



CEA, EDF, Naval Group and TechnicAtome unveil NUWARD : jointly developed Small Modular Reactor (SMR) project

On September 17th 2019, during the IAEA General Conference in Vienna, CEA, EDF, Naval Group and TechnicAtome unveiled “NUWARD”TM, their jointly developed SMR project, a PWR-based solution to meet the growing world demand for decarbonized, safe and competitive electricity generation, in the 300-400 MWe range.

“NUWARD”TM will benefit from best in class French technologies from more than 50 years of experience in PWR design, development, construction and more than 2 000 reactor years of PWR operating experience.

Based on this proven technology, “NUWARD”TM will be a modular solution introducing some significant innovations with major benefits to the operator and product’s competitiveness : compacity and simplicity of an integrated design, flexibility for construction and operation, innovative safety approach in line with world’s best standards.

Skills in research and qualification from CEA, systems integration and operation from EDF, structures and modular experience from Naval Group as well as compact reactor design expertise from TechnicAtome are strongly mobilised to serve these objectives.

In line with “NUWARD”TM ambition to serve the global market with a competitive solution in the late 2020s, the “NUWARD”TM partners are open to international cooperation, notably to foster the harmonisation of regulation, the standardisation of design and design optimisation.

In that spirit, CEA and EDF have initiated discussions with Westinghouse Electric Company to explore potential cooperation on small modular reactor (SMR) development.

François Jacq, Chairman of CEA stated: “CEA’s mission is to develop the low carbon energy systems of the future, including the SMR technology. For the “NUWARD”TM project, the CEA brings its skills and expertise for core and reactor design, development and validation of calculation tools, safety analysis studies and qualification of systems and components by providing its test facilities for R&D actions”.

EDF’s Chairman and Chief Executive Officer Jean-Bernard Lévy stated: “EDF is committed to contributing its wealth of experience to make “NUWARD”TM a success. Alongside our partners, we believe the project unveiled today is a promising beginning of a safe and competitive nuclear design meant to broaden the range of solutions for low carbon baseload energy offered by the French nuclear industry. We are proud to team with the best experts and breed this new nuclear technology to address a new, high-potential market.”

Naval Group’s Chief Executive Officer Hervé Guillou stated: “For more than 40 years, Naval Group has been building nuclear submarine and aircraft carriers whose propulsion energy is supplied by small nuclear energy production units. Naval Group is thus committed to the highest standards of safety, competitiveness and innovation in the nuclear field. This cooperation is a great opportunity and offers interesting synergies with our Nuclear propulsion core skills: Naval Group is proud to contribute to “NUWARD”TM “

TechnicAtome’s Chief Executive Officer Loïc Rocard stated: “TechnicAtome has been designing, assembling and commissioning more than 20 highly compact nuclear reactors, for almost 50 years. We are proud to commit our engineering skills and specific know-how to the exciting NUWARDTM project.”

CEA is a public research organization working in Defense and Security, Energy Transition (nuclear and renewable), Digital Transformation for Industry and Future Health technologies. Building on excellence in fundamental research and on recognized expertise, with its 20,000 employees and large research facilities.

A key player in energy transition, the **EDF Group** is an integrated electricity company, active in all areas of the business: generation, transmission, distribution, energy supply and trading, energy services. A global leader in low-carbon energies, the Group has developed a diversified generation mix based on nuclear power, hydropower, new renewable energies and thermal energy. The Group is involved in supplying energy and services to approximately 39.8 million customers⁽¹⁾, 29.7million of which are in France. It generated consolidated sales of €69 billion in 2018. EDF is listed on the Paris Stock Exchange.

Naval Group is a European leader in naval defence. The group designs, builds and supports submarines and surface ships. It also supplies services to shipyards and naval bases. Attentive to corporate social responsibility, Naval Group adheres to the United Nations Global Compact. The group reports revenues of €3.6 billion and has a workforce of 14,860 (data for 2018).

TechnicAtome is specialized in design, construction, commissioning and operational maintenance of compact nuclear reactors. TechnicAtome employs approximately 1,600 employees working in the fields of naval propulsion, research and energy. For over 45 years, it has been providing its nuclear engineering expertise for reactors, fuels and associated facilities, and offers its customers solutions and products that meet the highest standards of safety and availability.

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