

# Change in particle flux if parts of the VA is changed to Beryllium (Simulation by M. Shupe)

G

th.n:	3.5 kHz	-17%
hi.n:	621 Hz	-16%
had:	134 Hz	-17%
c.r.:	21 Hz	-15%
p.r.:	4 Hz	-14%

th.n. = thermal neutron rate (neutrons < 100 keV)  
 hi.n. = high energy neutron rate (neutrons > 100 keV)  
 had = charged and neutral hadron rate > 20 MeV  
 c.r. = counting rate  
 =  $0.0005n + 0.0117 \gamma + (\mu + p + \pi + 0.25e) / 2$   
 p.r. = penetrating particle rate  
 =  $0.1 \cdot 0.0117 \gamma + (\mu + p + \pi + 0.25e) / 2$

F

th.n:	3.2 kHz	-17%
hi.n:	615 Hz	-20%
had:	113 Hz	-22%
c.r.:	21 Hz	-13%
p.r.:	5 Hz	-2%

Forward  
Toroid

th.n:	27 kHz	-15%
hi.n:	9 kHz	-19%
had:	1.1 kHz	-24%
c.r.:	148 Hz	-16%
p.r.:	40 Hz	-11%

th.n:	3.4 kHz	-14%
hi.n:	796 Hz	-7%
had:	322 Hz	-6%
c.r.:	68 Hz	+2%
p.r.:	14 Hz	-1%

th.n:	2.1 kHz	-3%
hi.n:	322 Hz	-6%
had:	52 Hz	-10%
c.r.:	22 Hz	-3%
p.r.:	5 Hz	-3%

th.n:	43 kHz	-17%
hi.n:	28 kHz	-15%
had:	5.8kHz	-17%
c.r.:	374 Hz	-13%
p.r.:	130 Hz	-9%

th.n:	2.3 kHz	-4%
hi.n:	1.0 kHz	+6%
had:	424 Hz	+2%
c.r.:	177 Hz	+16%
p.r.:	30 Hz	+15%

