

Memo

date: Feb 27, 2008

to: Distribution

from: J. Maraviglia

subject: Safety Walk – Cleaning/Acid Flushing of Booster D6 Septum

A Safety Walk was performed today, 2/27/2008. The observed task was checking cooling water flow rates and back flushing/cleaning the water system of the Booster D6 septum coils. The work was performed by the C-AD Water Systems Group.

Several positive observations were noted:

- Work planning was performed.
- OPM procedure in place for this specific task.
- Job-specific RWP in place.
- Booster tunnel radiological survey maps in place showing rad levels in area.
- Health Physics performed survey of D6 prior to start of task. Extension tool used by HP technician in order to maintain safe distance from potential electrical hazards.
- It was observed that the personnel involved with the task were very knowledgeable of the septum cooling system.
- Personnel training all current.
- Proper PPE was worn: Rubber gloves were worn. Safety face shields were worn during handling of AC500 Acid. Careful handling of the AC500 was observed during all phases: pouring, operation of pump, collecting used solution.
- AC500 Material Safety Data Sheet (MSDS) was part of the work package and present at the job site.
- Septum cooling system header piping clearly labeled 300 psi (actual system operating pressure is approximately 250 psi).
- The Booster ring/tunnel was initially under Controlled Access Mode, and the Gate Watch individual controlled access well. Mode was later changed to Restricted Access Mode.
- Booster Main Magnet LOTO was in place. Specialists performing task also LOTO'd the power supply (located in B930A) for the D6 septum.

- Main Magnet bus work throughout the work area was protected/covered, clearly labeled high voltage (5000 Volts), and LOTO'd.
- Data from annual sampling of cooling water radioactivity was up to date. Data indicated expected levels of tritium, and other isotopes were as expected or less than MDA.
- Disconnection and connection of D6 water system lines and portable hoses done with care throughout the task. Water was collected during disconnecting and connecting of hoses. Collected water was recycled; put back into the system to reduce rad waste.
- Portable pump used in acid flushing placed in secondary container for protection in case of spill.
- After completion of acid flushing, clean water flushed through hoses and septum until clear; no significant concentration of acid remaining.
- Cart used to hold and transport the portable hoses and equipment strictly used for this type of flushing.
- Mixed waste of AC500 and water was properly disposed of in a designated rad material area in B919. Solution will be neutralized to PH level between 5 and 9 for final disposal.

Brief description of task:

(Note: It was observed that the personnel involved with the task were very knowledgeable of the septum cooling water system.)

- Flow rate measurements taken as bases prior to cleaning/acid flushing. Each of 4 cooling coils were measured. Total flow also measured.
- In this case, each of the 4 coils were reading approximately same flow rate. No one particular line worse than another.
- D6 septum cooling water system isolated from main cooling water system. Inlet and outlet valves closed.
- Acid flush performed.
- System flushed with clean water. Flow rate measurements retaken after cleaning. System restored.
- Total flow rate through D6 septum successfully increased to approximately 17.9 gpm (was initially at approx 12.5 prior to cleaning; 18 gpm is nominal).

Negative Observations:

- There were no negative observations for this task.

Distribution:

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