Current Status and Recent Topics of Fukushima Daiichi NPS

September 10th, 2014

TEPCO

TOKYO ELECTRIC POWER COMPANY

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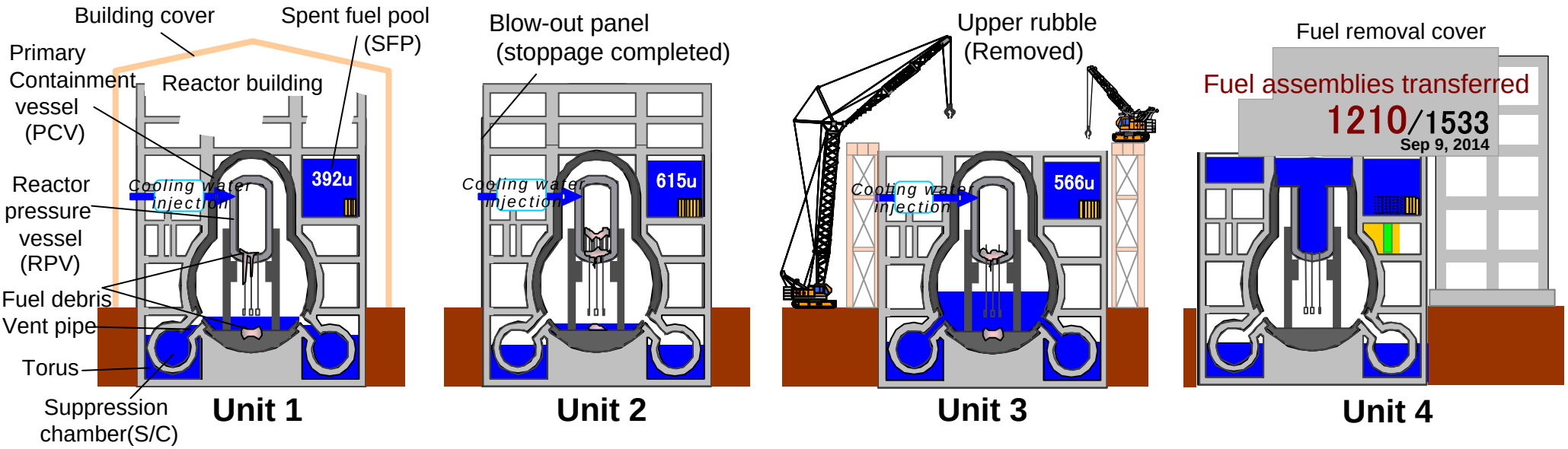
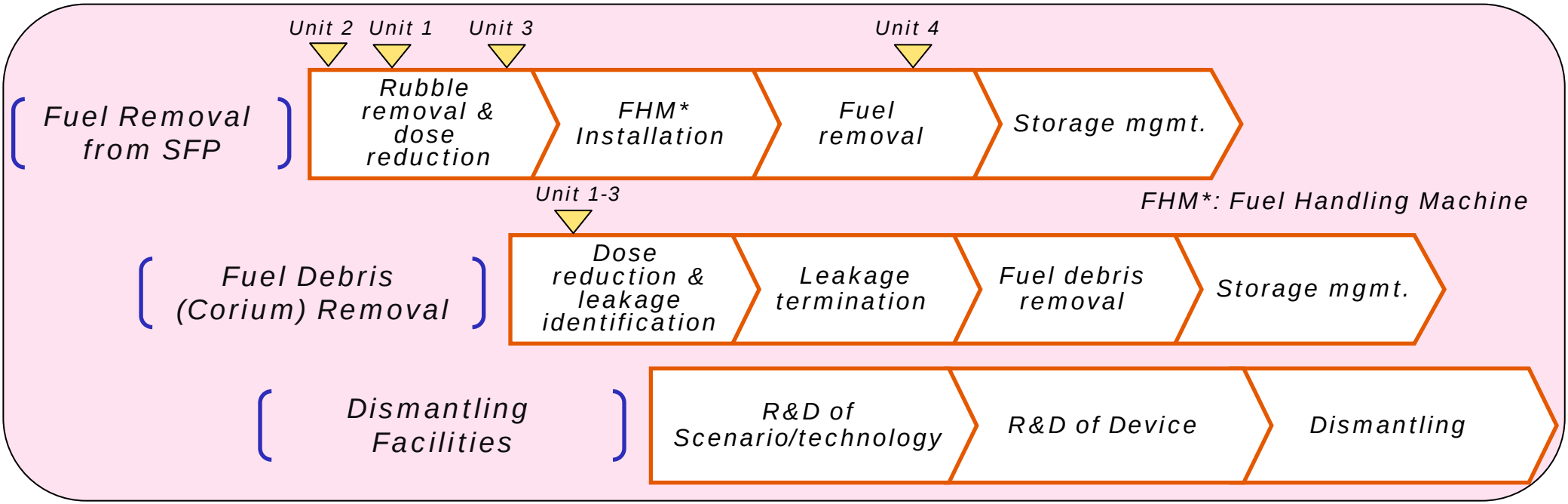
Current Plant Situation

- **All Units continue to be in cold shutdown**

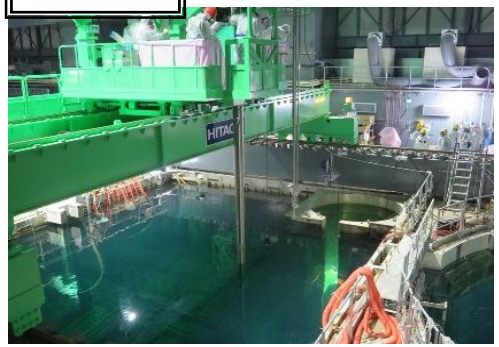


Current Status towards decommissioning



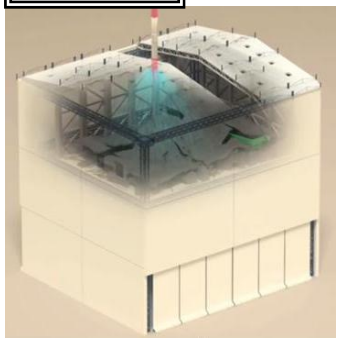
Recent Topics

Unit4



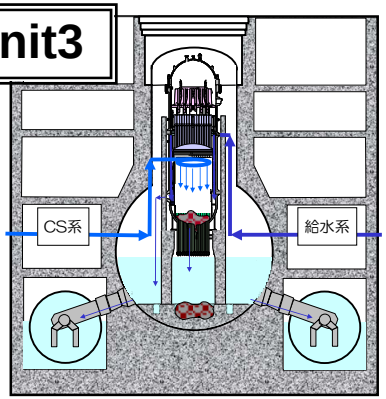
Fuel Removal

Unit1



Removal of cover

Unit3



Latest-evaluation of fuel melting

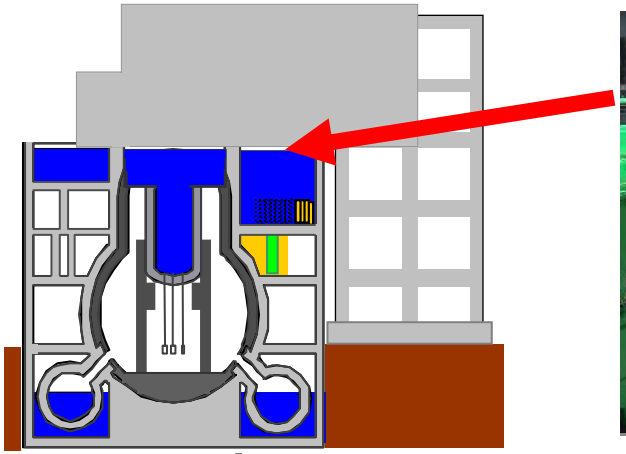
Improvements in Work Environment

Fuel Removal from Unit4 ①

Water Injection by Concrete Pumper (3/22/2011)

Crane setting completed (May.2013)

Fuel Removal Structure (Nov. 2013)



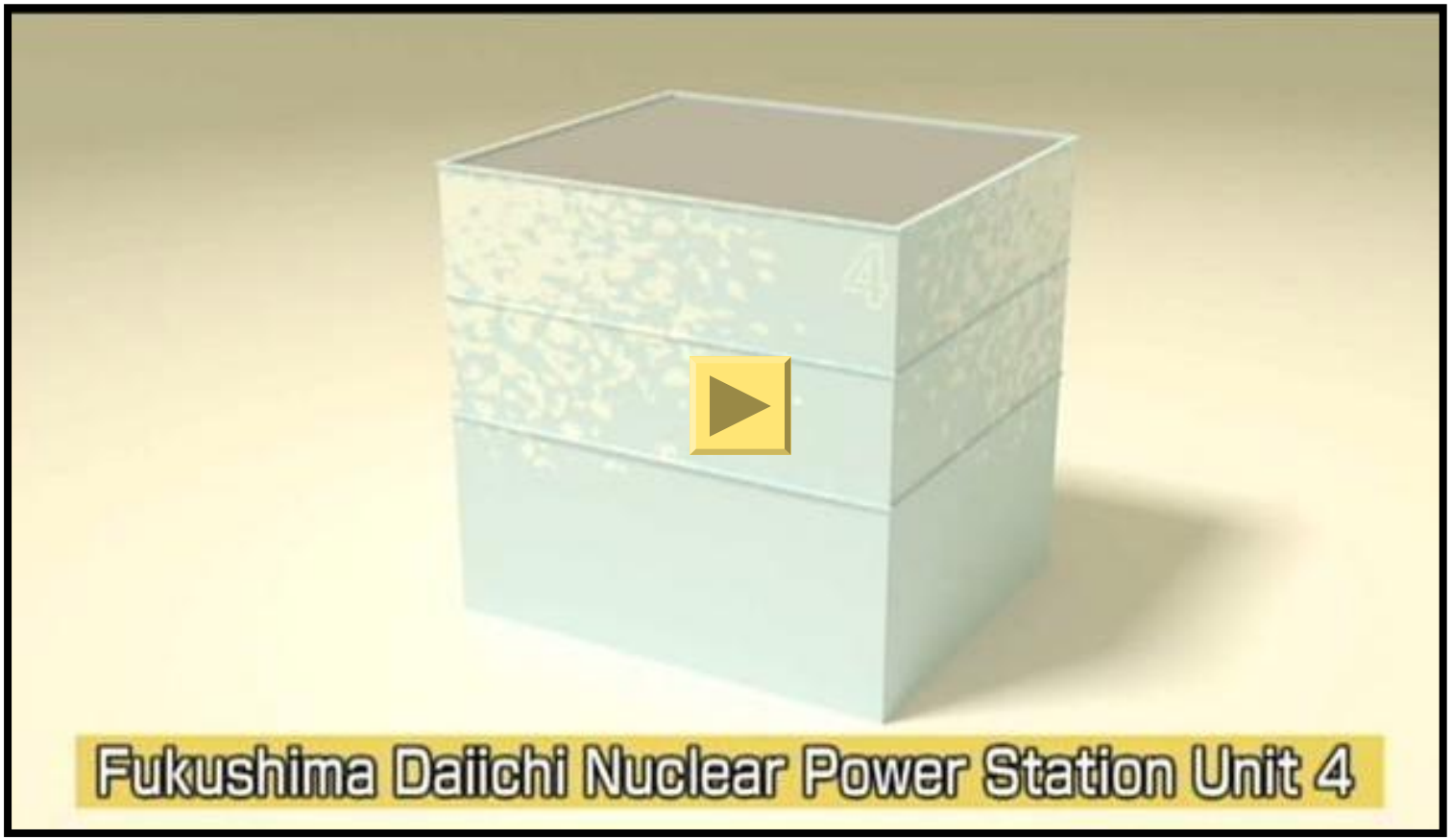
Unit4

Fuel Removal from SFP (11/18/2013)

1,210/1,533 fuel assemblies transferred to common pool
http://www.tepco.co.jp/en/decommision/planaction/removal-e.html (as of 9/9/2014)

Fuel Removal from Unit4 ②

Video Title: Summarized explanation about Fuel removal from Unit 4

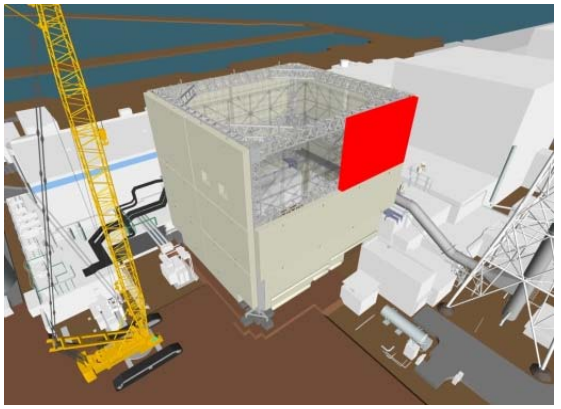


http://www.tepco.co.jp/en/news/library/archive-e.html?video_uuid=kj163162&catid=61787

Removal of Unit1 Building temporary cover ①

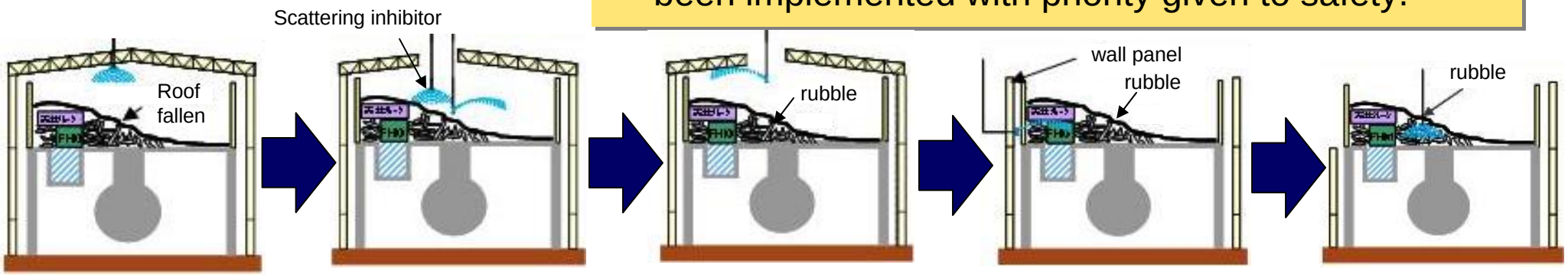
Reactor Building (3/15/2011)

Reactor Building Cover (installed in Oct. 2011)



Removal of the Wall cover

- Multi-layered dispersal prevention measures have been implemented with priority given to safety.



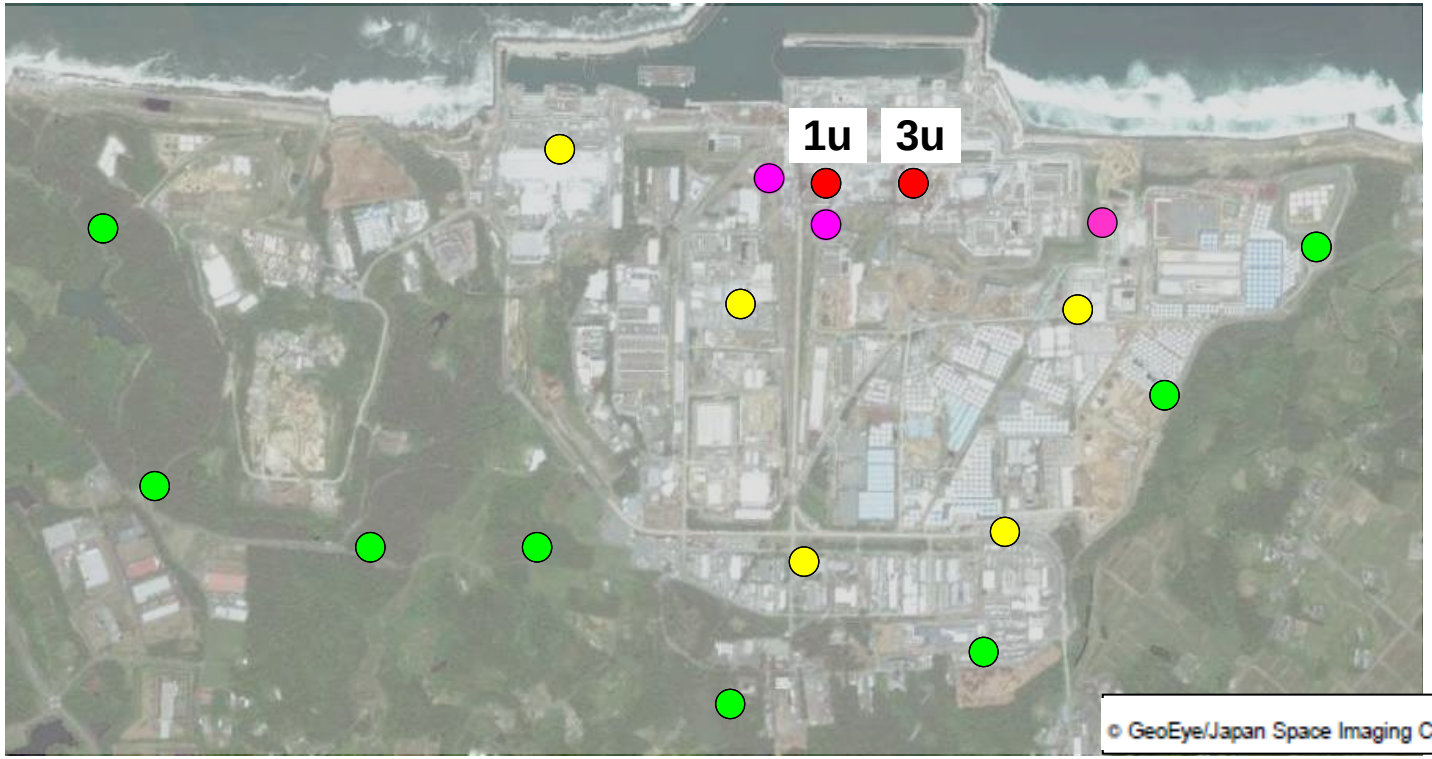
Dispersing process of scattering inhibitor (while removing the cover)

http://www.tepco.co.jp/decommision/planaction/removal-reactor-j.html

Removal of Unit1 Building temporary cover ②

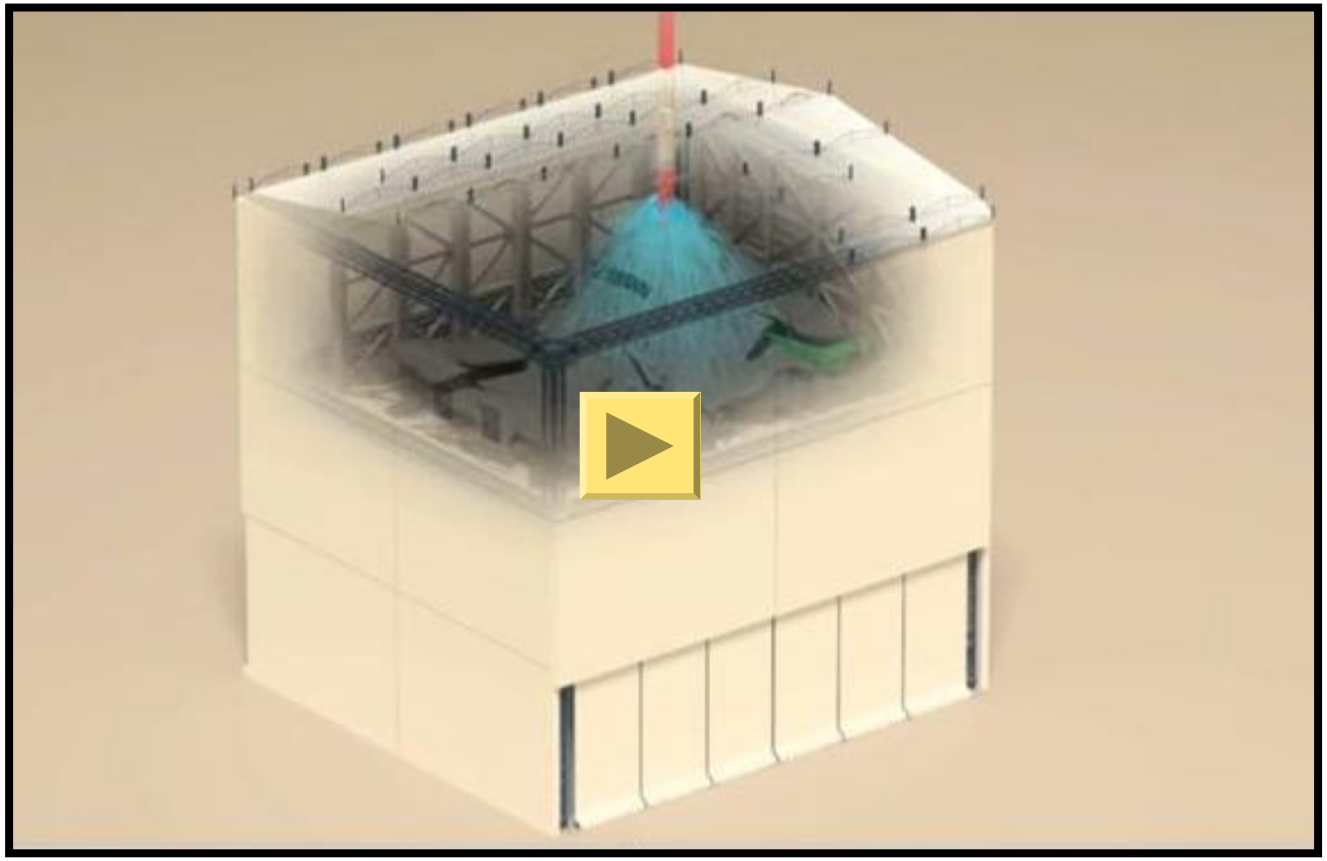
- The framework for monitoring radioactive substances has been strengthened, and the scheme for information dissemination has been enhanced.

monitoring at dust monitor on operation floor (each 4 points for Unit 1 and 3)
monitoring at dust monitor near the reactor building (2 points)
monitoring at dust monitor inside the site (5 points)
monitoring at monitoring posts on the border of the site (8 points)



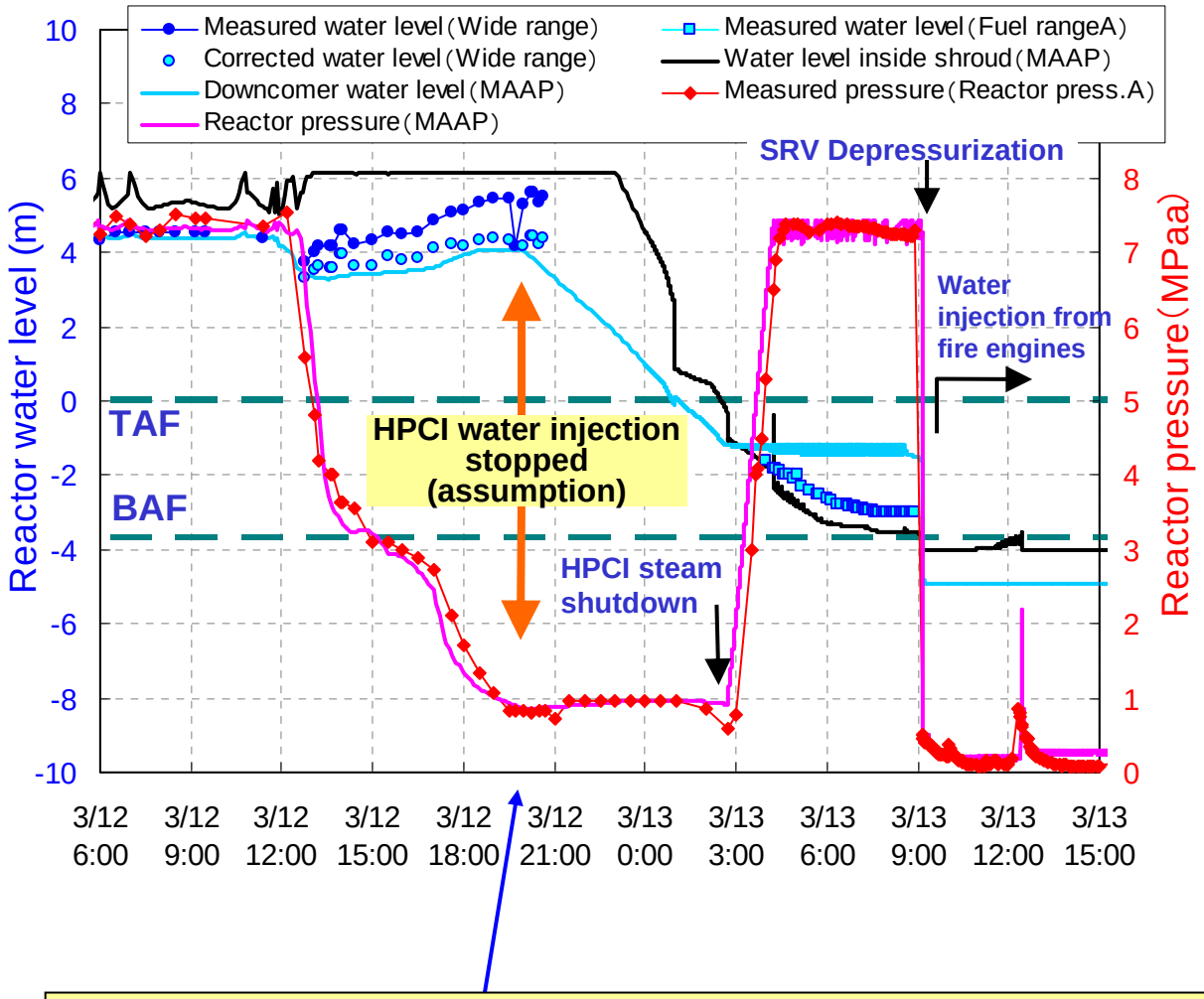
Removal of Unit1 Building temporary cover ③

Video Title: Measures to reduce radioactive material from scattering at debris



http://www.tepco.co.jp/en/news/library/archive-e.html?video_uuid=kletx9w5&catid=61795

Latest-evaluation of Unit3's fuel melting ①



- Conditions for analysis -

✓At 20:00 on March 12, reactor pressure fell below HPCI design condition 1MPag to about 0.8 MPag. We assumed that no cooling water was injected into the reactor after that time.

✓As for the state of HPCI operation, steam supply to the turbine continued, but we estimate that virtually all of the discharge flow rate went back from the test line to CST.

✓After the HPCI's manual shutdown, reactor pressure began to rise due to steam supply being cut off.

Conduct MAAP[note1] analysis, taking into account hypothetical state that no cooling water was injected into the reactor by HPCI[note2] after 20:00 on March 12.

Latest-evaluation of Unit3's fuel melting ②

Conduct MAAP[note1] analysis, taking into account HPCI[note2] operational state

Process leading up to fuel melting and evaluation of its impact on the accident's developments

- Result analysis -

Process leading up to fuel melting

A zirconium-water reaction caused as the water level dropped resulted in fuel melting before the **water level reached the fuel's bottom.**

Developments following fuel melting

While uncertainty in the model and in the quantity of cooling water injected from fire engines makes the results of analysis somewhat unreliable, **the RPV did rupture, causing the majority of fuel to drop into the PCV.**

※note1; Modular Accident Analysis Program Analysis employing MAAP, a severe accident analysis code

※note2; High Pressure Coolant Injection system

Improvements in Work Environment

- An environment will be created that is conducive to long-term employment by all workers.

●**New administration building (in operation)**

●**Large rest house (under construction)**

●**Fukushima meal service center (under construction) OkumaTown outside the site**

- The 1st phase construction of the New Administration Office Building was completed. Employees can be able to allocate in a same office and communicate smoothly in a place closely the site.
- A large rest house (capacity: approx. 1,200 workers) will be built by the end of 2014.
- The Fukushima meal service center will be built and workers will be served with hot meals.