

Memo

date: September 27, 2010
to: RSC, C. Folz
from: D. Beavis 
subject: Inspection of new 3 O'clock

Charlie Folz and I inspected the as built penetration¹ that has been added at 3 O'clock. The penetration entered the tunnel wall slightly lower than considered in the design. The center of the 14-inch OD pipe is 21 inches above the beam height. The dose from a beam fault was calculated based on the new dimensions. It is estimated that if 1/2 of the present beam hits the beam pipe that the dose exiting the empty penetration would be 80 mrem. This is a factor of two higher than the existing penetration. If one allows for future plans to increase the beam current to $5 \cdot 10^{13}$ protons and the energy to 325 GeV the the exiting dose could be 220 mrem. This is comparable to the potential exposure on the top of the berm.

It is recommended that the penetration be plugged if there are no cables in the penetration. There are a substantial number of cables planned for this penetration and there mass will reduce the potential radiation from beam faults. **(CK-fy2011-RHIC-726)**

No chronic issues for radiation dose are expected from the port.

References

1. D. Beavis, "[Additional penetration at 3 O'clock](#)", August 27, 2010

CC:

A. Pendzick
A. Drees
G. McIntyre
A. Zaltsman