

Affected reactor units: Belleville 1-2, Cattenom 1-2-3-4, Chinon B3-4, Cruas 1-4, Dampierre 1-2-3-4, Golfech 1-2, Nogent-sur-Seine 1-2, Saint-Laurent-des-Eaux B1-2.

INES-2 event report on seismic resistance of pipes located inside the pumping station*

As required by its power-plant maintenance programme, EDF has performed inspections on some of the pipes located inside the pumping station* of all its existing nuclear power plants. The purpose of these pipes is to supply and filter water in the event of a fire.

In-depth investigations have revealed thinning of the metal in certain sections of piping, thus making it impossible to justify their seismic resistance in the event of a design-base-type earthquake**.

Investigations have revealed that in the event of a design-base-type earthquake, this could potentially cause flooding in the pumping station of twenty reactor units, thereby resulting in the functional loss of both reactor cooling water systems.

- **The pipes on nine reactor units have been reinforced** (Belleville 1-2, Cattenom 3-4, Dampierre 1-2, Golfech 1-2, and Saint-Laurent-des-Eaux B1).
- **On five reactor units currently in outage, the pipes are being reinforced and work will be completed prior to unit restart** (Chinon B3, Cruas 1, Dampierre 3, Nogent 1, Saint-Laurent-des-Eaux B2).
- **On six running units, reinforcement work has been completed on one of the two reactor cooling water systems, thus ensuring that the plant could operate safely even in the event of an earthquake. Reinforcement work on the second cooling water system is underway** (Cattenom 1-2, Chinon B4, Cruas 4, Dampierre 4, Nogent 2).

On the 9th of October 2017, EDF consequently reported a generic safety-significant event to the French nuclear regulatory authority (ASN) as twenty reactor units were affected. The event was given a level-2 rating on the INES scale (International Nuclear Event Scale) which comprises 7 levels.

The faults leading to this event report have had no adverse effects on occupational or environmental safety.

The same inspections showed that on 9 other reactor units (Cruas 2-3, Paluel 3-4, Saint-Alban 1-2 and Tricastin 1-3-4), the seismic resistance of certain pipes could not be fully established, thus making it impossible to rule out the risk of pumping station flooding or functional loss of the reactor cooling water system in the event of a design-base-type earthquake. For these reactor units, a level-0 safety-significant event was reported to the ASN and reinforcement work is now underway on the affected pipes.

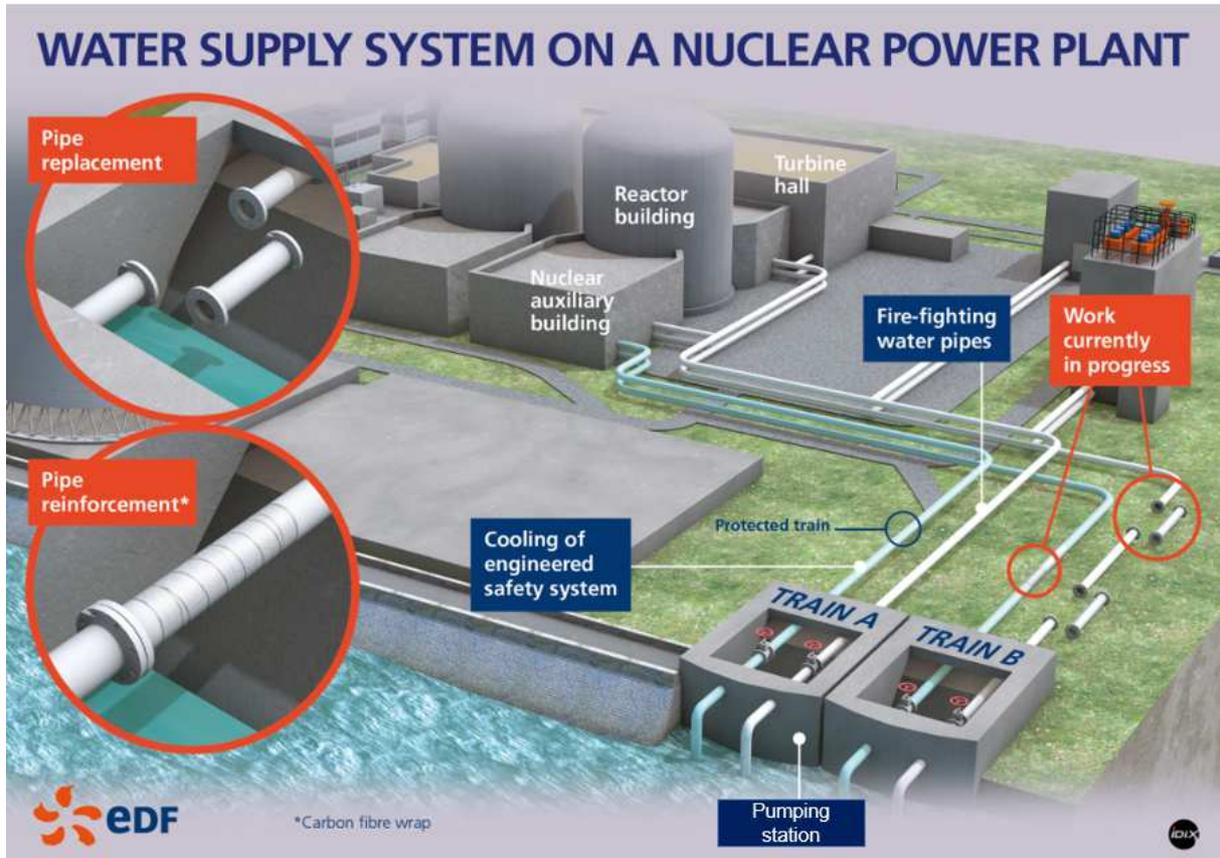
Paluel 2, which is currently in a planned, extended outage, is now undergoing inspections.

With regard to twenty-eight other reactor units, inspections have shown that there is no risk of the pumping station flooding in the event of a design-base-type earthquake.

* The pumping station supplies the reactor cooling systems with water. It draws water from the sea or the river.

** In accordance with the design of nuclear power plant systems, two levels of design-basis earthquake have been determined: the maximum historically probable earthquake (MHPE), which is bigger than any earthquake having occurred in the vicinity of the plant in the past thousand years, and the safe shut-down earthquake (SSE), an even bigger postulated earthquake.

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A nuclear power plant has a pumping station that supplies water for the entire facility. It draws water from the sea or the river.