

**RESULTS OF DECOMMISSIONING WORK UNDERTAKEN AT THE  
RADIOMETALLURGIY LABORATORY OF THE CEA CENTRE IN FONTENAY-AUX-  
ROSES**

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Since 1990, CEA has been undertaking decommissioning work of the radiometallurgy laboratory for plutonium based fuels at the Fontenay-aux-Roses centre, which has been operational since 1963

The protection survey put in place on the Centre's Radiation Protection Department has enable dosimetric figures to be produced for this decommissioning operation, which generates high doses.

The collective dose of the worksite amounted to 1772 men.mSv, which makes one of the major CEA decommissioning worksites.

Doses received whilst work was in progress came from two main sources (picture 1):

- work undertaken within cells, which generated the highest dose rates
- nuclear waste stored in the premises adjacent to the cells. These doses are called "passive doses"

The dosimetric indicators used by the Radiation Protection Department are presented for each year. In particular, these are collective doses for the whole worksite, average dose and the dose received by the most exposed employee (picture 1 and 2)

One notice a significant increase in activity in 1993 and 1994 (increase in terms of work force, collective dose and even average dose)

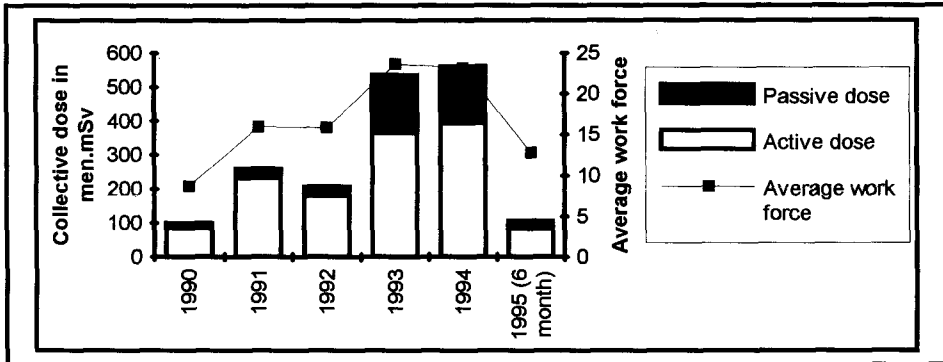
Besides the normal correlation between work force and overall dose, the increase in the average dose results from a high passive dose in the order of 30  $\mu$ Sv per day and per man, since irradiating waste couldn't be evacuated fast enough and was stored on the premises.

Picture 3 compares the average dose received per employee with that received if the passive dose for 1993 and 1994

A 60% reduction in the dose resulting from the use of remote control robots was assessed for an initially estimated dose of 300 men.mSv.

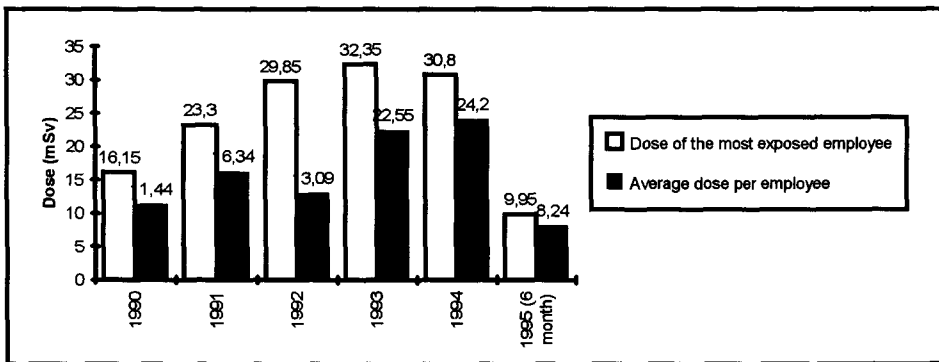
The expansion of ALARA initiative on such worksites has led to the use of remote-controlled equipment to decommission cells, automatic carriers to scrape floors and walls, cutting out internal cell protection panels by remote-control and  $\gamma$ -camera to make maps.

Evolution of the collective dose and the work force during work in progress



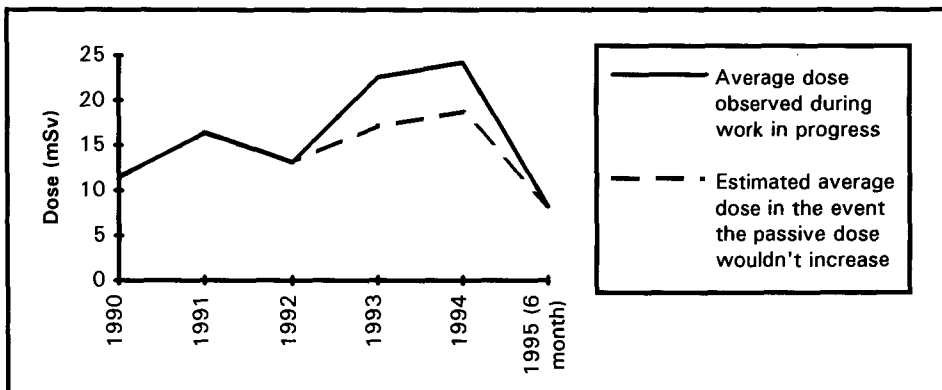
Picture 1

Dose of the most exposed employee and the average dose per employee



Picture 2

Effect on the average dose of the increase in passive dose between 1993 and 1994



Picture 3