PRESS CONFERENCE

3 September 2015

Jean-Bernard LÉVY
Chairman and CEO

Xavier URSAT
Group Senior Executive VP - New Nuclear Projects and Engineering
EDF, A RESPONSIBLE ELECTRICITY COMPANY, A CHAMPION OF LOW CARBON ENERGY GROWTH

EDF, THE ELECTRICITY COMPANY EMITTING THE LEAST CO₂

- World leader in nuclear power
- European leader of renewable energies
  1/3 of gross investments in group development dedicated to renewable energies
- Number 3 in European energy services

EDF, OFFICIAL PARTNER OF COP21

Our goal: successful energy transition
SAFETY FIRST

SAFETY FORMS THE BASIS OF OUR SPECIALISATION AS THE WORLD’S LEADING NUCLEAR OPERATOR

- For nuclear power plants in operation
  Principle of continuous improvement and factoring in of operating experience at international level

- For Flamanville EPR under construction
  The most powerful reactor with the latest safety and external hazard protection features
  Priority afforded to nuclear safety, quality of implementation and construction site safety
A CHALLENGING CONSTRUCTION SITE

- **FOR EDF**
  - Future of the French nuclear fleet
  - Contribution to the low carbon energy mix

- **FOR THE NUCLEAR SECTOR**
  - 3rd largest industrial sector in France
  - Restructuring underway of the relations between EDF and AREVA
  - Operating experience for Hinkley Point
  - Multiple international development prospects

- **FOR FRANCE**
  - Key to energy independance
  - Safe and competitive electricity
  - Development of French expertise
A LARGE-SIZED CONSTRUCTION SITE

- **Nearly 4000 persons** working on the construction site every day
  - **150 contractor partners**

- **Completed stages**
  - 60% of the electromechanical erection and
  - 98% of the building civil structure

- **Industrial contingencies**
  - inherent of a project of this size
A NEW INDUSTRIAL ORGANISATION
COMPLETE PROJECT REVIEW

AN ORGANISATION BASED ON STREAMLINED MANAGEMENT REPORTING DIRECTLY

DETAILED PROJECT REVIEW

- Running modes, risk assessment and future lead times

ACTION PLAN

- Restructuring with our suppliers
- A new roadmap
- Strengthened cooperation with the Nuclear Safety Authority
3 KEY MILESTONES FOR COMMISSIONING

Completion of mechanical erection of the Reactor Coolant Circuit
1st quarter of 2016

Last electromechanical phase and start of system performance testing
1st quarter of 2017

First fuel loading and start-up of the reactor
4th quarter of 2018

Revised costs of € 10.5 billion*

Successful completion of Flamanville constitutes an absolute priority

* In euros 2015
Xavier Ursat,
Group Senior Executive VP - New Nuclear Projects and Engineering

- **PROTECTION AGAINST EXTERNAL HAZARDS**
  - Earthquakes, floods
  - Plane crash shell

- **4 INDEPENDENT SAFETY SYSTEMS**
  - A 10\textsuperscript{th} of the likelihood of core melt

- **CORE CATCHER**
  - Containment of radioactivity in the event of accident

- The world’s most powerful reactor
  - **1 650 MW**

- Optimised use of fuel
  - - 17 % of burn-up*

- Increased environmental performance
  - - 30% of radioactive release and waste*

* Compared to 1300 MW reactors
THREE PRIORITIES

- Optimised project coordination and organisation
- Processing of ongoing technical matters
- Schedule and cost control
OPTIMISED PROJECT COORDINATION AND ORGANISATION
ORGANISATION AND WORKING METHODS

FOR EDF

- Streamlined management, shortened decision-making loops
- Clearer responsibilities
- Oversight, coordination and reporting committees
- Reinforced management presence on site
- Transfer of knowledge and skills renewal

Guarantee industrial management and improve productivity on the construction site
FOR OUR PARTNERS

- Common roadmap
- New incentives contract framework

Strengthened coordination, shared aims and consolidated collective commitment
TECHNICAL MATTERS BEING ANALYSED
ADDITIONAL REACTOR VESSEL COMPLIANCE TESTING

- Higher carbon content in a limited zone on the reactor vessel bottom and head
- A new test programme to demonstrate reactor vessel resistance submitted to the Nuclear Safety Authority for approval

*Expected results in 2016*
PROCESSING OF WELDING DEFECTS ON THE MAIN PRIMARY CIRCUIT

- 4 welds with quality defects out of the 24 completed.
- Weld reworks being carried out.

Two of the four welds have already been processed.
TECHNICAL QUALIFICATION OF THE PRESSURISER RELIEF VALVES

1\textsuperscript{st} qualification tests in 2014 with anomaly on one relief valve due to test conditions and not to the relief valve itself

2\textsuperscript{nd} series of qualification tests successfully performed in 2015, with design items to be improved

In the future: last design qualification tests and endurance tests on the relief valve

Ongoing technical review with the ASN and IRSN
COMMISSIONING OF THE CONTROL ROOM

Inauguration of the control room and first commissioning tests

COMPLETION OF INNER CONTAINMENT CONCRETING

View of the completed inner containment

ENTRY OF THE 4 STEAM GENERATORS AND ASSEMBLY OF THE REACTOR COOLANT CIRCUIT

Entry of the motor for the first of the 4 reactor coolant pumps
END OF THE PRE-STRESSING OPERATIONS

Insertion of the pre-stressing tendons in their sheathing

DELIVERY AND ENTRY OF THE DIESEL GENERATORS

Entry of the last diesel engine for the SBO diesel generator in the northern diesel building

COMMISSIONING APPLICATION FILE SUBMITTED TO THE ASN

First quarter of 2015
UPCOMING CONSTRUCTION SITE MILESTONES

- 1st quarter of 2016: Completion of primary circuit mechanical erection
  Completion of welding operations and piping inspection

- 1st quarter of 2017: Last electromechanical erection phase and start of system performance testing
  Implementation of several test series, system by system and then as a whole

- 4th quarter of 2018: First fuel loading and start-up of the reactor
  Last operations before the reactor power build-up phase
CONCLUSION

Jean-Bernard Lévy
FLAMANVILLE 3, A PRIORITY FOR EDF

Collective deployment of EDF and its partners

A key project for the French nuclear sector and its success internationally

Legal commissioning framework: installed nuclear capacity capped at 63.2 GW in France (Energy transition law)
Your questions