

SUBJECT 3

THE FLAMANVILLE SITE ENVIRONMENT

Terrestrial environment

The Flamanville CNPE is situated on the Channel and is subject to an oceanic climate characterised by a low range of temperatures, cool summers and mild winters thanks to the Channel.

The region's river system is not very large. Some low flow rivers run from east to west and empty directly into the sea.

The site's environment is characterised by two kinds of landscape:

- the seafront with its high cliffs, which are the site's prevailing feature, form a defensive wall against the sea. The cliffs are surrounded by expansive dune beaches to the north and the south of the site;
- the interior, comprising high hills, which make the landscape look like it has valleys, numerous enclosures and wet valleys which reach down as far as the sea.

Several natural protected areas, including three Natura 2000 areas, are located in the CNPE's immediate vicinity. These areas are characterised by an outstanding landscape of dunes and cliffs with a large number of flora and bird varieties.

Marine environment

The Flamanville site is situated at the foot of the cliffs of the Cotentin peninsula, 1 km south of Diélette harbour. It is subject to the marine conditions imposed by the Channel with semidiurnal tides whose tidal range (difference in sea level between high and low tides) is one of the highest in the world.

The Flamanville area's marine populations are typical of those of strong hydrodynamic oceans. The main species of commercial interest in the Channel close to the CNPE are shellfish (lobsters, spider crabs, etc.).

Human environment

- **Demography**

In 1999, last complete inventory carried out, the total population within a ten kilometre radius of the Flamanville CNPE stood at 10,661 inhabitants (10,218 inhabitants in 1990). The average demographic density in this area is 34 inhabitants/km², in comparison with the national demographic density in 1999 of 106 inhabitants/km².

- **Agriculture, cattle breeding and fishing**

Agriculture is still a very important activity in the region. This sector employs 7.8% of the active population against 4.1% at the national level.

The department's agricultural economy is based on milk production and beef, pork and sheep farming as well as the breeding of horses and poultry and vegetable production (carrots, leeks, cauliflowers, turnips, lettuce, etc.).

The Basse-Normandie region is the second-largest region on the Atlantic coast in terms of numbers of fishermen. The species most fished are scallop, common northern whelk, pout, tubfish, great scallop, cuttlefish, squid and sole. Closer to Flamanville, shellfish are mostly caught (lobsters, crabs, spider crabs and velvet swimcrabs).

La Manche *département* accounts for two-thirds of the Basse-Normandie region's ships, seamen and turnover. The area of Cotentin alone represents 46% of the La Manche department's ships, 51% of its seamen and 37% of its tonnage.

- **Industry and transportation routes**

The region is not very industrialised; nevertheless, it does have several sites employing large numbers of people (AREVA – COGEMA - La Hague, DCN⁴ Cherbourg).

The food industry is the most important industry in the Basse-Normandie region with over 20,000 employees.

Outside of the food industry, the Cherbourg region is searching for a new industrial dynamic to make up for the drop in activity felt by the ship building industry.

The hazards related to the Flamanville site's industrial environment are therefore quite low.

Radioecology

The Flamanville site environment is the subject of radioecological studies which aim to:

- ascertain the radioactivity of terrestrial and marine ecosystems prior to the current production units' commissioning (reference state performed in 1980 and 1981);
- monitor on a yearly basis (since 1991) the radioactivity of these ecosystems so as to evaluate the part played by the site's radioactive waste while in operation in the overall increase of radioactive elements (or radionuclides) in the environment.

These radioecological studies undertaken on the Flamanville site's initiative complement the checks performed on waste and the environment required by regulation.

The samples analysed are taken from land-based (soils, plant life, types of milk and water) and marine environments (sediments, plant life, shell fish, molluscs and fish).

Regardless of the ecosystem studied (land-based and marine), the radioactivity of the samples can be attributed in most cases to a natural component. Radionuclide traces (so-called 'artificial' radioactivity) which are caused by human activities occasionally latch onto this 'natural' radioactivity. The 'artificial' radioactivity measured in the Flamanville site's environment has various sources of origin:

- radioactive fallout from former atmospheric nuclear weapon tests and the Chernobyl accident which occurred on April 26 1986;
- the radioactive waste discharged by the La Hague reprocessing plant;
- the radioactive waste discharged by the Flamanville site.

Fallout from the Chernobyl nuclear accident did not have a major effect on the Cotentin area but it does contribute to detecting certain radionuclide traces just like the fallout from former nuclear weapon tests and the waste from local nuclear plants.

☞ **TO FIND OUT MORE**, please see:

- **Documents 5 et 6** *Piece C: Description of the site's environment*

⁴ Direction of naval constructions