

# Challenges of confidence building on a final disposal facility of high-level radioactive waste

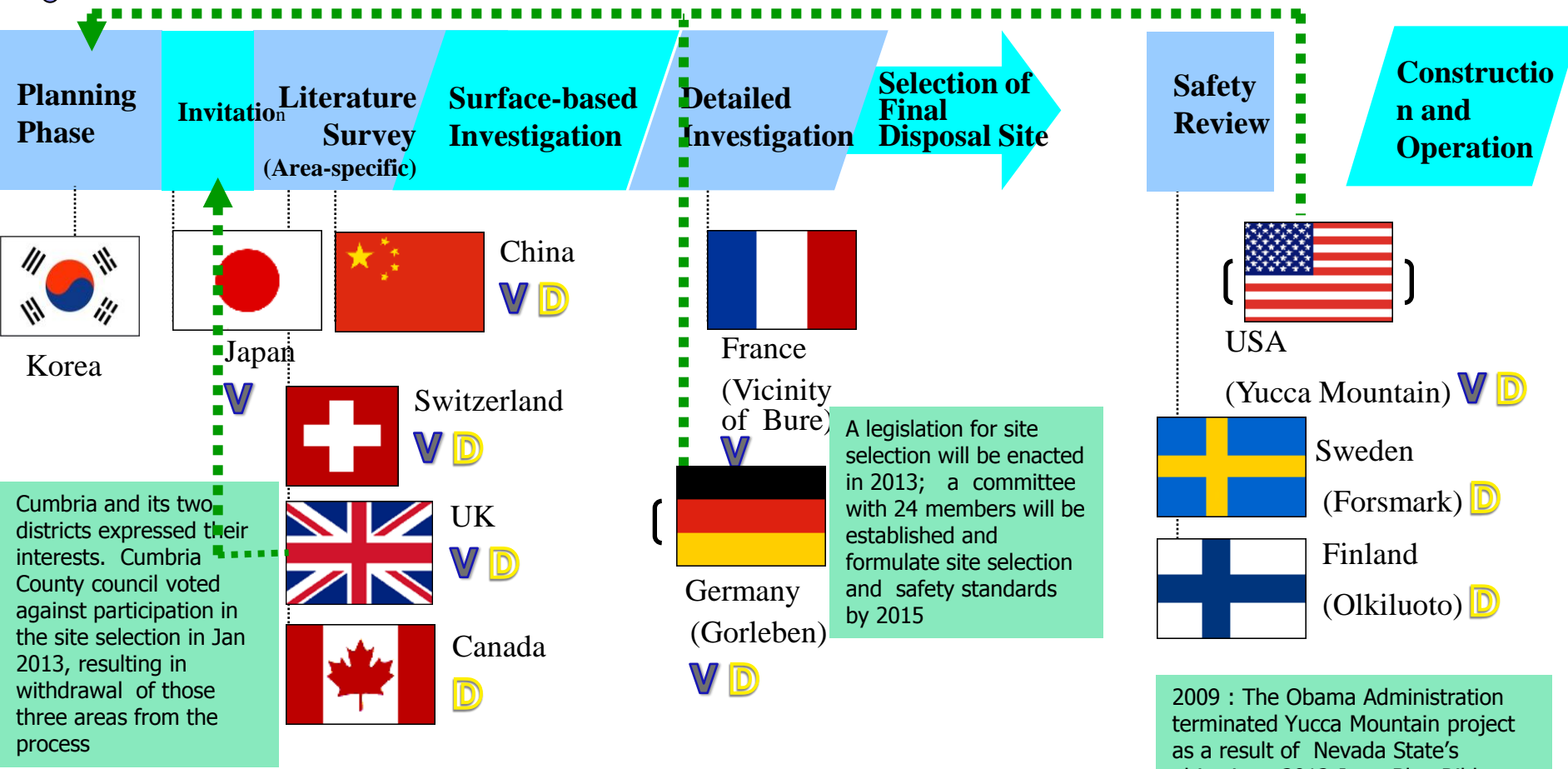


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# Today's topics

- Recent situations of high-level radioactive waste disposal in Sweden, Finland, Switzerland and France
- Site selection process in the UK
- Japan's latest situation
- Summary: Public confidence building

# Situation of HLW disposal program (as of May 2013)



- (1) International principle: all nuclear wastes should be disposed of in the country which generated them.
- (2) Geological disposal is internationally recognized practice. Each country is conducting site selection process.

**V** : Vitrified (reprocessed)  
**D** : Direct disposal

# Northern European countries

## - success in selecting final disposal site -

### Sweden

For the purpose of gaining citizens' confidence on nuclear disposal, SKB, a Swedish nuclear fuel and waste management company has endeavored to communicate with local residents bi-directionally by creating various opportunities for concerned residents to gain sufficient information and to express their views, instead of just providing information from SKB. After the selection of Forsmark by SKB as a disposal site, 81% of residents in Osthhammar where Forsmark is located voted for the plan.

Reasons why site selection was successful:

- Clarity of who is responsible for radioactive waste disposal
- "Safety" is the top priority in selection criteria
- Respected citizens' opinion
- Conducted grass root activities and dialogues with local citizens (Kitchen table meeting, facility tour for local residents)

# Finland

In 1987 when a site selection was under way, Nuclear Energy Act was totally renewed. Accordingly, public, residents of the candidate site, communities nearby and regulatory authority were given an opportunity to voice their opinions on the plan of nuclear facility including a final disposal facility prior to application of the facility construction license.

A meeting with local government of Eurajoki, a selected disposal site

- Safety and transparency were key points to consider when accepting a final disposal site. Thus, first, discussion opportunities were created.
- Residents are well aware of pros and cons through provision of sufficient information.
- VTT, Finland Technology Research Center and STUK, a regulatory agency monitor “safety” strictly. Both are neutral and highly trusted by the public.



# Switzerland

In November 2011, three geological siting areas were selected as candidates of a geological disposal site, thus the 1<sup>st</sup> stage of the selection process finished.

The federal government will conduct and report environmental impact and social impact. In addition, a process to invite local governments and concerned communities in the selection process is underway.

In each location, a regional conference is formed and acts under the initiative of Federal Office of Energy. The regional conference consists of 50 to 150 members from representatives of communities, industry associations, political parties, churches and residents.

# France

2006: Planning Act related to sustainable management of radioactive material and waste was adopted and geological disposal with reversibility was determined as a disposal method of HLW. ANDRA, a waste management agency has been conducting research and investigation at its Bure Underground Research Laboratory.

May 2013: a national debate on a geological disposal facility was launched. However, the meetings were interrupted by the opponents.

July 2013: measures to improve public debate method were introduced.

- To hold a regional meeting in a small administrative unit
- To hold a series of internet conference” different opinion debate” regularly.
- To hold a town meeting to wrap up series of public debates.

# UK's site selection program of HLW

NDA



Copeland City council



ONR



DECC, NDA





# UK's situation of HLW disposal site selection

- 2008 White Paper defined the selection process with six stages based on an open invitation and applicable criteria for the selection. Issued invitation for communities wishing to have a consultation with the government as the 1<sup>st</sup> stage of the selection process.
- Two districts, Copeland and Allerdale of Cumbria County expressed their interests. In 2009 three communities (Cumbria, Copeland and Allerdale) formed a partnership which promoted participation program and released a final report in 2012.
- On January 30 2012, each council voted whether to proceed to the 4<sup>th</sup> stage. The result was Copeland and Allerdale voted in favor and Cumbria voted against.
- As their partnership agreement requires unanimous consent to move ahead, they all withdrew the site selection.

# UK's site selection program of HLW

**Stage 1:**  
Invitation issued and  
Expressions of Interest  
from communities

A local community can start discussion with the Government without commitment to participate in the site selection process.

**Stage 2:**  
Consistently applied  
'sub-surface  
unsuitability' test

By bibliographical investigation with White Paper's screening criteria unsuitable areas are identified and communities are informed.

**Stage 3:**  
Community consideration  
leading to Decision to  
Participate

A community can decide participation in the selection process without commitment to accept the future disposal site when selected.

**Stage 4:**  
Desk-based studies in  
participating  
areas

NDA compares multiple sites on a desk basis investigation. To take local residents' views into consideration, NDA cooperates with regional partnership. A community decides whether it proceeds to the next stage with the advice of the partnership. The Government decides one or multiple sites to go to the next stage.

**Stage 5:**  
Surface investigations on  
remaining  
candidates

NDA conducts surface investigation. A community decides whether it proceeds to the next stage with the advice of the partnership. (the last opportunity to withdraw from the process). Government decides a preferred site.

**Stage 6:**  
Underground operations

Once completed required regulatory processes, underground-based investigation and construction of the site starts.

# Meeting with Copeland Council

- Voluntarily formed a partnership of stakeholders to start selection of a final disposal site. Opponents were invited, but they did not join.
- Partnership had continued PR activities for 3 years, it never said to invite the disposal facility, instead asked if invitation of the facility is right thing or not for us.
- Booklets and DVDs were distributed, meetings were held, where only those people with interests or concerns came, but vast majority without interests did not come.
- As nuclear facilities have been here for a long time, people take it for granted, so they don't participate in such activities. Younger people should pay more attentions. But the facility won't be built until 2040, it is hard for them to keep interested in something that won't happen until 30 years later.
- Extension of council vote by four months was critical. We did not say we wanted to invite the disposal site, but opponents clearly said No. When we participate in the selection process again in the future, we need to have someone that can smoothly tell the public a pro-facility well.

# Meeting with Copeland Council

- During 3 year activities, the followings are what residents wanted to know and what we were not able to answer:
  - Will the disposal facility be constructed near my house?
  - What are benefits from accepting the facility? New roads, more employment ?
  - Is there any safety problem?
- It is no use that a local politician advocates pro-facility opinion. People generally do not trust the local council and the Government. Independent experts, scientists of nuclear engineering, nuclear physics and geologists need to speak to the public with simple terms.
- The more time we spent with young people, listened to them and communicate, the more interest they showed. The Key to build trust is to take time and maintain relationships. An important thing for confidence-building is Not lying and honesty. It takes long time to communicate with people, but this is the shortest way after all.

# UK's situation - Update

Update:

May 13 ~June 10: Public hearing on the site selection

- What aspects of the site selection process in the MRWS White Paper 2008 can be improved and how?
- What can be done to attract more communities to the selection program?
- What kind of information will help communities engage with the selection process?

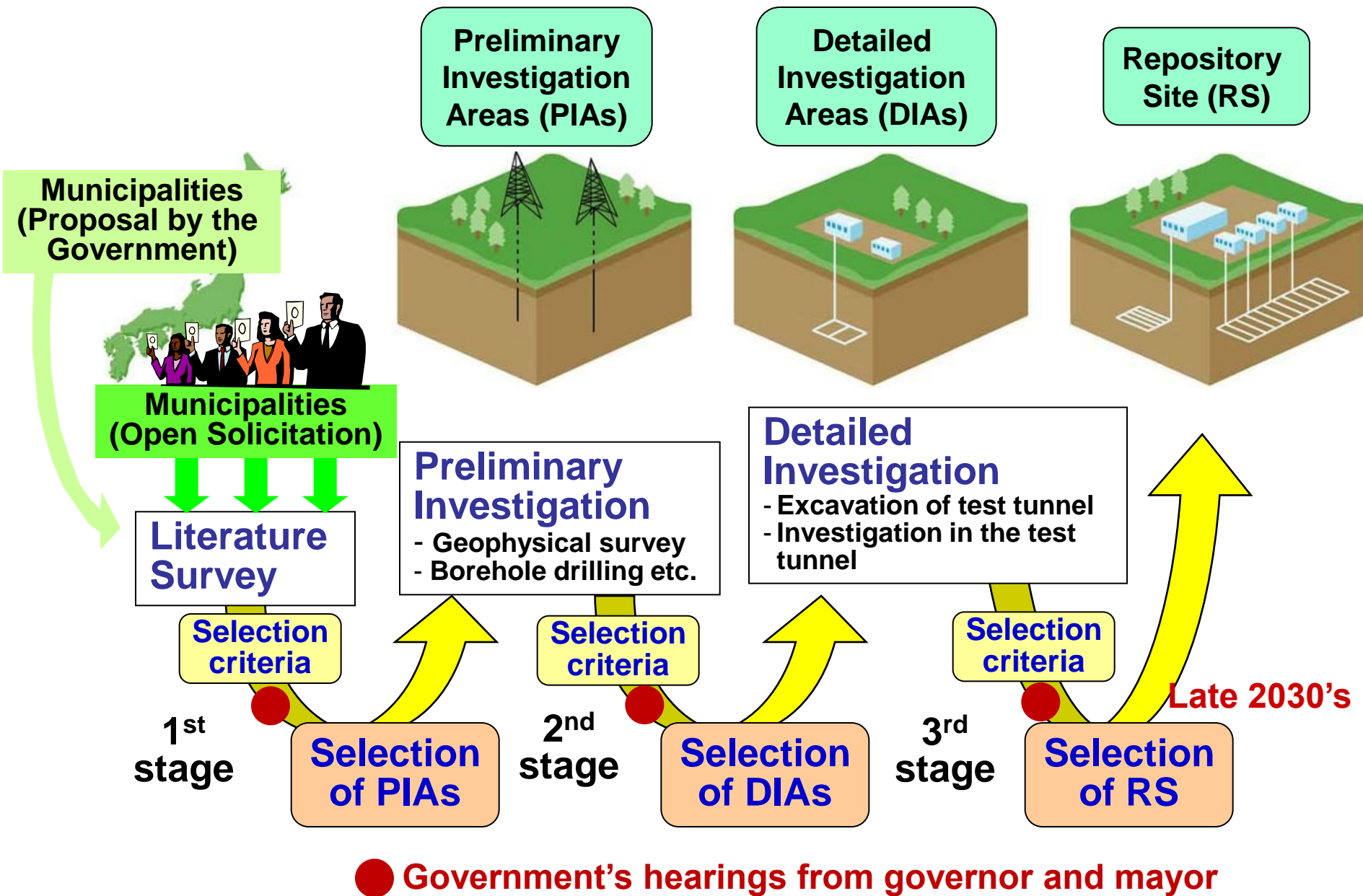
July 9: The third annual report of the Government's Managing Radioactive Waste Safely (MRWS) programme was published.

- Based on the outcome of the hearing, a public consultation will be held in the later part of 2013.

# Japan's selection of final disposal site

- Based on the Designated Radioactive Waste Final Disposal Act enforced in 2000, NUMO the disposal operator opened a public invitation to local communities for investigation as a final disposal site.
  - From the lesson learned at Toyo town in Kochi, a process that the central government appoints and invites a specific community was added. R&D to enhance safety and reliability of geological disposal continued. PR activities and public hearings have been repeated to gain public's support. However, there has been no community newly volunteered. Literature survey was on hold.
- \* In 2007 Toyo in Kochi applied for bibliographical investigation. At the town mayor's election three months later, an opponent to the investigation won and withdrew the application.

# Procedure for Repository Site Selection



# Recommendation of SCJ and JAEC's Statement

1. SCJ's (Science Council of Japan) recommendation in September 2012 in response to the request of JAEC of September 2010.
2. JAEC (Japan Atomic Energy Commission) issued Statement to present its view on the future direction the Government should aim for.

SCJ: Issues concerning HLW Disposal (Sept. 2012)

Seek a consensus on selecting the final HLW disposal site after reaching a consensus on broader nuclear power policies. Fundamentally review HLW disposal policies.

- No sufficient consensus among experts on the safety of geological disposal. Independent and autonomous scientists team should conduct a thorough review.
- Put in a temporal storage for several tens to hundreds of years in order to ensure time for discussing and choosing a scientifically better decision.
- Stop limitless increase of HLW, cap total volume of HLW (Total volume control).
- Streamline the selection processes such as putting priority on scientific views, multistage consensus forming by participation of versatile stakeholders

JAEC: Renewing Approaches to Geological Disposal of HLW (Dec. 2012)

Geological disposal of HLW is a reasonable option.

Review periodically "safety" of geological disposal with suggestions and assessment of an independent 3<sup>rd</sup> party organization and the latest scientific knowledge. Take a step-by-step approach considering reversibility and retrievability to allow flexible modification and changes in the disposal scheme based on the latest scientific insight. Present difference of radiological wastes and size of disposal facility relative to nuclear power and nuclear fuel recycle policies. The government should take a leadership in policy setting, e.g. to streamline cooperation between a disposal operator and stakeholders including a local government.



# Enhancement of approaches to build nationwide understanding

While radioactive wastes are actually produced today, it is an urgent matter to share with the public an existence of the disposal problem and to build a national level understanding of the problem. Along with discussion at the Waste WG, we should start taking actions whatever possible. As the first step, we will start the following actions:

1. Approached to gain better understanding on safety and technological reliability of geological disposal ⇒ Start geological disposal technology WG
2. Information sharing with variety of local communities including electricity consumer side ⇒ Government to promote mutual understanding with concerned local communities and electricity consumer regions and to set up “joint study committee on spent fuel disposal.”
3. Set up a staged approach of discussion ⇒ Continuous hearing from public and its reflection to the discussion. Hold a two-way symposium. Set up a forum to share the problem with regional public.

# Workshop organized by NUMO (Nuclear Waste Management Organization of Japan ) inviting students and public

10 locations across the nation in 2012



# Participants' comments

- Until I attended the workshop, I didn't even know such HLW problem. Everyone should learn this and think about this.
- When we started using nuclear energy, we should have considered solution of nuclear waste as well.
- I feel there is a risk of “out of sight, out of mind”, once nuclear waste is disposed underground. May need something visible to keep us remember the problem.
- Deep geological disposal is not a good choice as it can create environmental impact.
- I don't think there is a location in Japan that has a safe geological formation. We should consider worldwide cooperation to build a safe disposal site on a global basis.

# Summary

PI (Public Involvement) is social communication which is led by an administrative organization's initiative and aims to form a national consensus with active involvement of public.

<What are basic things an administrative organization must bear in mind>

- Execution of accountability,
- Disclosure of correct information
- Securing of transparency/fairness of actions/decisions. Ensuring public involvement in this decision process
- An intelligible explanation

In future, for administrative decisions concerning energy and nuclear policies, the national government should act for the public that meet these four fundamental requirements, and accordingly give the public more opportunities to participate in the decision-making process. It is important to sincerely listen to public opinion and questions by striving to provide more opportunities to engage with the public and try to understand each other through communications. In other words, when the national government and operators explain their own actions to the public, they should not do so on a one-sided basis. Rather, they should engage in two-way communication to deepen mutual understanding and develop a relationship built on trust through conversation. (Japan Atomic Energy Commission Statement "Efforts to Build Public Confidence")

Thank you.