



# Decommissioning experience in Chile

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ANNUAL FORUM FOR REGULATORS AND OPERATORS IN THE  
FIELD OF DECOMMISSIONING  
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# Nuclear National Legislation

- Ley 18.302 “Nuclear Safety Law” (1981)
- DS 133 Regulation on Radioactive Facilities & Workers Authorization (1984)
- DS 12 Regulation on the Safety Transport for Radioactive Materials (1985)
- DS 3 Regulation on Radiation Protection (1984)
- DS 87 Regulation on Physical Protection for Nuclear Facilities (1981)

Ley 19300 : Basic Law on Environment  
(1994)

# Radioactive Facilities Decommissioning

Art 13 Tit III, DS N°133 :

For temporary or definitive closing  
the licensee has to apply a request presenting  
to the Regulatory Body  
all procedures and safety systems to be  
adopted for this fact.

Decommissioning ?? Closing ??? Closure????  
Not clear in our legislation

# Decommissioning

1. administrative and technical actions taken to allow the removal of some or all of the regulatory controls from a facility.
2. all steps leading to the release of a nuclear facility, other than a disposal facility, from regulatory control. These steps include the processes of decontamination and dismantling.

Joint Convention definition - not recommended for IAEA publications

Closure is used to a repository or to certain nuclear facilities used for mining and milling of radioactive materials,

We need to find a good term to define decommissioning in our regulations

# Radioactive Facilities Decommissioning

For the time being:: How the licensee may do it?

He ask for assistance and service of

Radioactive Waste Management Service  
given by SEGEDRA (CCHEN)

To centralize all activities related to collection, treatment, conditioning and storage of radioactive waste generated in the country as result of the national nuclear development

- Radioactive waste: (Nuclear safety law)

radioactive material

$$\text{activity} > \acute{o} = 74 \text{ Bq/g}$$

- its owner does not foresee any further use
- owner or licensee (waste generator) is responsible since the origin to dispose off
- the admittance of any waste into the country is forbidden

# Some decommissioning examples

- Radioactive facilities at Universities:

commonly it is referred to very short term waste storage, for which the licensee needs to change the use, the release of the facility or, in the case I am presenting, to build a very short term storage facility

# Steps done

Planning the work to be done



Evaluation and quantification of work



# Steps done

**Segregation, sample collection and characterization**



**Waste classification**



**Preparation of Radioactive waste to be sent to Radioactive waste facilities of CCHEN**

# Steps done

- Decontamination was
- followed
- Not solid material
- resulted to be contaminated
- The cost : human resources and further work for segregated radioactive material:  
US \$ 5400

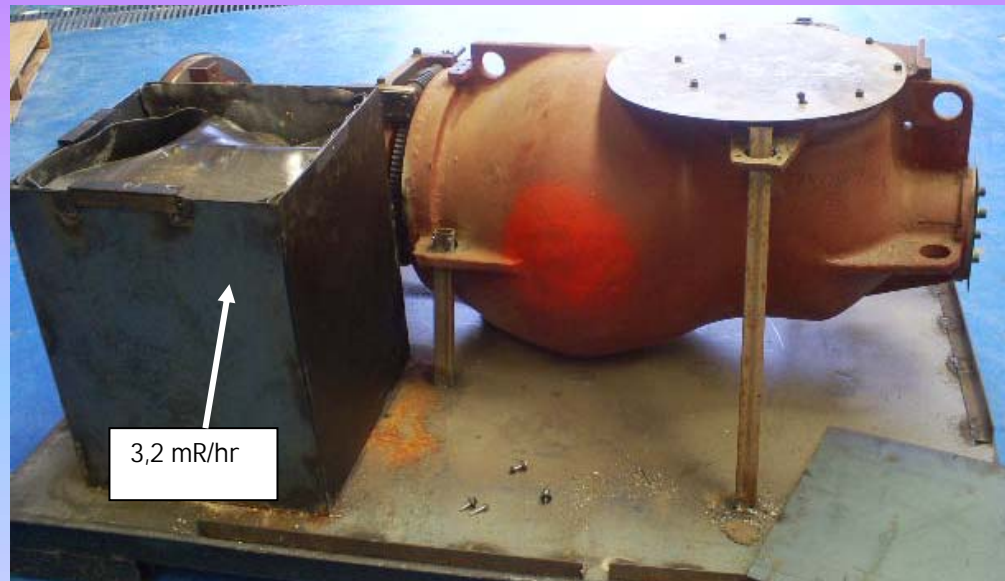
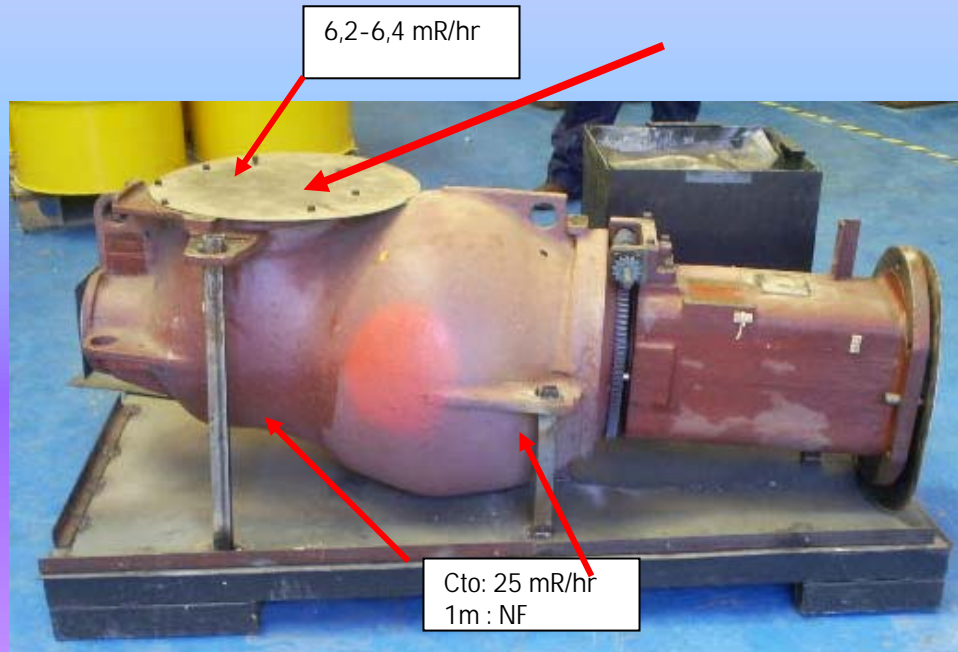


# Results

- In one of these cases, from a total of 1,5 m<sup>3</sup> sampled material:
  - 202 l (boxes and bags) contain scintillation liquid waste in vials, activity is 142.72 MegaBq in H-3
  - 60 l (H-3 liquid phase in drum) activity is 516.7 MegaBq,
  - 47 l (boxes and bags) contain scintillation liquid waste in vials, activity is 72.9 MegaBq in C-14
  - 55.7 l (C-14 liquid phase) activity 162.69 MegaBq contained in flasks and drum
  - 100 litres liquid scintillation mixture of H3 y C-14 total beta activity 7.68 MegaBq.

Aprox 0.5 m<sup>3</sup> classifies as radioactive waste

# DECOMMISSIONING OF HOSPITAL COBALT THERAPY FACILITY



# Conditioning in a retrievable way





Spent seals  
sources Store  
of a  
Industrial  
(mining)  
facility



# 450 SSRS were stored at the Radioactive Storage Facility on the site of the mining



# Conclusion

- Our legislation has to be actualized according to last developments and terminology:
- Incorporation of a well defined decomissioning term in our legislation to carry it to practice is needed
- Planning and resources has to be considered for decomisioning purposes : in the legislation and in the practice , as well