

Reference
August 25, 2016
Tokyo Electric Power Company Holdings, Inc.

Response to the Drain Sump Pit of the Units 1-2 Exhaust Stack

TEPCO

[Examination conducted]

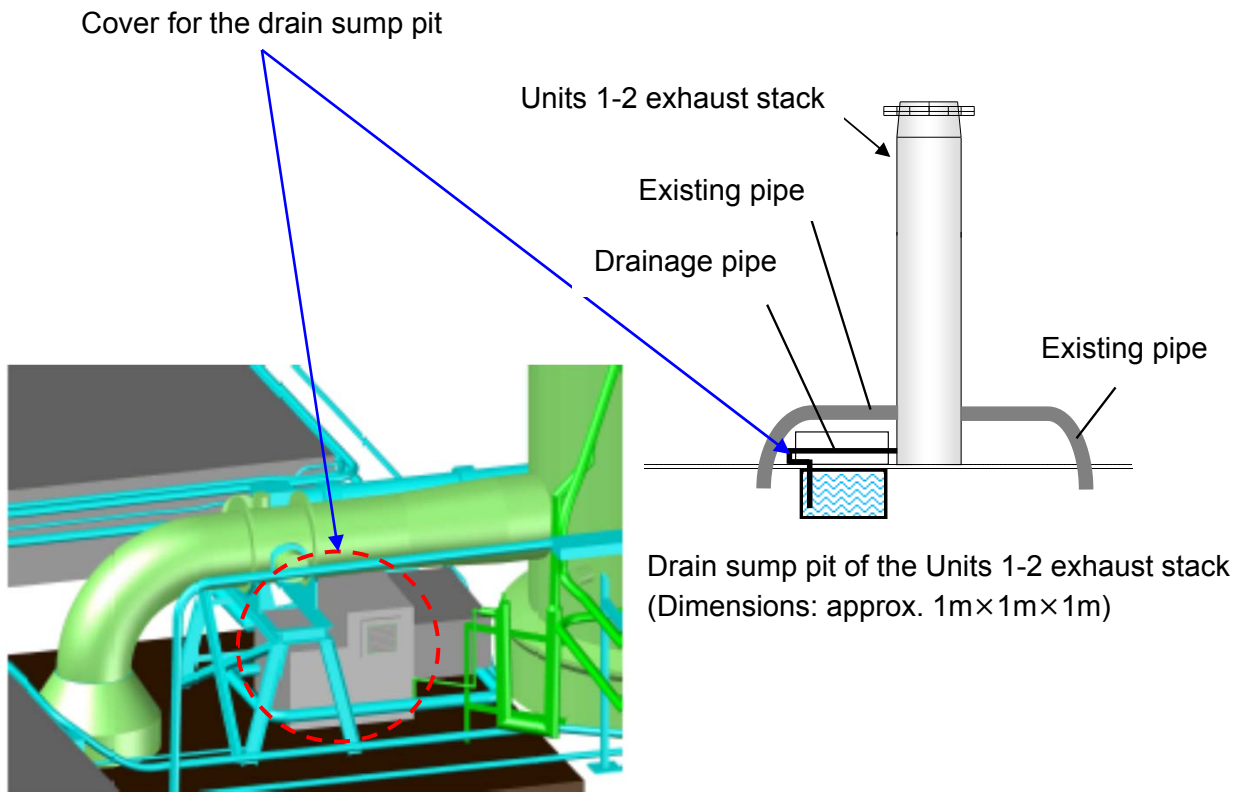
- In the area around the Units 1-2 exhaust stack, the airborne radiation dose is still too high to conduct examination. (The latest dose data were published on September 17 and October 26, 2016.)
- The layout of existing structures around the drain sump pit of the Units 1-2 exhaust stack has already been examined using remotely controlled heavy duty machines. (Previously announced on December 17, 2015)
- The feasibility to examine water level and water quality and to install temporary drainage equipment using remotely controlled robots was confirmed through mock-up tests and thus preparations for actual work started from July 25. (Previously announced on July 28, 2016)

[Work plan]

- To access the inside of the drain sump pit of the Units 1-2 exhaust stack, the pit cover and the access panel will be opened. Examination of water level and water quality and installation of temporary drainage equipment will then be conducted.
- When everything goes as planned, examination inside the pit will be conducted through the end of August to the beginning of September and temporary drainage equipment will be installed through the beginning to the middle of September.
- Rain may affect performance of the robots and visibility of the cameras, so the schedule could be changed when it rains.

Measures implemented for the drain sump pit of the Units 1-2 exhaust stack (1/5) **TEPCO**

- Water level and water quality of accumulated water inside the drain sump pit of the Units 1-2 exhaust stack will be examined and temporary drainage equipment will be installed using remotely controlled robots.



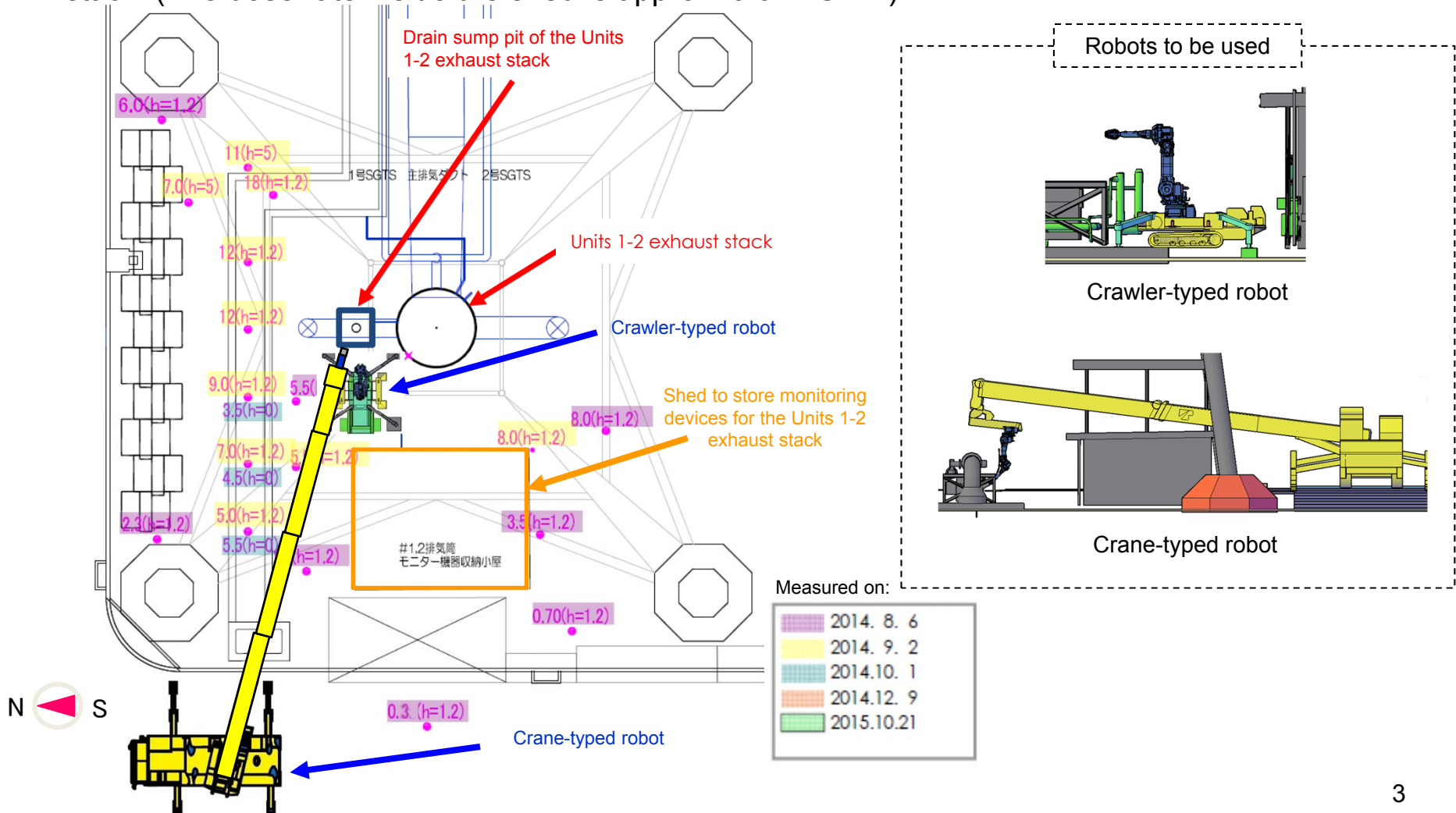
3D image based on examination results



Mock-up tests using remotely controlled robots

Measures implemented for the drain sump pit of the Units 1-2 exhaust stack (2/5) **TEPCO**

- A crawler-typed robot will be lifted by a crane and placed on the west side of the pit. A crane-typed robot will be stationed on the west side of the road.
- These robots will be operated from the shed to store monitoring devices for the Units 1-2 exhaust stack. (The dose rate inside the shed is approx. 0.04mSv/h.)



- To access the inside of the drain sump pit of the Units 1-2 exhaust stack, the pit cover and the access door will be opened using remotely controlled robots.
- A crawler-typed robot will be mainly used to open the pit cover, and a crane-typed robot will open the access door.

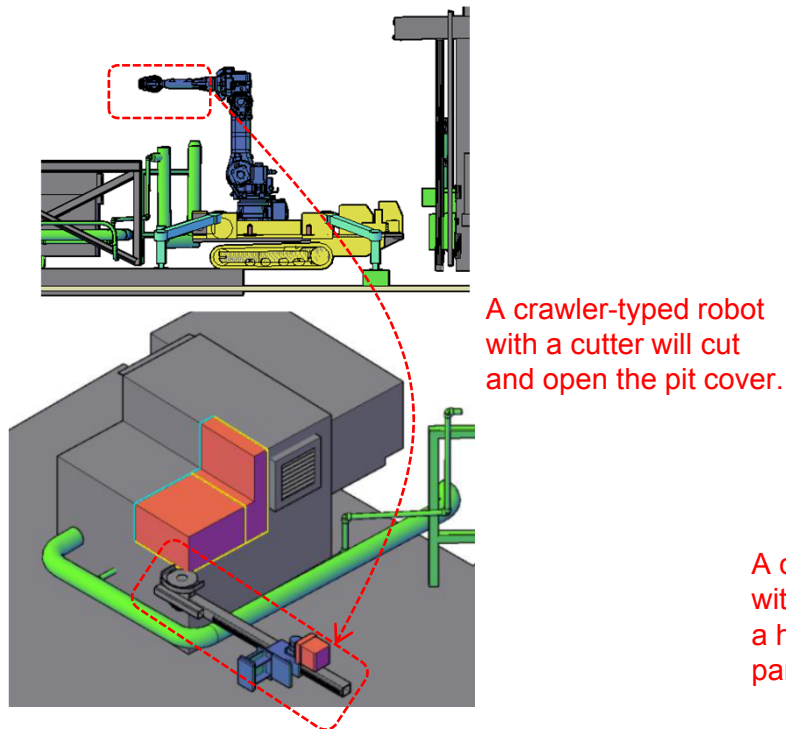


Figure 1. Image of opening the pit cover with a crawler-typed robot

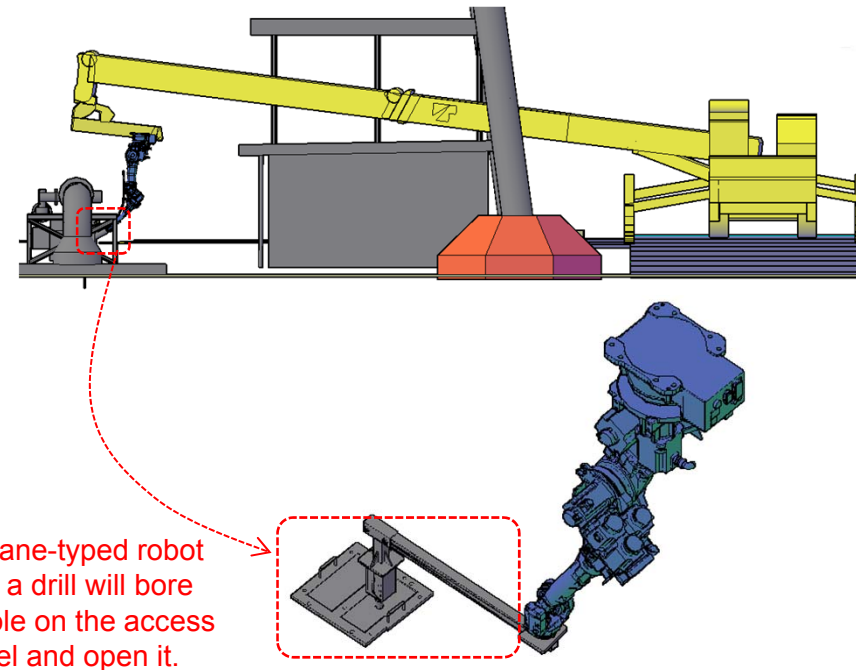


Figure 2. Image of opening the access panel with a crane-typed robot

Measures implemented for the drain sump pit of the Units 1-2 exhaust stack (4/5) **TEPCO**

- After opening part of the access panel, water level inside the pit will be measured with a water gauge and then a pipe to transfer the water will be installed.

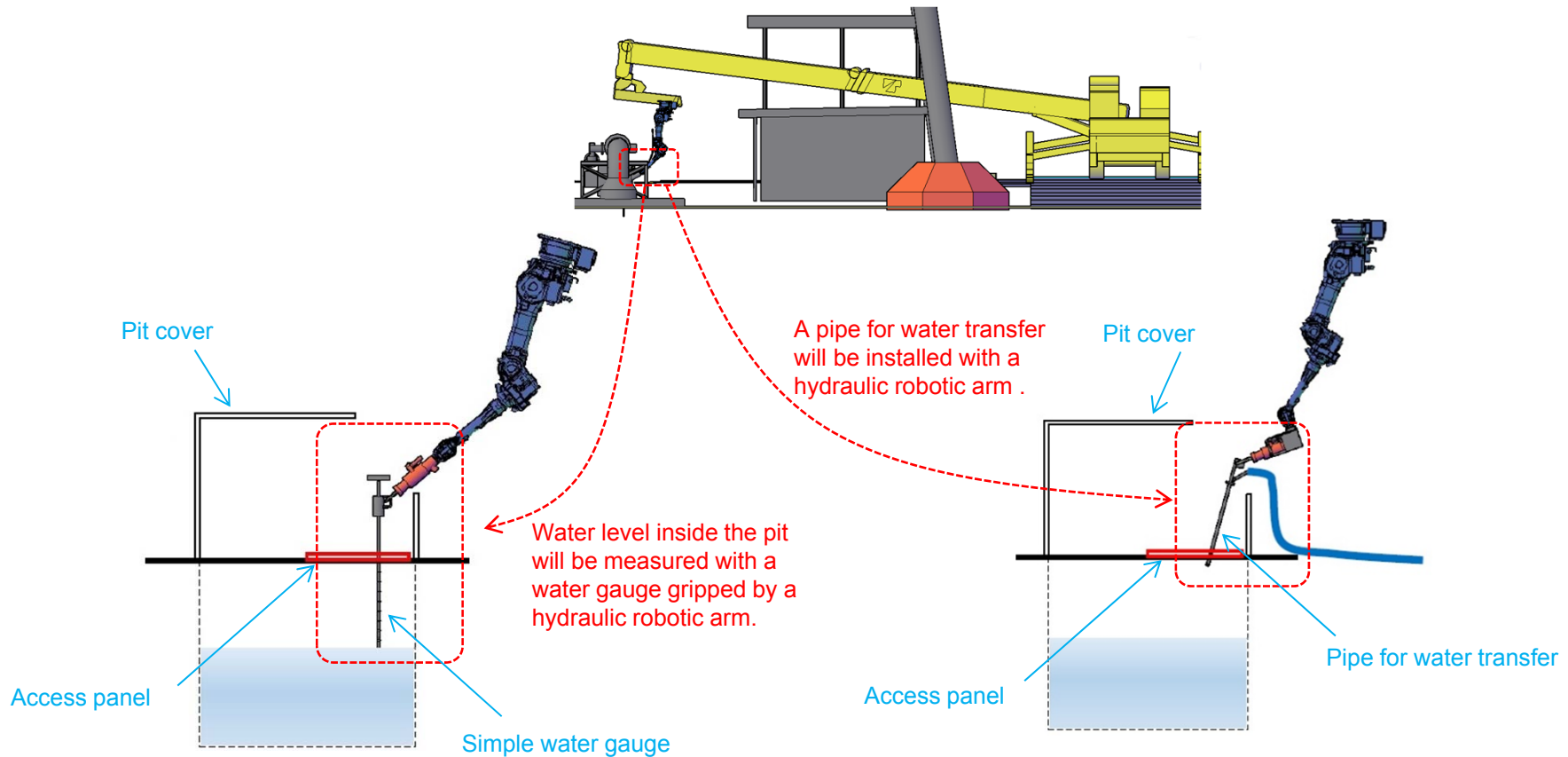
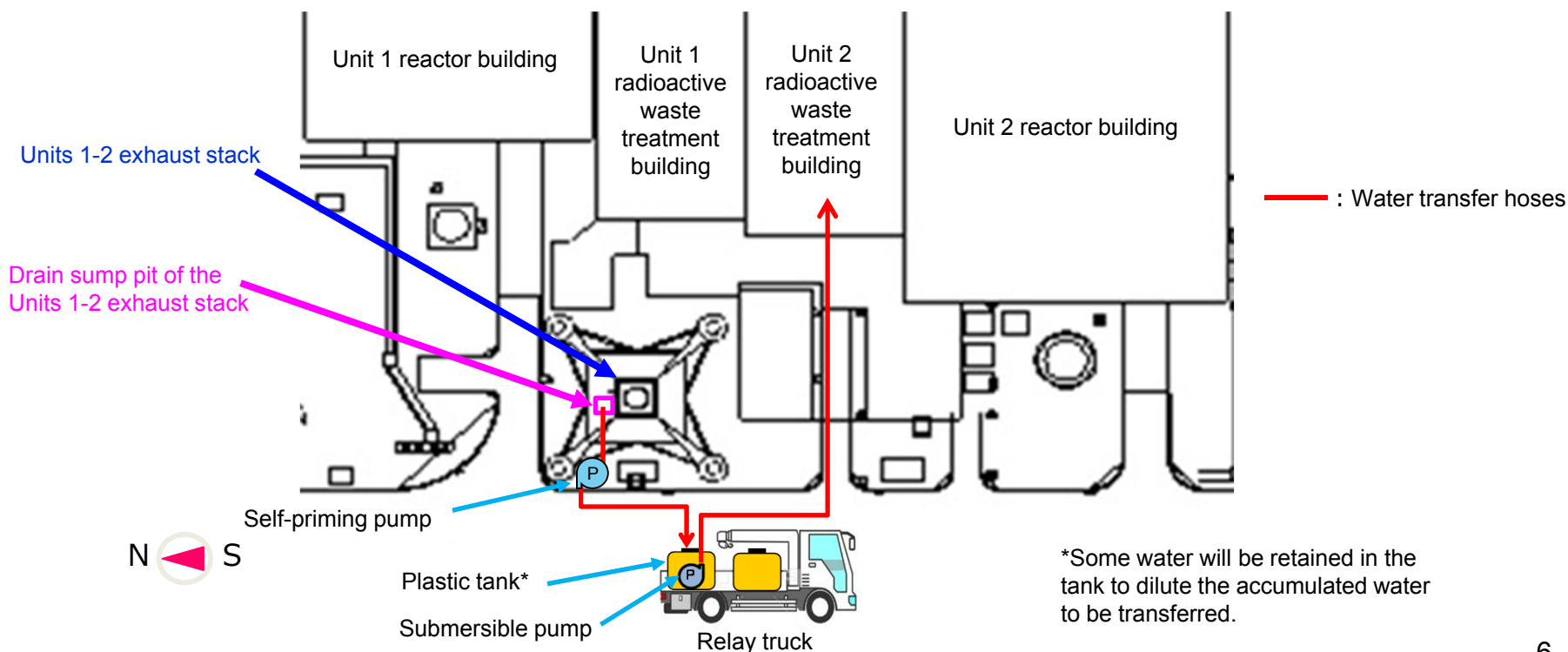


Figure 3. Image of water level examination inside the pit and pipe installation for water transfer using a crane-typed robot

Measures implemented for the drain sump pit of the Units 1-2 exhaust stack (5/5)

- If there is accumulated water inside the drain sump pit of the Units 1-2 exhaust stack, the water will first be transferred to a plastic tank loaded on a relay truck and then discharged into the basement of the Unit 2 radioactive waste treatment building. The following measures will be taken during the work.
 - Water transfer hoses will be wrapped twice with curing tapes and water transfer hoses which are placed outside will be covered with thatched sheets.
 - The joints between the water transfer hoses will be secured with falling prevention structure and wrapped with bags. Containers will also be placed under them.
 - The water transfer will be monitored regularly.
 - After transferring the water, the hoses will be washed repeatedly and then stored on site with the hose ends treated.



Schedule to implement measures for the drain sump pit of the Units 1-2 exhaust stack **TEPCO**

- A series of work to implement measures for the drain sump pit of the Units 1-2 exhaust stack will be proceeded according to the following schedule. Rain may affect performance of the robots and visibility of the cameras, so the schedule could be changed when it rains.

Work to be done	July 2016			August 2016			September 2016		
Preparations				[Bar spanning July 25 to Aug 10]					
Opening of pit cover and access panel							[Bar spanning Aug 15 to Aug 20]		
Examination in the pit (Water level and dust)							[Bar spanning Aug 25 to Aug 26]		
Sampling of the accumulated water							[Bar spanning Aug 28 to Aug 29]		
Transfer of the accumulated water							[Bar spanning Aug 31 to Sep 1]		
Installation of water gauge							[Bar spanning Sep 5 to Sep 15]		