PSI Center for Nuclear Engineering and Sciences

eurad 2
European Partnership on Radioactive Waste Management

WP.17, TASK 5

"Loading curves, ILW mass limits and optimization"

Co-funded by the European Union under Grant Agreement n° 101166718

SUMMARY

- General information
- Objectives
- Task efforts
- Description of activities (with deliverables)
- List of deliverables and Milestones

GENERAL INFORMATION

- **Project start: October 1st, 2024**
- **Duration**
  - **Total:** **60 months (5 years)**
  - **First phase** **Approved** **24 months (2 years)**
  - **Second phase** **To be approved**
- **Implication: ratio of 0.4 applied to all PMs from the Grant Agreement (24/60=0.4)**
- **Task 5 leader:** **PSI (Dimitri Rochman)**
- **Task 5 co-leader:** **PURAM (Peter Buday)**
- **Start:** **month 1**
- **End:** **month 60**
- **Effort:**
  - **EU countries:** **72 PM (5 years)** **28.8 PM (2 years)**
  - **Associated countries (CH and UK)** **27.75 PM (5 years)**
  - **SNL and PNNL (USA)** **2 PM (5 years)**

GENERAL INFORMATION

Task 5 partners

- **Subtask 5.1:**

ANDRA (A. Feuerle)

VTT (P. Juutilainen, S. Häkkinen)

GRS (F. Sommer, R. Kilger)

CIEMAT (F. Álvarez)

CVUT (J. Frýbort)

ENRESA (F. Gómez)

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LEI (A. Šmaižys)

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SKB (F. Johansson, A. Alvestav)

Tractebel (M. Vanderhaegen)

SSTC NRS (Y. Kovbasenko, Y. Hontar, O. Soloviov, K. Fuzik)

BGE (A. Göbel, F. Voigts, C. Herold)

GSL (T. Hicks, T. Baldwin, C. Elridge, N. Al-Abidah)

Nagra (A. Shama, V. Solans, S. Pudollek, M. Wittel)

PSI (D. Rochman, A. Vasiliev, M. Frankl)

SNL (L. Price)

PNNL (J. Clarity)

NWS (T. Harris, L. Payne)

Jacobs/Amentum (J. Roberts, E. Wilson, V. Ballard, R. Mason)

GENERAL INFORMATION

Task 5 partners

- **Subtask 5.2:**

ANDRA (A. Feuerle)

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GRS (F. Sommer, R. Kilger)

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CVUT (J. Frýbort)

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JSI (M. Kromar)

LEI (A. Šmaižys)

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Tractebel (M. Vanderhaegen)

SSTC NRS (Y. Kovbasenko, Y. Hontar, O. Soloviov, K. Fuzik)

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PSI (D. Rochman, A. Vasiliev, M. Frankl)

SNL (L. Price)

PNNL (J. Clarity)

NWS (T. Harris, L. Payne)

Jacobs/Amentum (J. Roberts, E. Wilson, V. Ballard, R. Mason)

GENERAL INFORMATION

Task 5 partners

- **Subtask 5.3:**

ANDRA (A. Feuerle)

VTT (P. Juutilainen, S. Häkkinen)

GRS (F. Sommer, R. Kilger)

CIEMAT (F. Álvarez)

CVUT (J. Frýbort)

ENRESA (F. Gómez)

JSI (M. Kromar)

LEI (A. Šmaižys)

PURAM (P. Buday, K. Aradi)

SKB (F. Johansson, A. Alvestav)

Tractebel (M. Vanderhaegen)

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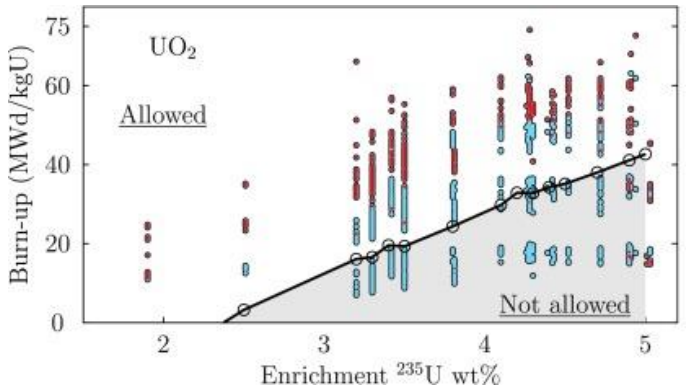
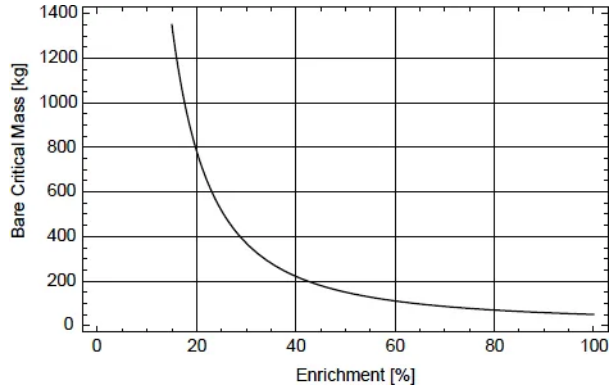
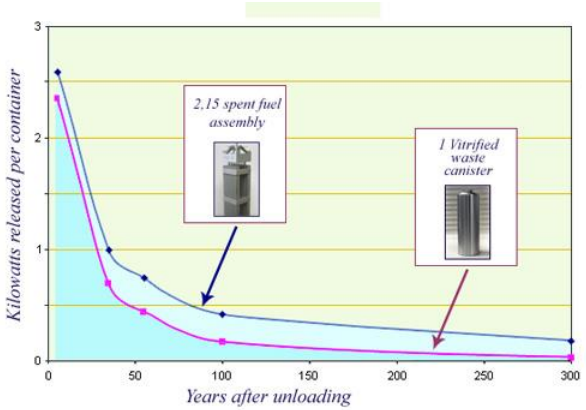
OBJECTIVES

- **Task 5: Development of methodologies for the « assessment of post-closure criticality scenario »**
  1. **Improve the modelling understanding for the development of**
     1. **« loading curves » and**
     2. **ILW mass limits**





  2. **Study the optimization of canisters, ILW packages and engineered barrier designs**
     1. **Decay heat**
     2. **Criticality**



https://radioactivity.eu.com/articles/radioactive_waste/spent_fuel_heat

TASK 5 EFFORTS

- **For EU countries: a total of 28.8 PM are assigned for the first 2 years**
  - See the emails sent by me to subtask participants on October 18.
  - Number of PMs decided for each institute, **but not** the distribution in subtask (to be decided by us)

- **For non-EU associated countries: 27.75 PM are assigned for the first 2 years**
  - See the emails sent by me to subtask participants on October 18.
  - Number of PMs decided for each institute, **and** a distribution in subtask is given in the Grant Agreement

- **For US (SNL and PNNL): 2 PM are assigned**
  - See the emails sent by me to subtask participants on October 18.
  - Number of PMs decided for each institute, **but not** the distribution in subtask (to be decided by us)

TASK 5 EFFORTS

Brief description (to trigger later discussions and brain storming)

- **Subtask 5.1**
  - Loading curves
- **Subtask 5.2**
  - ILW fissile mass limits
- **Subtask 5.3**
  - Optimization

Details to be discussed soon (thanks to those who already provided some feedbacks)

Given the allocated PMs for 2 years, my recommendation would be to focuss first on subtask 5.1

TASK 5 DELIVERABLES AND MILESTONES

No deliverables and milestones within the task 5, but

- **Participation in D1 (lead by ANDRA) SOTA**
- **Participation in D2 (lead by SKB) Gap analysis**
- **Possibly other ones**

How to organize the subtasks

- **Thank you for answering my previous email and raising some questions (e.g. access to GA)**
- **(subtask leader, focussing on specific subjects) ?**

How to present Task 5 results ?

- **Conference contributions (which ones)**
- **Journal papers (which subject)**