Information About the

La Hague Nuclear Complex

The La Hague area has been associated with nuclear activities for a long time. On the northern part of the Cottentin peninsula, on the Beaumont-Hague township, we find the French nuclear waste reprocessing factory (equivalent to Sellafield in the UK), known as the 'La Hague' plutonium plant and currently owned by Orano, formerly known as Areva. The original purpose of La Hague, built in the 60's, was to produce plutonium for the atomic bomb. Now, it is officially used to separate the plutonium from the other wastes, in order to reuse it in nuclear MOX fuel combined with uranium (6-7 % of plutonium). But the amount of plutonium obtained exceeds the French MOX supply by far and the plutonium just accumulates in La Hague and becomes unusable after 5 years.

The **La Hague reprocessing plant** also separates nuclear waste of different radioactive activity and life-span, in order to apply specific storage solutions to them.

Despite all the safety claims from Orano, the waste separation is a very complex and dangerous process (see history below). It's also producing a great amount of **chemical and radioactive pollution**, part of it in the form of effluents simply emitted in the air or in the sea (so-called 'dilution' strategy). The solid and most radioactive wastes, which have to be stored, are the depleted uranium (low 235 isotope rate) - not recycled - from the reprocessing plant, the highly dangerous actinide series and a long list of other minor radioactive / contaminated materials. Because of the risks and complexity of the waste separation, very few countries are able (daring?) to do it. For instance, Germany gave up in 1989 the construction of its reprocessing plant in Wackersdorf due to public opposition, and decided to send its wastes to ... France. So Orano is actually processing nuclear waste from many countries all around the world (Japan, Australia, Germany, Italy, ...) which implies frequent transports of very dangerous radioactive products. However, the cost of reprocessing is so high that it was abandoned by Sweden in 1984, Belgium in 2000, Germany in 2005 and suspended by Switzerland in 2007. Still, AREVA NC got new contracts with Australia and Italy in 2009.

Next to the reprocessing plant, the **Centre de Stockage de la Manche** (CSM) deposit site is hosting nuclear waste with low- to intermediate-level activity and a short life span (characteristic half-life lower than 30 years). It was created in 1967 on a former swamp. Not the best place, but nobody wanted this site anywhere. This center is full since 1994 and other storage sites are currently used in different places in France (Soulaines). Indeed, the amount of waste of this category is going to increase dramatically when old nuclear power plants are dismantled.

Radioactive Effluents

A waste reprocessing plant emits huge amounts of effluents. Compared to a typical nuclear power plant (2 x 1300 MW), La Hague discharges 172 times more tritium, 12 times more carbon-14, and 13,000 times more iodine - the three elements having the highest environmental impact (source: AREVA NC and EDF).

Timeline of Incidents

1976	Due to leakages from the CSM deposit, the groundwater is found to be contaminated with tritium (radioactive isotope of hydrogen)
15/04/1980	Failure in the power supply necessary to cool down the tanks where the radioactive waste is stored. A major accident was narrowly avoided.
May 1980	The dedicated glove-box for manipulating the plutonium broke, contaminating the whole plutonium facility.
Oct. 1980	Plutonium leakage from the CSM.
06/01/1981	Burning of one of the waste tanks in the north-west part of the site. 300 workers were contaminated. The authorities claimed at first that no contamination went out of the site, although plumes were observed even at the opposite end of the plant.
1995	The CRILAN, a local association, is suing the La Hague plant for pollution of the two rivers originating below the site. The definite coverage of the CSM's old barrels, previously lying in open-air, is interrupted, but resumed one year later, making any future leakage investigation impossible.

Safety and Environmental Issues

- Plutonium deposit: About 45 tons are situated in the La Hague plant's basement. If, for whatever reason (fire for instance), the tanks begin to leak, the plutonium could concentrate and reach the critical mass, causing a catastrophic chain reaction.
- Plane crash hazard: The Schneider Study has shown that the La Hague plant - particularly the pools for radioactive fuels - would not resist a plane crash (the Paris –USA line is passing nearby). Such an accident, or terrorist attack, could cause a cesium-137 dispersion 60 times larger than the Chernobyl accident.
- CSM deposit site: There is evidence of tritium contamination since 1976. Many barrels are damaged and the ground is humid and highly unstable. Waste that should not be there has been discovered, including 100 kg of plutonium scattered all over the site. Again, there is a risk of a chain reaction if this plutonium happens to concentrate (critical mass is 6 kg).

Demands

- Stop producing radioactive waste by adopting other forms of energy generation.
- Stop separating the plutonium. On the contrary, it should be re-mixed with other waste so that nobody can use it to make a nuclear bomb.
- For the time being, waste from nuclear power plants should be locally stored instead of being transported from one place to another.
- Completely rearrange the CSM deposit site by consolidating the ground and building a better coverage.
- Shut down all nuclear facilities immediately.

History of Resistance

1972	First demonstration in the region, including many farmers and teachers. The scientific community played a big role at that time by explaining the dangers of radioactivity. As a protest, a truck containing radioactive waste was stopped on its way to the CSM.
1975	First big demonstrations (5,000 to 7,000 persons) against the Flamanville nuclear power plant. The Regional Committee for Information and Anti-Nuclear Resistance (CRILAN) is created, gathering about 30 local groups, and still existing today.
1976	Workers union CFDT joins the protest against the transfer of the reprocessing plant to a private company (Cogema, AREVA NC, now Orano) combined with the plant's extension. A demonstration gathers 10,000 people outside the plant and a 3 month strike is organised by the workers.
1979-1980	Several demonstrations as Japanese ships come into the Cherbourg harbour to deliver radioactive waste for reprocessing.
1980	A demonstration gathers 20,000 people.
1981	A train from Germany containing nuclear wastes is blocked around Caen (Basse-Normandie). The train had to go back!

The resistance is becoming more difficult due to the huge economical impact of the nuclear industry in the region: Not only jobs but also a comfortable local tax revenue of € 170 millions annually.

Further Information

Web-sites...

Réseau Sortir du Nucléaire: *(French)*
https://sortirdunucleaire.org

Nuclear Heritage Network: *(English)*
http://www.nuclear-heritage.net

Operator of the plant (Orano):
https://www.orano.group/en

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