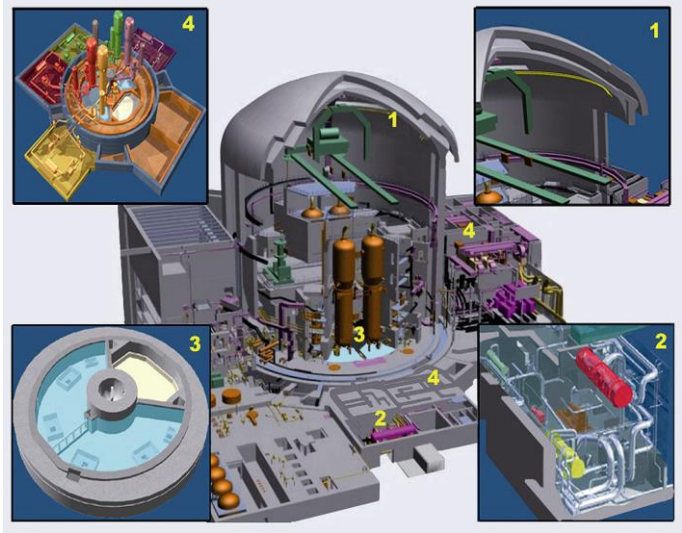
BUILDING A COMPETITIVE REACTOR

Jacques de TONI
EDF New Nuclear Division
Deputy project Director, EPRNM



OECD conference
12th April 2017 , Paris

ENERGY CONTEXT

- A very competitive market with a significant fall in cost for onshore wind and solar PV whereas nuclear costs tend to increase
- Carbon price still low even though the concern on climate change might invert the trend in the near future
- Development of shale gas in the US has brought its price down. Coal prices are also low.
- The market prices for electricity remain at a low level

Despite this context, new nuclear will be part of the energy mix

NEW REACTORS: EDF STRATEGY

Nuclear energy will remain an attractive technology for the energy mix provided the following challenges are met:

- A high level of safety
- Flexibility of the reactors to cope with the variability of the renewables
- A strong and skilled supply chain, building experience on a real nuclear business
- Financing scheme is offered to support these capital-intensive nuclear projects
- The projects can ‘Deliver on time and to budget’

These challenges are addressed through the joint development by EDF & AREVA of a new reactor, EPRNM

NEW REACTORS: EDF STRATEGY – EPRNM PROJECT

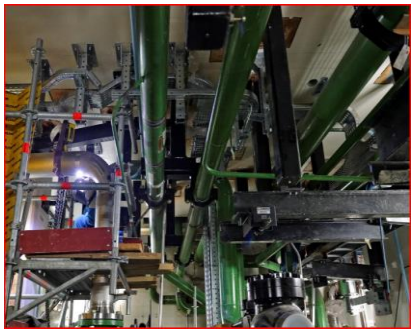
A new reactor , jointly developed by EDF & AREVA:

- Power range: 1650 to 1750MWe (Scale effect: lower cost per kW)
- Fully compliant with most recent international regulations (IAEA, WENRA)
- Evolution from the EPR design taking account of all lessons learned from the ongoing projects (France, Finland, china, UK)
- Early design review by the French Safety Authority ASN

EPRNM: HOW TO MEET THE COMPETITIVITY TARGET ?

3 main drivers implemented:

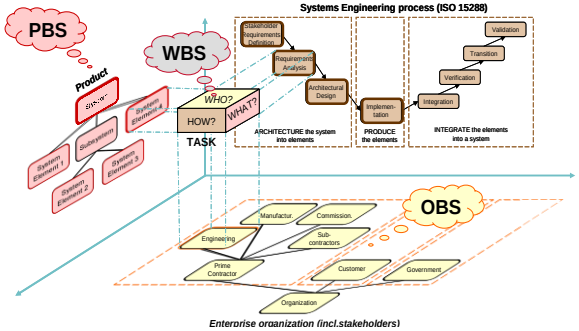
1. Industrial



- Greater standardization of equipment,
- More efficient supply chain,
- Involvement of the main stakeholders at the early stage of the basic design to master the end cost of the reactor: ***cost is a design parameter for the Reactor development***.

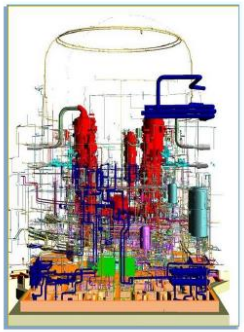
2. Digital

- Implementation of System Engineering and Product Lifecycle Management – PLM tools, as successfully done in car and space industries



3. Design and constructability

- Extended prefabrication,
- New construction techniques
- Early involvement of the main suppliers (Extended enterprise)



Thank you for your attention