

Internal Dose Investigation of the Unit 3 Reactor Building using a Drone



March 1, 2018

Tokyo Electric Power Company Holdings, Inc.

【Purpose】

This dose investigation was carried out using “RISER”, a drone equipped with a dosimeter, to check conditions in areas inside the Fukushima Daiichi Nuclear Power Station Unit 3 reactor building that have yet to be investigated (2nd and 3rd floors).

Dose data obtained will be utilized for decommissioning, including devising plans to investigate existing facilities.

【Investigation area and flight path】

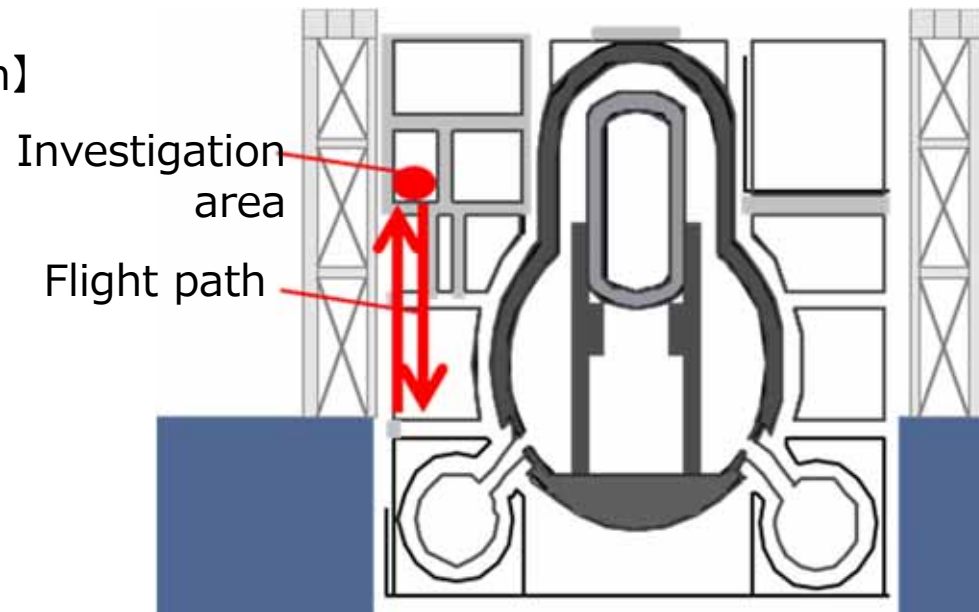
Southwest area of the Unit 3 reactor building
(Refer to the figure to the right.)

【Investigation date】

February 27, 2018

【Obtained data】

Still images and dose data along the flight path



Cross section of the Unit 3 reactor building

Results



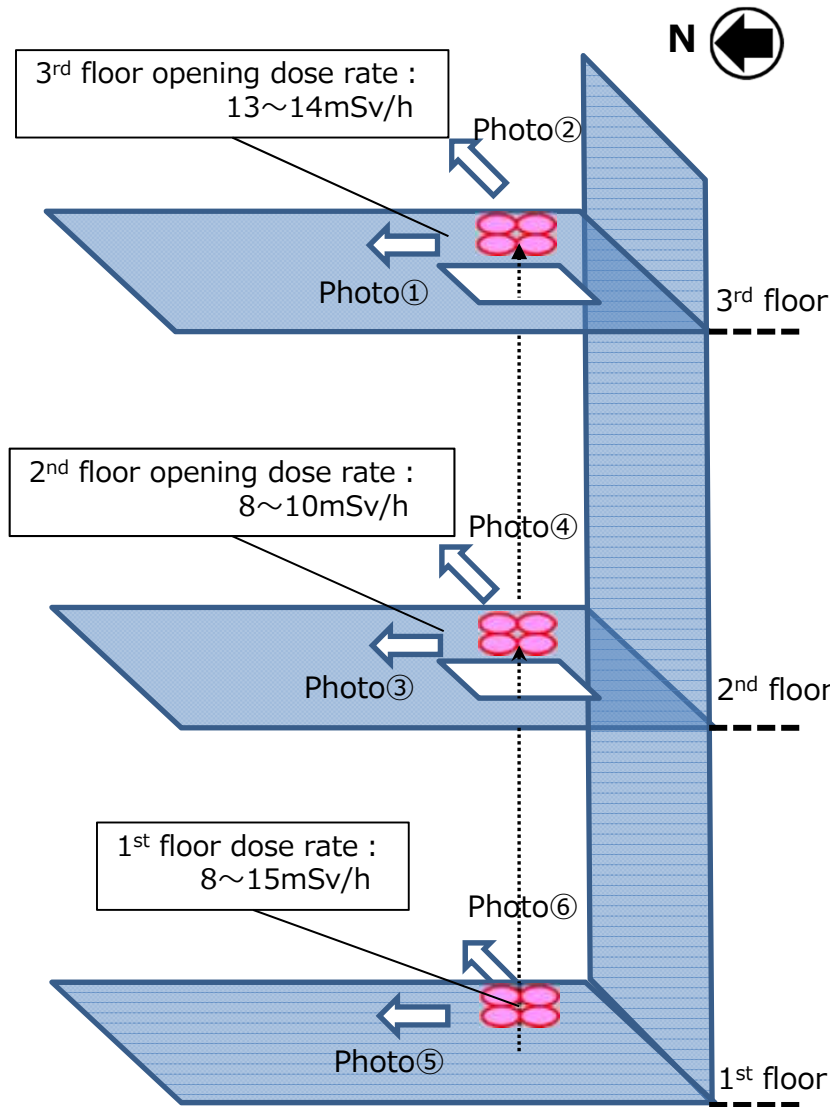
Photo① North from 3rd floor opening



Photo③ North from 2nd floor opening



Photo⑤ Northward on 1st floor



〈Southwest area of Unit 3 reactor building floors 1-3〉



Photo② East from 3rd floor opening



Photo④ East from 2nd floor opening



Photo⑥ Eastward on 1st floor



Main body of RISER

Developers	CREATEC and BLUE BEAR (joint development), UK
Dosimeter	CZT semiconductor detector Measurable dose range: ~2500mSv/h
Battery	LiPO Battery 10000mAh 22.2V
Dimensions	W930×D830×H160
Weight	Approx. 4kg
Flight time	Approx. 15min
Cameras	2 HD Camera(front, downward)
Mounted Sensors	LiDAR (vertical/horizontal), Acceleration sensor, Gyroscope sensor
Characteristics	<p>RISER can fly autonomously by using lasers to ascertain its position even in environments where GPS is not available. Contamination conditions and images can be rendered in three dimensions.</p> <ul style="list-style-type: none"> • Required space for flight is W2m x H3m (W3m x H3m required for take off). It can fly just within the range of the sight of the operator. • Range of radio communication: Within a 135m radius.