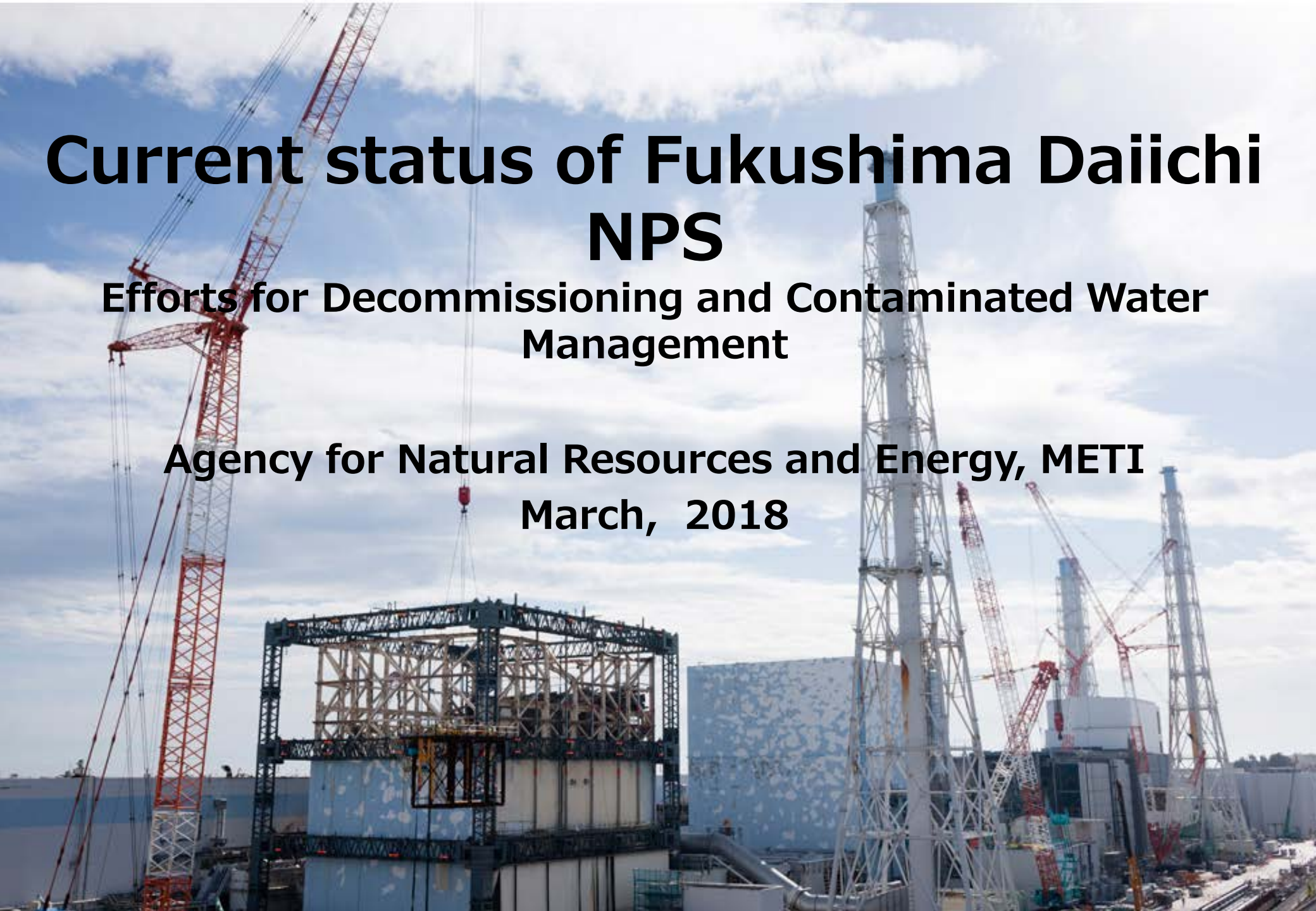


Current status of Fukushima Daiichi NPS

**Efforts for Decommissioning and Contaminated Water
Management**

**Agency for Natural Resources and Energy, METI
March, 2018**



Mid-and-Long-Term Roadmap

The government has formulated **“Mid-and-Long-Term Roadmap towards the Decommissioning of TEPCO’s Fukushima Daiichi Nuclear Power Station”** and is engaged in **process control measures** for decommissioning.

It has been revised three times so far. **Continuous review will be carried out** based on the situation of the site in the future and the results of research and development.

Major Milestones of the Mid- and Long-Term Roadmap

Contaminated water management	Suppress contaminated water generation to about 150 m ³ / day.	Within 2020
	Storage of all water generated by treatment of highly contaminated water in welded-joint tanks	FY 2018
	① Separation of connection between Units 1 and 2 and between Units 3 and 4	Within 2018
	② Reduction of radioactive materials in stagnant water in the buildings by one-tenth of the 2014 year-end.	FY 2018
Stagnant water treatment	③ Completion of treatment of stagnant water in buildings	Within 2020
Removal of spent fuels	① Start of spent fuel removal at Unit 1	FY 2023 (an outlook)
	② Start of spent fuel removal at Unit 2	FY 2023 (an outlook)
	③ Start of spent fuel removal at Unit 3	Mid FY2018
Retrieval of fuel debris	① Decision on the method for fuel debris retrieval from the 1st implementing Unit	FY 2019
	② Start of fuel debris retrieval from the 1 st implementing Unit	Within 2021
Solid Radioactive waste	Establishment of a technical perspective on measures of treatment / disposal and on safety.	Around FY2021

Key event

Investigation using Robots

Unit1



Unit2

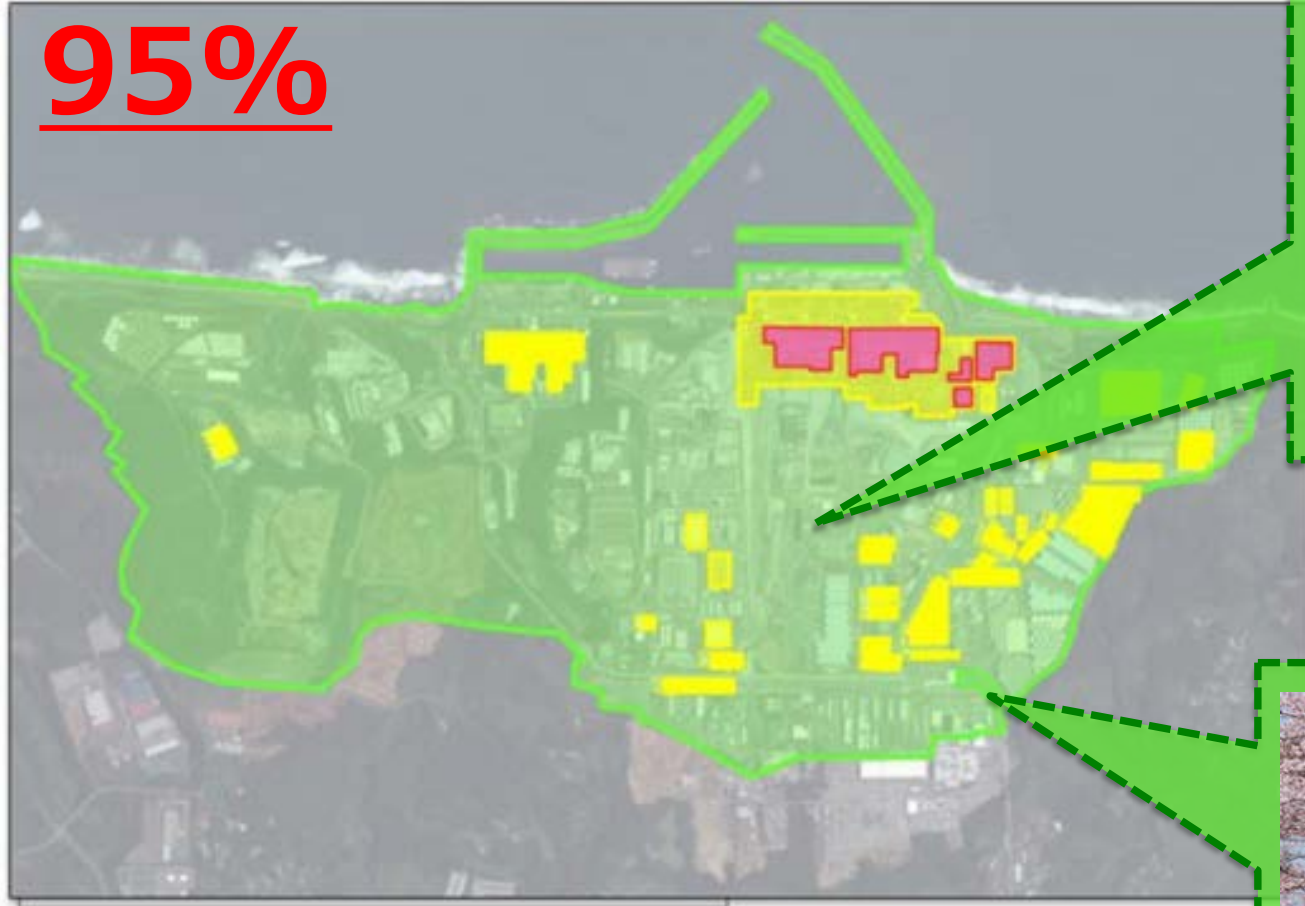


Unit3



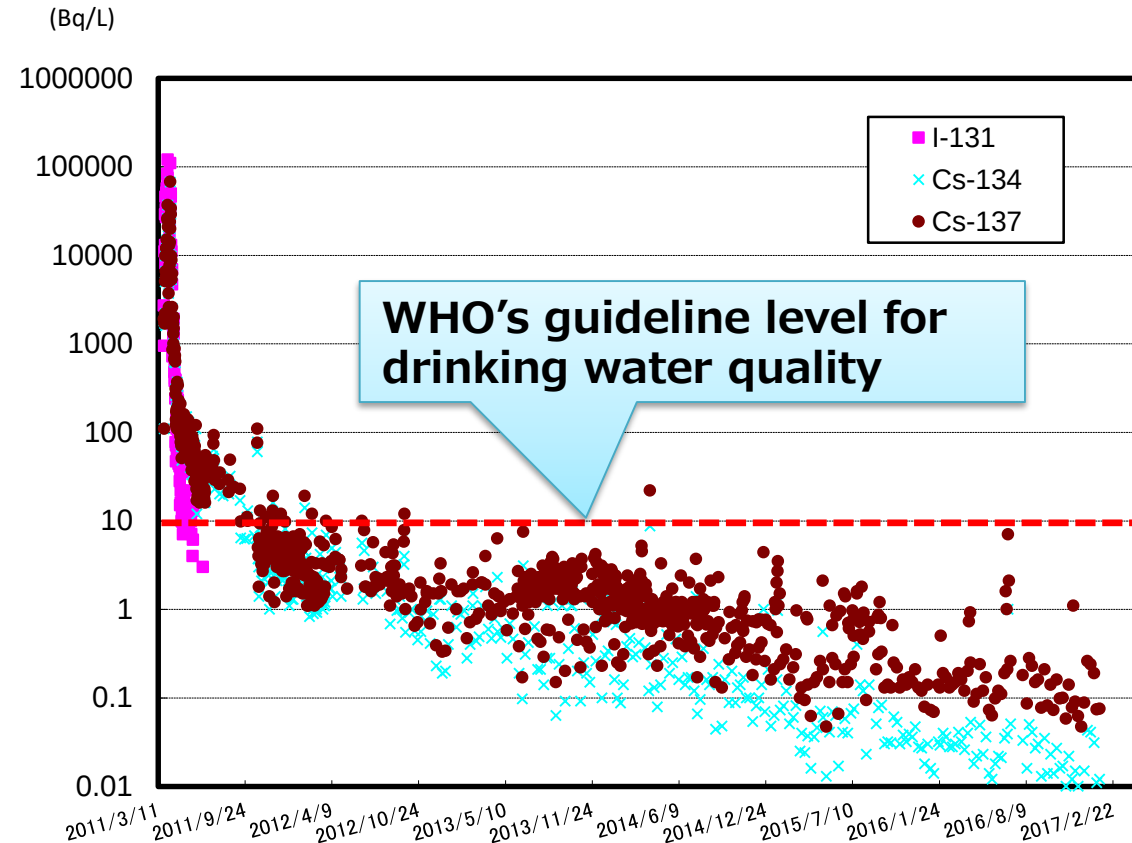
Key numbers

95%



Key numbers

Under 0.7 Bq/L



**Generation of
contaminated
water**

500 m³/day



200 m³/day

Unit 4

Mar. 2011



Now



Unit 3

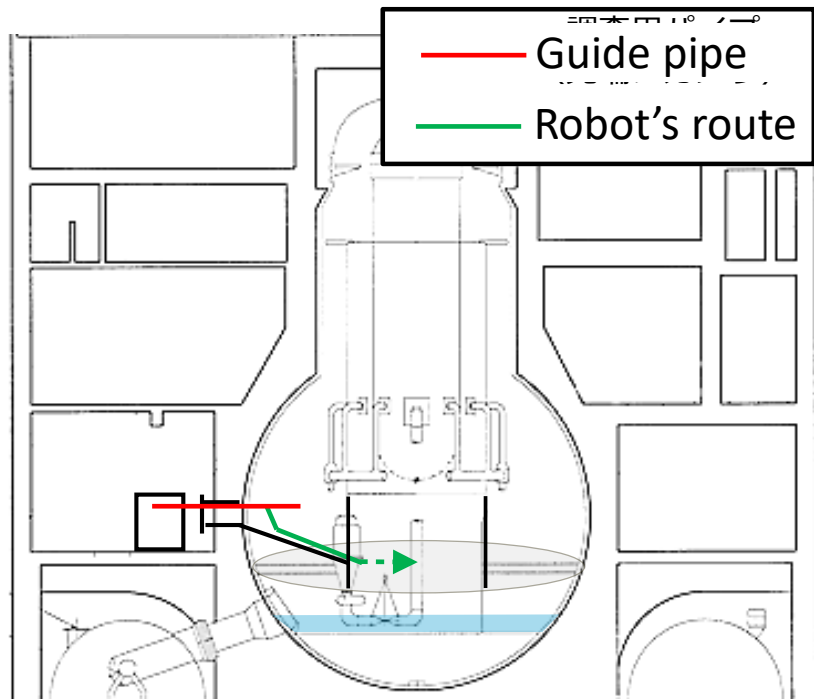
Mar. 2011



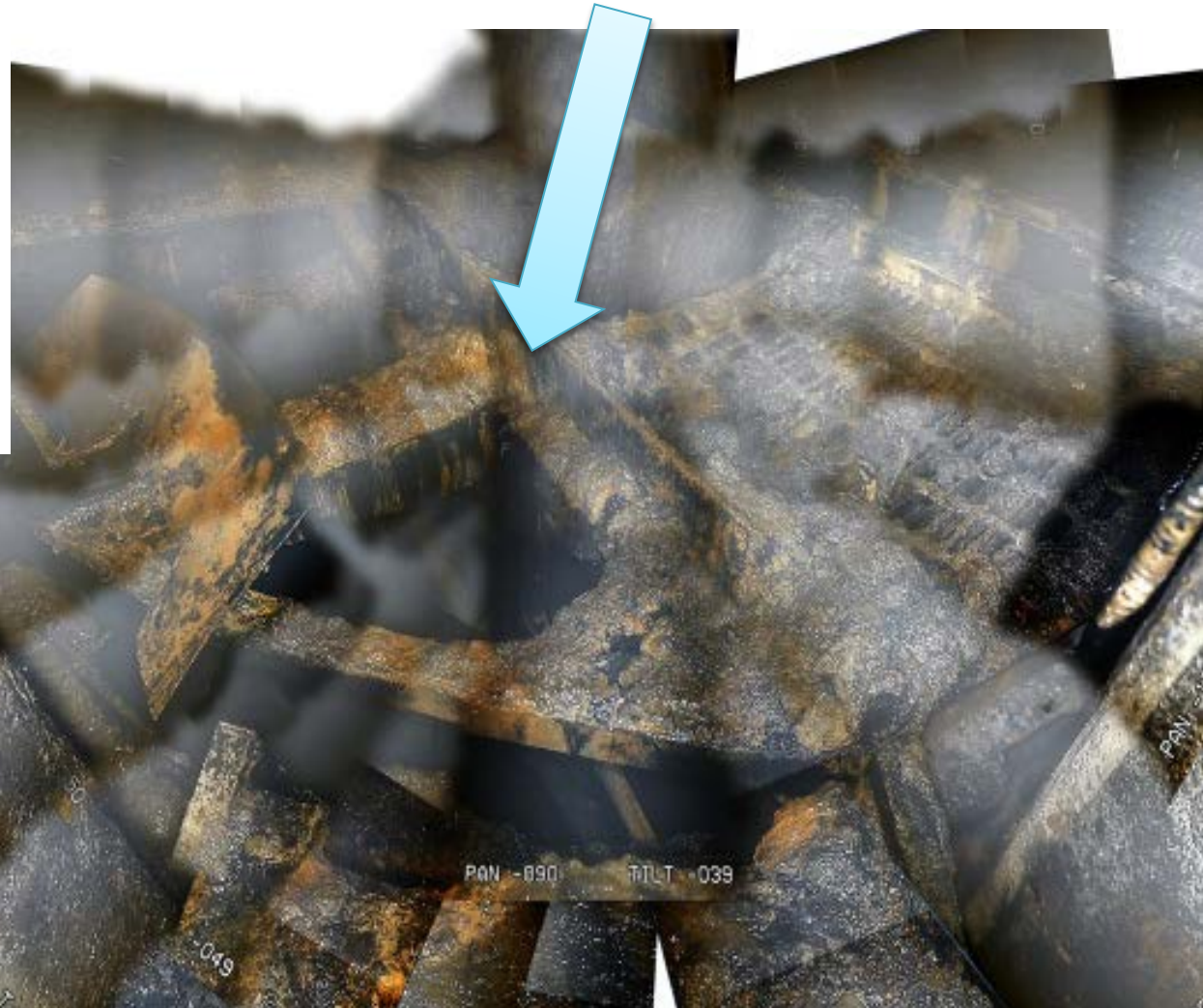
Now



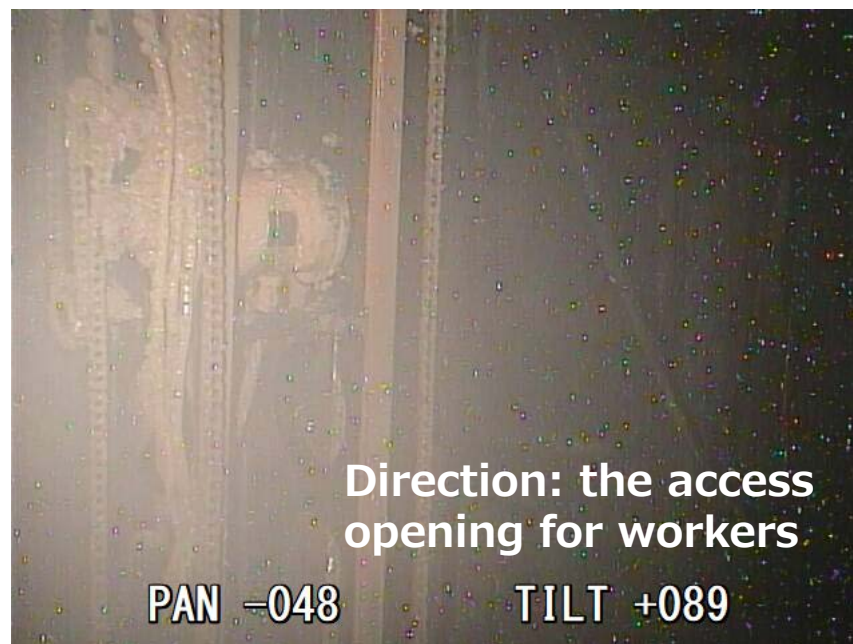
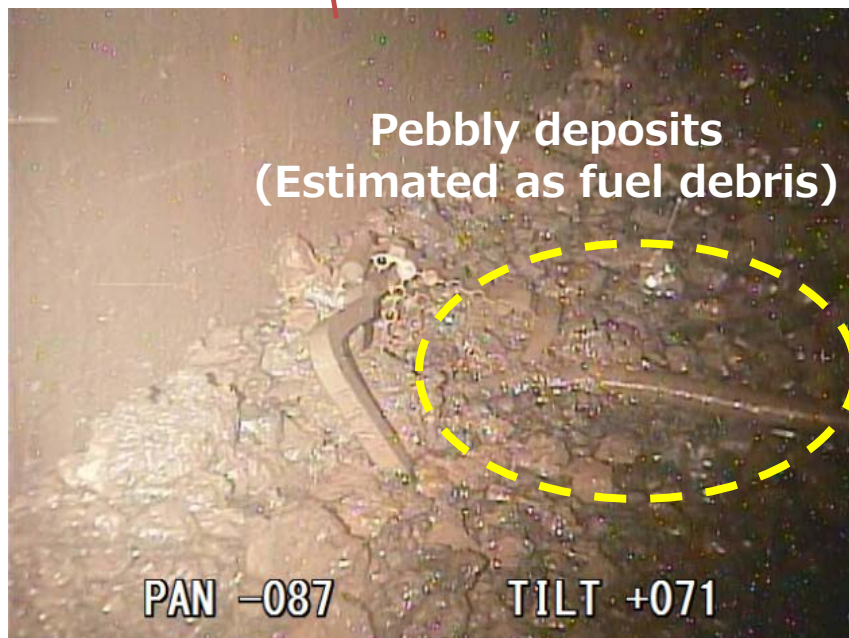
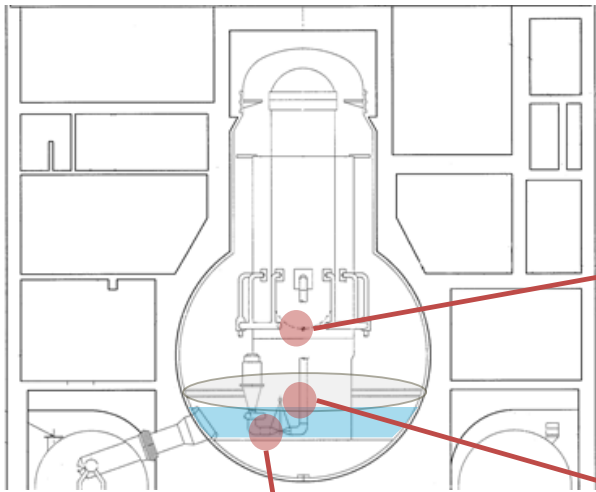
Robot into Unit 2 (30 Jan. 2017)



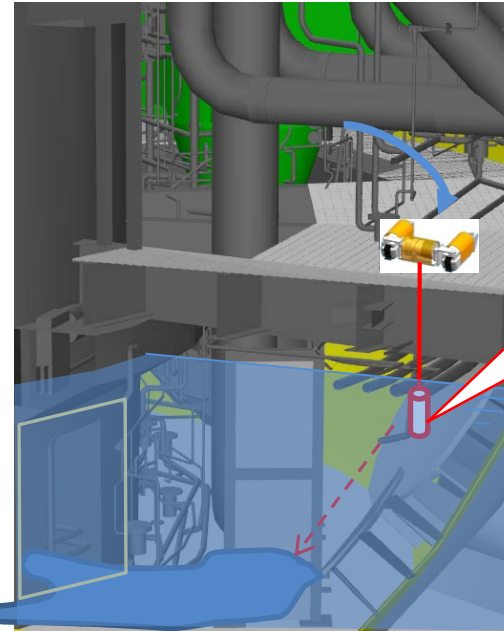
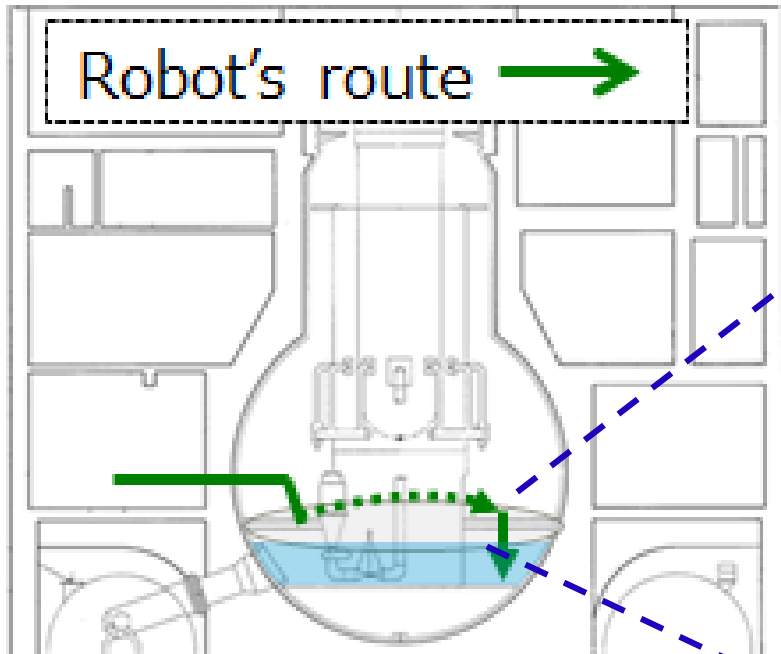
Scaffold fallen



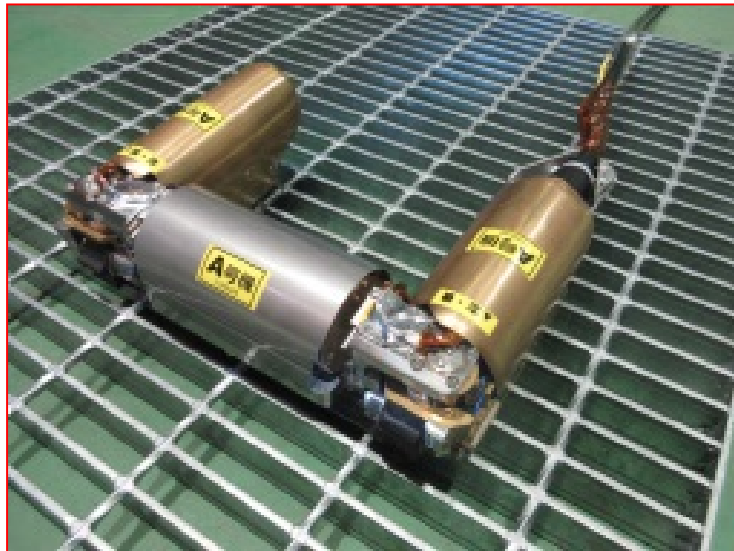
Camera into Unit 2 (19 Jan. 2018)



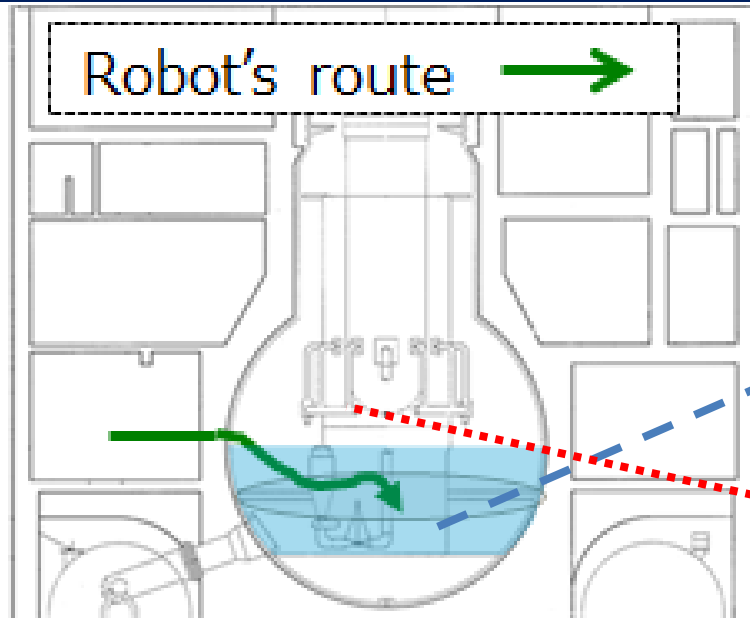
Robot into Unit 1(18-22 Mar. 2017)



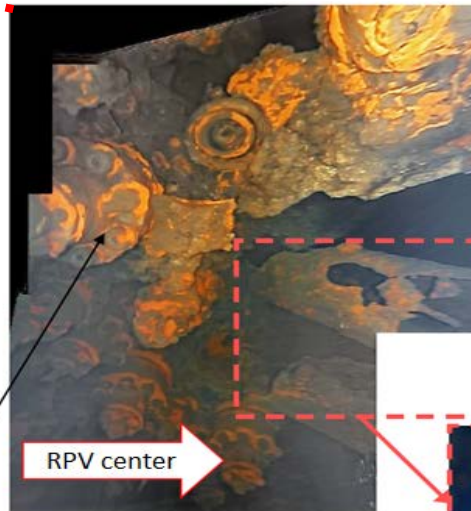
A dosimeter
&
A camera
in water



Robot into Unit 3 (19-22 Jul. 2017)



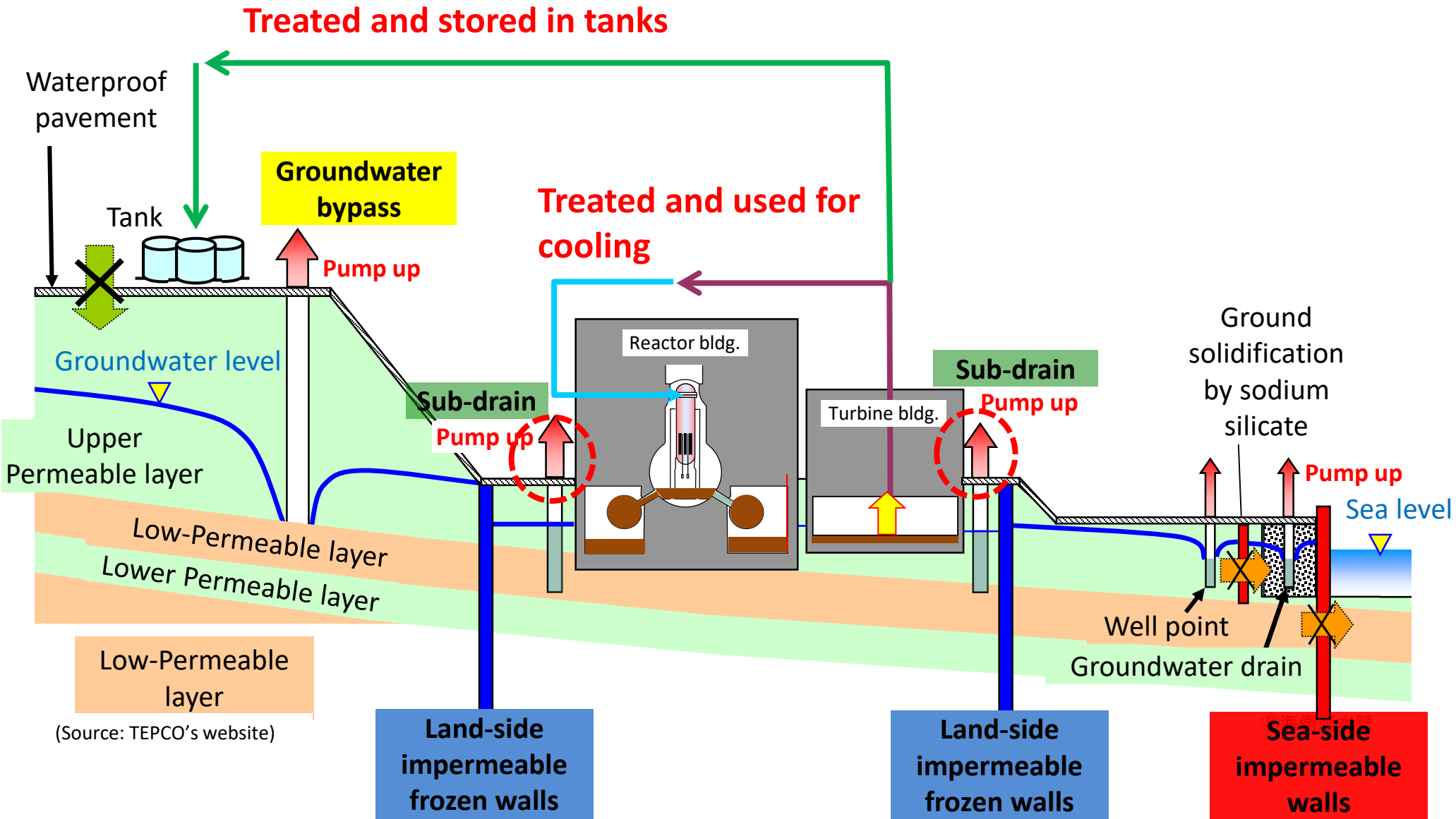
Inside the pedestal



CRD housing flange



Contaminated Water Management

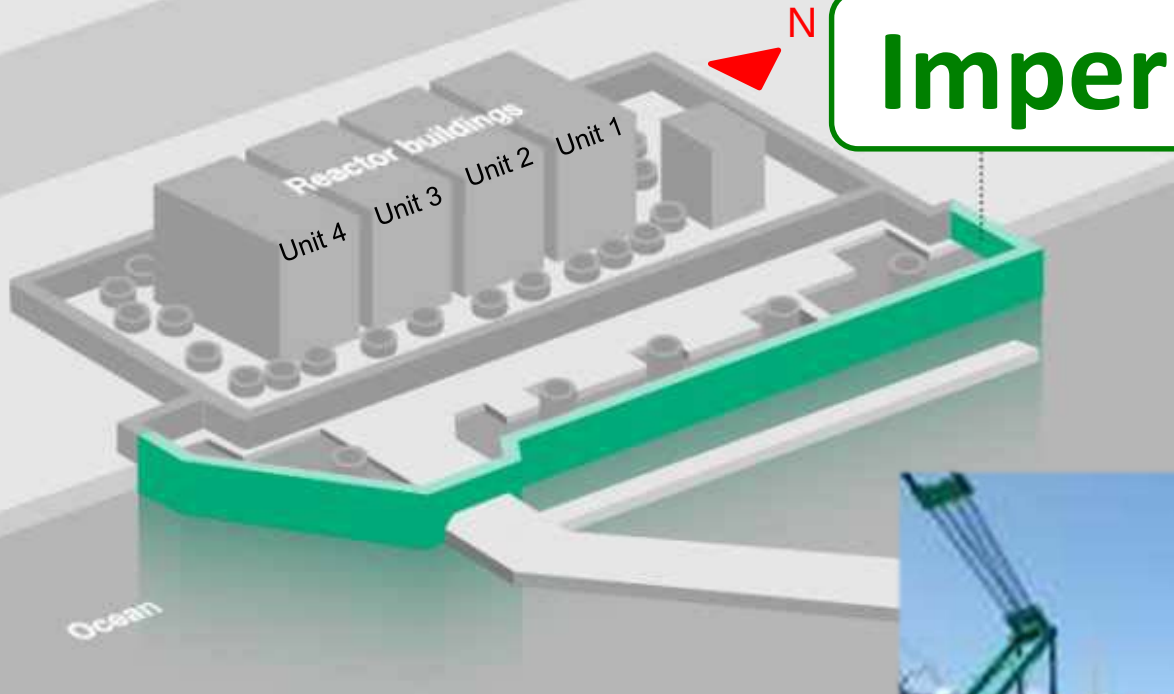


Bird's-eye view



Contaminated Water Management

Impermeable Wall

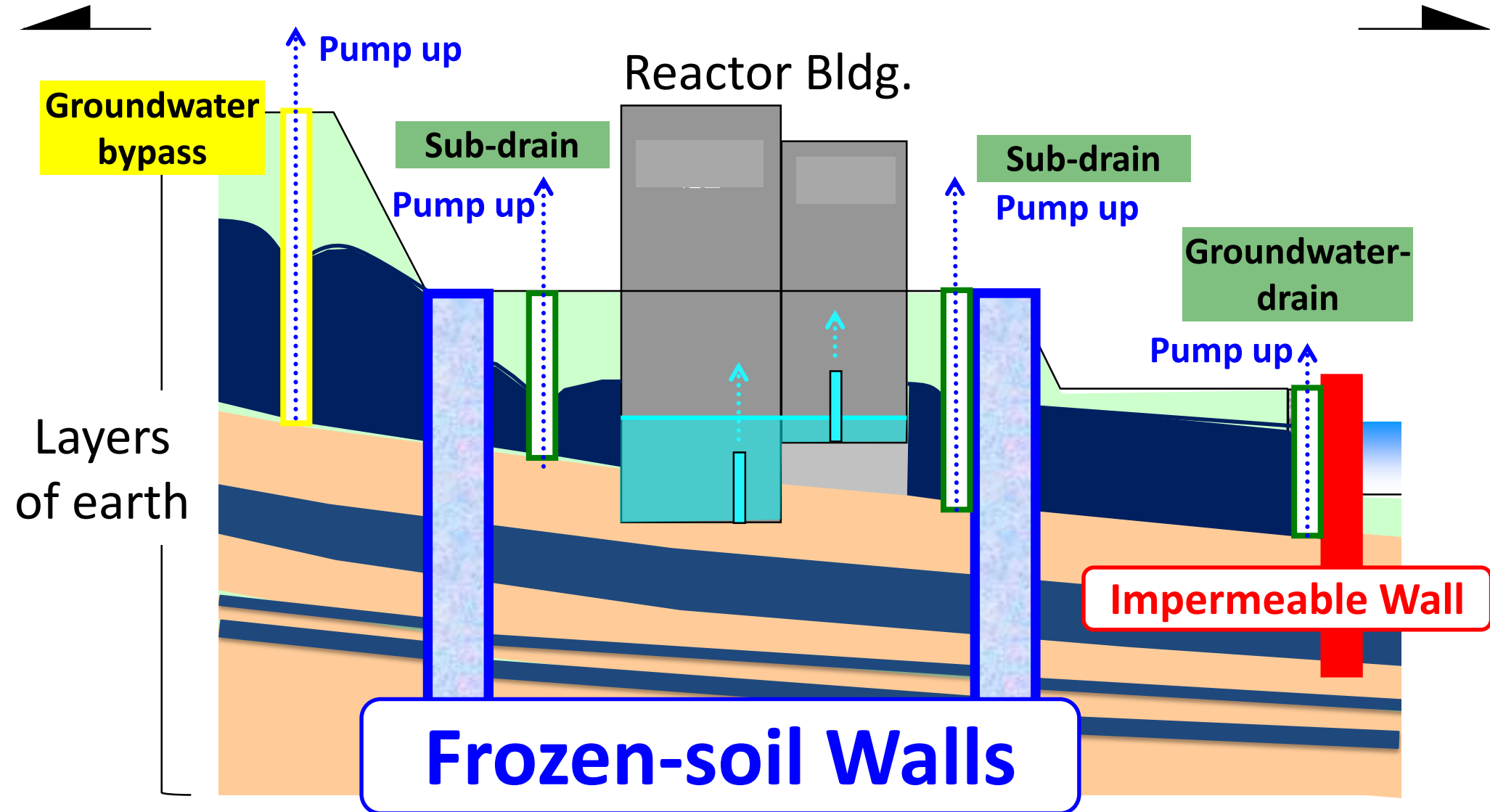


Frozen-soil Walls

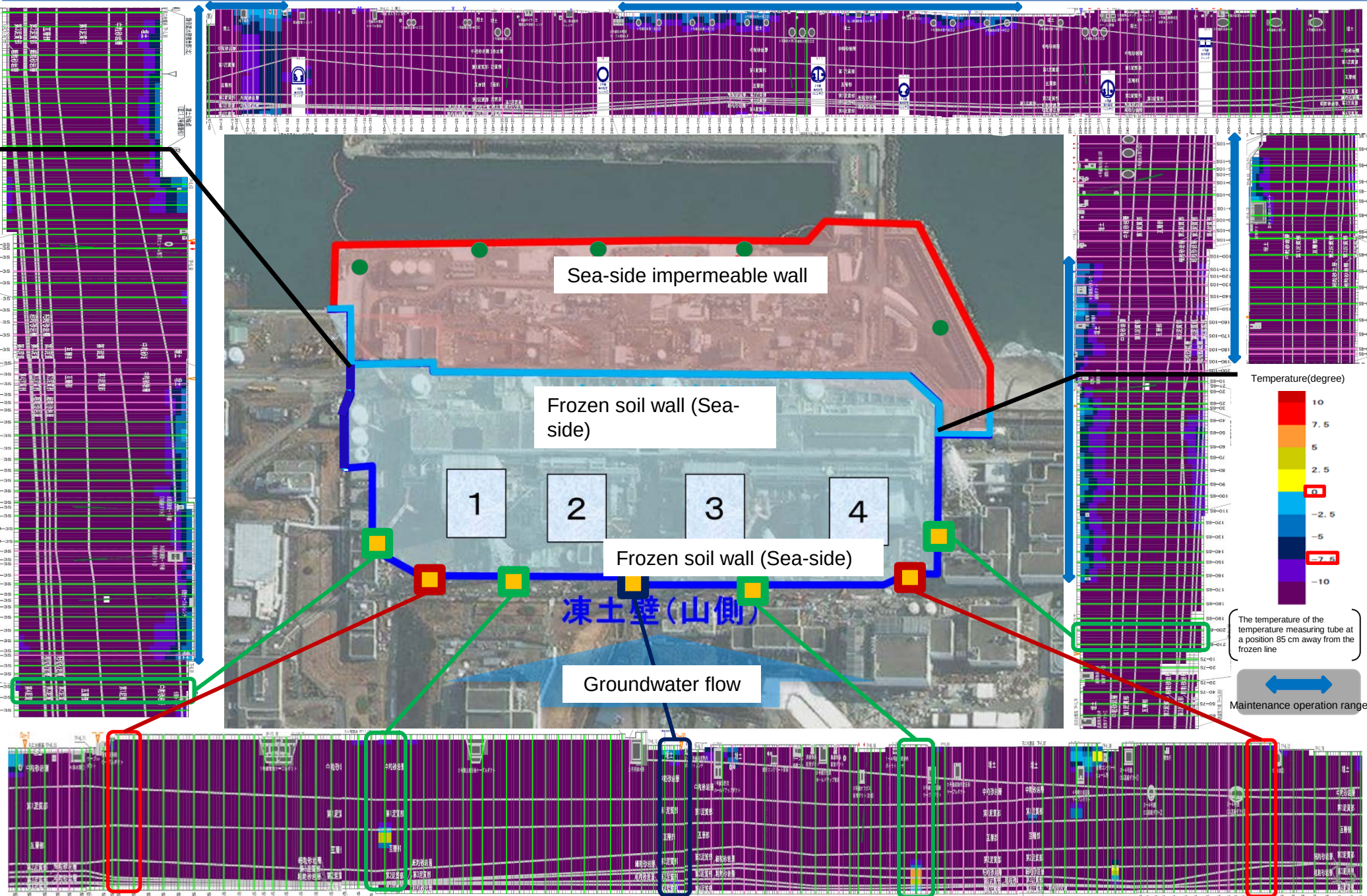
Mountains

Cross-section

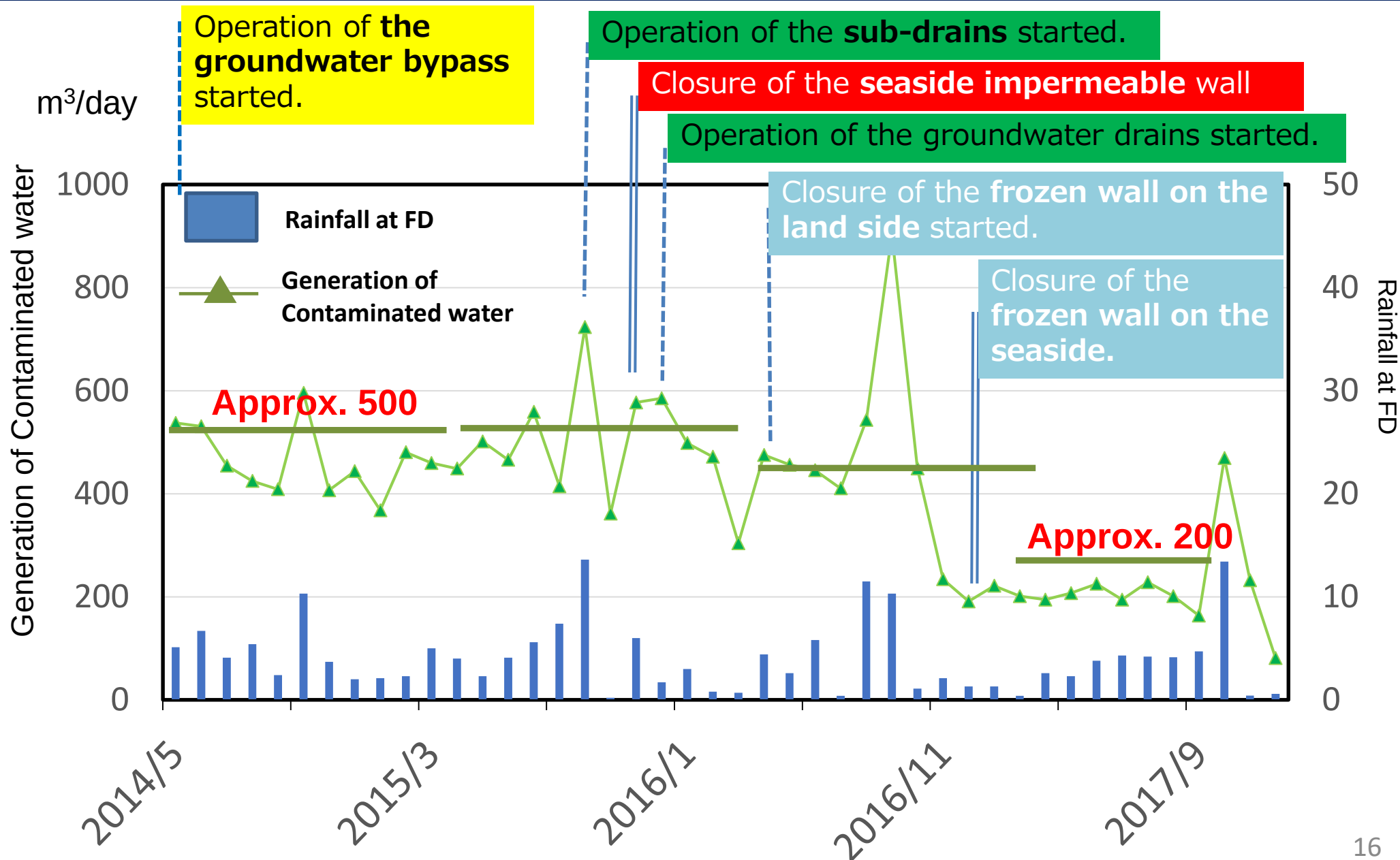
Sea



Freezing condition of the entire frozen wall (as of 9 February 2017)



Generation of contaminated water



Waterproof Pavement

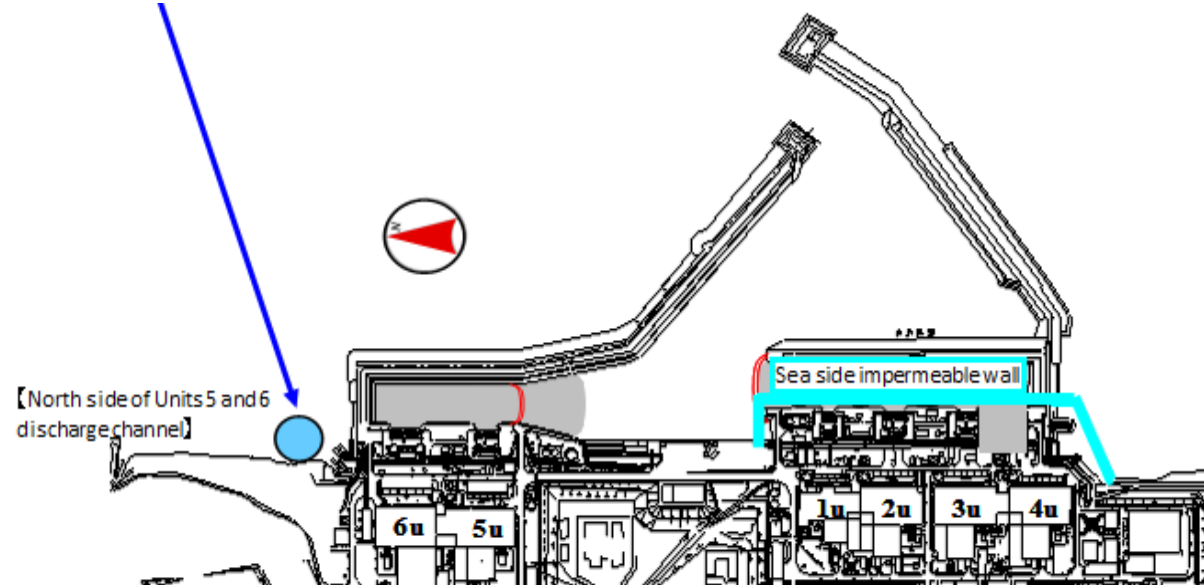
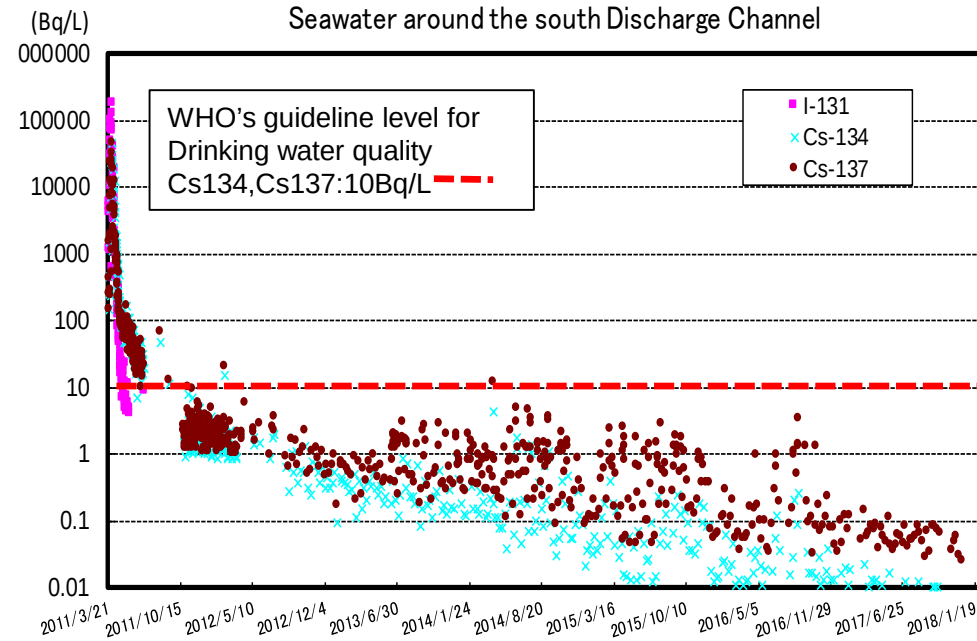
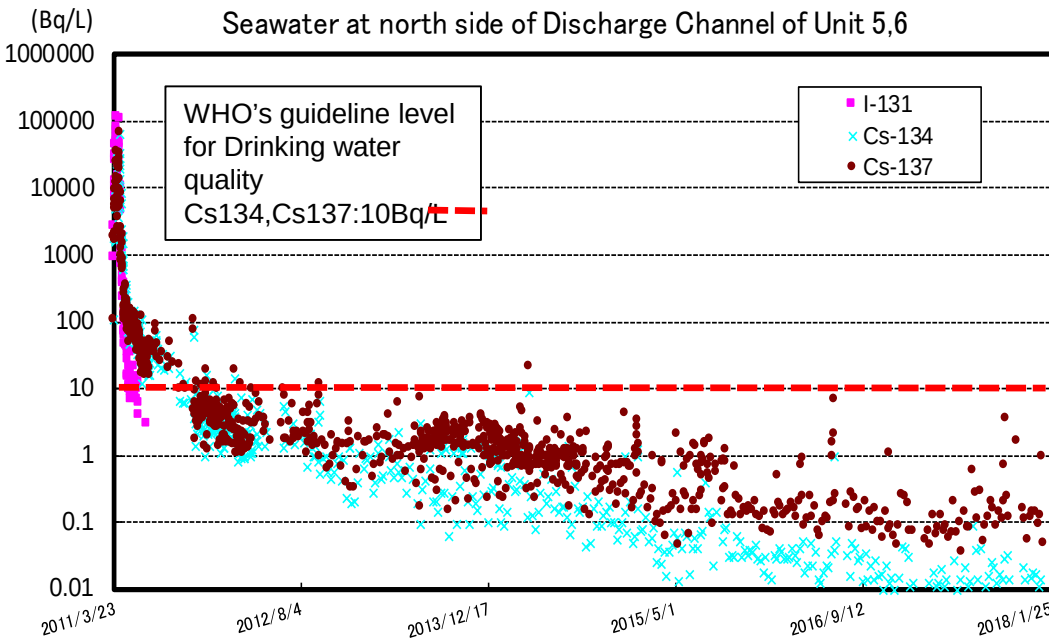
Before



After



Status of seawater



Concentration of radioactive materials in the surrounding sea area

About 10,000 Bq/L (March 2011 near the south outlet)

▶ Not Detectable (Under 0.7Bq/L) (March 2016 near the south outlet)

Less than 1/10,000

※ Concentration of Cs137

Working Conditions

<Large rest house>

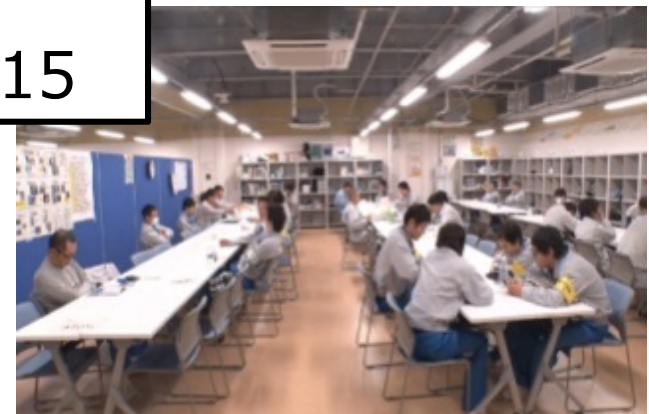


< Changes in rest areas >

Just after the accident



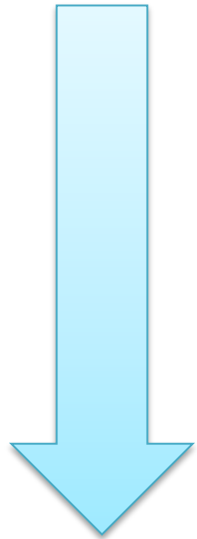
From
May 2015



Mid-and-Long-Term Roadmap

June, 2011 Adapted

June, 2015 Revision of third edition



- Many countermeasures have progressed.
ex) Robot investigation inside the PCVs
- The policy for fuel debris retrieval has been decided based on NDF's technical strategic plan.

September, 2017 Revision of fourth edition

Mid-and-Long-Term Roadmap

(1) Fuel debris retrieval

- Step by step approach

Key points
(Provisional translation)

(2) Spent fuel removal from pools

- Proceed carefully with work

(3) Contaminated water management

- Reduction of generation volume of contaminated water

(4) Solid Waste management

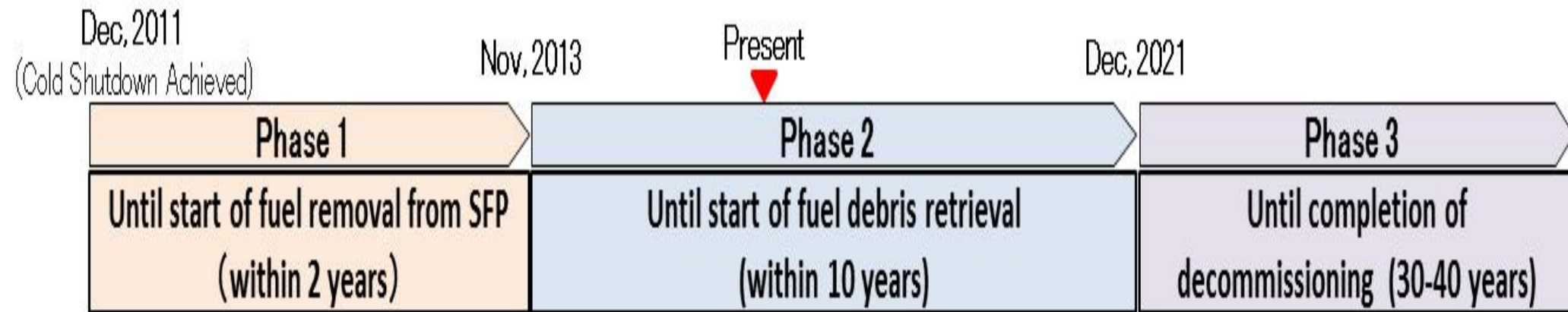
- Storage of solid waste with volume reduction under the safety conditions

(5) Communication

- Reinforce interactive communication

Mid-and-Long-Term Roadmap

The current framework is maintained.



Releasing information from Gov.

Local

National

Overseas

Portal site of the status of Decommissioning and Contaminated water Management management in METI-WEB

Films in Japanese

A Film in English

Brochures in Japanese

Brochures in English

Monthly
Information
To Fukushima Pre. And 13
local municipalities

Release
Information
To Industries

Provision of updates to IAEA

Monthly
Press Briefing
To local media

Monthly
Press Briefing
To media

Release
Information through;

- Japanese Embassies and ministerial-level conversations,
- Embassies in Tokyo,
- Press Conference,
- Briefing, Tour, etc.

Fukushima Advisory Board

on Decommissioning and Contaminated Water Management

Members

Chair : State Minister of METI

Members :

- Deputy Governor of **Fukushima Prefecture**,
Mayors of **13 local municipalities** around site
- Chamber of commerce,
Agricultural cooperative,
Fishery association, NPO
- TEPCO,
- METI, Nuclear Regulation
Authority, etc.

Main Topics

The 1st Meeting in Feb. 2014:
Explanation of current status
(Main issues: Contaminated water
Management) from TEPCO & Gov.



The 12th Meeting in Mar. 2017:
Discussion around members
related to best efforts such as
contents of information
transmission (decommissioning and
contaminated water management)

- Films, Brochures
- International Forum

Film and Brochure

Fukushima Today -For a Bright Future- (English)



Release: Sep. 2016
Runtime: 5 min.
Subtitle: English,
Chinese, Korean



Fukushima Today (English)



Release: Jan. 2017
Runtime: 90 sec.
*Aired on JAL, ANA
international flights, in
hotels, airports etc.

Fukushima Today 2017 Spring (Japanese)



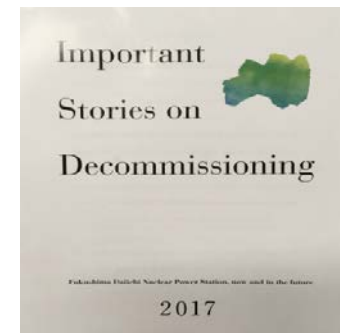
Release: Mar.
2017
Runtime: 17 min.
*for the domestic
audience

Friends of Japan – Fukushima –(English)



Release: Jun. 2017
Runtime: 13 min.
*Mainly off-site

“Important Stories on Decommissioning” Brochure



Film (Digest)



Fukushima Today
for a Bright Future

Cooperation with International Communities

International Organizations



- Peer Review Missions (April, 2013 -)
- Expert Visits
- Expert Meetings
- Comprehensive information on the website (December, 2013 -)
- “The Fukushima Daiichi Accident” (September, 2015) (Reported by the Director General)
- Side Event in the General Conference (2015 -)



- BSAF Project
(Benchmark Study of the Accident at the Fukushima Daiichi NPS)
- PreADES
(Preparatory Study for Analysis of Fuel Debris)
- EGFWMD Meeting
(The Expert Group on Fukushima Waste Management and Decommissioning R&D)

Bilateral Frameworks

U.S.-Japan Bilateral Commission on Civil Nuclear Cooperation

- Decommissioning and Environmental Management Working Group
- Civil Nuclear Energy R&D Working Group



UK-Japan Nuclear Dialogue

- Decommissioning Working Group



Japan-France Nuclear Committee



Japan-Russia Nuclear Energy Working Group



International Forum

on the Decommissioning of the Fukushima Daiichi Nuclear Power Station

The 1st Forum

10,11 April 2016 in Iwaki-city

Main speakers:



W. D. Magwood IV
Director General,
OECD/NEA



J. C. Lentijo
Deputy Director General,
IAEA



M. Weightman
Former Chief
Executive, ONR

The 2nd Forum

2,3 July 2017 in Hirono-town and Iwaki-city

Facilitator / Main Speakers



H. Kainuma
Associate Professor, RITS
Univ.



W. D. Magwood IV
Director General,
OECD/NEA



J. C. Lentijo
Deputy Director General,
IAEA

The 3rd Forum

5,6 August 2018

in Naraha-town and Iwaki-city

At the 2nd Forum...

**Dialogue between local representatives
and
METI, NDF, TEPCO, IAEA, OECD/NEA, etc.**



Simultaneous graphic recording of the discussion

