<Reference>

Results of Survey on Upper Space in 1st Floor of Fukushima Daiichi Nuclear Power Station Unit 2 Reactor Building

June 19, 2013

Tokyo Electric Power Company

TEPCO 東京電力

1. Outline of survey results

◆**Purpose**

To obtain atmosphere dose rates and information on presence of obstacles in the upper space and around PCV penetrations at high places in the Unit 2 Reactor Building's 1st floor through a survey using a robot, and apply the results in developing measures for R/B interior dose-rate reduction and work plans for PCV investigation and repairing.

◆**Survey coverage**

Survey on upper space in Unit 2 R/B 1st Floor

- **Dose rate measurement, and visual verification (conditions of obstacles)**

◆**Machines used**

1 high-access survey robot and 1 PackBot

◆**Implementation unit**

9 TEPCO employees (5 at Main Anti-Earthquake Building and 4 on site), and 5 cooperative company employees (2 at Main Anti-Earthquake Building and 3 on site)

◆**Survey schedule**

June 18 (Tue.) 12:00 Entry of the robot into R/B

16:14 Retreat of the robot from R/B

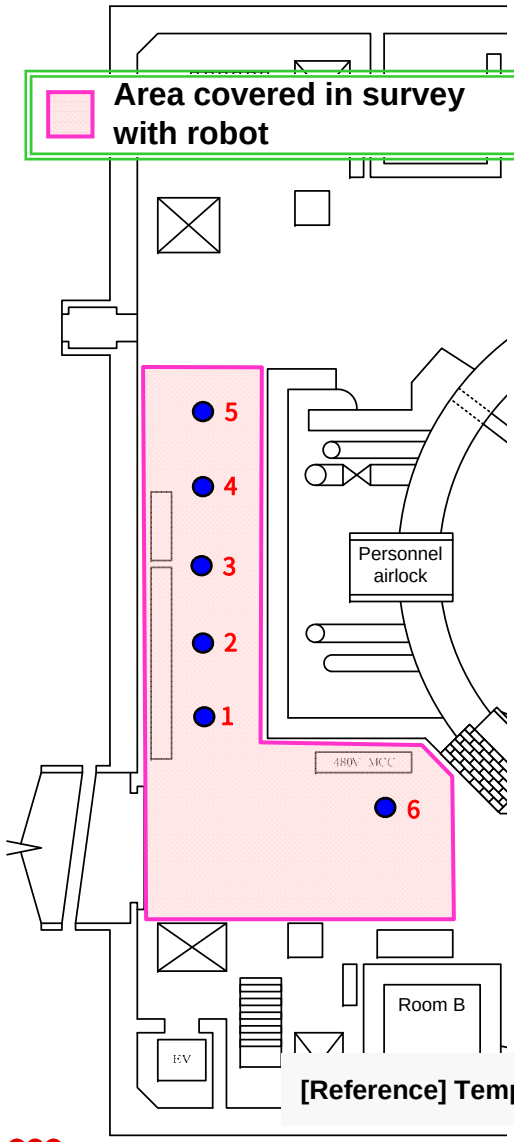
◆**Radiation exposure**

Worker: 0.98mSv (Largest; Planned dose was 2.0mSv)

High-access survey robot: 38.5mSv PackBot: 41.0mSv

High-access survey robot

2. Survey results (atmosphere dose rates)

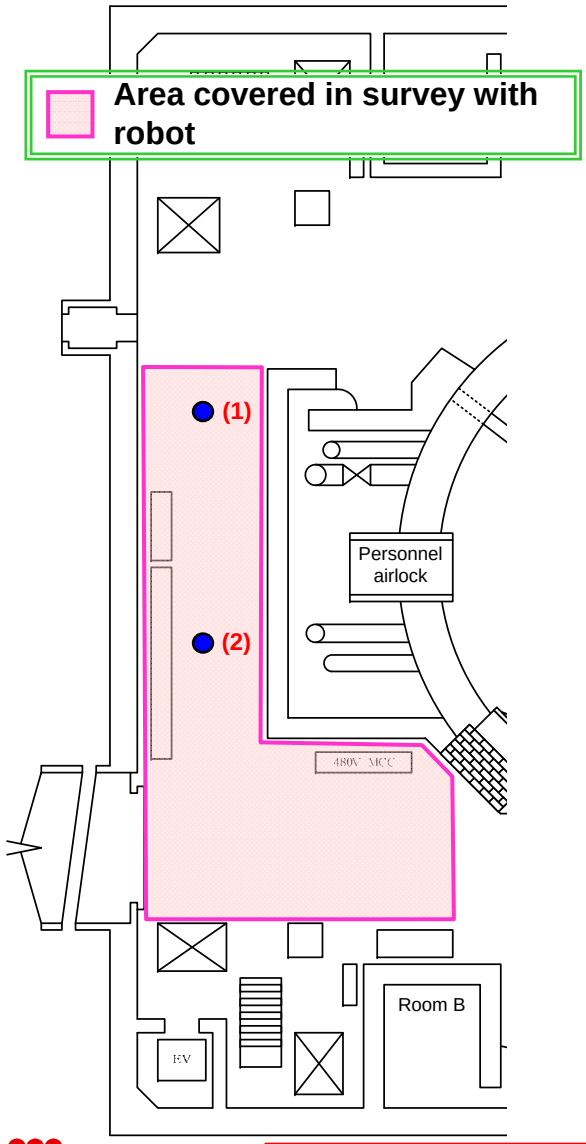


[Unit: mSv/h]

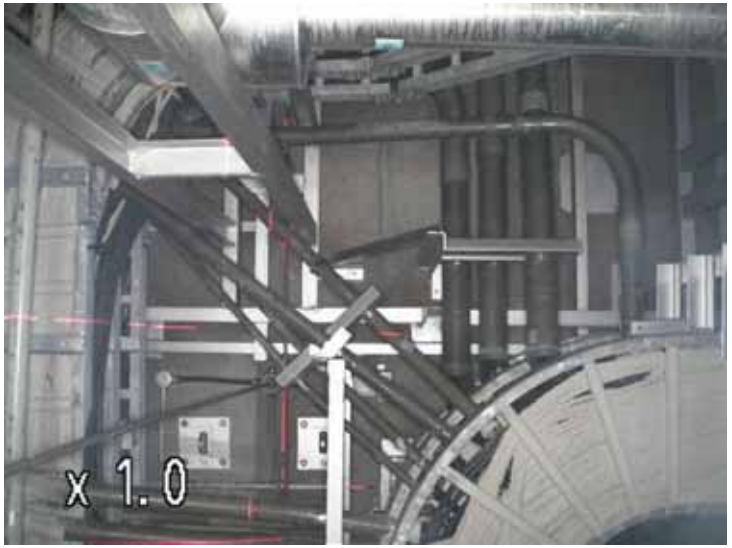
Measurement point	[Reference] National project survey (end of May 2012) 0.05m	[Reference] National project survey (end of May 2012) 1.5m	2.5m	3.5m	Maximum height reached	
					Dose rate	Height [m]
[1]	11	17	12	–	–	–
[2]	8	11	10	12	13	4.0
[3]	7	11	–	–	10	2.1
[4]	8	13	–	–	6	1.6
[5]	7	9	7	9	10	4.0
[6]	15	16	13	17	19	4.3

[Reference] Temperature and humidity inside R/B: 23.6ºC and 78% (at the measurement point [1] and 2.5m from the floor)

3. Survey results (visual verification)
– Ceiling of west-side passage –

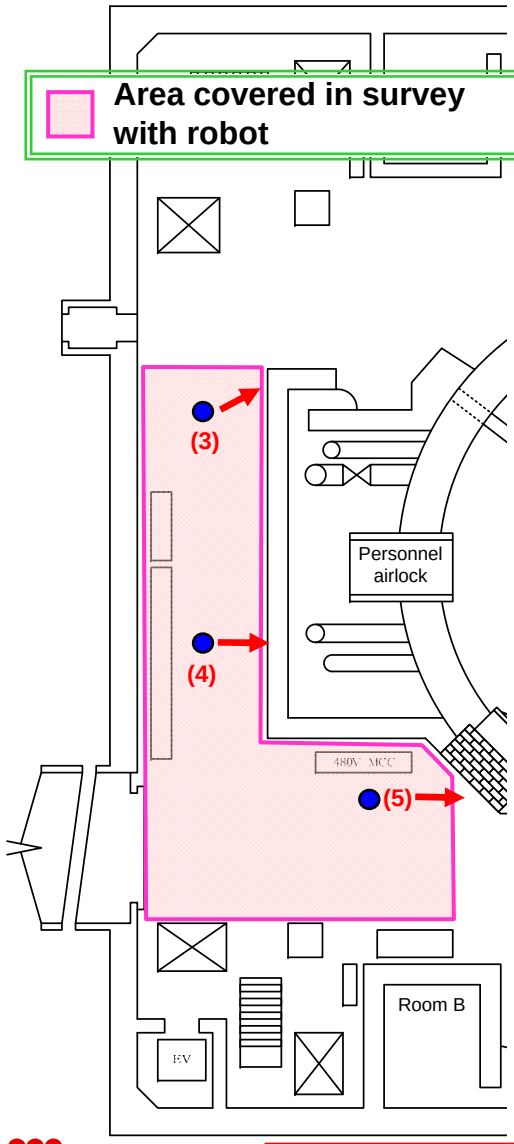


Picture point (1): Conditions of the ceiling



Picture point (2): Conditions of the ceiling

4. Survey results (visual verification)
– Conditions of upper wall surface –



Picture point (3): Upper part at the wall surface side (4.0m from the floor)

Picture point (4): Upper part at the wall surface side (4.0m from the floor)

Picture point (5): Upper part at the wall surface side (3.5m from the floor)

Picture point (5): Clearance in the upper part at the wall surface side (4.3m from the floor)

5. Summary

◆Survey results

- In Unit 2 Reactor Building, a survey was conducted to investigate conditions in the upper space of the west-side passage and southwest area.
- Dose rates in the upper space were found relatively high, but did not show remarkable differences from those in the lower space.
- Information was obtained on how narrow and small the accessible parts in the upper space are.
- No particular damage was found in the machinery and equipment.

◆Next step

- Based on the survey results, we will determine whether to conduct the survey around PCV penetrations at high places, and whether and where to expand the survey.