

4.0 CONTRACT METHODOLOGY

Between 2000 and 2010, various new activities will be contracted and some current activities may continue. Contractors possessing different areas of expertise than those currently on board may be required to support new activities. The site characterization phase at the Yucca Mountain site is coming to a close, and if the site is found suitable and is approved and licensed, the OCRWM Program activities at Yucca Mountain will shift from a focus on science and design to a focus on construction and operations. The OCRWM Program Business Plan will address this changing focus. Primary activities at Yucca Mountain from now through 2010 will include design activities; licensing activities; Total System Performance Assessment; procurement; construction and fabrication; testing and site data; operations and maintenance; environment, safety, and health; training; and project services.

The Office of Acceptance, Transportation, and Integration will concentrate its efforts on planning for transportation services and activities and continued development of Standard Contracts to allow finalization of the schedules and procedures that will affect the transfer of spent nuclear fuel to the federal government. The Program Management Center will continue to conduct such major activities as coordinating Program-wide strategic and contingency planning, including developing revisions to OCRWM's Program Plan; developing and submitting OCRWM's annual reports to Congress; developing and submitting the Program's audited financial statements; conducting and publishing fee adequacy analyses; submitting annual budgets; and conducting financial audits of all Program participant organizations.

The government is committed to developing more innovative and competitive approaches to the procurement process. Each of the four major activities described in Section 2.1.1 may be contracted separately or combined in appropriate combinations, such as design/construction or construction/operations. The existing M&O contract could be extended in part or in total. Alternatively, a multiphase, long-term contract could be executed. This contract would evolve over time to cover the major Program activities.

The following sections discuss possible acquisition scenarios and potential issues that may be encountered during acquisition planning.

4.1 CONTRACT APPROACH

The current M&O contract expires in February 2001, and OCRWM is considering implementing alternative contracting methodologies. The Office of Management and Budget has asserted that competition and use of a performance-based service contract pilot for DOE is their preferred method for meeting the continuing Program requirements for contractor support. Given the government's policy and the inherent benefits of competition within the marketplace, competition will be the preferred acquisition method used for the major contracted activities discussed in this Program Business Plan. Due to the complexities of this major national program, any contractor will be required to have exceptional capabilities in management, planning, and integration. In addition, the OCRWM Program has developed an integrated safety management process based on surveys and benchmarks from other DOE and industry practices. Safety Management Plans are an integral part of planning work and are integrated into work

performance. All personnel and organizations working for the OCRWM Program must accept and implement the integrated safety management culture and blend it into their lowest-level work instructions.

In reviewing the work to be accomplished, a possible initial acquisition strategy may include acquiring a contractor with such core competencies as successful licensing experience and successful nuclear project/operations management capabilities. The primary activity could include design/licensing and construction preparation. The contract period of performance could run for five years with a five-year option. It is anticipated that the design/licensing contractor could have or would acquire a major subcontractor experienced in large nuclear and/or civil construction projects for construction or construction management support. The construction or construction management subcontract could overlap portions of the period of performance for the design/licensing contractor and would have the flexibility of beginning at any point in time and being reassigned to DOE or a DOE-designated contractor. The design/licensing-contracted activities could be initiated in the fall of 2000 with a transition period that would extend to February 11, 2001. By the beginning of transition in late Fiscal Year 2000, drafts of all technical documentation for Site Recommendation and License Application should be completed. Transition in late Fiscal Year 2000 would allow the design/licensing contractor to become familiar with the draft technical documentation, participate in near- and long-term planning activities, and review the design. In the near future, it may be necessary to have a major construction or construction management subcontractor provide constructibility reviews, initiate procurement of long-lead construction items, and develop integration and implementation plans for a significant construction activity in March 2005. DOE will determine at a later date whether the design/licensing contractor will subcontract for the construction or construction management contract or whether it will be a DOE prime contract.

A second major contracted activity could be initiated as early as 2006 or as late as 2008. As with the design/licensing-contracted activity, this could be a five-year contract with up to a five-year option. The primary focus of this contract would be on repository operations and, beginning in 2010, regulatory compliance. The operating contractor could be in place as early as 2006 to assist DOE (the licensee applicant) in developing preoperability testing procedures; conducting preoperability testing of structures, systems, and components important to safety; assisting in finalizing technical specifications and operation procedures; and establishing a personnel training and certification program.

A third major contracting activity could focus on transportation. As presented in the drafts request for proposal [Reference 6], the time frame for this procurement ties in with the anticipated schedule discussed above.

There are many smaller activities going on during this period, such as performance assessment, performance confirmation, testing at the site, and site services. It is anticipated that the first major contracted activity initiated will include all of these types of activities. Additionally, it is anticipated that the responsible contractor will acquire these activities using the most prudent, cost-effective approach. While Bechtel Nevada (the Nevada Operations Office management and operating contractor) currently performs many site services, it may be more prudent by Fiscal Year 2003 to acquire these services from other independent contractors. Contractual decisions will be made with a focus on serving the best interest of the government. For example, it is

anticipated that most of the construction activities and site services can be performed utilizing firm-fixed-price contracts.

While there are several options available for combining the major contracted activities, the above scenario was developed based on the fact that DOE will be the licensee and a limited number of federal staff will be available to oversee and direct contractor activities.

4.2 STATEMENTS FOR CONSIDERATION

This section presents areas that OCRWM will continue to evaluate as the Program continues to mature. The path forward will require careful consideration of multiple variables, some of which will not be fully known until DOE is in the licensing process.

4.2.1 Design

If there is a change in architect-engineering firms for the repository prior to submittal of the License Application and subsequent receipt of a Construction Authorization, a number of considerations must be addressed to minimize potentially deleterious effects on the Yucca Mountain Site Characterization Project and its schedule.

In the 1980s, a number of qualified architect-engineering firms were engaged in domestic nuclear work. However, by the early 1990s, large domestic nuclear projects had been completed. Most of the domestic architect-engineering nuclear work has been associated with nuclear plant modifications under 10 CFR 50.59, which is a very limited scope. A few architect-engineering firms have some experience in designing, licensing, and constructing at-reactor storage facilities. A small number of architect-engineering firms have maintained their large nuclear facility expertise by designing and constructing nuclear plants overseas. Thus, it is possible that much expertise in designing, licensing, and constructing large domestic nuclear facilities has been lost as personnel and companies have moved on to other business areas. Including “years of experience” requirements in the request for proposal may minimize potential performance liabilities in this area.

The new architect-engineering firm must understand the importance of reviewing, approving, and (if necessary) revising all quality-affecting calculations performed previously by former architect-engineering firms. Additionally, the new architect-engineering firm may want to change the inherited design developed by the previous architect-engineering firm. This would, of course, result in additional (and possibly unnecessary) costs and project delays. There appears to be some risks involved in changing the architect-engineering firms currently performing the design, and it may be appropriate to have all firms in the competitive range of a procurement perform a “due diligence” review of the current design activities.

One method for evaluating the architect-engineering firms would be to include a requirement in the request for proposal that bidders falling within the competitive range of the procurement submit a design review limited to the area of fatal flaws. This could require the offeror to become familiar with the current design prior to contract award, rather than “learn as you go” after contract award. The request for proposal could also require that the offeror identify future work to be done based on the results of its design review. This approach may minimize the

likelihood of the new architect-engineering firm identifying changes “needed” in the existing design after contract award, especially if performance awards are tied to the efficacy of such a preaward design review. The quality assurance portion of the design review cannot be performed until after contract award.

4.2.2 Contract Characteristics

The Office of Management and Budget has recommended that OCRWM consider using the recompetition of the current management and operating contract as a pilot for performance-based contracting. The Fiscal Year 1999 passback from the Office of Management and Budget included the following statement:

“The management and operating contract for the Yucca Mountain Program will expire in Fiscal Year 2001. The Department should consider including this management and operating contract as a pilot for demonstrating performance-based contracting, see Management passback section.”

OCRWM currently is working with several offices within DOE to aid in developing its detailed acquisition approach and contracts that will result from completion of the OCRWM Program Business Plan. Performance-based contracting, as well as other contracting methods, have been considered.

4.2.3 Mix of Contractors

A wide variety of contractor skills and expertise may be required for the design, licensing, construction, and operation of the repository. The need will span architect-engineering; nuclear and nonnuclear contracting managers; and construction, licensing, and nuclear facility operations firms to complete the segments of work required to build and operate a repository. In addition to these firms, there is a need for infrastructure management firms to provide power and other utilities, motor pool services, equipment maintenance, roads and grounds maintenance, medical and safety systems support, and other site support functions. It may be that a single contractor or team of contractors can provide all of these functions. Additionally, there is a need for a mix of support and technical services, including information technology, operations, quality assurance audits and inspections, and advisory and assistance services. The challenge for developing the final acquisition plan is twofold—to determine the appropriate mix and integration of work scopes and to identify the time phases for bringing the contracts/contractors on line.

4.2.4 Contract Philosophy

There are several different possible views of the most beneficial use of contract types and attributes. Basically, there are two contract types—cost and fixed price—with several attributes, such as award fee, performance-based, firm-fixed price, and cost-incentive contracts. In addition, there are opportunities for privatization where the commercial marketplace assumes responsibility for selling a service or commodity to the government and recovering its investment in the selling price. DOE is considering privatization for the regional servicing contractors to transport spent nuclear fuel and high-level radioactive waste.

4.2.5 Site Support and Security Services

The Nevada Operations Office management and operating contractor provides many site services. Due to the limited work currently being performed at the site by the OCRWM Program, this appears to be an efficient way for the government to operate. As site activities for the OCRWM Program begin to increase during on-site construction and infrastructure development, it may be appropriate to analyze the necessary site services to determine whether the OCRWM Program would be better served by having its own integrated site services/security function. This level of critical services may need to be under direct OCRWM management and control to more efficiently support the complex parallel construction activities. Additionally, construction activities may be less subject to disruptions if these types of services are directly integrated into the Program operations.

4.2.6 Construction Manager

Since the majority of the work is performed simultaneously and sequentially by different contractors, a significant effort is required to schedule, stage, and coordinate Program activities.

In the past, DOE has managed this function with one of two contract entities—a construction manager or a management integrator contractor. The magnitude of the OCRWM Program requires a special management approach.

4.2.7 Major Decisions

The OCRWM Program recently completed the Viability Assessment, which described the status of and planning for the Yucca Mountain Site Characterization Project as of the date of publication. As with any major project, evolving circumstances must be evaluated and determinations must be made to move the project forward. DOE will determine the appropriate course of action for the following circumstances, as necessary, to achieve the Yucca Mountain Site Characterization Project mission.

- Contractor Strategy—Determine which types of contracts are needed and when to award them.
- Multiple Underground Contractors—Determine whether staging and scheduling issues outweigh the efficiencies gained by using multiple contractors.
- Buy a Tunnel Versus Government-Furnished Equipment—Determine whether providing tunnel boring machines and other major equipment as government-furnished equipment provides benefits over buying the end product and allowing the contractor to use its own equipment.
- Use of the Nevada Test Site Low-Level Radioactive Waste Facility—Determine whether using the existing low-level radioactive waste disposal facility at the Nevada Test Site is more beneficial over constructing another facility for exclusive repository use.

- Nevada Transportation—Determine the most advantageous transportation method to use for waste transport within the state of Nevada. Both heavy-haul and rail provide benefits and have certain limitations. DOE will work with state and local governments to evaluate and determine whether to use heavy-haul trucks or rail for transporting waste.

4.2.8 Contracting/Subcontracting/Privatization Opportunities

As the OCRWM Program progresses toward emplacement of waste in 2010, there are abundant contracting/subcontracting opportunities. Some of the services identified under Site Support and Security Services are prime opportunities for contracting/subcontracting with local entities or privatization activities in which the contractor would furnish the land, facilities, and equipment to provide the service. Portions of the construction and operations services can be contracted directly or subcontracted, including waste package fabrication, which could be a privatization opportunity conducted off site versus on site. Facilities to provide housing, food, and other services for construction and operations employees at the site could be located immediately off site, which would facilitate additional privatization opportunities. A portion of the incentives for the primary contractors could be provided for the subcontracting/privatization activities they conduct, including contracting with small, small disadvantaged, and women-owned businesses.