

Flywheel Based UPS Demonstration at NASA GRC

Monthly Report Thru October 31, 2003

Objectives

The NASA Glenn Research Center is purchasing, installing and operating a flywheel based uninterruptible power supply to upgrade the flywheel and EPS test bed facilities in Building 333. This effort will verify that flywheel based UPS systems can offer an environmentally clean, safer alternative to chemical battery systems in current use. This effort will provide the experience to enable the NASA GRC to begin a phased retrofit of many battery based systems as opportunities arise to provide a cleaner, safer working environment across GRC and potentially all NASA Centers.

Management

All task agreements and contracts are in place at this point for procurement, installation, test and evaluation of the flywheel UPS. A proposed press release by Pentadyne was coordinated with NASA project management and the Media Relations Office and approved. There has been no other significant activity for October.

Flywheel UPS Procurement

The selected flywheel vendor is Pentadyne Power Corporation of Chatsworth, CA. The installation manual was received this month. Delivery of the flywheel unit is still on schedule for 12-12-03. The UPS vendor selected was Powerware Corporation of Raleigh, N.C. The UPS has been delivered. All other installation supplies have been delivered.

Installation and Checkout

Space was cleared out of 333-117 by moving out two 90Kw DC power supplies to make room for the Flywheel UPS installation. A meeting was held to determine the location of the utility panel and the routing of the conduit and wiring. Installation of the Powerware UPS, power panel and conduit and wiring is expected to occur in November. Since the flywheel supplier has been selected and we know the specific configuration of the flywheel UPS, we will finalize the installation approach and complete the interface documentation in the coming month.

Demonstration Testing

There has been no activity on this task during the reporting period.

Evaluation and Study

A training session on life cycle cost evaluation provided by EMO was conducted by Walter Kocher in September 2003 for the flywheel team. The team was to review the general evaluation matrices provided by Walter and draft a tailored approach for UPS applications. We were unable to work on the tailored draft in October. We will develop the draft in November and provide it to Walter and the EMO for review.