

NUMO International Technical Advisory Committee**Short Record of the ITAC-7 Meeting
Tokyo, 20 – 22 April 2004****1 Introduction**

This short note summarises the main points discussed during ITAC-7 meeting. It is based very much on the presentation by C. McCombie in the final wrap-up session of this meeting and subsequent discussion.

2 General Remarks

The standard (style, presentation and content) of the NUMO presentations was extremely good and the level of preparation was greatly appreciated. Teams seem to be gaining useful experience and continue to work well together. The special focus of the meeting was review of the draft English-language "Level 3" documentation, which involved considerable input in their production from specific ITAC members. This work included definition of NUMO positions in a number of key issues.

It may be useful to consider structuring of future ITAC activities following NUMO completion of its solicitation documentation stage. A range of actions has been identified and is discussed further in Section 6 below.

The interpreters / communicators were again very valuable for key sessions and should also be included in the future.

3 Block 1: Development in NUMO Activities from last ITAC**3.1 Siting and PR**

Progress in solicitation of volunteers was summarised in the introduction by President K. Tomon. The international interest in NUMO's volunteering process has been considerable, which also increases the requirement for ITAC members to provide local updates to world-wide interested groups.

ITAC found the presentation by M. Kuba useful and interesting and was impressed by extent and content NUMO's PR work. The very large coverage of the population by the diversity of media used was particularly notable. It may be that the information activities can become more focused as volunteers come forward.

The consistent and attractive images used to catch attention were good and, in a nice way, introduced the idea of analogues. The associated calendar has also been widely distributed throughout Japan and internationally. ITAC noted that the term PR is less used now and alternatives are becoming more common (outreach, public involvement, dialogue, etc.).

The large effort in the Forum and Panel Discussion activities seemed to be worthwhile and well focused and structured – especially by the use of local opinion-formers. Building links with local newspapers seems particularly valuable. These discussions early identify some very important issues, which NUMO should develop a position on. Other points raised, such as the importance of listening and the communities feeling of contributing to solving a national problem, were recognised as being valid.

The opinion poll results reported were interesting and the increased association of HLW with geological disposal and recognition of NUMO's name points to success of the PR work. The detailed analysis of results to focus PR appears very professional. The low extent of knowledge about HLW disposal is probably common to all countries and this will be a major future challenge. The tracking of the movements in public opinion should continue with the use of a constant set of polling questions.

International experience with "volunteering" could possibly provide some interesting input in the analysis of difficulties in gaining acceptance. The role of face-to-face communication was emphasised – which could be particularly valuable.

Communication of the basic idea of geological disposal will be a long term PR task. NUMO seems to recognise this and is developing a wide range of material to support this work with involvement of their technical staff – although this interaction could be strengthened. In such a case, media and communication training of key technical staff could be useful. Comparison of international experience in this area could be a topic for more extensive discussion at a future ITAC meeting, including:

- Materials developed
- Practicality of building the links between technical and PR teams
- Involvement of technical staff "in the field".

3.2 Japanese Level-3 Documents

The publication and distribution process for the Japanese documents was outlined and sample copies were circulated. ITAC noted that the quality of production appeared to be high. Wide distribution using a range of media is good. The plan to combine Japanese and English report on a CD will need a clear emphasis of the differences in content of these reports (e.g. the Japanese report extends the Level 2 documents, reviews designs in different countries and shows details of repository implementation while the English reports for an international audience emphasise concepts for the special boundary conditions set by the volunteering process and Japanese geology). The planned "open

"forum discussion" in June will provide an effective method for publicising these documents and ITAC would be interested in resulting feedback.

3.3 Quality Management of Documentation

Congratulations were extended to NUMO for following ITAC recommendations in the implementation of a QA system. Document control is a good place to start a trial application, but the QMS must eventually encompass all activities. Some specific comments on experience so far on document control procedures:

- The problems experienced – picked up in what is effectively an internal audit - were presented very honestly and openly. Although often not acknowledged, such problems are common in other programmes (even ones with ISO certification)
- The proposed grading of reports appears to be useful, but needs to be done carefully (e.g. with clearly formulated guidelines)
- It is important to clearly define the process of responding to reviewers comments
- The check list could reduce formal detail and have more concentration on the process of review of technical content; maybe include responses on reviewers sheet
- To check external consistency, the specified reference NUMO information base will be useful; consistency checks need to also include internal consistency checks, especially for large multi-author reports
- The need for very good reviewers with the experience to assess large, multi-disciplinary reports may justify a special training programme (especially for Japanese language)
- For very big projects, a review monitor may be valuable to guide the entire process
- Integration with contractors QMS is important and may be a challenge (based on international experience).

4 Block 2: Related Meeting and R&D

4.1 International Tectonics Meeting

The work carried out in the last year was overviewed by H. Tsuchi in an entertaining and well-structured presentation. The presentation included a lot of technical content but most was not discussed in detail. In order to do a full review of the tectonics work, reports distributed in advance would be useful (and any past project documents). Nevertheless, this project appears to be of a very high standard and is also considered a good tool for establishing national and international credibility in an area that is critical for NUMO. It will provide direct input to guide the literature study of volunteer sites and it is therefore important that the work considers all state-of-the-art data analysis techniques.

Involvement of more Japanese experts is a good development – especially their involvement in field trips. Providing opportunities for some of these experts to widen their background in the nuclear waste business could be useful. A future possibility may be a joint ITAC / DTAC field trip.

Documentation of this work and publication of a few papers in major scientific journals is being planned; ITAC see this as important and it is strongly encouraged. A few NUMO reports on this topic would be good. At a future stage, an ITAC meeting with an extended session on this very important work is recommended. This should include an overview of all relevant work and plans for the future.

4.2 Repository Concept Workshops

The overview by H. Umeki provided a large amount of interesting information, emphasising the special challenges to NUMO RC development resulting from the adoption of an open volunteering process. The process of iterative development of Repository Design Options (RDO) seems reasonable. The efforts to provide background information with a particular emphasis on engineering practicality interfaces well with the recent NUMO-Posiva bentonite / cement interaction workshop. Considering conditions at a possible site requires close interaction with the site characterisation team; increased detail of RDO design will develop iteratively with the siting work. Special focus on operational practicality / safety is also sensible.

It was noted that the presentation was much wider than RC as such – and may be worth developing a more refined structure in the work by setting up further special topics such as site characterisation, performance assessment, etc. In terms of R&D planning, a formal requirements management system might help.

Documentation of the work to date (internal and external) and definition of long-term deliverable is strongly recommended by ITAC. At the very least, a structured internal report series is essential. ITAC was extremely interested in some of the issues raised and recommend review of the overall programme as a future ITAC action.

A useful discussion on costs took place; trying to estimate precisely absolute costs is not very sensible at this generic stage but there can be great advantages of developing an understanding of how design changes influence total project costs. Noting trade-offs in cost of R&D may be sensible to include.

Response to the NUMO question to ITAC on developing an R&D plan was limited by lack of a clear structure – or even record – of past and ongoing work. Working together to develop such a structure and use it could be a topic for a future ITAC meeting (see later).

4.3 Multi-Attribute Analysis (MAA)

H. Umeki reviewed the background and aims of this project and N. Chapman summarised the output from the FY'03 workshop which focused on exploring strengths and weaknesses of different RDOs. ITAC concluded that the basic principle was good: providing a valuable training exercise and an encouragement to thinking about how different designs might be viewed differently by different stakeholders.

MAA has been used for many purposes in different national programmes. ITAC emphasised the pros and cons of MAA – both for internal use and for external presentation. It was emphasised that the increase in transparency is more obvious for the participants than for external audiences. Any external publication on this topic must be very carefully considered, as the product must be of a very high standard to avoid the potential for causing confusion. Analyses of uncertainties must be included. It was noted that NUMO was also looking at other independent tools for examining uncertainty to support decision-making, which was encouraged.

It was emphasised that the exercise described was aimed at examining the use of the procedure (and a user-friendly tool) and NOT to actually compare these options. The use of the tool was demonstrated in real time. In terms of interpretation, it was emphasised that better input (more level treatment of well-known & novel options) and wider involvement is necessary. For serious use as a decision aid, experts in all aspects to be considered should be involved in choosing and scoring the attributes. At a top level, guidance of exercises by MAA experts can be valuable.

Extensive discussion focused on whether it really was possible to compare widely different concepts, but a key aspect was ensuring the bottom level of attributes is sufficient and that all associated uncertainties are included. Even if never used directly for making decisions, this process may yield useful improved understanding of these attributes which may help prioritise work.

5 Block 3: Discussion for Level-3 English Documents

Reports were considered to be good and fit for purpose in terms of scope, content and style. The reports are interesting and novel in terms of approach, scope and transparency—especially at this early stage of a programme. They will probably attract considerable international attention. Very extensive comments from the ITAC were discussed with a large degree of consensus. Areas of divergence of opinion were also discussed and resolved. Intensive involvement of NUMO in report production was noted to be important for report finalisation. A list of actions for finalisation has been prepared.

Intensive NUMO involvement will be needed to publish the reports on the very tight deadline proposed and an action list identifying the critical path was produced. Following publication, ITAC recommends wide distribution and can help identify key international audiences. Preparation of associated papers for conferences or journals was strongly recommended.

The details of the "open forum discussion" are of interest to ITAC and C. McCombie promised to report on it at the next meeting. It would be interesting if NUMO could summarise resultant feedback from participants.

6 Block 5: Wrap up and Future Actions

From a discussion of the presentations during this meeting, ITAC suggested a number of potential issues for future meetings / actions which could be carried out:

- Advising on the technical activities programme
 - ♦ Identification of priority topics
 - ♦ Structuring
- In-depth review of specific, high priority NUMO technical activities (including past, ongoing and planned projects):
 - ♦ Based on technical presentations from managers and scientific staff
 - ♦ Review of technical reports
 - ♦ Further key reports in the NUMO technical report series
 - ♦ Interaction with DTAC
 - ♦ Participation in "open forum discussion".

Potential topics for ITAC-8 could include:

- Overall NUMO technical activities programme and schedule
 - ♦ Repository development
 - ♦ Site characterisation methodology
 - ♦ Performance assessment methodology
 - ♦ Supporting R&D projects (full, specific content)
- Other relevant Japanese work
 - ♦ Contents and links to NUMO programme
- Structured Technical Report (TR) series: contents, topics
 - ♦ Site characterisation and R&D plan (promised)
 - ♦ Further NUMO and ITAC suggestions
- Full scope of tectonics work and how it is integrated with overall programme
- Site characterisation plans.

A programme should be established well in advance to allow preparations required by ITAC members.

For ITAC-8 dates 12 - 14 October 2004 were noted to be problematic and reserve dates were set as 30 November - 2 December 2004 and ITAC-9 was set for 5 - 7 April 2005.

In concluding both ITAC and NUMO considered that the meeting had again been valuable and thanked all the participants for their active input and the presenters for their considerable efforts. Before closing the meeting, President K. Tomon thanked ITAC for their support of ITAC's documentation efforts and presented C. McCombie copies of the Japanese Level 3 reports with his autograph.