

New Build Field Report



CUSTOMER UPDATE ON NEW BUILD PROJECTS & ACTIVITIES

22 JUNE 2011



OL3 Project Status



General view of Olkiluoto 3 construction site, Finland - May 2011

» Nuclear Island: Airplane Crash (APC) Shell Completed

On May 27, the external dome on top of the reactor building was completed. This last 120m³ concreting operation, out of the total 6,000 m³ poured, completed the Nuclear Island airplane crash shell. The operation has been carried out with a high level of safety.

→ The OL3 EPR™ APC shell is now completed and protecting the fuel, reactor and safeguard buildings 2 & 3.



APC shell concreting operations

→ This major milestone marks the completion of the OL3 project civil works phase.

»» First Reactor Coolant Pump (RCP) successfully installed

The first RCP was successfully installed in the nuclear island. At the end of April, both the hydraulic system and the motor were lifted and positioned in the primary circuit of the reactor building.

The second RCP is now launched for completion. Motor preparation work began, and the installation of the hydraulic system is about to be launched. The third and fourth RCPs will be installed in June and July respectively.

The installation of the 4 RCPs is a very important milestone that finalizes the complete assembly of the primary circuit.



Teams preparing the RCP installation

→ After the installation of the steam generators, the pressurizer and the reactor pressure vessel, the 4 RCPs are the last remaining large components to be installed in the nuclear island in 2011.

»» In-Containment Refueling Water Storage Tank (IRWST)



Launch of the implementation of the first Bertin filters in the IRWST

Implementation of the first Bertin filters was launched in March.

The main function of these four different types of filters is to prevent debris from seeping into the pumps and strainers of the IRWST pools. Each filter is divided into several parts within 200 wooden crates averaging size 3x2x1m in size and containing more than 120 tons of material to be introduced through a door of 1.4x2.25m.

The introduction of these components into their final location represents an important operation, requiring very high precision and skills. This installation will be completed summer 2011.

»» Fire Water System: First Pressure Test



Fire Water System: First Pressure Test

The first "in situ" water pressure test on the Fire Water System in safeguard buildings 2 & 3 was performed on March 30. Prior to the launch of this pressure test and to ensure complete and perfect safety, the location's accesses were safely restricted.

This pressure test included:

- The main distribution line from the fire water distribution system valve up to the fire water distribution system valve.
- The four raisers that supply extinguishing water to 14 indoor

hydrants in safeguard building 2 mechanical and electrical divisions, and 15 indoor hydrants in safeguard building 3 mechanical and electrical divisions.

The system has been pressurized at 17.55 bar g by an electrical pressure pump located in the safeguard building 3 in order to check completeness of piping works and tightness of the welding. The operations lasted 3 hours and was successfully completed.



Flammanville 3 construction site - April 2011 - ©EDF

» Delivery of the LHSI Heat Exchangers on Site

The heat exchangers – for the world's second for EPR™ project – were delivered on site February 11 and March 11.

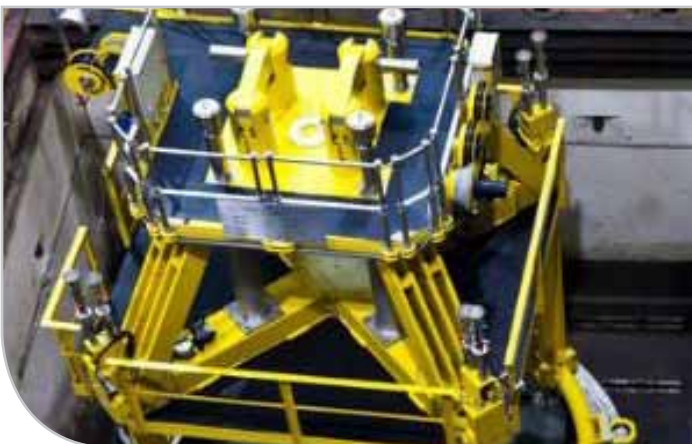
These big components – around 8m long and weighing 27 tons – are part of the Safety Injection / Residual Heat Removal System. They are installed in the safeguard buildings and are cooled by the Component Cooling Water System (CCWS).

In accidental conditions, the heat exchangers participate in the evacuation of the residual heat outside containment. They must be able to maintain IRWST temperature below 120°C (Safety Injection mode).



Heat Exchangers delivery - March 2011

» Reactor Pressure Vessel (RPV) Internals Handling Tool



RPV internals handling tool

In March 2011, the acceptance of the RPV internals handling tool was pronounced by the manufacturer MCE in Linz (Austria), in the presence of EDF, AREVA and the supplier Siempelkamp Nukleartechnik.

The 30-ton equipment includes:

- an upper platform fitted with telescopic rods
- a lower mechanical lifting structure fitted with a platform and a pneumatic rotating system for the load connection
- an I&C part with the connection/disconnection function of the load
- the storage stand of the handling tool

This equipment will allow the handling of the upper and lower RPV internals during reactor shutdowns.



General View of Taishan Units 1 & 2 construction site - May 2011



Nuclear Island Unit 2, Taishan, China

» April 2011 Project Status

The site construction shows good progresses: Unit 1 Inner Liner completed (44 meters high) representing a prerequisite for Dome Lifting. Unit 2 liner reached 18 meters high.

» Another Major Delivery for the Core Melt Stabilization System

March 03, 2011

“ Fabrication of the melt plug with embedded support frame, transport cart and associated railway system, representing major equipment for the Core Melt Stabilization System, has been completed.



Melt Plug fabrication

The melt plug is a removable barrier between the reactor pit and the discharge channel of the Core Melt Stabilization System, sometimes referred to as the "core catcher." In the highly unlikely yet anticipated case of a core meltdown, this passive system is designed to temporarily retain the molten core within the reactor pit, until it dissolves the sacrificial plug, and is channeled toward the spreading area where it will be sprayed to cool and harden.

This feature is one of many safety technologies used in the EPR™ reactor design to provide complementary, diverse and

redundant safety systems.




The plug is removable to provide access to the bottom of the RPV during outages. During plant operations, the plug is anchored in the support frame that is embedded in the civil structure underneath the reactor pit.

This delivery completes the scope of the major equipment of the Core Melt Stabilization System for Unit 1.

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Project Profiles

Name	Oikiluoto 3 (OL3) Finland 	Flamanville 3 (FA3) France 	Taishan 1 & 2 (TSN 1&2) China 
Customer	Teollisuuden Voima Oyj (TVO)	Electricite de France (EDF)	China Guangdong Nuclear Power Holding Corp. Ltd. (CGNPC), represented by the Taishan Nuclear Power Company (TSNPC)
Scope of work	1 EPR™ unit (AREVA - Siemens Consortium)	1 EPR™ NSSS (AREVA)	Design & procurement for 2 EPR™ units (AREVA)
Net electric output	1,600 MWe	1,630 MWe	1,660 MWe per unit
First concrete	October 2005	December 2007	End 2009
Nuclear Operations (Starting after reactor fuel loading)	End 2012	Project Lead EDF - "The target for beginning marketable output is now set at 2014" - EDF Press Release, July 30, 2010	Unit 1 - 2013

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