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EDF inaugurates the new Materials Ageing Institute

On Monday, 16 November 2009, EDF inaugurated the new laboratories of the materials ageing research centre (Materials Ageing Institute, MAI) at Renardières in Moret-sur-Loing (77).

The MAI was founded in January 2008 by the EDF Group, the Japanese electricity operator TEPCO (Tokyo Electric Power Corporation) and the American EPRI (Electric Power Research Institute). It aims to bring together the needs and skills of industrial companies focussing on the ageing of materials used in existing and future nuclear, fuel burning and hydraulic power stations in order to anticipate ageing and to extend the life of materials, components and structures in complete safety.

The MAI represents half the world's nuclear power station operators and concentrates its current research on the development of knowledge and models to help its members improve the management of their power station operating life, a problem shared by all nuclear electricity generators worldwide.

Run by EDF, the research institute has 80 researchers, engineers and technicians, and an annual budget of 9 million euros. Its work is focused on three main areas:

- microscopic observation of materials and experiments on specially developed specimens;
- modelling using mathematical models to confirm the understanding of fundamental processes, such as stress corrosion, fatigue and creep, and evaluate the longevity of components and materials;
- operational experimentation, using both digital simulation and operational data from samples of materials from power station operations or from the replacement of specific components.

The new MAI building, built to high environmental standards, is home to the latest generation microscopy laboratory, housing notably a TEM TITAN microscope, currently the most powerful in the world. Other laboratories (Microstructures, Corrosion and Chemistry, Mechanical Science, etc.), with very high performance computing resources like 8000 processor IBM Blue Gene/L computer, are also part of the MAI.

The EDF Group, one of the leaders in the energy market in Europe, is an integrated energy company active in all businesses: generation, transmission, distribution, energy supply and trading. The Group is the leading electricity producer in Europe. In France, it has mainly nuclear and hydraulic production facilities where 95% of the electricity output involves no CO2 emissions. EDF's transport and distribution subsidiaries in France operate 1,274,000 km of low and medium voltage overhead and underground electricity lines and around 100,000 km of high and very high voltage networks. The Group is involved in supplying energy and services to more than 38 million customers around the world, including more than 28 million in France. The Group generated consolidated sales of € 64.3 billion in 2008, of which 47% in Europe excluding France. EDF is listed on the Paris Stock Exchange and is a member of the CAC 40 index.



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