

# “Development of a technology to investigate inside the Reactor Primary Containment Vessel (PCV)”

- Site test “Investigation B1” on grating around the pedestal inside Unit 1 PCV -

[Overview of investigation on clockwise route conducted on April 15]

April 15, 2015

Tokyo Electric Power Company



**IRID**

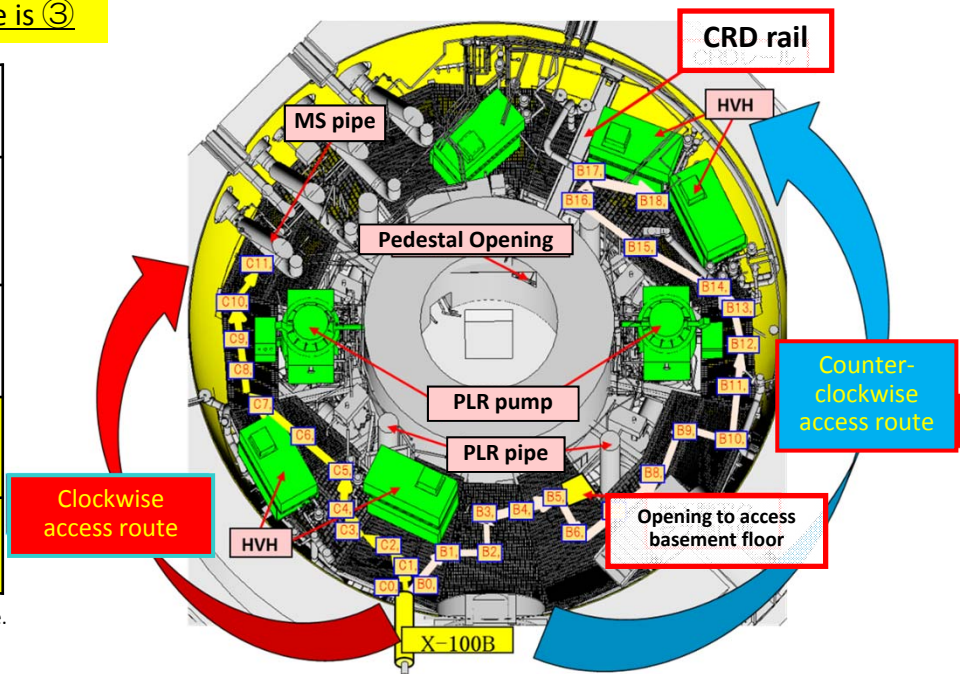
— The content of this material includes the output of the International Research Institute for Nuclear Decommissioning (IRID)

# 1. Investigation along the clockwise route

- Investigation around the grating inside the primary containment vessel (PCV) (along counterclockwise route) was conducted on April 10, 2015, as a demonstration test of the investigation of inside Unit 1 primary containment vessel under the “Development of a technology to investigate inside the PCV” by the International Research Institute for Nuclear Decommissioning (IRID). In which, it was found that there were no interfering objects present around the opening to access the basement floor, and as such, vital information which can be a big step forward has been gained in carrying out decommissioning activities in future.
- With a view to gather further information on inside the reactor containment vessel, today (April 15) at around 9:00 AM, the robot will start being inserted onto the clockwise route.
- The purpose of this investigation is to collect information of inside the vessel in as much detail as possible. As is assumed that there could be some factors such as a fallen object that might hinder the robot from running along the clockwise route, it is to gather as much information as possible on any route the robot may end up running.
- Sending a robot inside the PCV of Unit 1 is an unprecedented challenge for us. The fact that vital data has been successfully obtained through this investigation demonstrates a big milestone for future decommissioning activities. Each piece of the data obtained this time will be piled up and utilized for the decommissioning activities.

## Investigation items The items investigated on clockwise route this time is ③

No.	Purpose	Location	Item	Device
①	Check if there is a presence of any interfering object at the time of investigating the basement around the pedestal (B2)	Opening to access basement floor	Image	CCD camera
②	Check if there is a presence of any interfering object at the time of investigating inside the PCV pedestal.	CRD rail	Image	CCD camera
③	Check the environmental status.	On the access route*	Temperature Radiation dose	Thermometer Radiation dosimeter
	Check the conditions of existing facilities.		Image	CCD camera



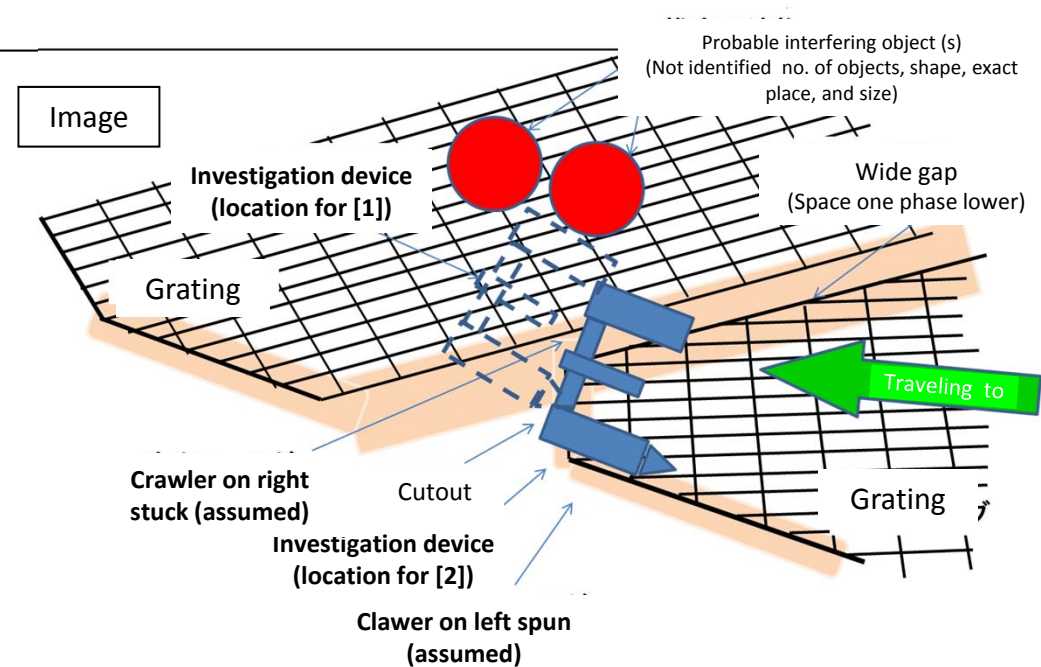
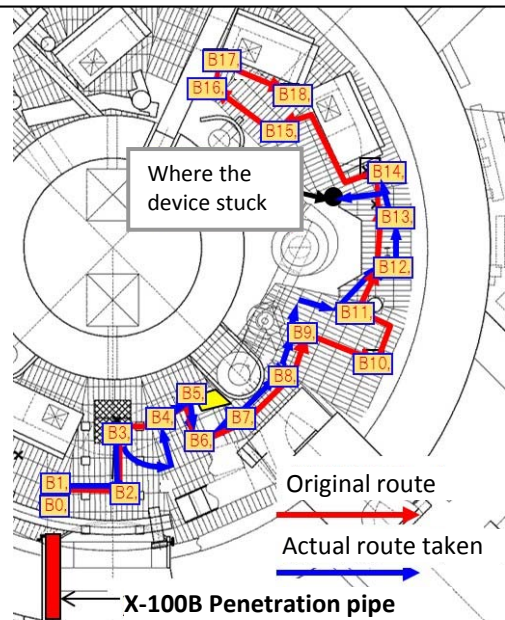
[Reference]

## Probable causes and countermeasures for stall of the investigation device on the counterclockwise route

### [Probable cause]

Through the investigation using mock-up, the following was found to be considered as a cause of the incident.

- [1] When the device was running through a narrow part of the route, one of its crawlers on the left side came off on the cutout portion of the grating.
- [2] After that, while struggling to get out of the spot, another crawler on the right side has also stuck in the gap between the joint parts of the grating.



### [Countermeasures]

The following countermeasures will be taken in a careful manner:

- At the investigation along the clockwise route, check constantly if there is a presence of fallen or interfering object, and the grating conditions in detail before proceeding further. When in doubt, stop the operation and study how to handle the situation.
- Also, given a knowledge through the investigation on the counterclockwise route that the robot can tolerate another few days in the radiation exposure inside the vessel, when there is any problem occurred with the device in running along the access route because of an interfering object, etc., stop the operation, discuss how to handle the problem and investigate the matter.