Department of Energy
National Waste Terminal
Storage Program Office
505 King Avenue
Columbus, Ohio 43201

September 28, 1983

Hubert Miller, Chief
Nuclear Regulatory Commission
7915 Eastern Avenue
Silver Spring, MD 20910

Dear Mr. Miller:

SUBJECT: COMMENTS ON NRC DRAFT STAFF POSITION PAPERS

The enclosed ONWI comments on two of the draft staff position papers you provided us at our June meeting question the value of commenting on papers at such an early stage of development. We rely upon the judgment of your staff to determine the appropriate stage of development of a position paper for productive review. We would appreciate your considering requesting DOE's review at a more complete stage of development and through the DOE-HQ office so that all NWTS projects have the opportunity to comment.

Sincerely,

J. O. Neff

J. O. Neff
Program Manager
NWTS Program Office

ST# 555-83

NPO:LAC:9865A

Enclosure
September 1983 letter to J. Neff from S. Goldsmith, Comments on NRC Draft Staff Position Papers.

cc with enclosure:
W. Bennett, DOE-HQ
D. Vieth, DOE-NV
L. Olsen, DOE-RL
R. Johnson, NRC

ONWI
Office of Nuclear Waste Isolation

BATTELLE Project Management Division
505 King Avenue
Columbus, Ohio 43201

September 14, 1983

J. O. Neff, Program Manager, NPO

COMMENTS ON NRC DRAFT STAFF POSITION PAPERS

As requested by NPO, we are providing comments on the following draft NRC position papers developed by the NRC to provide their perspective to the activities that will be necessary during pre-licensing (i.e., Detailed Site Characterization) work.

- STAFF TECHNICAL POSITION ON CONCEPTUAL DESIGN INFORMATION REQUIREMENTS - June 22, 1983 - Draft
- STAFF POSITION PAPER - IDENTIFICATION OF SPECIFIC LICENSING INFORMATION NEEDS - June 22, 1983 - Draft

Both position papers are in very early draft form and are therefore incomplete and not readily amenable to detailed review at this time.

1. Staff Technical Position on Conceptual Design Information Requirements

   It is stated in the opening paragraph of the paper that 'This staff position addresses the question of (a) what kinds of information and (b) what the level of detail of information about repository conceptual design is necessary and sufficient to assure that all licensing information requirements have been identified and the right kinds of quantity of testing are planned' during site characterization. The position paper itself is a first draft, less than three (3) pages in length and is little more than an outline. It is incomplete in that Attachment I, which is stated to list specific information needs, has apparently not yet been generated. The paper contains many parenthetical inserts where additional and more quantitative descriptions are to be added.

   The draft position is that information on the conceptual design must be provided in sufficient detail in the SCP to permit a determination relative to the completeness and relevancy of planned site characterization activities and that licensing information requirements have been identified. It is also pointed out that the conceptual design must allow for current uncertainties concerning site parameters or other factors which will determine performance of the repository. That is, the conceptual design must allow for a reasonable bounding of conditions, where there is uncertainty.

9 SEP 83 2:50

WBS #1.5.1

The position makes the point that, with respect to the performance of engineered components of the repository system, interim performance requirements should be established during the conceptual design stage. Such performance requirements should be specified in quantitative terms that can be related to the numerical performance objectives of 10 CFR 60. It also points out that testing needs are dependent on the reliability required in performance assessment.

This brief paper concludes by pointing out that determination of what specific information will be needed must be made on a case-by-case, site specific, basis. It is stated that examples of these specific details can be found in the BWIP DSCA.

Overall, this position paper is of limited content and provides no quantitative guidance for required submissions. In its present form, it only projects the philosophy that the kind of information and level of detail must be sufficient for the NRC to make a ruling at time of licensing. This is not quantitatively definitive. DOE should request the opportunity to review and comment on this position when the draft is more complete. Unwarranted extensions of the intent of the site characterization process and needs are, in our opinion, a definite possibility based on the current incomplete draft and future revisions must be carefully evaluated with this concern in mind.

2. Staff Position Paper - Identification of Specific Licensing Information Needs

The introduction to the paper consists of the following three paragraphs: 'This paper generally describes the approach to licensing of high-level waste (HLW) repositories that has been adopted by the U. S. Nuclear Regulatory Commission (NRC). It summarizes the activities of the NRC staff prior to the initiation of formal licensing proceedings for construction authorization. These activities are aimed at establishing what must be contained in the license application. Therefore, they also are intended to establish what must be achieved by U. S. Department of Energy (DOE) investigations during the site characterization period at sites being considered for disposal of HLW.

Principally, this paper focuses on the process the NRC staff has chosen for establishing specifically how much site characterization work is needed and enough. In other words, this paper addresses the practical question of how many of what kind of tests and analyses are needed and sufficient to support licensing findings. It describes the specific process by which DOE can obtain detailed guidance they can use in determining what resources should be allocated for investigating each distinct aspect of the repository system. The process provides a mechanism for dealing with the competing demands for limited resources available for site characterization activities.

The alternative approaches which were considered for resolving the above questions are discussed, and the systematic, iterative process chosen is described. Finally, the level of NRC involvement with DOE site characterization activities is discussed'.

Following this introduction, the paper gives a general but brief description of the NRC's approach to licensing and outlines, in a limited fashion, the associated information needs. It is clear from this paper that the NRC encourages early dialog with the applicant, desires access to available information, wants all uncertainties fully discussed, and places the burden for identification of performance requirements and information needs on the applicant.

In reading the paper, it is not clear that NRC has a solution to the question of resource allocation. Instead, the staff merely states emphatically that the problem must be resolved before any finding on reasonable assurance can be supported. Two approaches, however, are described. The prescriptive approach involves the NRC staff specifying, before site characterization, how much of what type of information is needed and the level of acceptable uncertainty (reliability) that must be achieved in the measurements. DOE would then be free to select the methods of measurement and analysis. This approach is described briefly and immediately discounted as being inappropriate because needed program flexibility is not accommodated, requirements based on high degrees of uncertainty are not meaningful, and the approach itself would be confusing to the licensing process. The second alternative, which the NRC evidently endorses, is the approach of utilizing a systematic, iterative process to determine what information is required; i.e., what must be accomplished in the site characterization program. This process was described in the BWIP DSCA. In this process, the DOE will take the lead in identifying the specific information that will be required to assess performance of the repository system. Specific data needs can be identified from consideration of the performance assessment methods, particularly the input parameters needed by the models. NRC states, that by considering specific assessment methods in a systematic way, together with sensitivity studies and expert judgement, the relative importance of information needs can be established. It is recognized that these needs will vary or become more specific as the investigations proceed. NRC places emphasis on quantitative sensitivity studies in identifying information needs. These studies should be conducted early in the programs in order to force a strong focus on areas of greatest uncertainty. NRC sees its role in this process as one of conducting selective and independent assessments concurrently with the DOE. This will enable selective and independent evaluations.

In summary, the systematic, iterative process involves identification by the DOE of the specific information needed for performance assessment with sensitivity analyses conducted to identify those areas of

most uncertainty and the effective application of available resources to these areas. In parallel, the NRC will conduct its own analyses and make independent evaluations.

In general, this paper acknowledges NRC's concern that the right information with an appropriate depth of detail be obtained but the DOE should determine what that is. Quantitatively the position does not give much guidance to DOE. The strongest point made in the position paper is that sensitivity analyses should be conducted throughout all phases of the program in order to identify where uncertainties which have an effect on performance exist and that the DOE should then direct its resources to those areas.

Please contact R. W. Klingensmith or M. A. Glora of my staff regarding this matter.

Stanley Goldsmith
Manager

SG/RWK:jem

In triplicate