

CNWRA/IWP PROJECT PLAN COM MM

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DEC 23 1988

MEMORANDUM FOR: Mary H. Mace, Contracting Officer  
Division of Contracts and Property  
Management, ARM

FROM: Joseph O. Bunting, Chief  
Engineering Branch  
CNWRA Program Manager  
Division of High-Level Waste  
Management, NMSS

SUBJECT: Comments on CNWRA Project Plan for Integrated Waste  
Package Experiments (Tuff) submitted September, 1988

Please provide full contractual authorization to the CNWRA to perform work on the Integrated Waste Package Experiments (Tuff) Project Plan subject to the comments provided below. The CNWRA should be directed to submit a revised project plan to NRC on January 13, 1989.

It would be desirable for the Center to outline the criteria which will be used to define the parameters on which the statistically designed work plan will be designed. It is understood that a full matrix design will be used to implement the scoping experiments and that the results of those experiments will be used in setting up the final statistically designed work plan. It should be kept in mind that a sound method of controlling expenditures is to minimize duplication of work the NRC is or has sponsored elsewhere (e.g., NIST's work on microbially-accelerated corrosion).

Work on electrochemical characterization of materials has been carried out by DOE using J13 water and this work is being confirmed and evaluated by Cortest Columbus. We recognize that the Center's plan to conduct tests in environments that have ranges of compositions calculated to be more representative of those present in the unsaturated zone is a departure from NRC's current program. It is, therefore, particularly important that the work being planned by the Center clearly be defined in the experiment design and that the effects of using these calculated solution compositions be fully documented in test reports. It would be advisable to run a small number of samples in J13 water to demonstrate the comparability of apparatus among the various laboratories concerned.

The issue of the use of Hastelloy C-22 as proposed by the Center for this project was raised at the WMRG meeting on December 9, 1988. The decision was reached that the work should proceed as proposed by the CNWRA. The Center should be informed of this decision.

The WMRG also suggested that provisions be made for a peer review. It is suggested that the technical aspects of this project's proposed approach be reviewed within three months of initiation of this work. The Center should develop a plan for conducting the peer review of their technical approach and submit the plan for comment by January 20. The plan should define the scope, process and schedule for the review, the criteria and sources for selection of the reviewers, and a list of candidate reviewers. The final selection of the reviewers will be made by the CNWRA.

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Although the likelihood is low that DOE will choose 304L stainless steel as the material from which the waste containers will be fabricated, it is still officially part of DOE's test matrix according to their 1988 Consultation Draft Site Characterization Plan. Therefore, it is essential that 304L stainless steel samples form at least some part of all portions of the test program until such time as DOE officially drops this from candidacy.

The importance of the sequence and timing of development of corrosion products on the various alloys under consideration deserves careful consideration. ASTM tests for corrosion as well as for materials and characteristics are internationally recognized. However, as is discussed in the Project Plan, these tests were not designed for the project at hand. Therefore, more fundamental data (such as sequence and rates of corrosion types and products) need to be gathered to permit development of reliable models of corrosion of the candidate materials under repository conditions. Our discussions on November 17, 1988 confirmed the agreement that the investigation of the corrosion products types, and extent and sequence of development may be of great importance in developing corrosion models for some of the materials under consideration.

The contractor should be advised that there is no contractual restriction which would prevent an SWRI employee from being designated as the principal investigator for this project.

Adequate and timely reports are of great importance to this project. As called for in the Center's contract with NRC, brief summary reports on the progress of this project should be included every 4 weeks in the overall Center management report. To streamline the overall project reporting I suggest that quarterly technical reports, containing detailed progress on all tasks would reduce what appears to be an overabundance of task specific intermediate reports. Every fourth quarterly should be an annual report suitable for publication as a NUREG/CR. Further, upon completion of a suitable portion of these investigations, topical reports should be submitted to NRC/RES for publication NUREG/CRs. This approach would utilize quarterly progress in place of intermediate status reports and should result in a more efficient, less time consuming reporting.

Travel expenses, as mentioned in the June, 1988 communication on this project, should be carefully controlled. It is not expected that monthly travel would be required by Center personnel to fulfill the needs of this Project in FY89. If the Center agrees, the new figures should be included in the revised plan. If the Center disagrees, a justification statement should be provided. The FY90 and 91 travel levels for travel appear reasonable.

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