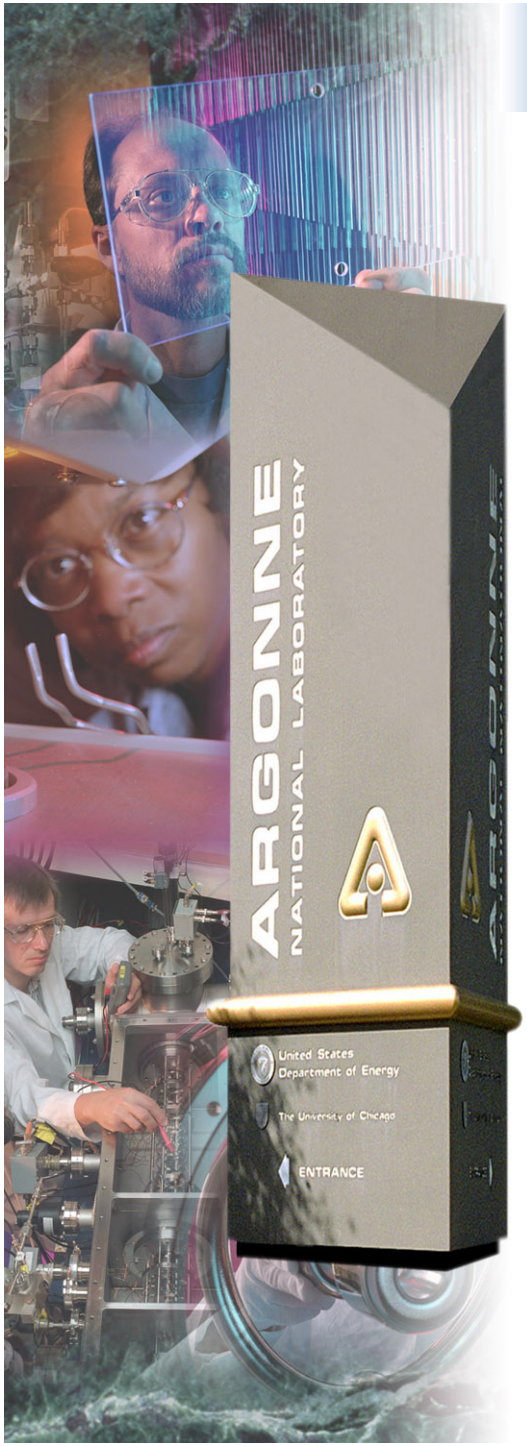

ARGONNE NATIONAL LABORATORY

Proposal Number **493**

Front End Equipment Protection System LOVE Controller Replacement was 185

Greg Markovich

Date

THE UNIVERSITY OF CHICAGO

Office of Science
U.S. DEPARTMENT OF ENERGY

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

Project: (ASD 493) Front End Equipment Protection System LOVE Controller Replacement was 185

Objective: Improve reliability of FEEPS system by replacing aging and obsolete Love controllers with an analog module in the Allen Bradley PLC.

Background Information:

- •New Initiative
- •Single Year Funding
- •High priority

Justification:
Reduced downtime due to ageing Love controllers which are beginning to fail.

Consequence:
If this is not implemented we will continue to see failing love controllers, each failure causing several hours of down time to the storage ring.

Requested Funds (FY06): $81.96 K (AIP)

FY	2006	2007	2008	Total
Non effort	$81.96 K			$81.96 K
Existing Effort	$214.44 K			$214.44 K
New Effort				
Total	$296.40 K			$296.40 K

Project: (ASD 493) Front End Equipment Protection System LOVE Controller Replacement was 185

- Project Details:
  - We have already begun this upgrade
    - This last shutdown we upgraded 14 systems, leaving 28 more to complete
  - Reduce Storage Ring down time & Improving Reliability
    - Over the past 2 years we have had 26 Love controllers fail
      - 9 causing storage ring trips resulting in 26 hours of down time
      - 17 failed during machine studies and shutdown periods
    - 183 installed units will be replaced with 28 analog modules
      - Reducing the parts count by almost 75%
  - At the same time we will be upgrading the PLC code
    - Adding logic in the plc to “and” the Vacuum pump signals to reduce vacuum valve closures
    - Making a hardware change to the VAT Chassis and upgrading the MPS Chassis to “and” the cold cathode signals which will reduce fast valve closures
    - Adding additional troubleshooting information to EPICS
    - Simplifying the PLC code and improving the internal documentation