Title	***Booster Kicker Power Supply Upgrade***			
Project Requestor	Ju Wang			
Date	04/18/2008			
Group Leader(s)	Ju Wang			
Machine or Sector Manager	SERENO, NICHOLAS S.			
Category	Obsolescence/Spares			
Content ID*	APS_1256850	Rev.	2	02/25/2009 4:26 PM

*This row is filled in automatically on check in to ICMS. See Note [1]

Description:

Start Year (FY)	**2009**	**Duration (Yr) 3**	

Objectives:

Redesign the Booster kicker power supplies for better reliability and maintainability

Benefit:

The benefit of the project is reduced maintenance and increased reliability.

Risks of Project: See Note [2]

None

Consequences of Not Doing Project: See Note [3]

Without this project the Booster operation will continue to have long downtime when a fault happens at the kicker power supplies. The thyratron used in the kickers is obsolete now. A new design and new thyratron are required in the next few years before our spares are depleted.

Cost/Benefit Analysis: See Note [4]

Failure of this project will keep the ASP operations at the risk of extended downtime. A typical major failure in a kicker power supply costs for than 8 hours of downtime. This project may reduce the repair time to 2 hours.

Description:

The APS booster ring has two kickers for beam injection and extraction. The kickers utilize high voltage to produce required magnetic field to bend the beam. Due to the nature of high voltage, the kickers, especially the extraction kicker, have had multiple insulation failures. Each failure has taken many hours to trouble shoot and repair. The thyratron used in the kickers is obsolete according to the manufacturer. The scope of this project includes identifying the thyratron replacement, identifying a new high voltage PFN cable with improved termination for better reliability and easy maintenance, and redesigning the power supply enclosure for easy maintenance and repair.

Funding Details

Cost: ($K)
Use FY08 dollars.

Cost ($k)

Year	AIP	Contingency
1	100	10%
2	150	10%
3	150	10%
4		
5		
6		
7		
8		
9		

Contingency may be in dollars or percent. Enter figure for total project contingency.

Effort: (FTE)
The effort portion need not be filled out in detail by March 28

Year	Mechanical Engineer	Electrical Engineer	Physicist	Software Engineer	Tech	Designer	Post Doc	Total
1								0
2								0
3								0
4								0
5								0
6								0
7								0
8								0
9								0

Notes:

[1] **ICMS**. Check in first revision to ICMS as a *New Check In*. Subsequent revisions should be checked in as revisions to that document i.e. C*heck Out* the previous version and C*heck In* the new version. Be sure to complete the *Document Date* field on the check in screen.

[2] **Risk Assessment.** Advise of the potential impact to the facility or operations that may result as a consequence of performing the proposed activity. Example: If the proposed project is undertaken then other systems impacted by the work
include ... (If no assessment is appropriate then enter NA.)

[3] **Consequence Assessment.** Advise of the potential consequences to the facility or to operations if the proposal is not executed. Example: If the proposed project is not undertaken then ____ may happen to the facility. (If no assessment is appropriate then enter NA.)

[4] **Cost Benefit Analysis.** Describe cost efficiencies or value of the risk mitigated by the expenditure. Example: Failure to complete this maintenance project will result in increased total costs to the APS for emergency repairs and this investment of ___ will also result in improved reliability of ____. (If no assessment is appropriate then enter NA.)