Short Record of the 1st ITAC Meeting

Tokyo, 3-5 December 2001

Background

This note comprises a brief summary of the main points arising from discussions during open and closed sessions of the 1st NUMO International Technical Advisory Committee meeting held in the NUMO office in Tokyo on 3-5 December 2001. The programme of the meeting and copies of all overheads presented were distributed to all participants and are on file at NUMO (contact T. Fujita) and hence are not reproduced here. The note is structured by topic, following the structure of the summary of ITAC conclusions and recommendations presented in the final session of this meeting. These topics are:

- 1st ITAC Meeting; overall impression and logistics
- NUMO framework/constraints
- Process for repository siting/development
- Documentation for site solicitation
  - Structure
  - Overview Document
  - Concept Catalogue
  - Siting Factors
- Supporting work programme 2002/3
- Other comments
- 2nd ITAC Meeting; suggested topics

1st ITAC Meeting; overall impression and logistics

The overall impression of the meeting from the ITAC viewpoint was very positive. In particular:

- The timing and programme was appropriate for the defined ITAC remit
- Meeting contents and documentation provided were excellent
- NUMO presentations were very useful and of a high standard
- Opportunity for DTAC interaction was valuable

The message clearly communicated was that NUMO has already developed an appropriate and impressive programme. Some potential areas for improvement were noted:

- ITAC needs more time to interact before meetings and must develop a structure for this (something for the ITAC members to discuss further among themselves and come back to NUMO with more specific ideas about how this could be done)
- Interactions with DTAC are very important and could receive more emphasis
  - should be considered in planning future ITAC meetings
  - aim to communicate results of meetings in both directions (DTAC<->ITAC)
- Noting specific questions and tasks for ITAC in the programme / presentations was useful and could be extended further

Finally, ITAC noted that they would like to receive NUMO feedback on the value of such meetings and suggestions for ways in which they could be improved.

NUMO framework / constraints

ITAC appreciate that many issues are not under NUMO's control but, for building public confidence and establishing its own credibility, it was considered important that NUMO was still able to take an agreed position on some key aspects of the overall national waste management policy. Some issues identified as relevant by ITAC were:

- Establishment of a total Japanese waste inventory (HLW, SF, TRU, other)
- Allocation of implementation & regulation responsibilities for each waste type
- Regulatory interfaces for NUMO (who, how, when…)
- Overall coordination and control over planning R&D that impacts on the NUMO programme
- Alternatives to geological disposal, e.g. partitioning and transmutation, long-term surface storage, ...
- The number and types of repositories envisaged in Japan over the next century
- Constraints on repository operations such as retrievability, the performance confirmation period, monitoring requirements, requirements for institutional control; ...
- Waste transportation to the repository

Ideally, NUMO should be able to provide direct answers to any questions which might arise in such areas. As a minimum, however, it should be at least possible to identify an organisation in Japan with the responsibility for answering these questions.

A practical approach would be for NUMO to prepare appropriate position papers or guidance documents on these topics for its staff.

Process for repository siting/development

ITAC recognised that the structured approach to siting adopted by NUMO was reasonable given the external constraints involved. It was also acknowledged that many of the key issues which have caused problems in other national siting programmes have been identified as important by NUMO. Nevertheless, ITAC identified a number of points worthy of further consideration:

- The need for a detailed NUMO programme plan for the immediate future, de-coupled from FY constraints; this is necessary both for transparency reasons and also to help structure an optimised future programme
- The decision to opt for a volunteer siting process is of extreme importance and will generate great interest in Japan and abroad.
- NUMO should emphasise the volunteer nature of the siting process and definition of how it will work in practice; credibility might be gained by stating this confidently and making a virtue of it
- Similarly, emphasise the staged nature of the siting process and put more emphasis on the first stages
  - define stakeholders and their roles in decision process (e.g. who makes/influences which decisions and how)
  - define decision points and commitments based on these and consider options remaining at each decision point - including reversibility
  - explain how knowledge gained in previous stages is utilised

- specify what information is required for each decision: R&D, PA, EIA results
- have a clear position on number of sites planned at each stage
- ensure that documentation and content has detail appropriate to each stage

- Plan for the repository concept development to narrow down and evolve in parallel with siting stages (knowledge on nature of site, stakeholder requirements, maturity of programme…)
- Maintain as much flexibility as is appropriate to the range of sites and the resources available
  - nevertheless, be clear about options available for each potential site at each stage
- Clarify ALL permitting requirements for siting (nuclear and non-nuclear)
- Ensure technical review requirements are fully co-ordinated with the defined "co-existence plan"

Documentation for site solicitation

a) Structure

ITAC agreed with the basic content of the documentation proposed to support the site-solicitation process. It was felt, however, that an additional summary document might be useful. This would then give 3 documentation levels:

- Level 1 comprising a single integrating document which can be widely distributed during the solicitation stage (see (b) below)
- Level 2 as already proposed with RCC, SF (etc) as separate documents is OK, but it was emphasised that they need careful co-ordination. In detail, it was also noted that:
  - close link between SF and RCC is vital: this could be emphasised at Level 1
  - the "benefits" document should be wider than just financial (other positive social and economic aspects)
- Level 3 documents: these can, in principle, be left until later (they may be difficult to produce on the timescales stated and may not even be required at such times, but will be vital later)

If this structure is accepted, there is a need to decide who documentation at specific levels is aimed at:

- Level 1 to individuals?
- Level 2 to municipalities?
- Level 3 available on request?

b) Overview Document

This document could clearly present NUMO's main messages to all key stakeholders. Such messages could include:

- A solution is needed for Japan's HLW
- Geological disposal can be carried out safely in Japan
- Geological disposal has been chosen not only for Japan but also many other countries
- NUMO has been set up with the competence to site and build such a geological repository
- At least one site must be found: NUMO has already informed all communities in Japan
- NUMO has developed traceable criteria and procedures for a staged siting process
- These exclude some areas in Japan

- In the remainder NUMO will seek volunteer communities to become involved in the siting process
- NUMO will ensure safety by transparent and fully documented evaluation of potential sites
- What will happen if a municipality agrees to co-operate with NUMO is ...
  - It becomes a **partner** in the process, providing input and being involved in decisions at all stages (...if this is really what NUMO intends to do)
  - It will have complete freedom to withdraw at any stage until final decision is taken(...if this is the case, otherwise specificy conditions for withdrawal)
  - The stages are (… fill in details)
  - The first stage is….and it would commit it to…...(… fill in details)
  - Receive financial **and other** benefits, and assistance to allow you to participate fully

c) Concept Catalogue

With the currently proposed contents, the title "Concept Catalogue" is too narrow for the wide scope. If the suggestion for an overview document is accepted, it might be sensible to move general introductory sections for the RCC up to Level 1. In further developing the RCC, some points which could be considered include:

- Implications of the whole life cycle of repository development for host communities is not included yet (environmental, economic, social…….)
- Illustrations are very important :
  - think about what the message of each is & how to express it clearly
  - separate illustrations could realistically show what the surface facilities and activities (including site investigations), underground facilities and the associated geological environment could look like
  - illustrate examples of potential & feasible EBS designs
  - illustrate chosen examples (not matrix) of realistic geological environments of Japan where it would be feasible to build a repository and explain what the safety-relevant features are for each
  - explain how RCs & EBSs might be associated with each example
- Explain that Category II SFs can be quantified fully only after selection of a site and repository concept but do not overemphasise significance of any SF in RCC (e.g small groundwater movement)
- Probably best not to present PA for RCC, but instead explain the safety functions of each concept qualitatively - how the concept "works" and what its implications will be for SFs (Note: it is important to carry out PA in-house to explore each concept, but this is extremely difficult to present to a non-specialist audience and may often be difficult to present to many specialists!)
- Use international experience & concepts: not just H-12

If these points are accepted, the English name "Repository Concepts" would be more appropriate as the "catalogue" aspect is now de-emphasised.

d) Siting Factors

In general, ITAC considered that the NUMO guidelines for producing siting factors are good. In particular these avoid misinterpretation of looking for the "best"site. The tricky message to communicate is that NUMO is not looking for the "best site in Japan" but **will** look for best among PIAs, based on full range of Category II SFs. In this assessment, safety will be the over-riding factor. (ITAC could suggest appropriate wording for English language text). Further ITAC comments:

- Classification into three groups is good and reflects the Japanese law
- It may be useful to re-name categories (names instead of numbers), for example:
  - 1a: Immediate exclusion factors (national)
  - 1b: Possible exclusion factors (area specific)
  - 2: Evaluation factors (Siting Environment and Repository Concept specific)
  - when using category II, use "favourable" instead of "preferable" to describe good characteristics
- Site investigation programme should be clearly aimed at gathering data relevant to level of detail of SFs at each stage
- ITAC accepts the current imprecise nature of Evaluation (Category II Siting) Factors, but expects that they would be extended, defined and described comprehensively before PIAs are chosen (and increasingly afterwards), in particular:
  - current list is dominated by "geology": also needs to include feasibility, cost, transport, environmental & social impact, etc, etc
  - PA input will be needed to refine SFs at later stages
  - Expand "mineral resources" to "natural resources"(includes water, potential resources): current definition of "being worked…..etc" is not exclusive enough
- Exclusion factors must be quantified and justified before documents are produced (although these can be specified for a reference concept, allowing some flexibility to introduce alternative concepts for specific sites)
- Need to consider how and when to use reactor and other nuclear plant seismic risk criteria to check suitability for repository surface facilities (also seismic hazard regulations for mines??)
- ITAC supports proposed supporting work on tectonics/predictability

It was also felt important to have a technical review of "fitness for purpose" of exclusion factor data in the GIS and QA of data input. This could be overviewed by DTAC. It may be useful also to use international lists of SFs to check for completeness (NB ITAC has not seen a complete NUMO list, so cannot comment yet).

Supporting work programme 2002/3

During the next couple of years it will be crucial for NUMO to develop a company image nationally and publicise it - building stakeholder knowledge and confidence and establishing national leadership in the nuclear waste management field. Some requirements for this will be to:

- Develop in-house competence, tools and technical credibility
  - to respond to multiple applicant regions and work closely with many muncipialities
  - for site specific investigations of PIAs
  - train staff with no/little radwaste experience
  - consider technical workshops (like ITM) on other important issues (SFs; operational phase safety; performance confirmation, etc….)
- Establish formal and regular contacts to other stakeholders (utilities, regulatory authorities, ..)
- Develop Level 3 documents (HLW Repository in Japan, Technical basis of SFs , Overview of SA) and use them as a tool to develop a comprehensive R&D plan
- Integrate the NUMO R&D plan with those of other organisations (if possible!)

A particular technical recommendation was to develop an R&D portfolio and have it reviewed by DTAC/ITAC. Based on this, NUMO could:

- Begin scoping P.A. studies on repository concepts

- Develop multi-attribute approaches
- Establish a top-level QA system
- Develop site characterisation strategies and allocate responsibilities between NUMO and other organisations
- Think about how to publish work: (form of report series, language(s), etc.)

Other comments

An open question which remains is exactly how the existence and activities of I/DTAC will be publicised. The establishment of th two groups is a good example of NUMO's intent to have an open and transparent programme; publicising their existence in Japan and in the international "trade press" could emphasise this. This is something for NUMO to consider before the next ITAC. In the interim, as English language documentation is produced, it could be usefully distributed to ITAC; in particular:

- Information/translations of other Level 2 documents (instructions and benefits)
- Interim information from NSC on developing regulations?
- Other documents we know exists (e.g. JSCE report)
- Internal "transparency guidelines"

2nd ITAC Meeting (April10-12, 2002); suggested topics

Some items which could be considered for the agenda of the next meeting include:

- Review of feedback from NUMO on output of ITAC-1
- Review Siting Factors document (in depth)
- Review Repository Concepts document (former RCC)
- Review Level 1 Document (if agreed…..)
- Review R&D plan
- Review siting programme plan for 2002-3
- Schedule and advance programme for next 6 months (ITAC 3 & 4)

It was also considered that an overlap (joint session) with DTAC would be valuable. In this could be included short presentations from ITAC members on international programmes. An additional possibility would be short presentations from DTAC members on SFs.