



Introductory Remarks

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1. Responsibilities of technical committee

- ✓ The Technical Committee was established in July 2006, with the intention of ensuring that JAEA's technical activities at URLs are of an appropriate standard.
- ✓ The Committee has provided input that contributed to their technical and scientific accuracy since its establishment.
- ✓ On 10th December 2019, Hokkaido local government announced the acceptance of the extension of operational period of the Horonobe URL, which will be until the end of FY2028.
- ✓ Taking this opportunity, JAEA decided to seek advice from not only existing domestic committee members but also overseas experts in order to further strengthen its plans for the next nine years.
- ✓ Especially, advices from overseas experts based on their experience are greatly beneficial to increase stakeholder's trust and understanding in the Horonobe URL project because they can see other countries are already in the practical stage.

2. Objectives

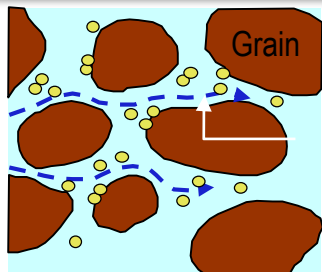
The objectives of this Technical Committee Meeting are:

- i) to review and discuss the in-situ experiments plans in **Horonobe URL from FY2020**
- ii) to get **feedback** from a wider range of **domestic and international experts** to improve/enhance the plans.

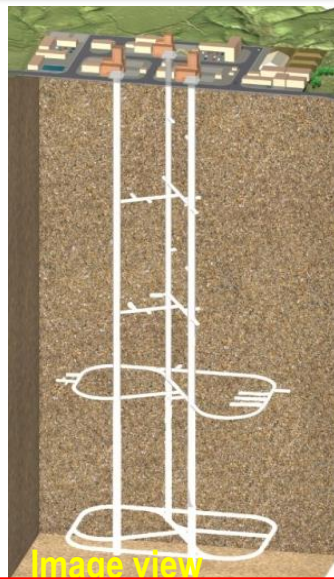
3. JAEA's URL Projects

- Confirm the applicability of geological disposal technologies;
 - Site investigation methods (Horonobe & Mizunami)
 - Engineering technologies / Safety assessment methods (only Horonobe)
- Understand the deep geological environment;
- Provide training facilities for specialists both in Japanese domestic and international geological disposal projects; and
- Promote public understanding of geological disposal.

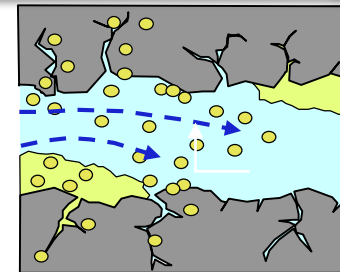
Horonobe URL Project



- **Mudstone**
(Sedimentary rock)
- **Soft rock**
- **Porous media**
- **Saline water**

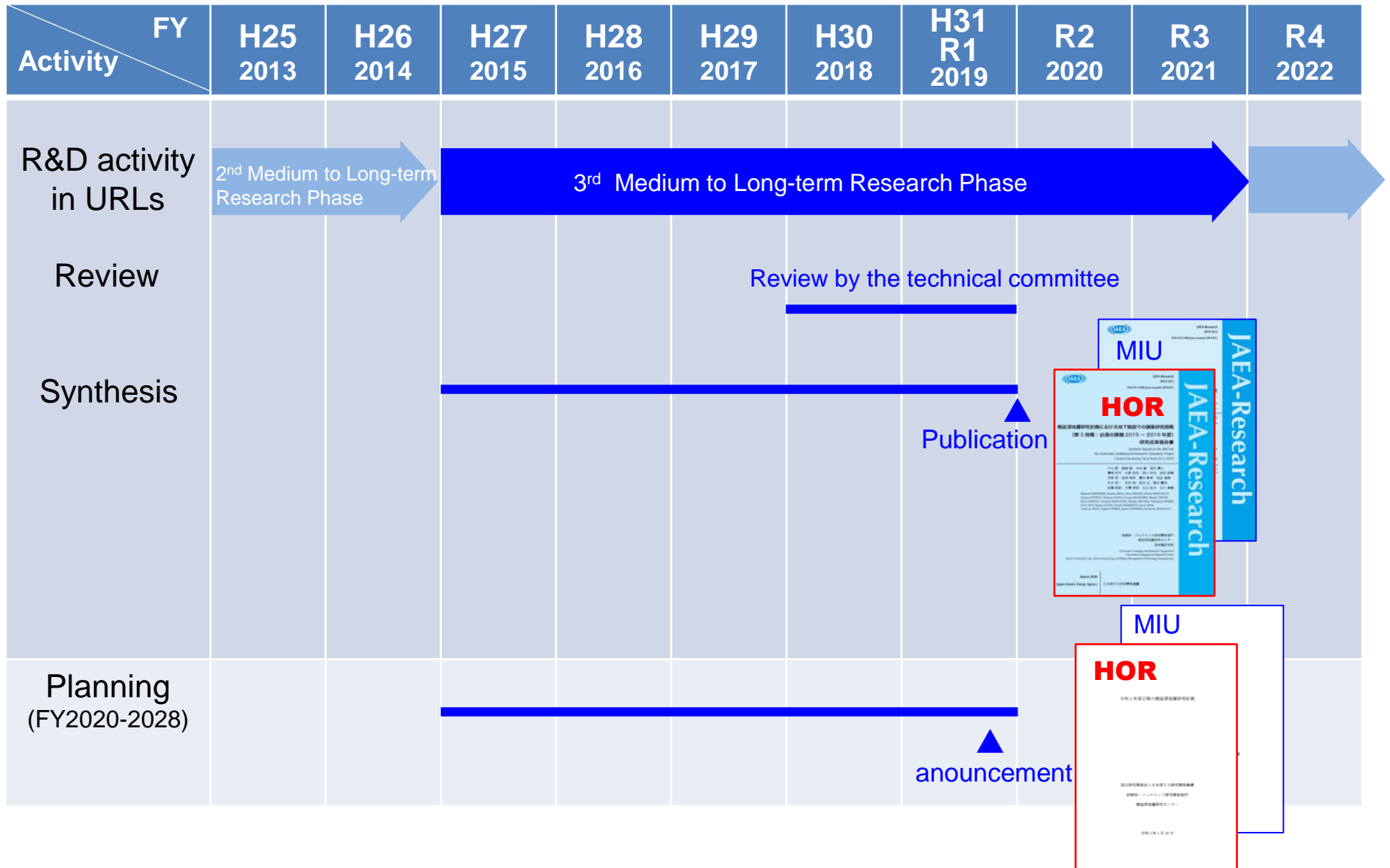


Mizunami URL Project



- **Granite**
(Crystalline rock)
- **Hard rock**
- **Fractured media**
- **Fresh water**

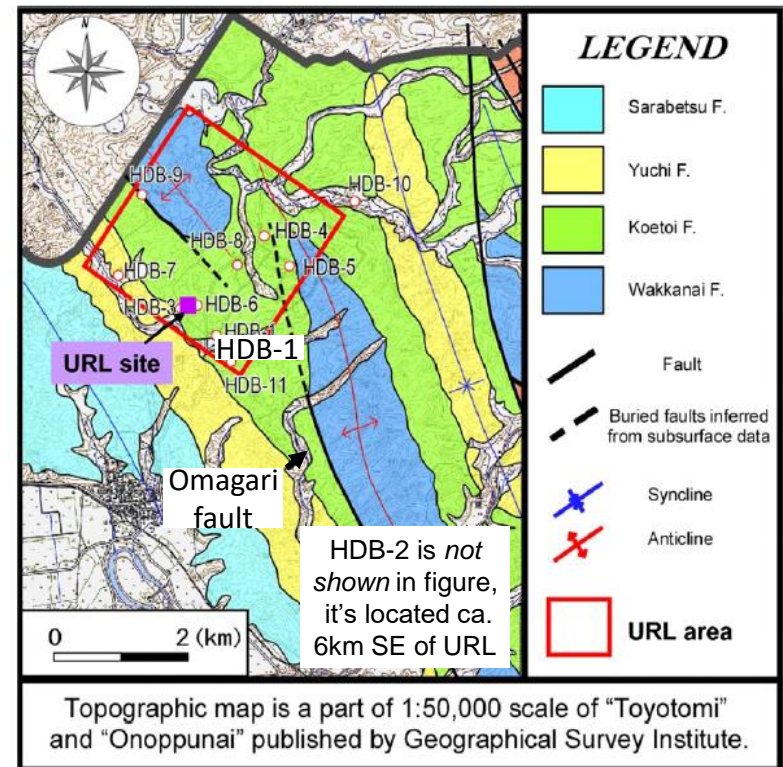
3. JAEA's URL Projects



3. JAEA's URL Projects

History of Horonobe URL Project

- 2000:** Agreement for 20-year R&D Program was signed among Hokkaido Prefecture, Horonobe Town and JAEA
- 2001:** Horonobe Underground Research Center opened
Surface-based investigation (Phase I) started
- 2002:** Announcement of the URL site location
- 2004:** Site preparation & surface building construction started
- 2005:** Shaft construction (Phase II) started
- 2010:** Operation phase (Phase III) started
- 2020:** Agreed with Hokkaido and Horonobe Town to extend R&D program for 9 years



* HDB: Horonobe Deep Borehole (11 deep boreholes were drilled till 2005 for a depth range of 500 to 1000m)

4. Comments from Technical Committee

● Horonobe URL Project

- ✓ R&D has conducted appropriately
- ✓ the goals were achieved from the R&D for five years
- ✓ In-situ experiment focused on performance of engineered barrier should be continued
- ✓ Horonobe URL should be most advanced geological disposal technology platform and be widely provided by related parties both in Japan and in the world.

● Mizunami URL Project

- ✓ R&D has conducted appropriately
- ✓ the goals were achieved from the R&D for five years
- ✓ the data and knowledge obtained will be widely provided both in Japan and overseas

5.R&D plan during FY2020-2028

●Horonobe URL Project (28th January 2020*)

- Focused on 3 important issues
 - Demonstration of EBS in geological environment
 - Demonstration of disposal concept
 - Validation of buffer capacity of the sedimentary rock to tectonism
 - Promote domestic/international collaboration
 - Compliance (agreement with local government), safety first
 - * <https://www.jaea.go.jp/02/press2019/p20012901/>
-

●Mizunami URL Project (24th January 2020*)

- R&D completed by the end of FY2019
- Back-filling by the end of lease contract period (January 2022)
- Environmental monitoring during/after back-filling
 - * <https://www.jaea.go.jp/02/press2019/p20012701/>

6.Presentation item

Plan for 9 years (FY2020-2028) in the **Horonobe URL**

- Geological environment
- Achievement
- Planned investigation
- Planned layout

7. Items to be discussed

1. Effective to the geological environment in Japan

- ✓ favorable geological environment for the planning/execution of in-situ experiment

2. International interest

- ✓ possible contribution to foreign program (R&D, implementation, regulation)