

The French La Hague plant: Suicide Manual

Jean-Pierre Petit

May 5, 2011

http://www.jp-petit.org/sauver_la_Terre/la_Hague_eng.ht

[Version française](#)



The La Hague plant, in northern coast of France

There is a page on Wikipedia, which provides some information on the La Hague "reprocessing center" plant located in Cotentin, on the northern coast of France.

http://en.wikipedia.org/wiki/COGEMA_La_Hague_site

There you will learn that this plant, the dirtiest in the world with respect to nuclear discharges, was commissioned in 1961, half a century ago (...).

The La Hague plant has been treating for decades "wastes" from different French and foreign plants, and has been "reprocessing" this material.

In fact this reprocessing [is entirely focused on the extraction, by chemical means](#), of 1% of plutonium produced by fission in nuclear reactors to uranium by fast neutron capture by the nuclei of non-fissile uranium 238. This plutonium, pure, is then packed in small packages and shipped to the MELOX plant at Marcoule, Le Gard, South of France. There, the plutonium is diluted at a 7% ratio into this uranium-238 and this mixture provides a new "nuclear fuel", called MOX (mixed oxide).

This MELOX chemical process may in turn be implemented in consumer countries, to extract plutonium for military purposes. Why bother, as the Iranians do, enriching uranium ore by a costly centrifugation process, when you can just buy MOX and extract plutonium 239 through purely chemical technique, the typical explosive for fission bombs?

Americans consider this MELOX process as "proliferation".

This means that the technique will eventually allow all countries in the world to possess their own atomic bombs.

This fuel is currently used in 20 out of 58 reactors operating in France. The construction of EPR reactors will

make their use common (that's what they were designed for).

We have ignored for a long time that the introduction of MOX reflected a stealth shift from fission of Uranium 235 to a process based on fission of Plutonium 238.

Everyone is starting to experience how extremely dangerous this substance is, as it has a high propensity to bind to human tissues after inhalation or ingestion of dust. With the characteristic time of its release by human tissues is 50 years, the human body is then unable to eliminate it. These particles are highly (100%) carcinogenic. It is not an irradiation, **but it is a biological contamination, which goes undetected by a measuring instrument.**

This contamination could occur in case of a nuclear accident with release of debris from the fuel assemblies.

This happened, and continues to happen, ever since the explosion of reactor number 3 at Fukushima, which was loaded with MOX. Dusts of plutonium have been found in the United States. The scattering will spread across the planet and some experts say it could lead to a million cases of cancer.

In order to stop this release from reactor 3, one should succeed in extracting its fuel rods and, at the very least, dip them in a pool specially designed for this purpose.

Yet access to these elements is impossible, and it is not clear when such access could be possible in the near or distant future.

It is necessary to continue to cool fuel rods of the "switched off" reactor, the heart of which has melted for its largest part and is releasing several tens megawatts of thermal energy. Water circulation in closed circuit, coupled to a heat exchanger, could help evacuate those

calories. But the deteriorating condition of the reactor makes it impossible.

The Japanese are forced to implement a cooling "open circuit", by injection or spraying of fresh water.

The latter, circulating in the damaged heart, is responsible for debris from the fuel elements that have escaped from zirconium tubes that contain and have melted. That water is filled with particles of plutonium and a wide range of highly toxic radionuclides. It is partly transformed into steam, which escapes into the atmosphere. The rest escapes by a whole series of cracks, which are impossible to locate and seal, due to the earthquake, in galleries located in the basement of reactor. The company TEPCO then proceeds to pump this water, which has so far been sent into tanks.

When these have been filled to the brim, TEPCO has just spilled the highly radioactive water in the ocean close by, while apologizing to the residents and fishermen.

All this will continue until a closed circuit cooling can be established. We do not see how this could be done as the reactors remains unapproachable because of the prevailing high radioactivity in the vicinity.

Two companies are directly responsible for this murderous dispersion:

- **The Japanese company TEPCO**
- **The French company AREVA, which manufactures and markets the new plutonium fuel in its MELOX plant.**



**Apologies from the TEPCO management.
When can we expect the apologies from the AREVA management?**

But there is something much more serious

Over five decades of operation, the center of La Hague, which is not a "recycling center" but given the conditioning performed at the Marcoule plant, a plutonium extraction and sale center. At La Hague AREVA has piled a stock that is mind boggling, the size of which is not provided on the Wikipedia page.

Sixty tons of plutonium

The assemblies that contain this plutonium are currently stored in four pools, located in La Hague, housed in

buildings the roofs of which are not armored, but formed by a thin cover sheet (...)

The Devil's Kitchen

The plutonium is denser than lead (19 kilograms per liter). These calculations make the sixty tons of plutonium correspond into 3.15 cubic meters, i.e. a cube with 1.46 meter on side.

As a reprocessing center the La Hague plant is, recovering the most dangerous and poisonous substance on earth. Considering what is happening in Fukushima, a logical reaction would be to stop the production of MOX fuel, to close MELOX Marcoule and to stop retrieving the ashes of the devil at the La Hague plant.

La Hague is not a treatment center, similar to a dumping place, or a "nuclear dustbin".

It is a safe.

I suggest the following little problem, level school certificate.

A manufacturer has a stock of 60 tons of plutonium. A barrel of oil has a capacity of 160 liters.



Barrel of oil

One gram of plutonium releases as much energy as one ton of oil. Oil also has an average density of 0.88 kg per liter. Its average market price is around 100 dollars, or 73 euros. Calculate the number of barrels of oil equivalent, corresponding to a cube of plutonium with 1.46 meter on side. Calculate the euro value of the stock of plutonium currently stored at La Hague.

60 tons = 60,000,000 grams = 60 billion, sixty billion kilograms of oil equivalent.

Divide by 140 pounds, which corresponds to the weight of a barrel.

We get

428 Million barrels.

At 73 euros per barrel, it makes

31.2 Billion euros

The La Hague plant has the capacity to process 1,700 tons of "spent fuel" per year. Approximately one thousand tons are processed each year. Based on this figure, 1% plutonium can be recovered, i.e. 10 tons per year.

Which allows for the load of 1,428 atomic bombs.

If we do not discount the (chemical) reprocessing cost this annual contribution is provided a turnover of:

5.2 Billion euros per year.