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International Fusion Energy Research Centre, Rokkasho, Aomori 039-3212, Japan

## Meetings

### Construction of the DEMO Joint Research Building for DEMO R&D

The DEMO Joint Research Building is under construction, based on the agreement of EU and JA to enhance research activities in the remaining Broader Approach (BA) period. It will address some issues raised by the peer-review of International Fusion Energy Research Centre (IFERC) activities in Rokkasho by experts from EU and JA in 2012.

The new building will accommodate two major facilities: a beryllium handling room to characterize small particle advanced multiplier/breeder materials and an experimental & material testing room for testing and data-basing of blanket structural materials. New instruments are in preparation to enhance research activities. An artistic impression showing the main dimensions of the DEMO Joint Research Building can be seen in Fig. 1.

Construction of the building was initiated from 25<sup>th</sup> February 2015. As of the end of August 2015, piling, earth work and groundwork were completed and steel-frame work is in progress (Fig. 2). In parallel, details of machine and electrical equipment to be installed were re-evaluated for practical use. The DEMO Joint Research Building will be completed by the end of January 2016 and will be operated from the beginning of February 2016.

In the Beryllium handling room, characterization of pebble bed properties packed with beryllides will be carried out as well as further development and optimization studies of fundamental techniques toward mass production.

For research in structural materials, we plan to obtain advanced data for the blanket design such as creep fatigue. Atmosphere control, especially ambient temperature control is critical for long time creep tests. Thus, an environmental control unit is going to be installed in the material testing room in which a testing machine will be installed. A new experimental system for loss of coolant accident (LOCA) / ingress of coolant event (ICE) experiments was designed and assembled to verify the safety code simulating the sequence of the in-vessel LOCA/ICE. A preliminary test will be carried out to verify the ability of the system.

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Fig. 1 Schematic of the DEMO Joint Research Building



Fig. 2 Current status of the construction of the DEMO Joint Research Building