



*National Commission for Nuclear
Activities Control
(CNCAN)*



*Nuclear Agency & Radioactive
Waste
(AN&DR)*



Safe management of spent fuel and radioactive waste

*Alexandru RODNA, CNCAN
Antonius GHEORGHE-SORESCU, AN&DR*

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Legislative and regulatory system



➤ **NATIONAL COMMISSION FOR NUCLEAR ACTIVITIES CONTROL (CNCAN)**

- *regulatory body in the nuclear field*

➤ **NUCLEAR AGENCY & RADIOACTIVE WASTE (AN&DR)**

- *Promoter of the nuclear energy development in Romania (power and non – power applications), exclusively for peaceful purposes*
- *Responsible for disposal of radioactive waste (RW) and spent nuclear fuel (SNF), and ensure at national level the coordination of the nuclear installations decommissioning processes*

➤ **Waste producers**

- *manage their own radioactive waste from its generation until disposal*



CNCAN



- The national authority competent in exercising regulation, licensing and control in the nuclear field;
- Independent body, reporting to the Prime Minister through the Chief of the Prime Minister's Chancellery
- Elaborates the strategy and the policies for regulation, licensing and control with regard to safe management of radioactive waste and spent nuclear fuel;



AN&DR



- Established in December 2009;
- Specialized body of the central public administration financed by waste producers and from the State Budget;
- Under the coordination of Ministry of Economy, Trade and Business Environment;
- Elaborates and update at least every 5 year the National Strategy for safe management of radioactive waste;
- Develop and implement technical solutions for disposal;
- Maintain an update inventory of RW.



Regulations for RWM (1)



- Fundamental safety norms on safe management of radioactive waste (NDR-01/2004);
- Norms for clearance from authorization regime of materials resulted from authorized nuclear practices (NDR-02/2004);
- Norms on classification of radioactive waste (NDR-03/2005);
- Norms for the calculation of dispersion of radioactive effluents released by nuclear installations (NDR-04/2004);
- Norm on surface disposal of radioactive waste (NDR-05/2005);
- Norms for international shipments of radioactive materials involving Romanian territory (NDR-06/2002);



Regulations for RWM (2)



- Norms for decommissioning of nuclear objectives and installations (NSN-15/2002);
- Radiological safety norms for radioactive waste management from uranium mining and milling (NMR-02/2002);
- Radiological safety norms on the conservation and decommissioning of uranium and/or thorium mining and/or milling facilities – Criteria of release from CNCAN regulatory body in order to use for other purposes of the buildings, material, facilities, dumps and area, contaminated following the activities of uranium and/or thorium ore mining and/or milling (2003);
- Fundamental norms for safe transport of radioactive materials (2002);



Sources of RW



1. Nuclear Power Plant (NPP)

- *SNN/CNE Cernavoda – U1, CANDU type, 720MWe, in operation from 1996;*
- *SNN/CNE Cernavoda – U2, CANDU type, 720MWe, in operation from 2007;*
- *SNN/CNE Cernavoda –U3&4, CANDU type: to be constructed by 2020;*

2. Research reactors (RR)

- *RAAN/SCN Pitesti, TRIGA type, 14 MW, in operation from 1979*
- *IFIN-HH Magurele, VVR-S type, shutdown in 1997, under decommissioning*

3. Mining and milling (M&M)

- *CNU, various sites/uranium ores extraction mines*
- *CNU/Feldioara, uranium ores processing plant*

4. Nuclear Fuel Plant (NFP)

- *FCN Pitesti, CANDU type fuel fabrication plant*

5. Institutional field

- *Medicine, Industry, Universities, Agricultural*



Basic principle

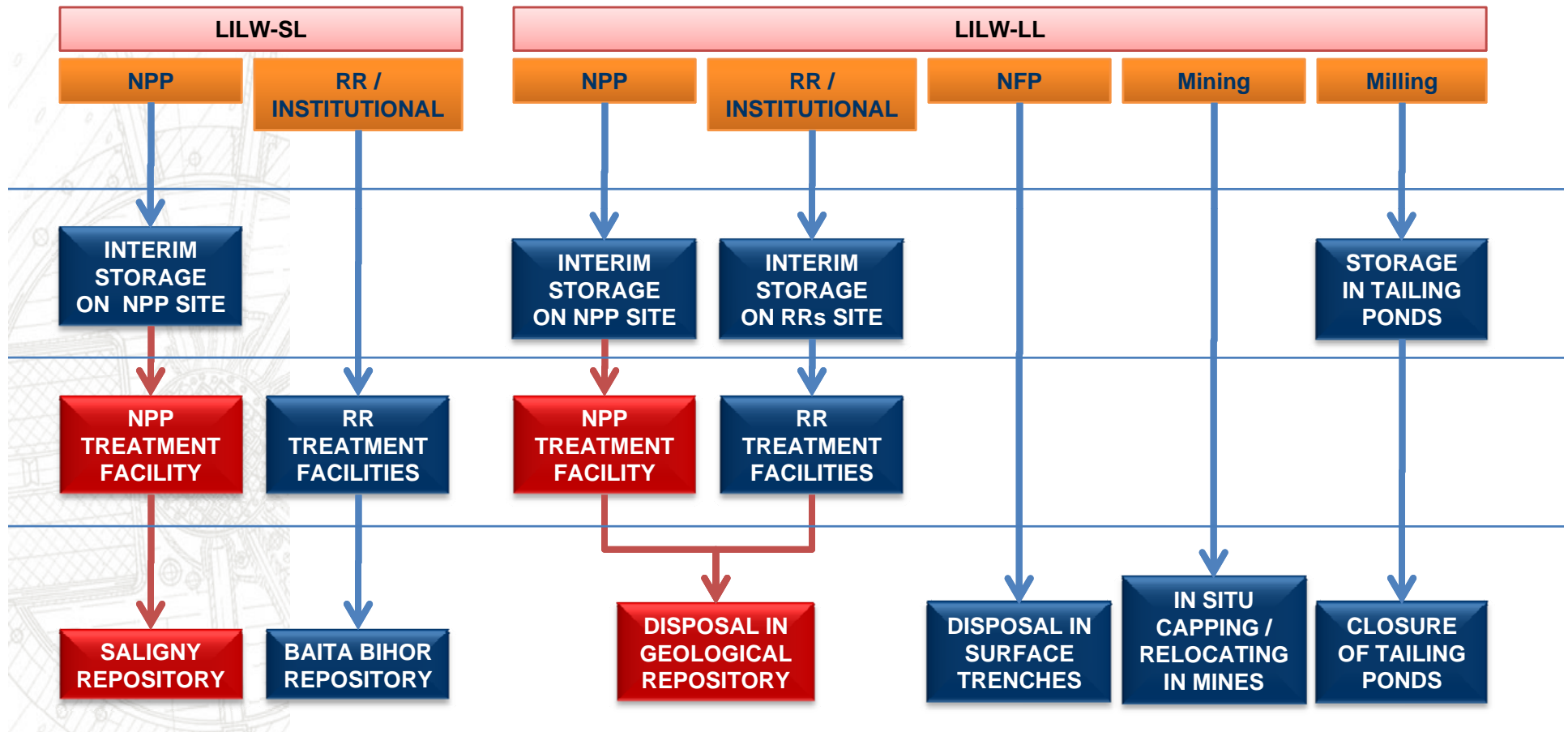


Basic principle of radioactive waste disposal in Romania:

- VLLW: less complex arrangement than LILW-SL;
- LILW-SL: near surface disposal facility;
- LILW-LL and SNF: geological repository;
- SNF is considered RW;
- Import of RW is forbidden.

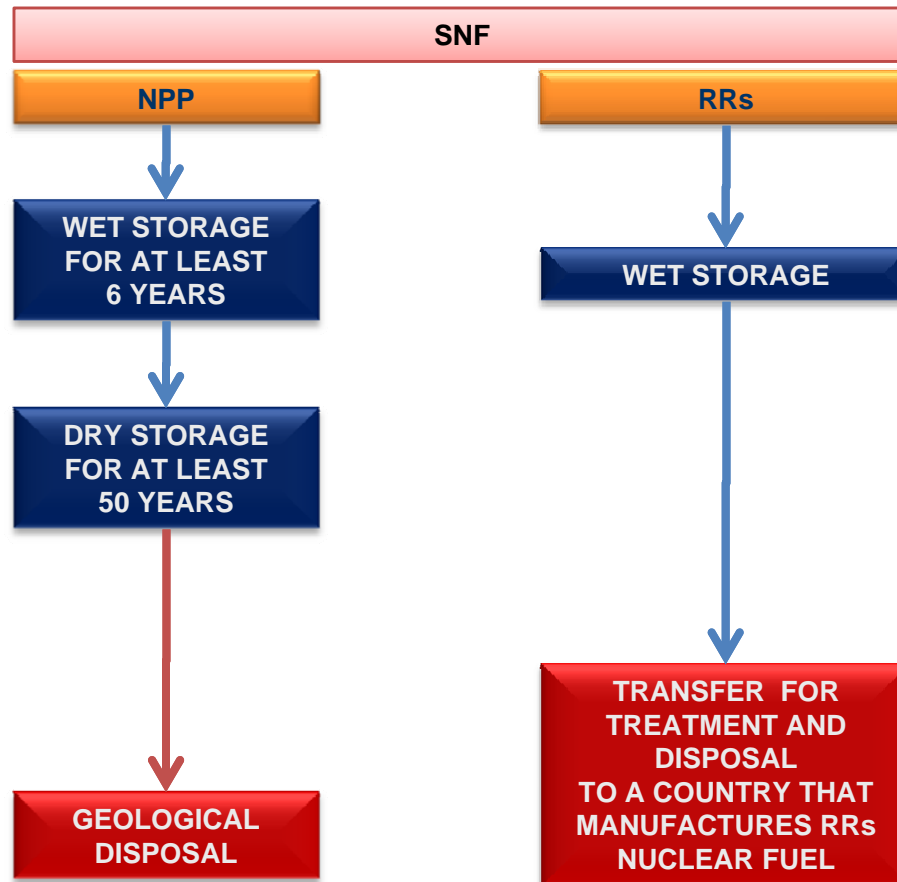


The National Strategy for Safe Management of Radioactive Waste - LILW -





The National Strategy for Safe Management of Radioactive Waste - SNF -

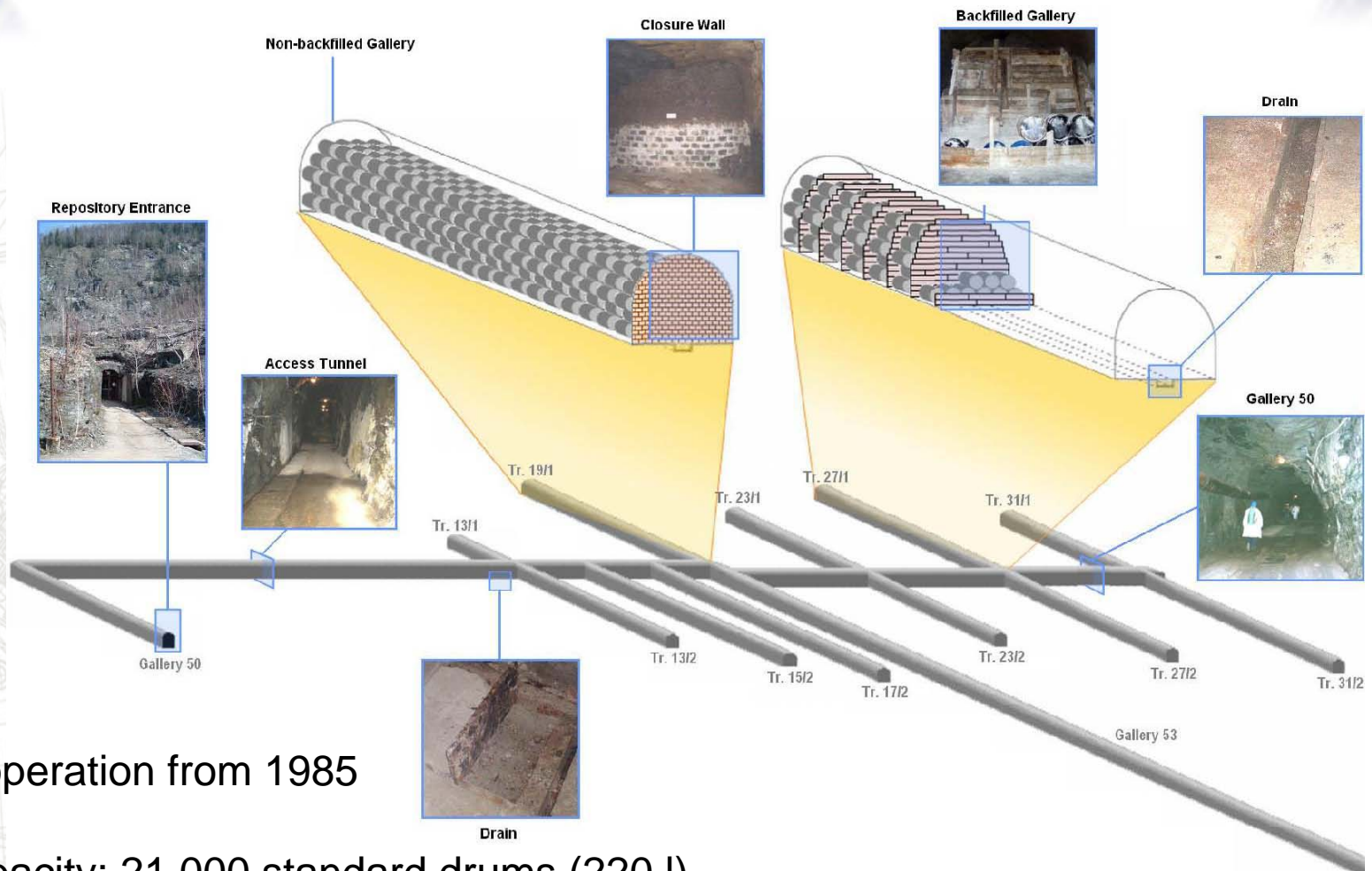


 EXISTING

 PLANNED

Baita Bihor Repository

(existing LILW-SL disposal facility)



- In operation from 1985
- Capacity: 21,000 standard drums (220 l)
- Type: an old exhausted uranium mine



Saligny Repository

(future LILW-SL disposal facility)



- The proposed disposal concept: a near-surface facility with multiple barriers;
- Preferred site : the Cernavoda NPP area (Saligny);
- Site surface: 67 ha;
- Repository surface: 22 ha;
- RW: LILW-SL with certain quantities of LILW-LL generated by operation and decommissioning of 4 Units at Cernavoda NPP;
- Maximum capacity: about 122.000 m³
- Cells: 64 cells, 27,9m x 15,23 m x 5,7 m
- Disposal modules: 24.576 DM, CBF-K type, 1,7 m x 1,7 m x 1,7 m
- Estimated cost: 263 MEuro (2009 price)

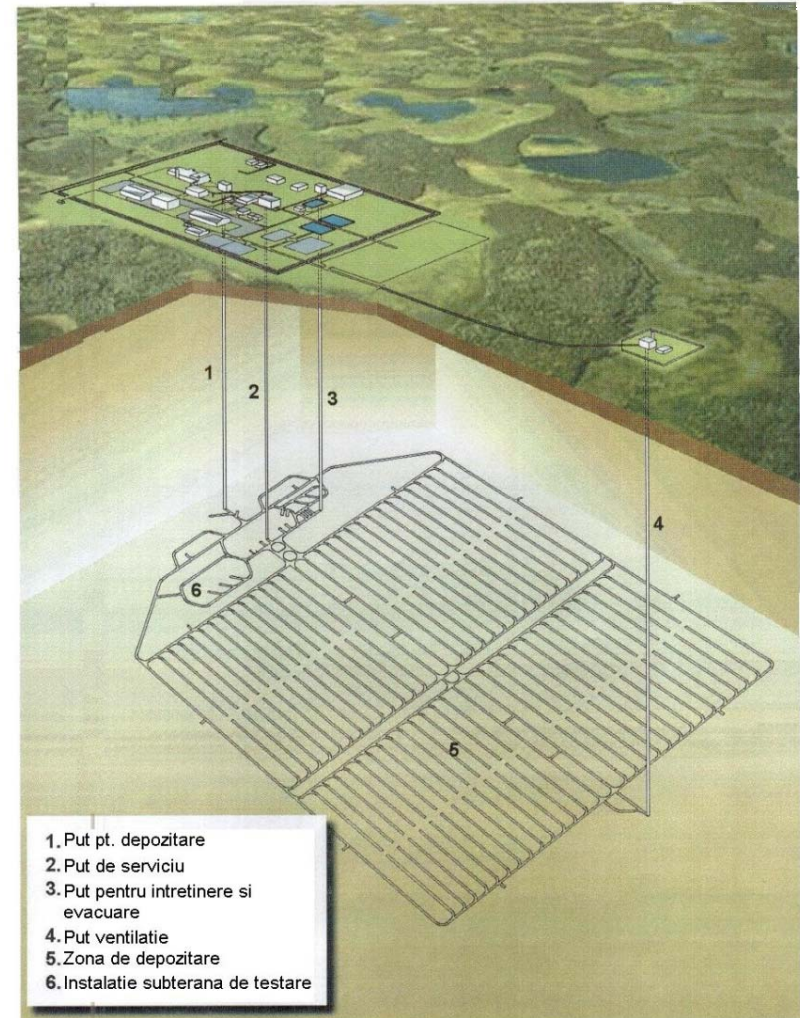


Deep Geological Repository

(future SNF/LILW-LL disposal facility)



- The DGR proposed concept will implement an existing and proven technology, adapted to local conditions.
- The proposal assumes the similarity of Canadian Concept for a Deep Geological Repository for CANDU spent fuel.
- DGR facility will dispose:
 - ✓ **Spent fuel:** 14,550 HMT (3,550 HMT/unit);
 - ✓ **Long lived wastes:** 15,660 standard drums from operation and 19,000 standard drums from decommissioning.





The way ahead (1)



- 3 new regulations will issue by the end of 2012:
 - ✓ Storage of radioactive waste,
 - ✓ Storage of spent nuclear fuel,
 - ✓ Decommissioning of nuclear installations;
- Geological repository: CNCAN intends to endorse the IAEA relevant publications;
- Improvement of the Legal Framework in order to clarify specific issues regarding the Radioactive Waste Management;
- Up-dating the Medium and Long Term National Strategy for Safe Management of Radioactive Waste;
- Elaboration of the AN&DR's Institutional Development Strategy in order to enhance the capacity to achieve its mission;



The way ahead (2)



- Licensing the Saligny Repository Site;
- Refurbishment of existing conditioning facilities;
- Upgrading of Baita-Bihor national repository;
- Licensing of a new conditioning facility;
- Approval of the Road Map for Geological Repository Development;
- Strengthening the efforts to increase the Public Acceptance for Radioactive Waste Repositories;