

Shaw Group Inc., an engineering and construction company whose projects include nuclear power, said on Monday that its second-quarter profit tumbled sharply mainly due to charges to cover big swings in the value of the dollar versus the yen.

Shaw reported a profit of \$1.2 million, or a penny a share, for the quarter that ended Feb. 28, compared with net income of \$61.5 million, or 72 cents per share, for the same period last year. The latest period includes a charge of \$28.7 million linked to foreign exchange losses, while the year-ago period included a gain of \$24.2 million.

Excluding the company's Westinghouse segment, Shaw would have earned \$35 million, or 40 cents per share, in the latest period. The drop in the US dollar versus the yen negatively affected that division because the company used bonds denominated in the yen to finance its 20 percent stake in the Westinghouse Group nuclear segment. Shaw's results also were trimmed by reduced earnings on a major petrochemical project.

Revenue fell 12 percent to \$1.42 billion from \$1.62 billion a year earlier.

Analysts had been expecting a profit of 45 cents per share on revenue of \$1.55 billion, according to FactSet. Analysts typically exclude one-time items such as expected currency changes.

Shaw said its nuclear power construction work continues as planned. The nuclear power industry has faced intense scrutiny in the wake of last month's earthquake and tsunami in Japan, which badly damaged nuclear facilities. Authorities there are still struggling to contain radiation from overheating reactors nearly a month later.

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It also said its nuclear construction and emergency response experience "positions us to assist with the recovery efforts in Japan and any future modification needs to existing power plants in the US and internationally."

For all of fiscal 2011, Shaw said it expects earnings per share to range between \$1.86 and \$1.91 on revenue of \$6.3 billion. Analysts are expecting net income of \$1.76 per share on revenue of \$6.56 billion, on average.

Shaw said it identified an accounting error linked to how revenue was calculated on an energy contract. As a result, Shaw overstated 2009 revenue by \$3.4 million and net income by \$2.2 million, and overstated 2010 earnings by \$10.7 million and revenues by \$16.7 million. It is revising its 2010 report to correct the mistake.

Shaw shares fell 48 cents to close at \$34.97.

## **Georgia moves to swap drugs for executions (AUGC)**

Augusta Chronicle, April 12, 2011

ATLANTA — Georgia prison officials are laying the groundwork to swap out a key sedative used for lethal injections after federal regulators took the state's stockpile of sodium thiopental, which is in short supply nationwide, according to more than 1,000 pages of documents reviewed by The Associated Press.

State Department of Corrections officials met with counterparts in Ohio and Oklahoma, two states that have already used another drug, pentobarbital, to execute inmates. They have also collected hundreds of pages of legal filings and other documents about the use of pentobarbital in those states, according to files obtained through an open records request.

The US Drug Enforcement Administration took Georgia's supply of sodium thiopental last week over questions whether the state circumvented law to get it.

The move effectively blocked Georgia from scheduling and carrying out any executions.

House speaker joins SRS H Canyon efforts

COLUMBIA — South Carolina House Speaker Bobby Harrell met with Savannah River Site managers and officials and members of the Aiken County legislative delegation Monday for a briefing on the Savannah River National Laboratory and the uncertain future of the site's plutonium-processing H Canyon.

"The purpose of the meeting wasn't to create or ask for next steps but to inform," said Clif Webb, the vice president of public affairs for Savannah River Nuclear Solutions, the contractor that operates and manages the site. "We felt we had a great dialogue with the speaker."

Last month, the nine members of the Aiken County legislative delegation wrote to US Energy Secretary Steven Chu to lay out concerns about the effects of shifting funding away from H Canyon, as is proposed in the federal budget. Harrell spokesman Greg Foster said Monday that the speaker also planned to send a letter to Chu.

## **Retired General: US Vulnerable To Cyber Attacks (AP)**

Associated Press, April 11, 2011

COLORADO SPRINGS, Colo. (AP) — The United States is still "hugely vulnerable" to cyber attacks, but so are most other nations, a former chairman of the Joint Chiefs of Staff said Monday.

"We're way late" in preparing to defend critical computer systems from hackers, enemies and others, retired Marine Gen. Peter Pace said.

Pace was chairman of the Joint Chiefs, the nation's highest military post, under then-President George W. Bush from 2005 until 2007. He spoke at the Space Foundation's Cyber 1.1 conference in Colorado Springs.

Pace said the US probably has the strongest offensive cyber capabilities of any nation, and it has employed cyber attacks in the past. After his remarks, he declined to say how many times that has happened, or to describe the circumstances.

Pace said the federal government should set security requirements for critical computer networks in the private sector, such as banking and finance.

Uniform requirements would prevent one corporation from gaining a competitive advantage by ignoring expensive upgrades. He also said it would encourage innovation by creating demand for security measures.

"We need to help prime that pump," said Pace, now president and CEO of SM&A, a management consulting firm.

Roger Cressey, an adviser on cyber security and counterterrorism under Presidents Bill Clinton and George W. Bush, told the conference that data manipulation — surreptitiously altering critical information on computer networks — is an underrated threat to cyber security

"The government makes decisions based on the assumption of accuracy of the data it's using," Cressey said in an interview later. "If a creative adversary doesn't steal, but just manipulates, that throws our decision-making process into disarray."

He said the banking and financial system, with trillions of dollars of international transactions at stake, could also suffer.

Cressey, now a senior vice president for defense contractor Booz Allen Hamilton, said he's not aware of any large-scale data manipulation attacks to date.

Gen. William Shelton, head of the Air Force Space Command, told the conference the US military still faces challenges in cyberspace, especially in "situational awareness" — a military term for knowing not only where an enemy is, but where it has been, where it's going and what its intentions are.

Shelton said computer-enabled weapons such as remotely piloted aircraft represent the future of warfare.

## **Cyber-security In The Spotlight At URI (PROJO)**

By Michael P. McKinney

Providence Journal, April 12, 2011

The four-star general who leads the National Security Agency headlined a cyber-security conference at the University of Rhode Island on Monday that highlighted student and faculty research into such challenges as defending the power grid from cyber-attackers.

Gen. Keith Alexander told the 150 to 200 attendees that cyber-security "is one of the most important issues facing our nation today."

In 2008, he said, the US Defense Department found that it had "malicious software" in its networks, the result of people using certain drives to go from unclassified computer networks to classified ones. In response, a team identified the problem and built a system in 22 hours to rectify the situation. That incident led to the start of the US Cyber Command, which he also commands.

Alexander called URI and the state's congressional delegation leaders on cyber-security issues. He noted that a 1986 graduate of URI is "one of the architects" for cyber-security at the NSA.

Part of Alexander's role is to defend the military's computer systems from cyber-threats, but security problems affect other areas as well.

US Sen. Sheldon Whitehouse said that a report indicated that the monetary value of intellectual property in the corporate world stolen through forms of cyber-security breaches is vast. He said more legislation on cyber-security issues is expected.

US Rep. James R. Langevin said that the nation "still stands largely unprepared to deal with various potential cyber-security threats.

The defenders of the nation's military secrets and the protectors of corporations' trade secrets and people's identities are a varied group.

One is Wenkai Wang, 30, a doctoral-degree candidate at URI who contributed to assumption-defying research with faculty that found a cyber-attack on the power grid could be more effective on a substation that does not carry the highest power load.

The idea was to look at scenarios from an attacker's point of view to develop better defenses against such attacks. A "traditional attack strategy," according to a poster describing their research, held that cyber-attacks would be attempted on the substation that has a high power load.

Yan Sun, a URI professor who worked with Wang and other faculty, said the research, focused on one cyber-attacker. Future research will look at multiple cyber-attackers on a power grid.

Jeffrey Troy, deputy assistant director of the FBI's Cyber Security Division, said the agency uses data obtained through computer forensics to gather the "signatures" of various groups that attempt to compromise security.

And the FBI is using technologies such as MCARTA, which, Troy said, allows investigators to know within 48 hours what malicious software did in a given case.

## **Congress, Administration Grapple With Cyber Defense Authority (NGOV)**

By Aliya Sternstein, Nextgov

Nextgov, April 12, 2011

The head of the military unit overseeing cyberspace reaffirmed that the US Cyber Command cannot monitor civilian networks, noting its powerlessness over systems outside the .mil domain might require congressional action.

"I do not have the authority to look at what's going on in other government sectors, nor what would happen to critical infrastructures. That means that I can't stop [an assault on nonmilitary networks]," Cyber Command chief Gen. Keith Alexander said during remarks at a University of Rhode Island symposium on the increasing threat of cyberattacks.

The division of responsibility between the Pentagon and the Homeland Security Department is at the center of a debate on cybersecurity legislation. DHS currently keeps an eye on vulnerabilities in the .gov and other civilian domains, while the Defense Department has visibility only into .mil networks. The White House has yet to weigh in on how to empower Defense to avert a potential cyberwar without running astray of civil rights and privacy laws. But Alexander offered hints about what the Pentagon might be pushing the Obama administration to consider.

"Civil liberties and privacy are not [upheld] at the expense of cybersecurity," he said. "They will benefit from cybersecurity." With the proper oversight from the administration and Congress, the military would be held accountable for any transgressions, Alexander added.

Alexander, who also serves as National Security Agency director, noted the Pentagon and DHS presently are sharing information, security equipment and staff at an NSA office, under the guidance of legal counsel and privacy officers.

He does not expect an imminent cyberattack by a nation state against the United States, but the country must be prepared for the day when adversaries take to the Web to destroy the US power grid, derail electronic stock exchanges, or shut down online communications, Alexander said.

Cyberspace is a domain that must be protected like the air, land and sea, "but it's also unique in that it's inside and outside military, civilian and government" domains, he said. Military forces "have to have the ability to move seamlessly when our nation is under attack to defend it . . . the mechanisms for doing that have to be laid out and agreed to. The laws don't exist in this area."

In March, Rep. James R. Langevin, D-R.I., who chairs the Congressional Cybersecurity Caucus, introduced a bill, H.R. 1136, that would create a cybersecurity review board with representation from civilian agencies, Defense and the White House. The measure has backing from Rep. Roscoe Bartlett, R-Md., a senior member of the Armed Services Committee.

"There is no one single person or office leading our government's efforts to keep our networks safe," Langevin said during the event. "My proposal establishes one national office to oversee cybersecurity, while ensuring the government and military can acquire the best technology and undergo regular reviews to evaluate their performance."

Sen. Sheldon Whitehouse, D-R.I., in recent weeks has pressured the administration to deliver to Congress a proposal for cyber reforms. Whitehouse, who also attended the forum, said last week lawmakers have been unable to act on network security legislation because they haven't received direction from the White House on assimilating the multiple cyber bills under consideration in both chambers.

The administration "will soon be prepared to reengage with Congress on this issue," said Whitehouse, chairman of the Judiciary Subcommittee on Crime and Terrorism, who also attended the forum.

"We hope to do a major bill this year," he added, noting that Langevin's bill "will be an important and foundational document."

## **IN THE BLOGS:**

### **Avoiding Nuclear Safety | The Energy Collective (ENCOL)**

By Charles Barton

Energy Collective, April 12, 2011

The real question about nuclear safety is not "can nuclear accidents be avoided," but "do we want to do what ever is required to avoid nuclear accidents." As it turns out avoiding and mitigating nuclear accidents is not terribly expensive, nor does it make nuclear power impractical, but does require the nuclear industry to change the way it does business. The current nuclear safety philosophy centers on what is called "Defense in Depth." "Defense in Depth:"

Defense in Depth can refer to a system of barriers which serve to prevent the exposure of people to radioactive materials that originate in the reactor core and which might for a variety of reasons, escape from the reactor. This is the central fear for nuclear accident. At one time it was believed that everything that was inside the reactor was fair game for escape, but some materials are a whole lot more likely to escape than others. One way to prevent the escape of radioactive materials is to erect a system of barriers that are intended to block the paths taken by radioactive materials out of reactor cores. The history of major reactor accidents suggests that in the event of a major reactor accident, blocking the paths taken out of the reactor core by some materials may prove difficult. Indeed it might prove a better safety approach to capture some nuclear materials and remove them to a safe places outside the core, rather than preventing their escape.

One reason for doing this is that the escape of some radioactive materials particularly gases and materials that are likely to turn into gases in a serious nuclear accident may be difficult to prevent, if an accident leads to core overheating and meltdown. The conventional defense system of core meltdown prevention is to back up the core coolant system with secondary coolants systems, and back up the secondary systems with emergency coolant systems. Passive emergency coolant circulation is more reliable as well as less expensive than emergency coolant circulation by pumps, as well as more reliable. The Fukushima Dai-ichi reactors, were designed for emergency coolant water circulation by use of electrical powered pumps. The pumps were powered in the event of a grid shutdown by fossil fuel powered generators. Those generators were vulnerable to tsunami at Fukushima Dai-ichi. The Westinghouse AP-1000 is designed with a more advanced safety system.

A large tank of emergency coolant water is located above the AP-1000 core. In the event of an emergency shut down, the loss of electricity automatically releases valves that allow the flow of emergency coolant water from the tank to the core. The flow itself is powered by gravity and the coolant lines lead directly from the tank to the core. Such a system provided superior nuclear safety at Fukushima Dai-ichi. In addition to the emergency passive water coolant system, the Westinghouse AP-1000 has a passive air cooling system. The passive containment cooling system (PCS), provides the safety-related ultimate heat sink for the plant. The PCS cools the containment following an accident so that design pressure is not exceeded and pressure is rapidly reduced. The steel containment vessel provides the heat transfer surface that removes heat from inside the containment and transfers it to the atmosphere. Heat is removed from the containment vessel by the continuous, natural circulation of air. During an accident, air cooling is supplemented by water evaporation. The water drains by gravity from a tank located on top of the containment shield building.

In addition a more primary emergency water cooling system relies on natural water circulation to remove decay heat from the AP-1000 core in the event of an accident

.A literature survey reveals that there have been many experimental and numerical investigations on the characteristics of different PRHRs. The Westinghouse advanced passive PWRs, AP-600, AP-1000, and EP-1000 (IAEA-TECDOC-1391, 2004; Adomaitis et al. [1]; Reyes and Hochreiter [2]; Zhang et al. [3]) adopt passive core cooling system (PXS) to protect the plant against reactor coolant system (RCS) leaks and ruptures of various sizes and locations. The PXS includes a 100% capacity passive residual heat removal heat exchanger (PRHR HX), which satisfies the safety criteria for loss of feedwater, feedwater and steam line breaks. The PRHR HX, immersed in the in-containment refueling water storage tank (IRWST), is connected through the cold leg and hot leg to the core. The IRWST water volume is sufficient to absorb decay heat for more than 1 hour before the water begins to boil. Once boiling starts in the IRWST, the steam passes to the containment and condenses on the inner surface of the steel containment vessel, and then drains by gravity back into the IRWST. The PRHR HX and the passive containment cooling system (PCCS) provide indefinite decay heat removal capability with no operator action required. The theoretical and experimental investigations on the PXS characteristics of AP600 indicate that the design of the PRHR is feasible and rational.

Despite the use of sophisticated passive safety features which greatly limit the likelihood of an accident that could lead to a core meltdown, both the AP-1000 and ESBWR employ the standard defense in depth barriers for the prevention of the release of radioactive materials in the event of nuclear accidents. The operation of advanced cooling system and emergency cooling system technologies, tend to make the breakdown of fission product release barriers even less likely than would be the case in older reactor designs.

This reactor manufacturers continue to make impressive advances in reactor safety designs. Yet critics of nuclear power seem totally unwilling to acknowledge any improvement in nuclear safety. Michael Collins, a self styled liberal, and "Joiquin" of the Agonist, are implacable enemies of nuclear power. "Joiquin" thinks that nuclear power is so dangerous that the nuclear power industry and the media are afraid to tell the truth about its dangers. Joiquin says, The truth is, there is a big fat lie that the nuclear

power industry and the media are foisting on the public and that has not changed. We are supposed to believe that this hydrogen explosion is no biggie; course it isn't; it's just a direct hit

Of course Joiquin did not go into a similar tizzy when a natural gas fired power plant exploded in Connecticut last year. The fact that the Dai-ichi explosions killed six fewer people than the single Klean Energy Systems explosion. Of course if you get killed in a nuclear plant accident, you are much more dead than if you are killed in a natural gas plant accident. Even if no one is actually killed in a nuclear plant accident it is much more deadly and dangerous than an accident involving fossil fuels that produces real casualties. Joiquin tells So, back to the big lie; what is it? This lie has to do with the nature of nuclear power in the future. Everyone is asking, can we make nuclear technology, the current, nuclear technology safe? In truth, the current risks with the nuclear fuel cycle i.e., the risks of contaminating the environment, are not the risks of the future because the current nuclear fuel cycle is not the fuel cycle that will be used in the future.

Note, that Joiquin completely ignores the Improvement in reactor design, and focuses on the fuel cycle, as if the fuel cycle alone makes reactors unsafe. US government intend to use more exotic fuel cycles in the future power plants including, . . . Thorium, and breeder reactors of various types.

All of this is hush, hush because, the industry and their government and media proxies don't want to talk about this fact too much because the waste from these future fuel cycles is far more dangerous than most of the stuff slowly making a large part of Japan uninhabitable for the next few dozen millennium. In other words, the discussion in the media about future nuclear safety is completely dishonest.

Well somebody is being dishonest. but I would not say it is the industry and the government. Claims such as a "large part of Japan uninhabitable for the next few dozen millennium," are quite dishonest, but all too typical of the sensationalist exaggerations of the anti-nuclear lobby.

Michael Collins basically reposts the previous post.

How did Joiquin find his material? He references the Wikipedia on thorium and tells us, Thorium could theoretically be used to fuel future reactors but probably nothing like what we have now; they would be cooled with liquid salt. The advantage is the Thorium is much more naturally abundant than Uranium. Another potential bonanza! Except of course for a few minor problems: doesn't work yet, creates a contaminant that is a gamma ray emitter U 232 which decays into many more alpha and beta emitters making the spent fuel very difficult to handle and very toxic for hundreds of years.

In a note on sources Joiquin adds Arjun Makhijani and Michele Boyd's "Thorium Fuel: No Panacea for Nuclear Power.

" Makhijani is usually one of the more careful of the nuclear critics but in his thorium fuel essay he makes a number of large errors, including a committing the fallacy of composition when he claims, Using thorium in a nuclear reactor creates radioactive waste that proponents claim would only have to be isolated from the environment for 500 years, as opposed to the irradiated uranium-only fuel that remains dangerous for hundreds of thousands of years. This claim is wrong. The fission of thorium creates long-lived fission products like technetium-99 (half-life over 200,000 years). While the mix of fission products is somewhat different than with uranium fuel, the same range of fission products is created.

What Makhijani failed to recognize is that a mixed group of fission products come out of the reactor when the thorium fuel cycle is used. Once they leave the reactor they began to go through decay process that lead toward stability. After 300 - not 500 - years the decay process has gone far enough that the mixed group of fission products is no more radioactive than thorium ore was when it was dug out of the ground. The fact that technetium-99 has a half-life of over 200,000 years means it was not very radioactive to begin with. Technetium-99 is so safe that it is used in medical tests. Collins, as I noted, simply quotes Joiquin. The blind leading the blind. It is clear that neither Collins nor Joiquin knows anything about either the nuclear fuel cycle nor nuclear safety, but they both pose as nuclear safety experts, as if total ignorance was not a hazard to telling truth from lies.

Figures like Collins and "Joiquin" and organizations like the Sierra Club and Greenpeace are enemies of nuclear safety because they deny the very possibility that nuclear power can be made safe or even safer. As long as the public listens to such arguments, it runs the risk that nuclear power may be less safe than it could be.

## **INTERNATIONAL NUCLEAR NEWS:**

### **Japan Regulators Raise Severity Of Nuclear Accident (USAT/AP)**

USA Today, April 12, 2011

TOKYO (AP) — Japan's nuclear safety agency has raised the severity rating of the crisis at its nuclear plant to the highest level, on par with the 1986 Chernobyl disaster.

An official with the Nuclear Safety Commission of Japan, speaking on national television, said Tuesday the rating was raised from 5 to 7.

The official, who was not named, said the amount of radiation leaking from the Fukushima Dai-ichi nuclear plant was around 10% of that in the Chernobyl accident.

Meanwhile, workers at Japan's tsunami-stricken nuclear power complex discovered a small fire near a reactor building Tuesday but it was extinguished quickly, the plant's operator said.

Tokyo Electric Power Co., which operates the disabled Fukushima Dai-ichi nuclear power plant, said the fire at a box that contains batteries in a building near the No. 4 reactor was discovered at about 6:38 a.m. Tuesday and was put out seven minutes later.

It wasn't clear whether the fire was related to a magnitude-6.3 earthquake that shook the Tokyo area Tuesday morning. The cause of the fire is being investigated.

"The fire was extinguished immediately. It has no impact on Unit 4's cooling operations for the spent fuel rods," said TEPCO spokesman Naoki Tsunoda.

The plant was damaged in a massive tsunami March 11 that knocked out cooling systems and backup diesel generators, leading to explosions at three reactors and a fire at a fourth that was undergoing regular maintenance and was empty of fuel.

The magnitude-9.0 earthquake that caused the tsunami immediately stopped the three reactors, but overheated cores and a lack of cooling functions led to further damage.

Engineers have been able to pump water into the damaged reactors to cool them down, but leaks have resulted in the pooling of tons of contaminated, radioactive water that has prevented workers from conducting further repairs.

Aftershocks on Monday briefly cut power to backup pumps, halting the injection of cooling water for about 50 minutes before power was restored.

A month after the disaster, more than 145,000 people are still living in shelters, and the government on Monday added five communities to a list of places people should leave to avoid long-term radiation exposure.

A 12-mile radius has already been cleared around the plant.

The disaster is believed to have killed more than 25,000 people, but many of those bodies were swept out to sea and more than half of those feared dead are still listed as missing.

Aftershocks have taken more lives.

In Iwaki, a city close to the epicenter of a magnitude-7.0 tremor Monday, a landslide brought down three houses, trapping up to seven people. Four were rescued alive, but one of those — a 16-year-old girl — died at the hospital, a police official said. He would not give his name, citing policy.

Around 210,000 people have no running water and, following Monday's aftershocks, more than 240,000 people are without electricity.

In all, nearly 190,000 people have fled their homes, the vast majority of whom are living in shelters, according to the national disaster agency. About 85,000 are from the cleared zone around the nuclear plant; their homes may be intact, but it's not known when they'll be able to return to them.

Yutaka Endo said he feels like his life has been put on hold because of the nuclear crisis.

He fled Minami Soma and has been living in a shelter in Fukushima city for three weeks with his family.

"I can't make any plans because of the nuclear crisis. My home was fine, but I can't go back there because it is in a restricted area," said the 32-year-old, who used to tend bar. "I need to find a new job and a place to live so that we can get out of here. But I can't do anything until these zones are lifted."

Ryokou Sasaki said he and his elderly parents are in the same position. They've applied for temporary shelters, and are waiting to hear back.

He recently moved back home — to the northeastern port city of Kamaishi — to help his parents' with their fishing business.

"We're not in a place yet where we can even think about rebuilding the business yet," said the 40-year-old. "They seem to have given up."

## **Japan Rates Nuclear Crisis At Highest Severity Level (WP)**

By Chico Harlan

Washington Post, April 12, 2011

TOKYO — Japanese authorities raised Tuesday their rating of the severity of the Fukushima Daiichi nuclear crisis to the highest level on an international scale, equal to that of the 1986 Chernobyl disaster.

Officials with Japan's Nuclear Safety Commission reclassified the ongoing emergency from level 5, an "accident with off-site risk," to level 7, a "major accident." The reassessment comes at a time when the International Atomic Energy Agency says the plant is showing "early signs of recovery" but still in a critical condition.

The plant's debilitated reactors face constant threat of strong aftershocks, and the latest on Tuesday morning — a 6.2-magnitude temblor — caused a brief fire at a water sampling facility near Daiichi's No. 4 reactor. The Tokyo Electric Power Co., which operates the power plant, said that the critical process used to cool the hot fuel rods had not been interrupted, and radiation levels showed no signs of change.

A level 7 accident, according to the International Nuclear and Radiological Event Scale, is typified by a "major release of radioactive material with widespread health and environmental effects."

Previously only Chernobyl had been given a 7 rating. The 1979 Three Mile Island nuclear accident in Pennsylvania was rated a level 5 incident.

Radiation leaking from Fukushima Daiichi amounts to about 10 percent of that from the Chernobyl accident, a Nuclear Safety Commission official, who was not named, said on national television.

Nonetheless, the crisis has prompted the evacuation of tens of thousands who live within 19 miles of the plant. Japan's government had initially called for a mandatory evacuation within a 12-mile radius. But Japan on Monday widened its evacuation zone, selecting certain towns within 19 miles — those with higher radiation readings — for mandatory evacuation.

According to the Kyodo news agency, Japan's Nuclear Safety Commission reported Monday that the plant, at one point after the March 11 earthquake and tsunami, had been releasing 10,000 terabecquerels of radioactivity per hour. The report did not specify when those radiation readings occurred. A release of tens of thousands of terabecquerels per hour, though, corresponds with the radiation leakage level that the IAEA uses as a minimum benchmark for a level 7 accident.

"This corresponds to a large fraction of the core inventory of a power reactor, typically involving a mixture of short- and long-lived radionuclides," an IAEA document says. "With such a release, stochastic health effects over a wide area, perhaps involving more than one country, are expected."

## **Japanese Declare Crisis At Level Of Chernobyl (WSJ)**

By Phred Dvorak, Juro Osawa And Yuka Hayashi

Wall Street Journal, April 12, 2011

Full-text stories from the Wall Street Journal are available to Journal subscribers by clicking the link.

## **Japan Nuclear Disaster Put On Par With Chernobyl (NYT)**

By Hiroko Tabuchi And Keith Bradsher

New York Times, April 12, 2011

TOKYO — Japan has decided to raise its assessment of the accident at the crippled Fukushima Daiichi nuclear power plant to the worst rating on an international scale, putting the disaster on par with the 1986 Chernobyl explosion, the Japanese nuclear regulatory agency said on Tuesday.

On the International Nuclear Event Scale, the rating, Level 7, is for a nuclear accident that involves "widespread health and environmental effects" and the "external release of a significant fraction of the reactor core inventory."

The scale, which was developed by the International Atomic Energy Agency and countries that use nuclear energy, leaves it to the nuclear agency of the country where an accident occurs calculate a rating based on complicated criteria.

Japan had rated its accident at Level 5, the same rating as the Three Mile Island accident in Pennsylvania in 1979. Level 7 has been applied only to the disaster at the Chernobyl nuclear plant in the former Soviet Union.

Japan's Nuclear and Industrial Safety Agency said at a news conference Tuesday that the rating resulted from new estimates that suggest that "tens of thousands of terabecquerels" of radioactive material per hour were released from the plant in the aftermath of the destructive March 11 earthquake and tsunami.

Still, the total amount of radioactive material released so far is equal to about 10 percent of that released in the Chernobyl accident, the agency said. (The measurement refers to how much radioactive material was emitted, not the dose absorbed by living things.)

The scale of the radiation leak has since dropped to a tiny fraction of those levels, the agency said.

The revised rating raised new questions about why the government has been so slow in releasing data and about whether the data continues to be underestimated.

Michael Friedlander, a former senior nuclear power plant operator for 13 years in the United States, said that the biggest surprise in the Japanese reassessment was that it took a month for public confirmation that so much radiation had been released.

Some in the nuclear industry have been saying for weeks that the nuclear accident released large amounts of radiation, but Japanese officials have played down this possibility.

The announcement came as Japan was preparing to urge more residents around the crippled nuclear plant to evacuate, because of concerns over long-term exposure to radiation.

Also on Monday, tens of thousands of people bowed their heads in silence at 2:46 p.m., exactly one month since the 9.0-magnitude earthquake and ensuing tsunami brought widespread destruction to Japan's northeast coast.

The mourning was punctuated by another strong aftershock near Japan's Pacific coast, which briefly set off a tsunami warning, killed a 16-year-old girl and knocked out cooling at the severely damaged Fukushima Daiichi power station for almost an hour, underscoring the vulnerability of the plant's reactors to continuing seismic activity.

On Tuesday morning, there was another strong aftershock, which shook Tokyo.

The authorities have already ordered people living within a 12-mile radius of the plant to evacuate, and recommended that people remain indoors or avoid an area within a radius of 18 miles.

The government's decision to expand the zone came in response to radiation readings that would be worrisome over months in certain communities beyond those areas, underscoring how difficult it has been to predict the ways radiation spreads from the damaged plant.

Unlike the previous definitions of the areas to be evacuated, this time the government designated specific communities that should be evacuated, instead of a radius expressed in miles.

The radiation has not spread evenly from the reactors, but instead has been directed to some areas and not others by weather patterns and the terrain. Iitate, one of the communities told on Monday to prepare for evacuation, lies well beyond the 18-mile radius, but the winds over the last month have tended to blow northwest from the Fukushima plant toward Iitate, which may explain why high readings were detected there.

Yukio Edano, the government's chief cabinet secretary, said that the government would order Iitate and four other towns to prepare to evacuate.

Officials are concerned that people in these communities are being exposed to radiation equivalent to at least 20 millisieverts a year, he said, which could be harmful to human health over the long term. Evacuation orders will come within a month for Katsurao, Namie, Iitate and parts of Minamisoma and Kawamata, Mr. Edano said.

People in five other areas may also be told to evacuate if the conditions at the Fukushima Daiichi plant grow worse, Mr. Edano said. Those areas are Hirono, Naraha, Kawauchi, Tamura and other sections of Minamisoma.

"This measure is not an order for you to evacuate or take actions immediately," he said. "We arrived at this decision by taking into account the risks of remaining in the area in the long term." He appealed for calm and said that the chance of a large-scale radiation leak from the Fukushima Daiichi plant had, in fact, decreased.

Mr. Edano also said that pregnant women, children and hospital patients should stay out of the area within 19 miles of the reactors and that schools in that zone would remain closed.

Until now, the Japanese government had refused to expand the evacuation zone, despite urging from the International Atomic Energy Agency. The United States and Australia have advised their citizens to stay at least 50 miles away from the plant.

The international agency, which is based in Vienna, said Sunday that its team measured radiation on Saturday of 0.4 to 3.7 microsieverts per hour at distances of 20 to 40 miles from the damaged plant — well outside the initial evacuation zone. At that rate of accumulation, it would take 225 days to 5.7 years to reach the Japanese government's threshold level for evacuations: radiation accumulating at a rate of at least 20 millisieverts per year.

In other words, only the areas with the highest readings would qualify for the new evacuation ordered by the government.

Mr. Friedlander, the former nuclear plant operator, who is a specialist in emergency responses to nuclear accidents, said that the Japanese decision to evacuate more communities made sense not just to protect people, but also to make the eventual decontamination of farms and communities easier.

Allowing people and nonemergency vehicles to continue moving through both radiation-contaminated areas and safer areas farther from the Fukushima reactors runs the risk of spreading radioactively contaminated particles, which could result in more square miles of territory ultimately being contaminated. "Unless you gain control, it will be like trying to mop your kitchen floor with the kids running in and out of the house," Mr. Friedlander said.

Masataka Shimizu, the president of Tokyo Electric, visited the tsunami-stricken area on Monday for the first time since the crisis began. He called on the governor of Fukushima Prefecture, Yuhei Sato, but was refused a meeting. He left his business card instead.

### **Strong Quake Jolts Tokyo (AP)**

Associated Press, April 12, 2011

TOKYO – A strong earthquake with a preliminary magnitude of 6.3 has jolted in Tokyo and its environs.

Japan's Meteorological Agency said the quake struck at 8:08 a.m. local time (2308 GMT) Tuesday. The epicenter of the quake was located just off the coast of Chiba, east of Tokyo.

There were no initial reports of injuries or damage in the prefecture. No tsunami warning was issued.

The agency said the quake was a string of strong aftershocks since the 9.0-magnitude earthquake and ensuing tsunami in northeastern Japan on March 11. The twin disasters decimated much of the region, killing up to 25,000 people and setting off radiation leaks at a coastal nuclear plant by knocking out its cooling systems.

### **Clinton To Visit Japan In Show Of Support (AFP)**

AFP, April 12, 2011

WASHINGTON (AFP) – Secretary of State Hillary Clinton will visit Japan in a show of support for the US ally as it recovers from a devastating earthquake, the State Department announced Monday.

Clinton will travel to Tokyo on Sunday, after stops in South Korea and in Germany where she is attending a NATO conference, State Department spokesman Mark Toner said.

Clinton's trip aims to "show the United States' support for the people of Japan and to highlight our long-standing commitment to the alliance," Toner said in a statement.

She will hold talks with Prime Minister Naoto Kan and other senior Japanese officials, Toner said.

The announcement comes on the one-month anniversary of Japan's worst disaster since World War II, which killed at least 13,000 people and left another 14,000 missing in a massive earthquake and debris-laden tsunami.

The United States, whose military presence in Japan has sometimes been controversial, deployed some 15,000 troops to assist in relief.

Senior US officials were also expected to participate in a memorial service later Monday at the Washington National Cathedral.

Clinton will take part in a NATO conference on Thursday and Friday in Berlin, where she will hold talks on alliance-backed military operations in Libya and Afghanistan, the State Department said.

She will head Saturday to South Korea for talks with President Lee Myung-Bak "as part of our ongoing efforts to strengthen the alliance and to discuss cooperation on regional issues," Toner said.

### **Clinton To Visit Germany, Japan, SKorea This Week (AP)**

Associated Press, April 12, 2011

WASHINGTON – Secretary of State Hillary Rodham Clinton will travel to Germany and Japan this week for talks on Libya and other crises with NATO allies in Berlin and to show support for the earthquake- and tsunami-stricken Japanese people. She also will visit South Korea.

The State Department announced Monday that Clinton will depart Wednesday for the German capital where she will attend a meeting of NATO foreign ministers and hold separate discussions with officials from Germany and other European nations on Thursday and Friday.

Over the weekend, she will visit South Korea and then Japan, which is recovering from a massive earthquake and resulting tsunami and aftershocks that have crippled the country's northeast. The events also damaged nuclear reactors that are now spewing radiation.

### **Clinton To Attend NATO Meeting, Visit Seoul, Tokyo (REU)**

Reuters, April 12, 2011

Full-text stories from Reuters currently cannot be included in this document. You may, however, click the link above to access the story.

### **Cleaning Up Fukushima: A Challenge To The Core (NPR)**

NPR, April 12, 2011

Nuclear engineers in Japan are dealing with two problems at the same time: They are working to fully stabilize the reactors at the Fukushima Dai-ichi plant, and they are trying to control the release of radioactive material.

It could take weeks or months to stabilize the reactors. And containing and cleaning up the radioactive material could take at least 10 years, at a cost of more than \$10 billion. Even though many of the details about what's happening at the reactors are not known, experts can predict the tasks ahead for workers.

Back in 1979, nuclear engineer Lake Barrett coordinated cleanup at Pennsylvania's Three Mile Island reactor for the Nuclear Regulatory Commission. He breaks down the cleanup challenge to the basic elements of ancient Greece. The Greeks had fire, air, water and earth. At Fukushima, it's pretty much the same: energy, air, water and solids.

A radiation decontamination area was built into the entrance of a building at the Fukushima Dai-ichi power plant. Damage to the facilities and the reactor buildings is slowing efforts to stabilize the nuclear crisis.

"So if you go back to the four basic principles, what the engineers are doing in Fukushima is first they have to deal with energy dissipation — that is the cooling of the decay products in the core — keep the core cool," Barrett says.

Over the past month, they've managed to do that pretty well, Barrett says, but at a price: They are cooling it with copious amounts of water, which has led to the continued venting of sometimes radioactive steam. It's nowhere near as bad as it was in the early days of the crisis, Barrett says, but gaseous releases will continue to be a problem until the complex can shift to a better cooling system.

For now, there's a watery mess at the plant.

"In the case of Three Mile Island, we had about half a million gallons of very highly radioactive water in the basement of the containment building," Barrett says. "It was about 10 feet deep. They're facing the same situation in Fukushima, but they have three of these cores that have severe damage to them, so they probably have tens of millions of gallons of the same highly radioactive water that they're dealing with."

That's a huge challenge, but engineers at Three Mile Island were able to decontaminate the radioactive wastewater.

"The very first systems we had within 10 days, and then we had a better system operating in a month," Barrett says. "And we had a better-yet system operating in about a year. That water was all cleaned up at Three Mile Island and it was safely discharged."

Fukushima Dai-ichi may or may not have any functioning systems to clean up its water, and there's no telling how much more radioactive water is going to be produced during the continuing operations there. But Barrett says the plant does have large tanks for storing contaminated water and a barge is on the way to store more.

Workers operate remote-controlled rubble-removing equipment at the Fukushima Dai-ichi nuclear complex. Though robotic machines will be able to clear some of the larger debris from the facility, some people will most likely be needed to work inside the reactor buildings.

**Getting To The Core Of The Cleanup**

Once the energy, gas and water aspects of the nuclear crisis are under control, the most highly radioactive materials — the solids in the reactor cores — remain. Just getting to them is a problem.

After the Three Mile Island accident, the core was still intact, but overhead cranes that usually do the lifting work were damaged by fire. So workers first had to refurbish the cranes to lift the reactor's lid. In fact, it was five years until they could look inside the reactor; only then did they discover that 30 percent of the nuclear core had melted. Still, the engineers on the scene figured out how to deal with that.

"They worked down through 20 feet of water for shielding with long tools and started picking up the pieces of broken fuel in the core and placing it in special canisters with vents and filters on them," Barrett says. They put those canisters in a transport cask and shipped them to Idaho, where they are stored like other waste from nuclear reactors.

Japanese engineers will probably try to do the same basic thing at Fukushima Dai-ichi.

Leo Lessard, a nuclear engineer at the French company Areva, says just getting to the cores at Fukushima Dai-ichi is going to be much more difficult than it was at Three Mile Island. For starters, the tops of two buildings have collapsed, so that debris will have to be cleared.

## **Nuclear-Reactor Industry Faces Challenge (WSJ)**

Wall Street Journal, April 12, 2011

Full-text stories from the Wall Street Journal are available to Journal subscribers by clicking the link.

## **Siemens, Areva End Nuclear JV, Legal Spat Goes On (REU)**

Reuters, April 12, 2011

Full-text stories from Reuters currently cannot be included in this document. You may, however, click the link above to access the story.

## **Anti-Nuclear Protesters Block Entry To EDF's London Offices (BLOOM)**

By Chris Spillane

Bloomberg News, April 12, 2011

Activists barricaded a road outside the London offices of Electricite de France SA today to protest plans by Europe's biggest power producer to build a new generation of U.K. nuclear power plants.

About ten demonstrators from the Boycott EDF group erected two 14-foot (4-meter) high tripods on Grosvenor Place by Victoria rail station at around 8:00 a.m. today and blocked cars and road access in the city for around six hours.

Between the structures hung a banner marked "nuclear disaster area." The road was reopened at 2:05 p.m. and two arrests were made, according to a Metropolitan Police spokesman, who declined to be identified, citing force policy.

"EDF has spent a massive amount of money marketing as an environment-friendly company," said Bella Benson, a spokeswoman for the activist group, in an e-mailed statement. "But the truth is that it's planning to lumber us with an outdated form of energy that is incredibly dangerous, extremely expensive and completely unnecessary."

The Paris-based utility, which is the world's largest operator of nuclear reactors, said nuclear energy has a "vital role" in maintaining the U.K.'s future electricity supply.

"That view is backed by the government and industry and a large proportion of the public," spokeswoman Phillippa Coates said in an e-mailed statement.

Around 3,800 people gathered at EDF's oldest nuclear plant at Fessenheim, France, yesterday to demand its shutdown, *Le Monde* reported, citing police estimates.

To contact the reporter on this story: Christopher Spillane in London at [cspillane3@bloomberg.net](mailto:cspillane3@bloomberg.net)

To contact the editor responsible for this story: Andrew Blackman at [ablackman@bloomberg.net](mailto:ablackman@bloomberg.net) EDF FP CN

## **Iran Touts Major Advances In Nuclear Program (WP)**

By Joby Warrick

Washington Post, April 12, 2011

Iran is proclaiming significant gains in its nuclear program, progress that Western officials and experts say could effectively erase setbacks from recent cyber attacks and shorten the timeline for acquiring nuclear weapons.

Scientists from Iran's atomic energy program, in announcements over the past three days, said they have successfully tested advanced centrifuges for enriching uranium and are less than a month away from starting the country's first commercial nuclear reactor. The announcements, linked to the observance of "nuclear technology day" in Tehran, underscore recent assessments by intelligence officials and Western nuclear experts suggesting that Iran is preparing to speed up its production of enriched uranium.

Although many of the advances have not been fully implemented, the apparent progress has prompted some experts to redraw their forecasts for how quickly the country could build an atomic arsenal if it chose to do so.

The pronouncements also appear intended to counter perceptions that Iran's nuclear program has been hobbled by a computer worm that heavily damaged the country's main uranium enrichment facilities in a series of attacks in 2009 and 2010. During a weekend ceremony lauding the accomplishments, President Mahmoud Ahmadinejad declared that the "Iranian nation cannot be defeated," despite sanctions and other threats.

"Not only should we be able to use all our capacities and potentials in nuclear technology, we should also export nuclear know-how," Iran's semiofficial broadcaster Press TV quoted the Iranian leader as saying.

The advanced centrifuges tested by Iran have been under development for several years. Experts say the new machines are far more sophisticated than the 1950s-era technology Iran has been using and will be far more efficient than their predecessors. According to the first reliable published estimates, the increase in the production of enriched uranium could be huge — an increase in output of at least 600 percent per machine.

"If they can get the new machines performing well, and in large numbers, it will make a big difference," said Olli Heinonen, a former nuclear safeguards chief for the International Atomic Energy Agency, the U.N. nuclear watchdog agency.

In theory, a few hundred of the new machines could produce enough enriched uranium for a nuclear weapon in less than a year, he said.

Iran quietly notified U.N. inspectors in January that it was moving forward with plans to phase in hundreds of the sophisticated centrifuges — models dubbed IR-2M and IR-4 — at its main enrichment plant in the city of Natanz. On Saturday,

Fereydoun Abbasi, the head of the Atomic Energy Organization of Iran, said the machines had been tested and were ready for use.

Abbasi also announced that Iran's first commercial nuclear reactor, at Bushehr, will begin operating as soon as May 5 after technicians overcome problems with the reactor's fuel. He disclosed the start of a new production line for uranium oxide, the material from which nuclear fuel rods are made.

Neither the United States nor the IAEA have published performance estimates for Iran's next-generation centrifuges, but a US intelligence official knowledgeable about Iran's nuclear program did not dispute Heinonen's observations.

"US intelligence officials share the IAEA's concern" about Iran's expanding capabilities, the official said, speaking on the condition of anonymity.

Natanz has more than 8,000 centrifuges to enrich uranium, ostensibly for nuclear reactor fuel. But those machines have been notoriously unreliable and prone to attack.

In late 2009 and early 2010, a computer worm known as Stuxnet penetrated the computer system at Natanz. Although the cyber attack appears to have damaged as many as 1,000 machines, Iran has moved quickly to replace broken equipment and has continued to process uranium at a steady pace.

Heinonen, who until last year oversaw the IAEA's teams of inspectors in Iran, recently presented performance estimates for the IR-2M during a seminar held by arms-control advocates in Washington.

Using an analysis that he said drew from "multiple sources," Heinonen calculated that the new machines would produce enriched uranium at a slightly higher rate than comparable machines made in Pakistan and North Korea and more than six times as fast as the IR-1 centrifuge currently used by Iran.

Iran, which began enriching uranium on an industrial scale in 2007, is now thought to possess enough low-enriched fuel to make at least two bombs if the material were processed further. The country has consistently maintained that it does not intend to make nuclear weapons.

Heinonen's figures are in line with Iran's estimates for the capability of the new machine, which Iranian scientists have been testing since 2009.

The IR-1 machines the nation uses are based on a 1950s Dutch design that was stolen by Pakistani scientist Abdul Qadeer Khan and sold to Iran decades ago. The IR-1 is relatively slow and inefficient and notoriously unreliable.

Although US officials have long suspected that Iran is capable of making better centrifuges, Iranian scientists have struggled to obtain the kinds of specialized materials needed to build them. The IR-2M, for example, is constructed largely from a carbon-fiber material similar to the Kevlar used in modern military helmets and body armor. Intelligence agencies think that Iran is not capable of making the material indigenously in significant quantities, and Iran has been repeatedly thwarted in its efforts to buy carbon fiber abroad.

Heinonen, however, noted that U.N. inspectors never were able to determine how much carbon fiber Iran managed to acquire before international sanctions dried up the market for such advanced materials. The IAEA also knows little about how and where the Iranians are building their new machines, he said.

"I think they're probably limited in their ability to get these materials," Heinonen said, "but the question is: How much do they already have?"

## **Iran To Build New Research Reactors (AP)**

Associated Press, April 12, 2011

TEHRAN, Iran – Iran will need more enriched uranium to fuel the "four or five" new research reactors it is planning on building, the country's nuclear chief said on Monday.

Fereidoun Abbasi told the semi-official ISNA news agency that Iran is planning to build the new research reactors "in the next few years" to produce medical radioisotopes for patients.

To fuel these reactors, Iran needs to continue enriching uranium to 20 percent — something which alarms the West because the process could eventually be used to produce material for a nuclear weapon.

Abbasi, a 52-year-old professor of nuclear isotopes at Tehran's Defense Ministry, was appointed Iran's nuclear chief in February after he survived an assassination attempt in November. He was wounded in the bomb attack.

Tehran contends its nuclear program is intended only for a civilian power.

The United States and its allies suspect is seeking to build nuclear weapons, and the United Nations has laid down four rounds of sanction to force Iran to stop its enrichment program.

## **Germany Rebuffs US Calls To Shut Iran Bank (WSJ)**

By David Crawford

Wall Street Journal, April 12, 2011

Full-text stories from the Wall Street Journal are available to Journal subscribers by clicking the link.

## **Iran Blames Pipeline Explosion On Western Enemies (NYT)**

By William Yong

New York Times, April 12, 2011

TEHRAN — A member of the Iranian parliament has blamed Western “enemies” for a blast on Friday that hit a major gas pipeline near the holy city of Qom.

The head of the parliament’s national security committee, Parviz Sorouri told reporters on Sunday that Western-backed “terrorists” were aiming to bring insecurity to Iran’s national energy transfer routes.

“By issuing resolutions and organizing terrorist activities, Western countries are aiming to redirect the events in Bahrain and Libya toward Iran,” Sorouri said.

Iranian officials continue to investigate the exact cause of the explosion, which struck a 56-inch diameter gas line near Qom early on Friday morning. No one was hurt in the blast.

The apparent bomb attack was the second incident in two months. Earlier, simultaneous explosions hit three different points on a gas pipeline within about 60 miles of the location of Friday’s blast.

The assertions of foreign interference came at a time when Iran is under increasing pressure from Persian Gulf states that accuse Iran of playing a role in the continuing unrest in Bahrain and after fresh accusations about the country’s nuclear program from an external opposition group.

Also on Sunday, Iran expelled three Kuwaiti diplomats in retaliation for Kuwait’s expulsion of three Iranian officials earlier this month, according to the Web site of Press TV, Iran’s state-financed satellite channel. The Kuwaiti government had accused the Iranians of spying on United States military bases.

Over the past week, top Iranian religious leaders have expressed anger over the involvement of Saudi Arabia, Kuwait and the United Arab Emirates in a combined regional military force to quell a civilian uprising in Bahrain, a Shiite majority state with which Iran has long historical and religious ties.

Fears over the development of Iran’s nuclear program were rekindled last Thursday, following a report from an exiled Iranian opposition group that said it revealed the location of a “secret” centrifuge factory 80 miles west of Iran’s capital, Tehran.

The National Council for Resistance in Iran — a lobby group associated with the banned leftist terrorist organization the People’s Mujahadeen — released what is said were satellite photographs of a facility that has produced parts for 100,000 uranium enrichment centrifuges over the past four years, though the group offered no further evidence.

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**3** new results for **Nuclear Regulatory Commission**

[Residents quiz \*\*nuclear\*\* regulators on Oconee plant's safety](#)

Anderson Independent Mail

By Anna Mitchell An annual safety meeting with federal regulators Tuesday night at the Oconee Nuclear Station drew 10 times more people from the public than a similar meeting a year ago. Jonathan Bartley, the **Nuclear Regulatory Commission's** branch ...

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[Final Environmental Impact Statement issued for two \*\*nuclear\*\* reactors](#)

Power-Gen Worldwide

The AP1000 is a 1100 MWe pressurized-water reactor design the **Nuclear Regulatory Commission** certified in 2006. The agency is reviewing Westinghouse's May 2007 application to amend the certified design. The **NRC** and the US Army Corps of Engineers, ...

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[Japan's \*\*nuclear\*\* crisis took toll on outlook for plant in Bay City area](#)

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NINA will continue to seek an operating license from the **Nuclear Regulatory Commission**, Crane said, as well as federal loan guarantee from the Department of Energy. Crane said he can envision a time when the project, with a license and loan guarantee ...

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**News**

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[Japan's Nuclear Crisis is Yet to Stabilize, \*\*NRC\*\* Chairman Says](#)

BusinessWeek

"Currently the situation is static," **Nuclear Regulatory Commission** Chairman Gregory Jaczko said at a hearing of the Senate Environment and Public Works Committee yesterday, after Japan raised the severity rating of the accident to the same level as ...

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[Limerick \*\*nuclear\*\* re-fueling worker hurt in fall](#)

The Mercury

According to Neil Sheehan, a spokesman for the **Nuclear Regulatory Commission**, the worker, whose name was not released, was working in the "secondary containment area" of Limerick's Unit 2, which is shut down for re-fueling. ...

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**News**

1 new result for **Nuclear Regulatory Commission**

[Japan nuclear plant 'not stable.' NRC chairman says](#)

STLtoday.com

The condition of the damaged reactors at the Fukushima Daiichi nuclear power plant in Japan is "static," but with improvised cooling efforts they are "not stable," the chairman of the **Nuclear Regulatory Commission** told a Senate committee on Tuesday. ...

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**News**

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[U.S. reassesses nuclear plant risks](#)

Charlotte Observer

David Guttenfelder - AP The United States will study expanding evacuation zones near power plants as part of the safety review triggered by Japan's reactor crisis, **Nuclear Regulatory Commission** Chairman Gregory Jaczko said. The **NRC**, which requires ...

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[Nuclear regulatory meeting today at plant in St. Lucie County](#)

WPTV

The **Nuclear Regulatory Commission** plans a public meeting today with Florida Power & Light officials. The St. Lucie plant's 2010 safety performance will be the topic of discussion. Fears, questions, concerns and general public interest has been ...

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[Michigan nuclear plants — are they safe?](#)

Fenton Tri County Times

According to the US **Nuclear Regulatory Commission (NRC)**, the combined effects of the earthquake and tsunami in Japan exceeded the Fukushima Daiichii nuclear plant's design limits. Natural environmental disasters, as well as the Sept. ...

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  - \*\* US should not let Fukushima I accident slow nuclear projects, says Southern CEO
  - \*\* US support for nuclear 'surprisingly high,' FBR says
  - \*\* SCE to seek \$64 million for San Onofre seismic studies
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11/11/11/186

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\*\*\* Tepco says Fukushima I cannot be worse than Chernobyl

Tokyo Electric Power Co. said April 13 that there is "no possibility" for the accident at Fukushima I to be worse than the 1986 Chernobyl disaster.

It made the statement after the Nuclear and Industrial Safety Agency on April 12 uprated the severity level of the Fukushima I accident to Level 7, the highest of seven levels, on the International Nuclear Event Scale. Chernobyl was previously the only INES Level 7 event.

A Tepco spokesman was also quoted in media reports the same day as saying that the accident was still ongoing and that releases could potentially exceed those of Chernobyl.

In a statement, Tepco said it tentatively estimates the amount of radioactive iodine-131 released during the Fukushima I accident to be on the order of magnitude  $10^{17}$  Becquerels (100,000 Terabecquerels), and the amount of released cesium-137 at about one-tenth that of I-131. These estimates are almost the same as NISA's, Tepco said.

Tepco said it was continuing to investigate the reactors' behavior and the figures from stack monitors at the Fukushima I site and "try to evaluate more accurately" the amount of released radioactivity.

But it said it considered that "there is no possibility to release [a] large amount of radioactivity in the future, because water is stably injected into the reactors now."

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\*\*\* Overheating spent fuel pool prompts Tepco to inject water

Tokyo Electric Power Co. sprayed 195 tons of water into the spent fuel pool at unit 4 at the Fukushima I nuclear power plant April 13, due to concerns the fuel rods might be further damaged, NHK reported.

Tepco detected radiation levels at the pool's water surface of 84 millisieverts per hour and a temperature of 90 degrees Celsius (194 degrees Fahrenheit) during April 12 testing, NHK reported following an April 13 briefing by the utility. Tepco officials estimate water levels in the pool are about 2 meters (6.5 feet) above the fuel rods, which is 5 meters lower than normal, NHK said.

Tepco said the loss of water in the pool immediately after the March 11 earthquake and tsunami might have damaged the spent fuel rods, based on the tests that found high levels of iodine-131 and cesium-134. In late March, Tepco sprayed water into the pool due to concern that fuel rods might have been at least partially exposed. The utility said April 13 it will continue to spray water into the pool until temperatures and radiation levels return to a normal range, NHK said.

Meanwhile, Tepco President Masataka Shimizu said at an April 13 media briefing that the utility soon will announce a "road map" to stabilize the Fukushima I plant, as requested by Japanese Prime Minister Naoto Kan, according to NHK.

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\*\*\* Areva, Bulgaria join in nuclear cooperation

Areva and the Bulgarian Energy Holding Co. may cooperate on new nuclear power projects at the Belene and Kozloduy sites in Bulgaria, under the terms of a memorandum of understanding announced April 13.

The MOU also covers potential work on fuel management, including recycling of spent fuel, as well as cooperation in nuclear safety, Areva said.

Areva was involved in the modernization project for Kozloduy-5 and -6 and more recently in preliminary contracts for the Belene nuclear site completion.

Bulgaria and Russia's Atomstroyexport, or ASE, disagree over the price for a planned 2,000-MW nuclear power plant at Belene. The contract signed between Bulgaria and ASE in 2008 was for Eur3.9 billion to deliver two 1,000-MW Russian design VVERs, but ASE has said delays have pushed the price up to Eur6.3 billion.

Last week, Bulgarian state-owned electric utility NEK and ASE agreed to put "maximum efforts" toward signing a final contract by June 1 for the plant's construction, according to Bulgarian press reports.

On March 2, Bulgaria's government approved a draft energy strategy to 2020 that includes proposals for construction of 2,000 MW of nuclear generating capacity. The strategy does not specify whether the increase will come from the planned Belene plant or two new units at the existing Kozloduy nuclear plant.

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\*\*\* Rio Tinto's first-quarter uranium production down 47%

Rio Tinto said April 13 its first-quarter 2011 uranium production fell 47% from a year ago to 1.4 million pounds U308.

Rio Tinto said full-year 2011 production is expected to be 7.5 million lb, down from 11.3 million lb in 2010.

The UK-headquartered company owns 68.4% of Energy Resources of Australia, which operates the Ranger mine in Australia's Northern Territory, and 68.6% of the Rossing mine in Namibia.

At Rossing, Rio Tinto said production was lower due to lower-grade ore and lower extraction rates.

Energy Resources of Australia April 12 announced it would continue a suspension of uranium processing operations at its Ranger mine from the end of April through July.

Rio Tinto said its share of Ranger production in first-quarter 2011 was 577,000 lb, down 58% from the same period in 2010.

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of power reactors in the US, Southern Co. Chairman and CEO Thomas Fanning said April 13.

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The Westinghouse Electric AP1000 reactor design selected for construction at Vogtle is "a completely different approach to nuclear safety" because of its extensive use of passive systems, Fanning said. Although the cost to build nuclear units is higher than other baseload energy sources, nuclear energy provides "long-term price stability" that makes it attractive for utilities, he said.

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Only 27% of respondents in the poll said they were confident the US government is prepared to handle a similar emergency, indicating policymakers may focus on emergency response instead of making changes to the existing nuclear fleet, Salisbury said.

AP-GfK polled 1,000 adults by telephone from March 24-28. The results have a margin of error of plus or minus 4 percentage points.

Political opposition might rise after the release of reports examining the cause and early responses to the crisis, Salisbury wrote. Some nuclear opponents are "dampening their objections as the crisis is ongoing," the report said.

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Southern California Edison Co. plans to file a funding authorization request with the California Public Utilities Commission on April 15 seeking \$64 million for seismic studies related to its San Onofre nuclear power plant.

SCE said in a statement April 12 that the research is aimed at increasing its scientific understanding of seismic and tsunami conditions that could affect the two-reactor station on California's coastline.

"We have been planning the seismic and tsunami studies for several months," SCE Chief Nuclear Officer Pete Dietrich said in the statement. "Following the recent tragic natural disasters in Japan, we re-evaluated and enlarged the scope in order to further increase the scientific information we could obtain."

San Onofre, near Long Beach, is designed to withstand a 7.0-magnitude earthquake and a tsunami 30 feet (about 9 meters) high.

SCE said the new studies will employ enhanced data gathering and analysis technologies and will include preparing an updated tsunami hazard analysis.

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The letter, dated March 11, said "Westinghouse anticipates that, as a minimum, a site application" either a construction permit or early site permit "will be submitted to NRC" before the design certification application is filed.

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\*\*\* NRC cites Dominion for fire protection violations at Surry

The NRC has issued a notice of violation to Dominion's Surry nuclear plant in Virginia, saying a former worker at Surry "deliberately failed to conduct fire watches and deliberately falsified fire watch logs."

On March 31, NRC issued Dominion a Severity Level IV violation, the least significant of four levels in the agency's enforcement scheme.

Dominion spokesman Richard Zuercher said April 13 that the worker's actions were discovered by a supervisor and reported by Dominion to the NRC. The worker admitted he falsified the logs and was terminated, Zuercher said.

The company has 30 days to respond to NRC's notice. Dominion does not plan to contest the violation, Zuercher said.

The worker did not conduct fire watches during a five-hour period on May 4 and 5, 2010 but signed a documentation sheet saying he had done so, NRC said in a March 31 letter to Dominion that the agency released publicly April 13.

"Surry's internal investigation identified numerous additional examples of missed fire watches and related falsified documentation involving this employee" that occurred over several months, NRC said in its letter. NRC's Office of Investigations conducted a five-month investigation, but its reports are not typically released publicly.

NRC requested that Dominion's response to the violation "address corrective actions that have [been] or will be implemented to permit or allow for early identification of similar non-compliances, should they occur in the future."

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South Carolina Electric & Gas said its Summer unit will be taken offline for a refueling and maintenance outage April 15. In a statement April 13, SCE&G said the unit's power has been reduced in preparation for the outage. Summer was operating at 85% power early April 13, according to NRC's daily reactor status report.

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Rio Tinto said April 13 its first-quarter 2011 uranium production fell 47% from a year ago to 1.4 million pounds U3O8.

Rio Tinto said full-year 2011 production is expected to be 7.5 million lb, down from 11.3 million lb in 2010.

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Nuclear News Flashes

Wednesday, Apr 13, 2011

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  - \*\* Rio Tinto's first-quarter uranium production down 47%
  - \*\* US should not let Fukushima I accident slow nuclear projects, says Southern CEO
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\*\*\* Tepco says Fukushima I cannot be worse than Chernobyl

Tokyo Electric Power Co. said April 13 that there is "no possibility" for the accident at Fukushima I to be worse than the 1986 Chernobyl disaster.

It made the statement after the Nuclear and Industrial Safety Agency on April 12 uprated the severity level of the Fukushima I accident to Level 7, the highest of seven levels, on the International Nuclear Event Scale. Chernobyl was previously the only INES Level 7 event.

A Tepco spokesman was also quoted in media reports the same day as saying that the accident was still ongoing and that releases could potentially exceed those of Chernobyl.

In a statement, Tepco said it tentatively estimates the amount of radioactive iodine-131 released during the Fukushima I accident to be on the order of magnitude  $10^{17}$  Becquerels (100,000 Terabecquerels), and the amount of released cesium-137 at about one-tenth that of I-131. These estimates are almost the same as NISA's, Tepco said.

Tepco said it was continuing to investigate the reactors' behavior and the figures from stack monitors at the Fukushima I site and "try to evaluate more accurately" the amount of released radioactivity.

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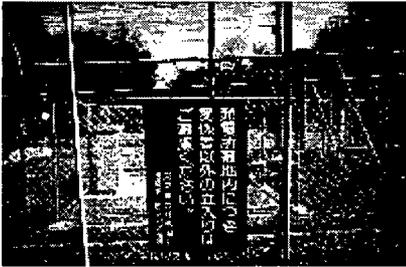
**From:** [Weber, Michael](#)  
**To:** [Carpenter, Cynthia](#); [ET05 Hoc](#); [ET01 Hoc](#); [OST02 HOC](#); [OST01 HOC](#)  
**Cc:** [Brenner, Eliot](#); [Hayden, Elizabeth](#); [Burnell, Scott](#); [Doane, Margaret](#); [Mamish, Nader](#); [Virgilio, Martin](#); [Merzke, Daniel](#)  
**Subject:** FYI - TOP STORY IN TODAY'S GLOBAL SECURITY NEWSWIRE  
**Date:** Wednesday, April 13, 2011 3:42:49 PM

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## Japan Denies Withholding Evidence of Massive Radiation Release

Wednesday, April 13, 2011

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



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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

A senior International Atomic Energy Agency official said the "Fukushima accident and

Chernobyl are very different," Kyodo News reported.

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

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

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

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

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

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

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

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

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

Japan on Monday announced plans to establish "planned evacuation areas" and "evacuation-prepared areas" outside the exclusion zone extending 12.4 miles from the plant, the International Atomic Energy Agency said. Residents are expected to leave planned evacuation areas within one month, while individuals in evacuation-prepared areas could be asked to remain indoors or potentially to leave their homes (International Atomic Energy Agency release, April 12).

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

left (Justin McCurry, London *Guardian*, April 12).

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

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

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

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

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

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

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

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

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

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

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

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

*Mike*

Michael Weber  
Deputy Executive Director for Materials, Waste, Research,  
State, Tribal, and Compliance Programs  
U.S. Nuclear Regulatory Commission

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**From:** [WebContractor Resource](#)  
**To:** [Hayden, Elizabeth](#)  
**Cc:** [WebWork Resource](#)  
**Subject:** RE: NRR Presentation on Fukushima- April 2011 ppt.pptx  
**Date:** Wednesday, April 13, 2011 12:57:40 PM

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Beth,

It's been removed from the live site, though it may take a few minutes for the servers to refresh and show the changes.

Thank you,  
Michael

**From:** Hayden, Elizabeth  
**Sent:** Wednesday, April 13, 2011 12:54 PM  
**To:** WebContractor Resource; WebWork Resource; Hardy, Sally  
**Subject:** FW: NRR Presentation on Fukushima- April 2011 ppt.pptx

Hold on this posting on the current website, too.

*Beth Hayden*  
*Senior Advisor*  
*Office of Public Affairs*  
*U.S. Nuclear Regulatory Commission*  
*--- Protecting People and the Environment*  
*301-415-8202*  
*elizabeth.hayden@nrc.gov*

**From:** Hayden, Elizabeth  
**Sent:** Tuesday, April 12, 2011 4:39 PM  
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**Subject:** RE: NRR Presentation on Fukushima- April 2011 ppt.pptx

Please shorten the title of the bullet to "Presentation on Fukushima." Also make this the title on the 1<sup>st</sup> page of the slides or use the attached revised presentation.

*Beth Hayden*  
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*--- Protecting People and the Environment*  
*301-415-8202*  
*elizabeth.hayden@nrc.gov*

**From:** WebContractor Resource  
**Sent:** Tuesday, April 12, 2011 4:33 PM  
**To:** Hayden, Elizabeth  
**Cc:** WebWork Resource; Hardy, Sally  
**Subject:** RE: NRR Presentation on Fukushima- April 2011 ppt.pptx

11/11/11/188

Good Afternoon Beth,

Please review and approve for live posting.

<http://webwork.nrc.gov:300/japan/japan-info.html>

Thank you,  
Michael

**From:** Hayden, Elizabeth  
**Sent:** Tuesday, April 12, 2011 3:42 PM  
**To:** Hardy, Sally  
**Subject:** NRR Presentation on Fukushima- April 2011 ppt.pptx

Please add this as last bullet in the right-hand box of current Japan Page. Also, move up bullets under "**FAQ**" so there's not so much space.

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**Cc:** [WebWork\\_Resource](#)  
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Beth,

This has been corrected. Please review and let me know of any further changes needed.

Thank you,  
Michael

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**Sent:** Wednesday, April 13, 2011 2:12 PM  
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No, the print should be bold like the **Blog** and **FAQs** and lined up to the margin like these two items. This is not a bullet under FAQ.

*Beth Hayden*  
*Senior Advisor*  
*Office of Public Affairs*  
*U.S. Nuclear Regulatory Commission*  
*--- Protecting People and the Environment*  
*301-415-8202*  
*elizabeth.hayden@nrc.gov*

**From:** WebContractor Resource  
**Sent:** Wednesday, April 13, 2011 2:04 PM  
**To:** Hayden, Elizabeth  
**Cc:** WebWork Resource  
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Beth,

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<http://webwork.nrc.gov:300/japan/japan-info.html>

Thank you,  
Michael

**From:** Hayden, Elizabeth  
**Sent:** Wednesday, April 13, 2011 1:26 PM  
**To:** WebContractor Resource; WebWork Resource; Hardy, Sally  
**Subject:** RE: NRR Presentation on Fukushima- April 2011 ppt.pptx

OK. Attached is the scrubbed presentation. For the existing website, please put the link at

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the bottom of the box on the right (having equal status as FAQs and Blog) using this presentation with the PowerPoint icon (like in the subject line) in front of the words: Fukushima Presentation.

For the new website, please put this as the first item in the Related Information box on the bottom right.

Thanks!

*Beth*

**From:** WebContractor Resource  
**Sent:** Wednesday, April 13, 2011 12:57 PM  
**To:** Hayden, Elizabeth  
**Cc:** WebWork Resource  
**Subject:** RE: NRR Presentation on Fukushima- April 2011 ppt.pptx

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**From:** Hayden, Elizabeth  
**Sent:** Wednesday, April 13, 2011 12:54 PM  
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**Subject:** FW: NRR Presentation on Fukushima- April 2011 ppt.pptx

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*Beth Hayden*  
*Senior Advisor*  
*Office of Public Affairs*  
*U.S. Nuclear Regulatory Commission*  
*--- Protecting People and the Environment*  
*301-415-8202*  
*elizabeth.hayden@nrc.gov*

**From:** Hayden, Elizabeth  
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*Beth Hayden*  
*Senior Advisor*

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**News**

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Japan nuclear plant 'not stable.' **NRC** chairman says

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**News**

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**News**

**1** new result for **Nuclear Regulatory Commission**

State's **nuclear** plants recover from shaky ratings

Milwaukee Journal Sentinel

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# NUCLEAR REGULATORY COMMISSION NEWS CLIPS

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**NRC NEWS:**

**US Nuclear Regulator Lets Industry Write Rules (PROPUB)**

By John Sullivan

Pro Publica, April 14, 2011

In the fall of 2001, inspectors with the Nuclear Regulatory Commission were so concerned about possible corrosion at Ohio's Davis Besse Nuclear Power Station that they prepared an emergency order to shut it down for inspection. But, according to a report from the NRC inspector general, senior officials at the agency held off – in part because they did not want to hurt the plant's bottom line.

When workers finally checked the reactor in February of 2002, they made an astonishing finding: Corrosive fluid from overhead pipes had eaten a football-sized hole in the reactor vessel's steel side. The only thing preventing a leak of radioactive coolant was a pencil-thin layer of stainless steel.

The Davis Besse incident has resurfaced in the wake of the ongoing nuclear crisis at Japan's Fukushima Daiichi plant. Stories recounting close ties between Japanese nuclear regulators and utilities there have reinvigorated critics who say the NRC has not been an aggressive enough US watchdog.

The NRC says that is not the case, and commission Chairman Gregory Jaczko defended the agency's independence and professionalism. "I have a great staff who are dedicated to public health and safety, and people who interact with this agency, they know that and they see that," he said in an interview.

Critics of the NRC say the problem at Davis Besse, 20 miles southeast of Toledo, is a prime example of the agency's deference to industry. The inspector general concluded that a conflict between the NRC's twin goals of inspecting the plant to protect public safety and a desire to "reduce unnecessary regulatory burden" on the owner led to the delay in finding the gaping hole.

In 2003, then NRC's Chairman Richard Meserve disputed the inspector general's report, which found that the agency's decision on Davis Besse "was driven in large part by a desire to lessen the financial impact" the plant's owner. Meserve said the NRC had adequate technical grounds for the delay.

The agency insists that it vigilantly watches operations at 104 commercial reactors and frequently issues violations to nuclear companies that step out of line. Since 2001, the agency has averaged about 120 significant enforcement actions a year at power plants and other nuclear facilities it oversees.

While the Davis Besse case focuses on singular allegations of influence, critics say the industry routinely exercises its muscle in a more pervasive way: through contributions to NRC regulatory guides that advise nuclear companies about how to best follow the agency's rules.

Large parts of the guides, issued by NRC, incorporate or endorse material written by the industry's trade group, the Nuclear Energy Institute. The guides – containing detailed technical procedures and reference materials – are a key part of NRC's oversight. They provide the nuts and bolts advice that nuclear operators follow to stay in compliance but often refer to even more detailed industry guides.

The NRC's guide on fatigue, for example, details how many hours employees in key jobs can work, how to respond when a worker is too tired, and how many days off employees in certain jobs need. It officially incorporates, with a few exceptions, another 60-page guide compiled by the industry group.

In an e-mail, Thomas Kauffman, a spokesman for NEI, passed along responses to ProPublica's questions from the trade group's director of engineering, John Butler. "NRC endorsement, with or without exceptions, of industry guidance is a common practice," Butler said.

Some examples from a list the trade group provided to ProPublica:

How to apply for an operating license extension. Many aging plants are seeking to extend their original 40-year licenses. The 10-page NRC document endorses a 245-page NEI guide that tells applicants how to identify critical equipment and inspect it to be sure it meets relicensing standards.

How to protect plants from fires. The NRC's regulatory guide cites an NEI document that "provides the majority of the guidance applicable" for analyzing fire risk at plants, with some specific exceptions.

How to upgrade plant control rooms. The NRC regulatory guide says that "when possible, this guide has incorporated (NEI's) 'Control Room Habitability Guide,' " again with some limits.

The NEI said its role in contributing to NRC's guides does not mean the nuclear industry has too much influence. Kauffman said the NRC has final say on what NEI adds and frequently makes changes.

"They review them completely," Kauffman said. "It is one thing to draft something and put it out there; it is quite another for the NRC to decide to accept it."

NRC spokesman Eliot Brenner said in an e-mail that the NEI is not the sole source of information in agency regulatory guides and that NRC accepts comment from a broad array of sources.

"If any stakeholder – company, industry organization, individual or public group – backs up a request with appropriate information, the NRC will consider it," Brenner said. "The NRC regularly denies industry requests that lack proper support, and we've taken properly supported rulemaking requests from non-industry sources on many occasions."

"The NRC is the final arbiter of what becomes a regulation," he said, "with safety the total focus of our effort."

But others said the reliance on the industry creates a potential conflict of interest.

Jim Riccio, who follows nuclear issues for Greenpeace, said that allowing the NEI to play such a large role means the industry can shape much of what nuclear companies are required to do.

Riccio said NRC's precursor agency, the Atomic Energy Commission, was disbanded after Congress concluded it had become too concerned with promoting nuclear power instead of regulating safety.

In a 1974 overhaul, development of nuclear energy was transferred elsewhere and protection of the public was given to the NRC, a five-member body whose members are appointed by the president.

Riccio asserted that over the years, NRC has become more accommodating to the industry.

"The problem with inviting the industry in is that they tend to dominate the process," he said. "The NRC has a problem distinguishing between the public they serve and the industry they regulate. "

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## **Senate Panel Questions NRC Actions, Transparency (EED)**

By Hannah Northey

E&E Daily, April 14, 2011

A key Senate committee yesterday grilled the country's top nuclear regulator on emergency actions he took in the wake of Japan's nuclear crisis and how regulators are weighing the safety of US reactors.

Environment and Public Works Chairwoman Barbara Boxer (D-Calif.) grilled Nuclear Regulatory Commission Chairman Gregory Jaczko on whether the agency is prioritizing the review of nuclear reactors in seismically active areas, notably California's Diablo Canyon Nuclear power plant and San Onofre nuclear generating station.

Jaczko said the commission will evaluate the two facilities as part of the agency's 90-day review of the country's 104 reactors, as well as undertaking a longer-term review once more information from Japan begins trickling in. But the chairman said the agency will not do "anything specific" for the two California plants.

The March 11 earthquake and tsunami that rocked Japan severely damaged the country's Fukushima Daiichi nuclear plant. Jaczko said the situation at the site is "static" but not "stable" and that officials remain focused on providing long-term cooling to the reactors and spent fuel pools.

Boxer acknowledged it is unlikely California could see a massive earthquake like the magnitude 9 Japanese temblor but said regulators must prepare for any situation. She pointed to announcements this week from two California utilities calling for increased seismic studies for their nuclear reactors.

"We've got to respond in a much different way, and I just don't feel the humility from all sides here," Boxer said.

Before the nuclear crisis in Japan, officials there had been "bragging about how this could never happen" and touted nuclear power, and "now they can't even figure out how to stop the darn thing," Boxer said.

But the chairwoman applauded the proactive steps the utilities in California are taking.

Pacific Gas and Electric Co. said Monday it will accelerate advanced 3-D seismic studies related to the Diablo Canyon Nuclear power plant and has asked NRC to delay final action on its license renewal application for the reactors until the studies are complete, according to a statement the company released.

Separately, Southern California Edison announced yesterday the company will file a funding authorization request with California state regulators for \$64 million to conduct seismic studies related to the San Onofre generating station.

Meanwhile, Environment and Public Works ranking member James Inhofe (R-Okla.) yesterday accused Jaczko of inappropriately invoking emergency authority after the Japanese disaster.

Inhofe said Jaczko cited emergency authority to transfer commission functions to himself in the wake of the Japanese crisis and failed to inform the Senate committee of such actions.

The emergency authority the chairman is given occurs in the wake of events such as a crisis at a particular facility, but Inhofe maintained that he is not "aware that an emergency condition exists at any US facility."

Jaczko denied the claims and maintained that he has been acting within his current authority as chairman and said he has continuously communicated with Congress and with his own commission members.

## **Japan Nuclear Reactors Remain Unstable (INTLBIZ)**

By Alyangka Francheska

International Business Times, April 14, 2011

The chairman of the US Nuclear Regulatory Commission told a Senate committee hearing on Tuesday that Japan's damaged nuclear reactors at the Fukushima Daiichi power plant is "static" but remains "unstable" with just an improvised cooling system.

Gregory B. Jaczko told the Senate, "We don't see significant changes from day to day.. However, he clarified that the risk of additional radiation releases diminishes everyday.

At the hearing, Jaczko told members of the Senate Environment and Public Works Committee that Japanese engineers have not yet re-established a long-term regular cooling of the reactors or a regular system to deliver water to the spent-fuel pool.

He made his assessment that the situation at the nuclear power plant is "not stable" and this would prevail until "that kind of situation would be handled in a predictable manner."

## **Nuclear Engineer Asserts Lack Of US Radiation Monitoring (HUNTNN)**

Huntington News Network, April 14, 2011

Nuclear Engineer , Amie Gunderson in this newly released video discusses why the Toyko Electric Power Company announcements of increased accident severity should not be a surprise. He discusses similarities of Chernobyl, Three Mile Island, and Fukushima.

Gunderson, an independent nuclear safety expert for Fairewinds Associates, tells how governments limit public access to radiation dose data.

Finally, he responds to numerous email inquiries regarding the Fukushima accident.

## **Images Of Japan Nuclear Crisis Loom During Meeting At St. Lucie Plant (TREASCOS)**

By Tyler Treadway

Treasure Coast Palm, April 14, 2011

HUTCHINSON ISLAND — With the recent nuclear disaster in Japan on their minds, several residents voiced concerns about the safety of the St. Lucie Nuclear Power Plant at a meeting Wednesday with representatives of the US Nuclear Regulatory Commission staff and Florida Power and Light Co.

Of particular concern: the safety of storing spent fuel rods at the nuclear plant on Hutchinson Island, the same type of rods that, in the aftermath of Japan's March 11 earthquake, released radioactivity at Japan's Fukushima Daiichi nuclear facility.

"How can the (commission) and FPL possibly ensure the health of the people here," asked Bonnie Howard of Lakewood Park, "when there are unending safety and security issues and long-term storage issues? ... Why do we continue to use a dangerous source of energy?"

Marty Tormey, a winter resident of Fort Pierce, noted that wind and solar power account for very small percentages of the power produced in the country and added, "Until a better alternative is found, I need this facility."

Commission representatives at the meeting went to great lengths to argue that the situations in Japan and Hutchinson Island are dramatically different.

Rick Croteau, the commission's director of reactor projects for the region that includes Florida, said an earthquake like the one in Japan is highly unlikely in Florida.

"That's what they said about Haiti," said Suki deJong of Boynton Beach, "before there was an earthquake there."

Croteau said the St. Lucie plant was designed to withstand "the maximum earthquake that's possible in this area."

Noting that a hurricane storm surge is more likely than an earthquake-generated tsunami, Timothy L. Hoeg, the commission's senior resident inspector at the St. Lucie facility, said the plant is built to withstand the area's maximum predicted surge: 17 feet.

"The ground level at the site is 19 and a half feet," Hoeg said, "and most of the doors and watertight seals are built higher than that."

Hoeg said the plant's spent rods are stored "in a heavy-duty concrete structure" with "two complete subsystems to handle the heat so that if one fails, there's a backup."

Croteau said enough fuel is stored at the nuclear plant to power generators for seven days.

"Just a week?" asked Cara Jennings of Lake Worth, noting that the Fukushima Daiichi nuclear facility has been without power for about a month.

"The idea is that more fuel can be brought to the site within that time if it's needed," Croteau said.

Herman Berg said he'd be satisfied if the commission and FPL officials "make sure you keep learning from what has happened in Japan as well as at Chernobyl and at Three Mile Island."

## **Lots Of Questions And A Banner At FPL Nuclear Plant Safety Meeting (PALMBEACHP)**

By Susan Salisbury

Palm Beach Post, April 14, 2011

JENSEN BEACH — Herman Berg lives about 10 miles from Florida Power & Light Co.'s St. Lucie nuclear plant on Hutchinson Island, and he's worried about how the island would be evacuated if there were some type of disaster.

"With a telescope, I can see this building," Berg told FPL and Nuclear Regulatory Commission officials at a meeting at the plant today. "There's only one way off this island."

Berg was one of about 40 South Florida residents who attended an annual safety assessment meeting at the plant, mostly seeking answers about the plant's readiness in case of a disaster. The plant met all safety requirements in its 2010 review, NRC officials said.

With Japan's nuclear disaster on their minds, the residents wanted details about the reliability of backup systems for keeping St. Lucie's spent fuel pools cooled, information about fuel storage in casks, the plant's water supply, health risks to the public and more.

The meeting had its lively moments, such as when former Lake Worth City Commissioner Cara Jennings and Cici Claar, also of Lake Worth, unfurled a "Don't Nuke Florida's Future," hand-painted banner across the front of the room.

"I am sure they had similar meetings in Japan," Jennings said as NRC officials told the pair to step aside.

Bonnie Howard, a Fort Pierce resident who lives about 20 miles from the plant, said, "I don't doubt the sincerity of FPL and the NRC, but in light of the worsening situation in Japan, how can the NRC and FPL possibly assure the health of the public?"

Howard wants to see FPL, which has three solar plants and has been thwarted thus far in its plans for a wind farm, seek to develop a wind farm here, then shut down its nuclear plants in St. Lucie and Miami-Dade counties.

"I no longer want my tax and ratepayer dollars to subsidize and safeguard this industry which could destroy my life," Howard said. "No one has died from wind and solar."

St. Lucie's Nuclear Power plant has two unit reactors; the first went online in 1977, the second in 1983. The plant employs over 800 people.

Unlike Japan and the northwestern US, the plant is not in an earthquake zone, but of course, has been in the path of hurricanes.

"A tsunami is not possible here. What is possible is a hurricane storm surge of 17 to 17.5 feet. The plant is 19 feet above sea level," said Rick Croteau, NRC's regional director of reactor projects.

NRC's resident inspector Tim Hoag said the plant has two redundant systems to ensure the spent fuel pools cooling system keeps working.

Although the NRC reviews evacuation plans, those are primarily the responsibility of counties and states, Croteau said.

That response did not go over well with Lake Worth resident Stan Smilan, who also had concerns about the plans for distribution of iodine pills, specifically in the form of potassium iodide, in case of a nuclear accident involving the release of radiation.

Smilan became agitated and pointed a finger as he accused NRC officials of shirking their duties, but Croteau stressed the agency's role is to license and regulate nuclear plants.

Hutchinson Island resident Marty Tormey said he believes the plant is safe and said other forms of electric power, such as coal and gas, have killed people.

"I need this power to keep things going," Tormey said. "There's no such thing has a free lunch."

## **Nuclear Regulatory Comm. Reviews St. Lucie Power Plant (WPTV)**

By Marci Gonzalez

WPTV-TV West Palm Beach, FL, April 13, 2011

ST. LUCIE COUNTY, Fla. - The frightening images from the Fukushima Nuclear Plant in Japan sparked some unease about the power plant on Hutchinson Island.

The concerns of residents from the Treasure Coast to Palm Beach County were expressed Wednesday in a meeting at the Saint Lucie Power.

Members of the United States Nuclear Regulatory Commission were in town offering their annual assessment of the plant, and paused to answer questions from the public.

Rick Croteau with the NRC explained, "The plant is designed for earthquakes within the large area but this is a very low seismic zone so it's a very small earthquake."

While they say there is virtually no risk of a disaster mirroring the one in Japan, the concern here, of course, is with hurricanes.

The crowd was assured that the St. Lucie Plant is prepared. Florida Power and Light officials say it can withstand the strongest hurricane, and is built 20 feet above sea level, which is several feet higher than what experts estimate a storm surge could ever be the in the area.

Michael Waldron, the Director of Nuclear Communication for FPL, says there are many other safeguards in place. He explains, "We train for the worst case scenarios constantly, so 1 week out of 6, our plant operators are trained and tested against the most stressful situations they could encounter."

While this year, the NRC gave the St. Lucie Power Plant excellent marks in it's review, the NRC says Japan is teaching everyone a lesson in how to be even more prepared for the unforeseen.

FPL says, while these public meetings are rare, anyone can stop by the Energy Encounter building at the plant to learn more in depth how the plant works and how they're prepared for a disaster.

## **NRC Gives St. Lucie Nuclear Power Plant Green Light For Safety (WPBF)**

### **Residents Pack Annual Meeting To Voice Concerns In Wake Of Japan Disaster**

By Terri Parker

WPBF-TV West Palm Beach, FL, April 13, 2011

HUTCHINSON ISLAND, Fla. —

Officials from the Nuclear Regulatory Commission held a public meeting Wednesday on their 2010 review of the St. Lucie County nuclear power plant on Hutchinson Island.

"It got a clean bill of health and will not get any unusual oversight other than our baseline inspections," said NRC spokesman Joey Ledford.

Concerns about the safety of US nuclear plants have grown since the tsunami in Japan created a crisis at the Fukushima Dai-ichi nuclear facility, where radiation leaked after the earthquake and tsunami.

Residents packed the Florida Power and Light meeting room, which are usually not so popular, according to FPL.

Some wanted to know if a hurricane or other disaster could damage the reactors or spent fuel storage areas and release radioactive material.

FPL's Michael Waldron said no. "For example, in the case of our Turkey Point plant, in 1992 it got a direct hit from hurricane Andrew and performed exactly as expected. Here at St. Lucie, hurricanes Jeanne and Frances, one after another, hit this plant directly and it survived just fine," said Waldron.

Some still weren't convinced and called some answers vague.

"You said if you needed more water you could just throw a hose into a canal? I mean, to me a canal isn't going to cool down a nuclear power plant," said Jennings.

And Stan Smilan, a retired airline pilot, ranted against what he said was a callous attitude from officials on the possibility of radioactive damage.

"Now can you honestly tell me that you think that an evacuation could take place here, when this site is here, you could get these people out of here?" asked Smilan.

Officials said they were prepared for any evacuation scenario.

Another big concern: how safe are FPL's used fuel rods?

FPL has run out of room to keep all of its spent fuel in cooling tanks, and for several years, has stored them in containers, called dry casks.

According to the Nuclear Energy Institute in Washington, Florida has 3,002 tons of discarded rods sitting in the stainless steel and concrete pools filled with recirculating water. St. Lucie County stores its used rods in pools and in dry cask storage. FPL could not immediately provide details on how many tons of spent fuel it had on-site, and how much it was originally licensed for.

"The amount is irrelevant. They license you to store it. We take it out of spent fuel pools and put it in dry storage," said Waldron.

"It's our position that dry cask storage is perfectly safe. This system has been used since the nuclear industry began so there's some spent fuel that's been on-site for 30 years or more," said Ledford.

The federal government is supposed to come up with a solution to the spent fuel problem, but so far hasn't, which is why many nuclear plants have amended licenses to store the spent fuel on-site.

"The important fact to remember when you're talking about spent fuel is that the federal government was supposed to start assuming responsibility for that 13 years ago, in 1998. Since that time we and every other nuclear plant in the country has moved to an alternative solution, which in the case of the St. Lucie plant is dry storage, which is a very safe way to maintain the fuel for a long time until the government comes up with a way to store it," said Waldron.

## **Japanese Disaster Raises Interest In Today's Open House On St. Lucie Nuclear Plant Safety (PBP)**

By Susan Salisbury

Palm Beach (FL) Post, April 13, 2011

ST. LUCIE COUNTY — Once, the thousands of 12-foot-long rods now being stored in 40-foot-deep pools of water at Florida Power & Light Co.'s two nuclear plants in the region — one on Hutchinson Island and the other in Miami-Dade — helped power the state's electric grid.

Their job is done. However, the used, or "spent," fuel rods have not gone anywhere. They're still at the St. Lucie and Turkey Point nuclear plants, they're still close to population centers on water and they're still radioactive. The pile of waste continues to grow.

The unfolding calamity with issues of cooling fuel rods at Japan's Fukushima Daiichi nuclear facility has drawn renewed attention to the safety of US nuclear plants.

Nuclear officials plan to visit the St. Lucie plant at 1 p.m. Wednesday to hold a public meeting on last year's safety review, and Nuclear Regulatory Commission officials say they have found more public interest since the Japan crisis began.

Should we be worried about the huge amounts of spent fuel stored in our state? The industry says no, but watchdog groups and others have concerns.

"Our federal regulatory and operating history proves that this can be done safely and securely," FPL spokesman Michael Waldron said. "We are supportive of the government's effort to try and identify a permanent disposal solution."

David Lochbaum, director of the nuclear safety project at the Union of Concerned Scientists, said spent fuel pools are among the most vulnerable spots at a nuclear plant. They are housed in buildings that aren't as strong as those that house reactors.

"It would be hard to manage this hazard (more) foolishly. The federal government's ineptitude in disposing of spent fuel has left Americans across the country exposed to elevated and undue risks," Lochbaum said.

The situation is the same at most of the nation's 104 reactors on 65 sites in 31 states. An additional 15 closed reactors also hold spent fuel.

The best plan would be to transfer spent fuel that has been out of the reactor for at least five years into dry casks, then spread the remaining fuel as far as possible, Lochbaum said.

South Miami Mayor Philip Stoddard, a Florida International University professor who lives about 17 miles from Turkey Point, said some hurricane models show storm surge coming to the brink of the plant.

In 1992, Hurricane Andrew devastated Homestead and damaged Turkey Point, which had been shut down before the storm. NRC reports issued in 1993 and 1994 stated that although the plant's reactors were not compromised, damage to the plant's stack, ductwork and monitoring equipment would have prevented monitoring a radiological release if it had been necessary to do so. There was no damage to safety-related structures, the reports said.

"I do believe the facility is vulnerable," Stoddard said. "With Hurricane Andrew, the plant got the clean side of the storm. If you have been around for some of these storms, stuff comes loose. Imagine a construction barge coming loose and bludgeoning the spent fuel pool."

James Tulenko, director of the Florida Laboratory for Development of Advanced Nuclear Fuels and Materials for the University of Florida, said the spent fuel pools in Florida do not pose a health risk.

"However, they do require either maintenance of the spent fuel cooling system or, in case of a power failure, maintenance of the water level to offset evaporation," Tulenko said.

Waldron said FPL's plants have multiple redundant systems to ensure there is adequate power to operate the spent fuel pool cooling systems.

Tulenko said all of Florida's spent fuel pools are next to reactors rather than on top of them, making them easy to maintain. Dry casks are safe and require no maintenance, he said.

Florida has 3,002 tons of discarded rods sitting in the stainless steel and concrete pools filled with recirculating water, according to the Nuclear Energy Institute in Washington. The pools are in steel-reinforced concrete buildings.

Although the pools' racks have been reconfigured to hold more than originally designed for, space is running out. At the St. Lucie plant on Hutchinson Island, 197 tons of rods are in concrete and steel casks, and cask storage is under construction at Turkey Point in Miami-Dade County.

"Almost every plant in the country is currently out of storage space or will be soon," said Roger Hannah, Atlanta-based spokesman for the Nuclear Regulatory Commission. "Spent fuel pools were designed for a limited time period with the expectation that the US government at some point would provide a permanent site for disposal."

"Everything is planned many years in advance," FPL's Waldron said. "We know exactly how much fuel there is, where it is and what our margin is of what any pool can handle safely."

Federal law required the US Department of Energy to begin moving used fuel from plant sites in 1998, but it has not begun to do so. The nuclear industry has poured more than \$35 billion in fees into a nuclear waste fund and is required to continue to do so. Of that, \$11 billion was spent to prepare Yucca Mountain in Nevada as a repository. However, the Obama administration has said it will not pursue the Yucca deal, and in January it appointed a blue-ribbon commission to study the issue. A final report is expected by late 2012.

Spent fuel pools are among the issues a Nuclear Regulatory Commission task force is reviewing as the agency looks at its regulations and programs in light of the March 11 Japan earthquake and tsunami. The six-member task force plans to report its recommendations at a July 19 agency meeting.

With more casks needed to store spent fuel, companies such as Jupiter-based Holtec International, one of three US companies in the business, are meeting the demand.

Joy Russell, Holtec's sales and marketing manager, said the firm has manufactured more than 400 casks in use in the US and Spain. It also manufactures high-tech spent fuel pool racks that can quintuple storage space.

The \$1.5 million cask's "overpack," or outside cask, is about 8 feet in diameter and 20 feet tall. It has two carbon shells and 27 inches of concrete. A stainless steel canister is stored in the inner cavity.

"Since the mid- to late '90s, the demand has increased because the spent fuel pools have been filling up," Russell said.

The NRC's Atomic Safety and Licensing Board has determined that Holtec's cask system can withstand the impact of a crashing F-16 fighter jet, Russell said.

Though some countries, such as Russia and France, recycle spent nuclear fuel, the US government has not allowed reprocessing since 1978 because of concerns about plutonium, which can be used to make atomic weapons.

The bottom line, experts say, is that while spent fuel is being stored safely, centralized, secure storage is needed. Until then, every precaution should be taken.

"At some point, spent fuel needs to be disposed of in a federal repository. But even if that repository were to open tomorrow, spent fuel will be stored on site for a decade or longer," said Lochbaum, of the Union of Concerned Scientists.

"We need to take steps to better manage that known risk before our luck runs out."

## **Legislators Ask NRC Tough Questions, Local Officials And Pilgrim Critics Give Their Best Answers (OCM)**

By Frank Mand

Old Colony Memorial, April 14, 2011

As the state met with representatives of New England's nuclear power plants and their critics last Wednesday, Gov. Deval Patrick, Senate President Therese Murray and Speaker of the House Robert DeLeo released a series of 22 questions legislators are asking Nuclear Regulatory Commission Chairman Gregory Jaczko to address.

We posed those same questions to local officials and critics of the plant and asked them to comment or to offer what they would consider a satisfactory response to each.

Ten of the 22 questions have to do with spent-fuel rods and their storage.

Does the federal government have any new plans for storage or is dry cask storage the solution, at least on an interim basis?

Patrick, Murray and DeLeo also want Jaczko to comment on whether there are plans to strengthen the fuels stored in the upper levels at Pilgrim against aerial attack, or relocate the wet pool to a more secure location.

Town Manager Mark Stankiewicz says Plymouth does not have the expertise, nor the funding, to effectively monitor Pilgrim. The town must by necessity rely on others for that oversight.

But Stankiewicz says the town doesn't need experts to tell them that Plymouth is being asked to do more than was original conceived when the plant began operation, including serving as a long-term storage facility for spent fuel.

"If the Federal government is not going to pursue a national long-term solution" for spent-fuel storage, Stankiewicz said, "it would only be fair to use the funds earmarked and paid by the nuclear industry and the ratepayers for interim local storage."

Nuclear power critic and Plymouth resident Wedge Bramhall is sympathetic, to a point.

"It isn't easy planning a (spent fuel) repository," Bramhall says, "(a repository) that will have to last for tens of thousands of years. And who would allow it to happen in their town or state for any amount of money?"

Mary Lampert, head of Pilgrim Watch, says first things first: reduce the "catastrophic risk of a spent-fuel fire."

To do that she says the state needs to pressure the NRC to require licensees to reduce the density of assemblies in the spent fuel pool, allowing only the fuel discharged in the previous five years,

"All other spent-fuel assemblies," Lampert says, should be put "in hardened, dispersed dry casks onsite, until an offsite repository is developed.

"Doing so would lower the risk by generating a lower heat load so that if cooling water is interrupted or water lost, the lower heat load would give workers more time to recover cooling or water inventory before overheating caused fuel damage."

"If fuel did become damaged," Lampert continues, "the amount of radioactivity released would be considerably less than that released from a nearly full pool."

Additionally, the Pilgrim Watch leader notes, "dry casks are passive structures and not subject to human error or mechanical malfunction."

Question 8 cites the fact that electric cables at Pilgrim are buried in the ground where, after 40 years of operation, their condition is suspect.

The legislative leaders ask whether the federal government has a system for inspecting, repairing or replacing these cables.

Stankiewicz' answer is that the town expects the NRC to monitor the condition of the cables and all operating systems at Pilgrim.

Bramhall assumes the worst.

"The underground cables must present a problem, or the NRC would have just shrugged it off when Mary Lampert raised the question," Bramhall says. "Sometimes I wonder if she doesn't know more than the NRC itself."

Pilgrim Watch is actually involved in litigation over the issue of what it calls "submerged non-environmentally qualified electric cables."

"Pilgrim's submerged electric cables are not qualified to be in moist environments," Lampert said. "Most electrical cables at Pilgrim have been exposed to significant moisture over the past 40 years."

Lampert references a recent NRC inspection (April 2010) of three manholes that noted two were periodically submerged or partially submerged and the other always submerged.

Pilgrim Watch offers a simple solution: "Require replacing electric cables that may be subject to submergence with ones qualified for a wet environment, or require a more robust inspection program."

The state also asked if there are plans to have real-time radiological and meteorological monitors sited strategically within the emergency-planning zone (EPZ) to more accurately identify "which way the wind (and radiation) is blowing."

This is something that the town's own Nuclear Matters Committee has sought, though Town Manager Stankiewicz says he would like more information before commenting.

During the Dukakis administration there were actually plans for such a system, but they were dropped during the Weld administration in favor of a system that Lampert calls "a useless compromise."

"Those monitors are too close to the reactor to provide any worthwhile data," Lampert asserts. "They may indicate which way the wind is blowing onsite but not what happens to the plume once offsite."

Trust, or its lack, is at the heart of two of the questions posed to NRC head Jaczko.

Will the NRC allow independent experts access to the studies and documents it used in its review of the safety and security of commercial nuclear reactors, and as the basis for their conclusion that continued on-site storage of spent fuel is safe?

"We support (these initiatives), otherwise there is no basis for public confidence," Lampert says. "Safety and trust depend upon layers oversight, and among those layers (should be) an independent panel of experts vetted publicly."

And, to a point, the town of Plymouth seems to agree.

"Unless there are legitimate security concerns," Stankiewicz notes, "any such documents should be released to the public."

In Part Two of our search for the answers of the Loaded 22, we reference those questions that deal with the Japanese disaster and how Pilgrim and other New England nuclear facilities may or may not be responding properly.

In light of the 50-mile evacuation zone that American officials recommended for Japan, for example, is the 10-mile evacuation zone for Pilgrim still valid?

Most importantly, we ask for a response to question 21: "What assurances can the NRC provide that Yankee and Pilgrim are not just meeting current NRC standards for safety and security, but that there are material differences in the way the plants were designed, upgraded and regulated that will reduce the risk of what is happening in Japan, as they are being re-licensed?"

## **Pilgrim Will Store Its Waste In Casks (BOS)**

By Robert Knox

Boston Globe, April 14, 2011

Seeking to douse worries over nuclear safety sparked by failures in Japanese plants, Pilgrim officials recently announced they plan to begin storing the Plymouth power plant's nuclear waste in hardened dry containers.

In Japan following the massive March 11 earthquake and tsunami that damaged several of the country's nuclear power plants, the greatest source of radiation danger has come from the storage of used fuel in pools of water inside the facilities. When the plants' water coolant system failed, the used fuel grew hot, and radiation escaped though the plants' outer shell.

Last week at a State House hearing, nuclear industry officials cited multiple backup cooling systems as they offered reasons why that failure wouldn't be repeated here, even in plants of the same design. And the decision by Entergy, Pilgrim's

owner, to move to dry-cask storage for used fuel accords with the views of Attorney General Martha Coakley and many experts that such storage of nuclear waste outside the plant is a safer alternative than water storage.

But although it has also urged dry-cask storage for years, Duxbury-based watchdog group Pilgrim Watch says Pilgrim's move to dry storage is too slow and too small. Mary Lampert, Pilgrim Watch president, said Entergy is planning to move only a few hundred spent fuel-rod assemblies to take pressure off an already crowded pool.

Although the spent fuel pool "was designed to hold approximately 880 used and highly radioactive fuel assemblies," Lampert said, it now holds more than 3,000 fuel rods and is likely to hold 3,859 assemblies by the time Pilgrim's current license expires in June of next year. Pilgrim has applied for a 20-year license extension

"It will keep the spent fuel pools nearly filled with radioactive fuel, maintaining the risk level about as high as possible," Lampert said. She said the plan to remove a small percentage of fuel rods will not significantly reduce the risk to public safety, calling it the "cheap" approach.

Concern over the safety of spent fuel storage is also an issue for a newly formed Marshfield-based organization called Pilgrim MUST (Make Us Safe Today). The group is planning to hold a rally at the site of the Pilgrim plant on May 7 from 10 a.m. to noon to publicize its call for new measures to make the plant safe. Anna Baker, the action's co-leader, said the rally's purpose is to expose "significant safety threats at Pilgrim that have been underscored by recent nuclear power events and which affect the surrounding communities."

A prepared statement by the group calls on the Nuclear Regulatory Commission to limit the number of used fuel rods stored in Pilgrim's pool to the number in the pool's original design and require the plant to replace all its buried electric cables with new ones, among other demands. The loss of electric power in the Japanese reactors led to the failure of their coolant systems and the release of radiation.

Pilgrim spokeswoman Carol Wightman said Monday she could only provide details on initial dry-cask storage plans. "We will begin moving to dry-cask storage in 2014, with the first three casks," Wightman said. "Sixty-eight used fuel bundles per cask, for a total of 204 fuel bundles," will be moved then. "It requires a very long lead time."

The nuclear power industry has repeatedly complained that it has been forced to store nuclear waste on site because of the failure of the federal government to deliver on its promise to provide a single national waste site. "We have no desire to store spent fuel in our plants," Wightman said.

While Pilgrim Watch contends that Entergy is unwilling to spend the money needed to put all its waste into a safer storage system, inadequate funding is also a problem for "host" communities involved in emergency planning in the event of a nuclear accident at Pilgrim.

"They're a business. They tend to want to cut funds," said Richard Ferreira, the emergency management director for Taunton, one of three host communities.

Emergency plans call for Plymouth students and many of its residents to evacuate homes, schools, and workplaces in the event of a serious nuclear accident and travel to Taunton. Other residents living within the 10-mile Emergency Planning Zone — including Kingston, Duxbury, Carver, and Marshfield — will be sent to a reception center in Bridgewater or Braintree.

Fleeing Plymouth residents would go to Taunton High School to be monitored and decontaminated. They would walk through portal monitors (resembling airport security gates) and be checked by hand-held radiation monitors. Television images from Japan of emergency workers wearing booties and Tyvek protective suits and "wanding" people for radiation give you "a good idea" of what it would be like, Ferreira said.

Training local volunteers to be prepared to "receive" thousands of evacuees is a huge operation, he said. "I have over 200 community volunteers," said Ferreira. "The entire city is involved. Our roadways, our transportation routes, are all part of this program."

But Entergy has proposed cutting reception center communities' funding, including Taunton's basic grant of \$100,000 for two positions to \$80,000 and requiring the town to pay for the expense of training volunteers. Last year Taunton had \$28,000 reimbursed by Entergy for those training expenses.

Wightman said that last year the funding that Entergy provided to the state and local towns to support emergency planning totaled about \$2.5 million. "They're in negotiations now. We're looking at what is fair and equitable," she said of the company's contribution for training.

In addition to the three host communities, the five towns within the Emergency Planning Zone receive funding from Entergy for their emergency management offices.

Marshfield Police Lieutenant Paul Taber, who serves as his town's emergency management director, said his town received \$186,000 last year from Entergy. Although the town has "a good relationship with Entergy," Taber said, emergency

planning concerns remain. Only about one-third of Marshfield, the south end of town, is included in the 10-mile zone around Pilgrim.

"We'd like to see expanding the zone to include all of the town's residents," he said. "Japan went out to 12 miles." US officials warned Americans in Japan to stay 50 miles away from damaged reactors there.

Pilgrim MUST also wants to see the Emergency Planning Zone around Pilgrim expanded from 10 to 25 miles, which would include all of Marshfield.

## **Evacuation Area Under Scrutiny (CAPECOD)**

By Patrick Cassidy

Cape Code Times, April 14, 2011

A week after the Japanese nuclear crisis began, the US Nuclear Regulatory Commission advised Americans within 50 miles of the island nation's crippled Fukushima Dai-ichi nuclear power plant to evacuate.

In the United States, however, the same federal agency and state emergency officials prepare communities within only 10 miles of nuclear power plants for evacuations related to the facilities, leaving Cape Cod and other areas around the Pilgrim Nuclear Power Station in Plymouth on the outside of the emergency planning process looking in. The basis: a nearly 40-year-old decision that predates even the 1979 partial meltdown at Three Mile Island Nuclear Generating Station in Pennsylvania.

"Fifty miles being the main evacuation area for the plant in Japan maybe we need to look at our plant and adopt it for these issues," said George Baker, Mashpee fire chief and chairman of the Barnstable County Regional Emergency Planning Committee.

While communities less than two miles from the Cape Cod Canal are supported in their planning efforts by the state and Entergy Corp., the company that owns Pilgrim, Cape emergency planners are still unsure what would happen here if an accident occurred at the state's only active nuclear power plant.

Communications would be especially important on the Cape where any major evacuation would require travel over the canal bridges, Baker said.

He said Cape Cod officials prepare for hurricanes and other emergencies but there are no specific plans in case of an accident at Pilgrim. In addition, if residents south of the plant evacuate, many of them would likely head down Route 3 setting up a potential traffic nightmare on the Scenic Highway in Bourne if motorists flee the Cape as well, he said.

'No lead shield'

The so-called plume exposure pathway, which the 10-mile zone is based on, is a planning tool used nationwide to prepare and evacuate populations most likely to be affected by the release of radioactive material at a nuclear plant. A larger area extending 50 miles from nuclear plants known as the ingestion pathway planning zone is designated to protect food supplies.

The zones are arbitrary, according to Mary Lampert, a longtime Duxbury-based nuclear safety activist who leads an organization called Pilgrim Watch.

"There is no lead shield that goes up at 10 miles," she said. "That's just ridiculous."

Planning efforts based on these zones aren't "dealing with reality," she said, adding that harmful exposure could easily extend beyond the 10-mile zone as it has in Japan.

Although she would like to see the primary emergency zone in the US extended further, Lampert has suggested a compromise of 25 miles which would include Cape Cod.

Current planning provides no information for residents on the Cape except in the event that food supplies need protection, she said.

"I advise some people cynically (to) pretend you're a cow and then you'll be tested," she said.

If the entire Cape is included in the planning zone the region could prepare by educating residents and by alerting them quickly to an incident at Pilgrim, Lampert said.

While Entergy provides funding and other support, emergency planning is the purview of local, state and federal officials, said the company's spokeswoman Carol Wightman.

In 2010 the company provided \$2.5 million to towns around the plant for training and emergency equipment, she said.

US plants, like Pilgrim, have many safety measures in place that did not exist at the Japanese plant and the exact sequence of events that occurred there was unlikely here, Wightman said. The Japanese nuclear plant lost power after an earthquake-fueled tsunami struck on March 11.

"I think it would be premature to reach any conclusion that the (emergency planning zones) in the US are inappropriately sized until we get more information," she said.

The state bases its response in emergency planning zones for nuclear accidents on recommendations from the federal government, said Massachusetts Emergency Management Agency spokesman Peter Judge.

Initial evacuations around Pilgrim would include five towns where residents are in the most danger of exposure to radioactive material, Judge said.

If the zone was expanded it would make it more difficult to move those residents most in harm's way to safety, he said.

While different recommendations could come out of the Japanese nuclear crisis, it is too early to tell what those might be, Judge said.

"We're waiting and watching it just like everybody else," he said.

No plans to expand

There are no immediate plans to expand the 10-mile emergency planning zone or to adjust it for specific facilities, NRC spokesman Neil Sheehan said.

"It goes back to the '70s," he said of the planning zone, adding that the 10-mile limit was decided on by a joint NRC and US Environmental Protection Agency task force.

Studies at the time showed that impacts from any release would have the greatest effect on residents within several miles of a plant, he said.

"Therefore it made the most sense to focus your emergency planning efforts on that 10-mile radius," he said.

Although full-scale exercises are conducted within the area every two years and communities there are supplied with potassium iodide pills, the zone's perimeter is not set in stone, Sheehan said.

"It is not a finite wall at the 10-mile radius," he said, adding that just as occurred in Japan, the zone could be expanded as necessary.

A look at the emergency planning zones are part of short- and long-term reviews the NRC is undertaking in the aftermath of Japan's crisis, Sheehan said.

Lampert, who is scheduled to testify before the NRC in Washington, D.C., during a briefing on emergency preparedness May 3, said the agency should hold off on finalizing any new regulations until lessons learned from Japan can be integrated into the process.

Lampert and other nuclear safety activists are holding a press conference today calling for the NRC to suspend all nuclear reactor licensing decisions until a full-scale review of the Fukushima disaster similar to what was done after Three Mile Island is complete.

## **Letter: AUDREY RICHARDSON, Boston: Good To See Citizen Opposition To Nuclear Energy Is Going Strong (QPL)**

By Audrey Richardson

Quincy (MA) Patriot Ledger, April 14, 2011

As one of the groups organizing the April 6 Rally for Nuclear Safety at the State House, we are heartened to see the movement opposing risky nuclear power is alive and well.

Nuclear power – and, especially, old nuclear power plants, like Pilgrim in Plymouth – is inherently dangerous. Elected officials supporting anything other than a “no” on relicensing by the NRC should imagine themselves in the shoes of the mayor of Dai-ichi in Japan for one moment.

The odds of a full-scale nuclear disaster might be similar to hitting the jackpot at a casino, but we all know jackpots are hit. Beyond being an extremely risky way to generate electricity, nuclear power is unnecessary in Massachusetts.

ISO, the organization that monitors the reliable flow of electricity for most of New England, recently reminded state legislators that we would have enough sources of generation for the region (without Pilgrim).

Massachusetts is a national leader in energy efficiency and truly clean and renewable energy. Why should we continue to use risky, unnecessary nuclear power when we have safer solutions right now?

AUDREY RICHARDSON

Environment Massachusetts, Boston

## **'Radiological Preparedness' Exercise Planned Around Callaway Nuclear Plant (STLBeac)**

By Robert Koenig

St. Louis Beacon, April 14, 2011

WASHINGTON - The timing is unrelated to Japan's nuclear crisis, but a safety exercise in the four counties around Missouri's Callaway nuclear power plant next month seems likely to get far more attention than in previous years.

On Tuesday, the Federal Emergency Management Agency announced that state and federal officials – along with county and local emergency experts from Callaway, Osage, Montgomery and Gasconade counties – will conduct a "routine exercise" on May 11 that aims to "test their ability to protect the health and safety of the public living in the vicinity of the [Callaway] plant."

On the same day, safety officials at Ameren Missouri, which owns and operates the Callaway plant, will conduct a full-scale safety exercise at the power plant itself. Their performance will be observed and evaluated by regional experts from the Nuclear Regulatory Commission, federal officials say.

FEMA's announcement explains that the safety exercise is required every two years "to determine the adequacy of the radiological emergency preparedness and response plans" around the nuclear power plant. The exercise "will require the activation of emergency facilities for the state of Missouri" and the four counties.

To help ensure that the Missouri response meets national standards, officials from Region VII of FEMA's Radiological Emergency Preparedness Program will be on hand to observe and evaluate the plans and actions of state, county and local officials during the exercise.

Two days after the exercise is conducted, FEMA will hold a public meeting in Jefferson City "to describe and explain the full-scale response exercise process," the agency says. Representatives from FEMA will discuss the exercise and an expert from the NRC's regional office will explain the parallel safety exercise at the Callaway plant.

The preliminary findings described at that meeting will be "very limited in scope," officials said, because it will take a few months to fully evaluate the exercise.

Missouri's State Emergency Management Agency plans to release more information later about the May 11 safety exercise and the public meeting, which is scheduled to begin at 10:30 a.m. on May 13 in the main auditorium of Missouri National Guard headquarters in Jefferson City.

"The primary focus of the biennial exercise is on the ability of the state of Missouri, the utility and the participating counties, to protect the health and safety of the public living in the vicinity of the Callaway Nuclear Power Plant," according to the FEMA release. "The evaluated exercise provides reasonable assurance that the appropriate protective measures can be taken on-site and off-site in the event of a radiological emergency."

Officials at Ameren Missouri have said repeatedly that the facility is completely safe. Callaway participates in such full-scale emergency exercises every two years and also holds smaller safety drills. A report on the most recent such drill in November indicates that the facility got good marks.

In the weeks since the Japanese nuclear crisis began, Ameren officials have gone to great lengths to explain why they believe the plant is safe and would not be vulnerable to a major earthquake along the New Madrid fault in southeastern Missouri.

In a statement posted recently on the company's website, Ameren chairman and chief executive Thomas R. Voss wrote that "risks for nuclear energy in the United States today are actually lower than for many other energy sources."

Voss wrote that "we train, test and scrutinize operations incessantly" at Callaway, which he said "was built to withstand a worst-case seismic event for our area. The plant has redundant systems to ensure a safe shutdown in the event of an emergency."

While some questions have been raised about the safety features of the Japanese nuclear complex, Voss wrote that Callaway "has multiple barriers against radiation, including the strongest-available metal cladding on its fuel assemblies, which are housed in a steel pressure vessel that is eight inches thick and is inside a building with four-foot-thick, steel-reinforced concrete walls."

### **Ameren Nuclear Plant To Do Safety Drill (STLBIZ)**

St. Louis Business Journal, April 13, 2011

The Federal Emergency Management Agency said federal, state and local officials will conduct a safety exercise May 11 at Ameren's nuclear plant in Callaway County, the St. Louis Beacon reports. On the same day, Ameren officials will perform a full-scale safety exercise at the power plant itself. Their performance will be observed and evaluated by regional experts from the Nuclear Regulatory Commission, federal officials say.

### **Editorial: Stop Dismissing Tritium Threat (ASBPP)**

Asbury Park Press, April 13, 2011

When it comes to the release of carcinogenic tritium, the Nuclear Regulatory Commission clearly has failed in its role to ensure the safety of a public at the mercy of nuclear power plants, an Asbury Park Press investigation published Sunday found.

Millions of gallons of tritium-tainted radioactive water have leaked from nuclear power plants throughout the US since the 1970s, threatening water supplies in New Jersey and other states, the investigation found. And not one plant has been so much as fined for it. Why? Because current regulations don't provide for penalties.

That should be of particular concern to officials in New Jersey. The Oyster Creek nuclear power plant in Lacey and the Salem nuclear complex in Salem County have been among the biggest offenders. It is believed at least 180,000 gallons of contaminated water were released from Oyster Creek in April 2009 through two small holes in separate pipes. The contamination was much higher than allowable DEP standards.

It is time for Shore-area Reps. Chris Smith and Jon Runyan, both R-Ocean, and US Sens. Frank Lautenberg and Bob Menendez, D-N.J., to work together to push for regulations that will set new, tough standards for tritium contamination and establish penalties harsh enough to deter violations. It's an outrage that nuclear plants are legally allowed to discharge tritium into waterways and the air.

Major leaks at plants across the nation have increased in recent years as nuclear plants have aged. There was an average of one per year in the 1990s. There were five leaks or spills reported in 2010, five in 2009 and three in 2008, according to the NRC.

New Jersey holds the dubious distinction of being No. 1 in terms of the intensity of radioactive water leaks and spills. The Salem and Oyster Creek plants have leaked tritium with radiation that is more than 500 times the legal limit for drinking water.

The US Environmental Protection Agency's limit is 20,000 picocuries of tritium per liter of water. That is way too high, given recent scientific studies that have concluded tritium's cancer risk could be two to three times higher than what the EPA claims.

New Jersey lawmakers should push for the California standard — 400 picocuries per liter, 50 times more strict than the EPA standard — to become the regulatory law of the land.

By and large, according to NRC spokesman Neil A. Sheehan, "A leak in and of itself is generally not considered a violation," adding that the NRC's mission is to ensure the public faces "no undue risk." Tritium leaks do not pose that risk level, he said. Any time you hear the use of weasel words like "undue risk" coming out of the mouth of a government bureaucrat, a red flag should go up.

Last month, NRC Chairman Gregory B. Jaczko told US senators that tritium leaks are "not an acceptable situation for any power reactor in the United States." Saying it and doing something about it are two different things. Elected officials from New Jersey need to do everything they can to transform Jaczko's words into action.

The NRC does not require plants to clean up their sites until decommissioning, which for some reactors may not be for nearly 40 years after they stop operating. Once contaminated, tritium cannot be removed from water. We're stuck with it.

Nearly all nuclear plants have leaked tritium. There are 65 nuclear power sites in the US, with a total of 104 reactors, and most have had some type of leak or spill of radioactive material.

The NRC should stop pretending that tritium is not a threat. And because New Jerseyans bear such a disproportionate share of this scourge, our congressional delegation and state officials must bring the truth of the matter to the fore and translate it into regulations that will protect the state's citizens.

## **Berkeley Officials Call For Immediate Closure Of Oyster Creek (LACEYPATCH)**

### **Hard stance on controversial plant nothing new for Berkeley**

By Patricia A. Miller

Lacey Patch, April 13, 2011

Berkeley Mayor Jason J. Varano and Township Council members had a simple message last night for the owners of the Oyster Creek Nuclear Generating Station and the federal Nuclear Regulatory Commission.

Close it. Now.

Council members plan to pass a resolution at the next regular meeting calling for the closure of the plant on Route 9 South in Lacey Township. It's not the first time the council has come out against the troubled plant.

"We've always taken a strong position," Council Vice President Carmen J. Amato Jr. said after the meeting. "We want it closed immediately. Now we are also concerned about natural disasters."

Varano said that Japanese nuclear experts were now comparing the situation at the Fukushima Daiichi nuclear complex to the Soviet Chernobyl disaster in the 1980s.

"It's at the Chernobyl category level in Japan, and that's pretty scary," the mayor said.

The Township Council last year passed a resolution calling on the state to mandate that Exelon install cooling towers at the plant, instead of the current system of drawing water from Barnegat Bay.

Varano has said Berkeley Township officials have been "at the forefront" of Ocean County municipalities calling for the plant's closure, dating all the way back to the years when the late Bill Zimmermann Jr. was mayor.

Township officials also opposed the federal Nuclear Regulatory Commission's decision in April 2009 to allow the then-40-year-old plant to operate for another 20 years, he said.

Council members last night also followed up by unanimously passing a resolution in support of two bills sponsored by 9th District legislators Senator Christopher J. Connors, Assemblyman Brian Rumpf and Assemblywoman Diane Gove to establish the New Jersey Coordinating Council on the Decommissioning of Nuclear Power Generating Facilities.

The legislation — S-866 in the state Senate and A-296 in the state Assembly — calls for a mechanism to monitor and coordinate the decommissioning of plants to ensure they comply with federal and state regulations.

"Whereas the bills find that decommissioning of a nuclear power generating facility involves significant issues of public health, safety and welfare of the residents of the State of New Jersey..." the resolution reads.

Edith Gbur, a Berkeley resident and president of the Jersey Shore Nuclear Watch, thanked Varano and council members for agreeing to pass a resolution at the next meeting to close the plant.

"I would like to thank the mayor and council for reaching this decision and calling attention to the fact that Oyster Creek should be shut down now," Gbur said.

Resident William Gumper said during the public portion of the meeting that there were "two sides to this issue.

"I tend to stand in the middle," Gumper said. "We do need electricity, unless we are going to light our homes with candles."

## **County Against Diablo Nuke Plant Relicensing (AP)**

Associated Press, April 14, 2011

SAN LUIS OBISPO, Calif.—Leaders in San Luis Obispo County want a halt to the relicensing process for the Diablo Canyon nuclear power plant along the central California coast.

The Board of Supervisors voted unanimously Tuesday to send a letter to Pacific Gas & Electric asking the operator of the south county plant to withdraw its relicensing application.

PG&E has asked the Nuclear Regulatory Commission to extend the power plant's operating licenses an additional 20 years. Diablo's licenses for the twin reactors expire in 2024 and 2025.

Diablo Canyon sits on a bluff 85 feet above the Pacific Ocean near Avila Beach, within 3 miles of two earthquake faults. The company has been under pressure from area lawmakers to conduct extensive, three-dimensional testing in the area before seeking new licenses, a concern heightened by the Japanese nuclear crisis.

Diablo Canyon, where reactors began operating in the mid-1980s, has a long history of seismic issues.

The discovery of the offshore Hosgri Fault in 1971, after the plant was mostly completed, forced a costly redesign. Then in 2008 a geologic fault was discovered about a half-mile from the seaside reactor, raising new concerns about safety.

Preliminary research at the site found its reactors could withstand a potential earthquake generated by the recently identified Shoreline Fault, but California regulators say more detailed study is needed.

The fear is the two faults could begin shaking in tandem, creating a larger quake than either fault would be capable of producing on its own. PG&E says the plant is built to withstand a magnitude-7.5 earthquake, the maximum considered possible for the site.

Earlier this week, the company asked the NRC to delay issuing new licenses, even if approved by the agency, until after testing is completed. The company said it plans to complete its fault research no later than 2015.

The Santa Maria Times says county supervisors want PG&E to withdraw the applications and focus on the seismic studies for the next few years.

## **San Luis Obispo Officials Battle PG&E Over Diablo Canyon Relicensing (KTVU)**

KTVU-TV San Francisco, April 13, 2011

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### **Diablo Canyon Informational Meeting Today (KEYT)**

KEYT-TV Santa Barbara, CA, April 13, 2011

Officials at PG&E are hosting an open house this afternoon to better inform residents about the Diablo Canyon Nuclear Power Plant.

The event will address the plant's operations, security, and how the US nuclear industry is responding to events in Japan.

Today's 3 hour event starts at 4:00 p-m at the South County Regional Center. The address is 800 West Branch Street in Arroyo Grande.

### **Blog: Nuclear Power Debate: How Much Of Our Fear Is Rooted In Propaganda? (LAT)**

Los Angeles Times, April 14, 2011

If you caught the April 1 episode of "This American Life," a fear of nuclear power may have been cemented. In one segment, actors read harrowing passages from "Voices from Chernobyl," a collection of interviews that documents how people were affected by the nuclear meltdown at Chernobyl in 1986. The stories of disintegrating, disposable lives were brutal; it hurt to listen.

But that's radiation poisoning at its most extreme, at a time when we didn't yet know how to react to such a disaster. Still, here we are again:

[Japan's] Nuclear and Industrial Safety Agency announced that because of the amount of radioactive material released from the [Fukushima] plant after the magnitude 9 earthquake a month ago, the rating would be changed to level 7, a "major accident" on the International Atomic Energy Agency's scale, up from a level 5, an "accident with wider consequences."

Amid fears, a nuclear power debate rages on.

How much of our fear is rooted in propaganda?

What a strange turn of events. Instead of uniting the environmental movement in renewed opposition to nuclear power, the Fukushima disaster in Japan has divided it still further. An increasing number of green advocates, including some very prominent voices, have declared their support for nuclear power as a clean energy option, even as radioactive water accumulates and the timeline for cleaning up the contaminated areas extends by decades. Can they be serious? [...]

The science on radiation tells us that the effects of Fukushima are serious but so far much less so than some of the more hyperbolic media coverage might suggest. The power plant operator, Tokyo Electric Power Co., has been releasing enormous quantities of radioactive water into the sea, for example. It sounds scary, but a member of the public would have to eat seaweed and seafood harvested just one mile from the discharge pipe for a year to receive an effective dose of 0.6 millisieverts. To put this in context, every American receives on average 3 millisieverts each year from natural background radiation, and a hundred times more than this in some naturally radioactive areas. As for the Tokyo tap water that was declared unsafe for babies, the highest measured levels of radioactivity were 210 becquerels per liter, less than a quarter of the European legal limit of 1,000 becquerels per liter. Those leaving Tokyo because of this threat will have received more radiation on the airplane flight out than if they had been more rational and stayed put. [...]

What is needed is perspective. Nuclear energy is not entirely safe, as Fukushima clearly shows, even if the current radiation-related death toll is zero and will likely remain so. But coal and other fossil fuels are far, far worse.

–Mark Lynas, Why nuclear power is still a good choice

The US is at risk

Once again, the debate has begun about the role of this uniquely dangerous technology in our global fight against climate change — whether this latest failure in "fail-safe" nuclear reactor safety systems disqualifies nuclear energy from a growing role in cleaning up fossil-fuel pollution as we transition to a clean energy future, a future based on energy efficiency, renewable energy and green jobs. Neither the nuclear industry nor the commission has done enough over the years to inspire public confidence. Nuclear energy isn't cheap or clean or accident-free, and, for the relentless claims to the contrary, the credibility of nuclear utilities and the NRC has taken a beating.

–Joel R. Reynolds, US nuclear industry: Not safe enough

New safety policies should be the highest priority

A variety of events could conceivably cause a loss of pool water, including leakage, evaporation, siphoning, pumping, aircraft impact, an earthquake, the accidental or deliberate drop of a fuel transport cask, reactor failure or an explosion inside or outside the pool building. Industry officials maintain that personnel would have sufficient time to provide an alternative cooling system before the spent fuel caught fire. But if the water level dropped to even a few feet above the spent fuel, the radiation doses in the pool building could be lethal.

A 1997 report that Brookhaven National Laboratory did for the NRC found that a severe pool fire could render about 188 square miles uninhabitable, cause as many as 28,000 cancer fatalities and cost \$59 billion in damage. [...]

Safely securing spent fuel should be a public safety priority of the highest degree in the United States. The cost of fixing America's nuclear vulnerabilities may be high, but the price of doing too little is incalculable.

–Robert Alvarez, Unsafe at any reactor

In the cost-benefit analysis, nuclear doesn't add up

This page takes the threat of climate change very seriously, and would be delighted if a safe, cost-effective way of producing carbon-emissions-free nuclear power were developed. Sadly, we're not there yet. Nuclear power plants are so expensive, and their risks so extreme, that private investors are reluctant to fund them even with huge government subsidies and loan guarantees. Plans to build a national repository for nuclear waste in Nevada have been shelved, meaning radioactive waste is being stockpiled at individual plants in a way that is unsustainable. And then there's the threat of a Japan-type disaster.

–Nuclear fails the test, Editorial

## **Delaware Plans For Nuclear Incident (WILNJ)**

**Schiliro tells Senate preparations are solid**

By Nicole Gaudiano, News Journal Washington Bureau

Wilmington News Journal, April 14, 2011

WASHINGTON – As the nuclear crisis continues in Japan, Delaware's top homeland security official said Tuesday he has no "specific concerns" regarding the Salem-Hope Creek nuclear complex in New Jersey, or other nearby nuclear energy facilities.

Delaware officials are prepared to handle any radiological incident in the state, Lewis Schiliro, secretary of the state's Department of Safety and Homeland Security, stated in written testimony submitted at a Senate hearing.

Schiliro read some of his testimony at the hearing before the Senate Environment and Public Works Committee and a subcommittee chaired by Sen. Tom Carper, D-Del., a proponent of nuclear power.

Prompted by the escalating disaster in Japan, Carper and EPW Chairwoman Barbara Boxer asked the Nuclear Regulatory Commission to review the nation's 104 nuclear power plants, which generate one-fifth of the nation's electricity. Carper said Tuesday's hearing is one of many aimed at making sure the nation is prepared for the worst.

"The events that struck Japan are reminders that we are all vulnerable to unexpected disasters, whether an act of nature or a terrorist attack," said Carper, chairman of the Environment and Public works Subcommittee on Clean Air and Nuclear Safety. "While we cannot predict when or where the next major disaster will occur, we know that it will occur and we also know adequate preparation and response planning are vital to minimize injury and death when it does happen."

Gregory Jaczko, chairman of the Nuclear Regulatory Commission, and Lisa Jackson, administrator of the Environmental Protection Agency, also testified Tuesday. Jackson said her agency continues to conduct radiation monitoring in the US in case leaks from the stricken reactors in Japan find their way here.

"EPA has not seen and does not expect to see radiation reaching harmful levels in the United States," she said.

Delaware is within 50 miles of four nuclear generating stations: Limerick Nuclear Generating Station and Peach Bottom Atomic Power Station in Pennsylvania, Calvert Cliffs Nuclear Generating Station in Maryland, and the Salem-Hope Creek plant.

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Salem-Hope Creek, operated by PSEG Nuclear, is the closest, located 2.5 miles from the Delaware shoreline. The nuclear crisis in Japan, now considered on par with the 1986 Chernobyl disaster, has increased concerns among residents living nearby.

Last week, more than 700 people turned out for the latest public distribution of potassium iodide pills, which help block the accumulation of radioactive iodine in the thyroid glands of people exposed to radiation.

Delaware officials scheduled the distribution because of elevated public concern and the number of state residents – about 41,000 – who live within 10 miles of the Salem-Hope Creek plant. That's nearly double the number from 10 years ago.

Schiliro said the Federal Emergency Management Agency has given Delaware high marks on its exercises testing the state's emergency response capabilities within a 10-mile radius and readiness to address needs within a 50-mile radius of the Salem-Hope Creek plant and the other nearby nuclear sites. The Delaware Emergency Management Agency also conducts quarterly radiological drills with PSEG and New Jersey officials, focusing on emergency plans and responder resources.

Schiliro told Carper, the only senator present by the time he testified, that Delaware could comply if the NRC begins requiring evacuation plans beyond a 10-mile radius.

"There's no doubt in my mind if we needed to expand that we could," Schiliro said.

Jaczko testified earlier that his commission will examine whether evacuation plans around nuclear plants should cover a 50-mile radius.

Evacuating people from within a 10-mile radius would take about three to six hours, Schiliro said.

Expanding the Salem-Hope Creek zone to 15 miles would dramatically increase the consequences of an evacuation, pushing the affected population to 171,798 in Delaware and 35,300 in New Jersey, and extending about a mile into neighboring portions of Maryland.

Notification of a radiological incident would come from PSEG Nuclear, but the Delaware Emergency Management Agency has seven monitoring sites within the emergency planning zone's 10-mile radius providing readings all day, according to Schiliro's written testimony.

Schiliro told senators his department has "an excellent relationship" with PSEG officials. The company provides \$1.4 million each year for the state's radiological emergency preparation program and activities, the only funding for its radiological program.

DEMA staff members "work as a team" with PSEG staff and New Jersey officials, he said.

Federal officials are scheduled to review the PSEG operation's safety and environmental record and risks next month, when the NRC gives final consideration to 20-year life extensions for all three of the reactors along the Delaware. Studies to date have concluded that there was no reason to block the additional years of operation.

PSEG also has asked the NRC to authorize a site for one or two more reactors near Salem-Hope Creek, although the company has not yet chosen a reactor model or asked for construction approval.

## **Michigan Nuclear Plants — Are They Safe? (TRICITTI)**

Tri-County Times, April 14, 2011

As news broadcasts continue to cover the nuclear plant crisis and cleanup in Japan following the March 11 earthquake and subsequent tsunami, nuclear power plants across the United States are back in the spotlight.

According to the US Nuclear Regulatory Commission (NRC), the combined effects of the earthquake and tsunami in Japan exceeded the Fukushima Daiichii nuclear plant's design limits.

Natural environmental disasters, as well as the Sept. 11, 2001 terrorist attacks have put ongoing emphasis on security. The main environmental concerns for nuclear power are radioactive wastes such as uranium mill tailings, spent (used) reactor fuel, and other radioactive wastes. These materials can remain radioactive and dangerous to human health for thousands of years, according to the US Department of Energy (DOE).

Nuclear power is made when atoms within uranium pellets are split, releasing heat. That heat is used to boil water, build steam and crank turbines, which generate electricity for millions of homes and businesses.

There are currently 104 commercial nuclear reactors at 65 nuclear power plants in 31 states, according to the DOE. Since 1990, the share of the nation's total electricity supply provided by nuclear power generation has averaged about 20 percent, with the level of nuclear generation growing at roughly the same rate as overall electricity use.

There are three operating nuclear plants in Michigan and people should be aware of where they are located, what the plants provide and what they should do in the event of an emergency. FERMI 2

The closest nuclear power plant to the tri-county area, in operation, is FERMI 2. This plant is located in Newport, about 70 miles southeast of Fenton, (35 miles south of Detroit) along Lake Erie. It is visible from I-75. The nuclear plant was named after Enrico Fermi, the first physicist to split the atom.

FERMI 2 began operating in 1985 and Detroit Edison Company is the operator of this plant. At this site is another non-operational reactor, FERMI 1. It was closed in 1972 due to reactor problems.

FERMI 2 operates on uranium oxide-enriched U-235 fuel. It has received four notices of violations from the NRC since 1996.

#### Cook Nuclear Plant

The second plant in operation is Cook Nuclear Plant, named after Donald C. Cook, a former board chair of the American Electric Power (AEP). The plant is located on 650 acres along Lake Michigan in the southwestern corner of the state in Berrien County. It's owned and operated by AEP.

The Atomic Energy Commission granted the construction permit in 1969, and it was one of the largest construction projects, \$1.3 billion, in Michigan. Unit 1 began operating in 1975 and Unit 2 began operating in 1978. Both units are pressurized water reactors and produce enough electricity for more than 1.5 million average homes.

#### Palisades

The third operational nuclear plant is Palisades, located in South Haven, along Lake Michigan and about 50 miles north of the Cook Nuclear Plant. It is operated by Consumers Power Company. The pressurized water reactor began operations in 1972.

#### Closed nuclear plants

Big Rock Point, in Charlevoix closed in 1997, due to water storage limitations.

FERMI 1, in Newport closed in 1972 due to reactor problems.

Prema Chandrathil, public affairs officer for the NRC, said all three plants in Michigan are operating safely and in accordance with their operating license. This would be equivalent to a letter grade of A.

Chandrathil said the NRC focuses on ensuring the safety at all nuclear power plants. All plants are designed to take the most severe historical natural phenomena of an area and are required to be regulated by the NRC.

In an emergency, the nuclear power plants must have a plan in place to maintain cooling to the reactor core, the containment building and the spent fuel pools.

NRC regulations are updated as new studies, events and issues become known, said Chandrathil. "Regulations are not written in stone," she said. "We learned a lot from Three Mile Island and 9-11."

The NRC employs two resident inspectors at every nuclear power plant in the United States. Chandrathil said these on-site experts walk the plant daily and know the plant's design like the back of their hand.

According to the NRC, residents living within a 10-mile radius of a nuclear power plant involved in a radiological emergency may receive one or more alerts to warn them of an emergency. Nuclear plants are required to work with state and local authorities on their emergency plan.

If an alert is issued, residents are urged to tune their radio or television to the Emergency Alert System (EAS) station for their area and follow directions.

When asked if safeguards are in place if a terrorist intentionally steers an airplane into a reactor, Chandrathil said, the reactors are extremely robust structures. "Since Sept. 11, the NRC required plants to take additional steps to minimize the damage and risk to the public from a large fire or explosion.

"The requirements include minimizing fuel damage, actions to minimize a release to the public and using existing or readily available equipment and personnel."

She added that studies show there is a low likelihood that an airplane attack on a plant would affect public health and safety, but the NRC works closely with other federal agencies like the Military and Department of Homeland Security to identify and protect critical infrastructure.

#### US Nuclear emergencies

There has been only one nuclear emergency that resulted in an evacuation since the first nuclear power reactor started producing power in 1957. The accident at the Three Mile Island Unit 2 (TMI-2) nuclear power plant near Middletown, Pennsylvania, on March 28, 1979, was the most serious in US commercial nuclear power plant operating history. The evacuation was recommended for pregnant women and preschool-age children within a 5-mile radius of the plant.

If a nuclear emergency occurs...

- Stay indoors until you are told it is safe to go out.
- Close all windows and doors.
- Turn off all air-intake systems like fans, air conditioning, or combustion heating and fireplace dampers.
- Shelter pets and animals, if possible.
- Tune to the TV and radio stations for emergency instructions.

- Don't go outside to see what's happening. If you must go outdoors briefly to warn someone during a nuclear emergency, cover your nose and mouth with a piece of cloth, such as a towel or scarf.

- Don't use the telephone unless there is a serious need.
- Don't try to pick up children at school. School staffs will keep children in school until it is safe to go out again.
- Don't worry if you are in a hospital or other special-care facility. You will be protected.
- Don't panic! It's your worst enemy in an emergency.

How contamination can occur...

Dust-sized radioactive particles released into the air during a nuclear accident could fall on fruits, vegetables, or grains, which could enter the food supply. For example, dairy cows and goats could eat grasses covered with radioactive iodine 131. Traces of the iodine could be passed through to the milk and then to consumers. Iodine 131 has the potential to concentrate in the human thyroid gland where it could cause thyroid cancer.

Weather and time play a part

All radioactive materials lose their radioactivity over time. For example, inert gases released from commercial nuclear-power plants lose their radioactivity in a matter of minutes. Wind or heavy rain tends to remove radioactive material rapidly from plant surfaces. In some cases, however, hard rain falling on contaminated soil could splash the soil onto plant surfaces, thus increasing the amount of radioactive material on low-standing plants.

### **Nuclear Plant Siren Test Today (RHH)**

Rock Hill (SC) Herald, April 14, 2011

Sirens will sound shortly before noon today at the Catawba Nuclear Station, but it will only be a test, Duke Energy officials say.

The company has its regularly scheduled tests planned for about 11:50 a.m. at the Catawba station on Lake Wylie. The sirens will sound for about three minutes, giving Duke officials a chance to make sure the emergency notification system is working.

The tests are conducted once a quarter.

If the sirens were to sound for real, it is a signal for residents to tune to radio or TV stations for emergency information.

### **One US Nuclear Reactor Uses As Much Water As All Of D.C. (ATLANTIC)**

By Caitlin Dickson

The Atlantic, April 14, 2011

It takes the same amount of water required by a city of 5 million to fuel a typical US nuclear power plant for one hour: 30 million gallons, Fast Company reports. Charles Fishman, author of the book *The Big Thirst*, notes that "the US has 104 nuclear power plants—more than any other country, a quarter of all plants worldwide." As the world's largest energy consumer, "49% of the water used in the US goes to generate electricity," Fishman notes. That's "the single largest use of water" in the country.

### **Drill Held At Three Mile Island (Central PA)**

By Jeff Preval

We Are Central Pennsylvania, April 14, 2011

HARRISBURG - Three Mile Island conducted a scheduled drill.

The results of the drill will be evaluated by FEMA.

FEMA will then pass on the evaluation to the Nuclear Regulatory Commission and a final report will be made public in about four months.

Every two years, each nuclear power plant across the country must conduct a federally mandated drill to comply with regulations put in place following the 1979 meltdown at Three Mile Island.

### **Franklin County Participates In Three Mile Island Evacuation Drill (CPO)**

By Jim Hook

Chambersburg (PA) Public Opinion, April 14, 2011

FRANKLIN COUNTY – Schools and churches in Franklin County would be a temporary home for thousands of people, should radioactivity be released from Three Mile Island nuclear power plant.

The county Emergency Management Agency took part in a drill Wednesday to test the county's role as an evacuation center.

The drill was unrelated to recent events at the Fukushima Daiichi nuclear plant in Japan, according to county EMA Director David Donohue.

"It makes the drill more of a media event," Donohue said. "It's strictly coincidental. We've been working on it for the past year and a half."

Franklin is among eight counties participating this week in the Biennial Emergency Preparedness Exercise. At 7 p.m. Wednesday, a decontamination site and evacuee shelter was to be set up at J. Frank Faust Junior High School, Chambersburg.

"We'll put out a few tables and cots," said Allen White, emergency services director for the American Red Cross in Franklin County. "We will have our registration and medical stations."

The exercise supposes a release of radioactive material from the power plant. Officials must plan for the movement of the simulated plume based on wind and temperature. The Federal Emergency Management Agency will evaluate the government's ability to protect public health and safety.

Unlike in other disasters, only people who have been cleared or have been decontaminated of radioactivity are allowed in the shelter, White said.

A decontamination

station will be set up outside the school for the drill, according to Donohue. A team suited in protective gear must locate "hot spots," which in this training are actually radiating buttons, during the exercise.

"We did it two years ago," White said. "It went pretty well. There's always room for improvement."

A table-top exercise on Tuesday tested how the county's incident command and its management of information related to a crisis, Donohue said.

The disaster plan for Three Mile Island includes evacuation within a 10-mile radius of the plant. Franklin County is well outside the evacuation zone but within a 50-mile radius where foodstuffs would be monitored.

Franklin County had prepared to handle as many as 50,000 evacuees in the nuclear accident of 1979. An evacuation order was never given, and only 10 residents of a Middletown nursing home were housed in the county at the South Mountain Restoration Center.

A recent review found that the original evacuation plan did not account for 2,000 students from the Steelton-Highspire School District and possibly 500 of their parents, according to Donohue. The additional number is not part of the simulation today.

Faust replaces the Scotland School for Veterans' Children, which is closed. The exercise considers the routing of traffic as well as coping with pets and evacuees with special needs, Donohue said.

"It's great training for our newer volunteers," said White, who expected more than 15 volunteers at Faust.

In a real crisis, other shelters could be opened at the Eugene C. Clarke Jr. Community Center and local schools and churches, according to White.

Three Mile Island Unit 2, owned by First Energy of Akron, was damaged in the 1979 incident and never reopened. Unit 1 was restarted in 1985. Owned and operated by Exelon Corp., Unit 1 produces enough electricity to power more than 800,000 homes.

FEMA will present preliminary findings of the exercise in a public meeting at 11 a.m. Friday at the Hilton Garden Inn on TecPort Drive in Harrisburg. The evaluation will help the Nuclear Regulatory Commission make licensing decisions.

The final report will be available to the public about 120 days after the exercise.

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## **Braidwood: Tritium Release During Refueling Of Nuclear Reactor (Kankakee)**

Kankakee (IL) Daily Journal, April 14, 2011

Steam containing trace amounts of radioactive tritium will be released Thursday as the Braidwood Generating Station nuclear plant begins preparations to refuel its Unit 2 reactor.

"Several high pressure steam systems will begin to be tested and depressurized," said Exelon spokesman Neil Miller. "Residents may see steam or hear a loud noise from time to time as this takes place."

The amount of tritium "has no health or safety implications to employees or the public and is part of normal, permitted operations," Miller said.... For the unabridged version of this story, subscribe to The Daily Journal's print edition or E-edition.

## **Only Two Hospitals In Arkansas Can Handle Radition Treatment (KTHV)**

By Jessica Duff

KTHV-TV Little Rock, AR, April 14, 2011

LITTLE ROCK, Ark. (KTHV) – There are only two hospitals in Arkansas equipped to handle radiation emergencies in the event something goes wrong at Nuclear One – St. Mary's Regional Medical Center in Russellville and UAMS in Little Rock.

Ron Crane manages Emergency Preparedness at UAMS.

"We do decontamination every year. We do it yearly. But every two years we are federally evaluated and graded on our performance," Crane says.

Entergy partners with UAMS in these radiation drills. They're there every step of the way to monitor the radiation levels throughout the process.

"It really helps to have a second or third set of eyes as well as ears here to assist us because Entergy and ANO deal with this all time," adds Crane.

Entergy owns ANO, Arkansas Nuclear One, the state's only nuclear power plant.

"We want to be prepared just in case there's ever sort of an incident over at Arkansas Nuclear One. Hopefully not. Likely not. But that's why we're here, we want to be prepared," says Dr. Jon Palmer.

Dr. Palmer supervised the radiation drill, from the patient's arrival to recovery.

"First off to make sure the patient is safe. To make sure he was medically stable. And then to kind of decontaminate and supervise those procedures," Dr. Palmer adds.

Meantime, Crane says these drills help the staff and the public feel safe and prepared.

"The people of the state of Arkansas should feel very comfortable knowing that there are medical institutions and medical professionals that work very well with our partners to ensure that should any event ever happen of this type or of a greater magnitude that we're ready, willing and capable to handle it," adds Crane.

The crew working on the test subject did not have protective eye-wear or masks on during the drill. But in an actual emergency setting, those precautions would be taken.

## **Limerick Nuclear Re-fueling Worker Hurt In Fall (POTTMER)**

By Evan Brandt

Pottstown (PA) Mercury, April 13, 2011

LIMERICK — A contracted worker in Exelon Nuclear's Limerick Generating station was knocked unconscious early Monday morning during the plant's re-fueling outage, but was determined not to have been contaminated by radioactivity.

According to Neil Sheehan, a spokesman for the Nuclear Regulatory Commission, the worker, whose name was not released, was working in the "secondary containment area" of Limerick's Unit 2, which is shut down for re-fueling.

It was about 2:30 a.m. when the worker was injured.

He was "climbing a ladder when he hit his head on a scaffold pole," according to the notification Limerick sent to the NRC.

Sheehan wrote in an e-mail that the worker injured "the back of his head, rendering him unconscious for about one minute."

The worker was in full protective clothing in the area near the unit's "residual heat removal heat exchanger," which is being replaced, Sheehan wrote.

An ambulance responded to the plant and the worker was taken to Reading Hospital Trauma Center "as potentially contaminated at about 3:30 a.m."

Sheehan wrote, "radiation protection technicians from the plant accompanied the individual in the ambulance and were able to confirm he was not contaminated."

The worker was subsequently released from the hospital, according to Sheehan.

The Limerick Generating Station has two nuclear reactors and Unit 2 is currently off-line for re-fueling. Continued...

When re-fueling occurs, Exelon also performs regular maintenance and repair work that is more difficult to do when the reactor is running.

The entire process is so work intensive that contracted workers are brought in from outside the area to augment the plant's regular work force.

## **Fukushima, Japan, At Diablo Canyon (VCR)**

**Another disaster waiting to happen**

By Grant Marcus

Ventura County (CA) Reporter, April 14, 2011

"It was a disaster waiting to happen." This is what many Japanese environmentalists insisted, long before the Fukushima tragedy.

Environmentalists such as Aileen Mioki Smith of Green Action were trying their best to warn the public. But then the quake and tsunami struck. And it was too late.

The Fukushima nuclear energy site, with nine reactors and six spent-fuel holding ponds, had a history of several near misses. And the plant was built among several fault systems, all having the seismic potential that plant designers thought they had prepared for, but hadn't.

Mother Nature proved it. No one had predicted the 9.0 magnitude earthquake, 10 times greater than geological estimates. The tsunami exceeded estimates as well.

Could East meet West? Could we in California be looking in the mirror at a Japanese disaster serving as a premonition for what awaits us?

Diablo (Devil's) Canyon is also built near three fault systems. And like Fukushima, there is a calm before the storm.

But what will happen if a major earthquake hits? Will Mother Nature prevail? Is Diablo, too, a disaster waiting to happen?

And if this is a possibility, can California afford to wait and see, or do nothing, considering that hundreds of miles could be affected, thousands of lives lost, and crops and water supplies contaminated for generations?

Since there is no safe level of radiation, and doses are cumulative, every dose has the potential to cause health effects, such as cancer. That is why nuclear power must work perfectly. In other words, it must work against the odds of man's inherent mistakes in the midst of nature's unbridled power.

At least one partial meltdown in Japan: An update

For nearly 40 years, the public was told there were only minor problems at the Fukushima plant. It was going better than expected, considering that nuclear engineers had resigned from GE because of the Mark I reactor design flaws, the same design used by the Tokyo Electric Power Company (TOPEC) in six of the nine reactors on site.

Ken Bridenbaugh, one of the engineers who quit GE, put it this way: "The Fukushima situation is a direct result of Mark I containment (GE). It's a direct result of the earthquake, the tsunami, and the fact the Mark I containment is less forgiving than some other reactors."

At this writing, five of six of those GE reactors are unstable. Two show fissures in the exterior containment, indicating ruptures.

Authorities did finally admit to a partial meltdown at reactor No. 3, putting workers in a race to prevent a complete meltdown.

Radiation levels are at their highest level since the accident, and are 1,850 times the norm in the ocean water up to 1,000 yards off shore.

Two hundred square miles have been affected. The water supply in Tokyo, 180 miles from the plant, has been contaminated and is unfit for children.

Twelve different crops are contaminated, and fresh food is considered unsafe to eat. The fishing industry, too, is contaminated, if not lost.

And since the plant contained MOX fuel, a fuel source from breeder reactors, much higher in plutonium, pockets of plutonium have been found close to Tokyo, indicating there will be health problems for generations to come, and for miles around the plant.

Nuclear power at Diablo

Just 130 miles from Ventura, along the pristine coastline near San Luis Obispo at Avila Beach, lie two reactors above the cliffs of Devil's Canyon, an old Indian burial site. It is now PG&E's Diablo Canyon Nuclear Power Plant.

In a devil's tale, the local Indian tribes were the first to put up a fight against the plant, declaring that the spirits of their ancestors were being violated.

Recognizing health, safety and waste issues, environmentalists joined in. In 1976, the Abalone Alliance was created, following the defeat of Proposition 15, which had appealed to the voters for nuclear safety.

In 1976, the Abalone Alliance orchestrated the first civil disobedience at Diablo. Thousands gathered at Avila Beach, and 46 of its founders were arrested. A year later, thousands more were back at Avila, with thousands more marching in formal demonstrations, tallying 487 arrests.

In 1981, the National Council of Churches, local professors, politicians, ranchers and the organization Green Peace became involved.

Protesters were allowed onto adjacent lands, and as 30,000 marched along the coastal highway, 1,960 people, surrounding the plant by land and sea, were arrested, some within yards of the plant.

Included in the arrests were celebrities Ed Asner, Daniel Ellsberg and Jackson Browne. Forty professors and the entire San Luis Obispo City Council were also arrested.

Days before Diablo went on line, a poll was taken and showed that 80 percent of those living in San Luis Obispo County were opposed to the licensing of Diablo.

#### Fault lines

At the end of the 10-day civil disobedience, an engineer discovered a mirror image reversal in the seismic blueprints. PG&E had built one of its Diablo reactors backwards. The NRC (Nuclear Regulatory Commission) approved the plant anyway.

Yet, in spite of past errors, for 26 years, similar to the history at Fukushima, there have been only minor problems mentioned at Diablo, with the utility claiming there are no safety or health risks. And thus far, things have gone well, and catastrophes averted — Or have near misses been swept under the rug, just as they were in Japan?

In 2007, a new fault system was discovered, the Shoreline Fault, just a mile off shore from the Diablo plant, making a tsunami a greater possibility.

During the licensing process, PG&E bought up Shell's geological survey, perhaps to keep the public from knowing about the Hosgri faultline.

The Hosgri fault system had already produced an earthquake of 7.1 magnitude, more than Diablo Canyon was designed to withstand. It was only after a geologist exposed the danger of the Hosgri, that the utility agreed to reinforce the plant.

Another geological study showed that the Hosgri is connected to the San Andreas fault, and some geologists have estimated the Hosgri is now capable of an 8.7 jolt, about 12 times more powerful than the current strength of the rebuilt reactors. The Hosgri fault is just two and a half miles from the Diablo plant.

In February 2010, legislators asked PG&E for "seismic accounting," as the three nearby faults have shattered bedrock around the Diablo facility.

Photographs taken show irrefutable damage.

Complete seismic studies have yet to be done.

#### Diablo's hazardous spent-fuel pools

At Fukushima, the spent fuel pools lit the snowy sky like firestorms in the night. All six pools held radioactive waste, although, four years earlier, the waste had been transported to the breeder facility to be used for making MOX fuel.

Fortunately, the pools were not full when the earthquake and tsunami hit.

At Diablo, spent-fuel pools may pose more of a threat than earthquake uncertainties. Spent fuel has been stored at the two reactors since 1985. It has been accumulating, at 2,000 tons per year, and the waste continues to mount, never having been removed from the Diablo site. The amount of spent fuel, or nuclear waste, at Diablo is nearly 10 times the amount that was at the Fukushima site, or the equivalent of 60 Hiroshima bombs.

In a recent report to the L.A. Times, Robert Alvarez, past secretary and deputy assistant to the Department of Energy, cites Brookhaven findings done for the NRC. They demonstrate that if spent-fuel pools catch fire, 188 square miles will be rendered uninhabitable, and cancer fatalities will number 28,000, along with \$59 billion in property damage.

Alvarez points out that spent-fuel waste is more vulnerable because it is stored in open air, away from the facility, and is without the same safety backup systems and monitoring available on site. "And instrumentation is lacking to keep the water levels in pools." The nuclear waste must be submerged in water, if it is to continue to be cooled.

By law, nuclear power plants have only limited liability insurance, limited to \$1.2 billion. The state of California could stand to lose most of that \$59 billion (property damage) in a catastrophic accident, if the spent fuel catches fire.

And because the fuel is open to air, it is also the target of terrorists. Planes flying along the coast could cause damage to the spent-fuel storage ponds and cause a major disaster.

#### A history of safety violations

There have been 14 serious safety violations at the Diablo Canyon Nuclear Power Plant since its licensing.

One such violation is considered by the NRC to have been a "near miss."

A New York Times investigation revealed that many of the plant's backup cooling systems, intended to save Diablo Canyon from a nuclear catastrophe in the face of an earthquake, have had safety standards violations.

The NRC also cited PG&E for operating the plant for 19 months while some emergency systems were inoperable.

Secondary backup diesel generators were also cited for "performance deficiency." PG&E was further cited for the failure of its engineering staff to notify plant operators of these problems.

Just as the Fukushima reactors had problems with containment vessels, so Diablo Canyon has had past issues with the failure of its backup cooling systems, beginning years ago.

The cost of nuclear power and the practicality of alternatives

In light of all that can go wrong with nuclear power, would it still be worth the risk if it were cost effective?

Surprisingly, no.

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\*\*\* Criteria for EU nuclear stress tests to be put out for comment next week

Criteria for planned EU stress tests of nuclear power plants will be put out for public comment next week, the chairman of the European Nuclear Safety Regulators' Group, Andrej Stritar, said April 14

The tests are to be conducted on all EU nuclear power plants to determine their safety margins when faced with extreme challenges, in light of the ongoing accident at Japan's Fukushima I nuclear power plant. Test results are expected at year-end.

Stritar said on the sidelines of a conference in Vienna that the Western European Nuclear Safety Regulators Association, which is working out the details of the tests, will post the document on its website ([www.wenra.org](http://www.wenra.org)) "for all stakeholders to endorse it" or make comments.

The final document will be submitted to Ensreg at the regulators group's meeting May 12. Stritar said the next step after that is planned to be a "wider discussion" at the political level of the methodology for the stress tests before the tests are launched by the EU Council in June.

EU Energy Commissioner Guenther Oettinger had earlier said he wanted to convene a meeting involving regulators from EU countries, neighboring countries and even the US and other important nuclear countries before the May 12 Ensreg meeting to get broad input into the drafting of the stress test criteria. But Stritar said the plan now is to get any additional input after Ensreg approves the document.

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\*\*\* Nuclear safety treaty parties to review Fukushima lessons in 2012

Not enough is known about the accident at Japan's Fukushima I nuclear power plant to draw all the lessons learned and apply them worldwide, delegates to the Convention on Nuclear Safety review meeting in Vienna said in a summary report approved at the close of the 14-day meeting April 14.

They agreed to hold a special meeting in August 2012 about the Fukushima I accident. At the meeting, contracting parties will report on and debate measures taken in response to the Fukushima I events and decide whether the convention itself, which will then be 16 years old, needs revision. CNS members include all countries with operating nuclear power plants.

Bill Borchardt, executive director for operations of the US NRC and vice chairman of the CNS review meeting, said at the closing press conference that it would take up to 10 years to learn all the lessons from the Japanese accident.

CNS parties said in their summary report that "many contracting parties reported difficulties to provide the media and the public with prompt and reliable information" on the accident as it was developing. They said the media's demands for immediate information on the events had "often led to speculative and unbalanced reporting."

Borchardt said the Japanese delegation to the CNS had provided all the information available on the accident, but "there is still a great deal to be learned on the details, and it will be quite some time until this information is available."

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\*\*\* Tepco to take measures aimed at ensuring power supply

Tokyo Electric Power Co. will relocate standby diesel power generators and a pump control switch panel to higher ground near its Fukushima I nuclear power plant April 15, as "countermeasures" to ensure cooling of units 1, 2 and 3 in case future earthquake-triggered tsunamis interrupt grid-supplied electricity, the utility said April 14.

Tepco also said it plans to begin construction of external power lines April 19 to mitigate the potential for a station blackout.

Tepco is taking the measures to prevent a recurrence of a total power loss at the plant, such as a 50-minute one April 11 after a magnitude 6.6 earthquake, NHK reported. The earthquake disrupted grid-supplied power and briefly halted the pumping of cooling water to the three units' reactors.

Tepco will move the equipment to an area about 30 meters (98.4 feet) above sea level, along with fire trucks and trucks with portable generators, the Japan Atomic Industrial Forum said April 14.

Toshiba President Norio Sasaki said April 14 his company has submitted a plan to Tepco at the request of Japanese Prime Minister Naoto Ka for decommissioning damaged Fukushima I units over a 10-year period, NHK reported. It did not say how many units would be affected. The three-phase plan would first require several months of work to stabilize damaged reactors and spent fuel pools, and prevent the further release of radioactive materials into the air and water.

Over the next five years or so, special cranes would be erected to remove nuclear fuel rods from the reactors and spent fuel pools, NHK said. Another five years would be required to dismantle the reactors and dispose of the highly radioactive wastes at a still-to-be-determined facility.

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\*\*\* House bill would impose new restrictions on nuclear trade pacts

Countries seeking civilian nuclear trade agreements with the US would have to forgo uranium enrichment and reprocessing activities and would be required to shield US suppliers of nuclear power reactors from liability in the event of an accident, under a bill approved April 14 by the House Committee on Foreign Affairs.

The bill (H.R. 1280) also would require countries seeking such agreements to comply with United Nations Security Council Resolution 1540, which requires controls be established for the export of nuclear materials and annual reports be made to a UN committee monitoring compliance.

No date has been set for full House consideration and there is no Senate companion bill.

The bill's ban on fuel enrichment and reprocessing, along with nuclear materials export controls, were contained in an agreement the US signed last year with the United Arab Emirates. US President Barack Obama's administration has said it would seek to include these provisions in future civilian nuclear trade agreements.

The bill would amend section 123 of the 1954 Atomic Energy Act to include the nonproliferation safeguards that are in the UAE accord. It also would require the president to submit such nuclear trade agreements to the House and Senate, which would have to approve them by a simple majority vote. Current law stipulates that 123 agreements take effect automatically 90 legislative days after the president submits the agreement to Congress, unless it adopts a disapproval resolution.

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\*\*\* International nuclear safety bill approved by committee for House vote

The House Committee on Foreign Affairs approved April 14 an international nuclear safety bill for a vote by the full House of Representatives.

The Furthering International Nuclear Safety Act of 2011, H.R. 1326, "directs the State Department to use and strengthen existing mechanisms for the international sharing of nuclear safety information and best practices" and to encourage nations to join the 1994 Convention on Nuclear Safety, according to an April 14 statement by the office of Representative Jeff Fortenberry, a Nebraska Republican. Fortenberry introduced the bill March 17.

The Senate version of the bill, S. 640, is awaiting action by the Senate Foreign Relations Committee. It was introduced last month by Senators Daniel Akaka of Hawaii and Thomas Carper of Delaware, both Democrats.

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\*\*\* Poll finds upturn in Chilean opposition to nuclear power

Opposition to nuclear power rose sharply in Chile following the Fukushima I nuclear power plant accident in Japan, according to a new survey.

About 84% of Chileans surveyed said they oppose the construction of nuclear power units in their country, according to an Ipsos poll released April 13. In the survey, 12% said they supported nuclear power in Chile, while 4% did not have an opinion or did not answer.

Chile does not have any operating nuclear power plants but the government has said it plans to decide in the next several years on whether to embark on a nuclear program.

Opposition increased from a similar survey in October 2009, when 55% of respondents opposed nuclear power, with 37% supporting it, according to Ipsos.

Chilean public opinion company Ipsos conducted the poll, with results based on a telephone survey of 912 people from March 15-April 3. The margin of error is 3 percentage points, Ipsos said.

Chileans ages 18 to 24 were twice as likely as those over 40 to support nuclear energy, the survey said.

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\*\*\* Fukushima I accident 'devastating' to nuclear industry: Worldwatch report

The consequences of the ongoing Fukushima I accident "will be devastating" for the international nuclear industry, according to a draft report released April 13 by Worldwatch Institute, a Washington-based environmental research organization.

But even before the March 11 accident began, the industry has been unable to stop the "slow decline" of nuclear energy, the report said. "Not enough new units are coming online, and the world's reactor fleet is aging quickly," it said. "Moreover, it is now evident that nuclear power development cannot keep up with the pace of its renewable energy competitors."

The Fukushima I accident "is likely to accelerate the decline" of the nuclear industry, it said.

The lead author of the report is Mycle Schneider, a Paris-based consultant who has worked on previous reports over the past few years, including for the Green group of the European Parliament, that also concluded nuclear power was on the decline. The report was released April 13 at an event in Berlin hosted by the Heinrich Boll Foundation, which describes itself as "part of the Green political movement."

The report is at [www.worldwatch.org/system/files/NuclearStatusReport2011\\_prel.pdf](http://www.worldwatch.org/system/files/NuclearStatusReport2011_prel.pdf).

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\*\*\* TVA board postpones decision on completing Bellefonte-1

The Tennessee Valley Authority board of directors April 14 postponed a decision on completing the Bellefonte-1 nuclear unit in Alabama, saying it will study the lessons of the Fukushima I nuclear accident in Japan before deciding whether to go forward.

TVA had previously said it planned to make a decision on the completion of Bellefonte-1 this spring. Last year, TVA approved \$248 million to be spent in fiscal 2011 toward advancing the completion of Bellefonte-1. The 2011 fiscal year ends September 30.

TVA will continue with engineering and ordering of some long-lead time components for the unit, spokeswoman Barbara Martocci said April 14. No decision on whether to proceed with construction will be made until a TVA task force reviewing lessons from the Fukushima I accident completes its review, she said.

TVA Chief Operating Officer Bill McCollum said in a statement April 14 that the federal utility "will incorporate lessons learned from Japan into the operations, designs and features of its nuclear plants,

including those under construction and projects that are under consideration."

Board member Tom Gilliland said during the board's April 14 meeting that TVA could budget money in fiscal 2012 to cancel the Bellefonte-1 completion project if it decides not to go ahead.

TVA staff concluded last year that completing the Bellefonte-1 Babcock & Wilcox reactor, on which work was stopped in 1988, is preferred over construction of a Westinghouse AP1000 reactor at the site.

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\*\*\* Ostendorff to be nominated for second term at NRC, says White House

President Obama intends to nominate William Ostendorff for a second term as an NRC commissioner, the White House said April 14.

Ostendorff was nominated by Obama to replace former NRC Chairman Dale Klein, who resigned in March 2010. His current term expires June 30. Full terms on the commission are for five years.

Some members of the US Congress, notably Senator James Inhofe of Oklahoma, the senior Republican on the subcommittee that oversees the NRC, have called on Obama to re-appoint Ostendorff and Commissioner Kristine Svinicki, whose current term expires June 30, 2012.

Prior to joining the commission, Ostendorff was director of the National Academies' Committee on Science, Engineering and Public Policy and director of the academies' Board on Global Science and Technology. Ostendorff joined the National Academies after working as principal deputy administrator at the National Nuclear Security Administration from April 2007 to April 2009. Ostendorff retired in 2002 from the US Navy, where he had commanded a submarine squadron and, before that, the nuclear-powered attack submarine USS Norfolk.

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\*\*\* Groups petition NRC to suspend new reactor licensing

A coalition of 45 groups and individuals has petitioned the NRC to immediately suspend licensing of new nuclear power reactors and license renewals for operating reactors until the agency conducts a thorough examination of lessons from the ongoing accident at the Fukushima I plant in Japan.

Several of the groups are already involved in challenges to licensing of new plants and/or license renewals for operating plants. Groups signing the petition include Beyond Nuclear, Blue Ridge Environmental Defense League, and Nuclear Information and Resource Service.

The petitioners said during a press teleconference April 14 that the agency's reviews should be supplemented by an investigation by a presidential commission, similar to the Kemeny Commission, named after its chairman, that investigated the 1979 accident at Three Mile Island-2.

Diane Curran, a partner at the Harmon Curran law firm who is the attorney representing the petitioners, said the NRC is legally obligated under the National Environmental Policy Act to complete its review

of the Fukushima accident "before it allows another reactor to operate."

The petition is at [www.nuclearbailout.org](http://www.nuclearbailout.org).

NRC announced March 21 it would conduct a 90-day review of lessons learned from the Fukushima accident, followed by a six-month review that would begin when more solid information becomes available.

NRC Chairman Gregory Jaczko said last month he expects those reviews will be completed about the same time the first construction permit-operating license application reviews are winding up this summer or fall, but "if information tells us we need to make changes to our licensing process, we will do that."

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\*\*\* Nuclear energy fares 'relatively well' under CR, industry lobbyist says

The director of governmental affairs for the Nuclear Energy Institute said April 14 she believes nuclear energy fared "relatively well" under the funding agreement lawmakers reached April 8 for the remainder of fiscal 2011.

Leslie Barbour told reporters she considered the proposed funding for DOE's nuclear energy programs "good news" in light of the unfolding accident at the Fukushima 1 nuclear power plant in Japan. The continuing resolution would essentially result in "flat" funding, rather than deep cuts, for nuclear energy, she said.

The continuing resolution released April 12, which the House approved April 14 and now moves to the Senate for a vote, contains few details. It instead sets the parameters the federal agencies would use to decide how to spend money allocated for fiscal 2011, which ends September 30.

Barbour said she thinks DOE will try to make its national laboratories "whole first" and then decide how to cut expenditures according to CR guidelines.

Funding for a new DOE program for small modular reactors looks good, according to Barbour, who said the CR requires that any new program receive prior approval from House and Senate appropriators. Appropriators have already signaled support for SMRs, she said.

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\*\*\* Point Beach uprate clears NRC environmental review

Uprating Point Beach-1 and -2 by 17% each would have no significant environmental impact, the agency said in a letter released publicly April 14.

In the letter, dated April 13, NRC told plant owner NextEra Energy that the agency has completed the final environmental assessment, which "is being forwarded to the Office of the Federal Register for publication."

NRC said the uprate would increase the output of each unit from 519 MW to 607 MW.

NextEra applied for the uprate for both units in April 2009.

The Advisory Committee on Reactor Safeguards met last month to review the safety evaluation report

prepared by NRC staff on the application. The board recommended to NRC Chairman Greg Jaczko in a March 23 letter that the application be approved.

According to NRC's website, a final decision on the uprate application is expected this spring.

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\*\*\* Westinghouse announces executive appointments

Bruce Bevilacqua has been named vice president, Americas at Westinghouse, the company said in an April 14 statement.

Bevilacqua will be responsible for project delivery, customer relationships and business development for all product lines in support of AEP, Dominion, Exelon, PPL Susquehanna, PSEG and Xcel Energy, Westinghouse said.

Bevilacqua was most recently vice president for new plants engineering, where he led the design efforts in support of Westinghouse's AP1000 reactor design.

Bevilacqua is succeeded in that position by Rick Easterling, who was most recently vice president for international project execution, Westinghouse spokesman Scott Shaw said April 14.

The AP1000 design is referenced in seven applications for combined construction permit-operating licenses for 14 nuclear units, according to the NRC.

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\*\*\* Reactor report

Beaver Valley-1 was shut early April 14 for planned maintenance. Todd Schneider, spokesman for plant operator FirstEnergy Nuclear Operating Co., said workers are replacing one of four sensors that monitor power levels of the reactor. He said the outage "won't be long" but declined to say when the unit will return to service.

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\*\*\* Criteria for EU nuclear stress tests to be put out for comment next week

Criteria for planned EU stress tests of nuclear power plants will be put out for public comment next week, the chairman of the European Nuclear Safety Regulators' Group, Andrej Stritar, said April 14

The tests are to be conducted on all EU nuclear power plants to determine their safety margins when faced with extreme challenges, in light of the ongoing accident at Japan's Fukushima I nuclear power plant. Test results are expected at year-end.

Stritar said on the sidelines of a conference in Vienna that the Western European Nuclear Safety Regulators Association, which is working out the details of the tests, will post the document on its website ([www.wenra.org](http://www.wenra.org)) "for all stakeholders to endorse it" or make comments.

The final document will be submitted to Ensreg at the regulators group's meeting May 12. Stritar said the next step after that is planned to be a "wider discussion" at the political level of the methodology for the stress tests before the tests are launched by the EU Council in June.

EU Energy Commissioner Guenther Oettinger had earlier said he wanted to convene a meeting involving regulators from EU countries, neighboring countries and even the US and other important nuclear countries before the May 12 Ensreg meeting to get broad input into the drafting of the stress test criteria. But Stritar said the plan now is to get any additional input after Ensreg approves the document.

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\*\*\* Nuclear safety treaty parties to review Fukushima lessons in 2012

Not enough is known about the accident at Japan's Fukushima I nuclear power plant to draw all the lessons learned and apply them worldwide, delegates to the Convention on Nuclear Safety review meeting in Vienna said in a summary report approved at the close of the 14-day meeting April 14.

They agreed to hold a special meeting in August 2012 about the Fukushima I accident. At the meeting, contracting parties will report on and debate measures taken in response to the Fukushima I events and decide whether the convention itself, which will then be 16 years old, needs revision. CNS members include all countries with operating nuclear power plants.

Bill Borchardt, executive director for operations of the US NRC and vice chairman of the CNS review meeting, said at the closing press conference that it would take up to 10 years to learn all the lessons from the Japanese accident.

CNS parties said in their summary report that "many contracting parties reported difficulties to provide the media and the public with prompt and reliable information" on the accident as it was developing. They said the media's demands for immediate information on the events had "often led to speculative and unbalanced reporting."

Borchardt said the Japanese delegation to the CNS had provided all the information available on the accident, but "there is still a great deal to be learned on the details, and it will be quite some time until this information is available."

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\*\*\* Tepco to take measures aimed at ensuring power supply

Tokyo Electric Power Co. will relocate standby diesel power generators and a pump control switch panel to higher ground near its Fukushima I nuclear power plant April 15, as "countermeasures" to ensure cooling of units 1, 2 and 3 in case future earthquake-triggered tsunamis interrupt grid-supplied electricity, the utility said April 14.

Tepco also said it plans to begin construction of external power lines April 19 to mitigate the potential for a station blackout.

Tepco is taking the measures to prevent a recurrence of a total power loss at the plant, such as a 50-minute one April 11 after a magnitude 6.6 earthquake, NHK reported. The earthquake disrupted grid-supplied power and briefly halted the pumping of cooling water to the three units' reactors.

Tepco will move the equipment to an area about 30 meters (98.4 feet) above sea level, along with fire trucks and trucks with portable generators, the Japan Atomic Industrial Forum said April 14.

Toshiba President Norio Sasaki said April 14 his company has submitted a plan to Tepco " at the request of Japanese Prime Minister Naoto Ka " for decommissioning damaged Fukushima I units over a 10-year period, NHK reported. It did not say how many units would be affected. The three-phase plan would first require several months of work to stabilize damaged reactors and spent fuel pools, and prevent the further release of radioactive materials into the air and water.

Over the next five years or so, special cranes would be erected to remove nuclear fuel rods from the reactors and spent fuel pools, NHK said. Another five years would be required to dismantle the reactors and dispose of the highly radioactive wastes at a still-to-be-determined facility.

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\*\*\* House bill would impose new restrictions on nuclear trade pacts

Countries seeking civilian nuclear trade agreements with the US would have to forgo uranium enrichment and reprocessing activities and would be required to shield US suppliers of nuclear power reactors from liability in the event of an accident, under a bill approved April 14 by the House Committee on Foreign Affairs.

The bill (H.R. 1280) also would require countries seeking such agreements to comply with United Nations Security Council Resolution 1540, which requires controls be established for the export of nuclear materials and annual reports be made to a UN committee monitoring compliance.

No date has been set for full House consideration and there is no Senate companion bill.

The bill's ban on fuel enrichment and reprocessing, along with nuclear materials export controls, were contained in an agreement the US signed last year with the United Arab Emirates. US President Barack Obama's administration has said it would seek to include these provisions in future civilian nuclear trade agreements.

The bill would amend section 123 of the 1954 Atomic Energy Act to include the nonproliferation safeguards that are in the UAE accord. It also would require the president to submit such nuclear trade agreements to the House and Senate, which would have to approve them by a simple majority vote. Current law stipulates that 123 agreements take effect automatically 90 legislative days after the president submits the agreement to Congress, unless it adopts a disapproval resolution.

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\*\*\* International nuclear safety bill approved by committee for House vote

The House Committee on Foreign Affairs approved April 14 an international nuclear safety bill for a vote by the full House of Representatives.

The Furthering International Nuclear Safety Act of 2011, H.R. 1326, "directs the State Department to use and strengthen existing mechanisms for the international sharing of nuclear safety information and best practices" and to encourage nations to join the 1994 Convention on Nuclear Safety, according to an April 14 statement by the office of Representative Jeff Fortenberry, a Nebraska Republican. Fortenberry introduced the bill March 17.

The Senate version of the bill, S. 640, is awaiting action by the Senate Foreign Relations Committee. It was introduced last month by Senators Daniel Akaka of Hawaii and Thomas Carper of Delaware, both Democrats.

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**\*\*\* Poll finds upturn in Chilean opposition to nuclear power**

Opposition to nuclear power rose sharply in Chile following the Fukushima I nuclear power plant accident in Japan, according to a new survey.

About 84% of Chileans surveyed said they oppose the construction of nuclear power units in their country, according to an Ipsos poll released April 13. In the survey, 12% said they supported nuclear power in Chile, while 4% did not have an opinion or did not answer.

Chile does not have any operating nuclear power plants but the government has said it plans to decide in the next several years on whether to embark on a nuclear program.

Opposition increased from a similar survey in October 2009, when 55% of respondents opposed nuclear power, with 37% supporting it, according to Ipsos.

Chilean public opinion company Ipsos conducted the poll, with results based on a telephone survey of 912 people from March 15-April 3. The margin of error is 3 percentage points, Ipsos said.

Chileans ages 18 to 24 were twice as likely as those over 40 to support nuclear energy, the survey said.

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**\*\*\* Fukushima I accident 'devastating' to nuclear industry: Worldwatch report**

The consequences of the ongoing Fukushima I accident "will be devastating" for the international nuclear industry, according to a draft report released April 13 by Worldwatch Institute, a Washington-based environmental research organization.

But even before the March 11 accident began, the industry has been unable to stop the "slow decline" of nuclear energy, the report said. "Not enough new units are coming online, and the world's reactor fleet is aging quickly," it said. "Moreover, it is now evident that nuclear power development cannot keep up with the pace of its renewable energy competitors."

The Fukushima I accident "is likely to accelerate the decline" of the nuclear industry, it said.

The lead author of the report is Mycle Schneider, a Paris-based consultant who has worked on previous reports over the past few years, including for the Green group of the European Parliament, that also concluded nuclear power was on the decline. The report was released April 13 at an event in Berlin hosted by the Heinrich Boll Foundation, which describes itself as "part of the Green political movement."

The report is at [www.worldwatch.org/system/files/NuclearStatusReport2011\\_prel.pdf](http://www.worldwatch.org/system/files/NuclearStatusReport2011_prel.pdf).

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**\*\*\* TVA board postpones decision on completing Bellefonte-1**

The Tennessee Valley Authority board of directors April 14 postponed a decision on completing the Bellefonte-1 nuclear unit in Alabama, saying it will study the lessons of the Fukushima I nuclear accident in Japan before deciding whether to go forward.

TVA had previously said it planned to make a decision on the completion of Bellefonte-1 this spring. Last year, TVA approved \$248 million to be spent in fiscal 2011 toward advancing the completion of Bellefonte-1. The 2011 fiscal year ends September 30.

TVA will continue with engineering and ordering of some long-lead time components for the unit, spokeswoman Barbara Martocci said April 14. No decision on whether to proceed with construction will be made until a TVA task force reviewing lessons from the Fukushima I accident completes its review, she said.

TVA Chief Operating Officer Bill McCollum said in a statement April 14 that the federal utility "will incorporate lessons learned from Japan into the operations, designs and features of its nuclear plants, including those under construction and projects that are under consideration."

Board member Tom Gilliland said during the board's April 14 meeting that TVA could budget money in fiscal 2012 to cancel the Bellefonte-1 completion project if it decides not to go ahead.

TVA staff concluded last year that completing the Bellefonte-1 Babcock & Wilcox reactor, on which work was stopped in 1988, is preferred over construction of a Westinghouse AP1000 reactor at the site.

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\*\*\* Ostendorff to be nominated for second term at NRC, says White House

President Obama intends to nominate William Ostendorff for a second term as an NRC commissioner, the White House said April 14.

Ostendorff was nominated by Obama to replace former NRC Chairman Dale Klein, who resigned in March 2010. His current term expires June 30. Full terms on the commission are for five years.

Some members of the US Congress, notably Senator James Inhofe of Oklahoma, the senior Republican on the subcommittee that oversees the NRC, have called on Obama to re-appoint Ostendorff and Commissioner Kristine Svinicki, whose current term expires June 30, 2012.

Prior to joining the commission, Ostendorff was director of the National Academies' Committee on Science, Engineering and Public Policy and director of the academies' Board on Global Science and Technology. Ostendorff joined the National Academies after working as principal deputy administrator at the National Nuclear Security Administration from April 2007 to April 2009. Ostendorff retired in 2002 from the US Navy, where he had commanded a submarine squadron and, before that, the nuclear-powered attack submarine USS Norfolk.

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\*\*\* Groups petition NRC to suspend new reactor licensing

A coalition of 45 groups and individuals has petitioned the NRC to immediately suspend licensing of new nuclear power reactors and license renewals for operating reactors until the agency conducts a thorough examination of lessons from the ongoing accident at the Fukushima I plant in Japan.

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Several of the groups are already involved in challenges to licensing of new plants and/or license renewals for operating plants. Groups signing the petition include Beyond Nuclear, Blue Ridge Environmental Defense League, and Nuclear Information and Resource Service.

The petitioners said during a press teleconference April 14 that the agency's reviews should be supplemented by an investigation by a presidential commission, similar to the Kemeny Commission, named after its chairman, that investigated the 1979 accident at Three Mile Island-2.

Diane Curran, a partner at the Harmon Curran law firm who is the attorney representing the petitioners, said the NRC is legally obligated under the National Environmental Policy Act to complete its review of the Fukushima accident "before it allows another reactor to operate."

The petition is at [www.nuclearbailout.org](http://www.nuclearbailout.org).

NRC announced March 21 it would conduct a 90-day review of lessons learned from the Fukushima accident, followed by a six-month review that would begin when more solid information becomes available.

NRC Chairman Gregory Jaczko said last month he expects those reviews will be completed about the same time the first construction permit-operating license application reviews are winding up this summer or fall, but "if information tells us we need to make changes to our licensing process, we will do that."

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\*\*\* Nuclear energy fares 'relatively well' under CR, industry lobbyist says

The director of governmental affairs for the Nuclear Energy Institute said April 14 she believes nuclear energy fared "relatively well" under the funding agreement lawmakers reached April 8 for the remainder of fiscal 2011.

Leslie Barbour told reporters she considered the proposed funding for DOE's nuclear energy programs "good news" in light of the unfolding accident at the Fukushima I nuclear power plant in Japan. The continuing resolution would essentially result in "flat" funding, rather than deep cuts, for nuclear energy, she said.

The continuing resolution released April 12, which the House approved April 14 and now moves to the Senate for a vote, contains few details. It instead sets the parameters the federal agencies would use to decide how to spend money allocated for fiscal 2011, which ends September 30.

Barbour said she thinks DOE will try to make its national laboratories "whole first" and then decide how to cut expenditures according to CR guidelines.

Funding for a new DOE program for small modular reactors looks good, according to Barbour, who said the CR requires that any new program receive prior approval from House and Senate appropriators. Appropriators have already signaled support for SMRs, she said.

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\*\*\* Point Beach uprate clears NRC environmental review

Upgrading Point Beach-1 and -2 by 17% each would have no significant environmental impact, the agency said in a letter released publicly April 14.

In the letter, dated April 13, NRC told plant owner NextEra Energy that the agency has completed the final environmental assessment, which "is being forwarded to the Office of the Federal Register for publication."

NRC said the uprate would increase the output of each unit from 519 MW to 607 MW.

NextEra applied for the uprate for both units in April 2009.

The Advisory Committee on Reactor Safeguards met last month to review the safety evaluation report prepared by NRC staff on the application. The board recommended to NRC Chairman Greg Jaczko in a March 23 letter that the application be approved.

According to NRC's website, a final decision on the uprate application is expected this spring.

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\*\*\* Westinghouse announces executive appointments

Bruce Bevilacqua has been named vice president, Americas at Westinghouse, the company said in an April 14 statement.

Bevilacqua will be responsible for project delivery, customer relationships and business development for all product lines in support of AEP, Dominion, Exelon, PPL Susquehanna, PSEG and Xcel Energy, Westinghouse said.

Bevilacqua was most recently vice president for new plants engineering, where he led the design efforts in support of Westinghouse's AP1000 reactor design.

Bevilacqua is succeeded in that position by Rick Easterling, who was most recently vice president for international project execution, Westinghouse spokesman Scott Shaw said April 14.

The AP1000 design is referenced in seven applications for combined construction permit-operating licenses for 14 nuclear units, according to the NRC.

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\*\*\* Reactor report

Beaver Valley-1 was shut early April 14 for planned maintenance. Todd Schneider, spokesman for plant operator FirstEnergy Nuclear Operating Co., said workers are replacing one of four sensors that monitor power levels of the reactor. He said the outage "won't be long" but declined to say when the unit will return to service.

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This morning's Nuclear Regulatory Commission News Summary and Clips are attached.

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# NUCLEAR REGULATORY COMMISSION NEWS SUMMARY

THURSDAY, APRIL 14, 2011 7:00 AM EDT

[WWW.BULLETINNEWS.COM/NRC](http://WWW.BULLETINNEWS.COM/NRC)

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## NRC NEWS:

**NRC Said To Be Too Close To Nuclear Industry.** Examining the 2002 incident at Davis-Besse station, when NRC regulators agreed to delay an emergency

order to shut down for inspection, only to later find "a football-sized hole in the reactor vessel's steel side," *ProPublica* (4/14, Sullivan) reports that according to an NRC inspector general's report, "senior officials at the agency held off – in part because they did not want to hurt the plant's bottom line." NRC critics say the problems at Davis Besse, are "prime

example of the agency's deference to industry." According to those critics, the nuclear industry "routinely exercises its muscle in a more pervasive way: through contributions to NRC regulatory guides that advise nuclear companies about how to best follow the agency's rules." ProPublica says the guides are written by the Nuclear Energy Institute and contain detailed technical procedures and reference material and "are a key part of NRC's oversight."

**Senate Panel Questions NRC Chairman On Nuclear Reactor Reviews.** E&E Daily (4/14, Northey) reports the Senate Environment and Public Works committee "grilled" NRC Chairman Gregory Jaczko "on emergency actions he took in the wake of Japan's nuclear crisis and how regulators are weighing the safety of US reactors." Committee Chairwoman Barbara Boxer (D-Calif.) questioned Jaczko on whether the NRC "is prioritizing the review of nuclear reactors in seismically active areas, notably California's Diablo Canyon Nuclear power plant and San Onofre nuclear generating station." Jaczko said the NRC is evaluating the two plants as part of short term and longer-term reviews, but "said the agency will not do 'anything specific' for the two California plants."

**NRC Chairman Says Japanese Plant Situation "Static" But "Not Stable".** International Business Times (4/14, Francheska) reports, NRC Chairman Jaczko "told a Senate committee hearing on Tuesday that Japan's damaged nuclear reactors at the Fukushima Daiichi power plant is 'static' but remains 'unstable' with just an improvised cooling system." At the hearing, Jaczko told Senate lawmakers "that Japanese engineers have not yet re-established a long-term regular cooling of the reactors or a regular system to deliver water to the spent-fuel pool." In his assessment, the situation "is 'not stable' and this would prevail until 'that kind of situation would be handled in a predictable manner.'"

WJRT-TV Flint, MI (4/13, 4:06 p.m. ET, 27,116) reported that nuclear experts are warning that things could become far worse than what's been currently reported. Nuclear expert Joseph Cirincione said that this is a "major environmental catastrophe" and that it is "Chernobyl in slow motion." However, Nuclear Regulatory Commission Chairman Gregory B. Jaczko "offered a less alarming analysis." He said that they "believe the situation currently is static, namely we don't see significant changes on a day-to-day basis with the reactors. It is not yet, however, what we believe to be stable. Namely that given additional events or other circumstances, that there would not be the potential for significant additional problems at the reactors."

**Gundersen Discusses Fukushima Plant Crisis.** In a video caption appearing on its website, Huntington News

Network (4/14) reports how Fairewinds Associates nuclear engineer, Amie Gunderson "discusses why the Toyko Electric Power Company announcements of increased accident severity should not be a surprise. He discusses similarities of Chernobyl, Three Mile Island, and Fukushima." Gunderson also "tells how governments limit public access to radiation dose data" and he answers "numerous email inquiries regarding the Fukushima accident."

**NRC Discusses St. Lucie Plant Safety Concerns With Anxious Residents.** On its website, Florida's Treasure Coast Palm (4/14, Treadway) reports on Wednesday's public meeting with NRC staff and Florida Power and Light Co., representatives, during which "several residents voiced concerns about the safety of the St. Lucie Nuclear Power Plant" and particularly, the "safety of storing spent fuel rods at the nuclear plant on Hutchinson Island, the same type of rods that, in the aftermath of Japan's March 11 earthquake, released radioactivity at Japan's Fukushima Daiichi nuclear facility." Bonnie Howard of Lakewood Park asked: "Why do we continue to use a dangerous source of energy?" while Fort Pierce resident Marty Tormey, suggested that because wind and solar power account for such small percentages of the power produced, "Until a better alternative is found, I need this facility."

The Palm Beach (FL) Post (4/14, Salisbury) reports that resident Herman Berg lives close to FPL's St. Lucie plant, "and he's worried about how the island would be evacuated if there were some type of disaster." Berg told FPL and NRC officials, "There's only one way off this island." He was among about 40 South Florida residents attending the meeting, most of whom sought "answers about the plant's readiness in case of a disaster." According to the NRC, St. Lucie plant "met all safety requirements in its 2010 review," but as former Lake Worth City Commissioner Cara Jennings and another resident "unfurled a 'Don't Nuke Florida's Future,' hand-painted banner across the front of the room," Jennings said, "I am sure they had similar meetings in Japan."

On its website, WPTV-TV West Palm Beach, Florida (4/13, Gonzalez) reported, NRC officials "were in town offering their annual assessment of the plant, and paused to answer questions from the public. Rick Croteau with the NRC explained, 'The plant is designed for earthquakes within the large area but this is a very low seismic zone so it's a very small earthquake.'" The plant is also able to withstand the strongest hurricanes, Florida Power and Light officials said, "and is built 20 feet above sea level, which is several feet higher than what experts estimate a storm surge could ever be the in the area."

WPBF-TV West Palm Beach, Florida (4/13, Parker) added on its website that FPL's Michael Waldron said that "in the case of our Turkey Point plant, in 1992 it got a direct hit

from hurricane Andrew and performed exactly as expected. Here at St. Lucie, hurricanes Jeanne and Frances, one after another, hit this plant directly and it survived just fine,' said Waldron." Still, the report noted, some residents were unconvinced and called some answers "vague."

WPBF-TV West Palm Beach, FL (4/14, 4:34 a.m. ET, 5,114) reported that the "Nuclear Regulatory Commission held its annual meeting and review" of the Saint Lucie County Nuclear Plant "and gave it a green light for safety." The NRC also said that the "Saint Lucie County Plant is also built high enough to withstand a tsunami or a category five hurricane with no danger of water damaging the reactors or spent fuel storage." WFLX-TV West Palm Beach, FL (4/14, 1:33 a.m. ET, 11,087) and WPTV-TV West Palm Beach, FL (4/13, 6:05 p.m. ET, 139,384) provides similar coverage.

#### **Lochbaum Faults Spent Fuel Storage Management.**

Prior to the meeting, the Palm Beach (FL) Post (4/13, Salisbury) reported that while FPL spokesman Michael Waldron said the "federal regulatory and operating history proves that this can be done safely and securely," David Lochbaum, of the Union of Concerned Scientists, "said spent fuel pools are among the most vulnerable spots at a nuclear plant," housed as they are in structures that aren't as strong as reactors containment buildings. "It would be hard to manage this hazard (more) foolishly. The federal government's ineptitude in disposing of spent fuel has left Americans across the country exposed to elevated and undue risks," Lochbaum said."

#### **New England Leaders Want NRC To Answer Questions About Pilgrim Plant Safety.**

Massachusetts' Old Colony Memorial (4/14, Mand) reports, "As the state met with representatives of New England's nuclear power plants and their critics last Wednesday, Gov. Deval Patrick, Senate President Therese Murray and Speaker of the House Robert DeLeo released a series of 22 questions legislators are asking Nuclear Regulatory Commission Chairman Gregory Jaczko to address." Of the 22 questions, 10 had to do with spent-fuel rods and their storage. "Patrick, Murray and DeLeo also want Jaczko to comment on whether there are plans to strengthen the fuels stored in the upper levels at Pilgrim against aerial attack, or relocate the wet pool to a more secure location." Mary Lampert, of Pilgrim Watch, said the first priority was to reduce the "catastrophic" risk of a spent-fuel fire, by pressuring the NRC "require licensees to reduce the density of assemblies in the spent fuel pool, allowing only the fuel discharged in the previous five years,"

The Boston Globe (4/14, Knox, 244K) reports, "Seeking to douse worries over nuclear safety sparked by failures in Japanese plants, Pilgrim officials recently announced they plan to begin storing the Plymouth power plant's nuclear

waste in hardened dry containers." In the wake of the Fukushima Daiichi plant crisis, in which cooling water pumps for the spent fuel pools failed, nuclear industry officials told lawmakers at a State House that "multiple backup cooling systems" would prevent such a failure "here, even in plants of the same design. And the decision by Entergy, Pilgrim's owner, to move to dry-cask storage for used fuel accords with the views of Attorney General Martha Coakley and many experts that such storage of nuclear waste outside the plant is a safer alternative than water storage."

**Critics Fault Rule For 10-Mile Evacuation Zone.** The Cape Cod (MA) Times (4/14, Cassidy) reports that in contrast to the early days of the Fukushima plant crisis, when the NRC urged Americans living within 50 miles of the stricken plant to evacuate, the NRC and "state emergency officials prepare communities within only 10 miles of nuclear power plants for evacuations related to the facilities, leaving Cape Cod and other areas around the Pilgrim Nuclear Power Station in Plymouth on the outside of the emergency planning process looking in." The Times says the "basis" for that rationale lies in a "nearly 40-year-old decision" that even predates even the 1979 partial meltdown at Three Mile Island Nuclear. "The so-called plume exposure pathway, which the 10-mile zone is based on, is a planning tool used nationwide to prepare and evacuate populations most likely to be affected by the release of radioactive material at a nuclear plant." But Mary Lampert of Pilgrim Watch says the zones are "arbitrary."

**Activist Praises Opponents Of Nuclear Power.** In a letter to the editor of the Quincy (MA) Patriot-Ledger (4/14), Audrey Richardson of Environment Massachusetts, wrote to say she was glad to "see the movement opposing risky nuclear power is alive and well. Nuclear power – and, especially, old nuclear power plants, like Pilgrim in Plymouth – is inherently dangerous." Elected officials "supporting anything other than a 'no' on relicensing by the NRC should imagine themselves in the shoes of the mayor of Dai-ichi in Japan for one moment."

#### **NRC, FEMA To Oversee Emergency Response Exercises At Callaway Plant.**

According to its "D.C. Backroom" political blog, the St. Louis Beacon (4/14, Koerig) says, Tuesday "the Federal Emergency Management Agency announced that state and federal officials – along with county and local emergency experts from Callaway, Osage, Montgomery and Gasconade counties – will conduct a 'routine exercise' on May 11 that aims to 'test their ability to protect the health and safety of the public living in the vicinity of the [Callaway] plant.'" Ameren Missouri is planning to conduct a full-scale safety exercise at the power plant itself the same day, a drill that will be "evaluated by regional experts from the Nuclear Regulatory Commission, federal officials say." The St. Louis Business Journal (4/13,

Subscription Publication) ran a brief excerpt of the St. Louis Beacon story.

**Asbury Park Press Calls For New Tritium Release Penalties.** In an editorial, the Asbury Park (NJ) Press (4/13) argues, "When it comes to the release of carcinogenic tritium, the Nuclear Regulatory Commission clearly has failed in its role to ensure the safety of a public at the mercy of nuclear power plants, an Asbury Park Press investigation published Sunday found." The Press says that "current regulations don't provide for penalties" for tritiated water releases at nuclear plants, which are "threatening water supplies in New Jersey and other states." The Press is calling on New Jersey Reps. Chris Smith and Jon Runyan, and Sens. Frank Lautenberg and Bob Menendez, "to push for regulations that will set new, tough standards for tritium contamination and establish penalties harsh enough to deter violations."

**Local Officials Call For Oyster Creek Station To Be Closed.** According to the Lacey (NJ) Patch (4/13, Miller), Berkeley Mayor Jason J. Varano and Township Council members called on the NRC and the owners of Oyster Creek station to close the plant immediately. "Council members plan to pass a resolution at the next regular meeting calling for the closure of the plant," and Council Vice President Carmen J. Amato Jr. said "We want it closed immediately. Now we are also concerned about natural disasters." Mayor Varano said, that "Japanese nuclear experts were now comparing the situation at the Fukushima Daiichi nuclear complex to the Soviet Chernobyl disaster in the 1980s. It's at the Chernobyl category level in Japan, and that's pretty scary."

**County Board Calls On PG&E To Halt All Diablo Canyon Relicensing Efforts.** The AP (4/14) reports that the Board of Supervisors for San Luis Obispo County "want a halt to the relicensing process for the Diablo Canyon" and voted unanimously to send a letter to PG&E "asking the operator of the south county plant to withdraw its relicensing application." The AP notes that PG&E asked the NRC earlier to "delay issuing new licenses, even if approved by the agency, until after [seismic] testing is completed," expected sometime in 2015, but the "company has been under pressure from area lawmakers to conduct extensive, three-dimensional testing in the area before seeking new licenses, a concern heightened by the Japanese nuclear crisis."

On its website, KTVU-TV San Francisco (4/13) noted that the fear is that the Hosgri Fault and the Shoreline Fault "could begin shaking in tandem, creating a larger quake than either fault would be capable of producing on its own. PG&E

says the plant is built to withstand a magnitude-7.5 earthquake, the maximum considered possible for the site."

KKFXCA-TV Santa Barbara, CA (4/13, 10:00 p.m. PT, 6,524) reported that PG&E had a meeting with local residents over if their plant, Diablo Canyon Nuclear Power Plant, is safe if a disaster similar to what took place in Japan. During the meeting, Diablo Canyon's Jim Becker described the differences between their plant and Fukushima's plant. Some of the differences were that Diablo "is 85 feet above sea level" and "Fukushima is much lower" Becker also said that "Diablo can provide cooling without electricity," while "Fukushima didn't appear to be able to." Some viewed the meeting as informative and others did not see it that way.

KKFXCA-TV Santa Barbara, CA (4/13, 10:02 p.m. PT, 6,524) reported that the final renewal procedures for re-licensing the Diablo Canyon Nuclear Power Plant has been put on hold, pending seismic studies. The NRC called Senator Sam Blakeslee of San Luis Obispo to give "his input on seismic safety." KKFXCA-TV adds that "Blakeslee along with the San Luis Obispo County board of supervisors has called for the NRC to delay re-licensing the power plant all together."

KNTV-TV San Francisco, CA (4/13, 6:12 p.m. PT, 49,388) provides similar coverage.

KSBW-TV Monterey, CA (4/13, 5:06 p.m. PT, 41,239) added that the San Luis Obispo County Board of Supervisors voted last night to "send an official letter to Pacific Gas & Electric asking" them to "withdraw its re-licensing application. PG&E applied to the NRC to extend the power plant's current operating licenses an additional 20 years."

**PG&E Hosts Open House About Diablo Canyon.** KEYT-TV Santa Barbara, California (4/13) noted on its website that PG&E officials had planned to host an "open house" Wednesday "to better inform residents about the Diablo Canyon Nuclear Power Plant. The event will address the plant's operations, security, and how the US nuclear industry is responding to events in Japan."

**Officials Observe Emergency Drill At San Onofre Station.** Fox News' "Special Report with Bret Baier" (4/14, Baier) reports, "Imagine if a fire broke out causing explosion at the nuclear power plant like the one that crippled the Fukushima plant in Japan last month. That is the mock scenario playing out at the joint information center in Irving, California. The world watched as the Japanese utility officials held press conferences and did the best to report on catastrophe."

**LATimes Opinion Writers Weigh In On Nuclear Power.** On its "Opinion LA" blog, the Los Angeles Times (4/12, 657K) carries excerpts from the Times' opinion staff on the merits of nuclear power, especially in the wake of the

accident at Fukushima. Mark Lynas wrote on how fears of nuclear power seem to be rooted in propaganda, and how "science on radiation tells us that the effects of Fukushima are serious but so far much less so than some of the more hyperbolic media coverage might suggest." Joel R. Reynolds wrote on risks of atomic energy and how it "isn't cheap or clean or accident-free, and, for the relentless claims to the contrary, the credibility of nuclear utilities and the NRC has taken a beating." Robert Alvarez wrote on the vulnerabilities inherent in spent fuel storage technologies and while "The cost of fixing America's nuclear vulnerabilities may be high," the "price of doing too little is incalculable."

**Top Delaware DHS Official Touts State's Nuclear Preparedness.** The Wilmington News Journal (4/14, Gaudiano, 87K) reports that during a Tuesday Senate Environment and Public Works subcommittee hearing, Delaware Secretary for the Department of Safety and Homeland Security Lewis Schiliro submitted written testimony stating "he has no 'specific concerns' regarding the Salem-Hope Creek nuclear complex in New Jersey, or other nearby nuclear energy facilities." The hearing was chaired by Sen. Tom Carper (D-DE), who said it "is one of many aimed at making sure the nation is prepared for the worst." Schiliro added during oral testimony that federal officials have given Delaware officials "high marks" for planning related to potential nuclear disasters near the state's borders. NRC chairman "Jaczko testified earlier that his commission will examine whether evacuation plans around nuclear plants should cover a 50-mile radius." Schiliro agreed with this sentiment.

**NRC Comments On Safety Of Michigan's Nuclear Plants.** The Tri-County (MI) Times (4/14) overviews the Japanese nuclear disaster, Michigan's nuclear plants, and meltdown-safety tips. "According to the US Nuclear Regulatory Commission (NRC), the combined effects of the earthquake and tsunami in Japan exceeded the Fukushima Daiichi nuclear plant's design limits." According to NRC public affairs officer Prema Chandrathil, "three plants in Michigan are operating safely and in accordance with their operating license," an equivalent to an A-letter grade. Chandrathil added NRC updates regulations as studies and incidents provide new insights, adding, "Regulations are not written in stone. We learned a lot from Three Mile Island and 9-11." Chandrathil added

**Catawba Station Sirens Being Tested.** The Rock Hill (SC, 21K) Herald (4/14, 23K) reports that Duke Energy plans to conduct their quarterly test of sirens at the Catawba Nuclear Station today. "The sirens will sound for about three

minutes, giving Duke officials a chance to make sure the emergency notification system is working."

**Water Plays Important Role In Energy Production.** In a short article, The Atlantic (4/14, Dickson, 457K) observes that a Fast Company report says "it takes the same amount of water required by a city of 5 million to fuel a typical US nuclear power plant for one hour: 30 million gallons." More broadly, author Charles Fishman writes that "As the world's largest energy consumer, '49% of the water used in the US goes to generate electricity," which represents the largest use of water in the nation.

**Three Mile Island Conducts Emergency Drill.** On its website, WTAJ-TV Altoona, Perinsylvania (4/14, Preval) reports that Three Mile Island recently conducted a "scheduled drill." FEMA will assess the drill's results. From there, the NRC will review drill results "and a final report will be made public in about four months."

The Chambersburg (PA) Public Opinion (4/14, Hook) adds that Franklin County, PA participated in the drill, as the county's schools and churches would be housing many evacuees from a Three Mile Island meltdown.

**Braidwood Begins Refueling Unit 2 Reactor.** The Kankakee (IL) Daily Journal (4/14) reports, "Steam containing trace amounts of radioactive tritium will be released Thursday as the Braidwood Generating Station nuclear plant begins preparations to refuel its Unit 2 reactor." Exelon spokesman Neil Miller explained, "Several high pressure steam systems will begin to be tested and depressurized. Residents may see steam or hear a loud noise from time to time as this takes place." Miller added that the emissions pose "health or safety implications to employees or the public and is part of normal, permitted operations."

**Arkansan Hospital Conduct Drills To Test Nuclear Response.** On its website, KTHV-TV Little Rock, Arkansas (4/14, Duff) reports that only two Arkansan hospitals, St. Mary's Regional Medical Center in Russellville and UAMS in Little Rock, are "equipped to handle radiation emergencies in the event something goes wrong at Nuclear One." Officials note that they conduct "decontamination" yearly and are evaluated by federal officials every two years.

**Limerick Worker Injured In Fall.** The Pottstown (PA) Mercury (4/13, Brandt, 25K) reported, "A contracted worker in Exelon Nuclear's Limerick Generating station was knocked unconscious early Monday morning during the plant's refueling outage, but was determined not to have been contaminated by radioactivity." NRC spokesman Neil Sheehan, said the employee "was working in the 'secondary

containment area' of Limerick's Unit 2, which is shut down for re-fueling. ... He was 'climbing a ladder when he hit his head on a scaffold pole,' according to the notification Limerick sent to the NRC." According to Sheehan, the worker "injured 'the back of his head,'" and was rendered unconscious for about a minute.

**Former GE Engineer Said Mark 1 Reactor Less Forgiving Than Other Reactors.** In an opinion piece for the Ventura County (CA) Reporter (4/14, 4K), Grant Marcus of the Abalone Alliance, writes, "The Fukushima nuclear energy site, with nine reactors and six spent-fuel holding ponds, had a history of several near misses" and it "was built among several fault systems, all having the seismic potential that plant designers thought they had prepared for, but hadn't." Marcus says that for nearly four decades the Fukushima plant operated better than expected, "considering that nuclear engineers had resigned from GE because of the Mark I reactor design flaws. ... Ken Bridenbaugh, one of the engineers who quit GE, put it this way: 'The Fukushima situation is a direct result of Mark I containment' which he said "is less forgiving than some other reactors."

**TVA To Discuss Nuclear Safety.** The Tennessean (4/14, 129K) reports, "Nuclear issues are high on the agenda of the Tennessee Valley Authority's board meeting today in Chattanooga." According to the report, "TVA, the nation's largest independent power producer, has been aggressively pursuing building more nuclear power into its system." The Tennessean mentions that the "meeting, which is open to the public, begins with an opportunity for public comment at 8:30 a.m. EDT."

**TVA May Delay MOX Use Decision.** The Augusta Chronicle (4/13, Pavey, 64K) reported the TVA could seek "more time to determine whether its commercial nuclear reactors can use mixed oxide fuel to be made at Savannah River Site." Ray Golden, TVA's senior nuclear spokesman, said: "All of our nuclear programs now have to be looked at through the lens of what's going on in Japan." The Chronicle said the TVA "has an interagency agreement with the National Nuclear Security Administration to evaluate using MOX fuel at its two Sequoyah reactors in eastern Tennessee and at Browns Ferry's three reactors in Alabama."

**Bellefonte Proposal Criticized.** In an entry for the Clean Energy News (4/13) "Footprints" blog, Stephen Smith of the Southern Alliance for Clean Energy criticizes the proposal to revive TVA's moth-balled Bellefonte nuclear reactor. He said the reactor was "designed in the late 1960s" and "in many ways Bellefonte is similar to another relic of the era, the antique Ford Pinto," which is widely believed to be one of the worst cars of all time. The blog posting said "aside

from cost considerations, many safety and technical issues loom large at Bellefonte," and "all of these factors make completing the antique Bellefonte nuclear 'Pinto' reactors a risky proposition for TVA management."

**Long Island Officials Concerned About Millstone Station.** Newsday (4/14, Altherr, 321K) reports, "With the shadow of the Millstone nuclear power plant at its doorstep, Southold Supervisor Scott Russell has asked the town's congressional representatives for a community meeting with federal Nuclear Regulatory Commission officials to talk about the health of the Connecticut facility. At the top of the agenda would be a possible expansion of evacuation routes in the wake of Japan's recent nuclear disaster." He "joins a list of elected officials taking another look at Millstone, which sits across the Long Island Sound in Waterford, Conn., after radiation leaks from the Fukushima Dai-ichi power plants in Japan followed last month's earthquake and tsunami."

**Connecticut Tax Plan On Nuclear Generation Draws Opposition.** The Connecticut Mirror (4/14, Becker) reports, "A legislative plan to tax the state's two active nuclear power plants could threaten jobs, send the wrong message to businesses and lead to higher electricity rates, lawmakers, municipal officials, business and labor leaders and the operators of the plants warned Wednesday." Sen. Andrea L. Stillman said, "This targeted, seemingly vindictive initiative would undermine and destabilize an entire region of our state." Dominion's David Christian adds, "One would be that rates would go up due to the fact that the higher cost would be passed on to the consumers through higher electric rates. ... Or the plant would become uneconomic to operate and it would be forced into closure, following which electric rates would increase as well."

The WFSB-TV New Haven (4/14) website reports, "The bill would tax generators of electricity to provide relief for ratepayers, finance alternative energy and raise \$340 million in revenue - including \$332 million from Millstone nuclear plants." Dominion's Dan Weekley said, "Dominion is not threatening to close Millstone. What we are saying if Senate bill 1176 were to be passed, the Legislature would be forcing us to shut down."

The AP (4/14) reports, "Sen. John Fonfara, co-chairman of the Energy and Technology Committee that approved the legislation in its first legislative test, said Dominion 'is going to say the sky will fall' if the tax ultimately becomes law." He contends, "Ratepayers are overpaying for electricity and will benefit from a portion of the revenue that would be returned." The AP article also appeared on the websites of the Hartford Business Journal (4/14), the Boston Globe (4/14, Singer, 244K) and MSNBC (4/14).

The New London Day (4/14, Reindl), WTNH-TV New Haven (4/14, Davis), New England Cable News (4/14), Reuters (4/14) also provide coverage of this story.

In a letter to the New London Day (4/14), New London resident Kathy Cole writes, "I urge the legislators not to pass the proposed \$332 million tax on Dominion."

### **Safety Grades At Wisconsin Plants Markedly Improved In Recent Years.**

An article in the Milwaukee Journal Sentinel (4/14, Content, 202K) reports that the safety grades at the three nuclear reactors in Wisconsin have improved "markedly in the past few years" and "as a result, the two-reactor Point Beach plant and the single-reactor Kewaunee plant won't be subjected to extra scrutiny from regulators this year, even as public interest in the safety of nuclear energy has been heightened following the disaster at the Fukushima Dai-ichi plant in Japan." For the plants, "the improved safety ratings mean they won't face the additional layer of examinations they were subjected to for parts of the past decade." According to Dominion's Mark Kanz "the plant has worked to improve its safety performance in recent years, earning the NRC equivalent of an 'A' grade the past two years." He adds, "It's taken a lot of hard work for us to get there, and that's where we intend to stay."

### **Vermont Yankee Opponent Says Consumers Should Use Less Energy.**

Vermont's Commons (4/14, Peters) reports, "Robert 'Jake' Stewart, one of the charter members of the New England Coalition on Nuclear Pollution (NEC), believes that the economic impact of Vermont Yankee's closure cannot outweigh the consequences of a disaster at the plant" and he reminds people that the "decommissioning process will require skilled employees." Even so, he said, "people need to conserve energy. 'We need to stop the increase of energy use,' said Stewart," who said people should "develop more 'energy efficient systems,' and governments could provide more incentives to people developing alternative energy and technologies."

### **Texas Senate Approves Radioactive Waste Oversight Bills.**

According to the Texas Tribune (4/14 Gonzalez), the "Texas Senate passed a couple of bills that outline how the Texas Low Level Radioactive Waste Disposal Compact Commission will oversee the Texas Low Level Radioactive Waste Disposal Compact, which was established" by SB 1504 and would allow the "compact, which currently consists of only Texas and Vermont, to bring domestic waste to a facility in Andrews County." Also, SB 1605 "establishes the compact commission as an independent entity answering to the Texas legislature,

according to State Sen. Kel Seliger, R-Amarillo, the bill's author."

### **Output Increased At Beaver Valley, Browns Ferry Plants.**

Bloomberg News (4/14, McClelland) reports, "US nuclear-power output rose for a third day as plants in Alabama and Pennsylvania boosted energy production, the Nuclear Regulatory Commission said." Production across the country "increased 514 megawatts," to "77,568 megawatts, or 76 percent of capacity, according to an NRC report today and data compiled by Bloomberg." FirstEnergy boosted output from Beaver Valley Unit 1 to 100 percent of capacity, while the Tennessee Valley Authority increased production from Browns Ferry unit 2 reactor "to 98 percent of capacity from 82 percent yesterday."

### **Budget Compromise Appears To Deliver Final Blow To Yucca.**

The Las Vegas Review-Journal (4/14, Tetreault, 178K) reports that budget compromise details released Tuesday confirmed Senate Majority Leader Harry Reid's (D-NV) claim that funding for the Yucca Mountain project had been zeroed out. The article says Reid also was successful in removing a measure that would've stopped the NRC from closing down its review of the DOE's Yucca Mountain construction license application.

### **Southern Chairman Fanning Touts Energy Policy At US Chamber Of Commerce.**

The Atlanta Business Chronicle (4/14) reports Southern Co. Chairman, President and CEO Thomas Fanning "told an audience at the US Chamber of Commerce 'CEO Leadership Series' Luncheon in Washington, D.C., the nation needs full portfolio of energy resources combined with a big R&D effort to create new energy technologies." In addition, Fanning reiterated Wednesday the electricity producer's "support for new nuclear energy," noting that "good energy policy means 'a healthier economy and better prospects for job creation.'"

The AP (4/13) reported Fanning said "a new nuclear power plant proposed for eastern Georgia would be safer than the existing US nuclear fleet, and the utility building it plans to proceed despite the ongoing nuclear crisis in Japan." He said spoke out against "attempts by the Obama administration to tighten pollution controls on coal-fired plants, saying the industry was 'under attack,' AP added. The utility "expects federal safety regulators to decide by the end of the year whether the utility can build two more nuclear reactors at the Vogtle Electric Generating Plant near Waynesboro," the article noted.

Fanning, whose firm picked Westinghouse Electric Co.'s AP1000 reactors for the new project at Plant Vogtle, said the reactor design is "a completely different approach to nuclear safety' because of its extensive use of passive

systems," according to Platts (4/14, Freebairn). Moreover, "The Vogtle site is not seismically active and is 130 miles from the coast," he added.

### **Southern Co. Chief Says Japan Atomic Crisis Shouldn't Cast A Shadow Over US Nuclear Plans.**

Bloomberg News (4/14, Mcquillen) reports Fanning, "whose company won \$8.33 billion in US nuclear loan guarantees last year, said the nation should build reactors without letting radiation releases from a Japanese plant 'distract us from what we must do here.'" He said, "We need all the arrows in the quiver." Fanning added: "We need nuclear. We must preserve coal as a resource for America's energy future. We need natural gas, but it is not a panacea. We need renewable, but let's recognize its limitations."

In a "Washington Wire" blog entry for the Wall Street Journal (4/14, 2.02M), Stephen Power criticized the Obama Administration's plans to set limits on greenhouse gas emissions and pollutants such as mercury, noting the move would lead to loss of thousands of jobs, while increasing energy costs. The E&ENews PM (4/13, Mandel) and Power-Gen Worldwide (4/13) also covered Southern Co. CEO's comments at the US Chamber of Commerce.

### **Rockland County Executive Says Plant Should Be Closed.**

The Nyack-Piermont (NY) Patch (4/13, Siegel) reports, "Rockland County Executive C. Scott Vanderhoef said Tuesday that while he is confident in the government's Indian Point evacuation plan, he still believes the nuclear plant should ultimately be closed." During a Rockland County Government Day at Rockland Community College, Vanderhoef said his goal must be to "assure the safety and health of every single resident," and if "I can't do that, then the question becomes is nuclear power at that site, in this densely populated area, worth the cheap electricity it produces. And my response is no, that it should be closed."

### **Author Reflects On Growing Up Near Indian Point.**

In a personal essay in the New York Times (4/14, Subscription Publication, 950K), author Amanda Petrusich writes of her youth, growing up in Buchanan, N.Y., "a tiny, mostly working-class village in northern Westchester County," which is "home to the Indian Point nuclear power plant." Petrusich adds that one day her mother saw "a man with a sack of unwieldy equipment roaming our backyard, uninvited." He said he'd been "sent to survey our land — and all areas surrounding Indian Point," mentioning "something about 'fault lines.'" She says her aunt contracted thyroid cancer and she still wonders "if Indian Point contributed to her disease."

### **Retrospective Recalls Con Ed's Attempt To Site Nuclear Plant In New York City.**

On its "City Room" blog, the New York Times (4/13, Newman, 950K) reports that when Consolidated Edison built Indian Point plant

30 miles north of New York City, the company "had more ambitious plans," applying in December, 1962 "to the Atomic Energy Commission to build the world's largest nuclear plant, with a capacity of a thousand megawatts, more power than all the other atomic plants in the United States put together." Con Ed said it wanted to site that plant "on the East River waterfront in Long Island City, Queens, less than two miles from Times Square." The Times says that while the notion of "siting a mammoth nuclear generator in the heart of New York City seems preposterous now," at the time, "it was not unthinkable." The world "watched as the yearlong struggle, now all but forgotten, over Con Ed's proposed Ravenswood nuclear plant played out."

## **INTERNATIONAL NUCLEAR NEWS:**

### **Fukushima Stabilization To Take Until June, Source Says.**

Bloomberg News (4/14, Clenfield) reports, "Tokyo Electric Power Co. estimates the fight to stabilize its crippled Fukushima reactors will last through June, leaving the plant vulnerable to further earthquakes and radiation leaks, according to a person briefed by the utility on its recovery plan." According to the unnamed sources, TEPCO engineers "have so far rejected a proposal to flood reactors at its damaged plant, which could lower the temperature in days rather than months." TEPCO "has been reluctant to flood the reactors because it could increase the amount of contaminated water that eventually flows into the ocean, according to the person. The utility is also concerned that pushing in more water could raise the risk of more explosions because it would compress hydrogen inside the containment."

Meanwhile, Reuters (4/14, Saoshiro, Nakagawa) reports that engineers at the Fukushima Daiichi plant are now concerned that some of the spent fuel rods may have been damaged during the initial earthquake and tsunami and may be emitting high levels of radiation. However, TEPCO said the majority of the roughly 1,300 spent fuel rods at the No.4 reactor are presumed to be undamaged.

Japan's Asahi Shimbun (4/14) reports that TEPCO officials "are considering a plan to remove spent fuel rods from storage pools at its reactors," according to sources. "TEPCO workers began collecting samples of water from a storage pool at the plant on Tuesday to help assess the condition of the spent fuel rods and the feasibility of the plan." High levels of radiation and damaged equipment may complicate the removal effort, though.

### **US Commander Sees "Incremental" Progress At Reactor.**

Meanwhile, Bloomberg News (4/14, Cook, Capaccio) reports Navy Admiral Robert Willard, US Pacific Command commander said that "the situation at Japan's

Fukushima nuclear power plant is 'improving every day,' and the government's increase of the accident-severity rating doesn't indicate the status is worsening." Said Willard, the top US commander in the region, "I think it's actually getting incrementally better," adding, "We regard it as static, not yet completely stable, but it's improving every day." He went on to say regarding Japan's Nuclear and Industrial Safety Agency's decision to raise the severity rating of its nuclear crisis to 7, matching the 1986 Chernobyl disaster in Ukraine, "Though that status has changed to 7, we continue to see incremental improvement in the overall stability of the situation."

**TEPCO Works To Begin Repairs On Fukushima Plant's Cooling Systems.** Reuters (4/14, Uranaka, Fujioka) reports that as tests showed spiking radiation levels in the sea near the stricken Fukushima Daiichi nuclear plant, TEPCO said it was working on a detailed plan to halt the crisis, as engineers continued toward the goal of removing the highly radioactive water from one of the crippled reactors, which would allow for desperately needed cooling system repairs. Prime Minister Naoto Kan said the nuclear crisis is "slowly stabilizing, step by step, and the emission of radioactive substances is on a declining trend."

**Aftershocks Pose Ongoing Threats To Reactor, Generators To Be Moved.** Bloomberg News (4/14, Sato, Inajima) reports that "aftershocks rattling Japan after the nation's record quake on March 11 may continue for at least six months, increasing the risk of damage to a crippled nuclear plant at the center of the worst nuclear crisis since Chernobyl." Teruyuki Kato, a professor at the University of Tokyo's Earthquake Research Institute, said, "Aftershocks as big as magnitude-7 are likely to continue hitting in eastern and northern Japan for at least six months." While Kazuya Idemitsu, a professor of nuclear engineering at Kyushu University, said that "reactor containment vessels at the nuclear plant that have been flooded with tons of water to keep fuel rods cool are at risk in the event of another big quake." Said Idemitsu, "One of my concerns is that the containment chambers may have been compromised to some extent," and another strong aftershock could damage parts like "pipe joints and cause more radioactive water to leak."

Meanwhile, in a separate story, Bloomberg News (4/14, Nakayama, Inajima, Okada) reports Tokyo Electric Power Co. said it "will move backup generators at its crippled nuclear plant to higher ground away from the sea to ensure cooling systems aren't disrupted by future tsunamis, as aftershocks rattle Japan." TEPCO spokeswoman Takeo Iwamoto said, "Emergency diesel-powered generators will be moved to higher ground, and work for connecting them into the power distribution unit will be carried out around April 19."

**TEPCO To Seek Restart Of Reactor Shut After 2007 Earthquake.** Bloomberg News (4/14, Inajima, Okada, Nakayama) reports Tokyo Electric Power Co. plans to seek government approval to restart the nuclear reactor at Kashiwazaki Kariwa, which was shut after a 2007 earthquake, in order to address power shortages. TEPCO President Masataka Shimizu said the reactor, "the world's biggest atomic station, is capable of supplying electricity this year," adding, "I would like to get approval to restart the No. 3 reactor early, this year if possible."

**Residents Displaced By Radiation Protest, Demand Compensation.** The AP (4/14, Kageyama) reports, "Angry residents forced from their homes near Japan's tsunami-stricken nuclear power plant protested at the Tokyo headquarters of the plant's operator Wednesday, demanding compensation as the company's president pledged to do more to help." The protest, which included about 20 small-business owners from communities near the Fukushima Daiichi nuclear power plant, "reflects growing public frustration" with TEPCO. TEPCO president Masataka Shimizu and other company executives "bowed in apology, once again, after Shimizu pledged to do more to compensate residents unable to return home or work."

In a separate story, the AP (4/14, Kageyama) adds that Shimizu said during a two-hour news conference following TEPCO officials' meeting with the protesters that "cash payments would be readied as soon as possible and the company would do its best to get the plant's reactors under control and stop radiation leaks." During the news conference, he "declined to comment on whether he would resign to show he is taking responsibility for the crisis. He said his job is to deal with it, along with the problems of those evacuated and concerns about the energy supply."

**Hitachi, Toshiba File Plans To Dismantle Troubled Japanese Nuclear Reactors.** Bloomberg TV's Morning Call (4/13) reported in its "Inside Track" segment that "Hitachi and Toshiba have submitted" plans "to dismantle the crippled Fukushima nuclear plant." Anchor Deirdre Bolton "budgeting won't be easy because engineers say it could take up to three decades and cost \$12 billion."

The Wall Street Journal (4/14, Osawa, Smith, 2.02M) reports the two Japanese firms, Toshiba and Hitachi have confirmed they have each designed separate plans to decommission the nuclear reactors. Hitachi said it took help from its business partner General Electric Co. along with two other US firms, Exelon Corp. and Bechtel Corp. The competing plan from rival Toshiba is based on help provided from Babcock & Wilcox Co. and Shaw Group Inc.

The Yomiuri Shimbun (Japan) (4/13, 13.8M) reported Toshiba Corp. has asked "rival Hitachi, Ltd. that the two

companies join hands in decommissioning the crippled reactors at the Fukushima No. 1 nuclear power plant in Fukushima Prefecture, The Yomiuri Shimbun learned Wednesday."

However, a report by Bloomberg News (4/13, Yasu, Shiraki) said Toshiba "denied a Yomiuri newspaper report that it approached Hitachi Ltd. (6501) to jointly propose dismantling Tokyo Electric Power Co.'s stricken Fukushima Dai-ichi plant." Spokesmen from both the companies denied the report.

**Firms Eye Poland Nuclear Contract.** The Warsaw Business Journal (4/13) reports, "In July of this year, Polish utility PGE is set to announce a tender for a technology supplier to support the construction of Poland's first nuclear power plant, daily Dziennik Gazeta Prawna reports." The paper said US-Japanese firm GE Hitachi, "US company Westinghouse and a French partnership comprising Areva and EDF are interested in obtaining the contract."

**Bulgaria In Energy Pact With Areva.** The AP (4/13) reported "Bulgaria has come to an agreement with France's nuclear engineering company Areva on future nuclear and renewable energy projects." The AP said Areva CEO Anne Lauvergeon told reporters Wednesday "that the company will provide nuclear safety expertise for Bulgaria's nuclear facilities." Bulgaria "has two 1,000-megawatt reactors at its only nuclear plant in Kozlodui."

Bloomberg News (4/13, Konstantinova) said the contract "envisages cooperation in future nuclear energy projects in Bulgaria's planned 2,000-megawatt Belene plant project in which Areva is a subcontractor of Rosatom Corp."

**NRG Says Japan Atomic Accident Hurt Plans For Texas Reactors.** Reuters (4/14) reports NRG Energy CEO David Crane said Wednesday the Japanese nuclear disaster has hurt plans by the company to build two reactors in Texas. The article said Tokyo Electric Power Co., the owner of the damaged Fukushima Daiichi plant, is a nuclear development partner of NRG, and after the accident, NRG decided to reduce spending on proposals to set up the reactors at South Texas Project.

**China Could Block Approval Of Second-Generation Nuclear Projects.** Reuters (4/13, Stanway), citing Li Xiaoxue of the state-owned China Guangdong Nuclear Power Corp., said China may block approvals of second-generation nuclear reactors as it takes stock of its long-term nuclear plans in the wake of the nuclear disaster in Japan. China has plans to eventually build third-generation reactors to meet its growing energy needs.

**Areva Says Applying Lessons Learned To Cut Construction Times, Lower Costs.** In a blog entry for Power-Gen Worldwide (4/13), Brian Wheeler wrote "the Areva EPR, or Evolutionary Power Reactor, has been criticized by opponents since construction began in 2005 on the Olkiluoto 3 (OL3) reactor in Finland." In spite of the criticism, "Areva continues to construct new plants worldwide and believes Generation III+ plants can be built, on-time and on-budget." The blog posting said "completion of OL3 is nearly three years behind schedule and 50 percent over budget," but Areva has "acknowledged the problems" and is "applying lessons learned to cut construction times and, in turn, lower costs."

**German Cabinet Approves CO2 Storage Bill.** AFP (4/13) reports, "Germany's cabinet approved a draft law on storing carbon dioxide underground on Wednesday after months of debate as Europe's top economy wrangles over energy policy following Japan's nuclear disaster." The measure, "which needs parliamentary approval and which implements a directive from the European Union, allows pilot and demonstration projects to go ahead of an assessment of its viability in 2017, the government said." According to the report, the bill "follows...months of debate with the governments of Germany's 16 states, and includes a clause giving them the say on where the storage sites are located."

Reuters (4/14, Wacket, Eckert) reports that the German government released the following statement regarding the bill, "The government today [has] agreed [on] a draft bill ... This created the pre-requisite for Germany's CCS-testing projects to attract EU funding." The article also mentions that Hildegard Mueller, director for the energy industry group BDEW, remarked that "the law is more than overdue."

In a separate story, Reuters (4/14, Eckert) reports on the details of the draft legislative measure.

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