Fukushima Daiichi Nuclear Power Station Unit 2 Primary Containment Vessel Internal Investigation Results (Preliminary Report)

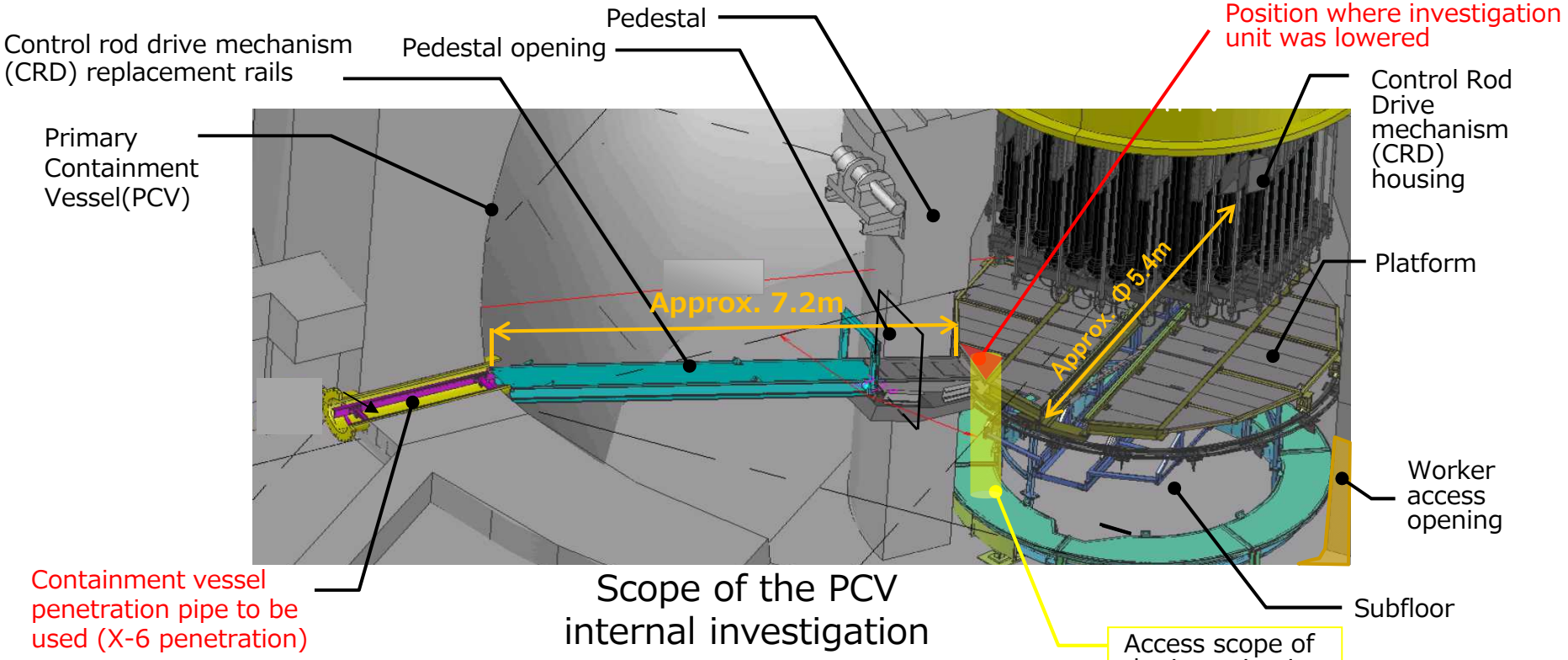
February 13, 2019

TEPCO

Tokyo Electric Power Company Holdings, Inc.

1. Primary containment vessel internal investigation overview

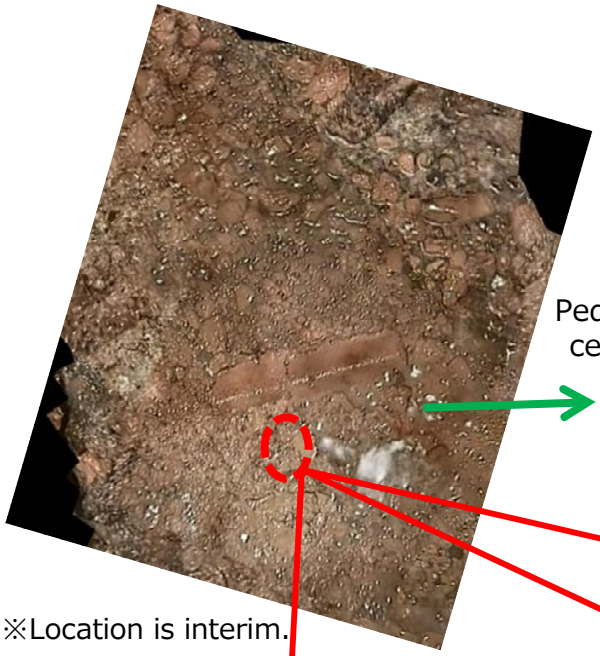
- The investigation unit was lowered from the same location as the previous investigation (January 2018) to investigate the primary containment vessel (PCV).
- During this investigation we purposely made the investigation unit come in contact with the deposits at the bottom to observe the behavior of the deposits. Video images, and dose and temperature readings from locations closer to the deposits than previous investigations, were also obtained.



Scope of the PCV internal investigation

※ Inner diameter of pedestal was corrected from Φ5.0m to approx. Φ5.4m (February 14, 2019)

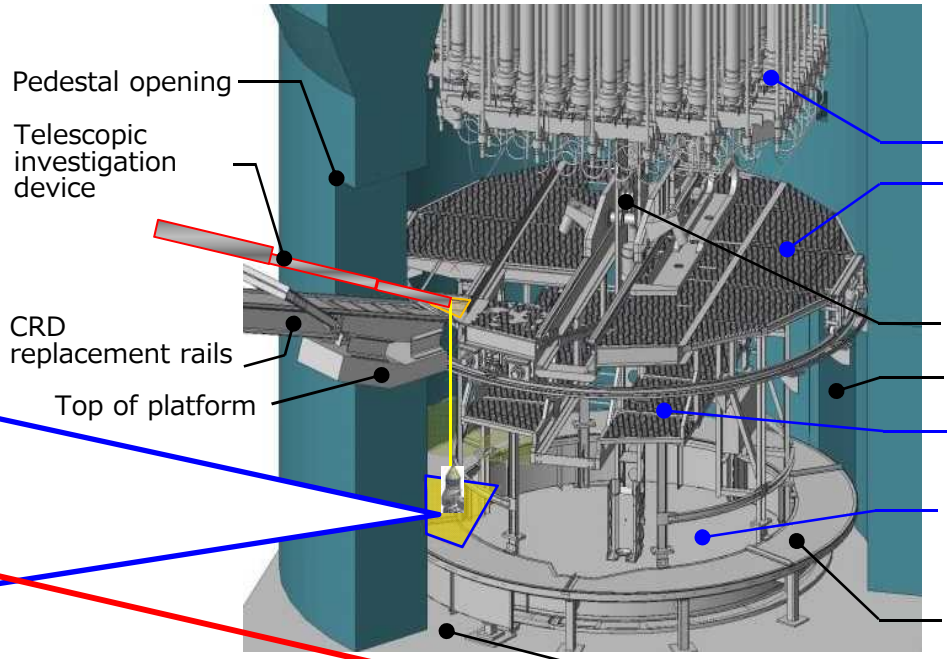
2. Investigation results (Preliminary report) (1/3)

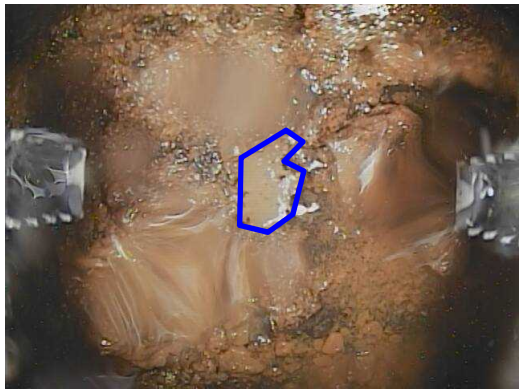


Pedestal center

※Location is interim.

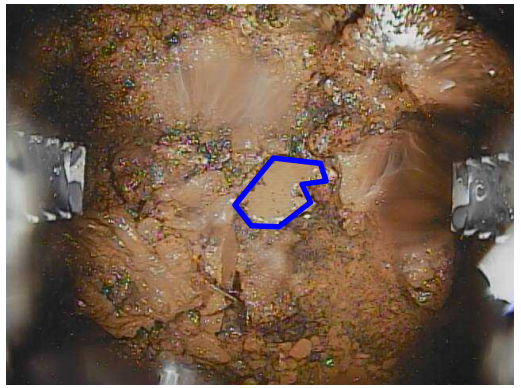
Investigation location (taken in January, 2018)





Before touching deposits

During contact with deposits



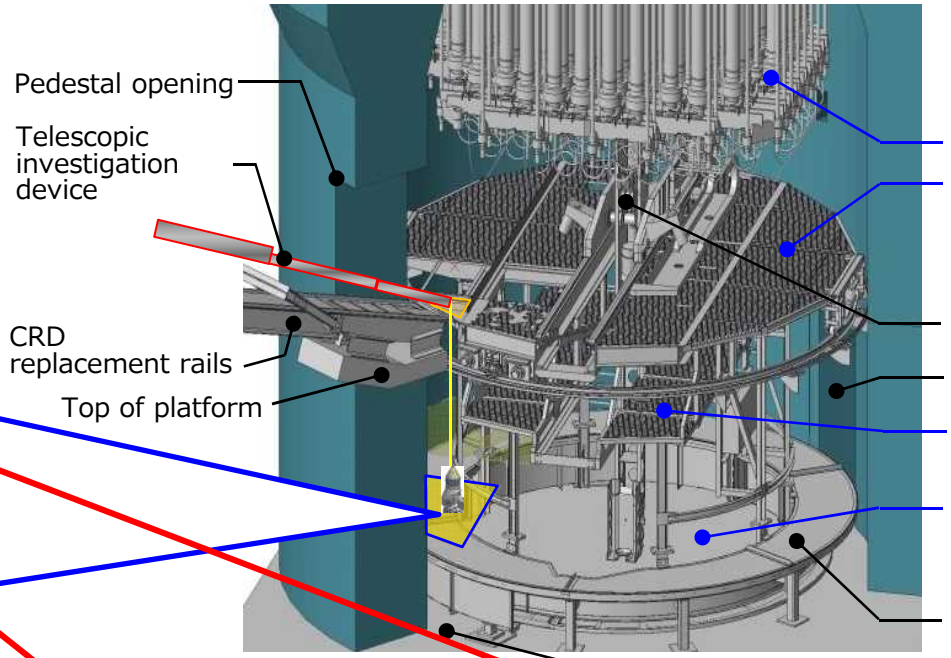
After touching deposits

2. Investigation results (Preliminary report) (2/3)

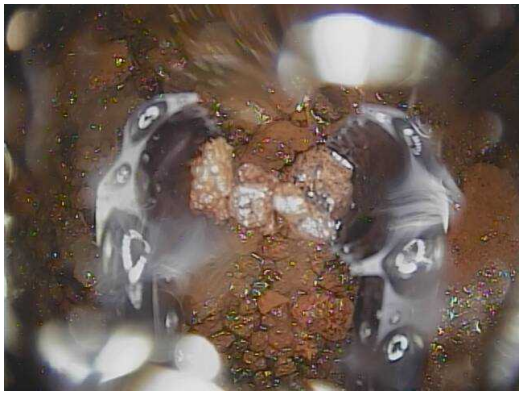
Pedestal center

※Location is interim.

Investigation location (taken in January, 2018)



Before touching deposits



During contact with deposits

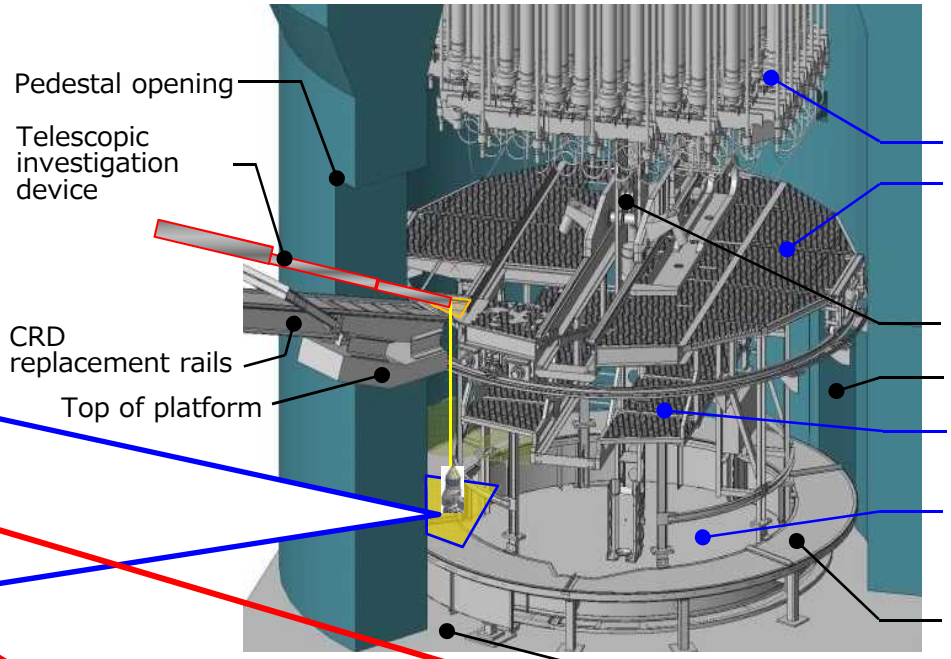
After touching deposits

2. Investigation results (Preliminary report) (3/3)

Pedestal center

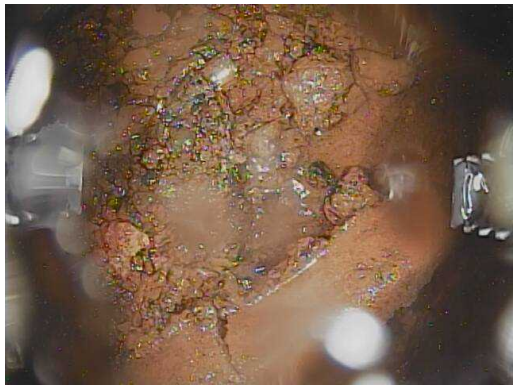
※Location is interim.

Investigation location (taken in January, 2018)



Before touching deposits

During touching deposits



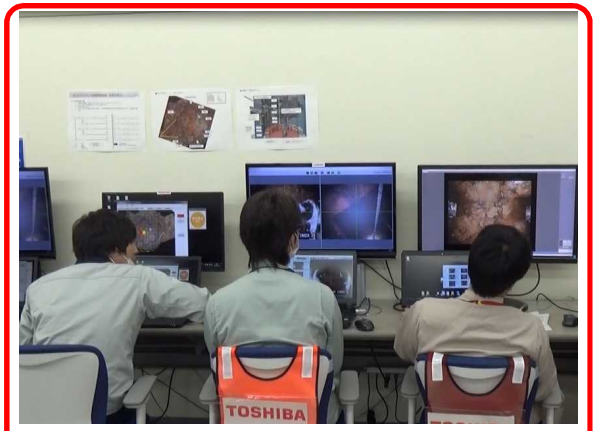
After touching deposits

3. Operation state (1/2)

Overhead image 1

Overhead image 2

Operation outside PCV
(in front of X-6 penetration)



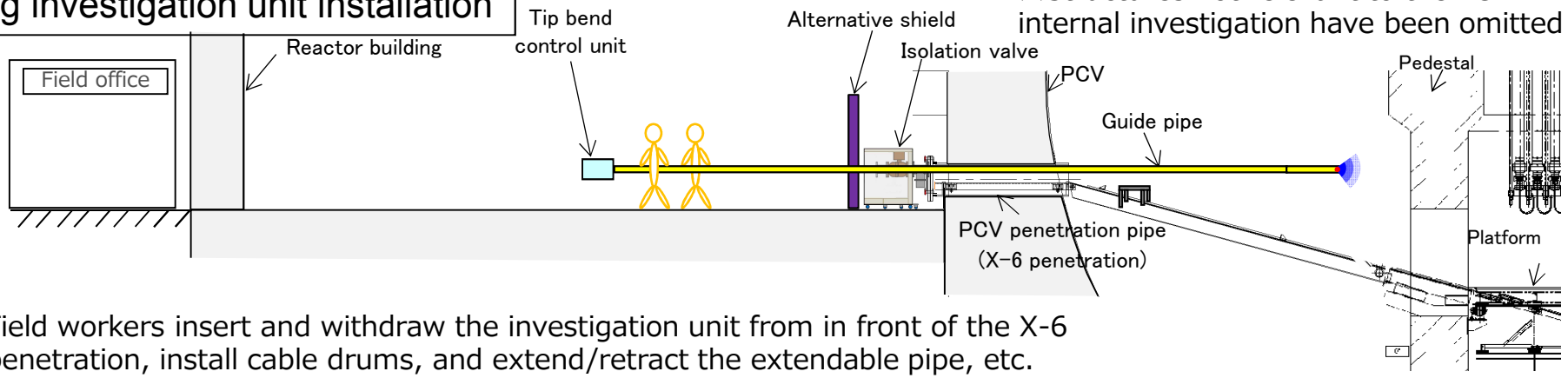
Remote operation room

Field office

4. Operation state (2/2)

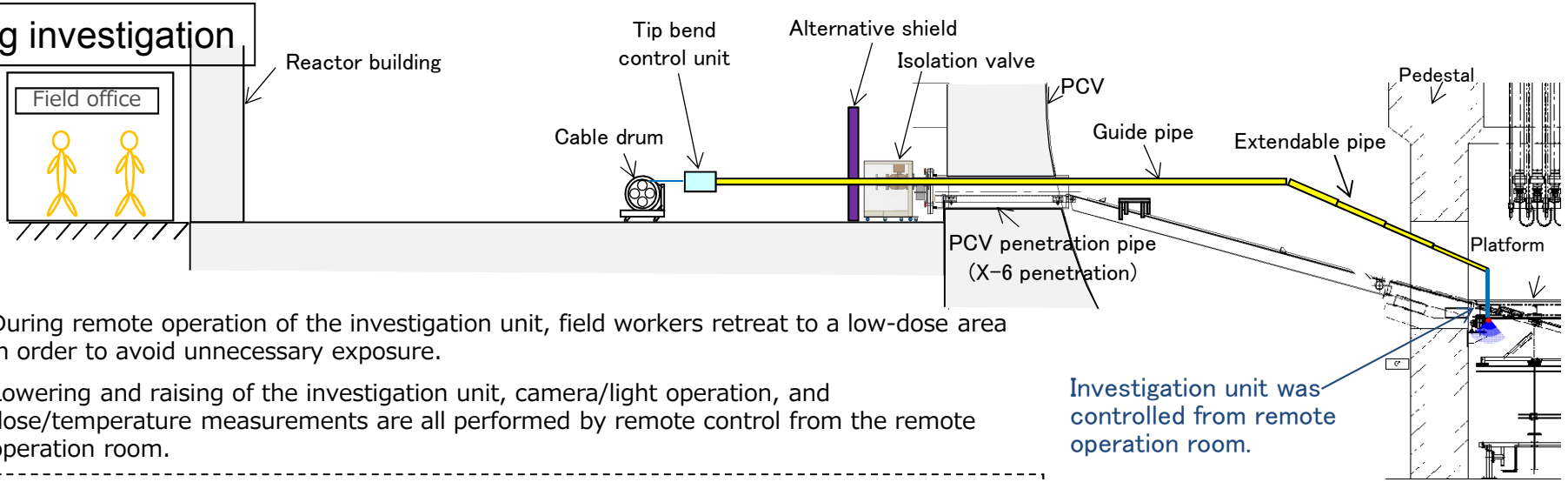
During investigation unit installation

※Structures not relevant to the PCV internal investigation have been omitted



- Field workers insert and withdraw the investigation unit from in front of the X-6 penetration, install cable drums, and extend/retract the extendable pipe, etc.

During investigation



- During remote operation of the investigation unit, field workers retreat to a low-dose area in order to avoid unnecessary exposure.
- Lowering and raising of the investigation unit, camera/light operation, and dose/temperature measurements are all performed by remote control from the remote operation room.

・Exposure dose on February 13
Plan : 3.00[mSv/person]　Actual : Avg. 0.26[mSv/person]　Max. 0.68[mSv]

4. Summary

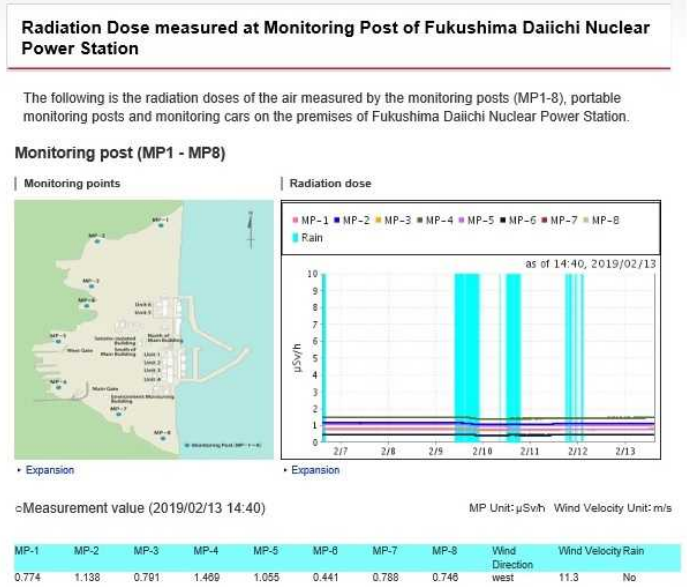
- We succeeded in touching deposits at the bottom of the pedestal in the PCV for the first time.
- During this investigation the investigation unit was brought in contact with deposits at six locations at the bottom of the pedestal. The deposits (pebble–like deposits, etc.) at five locations moved.
- The investigation unit was also brought in contact with deposits on top of the platform.
- Furthermore, images, dose and temperature data were obtained from locations closer to the deposits than during prior investigations. The obtained images and dose/temperature data will now be analyzed.
- The investigation was completed with workers subjected to exposure doses within planned dose limits.
- There were no significant fluctuations in monitoring post or dust monitor readings neither prior to, nor after, the investigation, and there was no radiological impact on the surrounding environment.

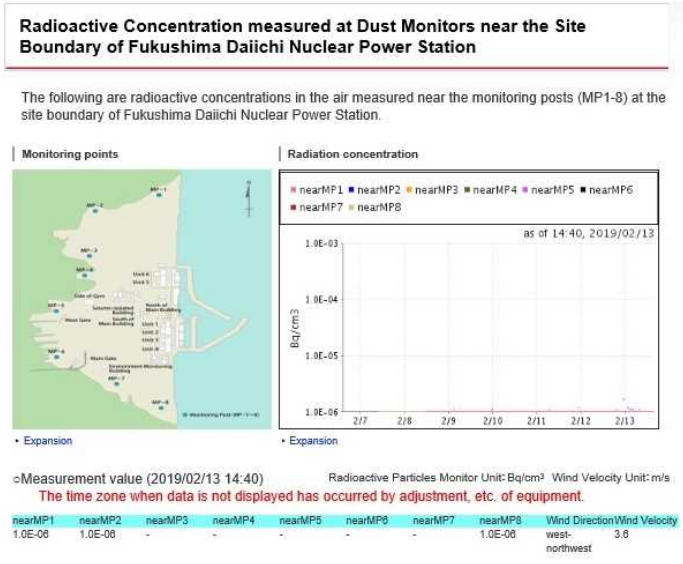
5. Environmental impact（1/2）

- **There was no impact on the surrounding environment from radiation during internal investigation of the Unit 2 primary containment vessel conducted on February 13.**
- **During the investigation a boundary was constructed to prevent the gases inside the containment vessel from leaking into the external environment.**
- **No significant fluctuation in data from monitoring posts and dust monitors were seen neither prior to, nor after, the investigation.**
- **Data from monitoring posts and dust monitors near site boundaries can be found on our website.**

URL : http://www.tepco.co.jp/en/nu/fukushima-np/f1/index-j.html
http://www.tepco.co.jp/en/nu/fukushima-np/f1/dustmonitor/index-j.html

(Reference) Website Excerpt





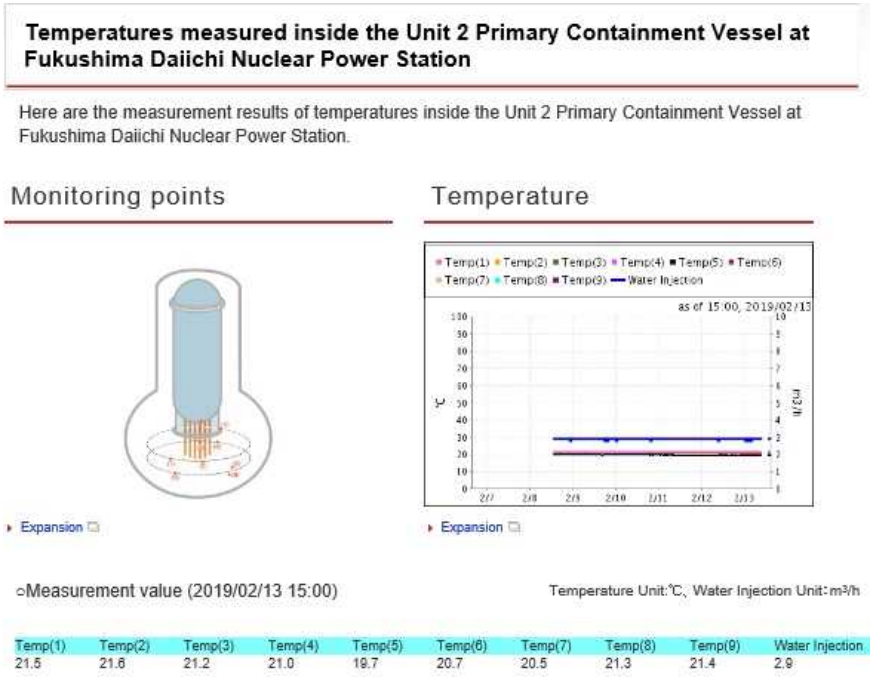
- Radiation levels include contributions from radiation sources other than the inside of the primary containment vessel.

5. Environmental impact（2/2）

- **During the investigation, plant parameter were continuously monitored and no significant fluctuations were seen in the temperature of the primary containment vessel neither prior to, nor after, the investigation. There were also no changes in the cold shut down status of the reactor.**
- **Primary containment vessel internal temperature data can be viewed on our website.**

URL : http://www.tepco.co.jp/en/nu/fukushima-np/f1/plantdata/unit2/pcv_index-j.html

（Reference）Website Excerpt



Temperatures measured inside the Unit 2 Primary Containment Vessel at Fukushima Daiichi Nuclear Power Station

Here are the measurement results of temperatures inside the Unit 2 Primary Containment Vessel at Fukushima Daiichi Nuclear Power Station.

Monitoring points

Temperature

Expansion

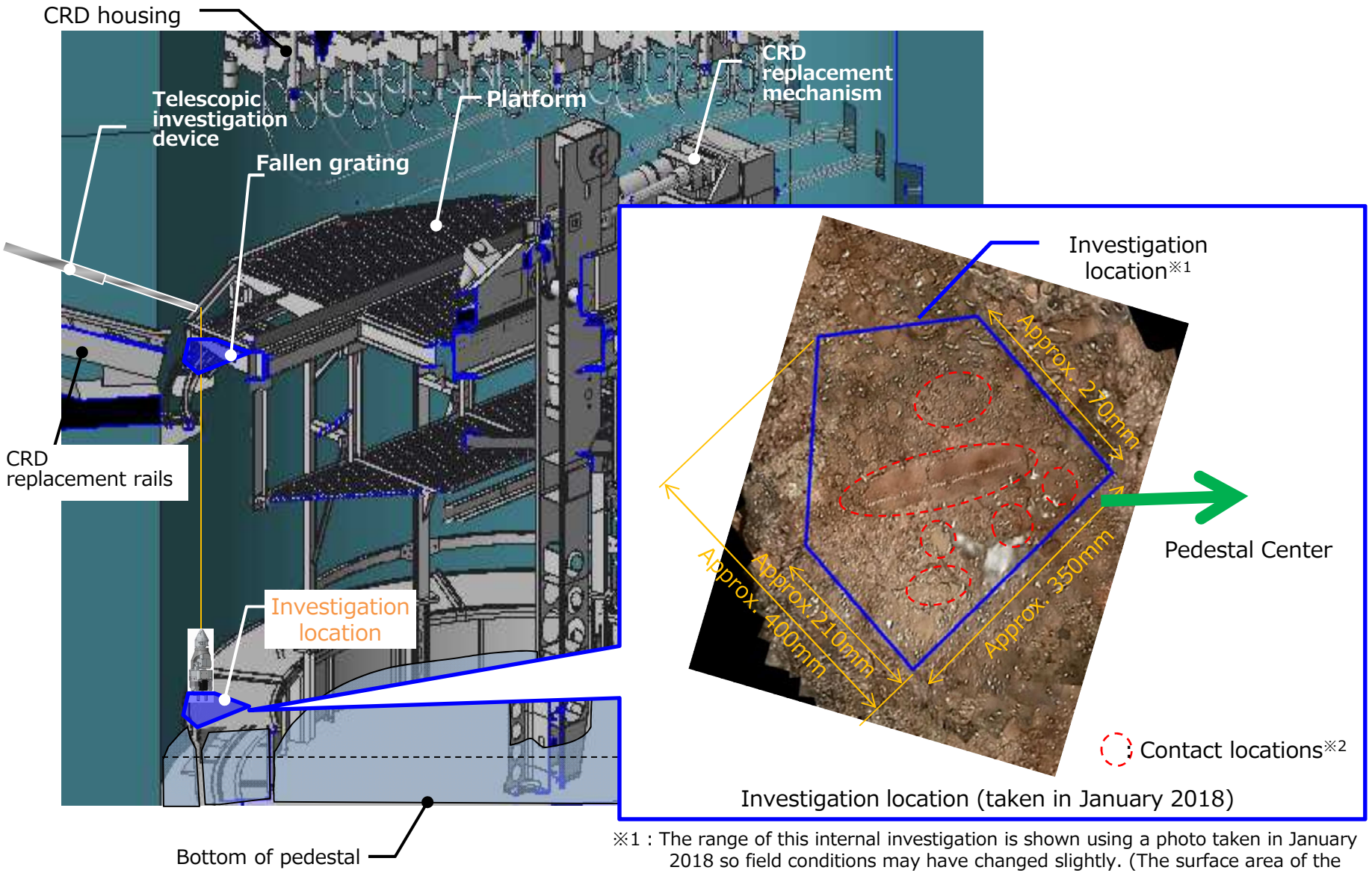
Expansion

○Measurement value (2019/02/13 15:00)

Temperature Unit:℃, Water Injection Unit:m³/h

Temp(1)	Temp(2)	Temp(3)	Temp(4)	Temp(5)	Temp(6)	Temp(7)	Temp(8)	Temp(9)	Water Injection
21.5	21.6	21.2	21.0	19.7	20.7	20.5	21.3	21.4	2.9

【Reference】Range of this internal investigation



※1 : The range of this internal investigation is shown using a photo taken in January 2018 so field conditions may have changed slightly. (The surface area of the area that can be surveyed is estimated to be approximately 2% of the entire surface area of the bottom of the pedestal (including cable trays))

※2 : Survey location is approximate