

The new moderator shield

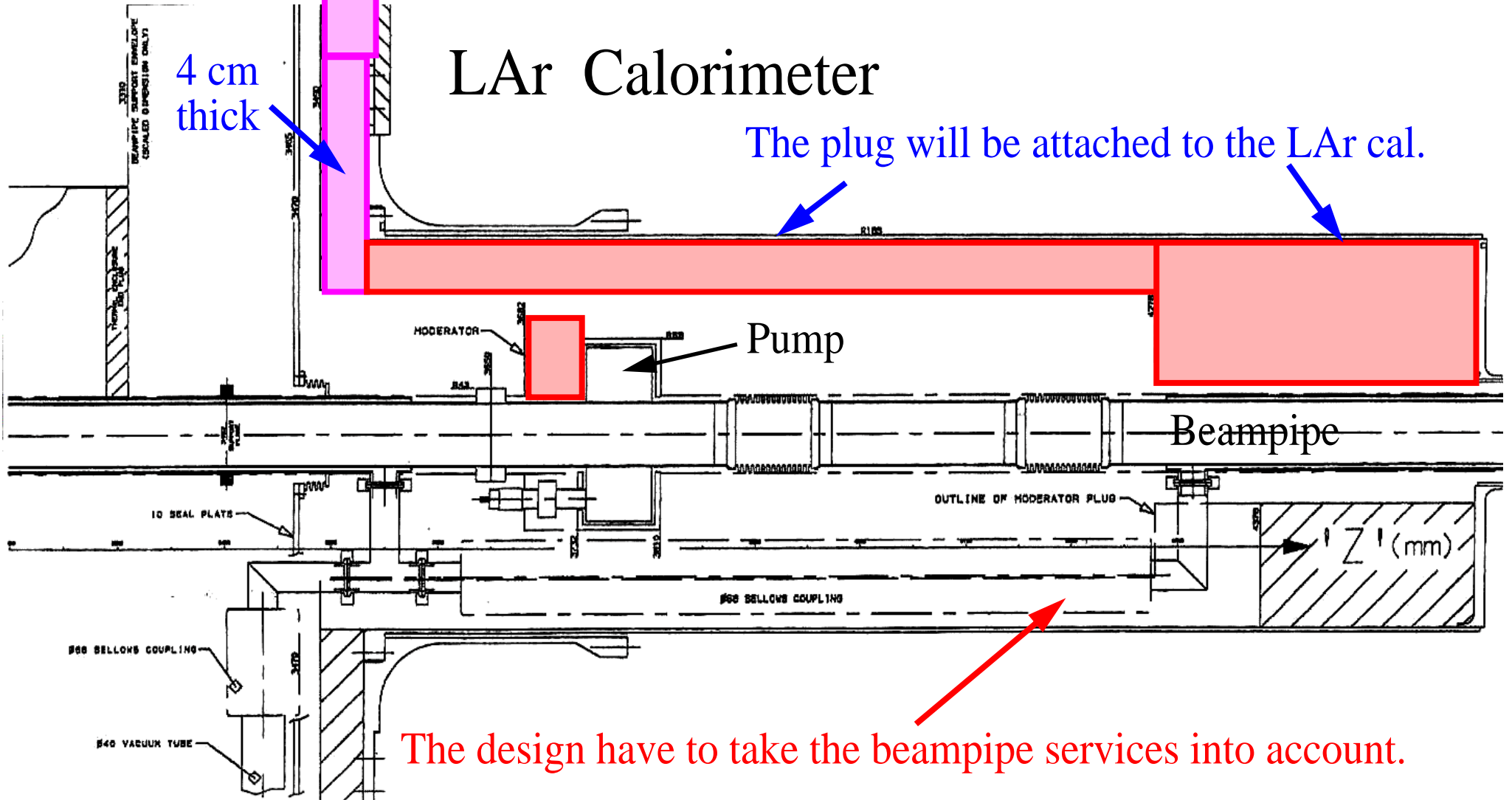
5 cm thick

The disk will be extended to a lower radius.

4 cm thick

LAr Calorimeter

The plug will be attached to the LAr cal.



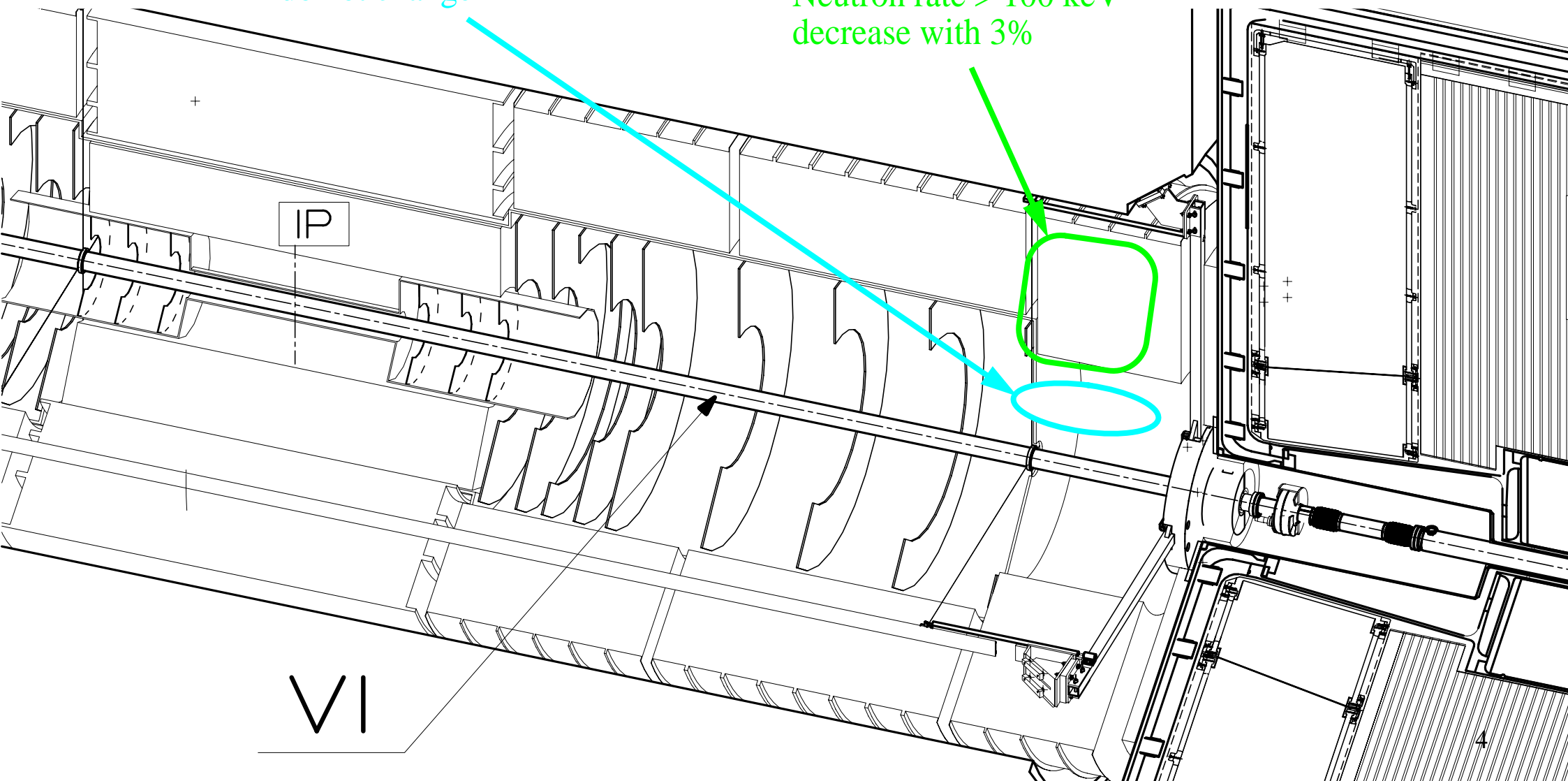
Change in background rate when going from old to new design

Photon rate increase with 8%

Neutron rate > 100 keV
do not change

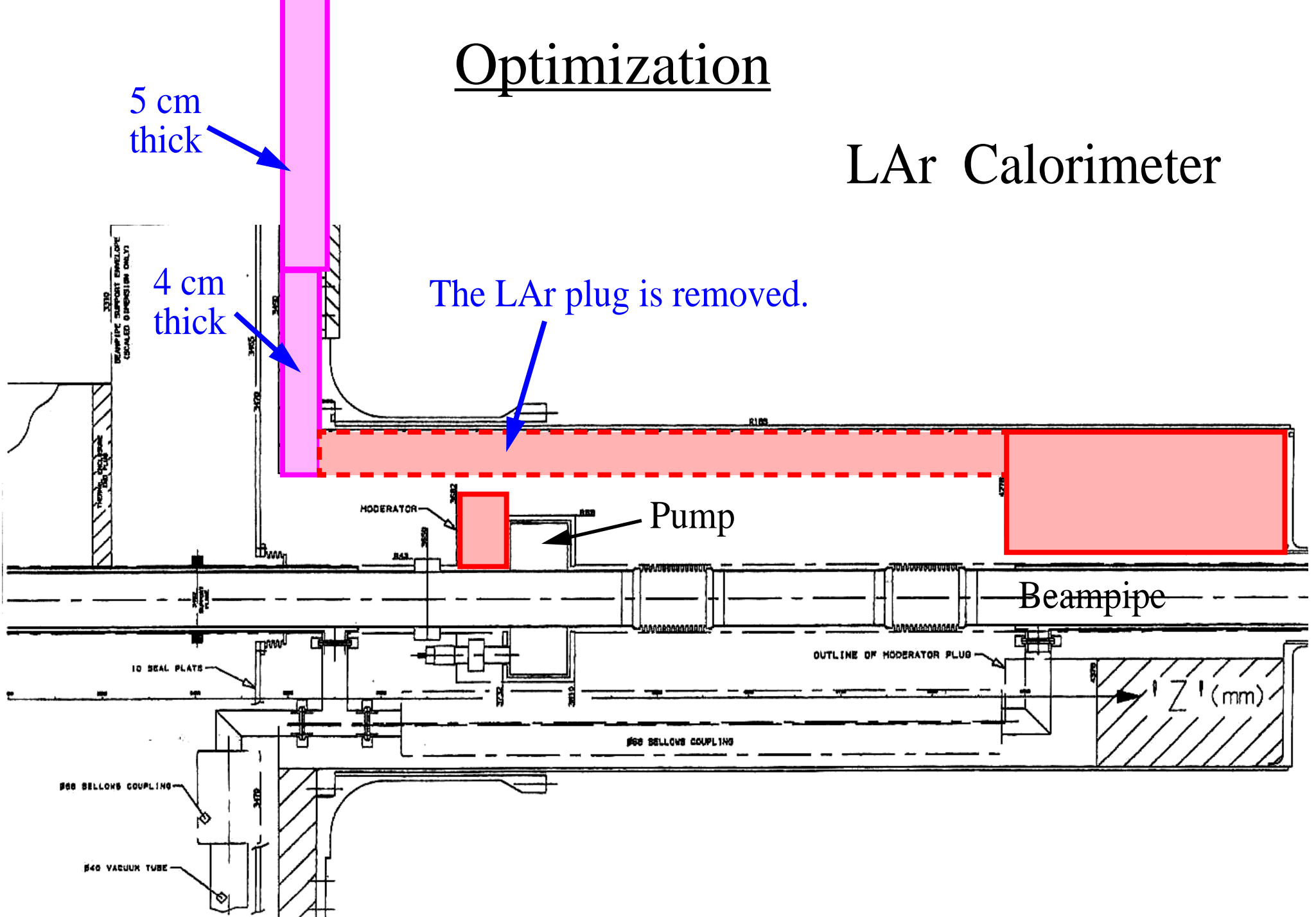
Photon rate increase with 2%

Neutron rate > 100 keV
decrease with 3%



Optimization

LAr Calorimeter



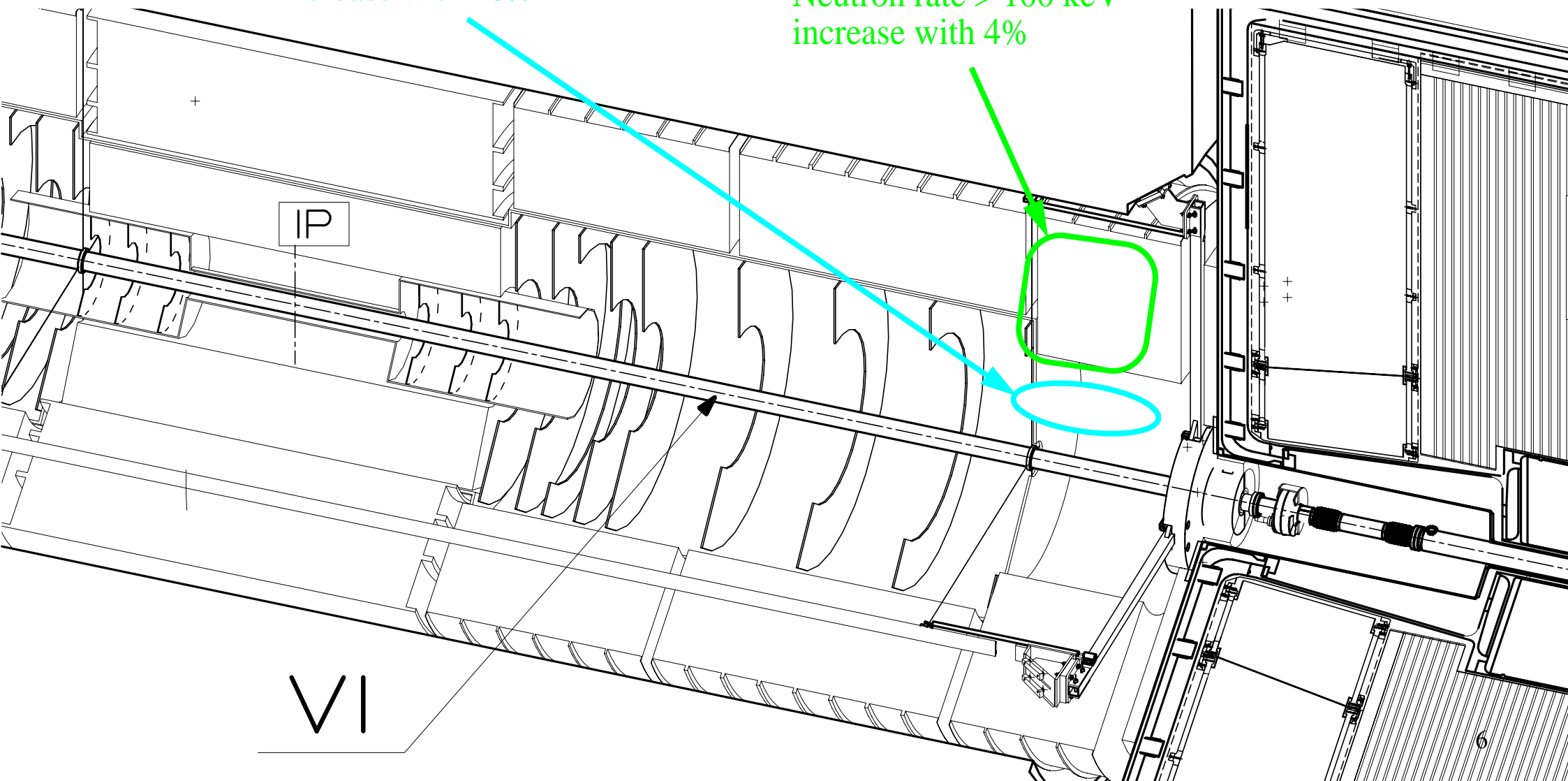
Change in background rate when going from old to new design

Photon rate increase with 12%

Neutron rate > 100 keV
increase with 26%

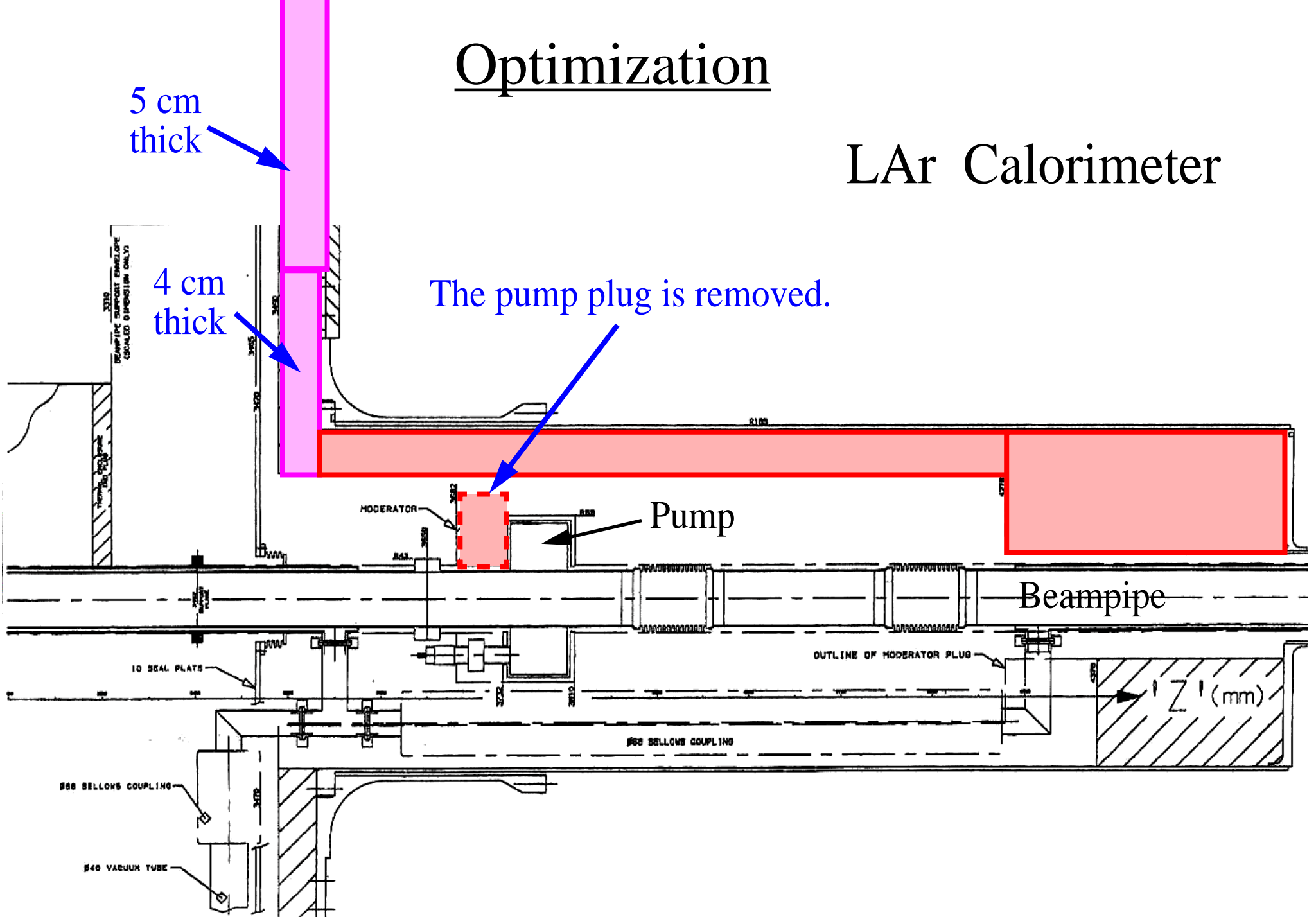
Photon rate increase with 5%

Neutron rate > 100 keV
increase with 4%



Optimization

LAr Calorimeter



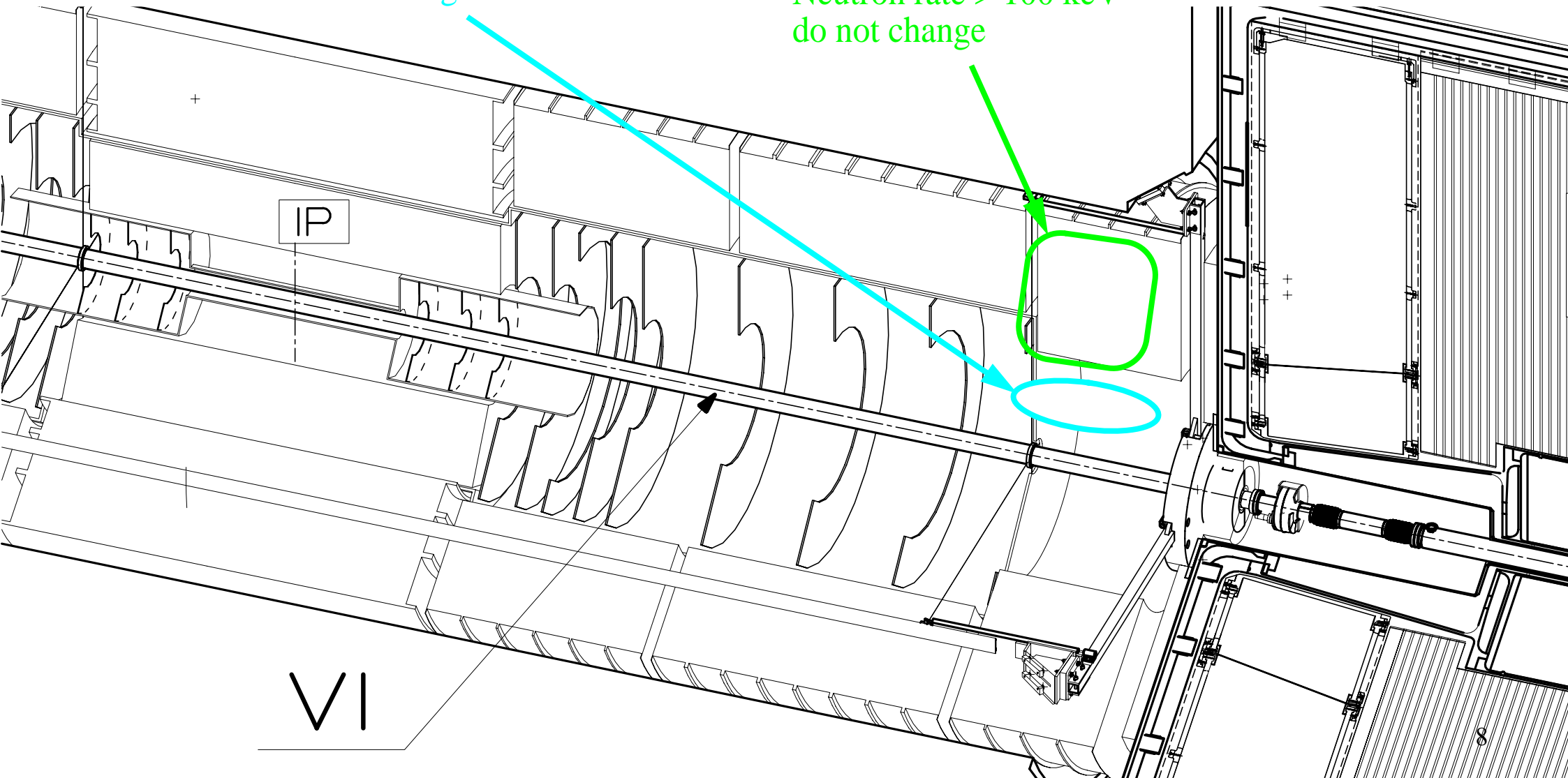
Change in background rate when the pump plug is removed.

Photon rate do not change

Neutron rate > 100 keV
do not change

Photon rate do not change

Neutron rate > 100 keV
do not change



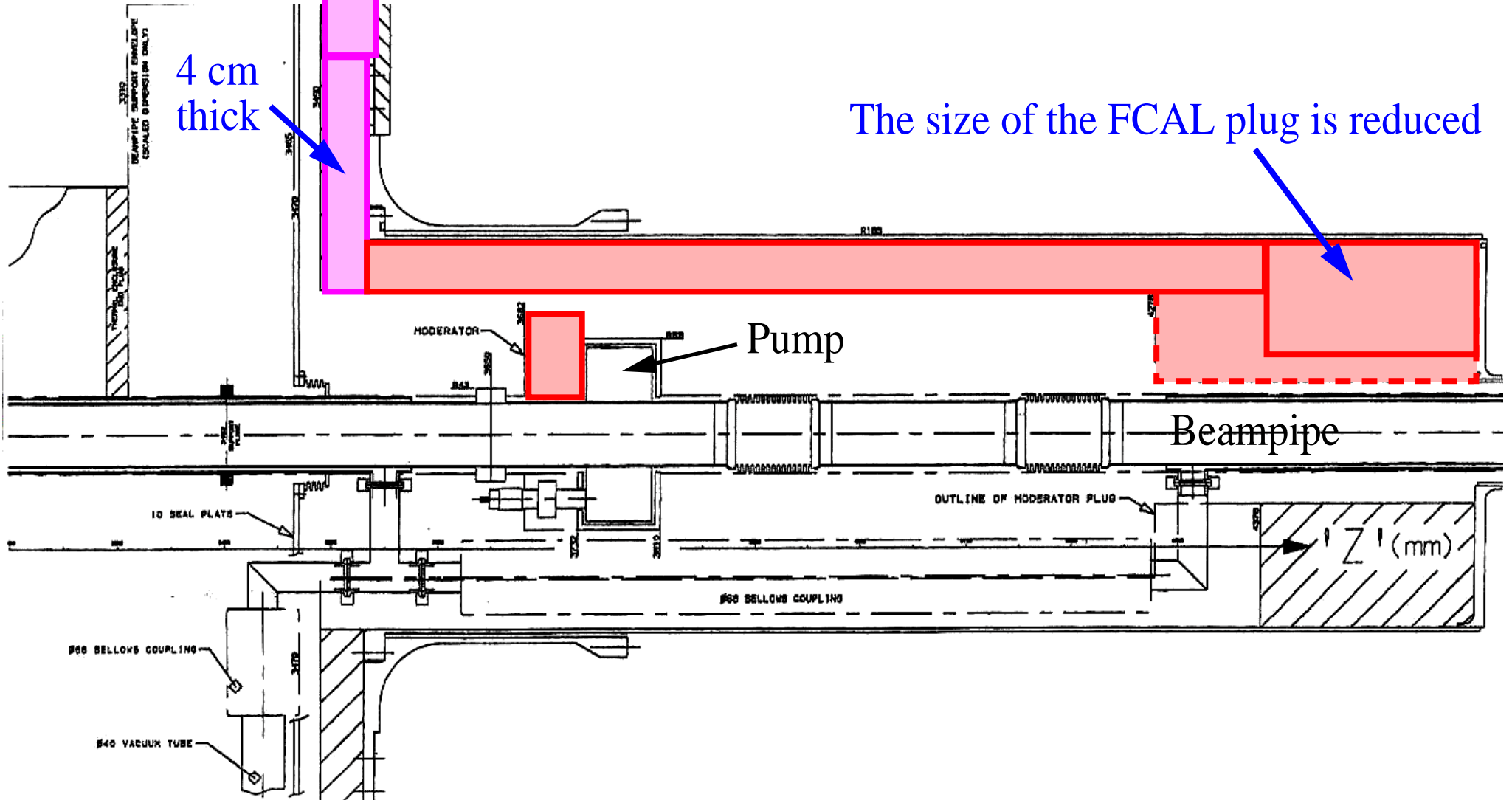
Optimization

LAr Calorimeter

5 cm thick

4 cm thick

The size of the FCAL plug is reduced



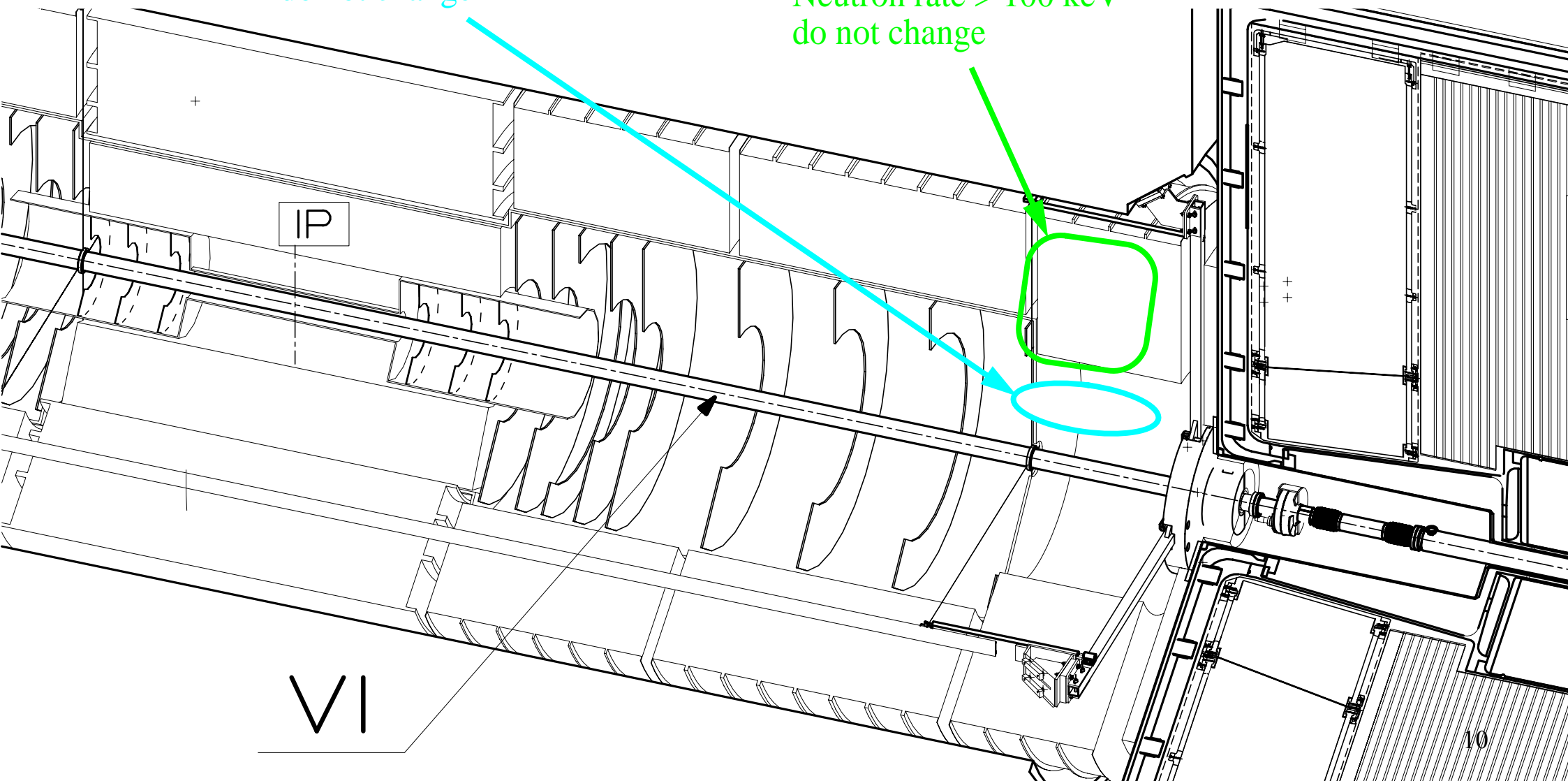
Change in background rate when the FCAL plug is reduced.

Photon rate do not change

Neutron rate > 100 keV
do not change

Photon rate do not change

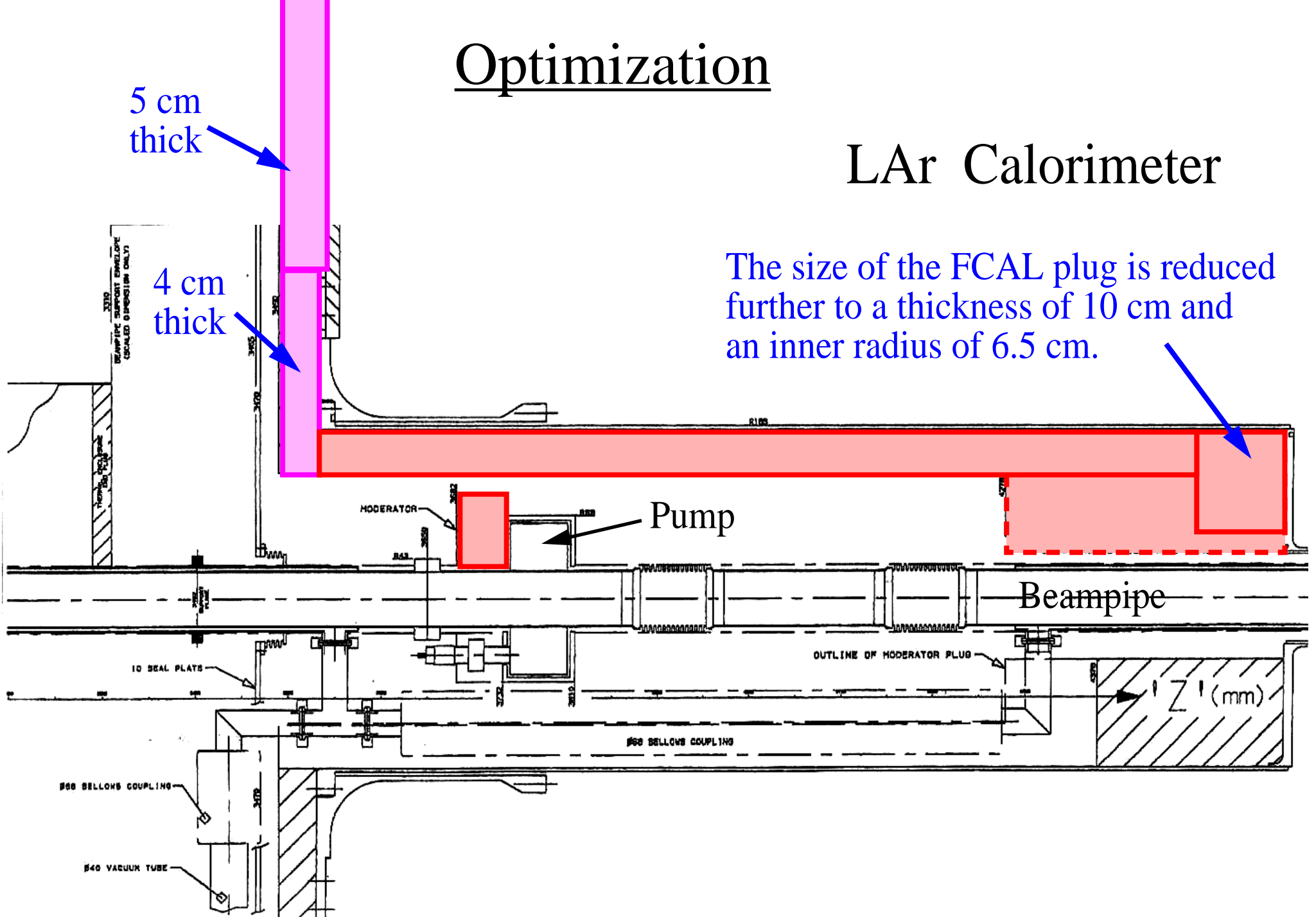
Neutron rate > 100 keV
do not change



Optimization

LAr Calorimeter

The size of the FCAL plug is reduced further to a thickness of 10 cm and an inner radius of 6.5 cm.



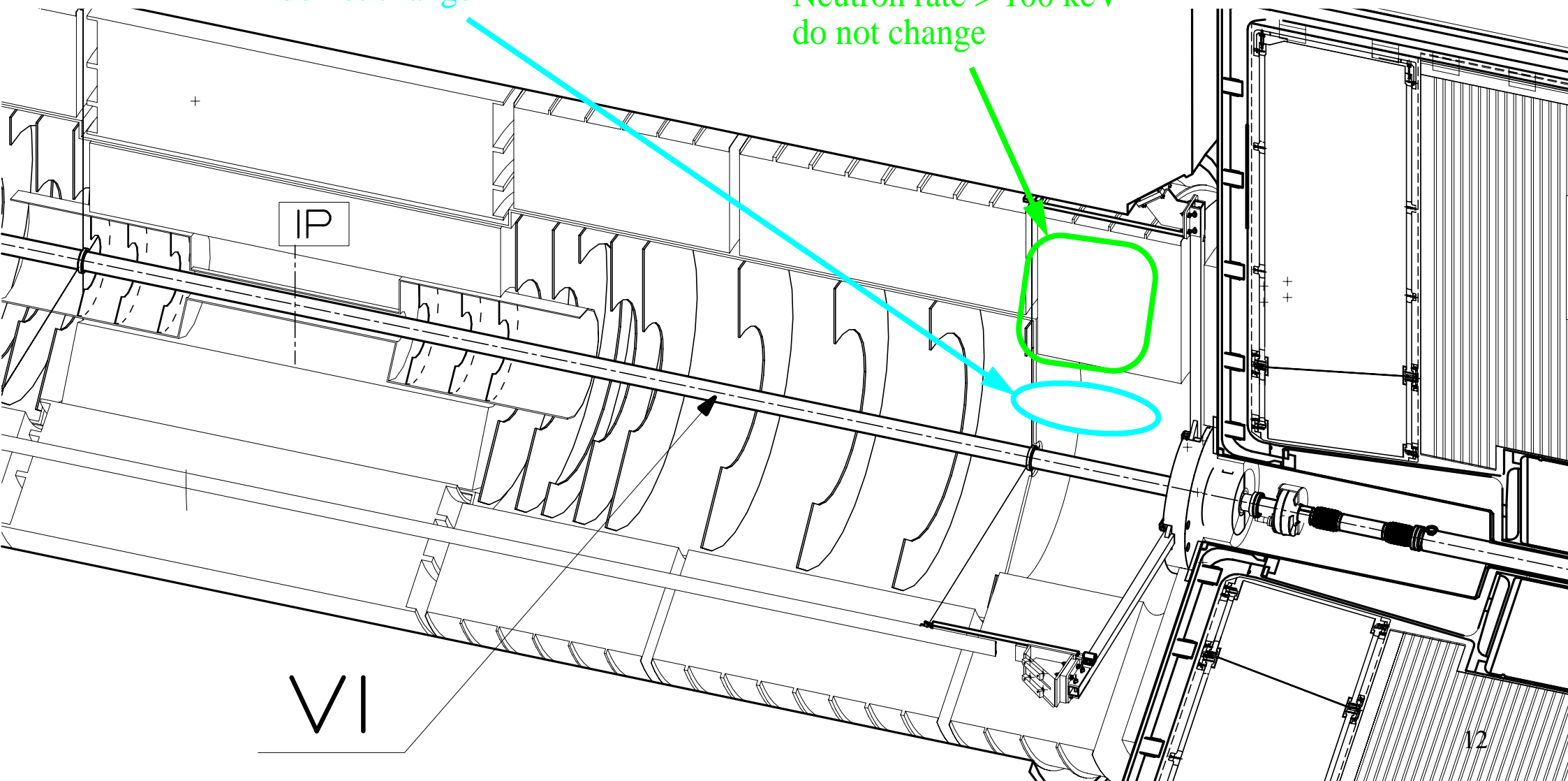
Change in background rate when the FCAL plug is reduced.

Photon rate do not change

Neutron rate > 100 keV
do not change

Photon rate do not change

Neutron rate > 100 keV
do not change



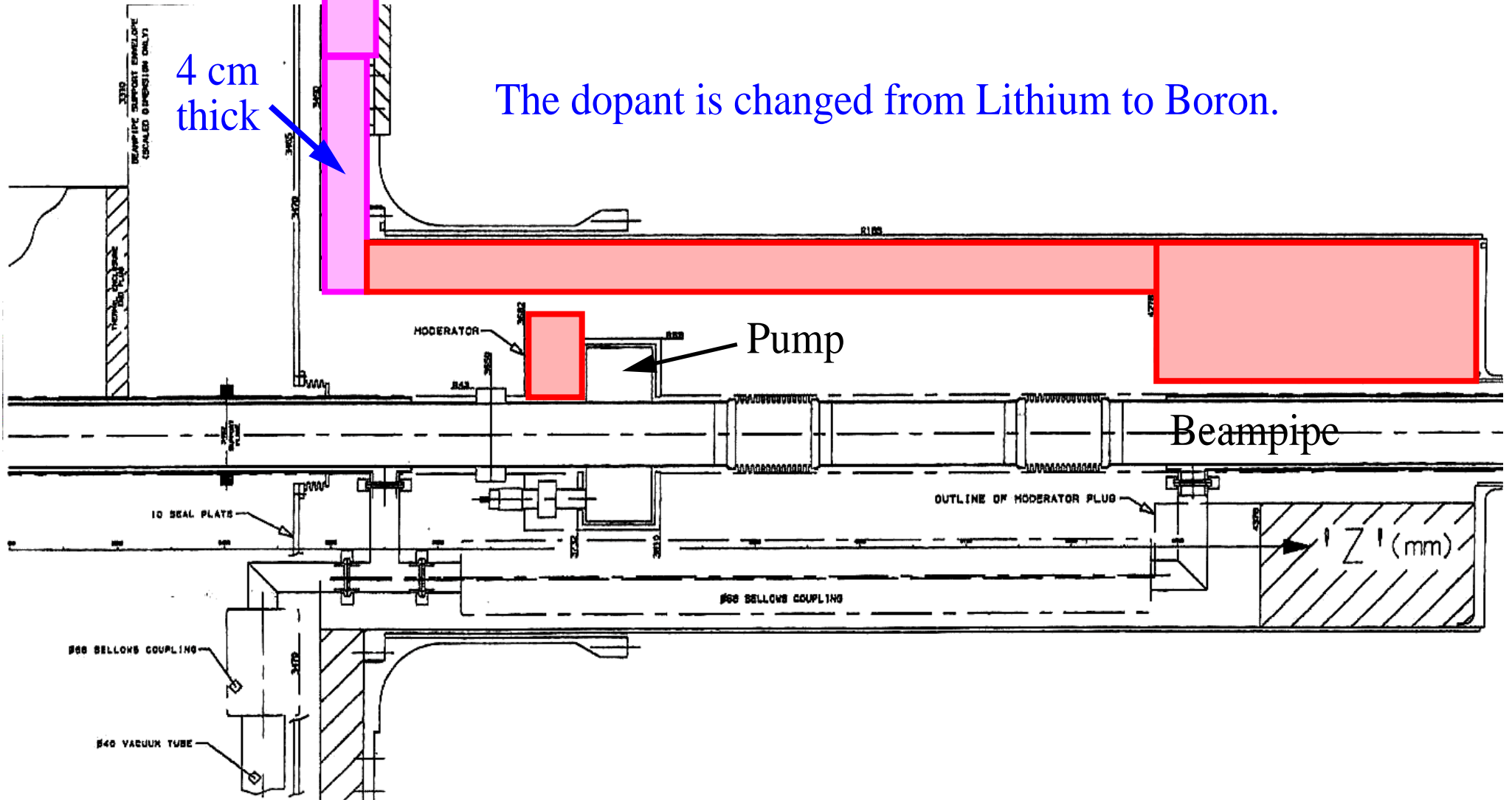
Optimization

LAr Calorimeter

5 cm thick

4 cm thick

The dopant is changed from Lithium to Boron.



Change in background rate when the dopant is changed.

Photon rate do not change

Neutron rate > 100 keV
do not change

Photon rate do not change

Neutron rate > 100 keV
do not change

