



INTEGRATED PLAN FOR
THE IMPROVEMENT OF
CIEMAT FACILITIES

PIMIC

PROJECT

In January 2000, the Centre for Energy-related, Environmental and Technological Research (CIEMAT), located in Madrid's university campus area, began implementation of the 'Integrated Plan for the Improvement of CIEMAT Facilities' (PIMIC). Its main objective is upgrading the centre's general infrastructures.

Enresa has worked in partnership with CIEMAT on the tasks involved in dismantling several of its nuclear and radioactive facilities, as well as the restoration of two areas that became contaminated as a result of old practices in nuclear research.



Dismantling works



Montecillo after remediation



Measurement of clearable materials

One of the challenges of the Project was coordinating the dismantling tasks with the normal operation of a research centre to ensure minimum interferences

FACILITIES

& AREAS

THE FACILITIES AND AREAS INVOLVED ARE AS FOLLOWS:



FACILITIES

IN-01 - JEN-01 Research reactor and auxiliary facilities.

IN-07 Liquid waste storage facility.

IR-16 Liquid waste treatment facility.

IR-18 Pilot reprocessing facility.

AREAS

'Lenteja'.

'Montecillo'.

DISMANTLING

OF FACILITIES

The first step in dismantling facilities involves the removal of all systems and components so that the decontamination of surfaces can be undertaken.

After decontamination, clearance measures are implemented until the required levels are reached for demolition or reuse.

1. DISMANTLING

2. DECONTAMINATION

3. CLEARANCE

4. DEMOLITION/REUSE

DISMANTLING OF JEN 1 RESEARCH REACTOR

DISMANTLING OF PILOT REPROCESSING FACILITY



Pilot reprocessing facility before dismantling



Pilot reprocessing facility during dismantling



Pool block before and after dismantling



SITE

REMEDIATION

The first step is the detailed characterisation of the area to be excavated, determining the ground's isotopic composition, the depth of the excavation and a preliminary estimate of the amount of waste materials to be removed, in order to gauge the dimensions of the interim storage. During the course of the excavation, periodic radiological monitoring is carried out to verify the progress of the decontamination works. Once the radiological measurements indicate values below the authorised release levels, the final status survey is carried out, before filling/ stabilising the excavation.

Site remediation produces a significant volume of waste materials to be managed, with very low levels of activity. The implementation of a rigorous in situ material segregation methodology enables a successful clearance process, as well as radioactive waste management is optimised at the El Cabril disposal facility.

Radiological characterisation

Excavation and removal of soils

Measurement and segregation of materials

Final radiological survey

Filling/Stabilisation of excavation

Very low level waste Clearance material



Excavation works



Filling of excavation

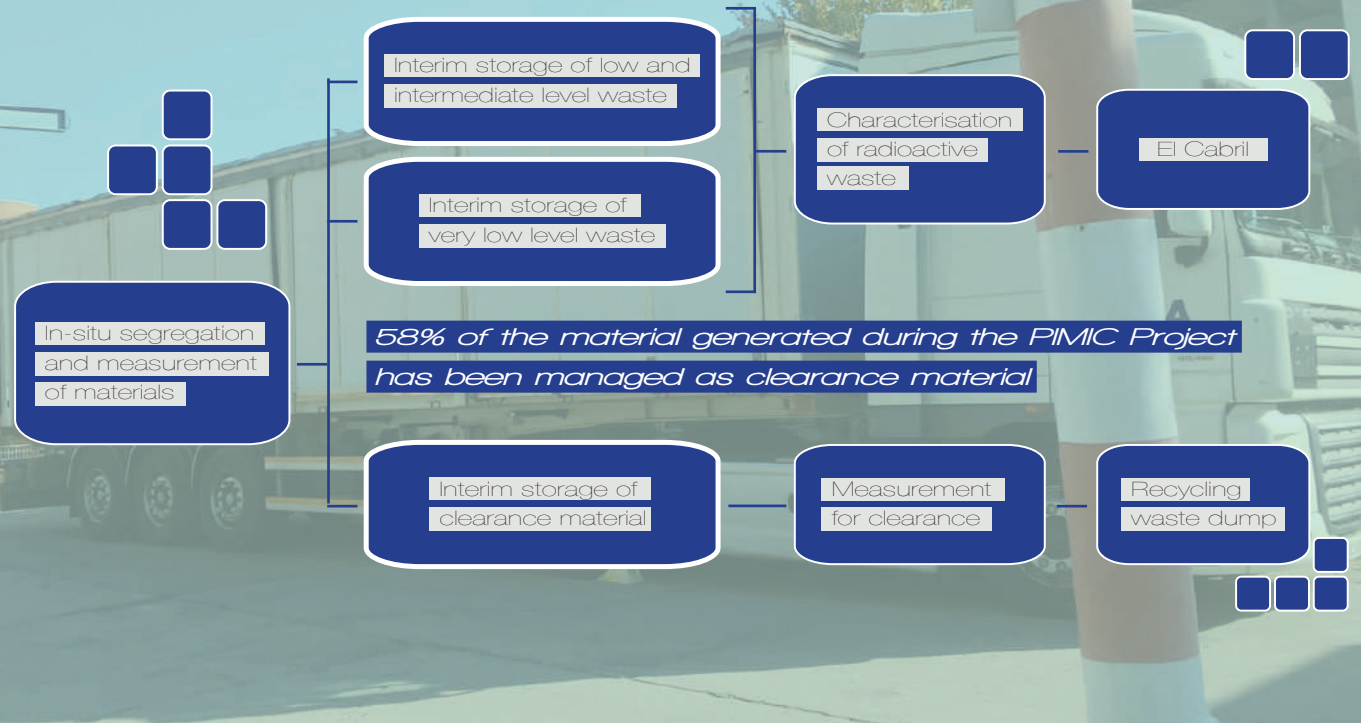


INTEGRATED

MANAGEMENT OF WASTE MATERIALS

One of PIMIC's Project prime objectives is to minimise the generation of radioactive waste.

This objective is achieved by implementing a rigorous in-situ material characterisation methodology, which enables differentiation between clearance and radioactive materials, and within this latter, segregation of very low level waste from low and intermediate level waste.



WASTE MATERIALS GENERATED 2006-2015

As a result of this waste management methodology, only 2% of the waste material has been managed as low and intermediate level waste.

- Clearance (58%)
- Very low level waste (40%)
- Low and intermediate level waste (2%)

In-situ measurement



TIMELINE

OF ACTIVITIES

The work has been carried out for 10 years, 4 were related to decommissioning and 6 to remediation of soils



	2006	2007	2008	2009
DISMANTLING OF FACILITIES				
PRELIMINARY TASKS				
IR-16 - LIQUID WASTE TREATMENT FACILITY				
IR-18 - PILOT REPROCESSING FACILITY				
IN-07 - LIQUID WASTE STORAGE FACILITY				
IN 01 - JEN-01 RESEARCH REACTOR AND AUXILIARY FACILITIES				
MANAGEMENT OF MATERIALS AND WASTE				

The integrated management of waste materials in the decommissioning activities is a key piece for optimizing storage capacity in El Cabril, so it should be addressed from the project beginning until its completion

	2010	2011	2012	2013	2014	2015
SITE REMEDIATION						
LENTEJA AREA						
MONTECILLO AREA						
IR-18 AREA						
MANAGEMENT OF MATERIALS AND WASTE						

