

## **COMMERCIAL DECOMMISSIONING AT ROCKY FLATS**

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### **ABSTRACT**

Due in large part to the number of nuclear facilities that make up the DOE complex, DOE-EM work has historically been paperwork intensive and driven by extensive regulations. Requirements for non-nuclear facilities are often grouped with those of nuclear facilities, driving up costs. Kaiser-Hill was interested in applying a commercial model to demolition of these facilities and wanted to apply necessary and sufficient standards to the work activities, but avoid applying unnecessary requirements.

Faced with demolishing hundreds of uncontaminated or non-radiologically contaminated facilities, Kaiser-Hill has developed a subcontracting strategy to drastically reduce the cost of demolishing these facilities at Rocky Flats. Aiming to tailor the demolition approach of such facilities to more closely follow commercial practices, Kaiser-Hill recently released a Request for Proposals (RFP) for the demolition of the site's former central administration facility. The RFP significantly reduced requirements for compliance with specific DOE directives. Instead, the RFP required subcontractors to comply with health and safety requirements commonly found in the demolition of similar facilities in a commercial setting. This resulted in a number of bids from companies who have normally not bid on DOE work previously and at a reduced cost over previous approaches. This paper will discuss the details of this subcontracting strategy.

### **INTRODUCTION**

There are over 700 facilities at the Rocky Flats Environmental Technology Site (RFETS); these facilities include buildings, trailers, support structures ( pump houses and cooling towers), and ancillary equipment. Although RFETS had a nuclear weapons production mission, the majority of the structures on the Site have never contained nuclear materials. Historically at DOE sites, non-nuclear/non-radiologically contaminated facilities have been lumped together with nuclear facilities in terms of the requirements applied to them, thus driving up the cost to construct, operate and demolish these facilities. Kaiser-Hill, in the interest of accelerating the cleanup of RFETS and saving money, developed a "commercial" model for asbestos abatement and demolition of non-nuclear facilities. The model was based on removing unnecessary site

requirements while maintaining the technical and safety standards required for similar commercial demolition projects.

## **STRATEGY**

Faced with demolishing hundreds of non-radiologically contaminated facilities (called Type I), Kaiser-Hill established a new approach for completing this work at RFETS:

- Establish a repeatable, safe, “commercial” process for the demolition of Type I facilities by employing the principles of Integrated Safety Management (ISM) based on benchmarks of similar commercial demolition projects
- Capture up to \$80 million in baseline cost savings through application of commercial practices by significantly lowering life-cycle costs

Kaiser-Hill has developed a strategy to enable this vision. This strategy laid out seven key steps:

- Benchmark similar commercial projects
- Perform detailed comparisons between commercial and federal processes
- Analyze and identify necessary requirements
- Establish equivalencies between processes while maintaining compliance with all state and federal laws, contract commitments, and relevant site procedures
- Subsequently define requirements in the RFP so that the requirements were easily understood, interpreted and “implementable” by the subcontractor
  - Appropriate requirements were included in the Scope of Work in “plain” English
  - DOE Order and Site procedural requirements were not referenced, instead, references were only made to industry standard requirements
- Convince RFETS infrastructure subject matter experts that the established equivalencies were appropriate in place of the established processes
- Oversee subcontractor compliance with their plan

## IMPLEMENTATION

With support from DOE, Kaiser-Hill is now implementing this commercial model, beginning with the demolition of the Site's former central administration facility, Building 111.

Benchmarking to commercial practices of two similar buildings<sup>1</sup> in the Denver area, Kaiser-Hill determined that Building 111 could be demolished at a cost substantially lower than their original estimate.



Fig. 1. Building 111

Aiming to tailor the decommissioning approach to more closely follow commercial practices, Kaiser-Hill began work on a streamlined RFP for the demolition of Building 111. The commercial approach was made possible based on the flexibility of Kaiser-Hill's contract to determine appropriate flow-down requirements to the subcontractors. This allows Kaiser-Hill to grade the requirements instead of flowing down all of the requirements in the prime contract.

The flexibility of the Department of Energy Acquisition Regulations (DEAR) and the Federal Acquisition Regulation (FAR), also supported the commercial method. Using DEAR Clauses 970-5204-2 and 970-5204-78 and working with DOE, necessary and sufficient flow-down requirements for safety, compliance and work control were established. The Kaiser-Hill project

manager, experienced in both nuclear facilities and commercial projects, then developed several “Equivalency Matrices” focussing on:

- Which laws, regulations and orders were applicable to the project work scope
- How DOE Order 440.1A (worker protection) was implemented in the subcontract statement of work
- How regulatory drivers for ISMS, Integrated Work Control Program, and Conduct of Operations were being implemented in the statement of work

DOE Order 440.1A - Worker Protection Management for DOE Federal and Contractor Employees Contractor Requirements Document - Worker Protection for DOE Contractor Employees Building 111, Building 333 and 132 Substation Pad Cross-walk Matrix			03.27.01
DOE O 440.1A REQUIREMENT		IMPLEMENTATION	DISCUSSION / COMMENT
<b>GENERAL REQUIREMENTS (Items 1-13)</b>			
1.	Implement a written worker protection program that:		
a.	provides a place of employment free from recognized hazards that are causing or are likely to cause death or serious physical harm to employees; and	SOW - Section 1.0 - Last Sentence	
b.	integrates all requirements contained in this attachment and other related site-specific worker protection activities.	Entire SOW and Section 3.4 Deliverables	
2.	Establish written policy, goals, and objectives for the worker protection program.	SOW - Section 3.4B	
3.	Use qualified worker protection staff to direct and manage the worker protection program.	SOW - Section 3.1C	
4.	Assign worker protection staff to direct and manage the worker protection program.	SOW - Section 3.1C	
5.	Encourage employee involvement in the development of program goals, objectives, and performance measures and in the identification and control of hazards in the workplace.	SOW - Section 3.1C, Section 3.11 Asbestos Abatement - g., and Facility Demolition - g.	
6.	Provide workers the right, without reprisal, to:		
a.	accompany DOE worker protection personnel during workplace inspections;	SOW - Section 3.1F and Section 3.1K	CTR Responsibility to Coordinate
b.	participate in activities provided herein on official time;	SOW - Section 3.1F and Section 3.1K	
c.	express concerns related to worker protection;	SOW - Section 3.1C, Section 3.11 Asbestos Abatement - g., and Facility Demolition - g.	
d.	decline to perform an assigned task because of a reasonable belief that, under the circumstances, the task poses an imminent risk of death or serious bodily harm to that individual, coupled with a reasonable belief that there is insufficient time to seek effective redress through the normal hazard reporting and abatement procedures established in accordance with requirements herein;	SOW - Section 3.1C(a) and Section 1 - Last Sentence	
e.	have access to DOE worker protection publications, DOE-prescribed standards, and the organization's own worker protection standards or procedures applicable to the workplace;	SOW - Section 3.1J	CTR will supply posting for Employee Information and will obtain any information requested by the Subcontractor employees

Fig. 2. Example of Equivalency Matrix prepared by Kaiser-Hill

It was also determined the FAR definition of commercial items could be applied to these decommissioning activities, thereby requiring only the following:

- FAR 52.202-1, Commercial Item Definitions
- FAR 52.222-26, Equal Opportunity
- FAR 52.222-35, Affirmative Action (Disabled Veterans and Vietnam Veterans)
- FAR 52.222-36, Affirmative Action (Workers with disabilities)

## RESULTS

These efforts reduced the number of subcontract requirements from over 150 to 50. No DOE Orders were included, by reference, because the necessary and sufficient requirements were incorporated specifically into the subcontract Statement of Work. The subsequent RFP required subcontractors to comply with health and safety requirements commonly found in the demolition of similar facilities in a commercial setting.

The resulting competitive bid process involved two steps: pre-qualification and proposal submittal. The pre-qualification process was geared toward reaching demolition subcontractors that have not traditionally worked at Department of Energy sites. The project was advertised in the Commerce Business Daily and Demolition News, a periodical developed by and for the National Association of Demolition Contractors. Thirty-five subcontractors responded to the ads. Subcontractors were pre-qualified based on safety and compliance, project experience, and financial condition, and 18 subcontractors met the pre-qualification requirements.

Of the 18 pre-qualified offerors, 13 prepared and submitted proposals. The offers ranged from \$462,000 to \$2,800,000. Of the 13 bidders, eight were subsequently identified as having the potential for subcontract award. As expected, the eight proposals received were significantly less than the original Rocky Flats estimates. The following figure compares the original Rocky Flats estimate<sup>2</sup>, the winning proposal received in response to the RFP, and the two local buildings used as benchmarks.

## FOOTNOTES

<sup>1</sup> The two facilities used for comparison to B111 were similar in construction type. Both facilities also had asbestos contamination, but at levels much lower than B111.

<sup>2</sup> Estimate was based on previous non-nuclear demolition at Rocky Flats.

## SUMMARY

Extending the savings realized from the Building 111 pilot (Figure 3) to other Type 1 non-nuclear facilities at Rocky Flats could result in potential project savings of up to \$80 million (Figure 4).

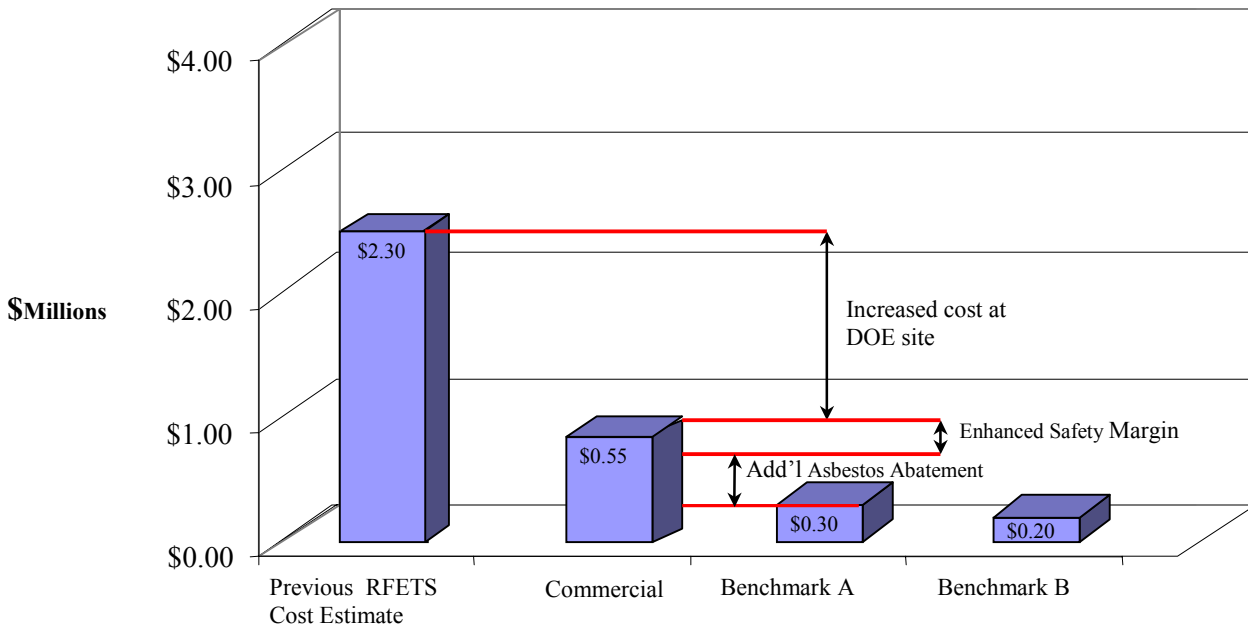


Fig. 3. Project Cost Comparison

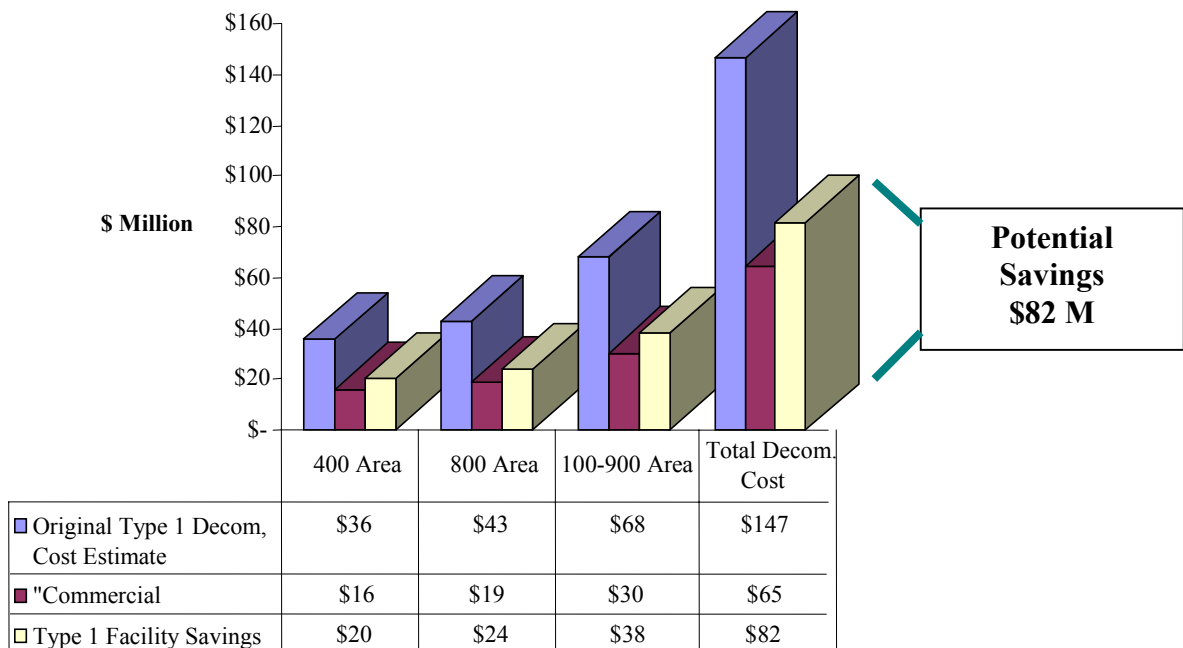


Fig. 4. Life-Cycle Cost Savings

Applying similar potential savings where applicable at other DOE sites and facilities, could result in significant savings across the complex.

Most importantly, safety will not be compromised in completion of the pilot project for Building 111, nor in implementation of the strategy across the site. Kaiser-Hill remains responsible for ensuring compliance with applicable DOE orders. Both DOE and Kaiser-Hill will have stop work authority. The success of this project means that over 80 buildings slated for decommissioning at Rocky Flats, as well as facilities at other sites, will benefit from this approach.