Decommissioning & waste management: The italian experience

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Backgroud history

All NPPs and other nuclear installations were definitively shut down in 1987 following a national referendum taken in the aftermath of the Chernobyl Accident.

Until 2000 a *"safe conservation strategy"* was adopted.

Current strategy call for a one step decommissioning until the release of sites w/o radiological constraints

MAIN NUCLEAR INSTALLATIONS DECOMMISSIONING PROGRAMMES

Under decommissioning

3 NPPs (Trino, Garigliano, Caorso)

1 Fuel fabrication plant (Bosco Mar.)

Pre-decommissioning phase

1 NPP (Latina)

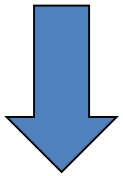
1 Reprocessing facility (ITREC, EUREX)

1 Fuel fabrication plant (IPU)

1 RR (JRC ISPRA 1)

Social & Political issues

A phase-out strategy based upon a national referendum has made any activity in the nuclear field a very sensitive social and political issue



It has also strongly influenced the development and the implementation of a policy for long term waste management

Key policy elements for Decommissioning , SF and RW management

- *Treatment and conditioning of all radioactive waste*
- *Export for reprocessing of the spent fuel still present in the nuclear installations, with return to Italy of the resulting waste*
- *"One step" decommissioning of NPPs and Fuel Cycle experimental facilities*
- *Interim storage on the sites*
- *Site selection, construction and operation in the same site of a LLW-ILW near surface disposal facility and of an ILW (long lived) - HLW interim storage facility*

Decommissioning activities

Glove boxes dismantling

Caorso NPP Off-Gas dismantliing

Chimney Dismantling Garigliano NPP

Clearance of materials

Specific clearance levels for unconditional release/reuse of buildings and materials, have been established in the decommissioning licences.

Clearance levels are established taking into account European Union directives and recommendations.

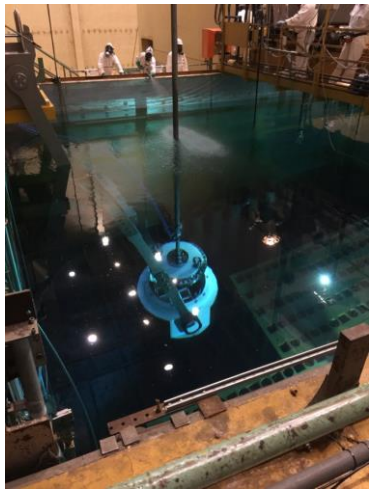




Spent Fuel Management Strategy

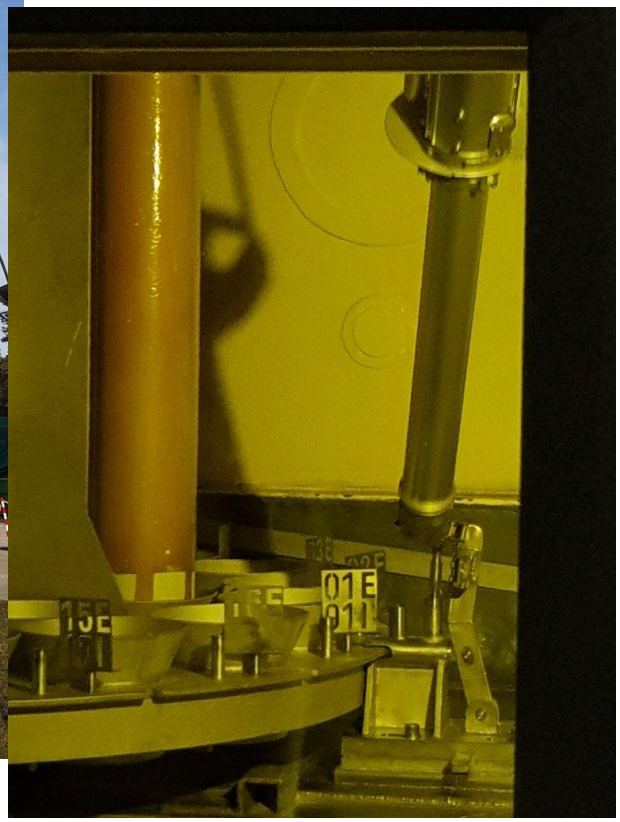
Short term ⇨ **Export for reprocessing of the spent fuel still present in the nuclear installations, with return to Italy of the resulting waste. Dry storage of remaining spent fuel.**

Long term ⇨ **A long term interim storage facility for intermediate (Long Lived) and high level waste (National Repository)**



Spent Fuel Management Strategy

Transfer of irradiated fuel from buried pits into a new dry storage facility at JRC of Ispra



Radioactive waste management

Short Term

Treatment and conditioning (Final packages suitable for interim storage, transport and disposal)

New Radioactive Waste Storage Facilities on the Sites

Radioactive waste management

Legacy waste remediation

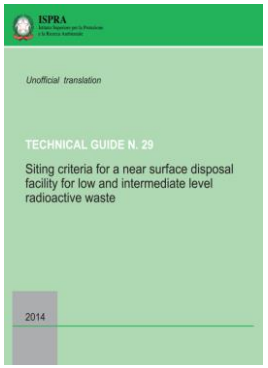
Garigliano NPP trenches

ITREC – Buried Waste Concrete Structure

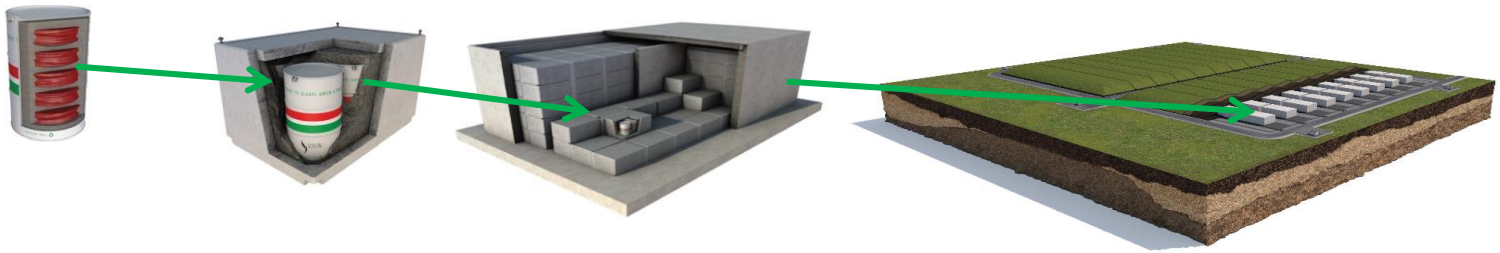
Waste Management strategy - Long Term

What is the National Repository?

The long term strategy for waste management envisages a National Repository made up of:



- **A near surface disposal facility for low and intermediate level waste**



- **A long term storage facility for intermediate (long lived) and high level waste**

Public involvement

The process for decommissioning authorization is based on

- **transparency** - publication of Environmental Impact Assessment and Decommissioning Overall Plan
- **participation** - public observations shall be taken in due consideration

During decommissioning phase, public information meetings are regularly organized by Region concerned

The siting of the National Repository foresees a process based on

- **transparency** - publication of the National Chart of potentially suitable areas
- **participation** - national workshop, public consultation
- **consensus** - municipalities declarations of interests

Thank you for your kind attention