



RADIOACTIVE SOURCES REMOVAL OF NUCLEAR LICENSED FACILITY N° 165

⁹⁰Sr RADIOISOTOPE THERMOELECTRIC GENERATOR

M. Jeanjacques

Removal of radioactive sources



- 10 strontium-90 radioisotope thermoelectric generators, 7 types
- Total activity 4 130 TBq, the more active generator 2 130 TBq.
- This generators are used at the end of the sixty : R&D, off-shore, Antarctic exploration....



Removal of radioactive sources

Solutions



▪ Dry Pathway: Intermediate storage before underground storage without dismantling or source removal and conditioning for the underground storage,

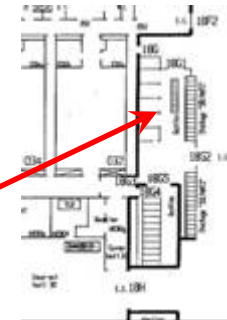
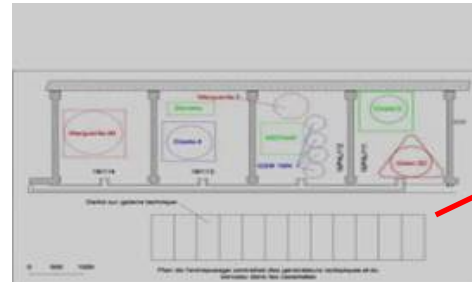
▪ Liquid Pathway: Dissolution of sources and HLLW treatment.

R&D studies :

- solubility from titanate of strontium (*nitric solution*),
- vitrifiability of this solution
(if Vol. Sr sol./Vol ΣPF sol. # 1%).

Removal of radioactive sources

- Actual solution : Intermediary storage in the LNF 57 (*Outside building FZ3 - Box fitting up : containment in depression*)



- Transfer of 4 ^{90}Sr Isotope Generators between the building 91/54 and the building 18 :
 - Change of wooden pallet by metal structures,
 - Transfer in the LNF perimeter.

