

## Progress status of the investigation into the causes of nonconformities discovered during preparations for the Unit 1 PCV internal investigation at the Fukushima Daiichi Nuclear Power Station (Update 4)

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< Reference Material >  
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- On January 12, when the power to cable drums was turned on in the course of preparations for the Unit 1 primary containment vessel (hereinafter referred to as, "PCV") internal investigation, the following phenomena were observed.
  - A) Dose data built-in to the submersible ROV did not display correctly
  - B) The timestamp (which is supposed to display the current time) on one of the monitors (display) for the six cameras built into the ROV was blinking and the time had stopped.
  
- If the investigation is continued while the dose data built into the submersible ROV is not displaying accurately, there is a chance that the submersible ROV will not be able to accurately measure the dose it is exposed to, so the decision was made to temporarily suspend the investigation. (Announced on January 12)
  
- When investigating the cause of the faulty timestamp on the submersible ROV camera monitor, we found by switching out the camera communications cables that one of the cables was defective. To rectify the situation we replaced the aforementioned cable with a longer cable that should prevent any tension from being applied to it from the outside. As a result, the timestamp displayed correctly.
  
- After implementing the following countermeasures in light of the results from additional investigations, on February 4, we turned on the power to each piece of equipment in the same order in which it will be done for the PCV internal investigation, and confirmed that we should be able to smoothly insert the submersible ROV into the PCV.
  - ① Instruments have been cut off from the HUB (Instrument output will now be transferred by an independent ethernet cable/fiberoptic converter)
  - ② A two-prong converter plug with no grounding prong will be attached to the outlet plug (grounded three-prong plug) on auxiliary equipment connected to remote power sources.

- During performance checks we confirmed that there were no abnormalities with dose data in the submersible ROV, the timestamp on camera monitors, or the operation of other equipment.

No	Item	Result	Submersible ROV position
1	<Initial status check> Submersible ROV/dosimeter/camera monitors/cable drum power ON	No abnormalities	Outside the PCV
2	<Operation check prior to PCV insertion> No.1 devices operation check	No abnormalities	
3	<Operation check during PCV insertion> Smooth insertion of submersible ROV	No abnormalities	Inside the PCV between the external and internal doors of the X-2 penetration
4	<Operation check during PCV insertion> No.1 devices operation check	No abnormalities	
5	<Final status check> No.1 devices status check	No abnormalities	Outside the PCV

- Today (February 7), we shall perform a final field check and make final preparations with the intention of starting the PCV internal investigation (Using submersible ROV-A to attach the guide ring) from tomorrow (February 8) at around 10 AM to February 10.
- We will continue to move forward while prioritizing safety.

# 【Reference】 Results of countermeasures for incorrectly displayed dose data

- From the results of additional investigations we have hypothesized that noise originating from the drum control box propagated as follows and affected the instruments. (①: Noise propagating from the south grounding line, ②: Noise propagating from the HUB)
- By implementing the countermeasures (A)~(D) shown in the diagram below and cutting off each noise propagation route, we eliminated instrument indicator malfunctions (0.00~0.01Gy/h)

