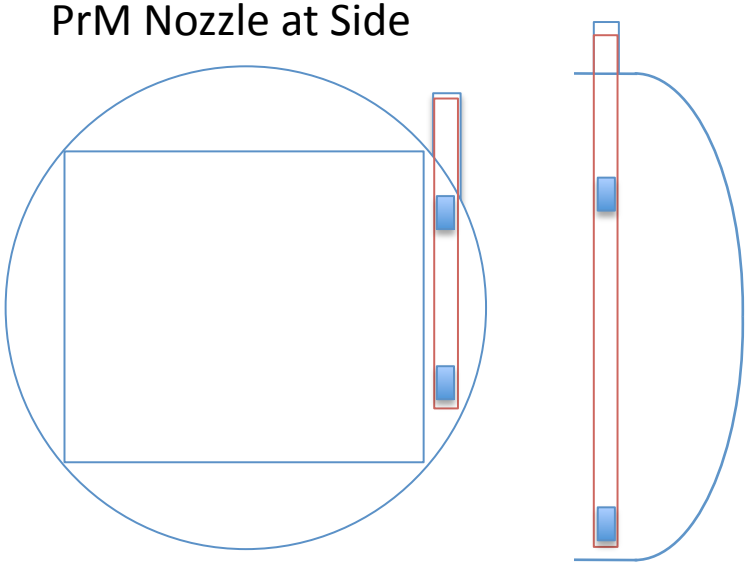
PrM Nozzle at Side



Not to scale

PrM Nozzle at End

PrM in framework

---- Original Message -----
From Stephen Pordes <stephen@fnal.gov>
Date Tue, 03 Nov 2009 11:28:55 -0600
To jsonder@bnl.gov, thorn@bnl.gov
Subject nozzles for purity monitors ..

Hi Jack and Craig, (and Bob)

you can see I'm in trouble because I use the word nozzles and not my favorite word chimneys.

I've been thinking a little how to install the purity monitors with this business of building the detector outside the vessel and sliding it into the cryostat. The hard part for the purity monitors is the quartz fiber connection that carries the light from the flasher outside the cryostat down onto the photocathode of the monitor. To do this here we have a single assembly which uses an 8 inch conflat with a 6 inch ID to which a frame with the monitor, its fiber, cabling and connections, is attached. The whole framework slides in and out of our cryostat vertically. The inner fiber ends in a fixture on the outside of the flange and is then connected (a simple butt-connection) to a fiber coming from the lamp. After some contemplation, I guess I would like a similar system for MicroBooNE with two such ports - some distance in from each end of the cryostat. A single frame would hold two monitors - one low in the cryostat and one some where above mid-height.

The monitors should sit somewhere outside the TPC and a natural place to put them would have the framework poking through the PMT structure. A disadvantage of being on the side of the TPC is that one doesn't begin to measure the purity till the liquid is someway up the cryostat. It might be fun/good to have one nozzle on the side (anywhere convenient) and one at the end where the lower purity monitor could be near the bottom of the tank. I would imagine the purity monitors would be installed after the TPC and PMT frame had been slid in. Yes - for a single solid frame there is quite some height requirement. I suspect the frame could be telescoping.

Attached please find a drawing and a picture that may help clarify what I'm saying. I am open to any alternatives, of course.

Stephen