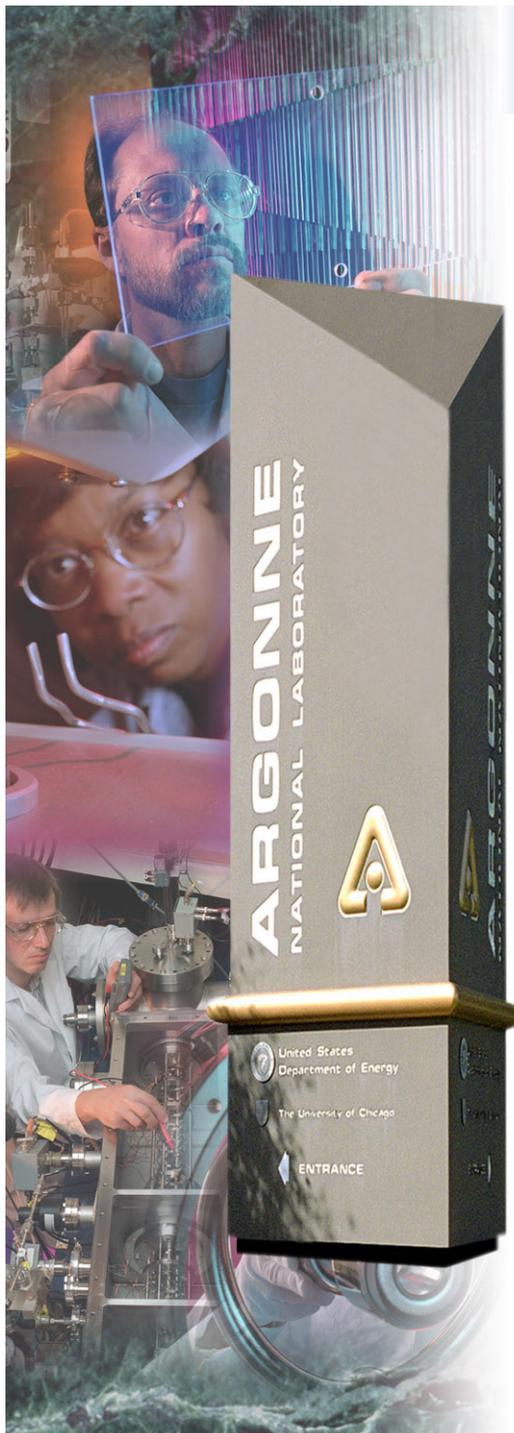


# Proposal Number **557 (241)**

## **Controls UPSs Replacement**

*Greg Markovich*

*September 27, 2005*



*Argonne National Laboratory is managed by  
The University of Chicago for the U.S. Department of Energy*

**Project: (AOD 557) Controls UPSs Replacement**

**Objective:** To replace 4 existing 18kW single phase UPSs with 2-80kW 3 phase units

**Background Information:**

- New Initiative
- Single Year Funding
- High priority

**Justification:**

This will be replacing 9 year old units that are being overloaded and have been subjected to a higher than ambient environment do to HVAC failures. The new systems will also provide 100% redundancy, something not presently available.

**Consequence:**

Machine outages are possible due to aging, overloaded equipment and the lack of redundancy. Recovery from a UPS failure has been as much as 5 days.

**Requested Funds (FY06): \$251.34 K ( AIP )**

<b>FY</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>Total</b>
<b>Noneffort</b>	\$251.34 K			\$251.34 K
<b>Effort</b>	\$84.31 K			\$84.31 K
<b>New Effort</b>				
<b>Total</b>	\$335.65 K			\$335.65 K

## **Project: (AOD 557) Controls UPSs Replacement**

### **Project Details:**

- Provides 100% redundancy
- Replacing units that would be overloaded should the redundant UPS fail
- Provides for future expansion
- This project affects the APS accelerator control and monitoring systems
- Installation similar to the installation of the CENTRAL UPSs from a power perspective (see single line)
- Will be utilizing some of the infrastructure built during the CENTRAL UPS installation
- Physical size of UPSs is creating a logistics problem (see layouts)
  - A doorway will have to be widened to get the UPS in the electrical room
  - Second UPS will probably be placed in the computer room
- Old UPSs will have to be removed before new can be installed
- This installation will probably be disruptive in some form
- Control system shutdowns will be required and will have to be closely coordinated
- Scheduling with technical groups will have to be closely watched and adhered to
- Electrician overtime is almost assured
- May require 2 machine shutdown periods to complete
- Conditions under the MCR/Computer Room floor are horrendous making the installation difficult
- Old infrastructure will have to be removed upon completion of the project

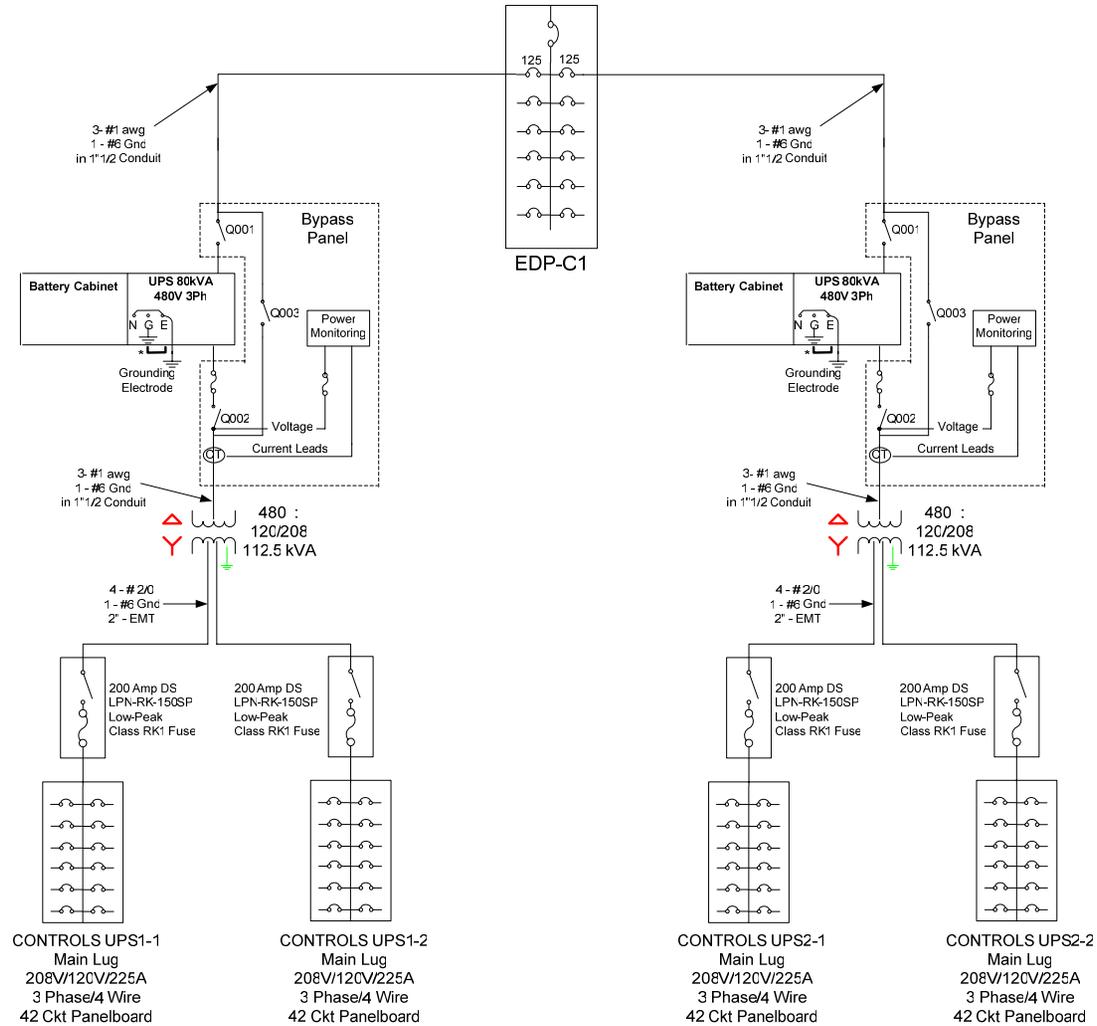
## **Project: (AOD 557) Controls UPSs Replacement**

### **Project Details (cont.):**

- A general electrical clean-up of the electrical room should be done depending on resources, schedule and budget.
- Design and installation is difficult due to NEC code restrictions.
- Power meters are being installed to monitor the output of the UPSs
  - Monitored via the web
  - Monitored via EPICS
  - UPS status also monitored through the power meters

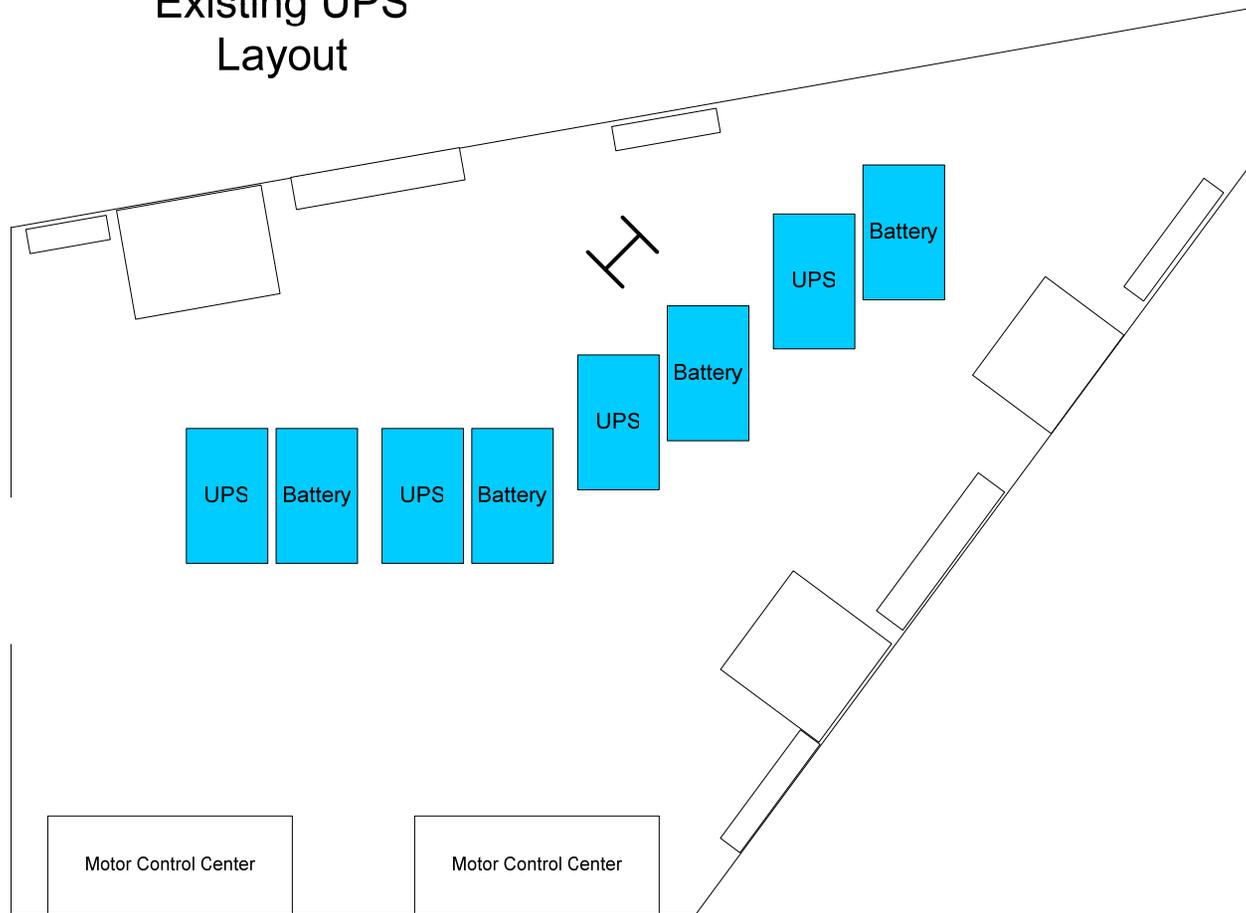
## Project: (AOD 557) Controls UPSs Replacement

# Controls UPS Single Line Diagram



**Project: (AOD 557) Controls UPSs Replacement**

Existing UPS  
Layout



**Project: (AOD 557) Controls UPSs Replacement**

**CONTROLS UPS  
LAYOUT**

