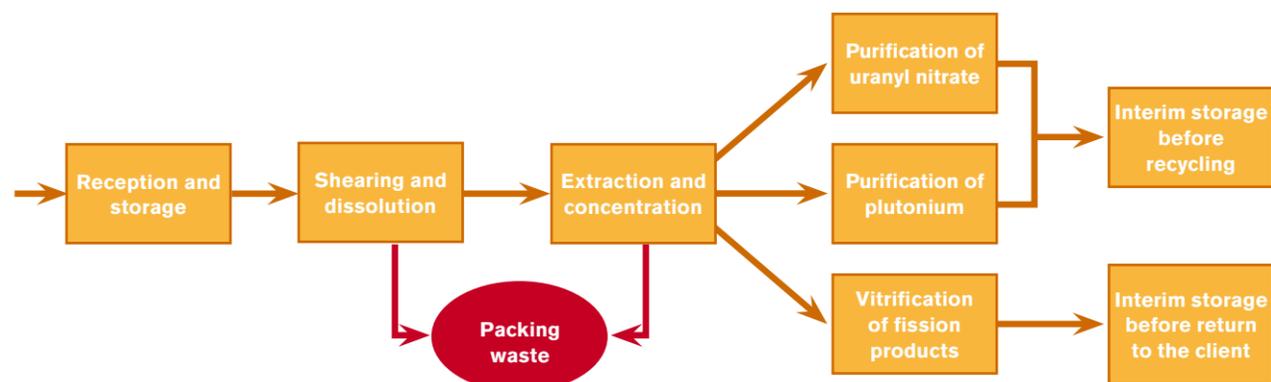


Reprocessing : the whole story



AD2: packing technological waste by cementation

This facility employs packing, storage, preparation and dispatch techniques pertaining to operational and maintenance waste, the waste from cleaning and dismantling procedures, as well as all activated radioactive waste or waste that is considered as such.

The objective is to obtain final residues for ultimate storage.

AD2's main function is to cement waste and put it in containers with the following characteristics:

- CO, CBF-C1, CBF-C2 for low-level waste that is suitable for surface disposal (CSS)
- CBF-C2 for radioactive waste that is suitable for surface disposal
- CBF-K for large-sized waste suitable for surface disposal
- CBF-K2¹ for high-level waste that is not suitable for surface disposal (N.S.S.S.)

AD2 facility also checks and compacts the 120 litre drums containing waste to be incinerated, ready for dispatch to CENTRACO.

It is to be noted that waste to be stored on the surface in France receives approval from ANDRA, France's National Radioactive Waste Management and Final Disposal Agency, before shipment to disposal centres.

STE3: Active liquid effluent processing station

A maximum of the liquid waste generated by the treatment process is recycled by the different facilities so as to reduce their activity. Said liquid waste is decontaminated by means of a series of evaporators. Low-level liquid waste is then piped into the sea, whilst the more active liquid waste is transferred to STE3 facility for a last treatment.

In fact, all alpha-emitting low and intermediate level effluents that emanate from any of the plants and that cannot be recycled converge in this facility. They are stored in a tank upon arrival, then analysed. They undergo chemical processing to eliminate the radio-elements they contain: they are made insoluble by co-precipitation. Liquids with very low activity levels are obtained and can be discharged into the sea in conformity with liquid discharge regulations, and sludge that is decanted and dried out and then coated with bitumen, packed in drums, and stored in holding areas.



REPROCESSING
NUCLEAR FUEL
ACC, AD2 AND STE3
FACILITIES



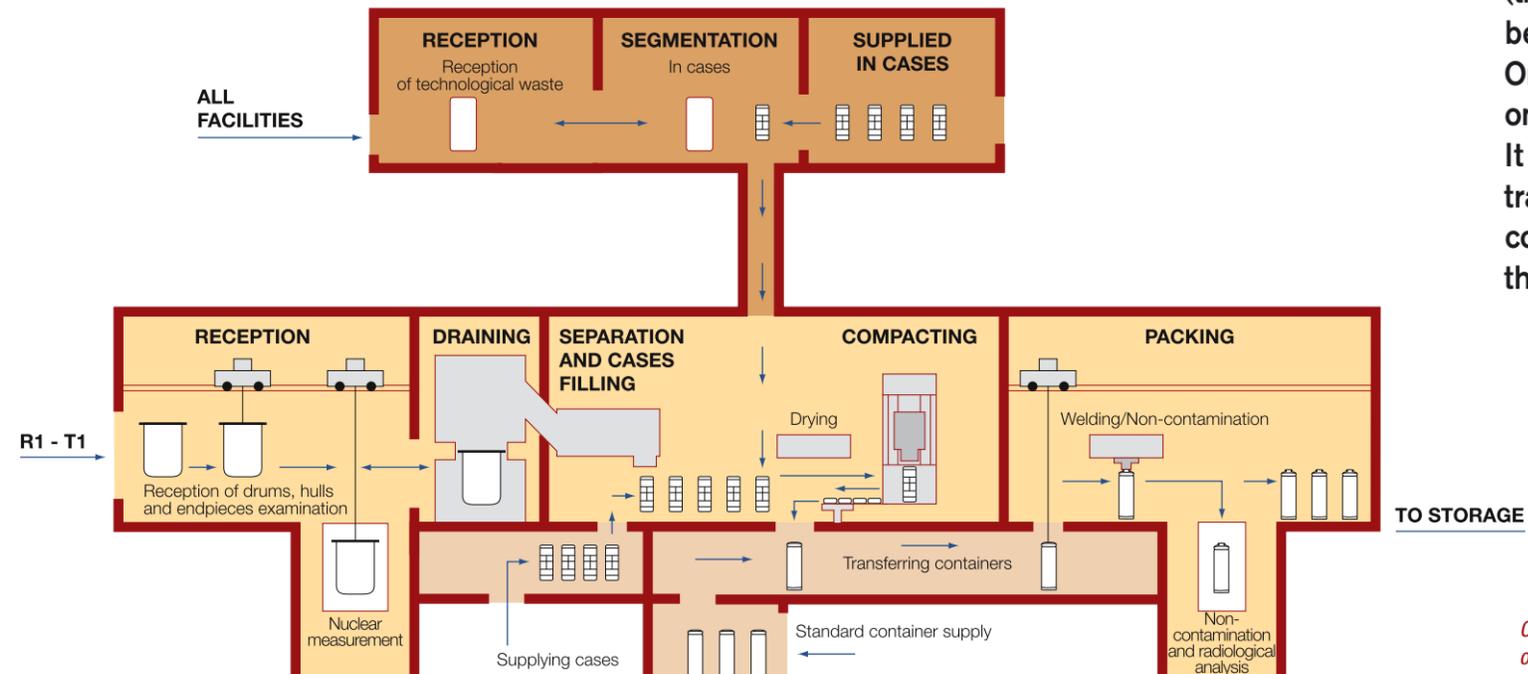
Compacting structural and technological waste, processing active liquid effluents

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High-Level Waste: volume reduced by 5



Whereas Fission products go to the vitrification facility, structural waste and hulls and end-pieces from spent fuel are directed to the ACC facility (the hull compacting facility). High-Level technological waste that cannot be disposed of on the surface also converges to ACC facility. On average, this facility reduces the volume of the waste it processes to one fifth of its original volume. It also optimises storage and the subsequent phases of handling, transportation and ultimate disposal. It is to be noted that standard containers of compacted waste (CSD-C) developed by AREVA NC share the same geometrical characteristics as Standard Containers of Vitri-

Cutaway diagram of a standard container of compacted waste

Overall view of the compacting facility.

1/ Receiving drums

Hulls and end-pieces arrive directly from R1, T1 (shearing/dissolution) and DE/EDS (ECE drums).

2/ Preparation

The hulls and end-pieces are separated in the separator-batching unit so that the filling of the 80 litre canisters can be controlled.

3-4/ Drying and compacting

Dried in advance to preclude the presence of any water, the cases are compacted to one fifth of their volume under presses with a capacity of 2,500 tonnes.

5/ Filling

The disks are placed in Standard Containers of Compacted Waste (CSD-C), welded close and checked, one by one, for contamination.

6/ Analysis and storage

Each CSD-C undergoes a radiological examination by the only measurement system of its type in the world. It can then be transferred to an interim storage site.

7/ High-Level technological waste

The main activity of ACC is to compact the hulls and end-pieces, but the facility is also designed to reduce the volume of high-level technological waste.

A laser cutting procedure (a first on a worldwide scale in the nuclear environment) cuts ECE baskets. All of these elements are also put in 80-litre cases (cf §2).

Press in operation.

