

17 FEBRUARY 2011

## Generic anomaly on bearing bushing of back-up diesel generators declared by EDF to French Nuclear Safety Authority

EDF has just declared to the French Nuclear Safety Authority a so-called generic anomaly Level 1 on the INES\* scale, affecting the bearing bushings of its back-up diesel generators, at its Blayais, Bugey, Chinon, Cruas, Dampierre, Gravelines and Saint-Laurent power stations. This event has been declared Level 2 at EDF's Tricastin power station.

The anomaly is caused by premature wear. It is of no consequence to the operation and safety of the facilities in question. EDF declared that it would preventively replace the bushings in question. Maintenance procedures for this purpose, which can be performed while the reactors are in operation, began on 12 February 2011.

Inspection revealed premature wear on a metal component known as a bearing bushing fitted to the diesel engines of the back-up generators equipping nuclear power stations. This premature wear is a deviation from nuclear safety rules. These require that electrical power supply components (see diagram), as a result of inspections and regular maintenance, are at all times fit for purpose including when not called upon for normal power station operations. Hence, the anomaly which has come to light has prompted to reinforce the maintenance procedures on the diesel generators. These bearing bushings have since the end of 2009 been fitted to 26 diesel-fired generators in eight 900 MW nuclear power stations.

Each nuclear power unit has three back-up diesel generators. At Tricastin, the bushings need replacing on the third diesel generator. This generator will, if necessary, pick up load to allow for the replacement of the bushings on the first two generators of units 3 and 4. This is not the case for the other affected power stations. The maintenance and replacement operations on the third back-up diesel generator at Tricastin took place on 17 February 2011.



*A simple gesture for the environment:  
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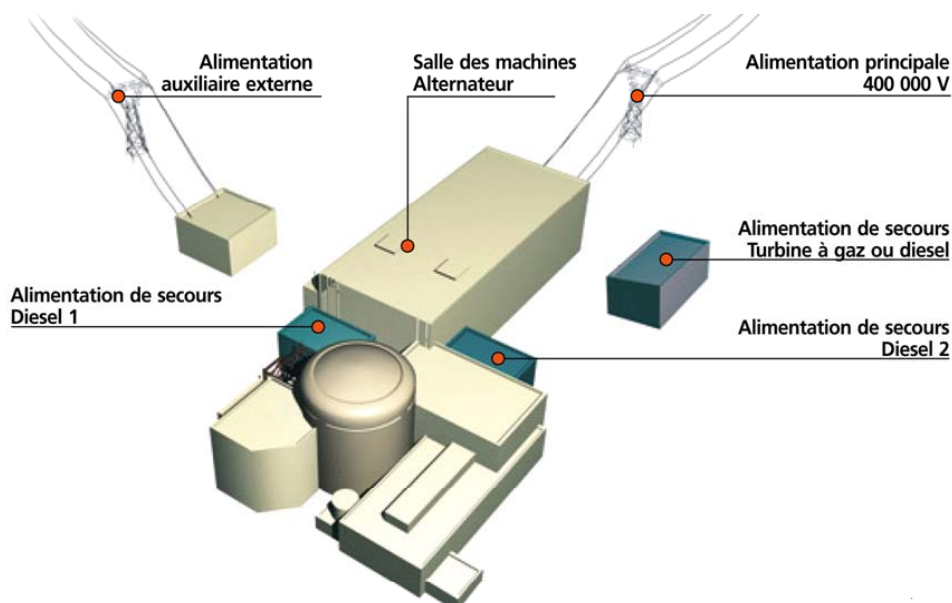
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## Electrical power supply to a nuclear power station

Each nuclear power plant has five different sources of electrical power supply permanently available (see attached diagram). This allows for the continuing operation of all equipment, including safety systems, as one source of power takes over from another in the event of failure. Power is sourced from two high voltage power lines and three back-up facilities. The latter are comprised of two diesel generators and, depending on the model of reactor, a combustion turbine for reactors rated 1350 MW and 1450 MW. For 900MW reactors, a third diesel generator is provided.

The three back-up sources of power must be permanently maintained as fit for purpose, so that they can in the event of failure of the two standard sources of power, supply the electricity needed to operate the safety systems. This is a mandatory rule imposed on the operator.



*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 1,285,000 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 close to 28 million in France. The Group generated consolidated sales of €65.2 billion in 2010, of which 44.5% outside France. EDF is listed on the Paris Stock Exchange and is a member of the CAC 40 index.*

