

Current Status and Recent Topics of Fukushima Daiichi NPS

March 4th, 2015



TOKYO ELECTRIC POWER COMPANY

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Unit 2 Reactor Building and Large Carry-in Entrance Rooftop Accumulated water Quality Results

1-1. Sequence of events about radioactive concentration in drainage channel K

December, 2013



It was announced that highly radioactive materials were found in drainage channel K (Regular press conference)

January – March, 2014



The extent of contamination of the drainage channel and the policy for cleaning & decontamination was announced during the meeting with the government.

From April, 2014



Although the cleaning and decontamination task was being carried out while collecting data for verifying the effect of individual countermeasures, **we did not officially announced the data collected after April 2014.**

Around December, 2014

The cleaning & decontamination task progressed and while the concentration at the outlet of the drainage channel showed a downward trend from around December 2014, the expected effect was not seen on the concentration at the outlet of drainage channel K.

1-2. Report overview and Response

- Given this result, the company inspected the upstream branch pipes of "Drainage K" and found that **a puddle on the rooftop of the large carry-in entrance of the Unit 2 reactor building showed a relatively high concentration** (e.g. 23,000 becquerels per liter of Cesium 137).
- Regarding the dosage at the mouth of "Drainage K", the levels monitored were lower (around ten to several hundred becquerels per liter of Cesium 137) than that of the rooftop of the large carry-in entrance of the Unit 2 reactor building, and **there was also no substantial concentration rise identified in the seawater around the south drainage release point, called Point T-2-1.**

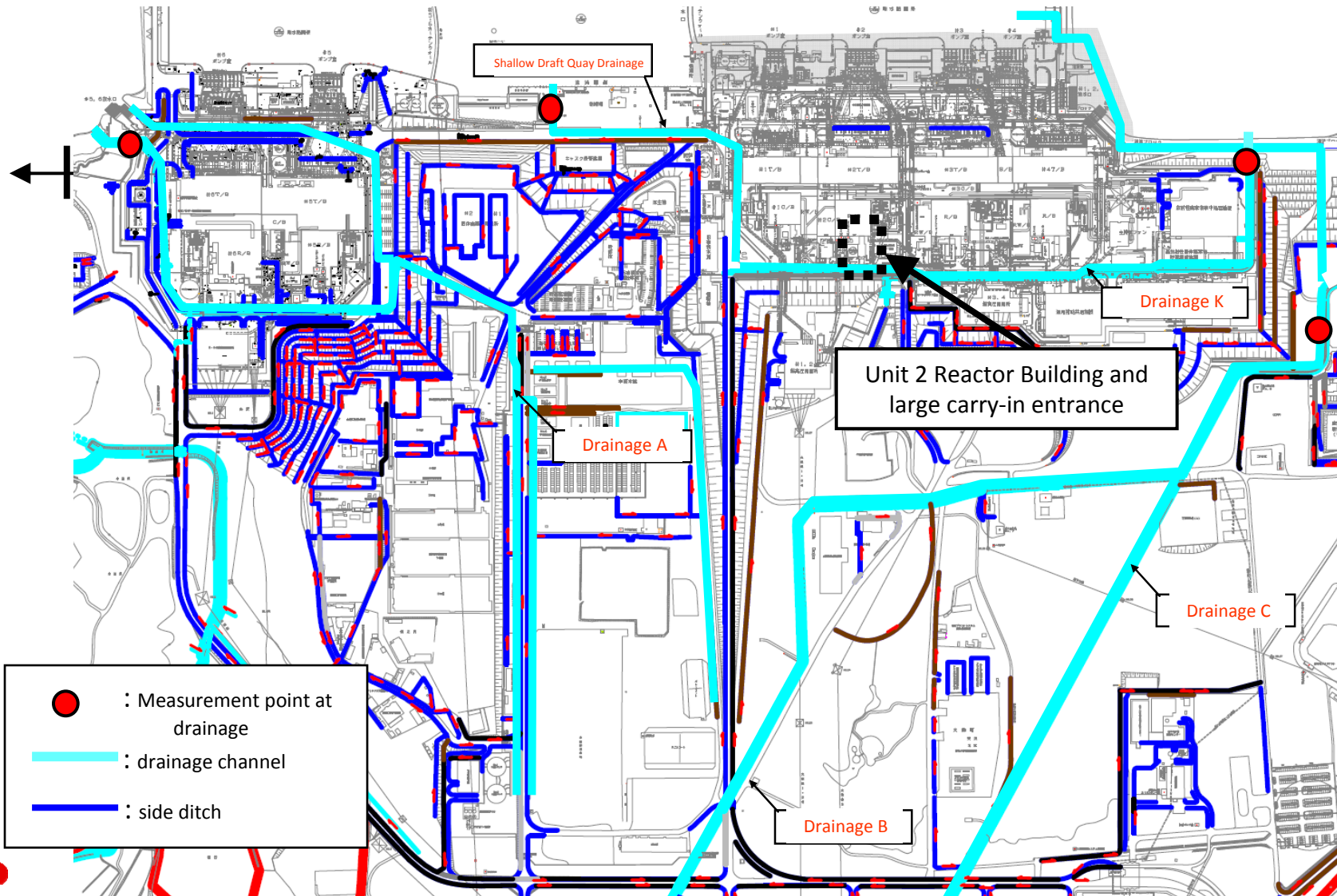


<Response>

On February 26, 2015, we heard from the State Minister of Economy, Trade and Industry, Yosuke Takagi, that *"with respect to risks that are likely to have an impact outside the site boundary, such as rain or dust, a comprehensive overall review will be carried out again from the perspective of the residents or public who are affected by the disaster, and thereafter, countermeasures that are appropriate for the current conditions will be presented and necessary information will be provided"*. We will be taking serious action.

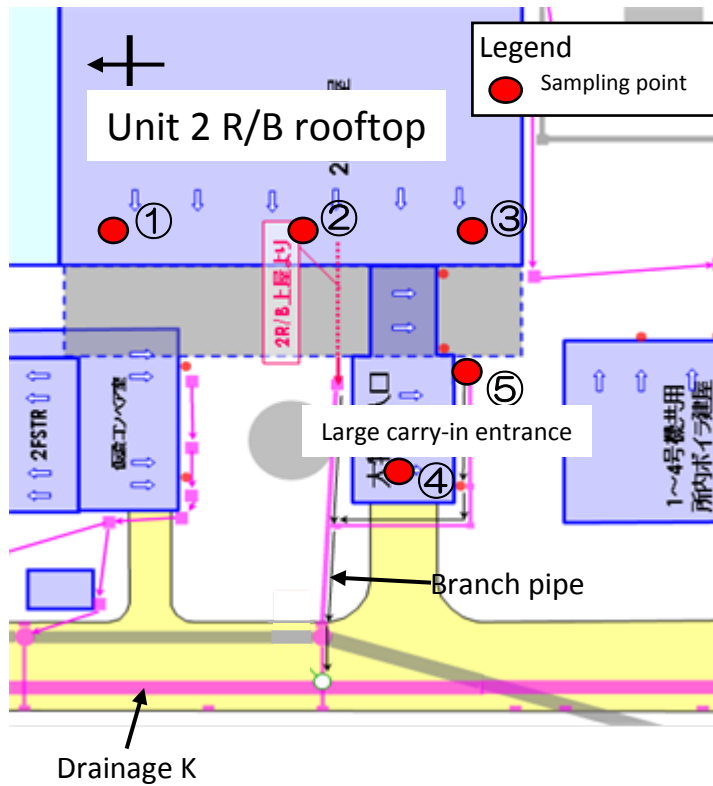
1-3. Drainage locations

Below are the locations of drainage channels.



1-4. Result of water quality analysis of the rooftop area of reactor building (Unit 2 reactor building rooftop, large carry-in entrance rooftop)

- Rainwater on the rooftop of the reactor building, located upstream of the branch pipes which flow into "Drainage K", were analyzed.
- Because of the high dosage in the reactor building roof and concern over the radiation exposure to workers in a comprehensive investigation, the analysis was limited to the 2 R/B rooftop and large delivery rooftop, which were chosen based on accessibility and atmospheric radiation.
- As a result of the investigation, the rainwater found on the large carry-in rooftop contained a relatively high density of radioactive materials.



Sampling location map



Photo② : Unit 2 Reactor Building rooftop



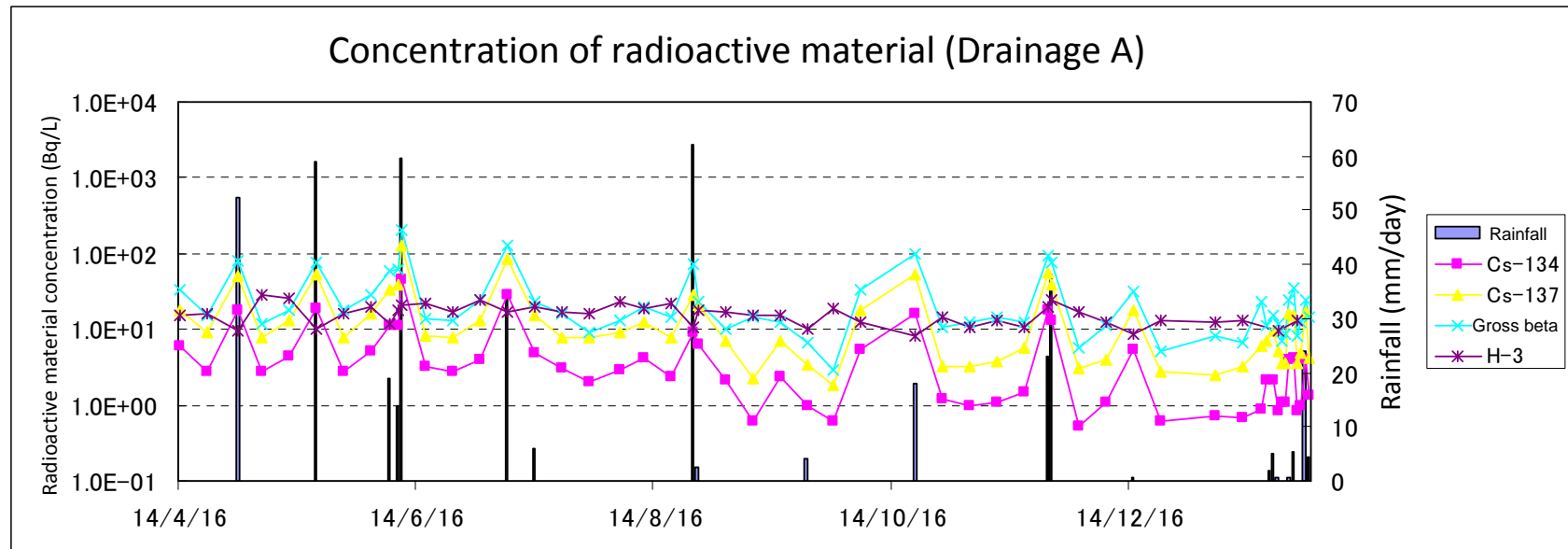
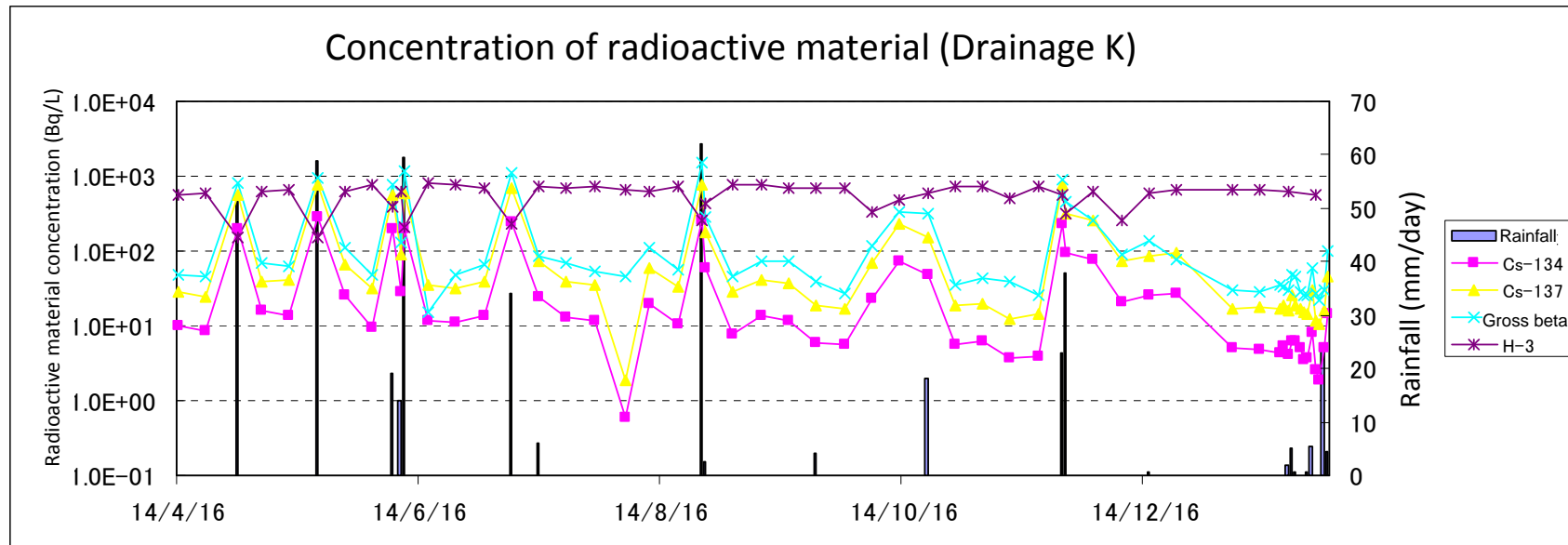
Photo④ : large carry-in entrance rooftop

List of analysis results

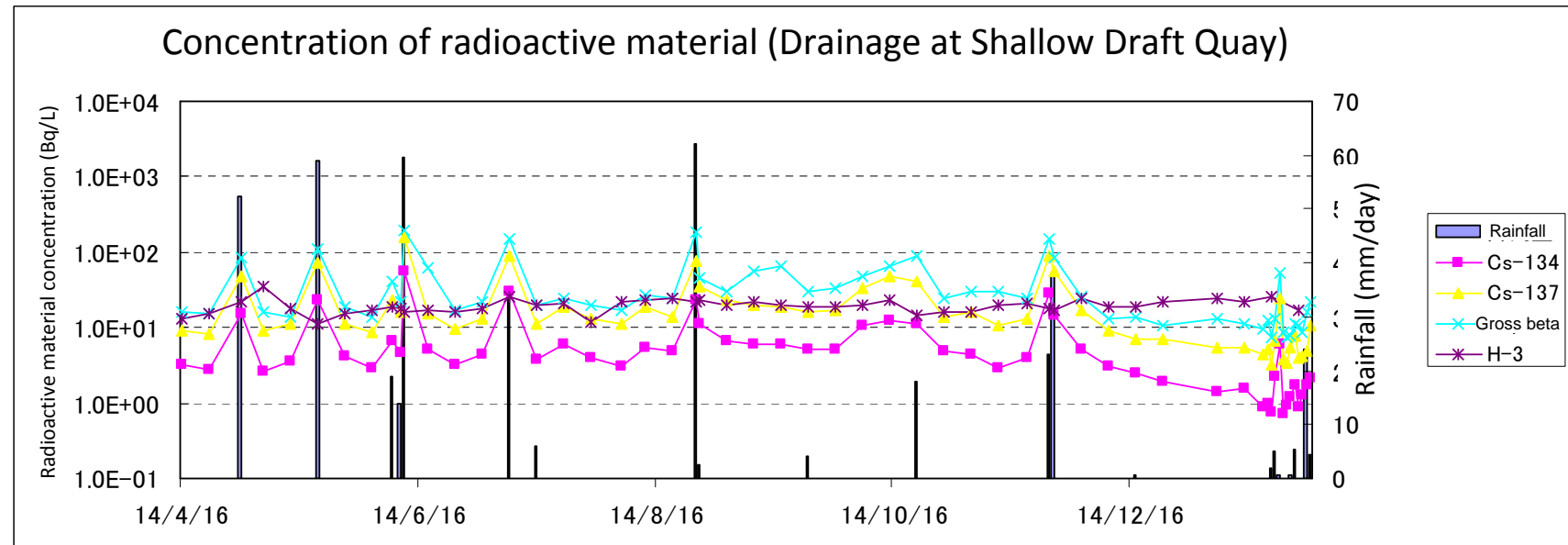
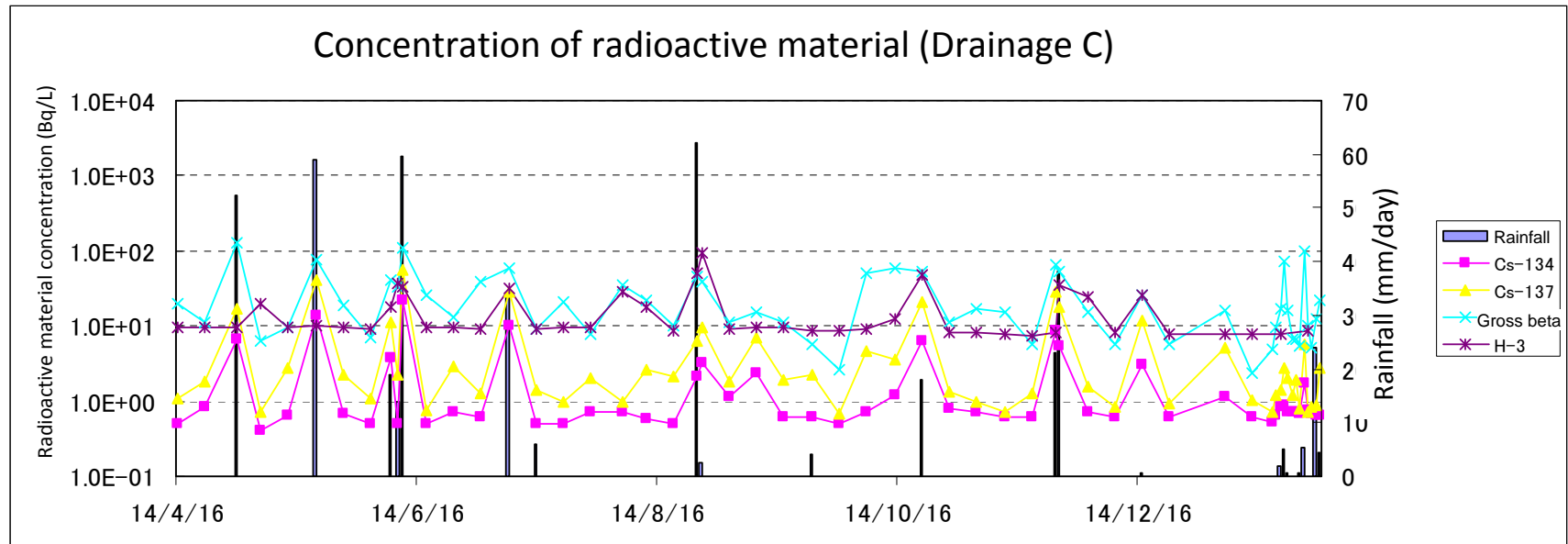
(Unit : Bq/L)

No.	place	Cs134	Cs137	Gross β	Sr90	H-3	Sampling date
①	Unit 2 R/B rooftop (north)	200	650	920	10	ND(<100)	2015.1.16
②	Unit 2 R/B rooftop (center)	340	1,100	1,900	12	ND(<100)	2015.1.16
③	Unit 2 R/B rooftop (south)	300	990	1,900	20	ND(<100)	2015.1.16
④	Large carry-in entrance rooftop	6,400	23,000	52,000	Under analysis	600	2015.2.19
⑤	Vertical drainage pipe of carry-in (east)	920	3,200	9,700	Under analysis	ND(<100)	2015.2.18

1-5. Water quality of the drainage channels (1/2)

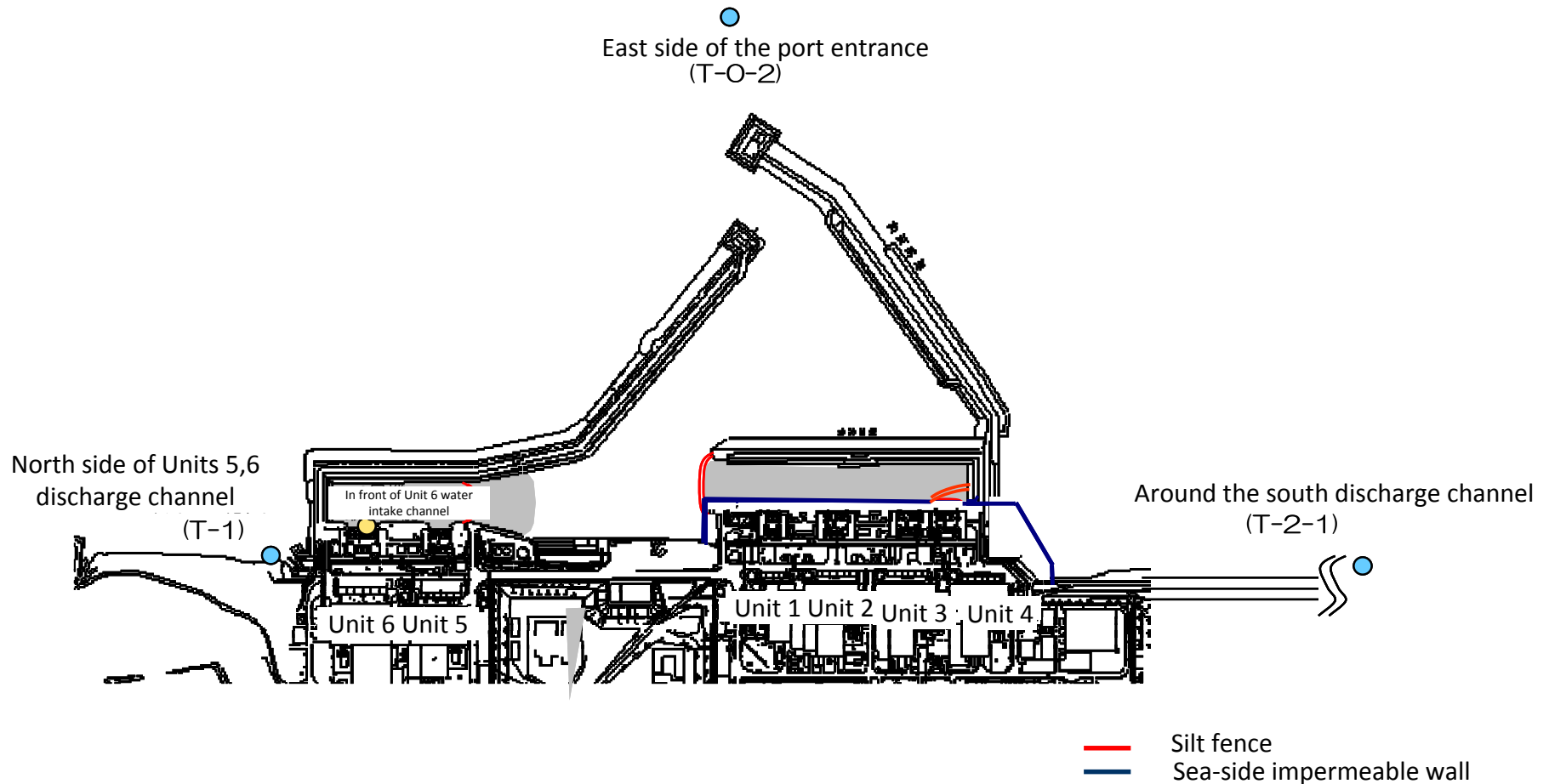


1-6. Water quality of the drainage channels (2/2)



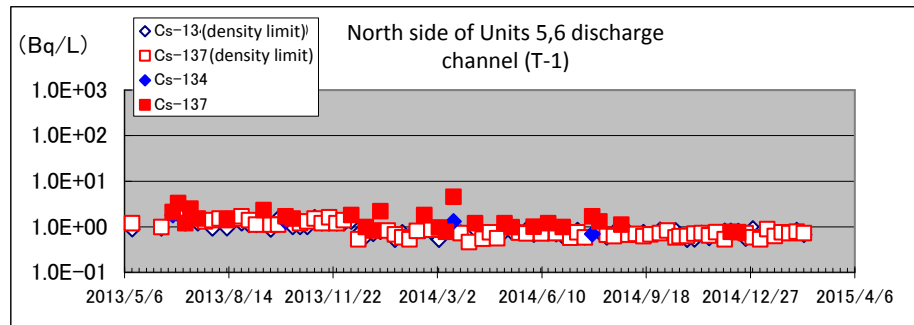
1-7. Ocean water condition (at sampling point)

■ Ocean water was monitored for dosage levels at the points below, but there have been no large changes seen in the condition.

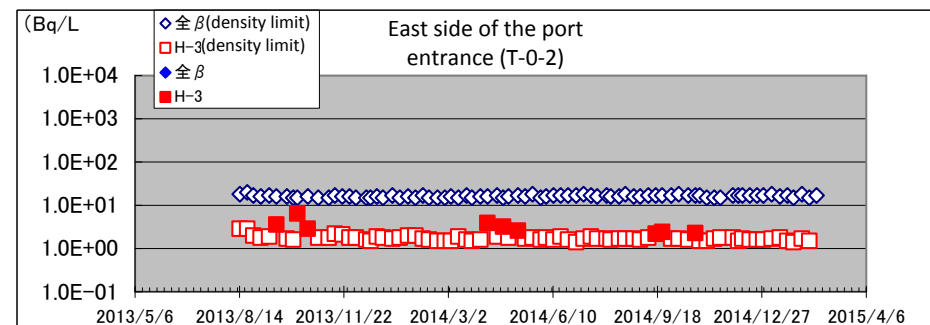
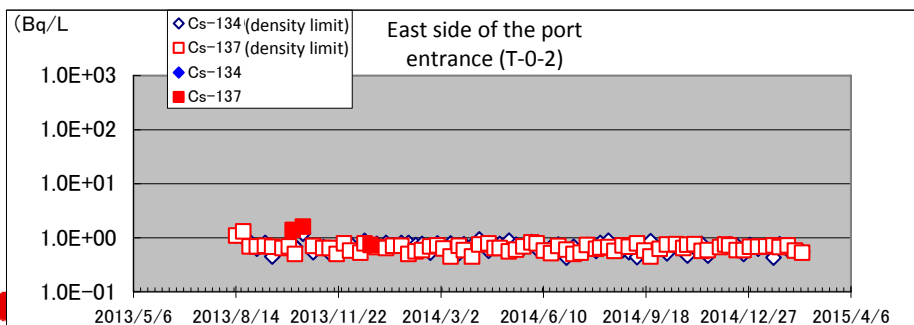
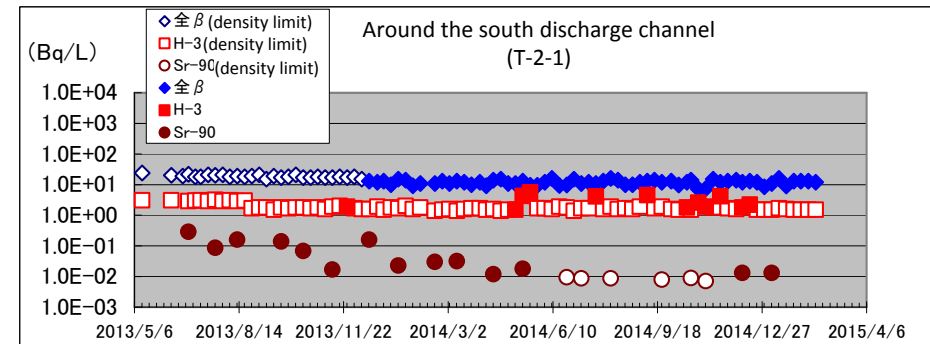
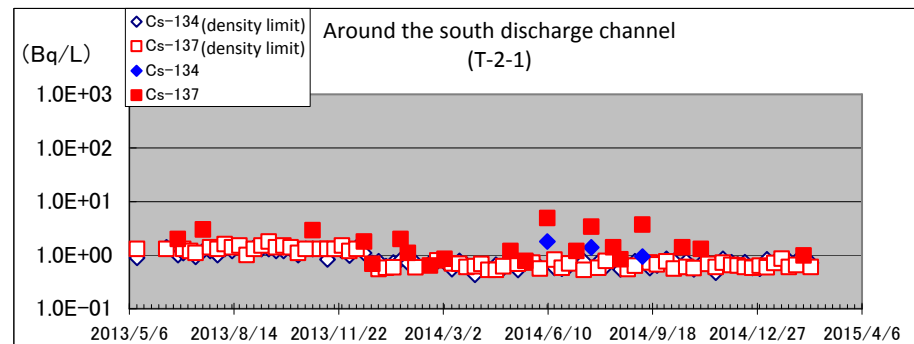
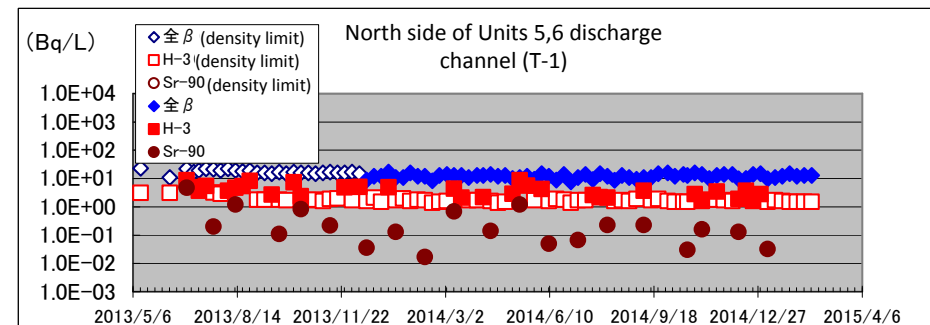


1-8. Seawater sampling historical results (Outside port: Gamma nuclides, Gross beta, H-3, Sr-90)

Gamma nuclides concentration



Gross beta, H-3, Sr-90 nuclides concentration

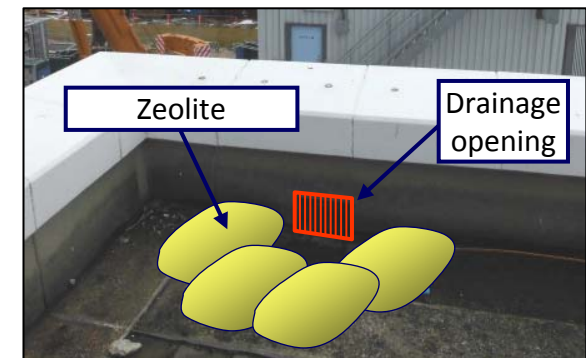
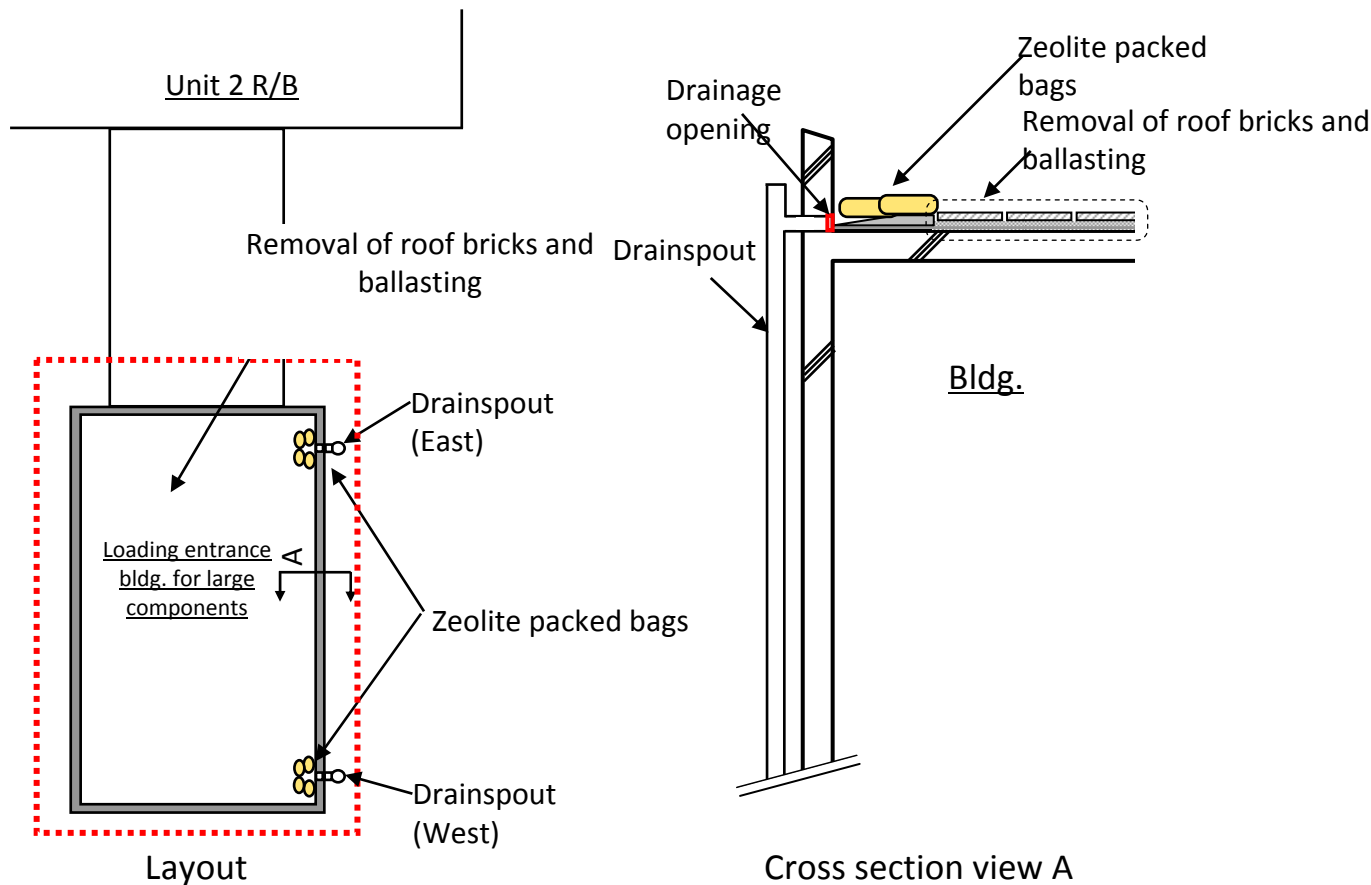


1-9. Measures for the rooftop of the large carry-in entrance at Unit 2 reactor Bldg.

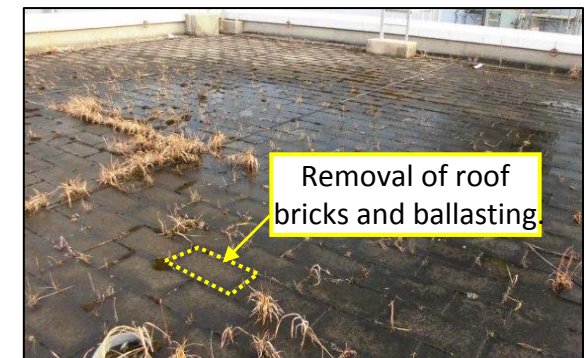
■ Preventive measures were carried out for rainwater contamination on the rooftop of the large carry-in entrance at Unit 2 reactor building.

- Place Zeolite packed bags around the drainage opening on the rooftop. (to be carried out once prepared)
- Block the roof likely to be the contamination source, and remove the ballasting, etc. from the roof. (to be carried out before the end of March)

Legend  Area subject to preventive measures for contamination



Installation of Zeolite packed bags

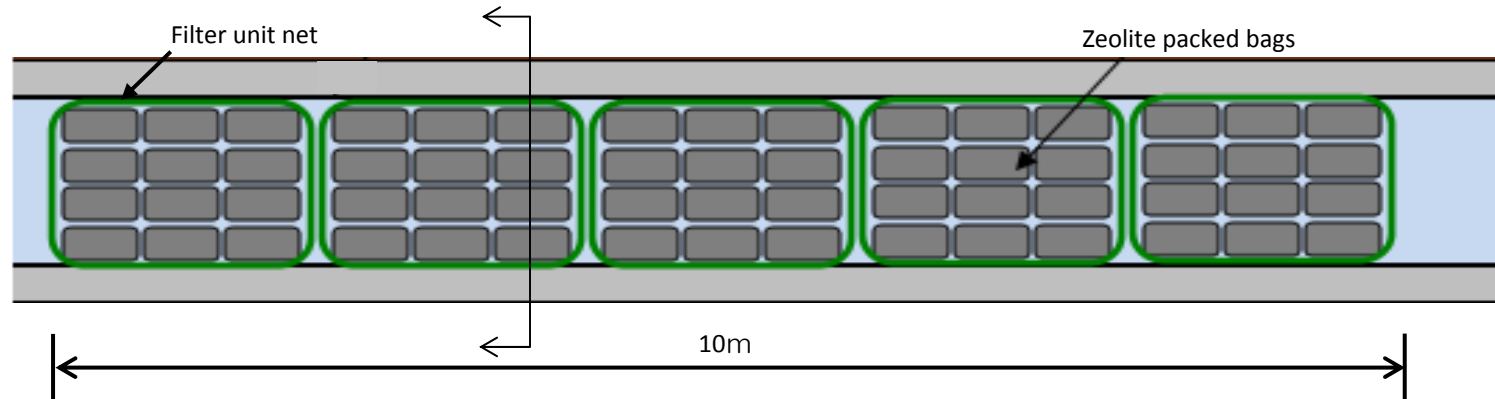


Rooftop

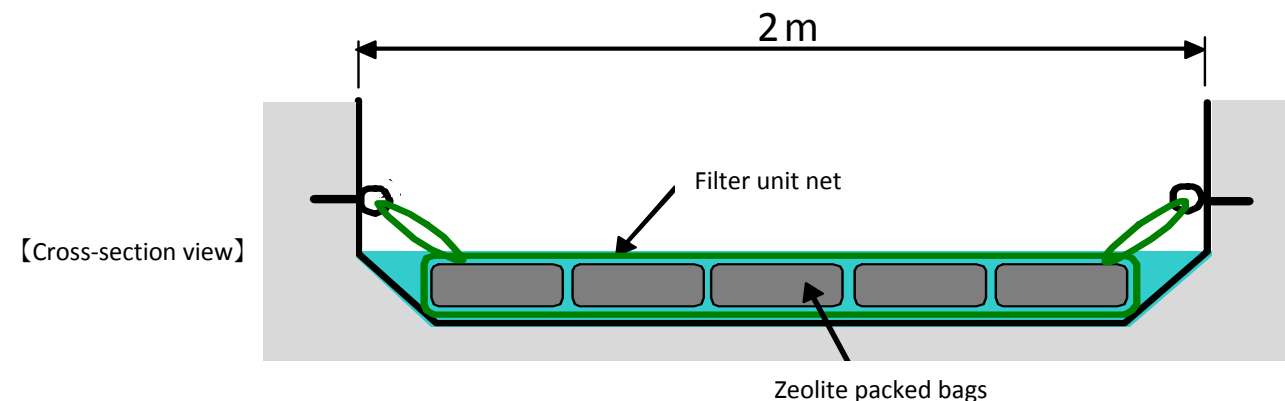
1-10. Measures for major parts of K drainage

<Major parts of drainage> To be installed before the end of March (to be started in order from Feb 9)

■ Spread Zeolite packed bags all over the bottom of drainage.



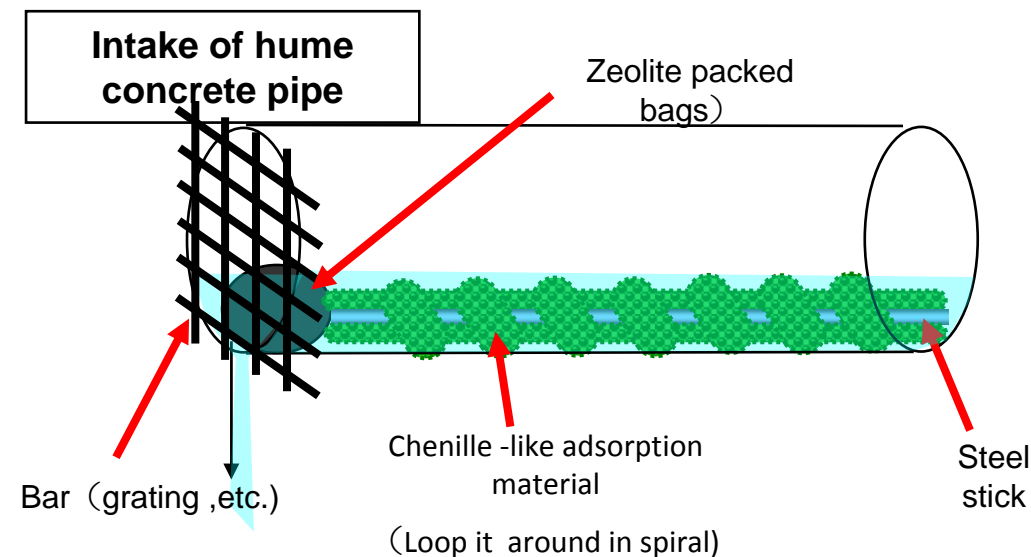
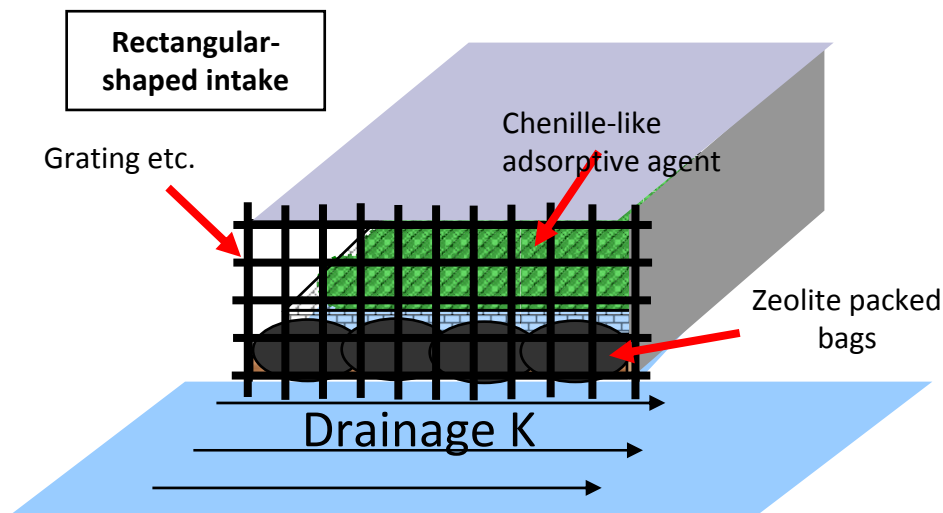
■ Place several Zeolite packed bags in a unit in the filter unit net and fix the net with bolts.



1-11. Measures taken toward "Drainage K" east side branch pipe (installation of decontamination material)

<branch pipe opening> to be installed by end of March

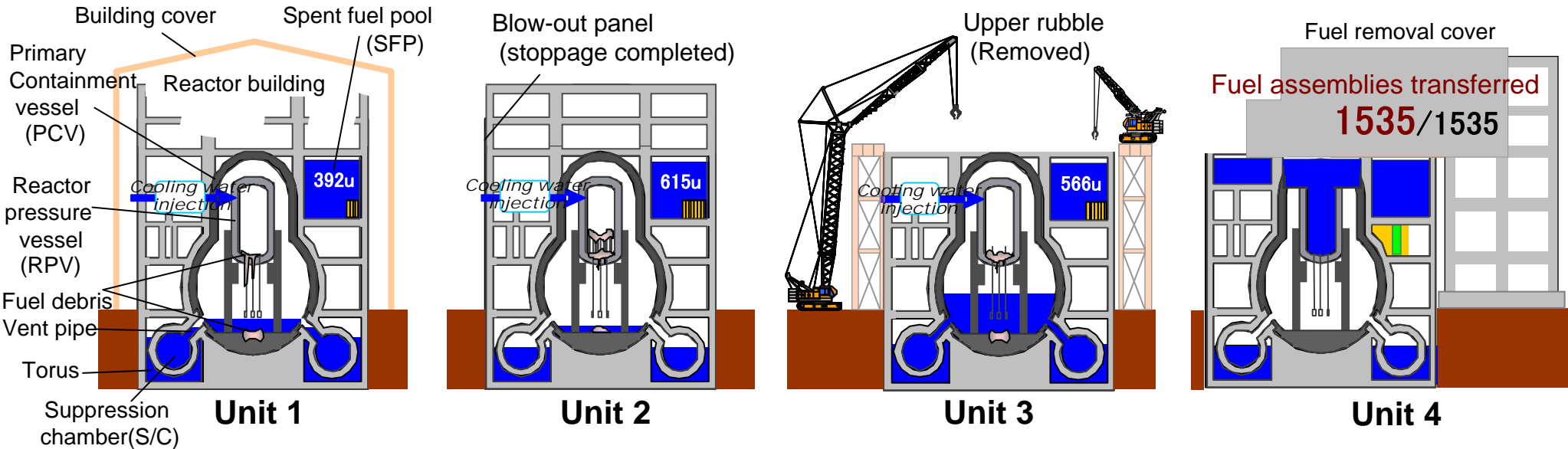
- Zeolite-filled bags will be installed and the water level will be raised in order for the chenille-like adsorption material.
- During rain, the upper part is opened wide for the water to flow across, and the material is also fixed to the metal wires to prevent it from being washed away.
- The lower part of the immersed parts is installed with the chenille-like adsorption material in order for it to close according to the amount of water flow.



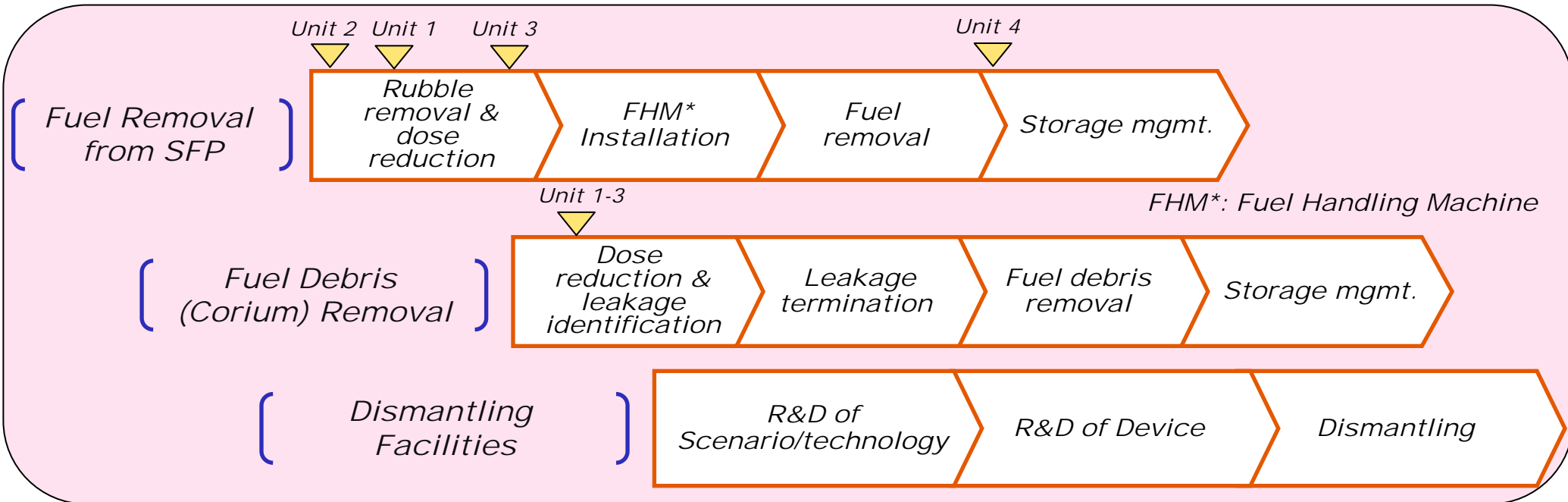
Other Topics

2-1. Current Status

■ All Units continue to be in cold shutdown (Unit 1, 2, 3, 4, 5 and 6)

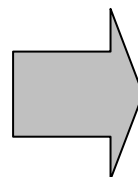
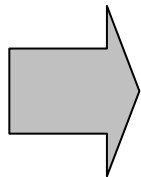


2-2. Main Works and Steps



- Fuel removal from Unit 4 SFP was completed. (as of Dec. 22, 2014)
- Preparatory works for fuel removal from SFP and fuel-debris removal are ongoing at Unit 1, 2, 3.

3-1. Fuel Removal from Unit 4 SFP



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

**Crane setting completed
(May.2013)**

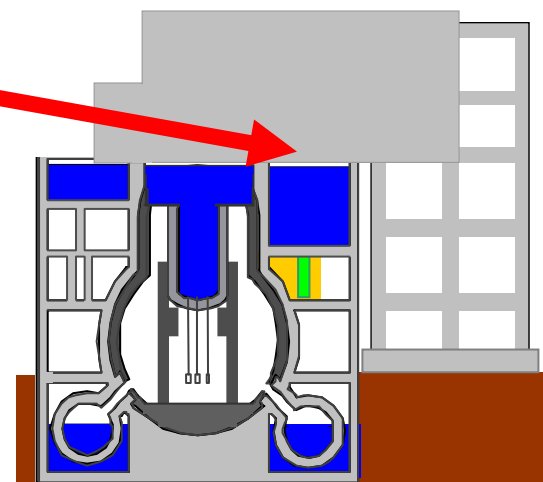
**Fuel Removal Structure
(Nov. 2013)**

- All fuel assemblies were transferred to common pool and Unit 6 SFP as of Dec. 22, 2014.

<http://www.tepco.co.jp/en/decommision/planaction/removal-e.html>

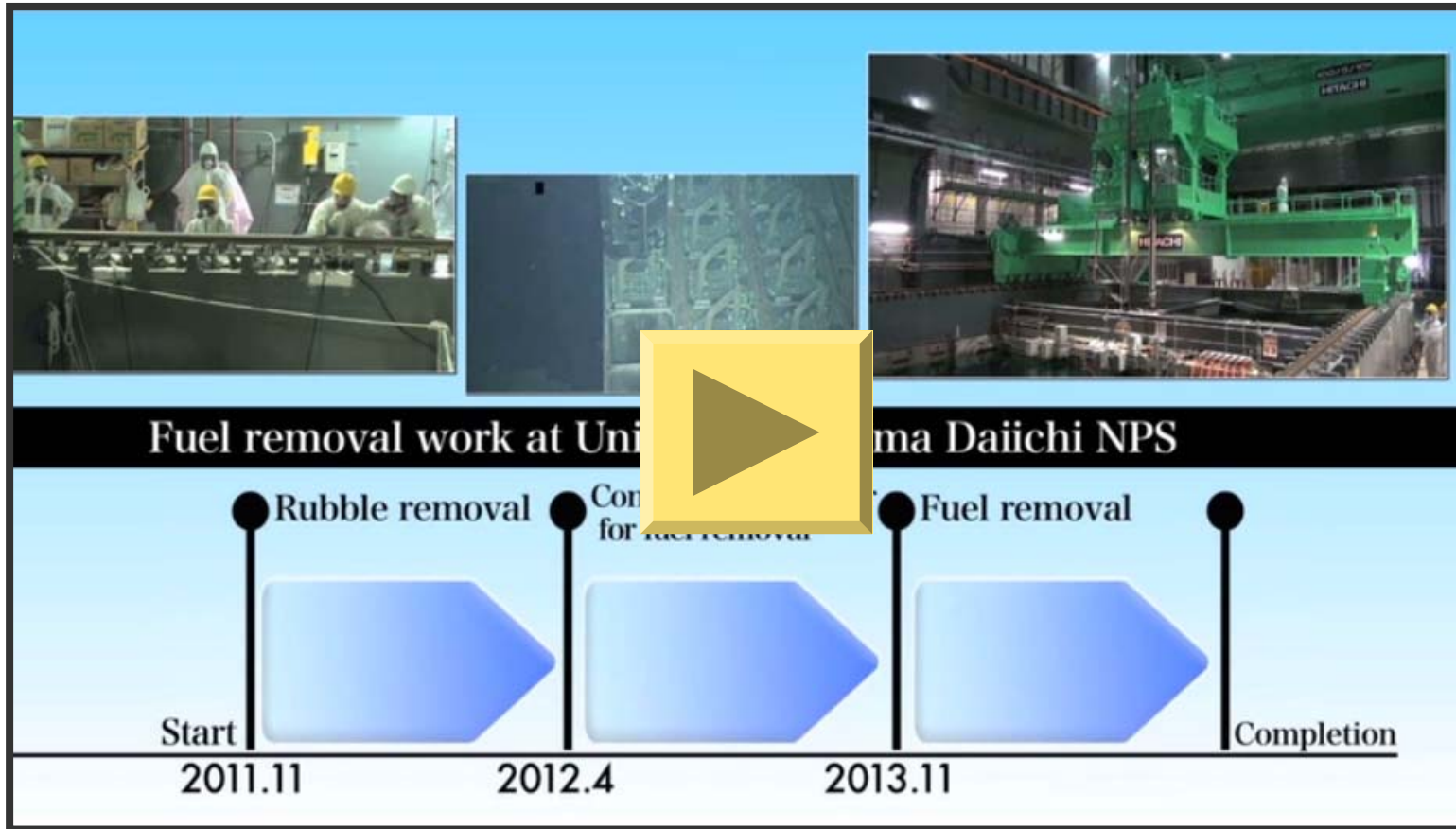


Fuel Removal from SFP



3-2. TEPCO's Video

Video Title: Completion of fuel removal from Unit 4 spent fuel pool at Fukushima Daiichi NPS



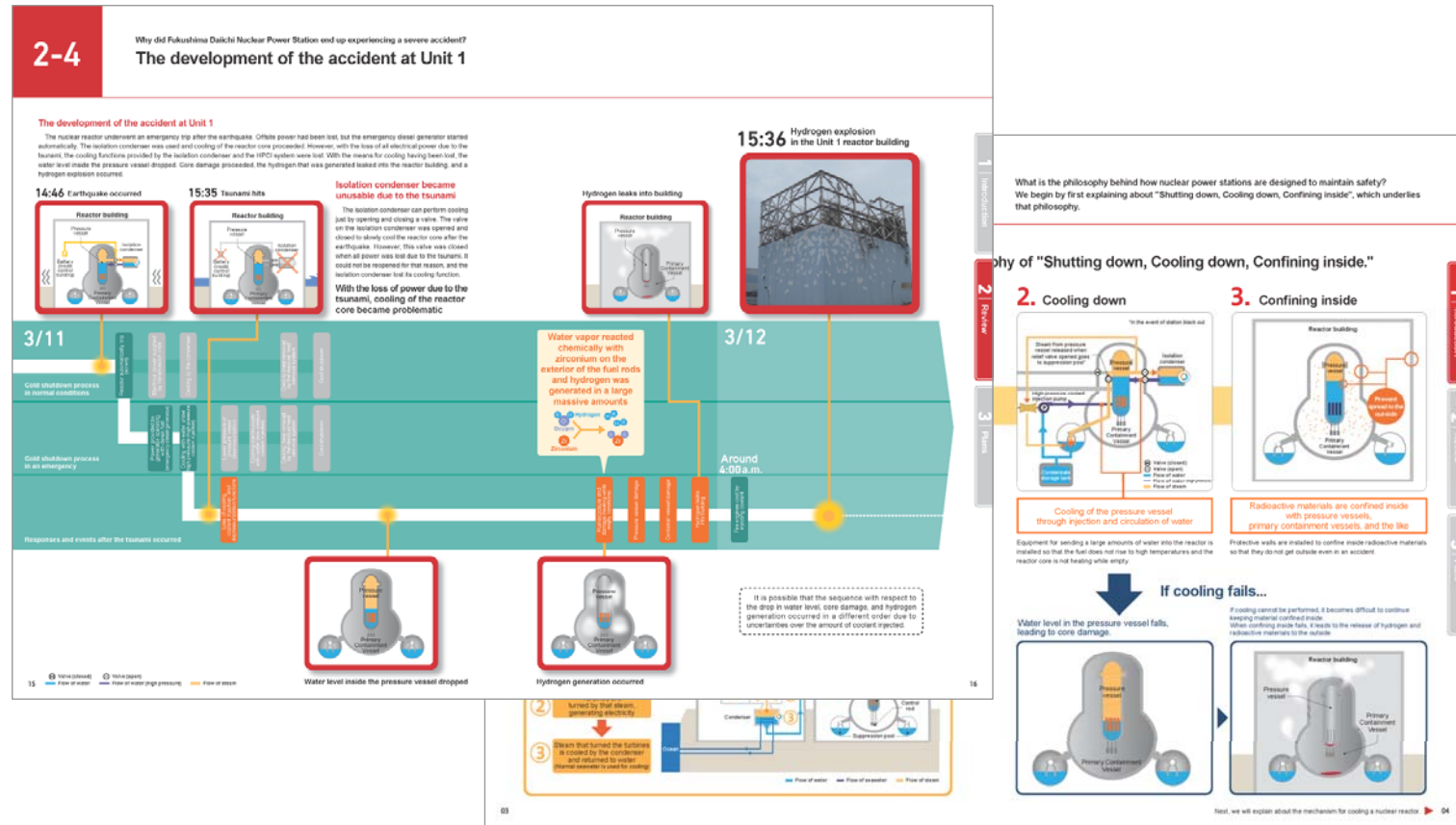
http://www.tepco.co.jp/en/news/library/archive-e.html?video_uuid=w220b15k&catid=61795

The Development of and Lessons from the Fukushima Daiichi Nuclear Accident

The Development of and Lessons from the Fukushima Daiichi Nuclear Accident



Fukushima Daiichi Nuclear Power Station, prior to the accident (from left to right, Units 1, 2, 3, and 4, photographed November 2000).



<http://www.tepco.co.jp/en/decommision/accident/index-e.html>