Design Meeting Summary

MD Work Order #: RC100609.1223H.W04047 Date: 24 Feb 2016

Project/Task: Mechanical Design of Proton Detector

Submitted by: C. Wrede

Participants: P. Glennon, D. Lawton, J. Ottarson, D. Perez-Loureiro, C. Wrede

Issues discussed/results:

Design Consideration / Tasks – Patrick …

(1) For an aluminum chamber, 1/16 inch should be machined off all around the inside diameter after welding.

(2) The entrance window needs to be sealed with an O-ring.

(3) Sufficient room must be allowed for working with wrenches to make the VCO & VCR connections.

(4) Standoffs for the aluminized mylar window are to be eliminated, and the window should somehow be attached to the PEEK structure used to support the field cage.

(5) The degrader chamber should be a 4-way cross like that used in 7mdx88 & 7mdx99.

(6) Some means of securing the field cage support structure in place inside the vacuum chamber needs to be added to the design.

(7) Sufficient room must be allowed for the air-side SHV connectors on the upstream end.

Design Inputs Required – Chris / David …

(1) Can the proton detector vacuum chamber be made of stainless steel instead of aluminum?

(2) Is it required that the gating grid be mounted off of the micromegas board instead of the field cage's PEEK support structure?

(3) What is the maximum tolerable air gap between the kapton window and the proton detector's entrance window (1/16" thick aluminum)?

(4) More details are needed regarding the physical make-up of the micromegas board and gating grid.