



Department of Energy  
Washington, DC 20585

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JAN 25 1988

Mr. Jean-Pierre Olivier  
OECD Nuclear Energy Agency  
38 Boulevard Suchet  
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France

Dear Jean-Pierre:

Thank you for your preparation of the proposed RWMC statement "Appraisal of the Geological Disposal Concept." The statement expresses well the general consensus and plans for geologic disposal.

In response to your December 18, 1987 request for comments on the possible RWMC statement, enclosed are two types of comments: 1) those that request a change in wording to be reasonably consistent with the U.S. programs; and 2) those that are editorial in nature. USNRC may provide separate comments.

In general we are pleased with the statement. However, it should have minor modification before it is reviewed by the RWMC for inclusion in the In-situ report.

I'll be interested in the results of your discussion with the RWMC Bureau. Perhaps we can discuss the statement further while we are together in Vienna.

Best Regards,

Carl R. Cooley

Enclosure

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## COMMENTS ON "APPRAISAL OF THE GEOLOGICAL DISPOSAL CONCEPT"

## 1. For Consistency with U.S. Programs

- Can we use some other word than research? i.e. testing, investigations, development etc. [Reason: We consider the state of development of repositories beyond the research stage.]
- page 1, third paragraph, first sentence -- change to read "The objective of geological disposal is to provide a reasonable assurance that the public and the environment will be adequately protected from the potential risks of radioactivity by long term isolation of radioactive wastes from the human environment such that future releases will be below protection standards. [Reason: we consider that reliance on time for reduction of radioactivity is insufficient alone.]
- page 1, third paragraph, second sentence -- change to read, "This can be achieved by designing multi-component systems, where the waste package, the repository and the geology and geohydrology provide multiple barriers to radionuclide release and transport." [Reason: waste package is considered a barrier and the use of the term geohydrology emphasizes the importance of hydrology in considering barriers.]
- page 1, third paragraph, last sentence -- change to read, "The emplacement of packaged waste in stable, low-permeable rock can ensure that the waste will remain undisturbed and isolated such that potential concentrations of radionuclides if released will remain at negligible levels. [Reason: same as above.]
- page 1, fourth paragraph, second sentence -- change to read, "It is not necessary ... geologic isolation." Add a third sentence which reads, "Several factors including: the long term stability of the rock, sufficient depth in the rock for long term isolation, sufficient impreamability of the rock and lack of mineral worth of the rock, all decrease the likelihood of inadvertent intrusion in the future." [Reason: depth and mineral worth are two additional important factors.]
- page 1, fourth paragraph, next to last sentence -- change to read, "In practice, underground geologic site coupled with suitable repository design features can reduce the risks associated with this phenomena. [Reason: statement too optimistic.]

- page 2, fifth paragraph, third sentence -- change to read, "This can be approached..." [Reason: validation may not be completely achievable.]
- page 3, fourth paragraph, first sentence -- change the first sentence to read, "The RWMC notes that, with increasing emphasis being placed on field and in-situ testing methods and the conduct of more site-specific activities, the characterization activities and the criteria for selection of the site for a repository become important issues. These issues involve .." [Reason: we are not using the concept that demonstrations are required before we construct a repository.]
- page 3, fifth paragraph, third sentence -- change to read, "Clearly, the technical factors, the socio-economic factors and the political characteristics related to a site must be considered together." [Reason: it is inappropriate to balance safety against the resources available.]
- page 4, second paragraph, first sentence -- change to read, "The RWMC notes that potentially suitable sites are available in a number of countries in several types of host rocks." [Reason: determination that sites are suitable cannot be made until detailed characterization of the site is completed.]

## 2. Editorial Comments

We do not find it clear whether the RWMC statement is for all geologic disposal or for just spent fuel and/or high-level waste. It seems that the concept of the depth with isolation needs to be linked more clearly in the statement.

On page 2 and 3 are listed four main ways. It seems that some reordering of the paragraphs may be appropriate, e.g. the fourth perhaps should be first to emphasis the data for use in performance assessment.

The statement does not acknowledge the reliance on geochemistry as a barrier. What is the international position on this? If we do intend to rely on geochemistry, e.g. to control solubility, then it should be mentioned.

On page 4, Concluding Remarks, second sentence -- change to read, " This option appears ...actively pursued to further contribute to the timely implementation of the concept of geologic disposal." [Reason: it is better to avoid the use of demonstration because of the uncertainty on what needs to be demonstrated.]