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Mr. Hubert J. Miller, Chief Repository Project Branch Division of Waste Management United States Nuclear Regulatory Commission Washington, D.C. 20555

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Dear Mr. Miller:

The Office of Civilian Radioactive Waste Management wishes to respond to the Commission's call for comments on the draft Issue-Oriented Site Technical Positions (ISTPs) as announced in the <u>Federal Register</u> (49 FR 45278) on November 15, 1984. DOE staff, both at headquarters and at our field project Offices, have reviewed the subject documents. At this time, we wish to provide our general comments and, with the Commission's agreement, we shall provide more specific comments by the end of February, 1985.

To begin, we note that the NRC staff has compiled a comprehensive set of repository siting issues in each of five disciplines: geology/geophysics, hydrology, geochemistry, repository design/rock mechanics and waste package. "These issues are largely repeated for each of the five geologic settings which have been identified as potential repository sites. Considerable effort was obviously expended in developing the draft ISTPs. However, in light of our review, we are compelled to recommend that the NRC staff not proceed with finalization of these technical positions in their present form.

In the <u>Purpose</u> section of each draft ISTP, the NRC staff gives three reasons for the development of the ISTPs. We believe those reasons correctly state the need for the ISTPs. We also believe the ISTPs as now constituted do not satisfy those intended purposes. The following paragraphs present what we consider to be generic problems with respect to the three reasons on which the ISTPs were based.

<u>Reason 1</u>: "The issues presented will serve as a set of benchmarks against which the NRC staff can independently review the relevance and completeness of issues identified by DOE in the Site Characterization Plans (SCPs)."

We welcome the idea of creating benchmarks by which to measure the relevance and completeness of the SCPs. However, the development of such benchmarks, well in advance of the SCPs themselves, seems premature. The issues presented in all five draft ISTPs are very similar and very generic; site specific issues are rarely identified. Without such site specific issues, we doubt



that the ISTPs can serve as accurate benchmarks against which to measure the SCPs. To assure their own completeness and relevance, we believe that the ISTPs must be tailored to the sites chosen for characterization, within an overall logical framework.

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Gearing the ISTPs to the recommended sites would allow the establishment of issues that reflect actual conditions. Such benchmark issues would have far greater utility than a listing of every plausible question that can be asked under a given disciplinary heading. Furthermore, the development of three site-specific ISTPs strikes us as more cost effective than the present five, largely generic, ISTPs.

<u>Reason 2:</u> "The issues provide a systematic structure for staff guidance to DOE and for tracking the progress toward addressing staff concerns about licensing issues throughout the site characterization process. The intent is to establish a tracking system which ties together all of the various documents that are pertinent to a given issue."

A system which tracks progress towards addressing siting issues seems a reasonable approach to handling the complex process of repository licensing. However, in order for such a system to function properly, the issues being tracked must be relevant and complete. We have already expressed our concern over the specificity of the draft ISTPs, which in turn affects their relevance and completeness.

NRC staff guidance on those issues critical to licensing would be invaluable to the DOE in devising and executing the SCPs. Unfortunately, in their present form, the ISTPs provide scant guidance; they constitute little more than a convenient itemized checklist.

As presently structured, the ISTPs rank every issue equally within the hierarchy. Issue priorities are not specified, either for different issues at the same site or for the same issue at different sites. We have no indication whether, for example, the effects of geologic discontinities on ground water flow are considered more important than the effects of changes in geomorphic rates and processes. Site characterization will not be an open-ended process; available resources in time and funds will be finite. DOE must allocate its resources such that critical site-specific licensing issues receive the greatest emphasis during characterization. The NRC staff could assist this allocation by identifying and ranking the most important licensing issues.

Another area of site characterization in which the ISTPs could provide useful guidance concerns the level of certainty needed to resolve each issue. Many issues cannot be resolved in an absolute sense. That is, the solutions to some issues will always have a degree of uncertainty associated with them. Any issue dealing with future effects, for instance, will require use of a predictive model; that model will contain theoretical approximations to complex real world conditions; of necessity the data base applied to the model will be

incomplete in time and space. These factors contribute to an overall uncertainty in the model's results and, hence, the resolution of the issue. The NRC staff could lend valuable assistance to DOE by providing guidance as to the acceptable level of certainty needed to resolve critical licensing issues. Additional guidance on the adequacy of data bases (e.g., How much is enough?) would also be helpful.

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<u>Reason 3</u>: "Finally, the issues provide a systematic and logical framework for NRC staff to organize the ultimate task of assessing geologic repository performance and compliance with criteria of 10 CFR Part 60."

There appears to be a gap in the logic used to develop the issue hierarchy. The <u>Development of Issues</u> section presents a rationale to identify issues based on the performance objectives of 10 CFR Part 60. This approach has merit, and, in fact, parallels the approach planned by the DOE project offices in formulating their SCPs. However, the sections on <u>Draft Site Issues</u> present technical questions by topical area, without apparent connection to the previously described, performance-based hierarchy. Reference is made to relating issues at different levels in the hierarchy by "technical reasoning" without further explanation. In the absence of such explanation, the logic of the ISTP framework is open to question. Nor are we assured that the issues raised in the lower echelons of the hierarchy are complete or relevent.

Adopting an issue structure based on technical disciplines rather than performance objectives has led to the development of "issues" that aren't really issues but simply information needs. In order to avoid confusion, especially during the licensing process, we suggest that the NRC staff distinguish the information needed to resolve issues from the issues themselves.

Categorization of issues by discipline implies that the NRC staff will evaluate the SCPs and, ultimately, the License Application by discipline as well. This approach may result in over emphasis of system component performance at the expense of total system performance. We are concerned that concentrating on individual components could lead to an untoward bias in evaluating the overall ability of a complete repository system to handle, store and isolate wastes.

In light of these general comments, we suggest that the NRC staff substantially revise the draft ISTPs. The basic concept of identifying site issues which must be satisfied to license a repository has merit and should be pursued. But those issues should be meaningful and complete, and each should be traceable to a regulatory requirement. Only then will the ISTPs properly serve the interests of NRC, DOE, and the public at large during site characterization and licensing.

As noted earlier, we shall provide more detailed comments on each of the ISTPs by the end of February. If you wish, Mr. Ralph Stein, Acting Director of the , ,

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Engineering and Licensing Division, is available to coordinate a meeting of our staffs for this purpose. Thank you for the opportunity to comment on the draft documents.

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Sincerely, Den

William J. Purcell Associate Director for Geologic Repositories Office of Civilian Radioactive Waste Management