# Putting it all together – CoolRep and integrated QA

Next Generation KMS Workshop
3-4 December, 2009
Tokyo
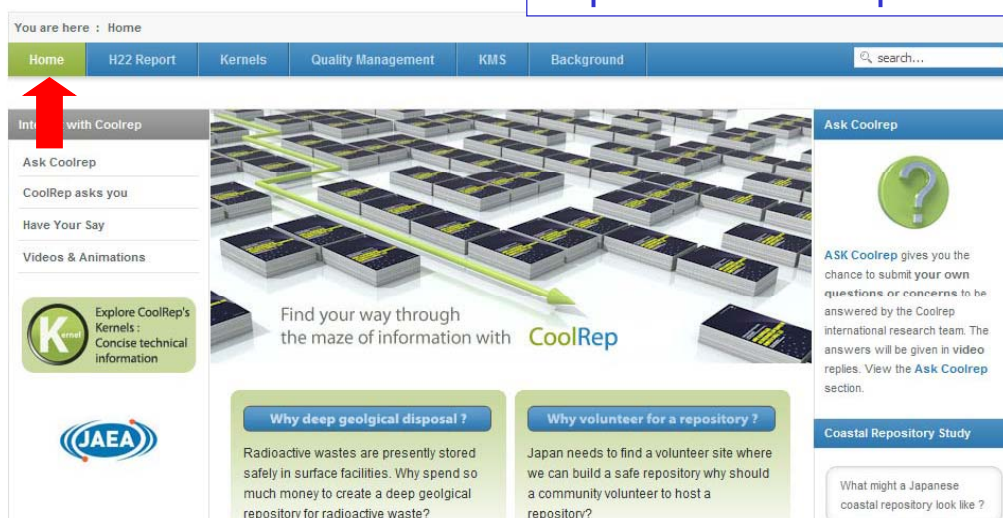
**Hiroyuki Umeki**

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# CoolRep

• CoolRep developed as the interface to H22 – also providing easy access to all supporting documentation.
• CoolRep specifically designed to communicate with a wide range of stakeholders…

http://www.coolreph22.com/

# CoolRep

Using CoolRep for access to the H22 supporting documentation…3 ways – through the H22 report



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# CoolRep

Using CoolRep for access to the H22 supporting documentation…3 ways – through the Kernels (Knowledge Element incorporating Requirements, Novelty, Experience and Limitations)



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# CoolRep

Using CoolRep for access to the H22 supporting documentation…3 ways – through argumentation representations

COOLREP | The next generation

You are here : Home ▸ Background ▸ Argumentation Networks

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Waste Disposal Overview | Why Volunteer ? | JAEA Research & Development | Argumentation Networks | Comparison of Energy Sources

**Interact with Coolrep**

Ask Coolrep

CoolRep asks you

Have Your Say

Videos & Animations

**Argumentation Networks**

What are Argumentation Networks and what how can they be used ?

It's a technical term from knowledge engineering that provides a way of explaining the pros and cons of any issue. We can use Argumentation Networks (ANs) to highlight the basis of our safety case. They are useful for communicating complex issues.

An Argumentation Network - what's that?

An AN is a structured set of arguments and counter arguments, supported by evidence

ANs are an efficient way of explaining the pros and cons of any issue

The basic concept of argumentation has been used in philosophy for millennia

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# CoolRep

Using CoolRep to communicate complex information to the public…the moles!

**Why volunteer for a repository ?**

We need to find volunteer site where we can build a safe repository.

In Japan - and several other countries - it has been decided to search for volunteer communities that would be interested in hosting a geological repository. What are the issues and benefits involved with volunteering ?

Volunteers

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# CoolRep

Using CoolRep to communicate complex information to the public…the moles!
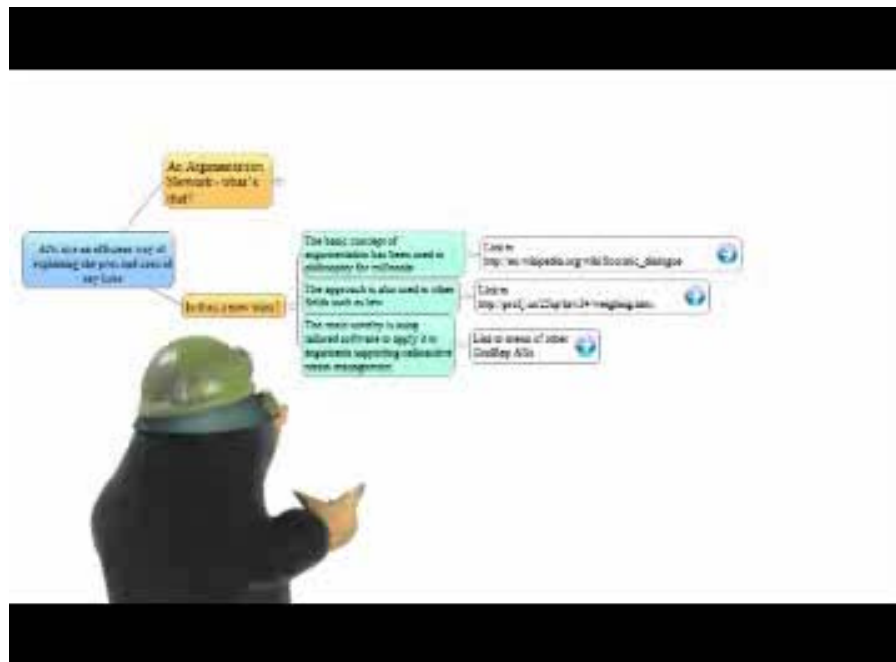
# CoolRep

Using CoolRep to communicate complex information to the public…natural analogues



A DEFINITION OF A NATURAL ANALOGUE

Analogues provide a method of testing our understanding of the long-term processes occurring in a repository.

An example of a natural analogue : Cigar Lake, Canada - multiple barriers.

The 1.3 billion year old uranium ore deposit at Cigar Lake is one of the richest in the world. It is located around 430 metres below the surface

Despite the high-grade uranium ore, there are no traces of its presence at the surface – the radionuclides present are effectively retained by a clay layer 10 to 50 metres thick.

The uranium ore is contained by several natural barriers, similar to the safety barriers in a deep geological repository.
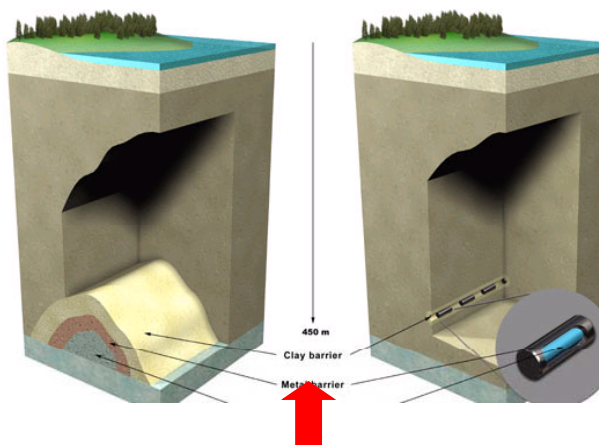
# CoolRep

## Using CoolRep to establish dialogue …earthquakes



Have your say

Earthquakes in Japan - your views

When asking "Do you think radioactive waste will be safely disposed in Japan ?" the issue of Earthquakes was raised. What is your opinion ? View the background and Join in the discussion.

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# CoolRep and QA

• QA – planned and systematic production processes providing confidence in the product and its suitability for its intended purpose.
• For radwaste disposal this is unique – testing a repository design compliance with design limits is difficult due to timescales, which leads to the use of natural analogues.
• JAEA R&D programme uses QA on many levels –
  • Site characterisation
  • Quality records for codes/databases
  • Test cases for verification exercises
  • Experimental and natural analogue cases for validation exercises.

# Implementing QA – Review Introduction

**Coolrep Review Guidelines**

Review Introduction ▶
Screening Process
Review guidelines
Link Rating Guidelines
Review Sheet
Issue Resolution Form
Schedule

**Interact with Coolrep**

Ask Coolrep
CoolRep asks you
Have Your Say

### Review guidelines introduction
Wednesday, 01 April 2009 11:21

All documents submitted to CoolRep will be reviewed before publication on the web site. For documents that pass the initial screening process, the QA manager will establish a review schedule and arrange for appropriate review by one or more reviewers from the QA team. The allocation of reviewers to documents will be made on the basis of the technical areas addressed in the documents, the inter-relationships between different documents and the expertise of the reviewers.

Note that:

➡ Wherever possible quality is assured by direct linking to peer reviewed text, but the links will be reviewed and classified (see rating guidelines) as an essential part of the review process
➡ During production, a single read-only master exists containing the accepted updated draft; amendments of components may be produced in parallel, but contain digital signatures of the author and are added only after acceptance and digital signature the QA manager (assures implementation of the QM system and prevents different versions of databases being used by different groups)
➡ Original text and review comments would be fully archived electronically and could, potentially, even be hyperlinked via a website. The QA section in the report can include, at least, links to main review comments and responses from authors.
➡ Automatic QA record generation
➡ Explicit QMS, change management
➡ QA record embedded in page

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# Implementing QA – screening process

**Coolrep Review Guidelines**

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### Screening process
Wednesday, 01 April 2009 11:45

The screening process is carried out by the QA manager to minimise the workload of the reviewers and will follow these guidelines

➡ level 1 screening: carried out by the first author of the report – is it good enough to submit in this format?
➡ level 2 screening: carried out by QA manager: who will evaluate whether it is of an appropriate standard for review. The aim of this initial evaluation is to determine whether review of the document would be constructive and of value to the authors. If the manager considers that review would be constructive, the document will be forwarded to the reviewer. If not, it will be returned to the authors with some guidance as to how it could be improved and a copy of the comments passed to the report coordinators.
➡ level 3 screening: either the QA manager accepts the document and signs it off or returns it to the reviewer for acceptance/rejection of the author's justification for ignoring the review comment. If the reviewer feels that the justification is unacceptable, the document is returned to the QA manager and an Issue Resolution Form (IRF) is assigned to the item and is returned to the author for re-assessment and re-submission. If a resolution cannot be found between the author and the reviwer, the QA manager will have the final decision.

Last Updated on Sunday, 05 April 2009 09:03

# Implementing QA – review guidelines

# Implementing QA – link rating guidelines

# Implementing QA – Review Sheet



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# Implementing QA – Review Sheet



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# Implementing QA – JAEA QA Workshop

Of course, CoolRep is only a tool to facilitate QA: basic procedures, priorities and review work have to be carried out by expert teams - initial workshop record available via CoolRep or http://www.jaea.go.jp/04/tisou/kms/pdf/qa_ws_19_2.pdf

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# Conclusions and future work

➤ The existing version of CoolRep demonstrates key functionality: content is being reviewed and will be extended with publication of H22 in spring 2010 (with implemented QA)

➤ It is intended that CoolRep will be a living document, continually evolving after H22: critical input to provide guidance on future development will come from review of H22 by Japanese implementers, regulators and other stakeholders

➤ It is hoped that other organisations will adopt this approach and further development could be an area of collaboration - maybe coordinated by a users group