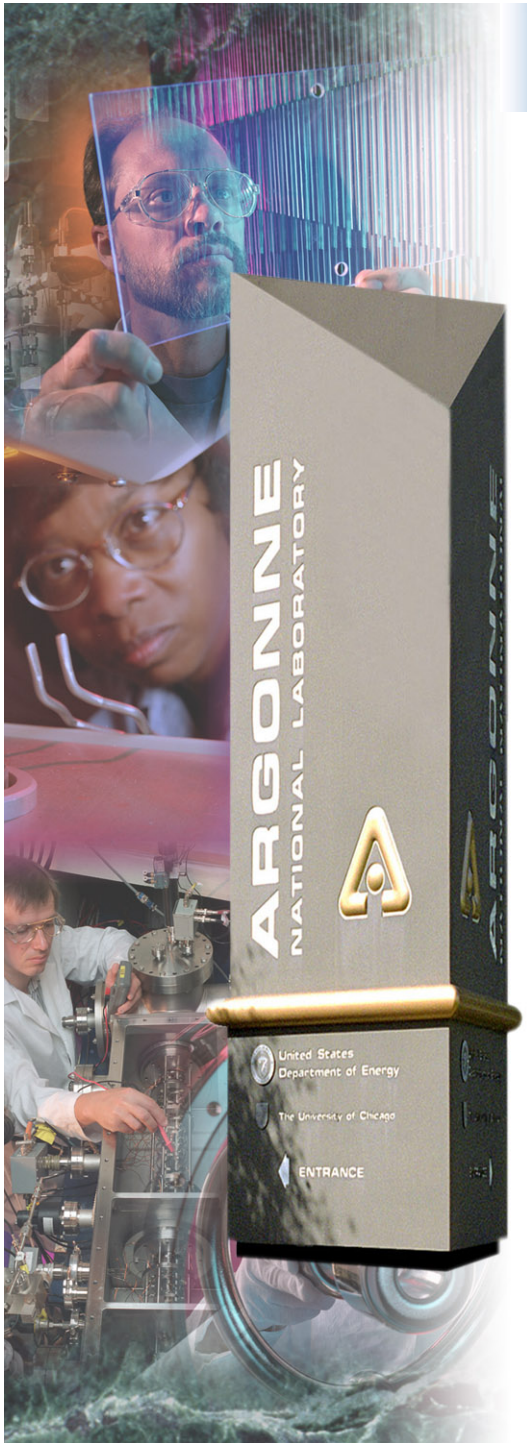

ARGONNE NATIONAL LABORATORY

Proposal Number **553**

GEN-3 PSS Printed Circuit Board Test System

Presenter name

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

GEN-3 PSS Printed Circuit Board Test System

Objective: Build an automated, programmable tester for the GEN-3 PSS Mezzanine and Station finished printed circuit board assemblies

Background Information:

- New Initiative
- Single Year Funding
- High priority

Justification:

To reduce many man hours of manual testing of GEN-3 PSS printed circuit board assemblies.
Reduce the possibilities of human error while manual testing GEN-3 PSS printed circuit board assemblies, since this testing is an extremely repetitive and boring task.
This type of testing is done with automated systems in industry to improve accuracy and reduce costs.

Consequence:

This proposed system will greatly improve the QA of a GEN-3 PSS installations and replacement spares by assuring the functional integrity of these complex circuit board assemblies.

Requested Funds (FY06): $44.83 K (Operating)

GEN-3 PSS Printed Circuit Board Test System

Facility Risk:

This proposed upgrade will have no impact on facility or beamline operations since the installation and testing will be completely implemented and validated during one of the three planned shutdown periods.

Cost Benefit:

Currently it takes two people, 8 hours to completely test one PCB assembly each requiring exhaustive point-to-point and functional testing before they can be installed into and APS Beamline Personnel Protection System (PSS). Each beamline requires from two (2) to eight (8) PCB assemblies. With this proposed equipment the testing of one PCB should be completed in minutes with improved accuracy.

Brief Description:

- Design and build a programmable/automated printed circuit board tester.
- This equipment will consist of a flexible test stand where unique fixtures for a given PCB will interface to.
- This piece of equipment could easily be utilized by other APS groups, such as ASD-PS, ASD-Controls and AOD-Detector Development.

GEN-3 PSS Printed Circuit Board Test System
COSTS

FY	2006	2007	2008	Total
Non-effort	$44.83 K			$44.83 K
Existing Effort	$123.47 K			$123.47 K
New Effort				
Total	$168.30 K			$168.30 K