

POLICY ISSUE

SECY-88-293

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October 14, 1988

(Information) The Commissioners

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From: Victor Stello, Jr. Executive Director for Operations

Subject: CENTER FOR NUCLEAR WASTE REGULATORY ANALYSES (CNWRA OR THE CENTER) ACCOMPLISHMENTS AND PLANNED ACTIVITIES

Purpose: To respond to Staff Requirements Memorandum (SRM) M880815, dated August 24, 1988, requiring an information paper summarizing the Center's planned activities for the coming year and accomplishments to date.

Summary: During the first year, the Center has met or exceeded the milestones in the contract. By the end of the second year, the Center should be ahead of the original three year phase-in projection with regard to its ability to provide necessary technical support to the staff.

Background: The contract establishing the Center at Southwest Research Institute (SwRI) in San Antonio, Texas, was placed on October 15, 1987. On October 21, 1987, the staff briefed the Commission regarding the planned start-up of the Center. As noted during this briefing, the staff envisioned a threeyear phase-in plan for the development of the Center's technical capability and the corresponding phase out of essentially all other contractors providing assistance to the staff. On August 15, 1988, the executives of the Center and the Office of Nuclear Material Safety and Safeguards (NMSS) staff briefed the Commission on activities in planning and in hiring and preparing staff to provide necessary technical support to the U.S. Nuclear Regulatory Commission's (NRC's) High-Level Waste Program, as described in the Five Year Plan.

Discussion: Year 1, the startup and planning activities of the Center were to be emphasized. The Center was required to:

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- address the physical aspects of implementing the Center (e.g., establish facilities and an effective organizational structure identifying roles, responsibilities, and applicable management and control techniques);
- develop technical and analytical capabilities including the initiation of a research program; and
- begin the development of the Program Architecture. (The Program Architecture is defined as a systematic analysis of the entire high-level waste management system (per the Nuclear Waste Policy Amendments Act (NWPAA)), including at-reactor storage, any interim storage such as monitored retrievable storage, defense and commercial high-level waste programs, and transportation, as well as the repository. It covers the entire life cycle of the regulatory program, from pre-license arplication through construction, operation and closure.)

It should be noted that our strategy for dealing with both reactive work (e.g., reviewing DOE's Mission Plan Amendments, Project Descriptive Summaries, Site Characterization Plan and Study Plans) and proactive work (e.g., rulemaking) is to have the NRC staff do the work. Outside assistance is obtained only in cases where necessary expertise is not available within the NRC staff. During the Center's phase-in period, the staff plans to use the Center only when the remaining existing contractors do not have the necessary technical expertise, or the existing contractors have been phased out.

Specific accomplishments for the Center's first year of operation include:

 Permanent office facilities in San Antonio, Texas, and Arlington, Virginia were established. These facilities will accommodate planned growth of the core Center staff through 1990. A mainframe computer has also been provided by the Center.* Additional

*To ensure the Center's computer hardware and software acquisition will be compatible with NRC's and eventually with the Licensing Support System (LSS), a group consisting of NRC and Center representatives has been established. The coordinating group consists of the same NRC representatives who are supporting the ongoing work which will lead to the LSS. The Commissioners

physical aspects of establishing the Center were discussed in SECY-88-9F

- An 11-person management team competent in the earth science and engineering disciplines applicable to deep geologic disposal of high-level waste has been hired.
- The Center prepared detailed "Operations Plans" which defined the specific deliverables (e.g., Center QA Plan), costs and schedules for Years 1 and 2.
- A large number of management and administrative procedures have been developed and implemented.
- 5. The hiring of additional technical staff has begun. As of September 21, 1988, the Center has on board or committed nine additional technical core staff. Five more full-time equivalent units for Year 1 are supplied by SwRI staff, consultants and three subcontractors.*
- An NRC approved Quality Assurance Manual has been developed and is being implemented.
- 7. The Center has begun four research projects in the following areas: (1) long-term degradation of waste package materials; (2) seismic effects on underground repository structures; (3) geochemistry aspects of radionuclide transport in the repository geologic environment; and (4) characteristics of thermohydrologic phenomena on repository and waste-package scales in unsaturated geologic media.
- 8. A three-year transportation risk study was initiated.
- 9. A computer code and the technology related to a code, which were previously developed by an NRC contractor, were transferred to the Center. This code (CONVO), which is used to assist in assessing material performance, is now up and running on the Center's computer and is undergoing modification and further development by the Center. This has eliminated the need for further use by NRC of the contractor who developed the code.

*To ensure all employees, consultants, and subcontractors of CNWRA present no conflict of interest problems, specific provisions have been included in the contract. In addition, the Center has developed and implemented written procedures to address conflict of interest concerns. These procedures have been reviewed by the Office of the General Counsel (OGC) and found to be adequate.

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- 10. The Center completed the preliminary design of the Program Architecture, and developed and demonstrated a computer software support system to store and process the data developed by the Program Architecture.
- A number of miscellaneous deliverables were also prepared (e.g., three special studiet: Analyses of NWPAA; Possible Conflict of Interest in using the BOM or USGS in the technical evaluation of the Natural Resources Regulatory Requirement; and State of Knowledge in Waste Confidence).

These accomplishments meet or exceed the milestones in the contract.

During the second year, the Center is expected to:

- Continue the development of its technical and analytical capabilities, including planning activities and the hiring of additional technical staff. New hires are planned to increase total staffing from 26 to about 41.
- 2. Deliver, by December 1988, that portion of the Program Architecture related to siting the repository. This deliverable will provide proactive support to the staff on four of the nine potential rulemakings identified in SECY-88-227 to resolve regulatory uncertainties. Following completion of this deliverable, the Center will begin the development of the remainder of the Program Architecture. This will include proactive support to the remaining rulemakings and the License Application Format and Content Regulatory Guide. By the end of 1989, the overall Program Architecture will be developed to the point that it can be baselined.
- Provide technical support to the staff in developing Technical Positions and assessment capability (e.g., preclosure performance assessment strategy).
- 4. Provide technical support to the staff in the reactive area by recommending regulatory requirements that should receive priority attention during NRC's review of DOE's site characterization program.

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Assistance will also be given in reviewing DOE's SCP, resolving technical concerns raised in NRC's comments on DOE's consultative draft Site Characterization Plan (such as those raised regarding the exploratory shaft), and assisting in quality assurance audits. The level of both proactive and reactive support increases throughout the second year, consistent with NRC staff's ongoing effort to phase out other contracts as quickly as practicable. In this regard, only two of the fifteen technical assistance contracts that were in place at the start of the Center's contract are being funded out of the FY89 budget.

- Continue the four research projects which were begun in Year 1. In addition, research intends to start two new projects late in the fiscal year dealing with flow and transport in unsaturated geologic media.
- 6. Complete an integrated research plan which is a deliverable from the Program Architecture development. This will recommend research the Center as identified as necessary to reduce any significant techncial uncertainties which have been identified during the course of the Program Architecture development. The Center's recommendations will be factored into additional findings on research needs which may evolve from the NRC staff's own development of its performance assessment capabilities.
- Continue the transportation risk study which was initiated in Year 1.

If these expectations are met, the Center will be ahead of the original three-year phase-in plan with regard to its ability to provide necessary technical support to the staff.

This title

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