



# November 2013

EM-53 Lessons Learned Bulletin

## Fully Developed Technical Performance Baseline Important Even for Small Non-Line Item Projects

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### Statement:

The lack of a fully developed technical performance baseline for a direct federal small business task order design/build construction contract led to challenges during project execution (design, construction, test, and turnover).

### Discussion:

In late 2005 the NNSA and M&O contractor for Y-12 recognized the need to replace the site Nitrogen plant. The business case payback for a project was estimated to be about two years. Several Acquisition Strategy (AS) alternatives were considered and finally in mid-2008 it was decided to execute the project under the Facilities and Infrastructure Recapitalization Program (FIRP) using existing small business contract mechanisms. Two direct federal contracts were issued including a major piece of equipment procurement and a design build contract.

To support federal execution, an Interagency Agreement with the U. S. Army corps of Engineers (USACE) was issued to provide contractor officer representative, technical, and administrative support. In addition, the M&O contractor was tasked to provide operational site support. This AS was previously successful in executing several other small projects at Y-12.

The project was estimated at \$4.2M including contingency and contracts were awarded in September 2008. Construction Substantially Complete was achieved in February 2011 and turnover to the M&O contractor was completed in March 2012 at a final cost of about \$4.95M. The project accomplished all initial goals and objectives.

The project was launched and design build contract awarded without a full definition of the technical requirements and performance criteria which resulted in a weak definition of project scope and system acceptance requirements. Several scope deletions/modifications were made during the development of the solicitation package which not fully vetted with the Integrated Project Team (IPT). This resulted in problem and delays during final turnover and acceptance by the customer.

Use of a separate contract to provide a large component as Government Furnished Equipment (GFE) caused difficulty during design, installation coordination, and testing/startup. This was chiefly due to a lack of coordination and integration between the two direct federal contractors. Vendor startup support was defined in the (GFE) contract by requiring on-site support for an anticipated number of days, rather than a required performance criteria definition, resulting in limited contractor technical support during startup. This included resolving issues between the startup/testing team and the contractors, one of which was three time-zones away making communications difficult.

### Analysis:

Final turnover and acceptance of the project proved extremely difficult due to the weaknesses in the project scope and final acceptance requirements as well as the fact that scope changes had been made with the full benefit of review by the IPT. In addition, key technical requirements and support expectations were not fully defined in the GFE contract. Part of the reason for this implication was that the GFE was awarded as an if the self procurement which generalized some performance and testing requirements. This major equipment component was procured directly by the NNSA and created difficulty in the integration with those systems provided by the design/build contractor during design, construction/installation, and testing of the system.

### Actions:

1. Ensure the project technical baseline is sufficiently developed prior to development and award of contracts.
2. Carefully identify IPT membership, included key SME, to develop technical requirements and contract requirements.
3. Carefully consider all the risk associated with the use of GFE. There are distinct advantages with leaving this scope with the appropriate contractors.
4. Ensure that acceptance criteria and testing requirements are clearly defined in the contract.
5. Ensure adequate time is allowed for reviews before procurement documents are issued.

**Critical Decision(s):** CD-1

**Facility Type(s):** Infrastructure

**Work Function(s):** Infrastructure/Site/Utilities, Integrated Project Team, Procurement/Contracting, Proj. Controls/Parameters (Cost,Schedule,Scope)

**Technical Discipline(s):** Mechanical



An aerial view of the Y-12 National Security Complex at the Oak Ridge Site in Oak Ridge, Tennessee. The Facilities and Infrastructure Recapitalization Program (FIRP) was created to reduce a substantial accumulation of backlogged facility maintenance, repair and demolition projects across NNSA's eight sites. Among its achievements, FIRP: executed nearly 800 projects throughout the NNSA enterprise; Eliminated \$900 million of baselined deferred maintenance, and brought the overall condition of the enterprises' essential facilities up to industry standards; Managed 625 recapitalization projects (\$1.2 billion) that refurbished laboratory and production facilities, repaired or replaced electrical and mechanical equipment, utility lines, fire protection, power and lighting systems, roofs, roads and other vital infrastructure; and oversaw 145 disposition projects which removed 3.5 million square feet of excess footprint, opened many acres of space for redevelopment, shrank security perimeters and reduced deteriorated condition.

Questions about the EM Lessons Learned program? Contact Johnnie Newson at [johnnie.newson@em.doe.gov](mailto:johnnie.newson@em.doe.gov).