

Full-scale test device of the lower part of the primary containment vessel
(Photograph provided by IRID, taken during construction)

To develop technologies for decommissioning of the Fukushima Daiichi Nuclear Power Station

Test Building of Naraha Remote Technology Development Center Opened

On March 30, JAEA held the opening ceremony of the Mock-up Test Building of the Naraha Remote Technology Development Center at Naraha Town, Fukushima Prefecture. The Center is the research base taking charge of the development and demonstration of remote control equipment and devices necessary for decommissioning of Fukushima Daiichi Nuclear Power Station (hereinafter “1F”) of Tokyo Electric Power Company Holdings, Inc. (TEPCO). The major challenges in the full-scale decommissioning task that will take place at 1F are extraction of fuel debris from the nuclear reactor and processing and disposal of radioactive waste. Using equipment at the Center, JAEA and the International Research Institute for Nuclear Decommissioning (IRID) will perform



Mock-up Test Building opening ceremony



President of JAEA proffering a letter of appreciation to an enterprise that participated in the construction of the Mock-up Test Building

development, demonstration tests and other necessary tasks to repair the damaged part of the containment vessel as preparation for fuel debris extraction and operating robots to be sent inside the buildings of 1F.

The Naraha Remote Technology Development Center consists of the Research Management Building and the Mock-up Test Building. The Research

Management Building is equipped with virtual reality systems representing the interior of the buildings of 1F for reviewing the operation procedures

using remote control equipment or for training workers. The recently completed Test Building houses a wide variety of test equipment to simulate the actual working conditions of 1F in its 60×80×40 m body. The largest equipment among them is the full-scale test device of the primary containment vessel placed at the demonstration test area (photograph on the first page). It represents the lower part of the primary containment vessel, and in this area, IRID will conduct actual-scale tests for repairing sections of the containment vessel from which cooling water is leaking.

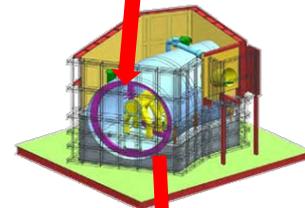
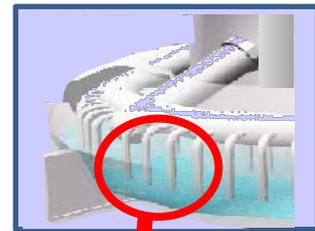


Research and development promotion area

Fully equipped with laboratories and workshop for repairing or modifying remote control devices and analyzing or summarizing test data



Demonstration test area



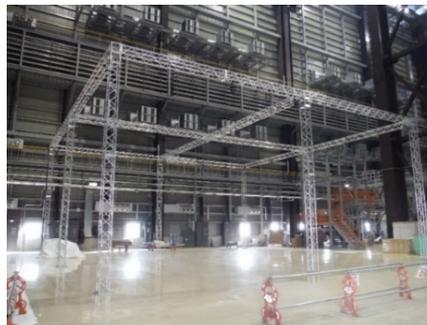
Full-scale mock-up representing one eighth of lower part of the primary containment vessel
The photograph of the first page shows assembly operation of the mock-up

Element test area

Reproduces the working conditions inside the reactor buildings



Mock-up staircases



Motion capture



Underwater robot testing tank

In addition, the Mock-up Test Building is equipped with real-scale mock-up staircases simulating stairs in reactor buildings, motion capture to precisely capture the motion of robots, and a 5 m-deep underwater robot testing tank for testing the underwater performance of devices. The mock-up staircases allow flexibly adjusting the width and slope to simulate various kinds of staircases. The tank is equipped with a temperature raising device and underwater cameras.

The Naraha Remote Technology Development Center also features shared use by outside users. Hereafter, institutions from industry, academia, and government will individually or jointly conduct development and demonstration tests of robots.

At the Mock-up Test Building opening ceremony held on March 30, Mr. Toshio Kodama, the President of JAEA highlighted the significance of opening the Naraha Remote Technology Development Center, “This Center is the very first facility established within 20 km of the Fukushima Daiichi Nuclear Power Station as a national project. While endeavoring to fulfill the mission given to the Center, we shall make unremitting efforts to contribute to the revitalization of Fukushima through acceleration of research and development, dissemination of the results, realization of an attractive base to which a wide spectrum of domestic and overseas researchers gather, symbiosis with the local people, and other initiatives, with maintaining close collaboration with the Fukushima Innovation Coast Framework.”

TOPICS Fukushima No. 74

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