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Memorandum

August 26, 2010

To: David Finley, PPD

From: Chuck Federowicz, FESS/Engineering

Subject: MiniBooNE Removal Scope and Costs

In April 2010, FESS Engineering contracted Crawford, Murphy & Tilly, Inc. (CMT) of Aurora, IL to study the feasibility, scope and associated costs required to remove the existing MiniBooNE roof structure, interior floor, tank and utilities in preparation of the Laboratory installing a new MicroBooNE experiment, complete with a new removable roof system. CMT was chosen to perform this study since they were the engineer's of record on the original design of the MiniBooNE Detector project back in 1999.

CMT's deliverable for this task was to produce a Project Definition Report (PDR) defining feasibility, scope and associated costs to prepare the existing MiniBooNE Detector structure for the MicroBooNE experiment, based on the MicroBooNE conceptual design drawings dated March 16, 2010. Other than removal of an anticipated empty spherical tank, CMT's scope of work does not include removal or decommissioning of any MiniBooNE equipment related to the experiment.

CMT's final PDR delivered on July 22, 2010, is broken down into four sections covering an Executive Summary, Requirements, Detailed Description and Cost and Schedule. The Detailed Description section is divided into three sub-sections or activities that define scope of anticipated work and associated costs.

The three sub-sections of work with associated tasks and costs, estimated in 2010 dollars, are as follows:

1. Civil construction……$73,000

    (a) Earth excavation to remove roof structure and expose sidewalls to elev. 755
    (b) Installation of hardstand for Crane access to Building
    (c) Installation of hardstand for relocating Tank
    (d) Miscellaneous site work, silt fence, construction fencing, seeding and mulch
    (e) De-energizing and shutdown of existing utilities including Domestic Water, Industrial Cold Water, Fire Dept. Connection, Power supplies, Comm lines and HVAC service conduit. All connection locations to be capped for future connections
    (f) Protect existing Sump Pump discharge lines
    (g) Temporary construction grading and drainage structures

2. Structural construction……$1,044,000

   (a) Removal of monorail crane beam
   (b) Construct protective shield over top of tank
   (c) Removal of MiniBooNE enclosure precast/concrete roof at elev. 760
   (d) Removal of MiniBooNE enclosure precast/concrete floor system at elev. 750
   (e) Construction of six (6) 3′-6″ dia. x 18′ concrete caissons for relocating Tank
   (f) Removal and relocation of (empty) spherical Tank, (CB&I cost of $490k)
   (g) Construct new concrete roof system with removable precast sections
   (h) Design conceptual roof system for future roof over loading dock area
   (i) Extend existing spiral stair system to remove ship's ladder stairway access

3. Electrical Construction……..$35,000

   (a) Disconnection and removal of one existing 150 kVA transformer
   (b) Disconnection of existing 150 kVA, existing conduits to be cut and capped
   (c) Disconnection, removal and relocation of existing sump discharge lines, power and controller
   (d) Disconnection and removal of existing AC condensing unit and concrete pad, existing conductors will be removed from conduits
   (e) Disconnection , removal and disposal of existing power distribution equipment, panelboards, low voltage transformers, disconnect switches and associated conduits and conductors.
   (f) Disconnection, removal and disposal of all building wiring equipment, receptacles, welding receptacles and light switches
   (g) Disconnection, removal and disposal of existing interior lighting fixtures and exit signs
   (h) Disconnection, removal and disposal of existing HVAC equipment and supply fan.

Total Subcontract Base Estimate (no contingency included)…….$1,152,000

Economic conditions and training @ 3.0%.....$35,000

Subcontractor Overhead and Profit @ 18%.....$214,000

Estimated Subcontract Award Amount……$1,401,000

Projected time duration to complete Subcontract…….3 months