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For a consistent management of radioactive waste : the national plan for management of radioactive material and waste

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Short introduction

- June 2006 : a law published after 15 years of research on the strands for the management of high-level long lived radioactive waste
- The law of 28th June 2006 requires the establishment of a National Plan for the Management of Radioactive Material and Waste (PNGMDR) every 3 years
- The PNGMDR forecasts the development of management schemes for different type of radioactive waste

<table>
<tr><th>Half life
Activity level</th><th>Very short life
<100 days</th><th>Short life
<30 years</th><th>Long-lived
>30 years</th></tr>
<tr><td>Very low level</td><td rowspan="4">Management by radioactive decay</td><td colspan="2">Dedicated surface repository
Recycling channels</td></tr>
<tr><td>Low level</td><td rowspan="2">Surface disposal (Aube repository)
except tritiate waste and certains sealed sources</td><td>Dedicated shallow depth repository under study</td></tr>
<tr><td>Intermediate level</td><td>Channels being sutdied under article 3 of the 28th june Act</td></tr>
<tr><td>High level</td><td colspan="2">Channels being studied under article 3 of the 28th june 2006 act</td></tr>
</table>

Table 1

Summary

- Brief description of the objectives and the content of the PNGMDR
- Practical case of one element of the French policy : the management of Very Low Level waste without clearance levels
- Advantages and drawback of the very low level waste French management
- Conclusions

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Objectives

- To ensure that management solutions either exists or are sought for each category of waste
- To take into account of older, possibly “forgotten” waste
- To take into account of the concerns of the public, who may be worried about the fate of radioactive waste
- To optimise waste management at the nuclear licensees
- To contribute to better management of the waste from other sectors generating radioactive waste : more conventional industries, medical sector, sites polluted by past activities, ...

Content

- First part : description of existing radioactive waste management solutions or those arising from current activities
  - Based on the inventory published by ANDRA
- Second part : radioactive material used in nuclear power generating industry
  - Considered as recoverable material
  - For instance, depleted uranium (several hundreds thousands tons)
- Third part : overall consistency of the existing or planned solutions for long-term management of radioactive waste
- Fourth part : Global analysis of the three first parts and proposals of improvements

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Context

- During the 90s, French operators were facing the challenge of management of very low level waste produced mainly by nuclear sector
- 2 main issues :
  - Cost to dispose VLLW in a disposal for low and intermediate level waste
  - Limit the volume of VLLW sent to the centre de l'Aube
- 1st solution : the CENTRACO incinerator
  - Not appropriate for concrete and grounds
- another solution : recycling
  - Non governmental organisations pointed out some examples of non appropriate management of such wastes

The French solution

- A disposal specially designed for VLLW (In Morvillier, near the centre de l'Aube)
- No universal clearance levels
- Approach based on the zoning of nuclear installations
  - In nuclear waste zone : every waste generated are considered as nuclear waste
  - In conventional waste zone : every waste generated is conventional
- The order of 31th December 1999 made this approach binding to nuclear operators (ASN approves the "waste studies")
- Since 2003 : 75 000 tons of concrete, metallic scraps, former transports casks are disposed of in the Morvillier repository

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Advantages

- Ethically less questionable: no dissemination of radioactivity into the environment due to the management of large amount of VLLW
- Easier to put in practice for decommissioning : No sophisticated measurements is needed for the clearance of materials during the decommissioning phases of installations in which nuclear activities had been carried out
- A practical way to dispose VLLW which may be beyond clearance levels which are very low

Drawbacks

- Difficulties to clearly define the materials considered to be radioactive as opposed to those be conventional
- The “zoning approach” is hard to apply in “classical” industries
- For decommissioning, the existence of clearance thresholds offers an indisputable and scientific way of proving a radioactive or conventional nature

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Conclusions

- The first edition of the National Plan for the Management of Radioactive Material and Waste should constitute the basis to build the necessary consensus on the management of radioactive waste for the next decade

- The plan aims to verify the general consistency of waste management modes. For instance it justifies the VLLW management policy

- Differences between different countries : a lack of consistency ?
  - European countries should pursue an harmonisation of the objective to protect people from radiation by enhancing the conditions of materials clearance from nuclear installations

Thank you for your attention

Any questions ?