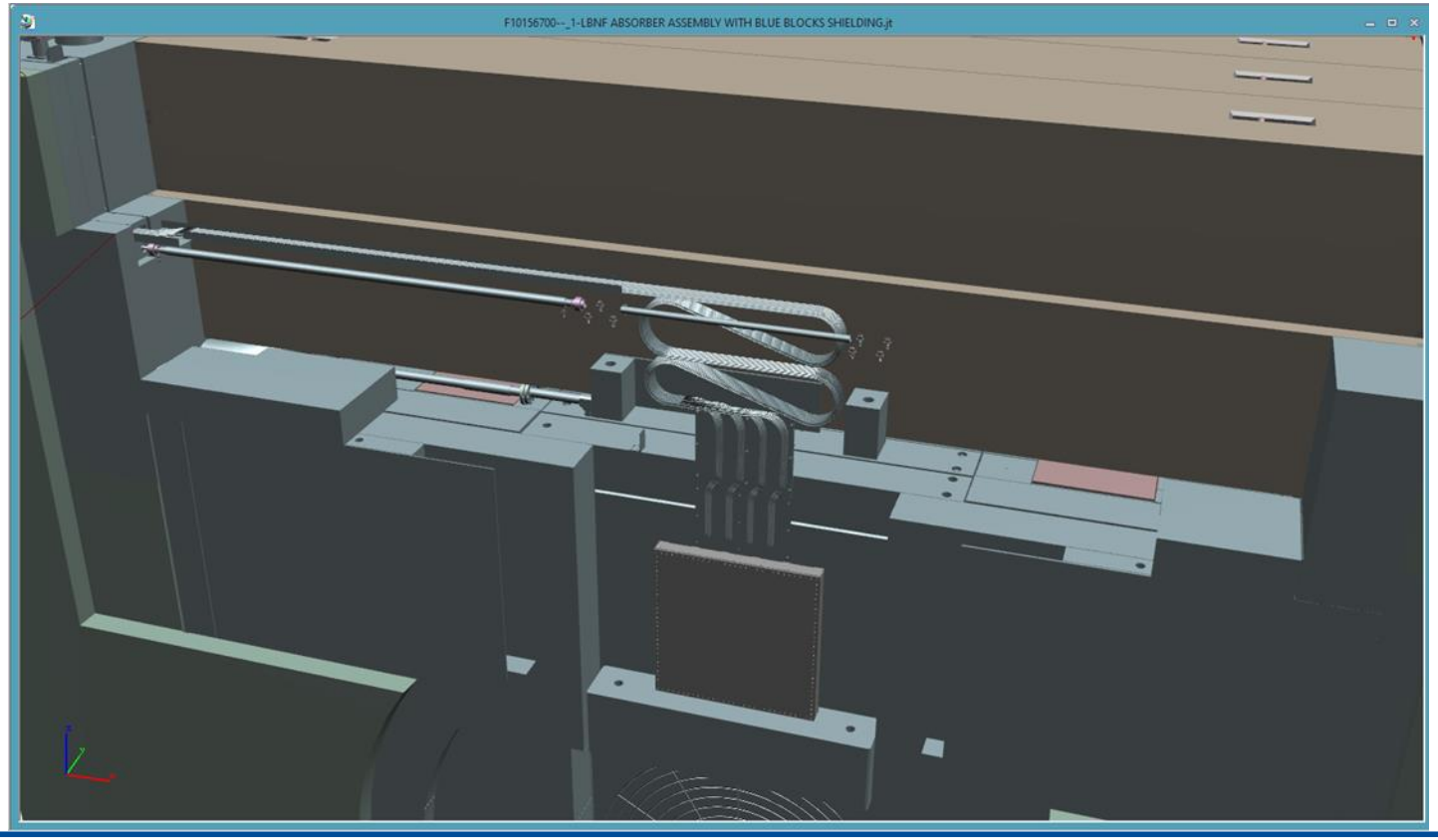
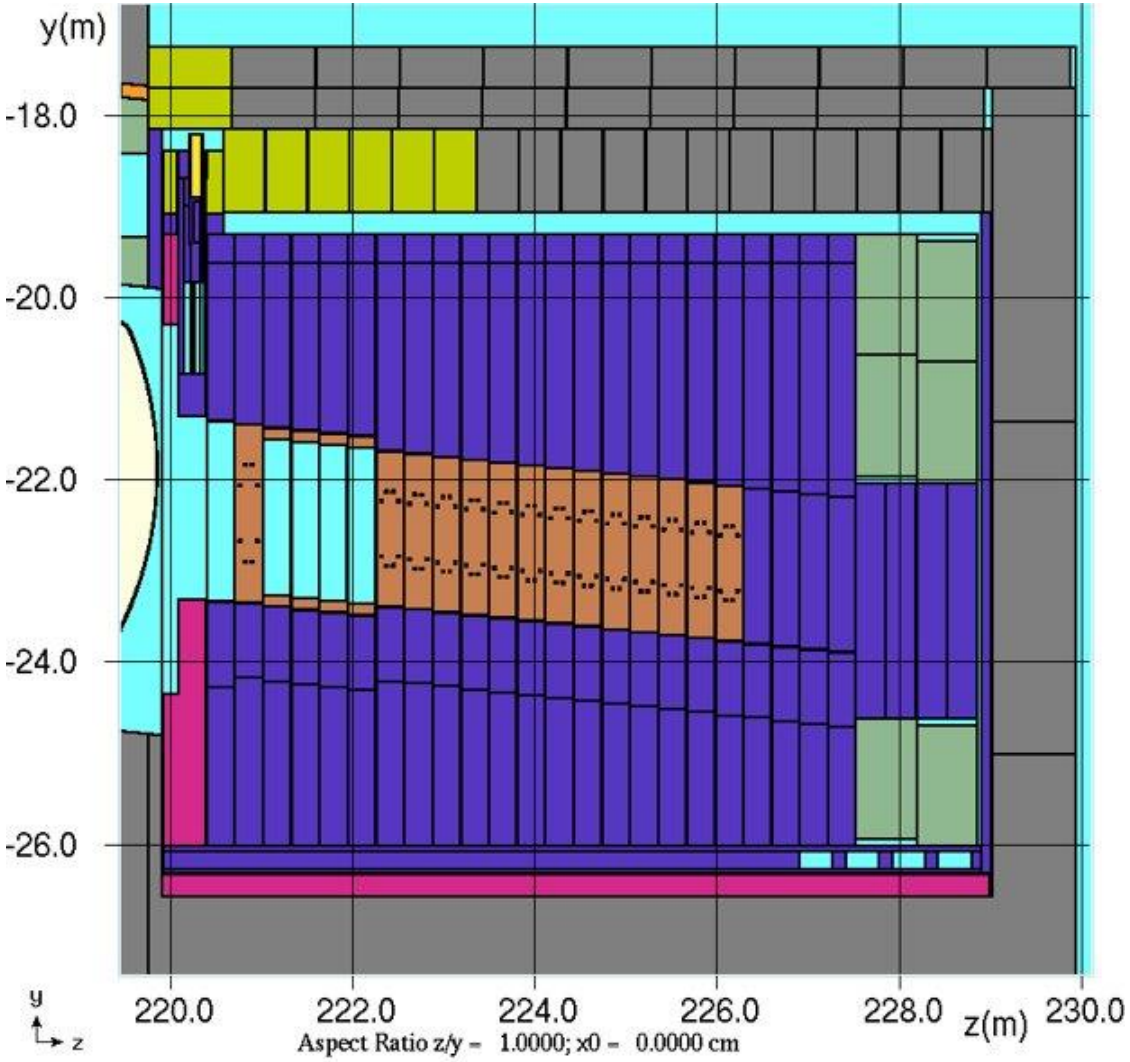
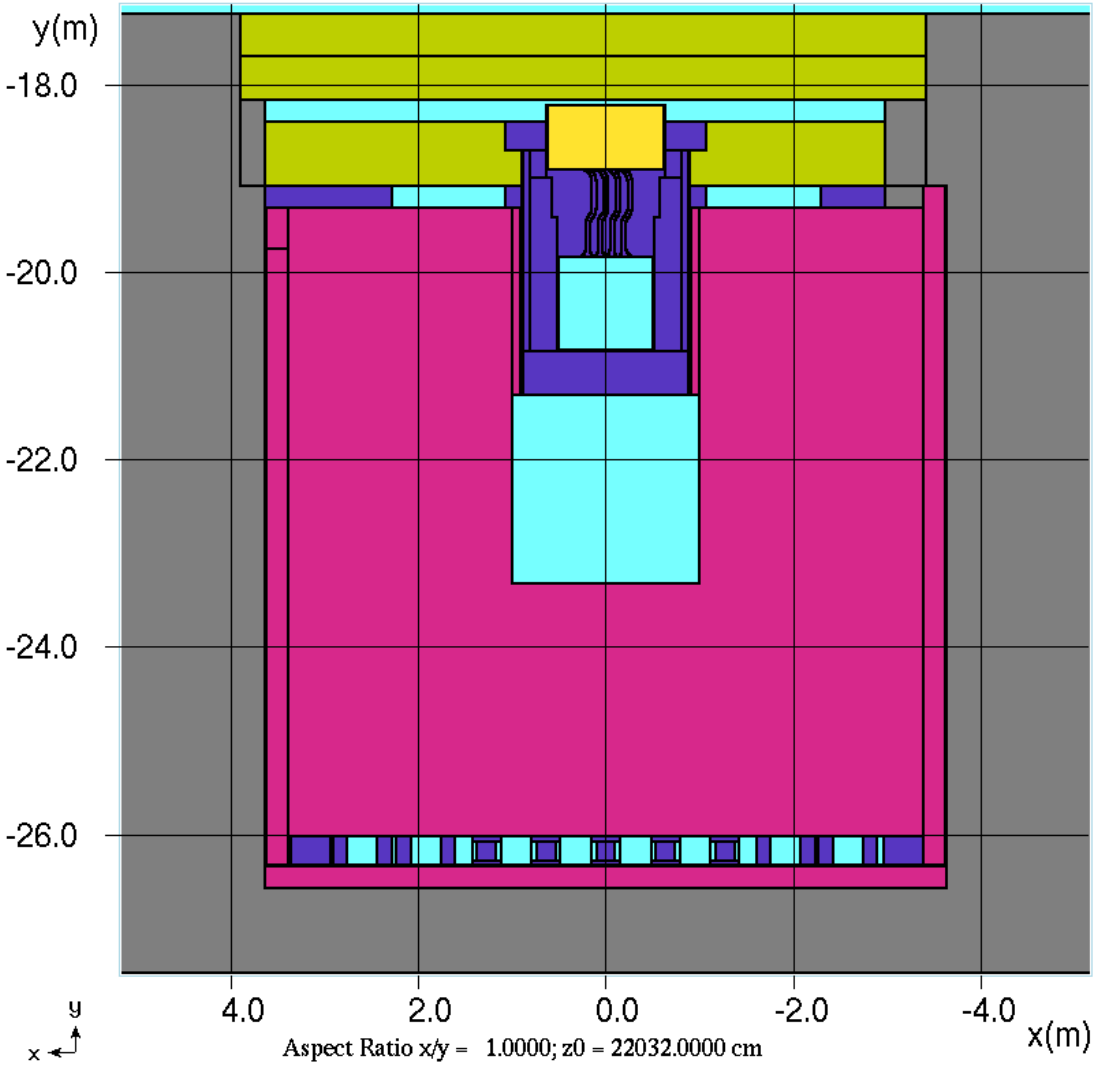
131.NSCFB.03.01.01.02 – Radiation Modeling – Absorber Complex and Decay Pipe

- Work on implementation of the most recent updates to Hadron Absorber model (submitted by V. Sidorov in the end of May) is close to completion. The Figures below show a 3D view of **internal structure** of the block with Hadron Monitor and openings for cables as implemented in the CAD model as well as several views from the updated MARS model.



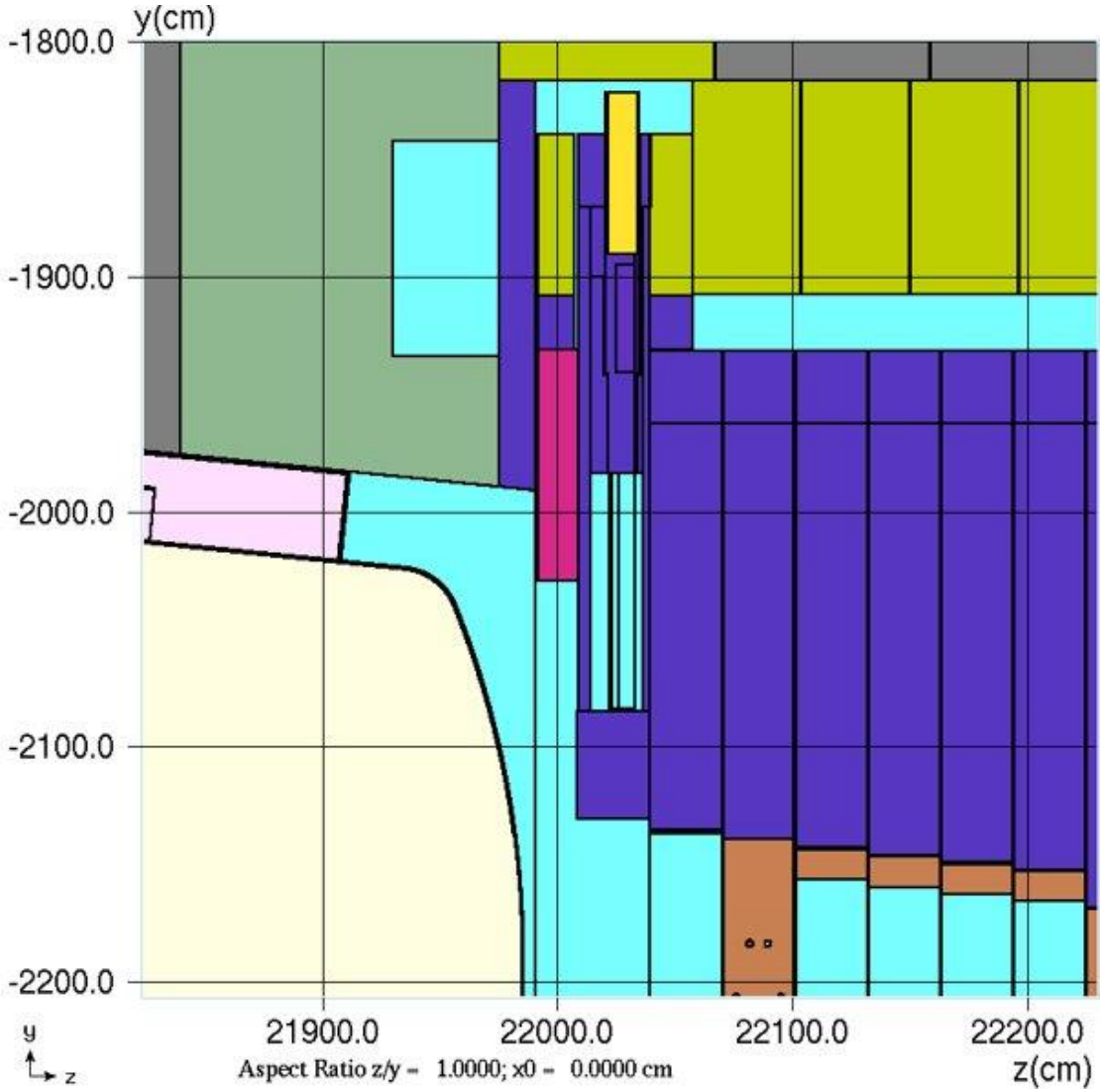
131.NSCFB.03.01.01.02 – Radiation Modeling – Absorber Complex and Decay Pipe

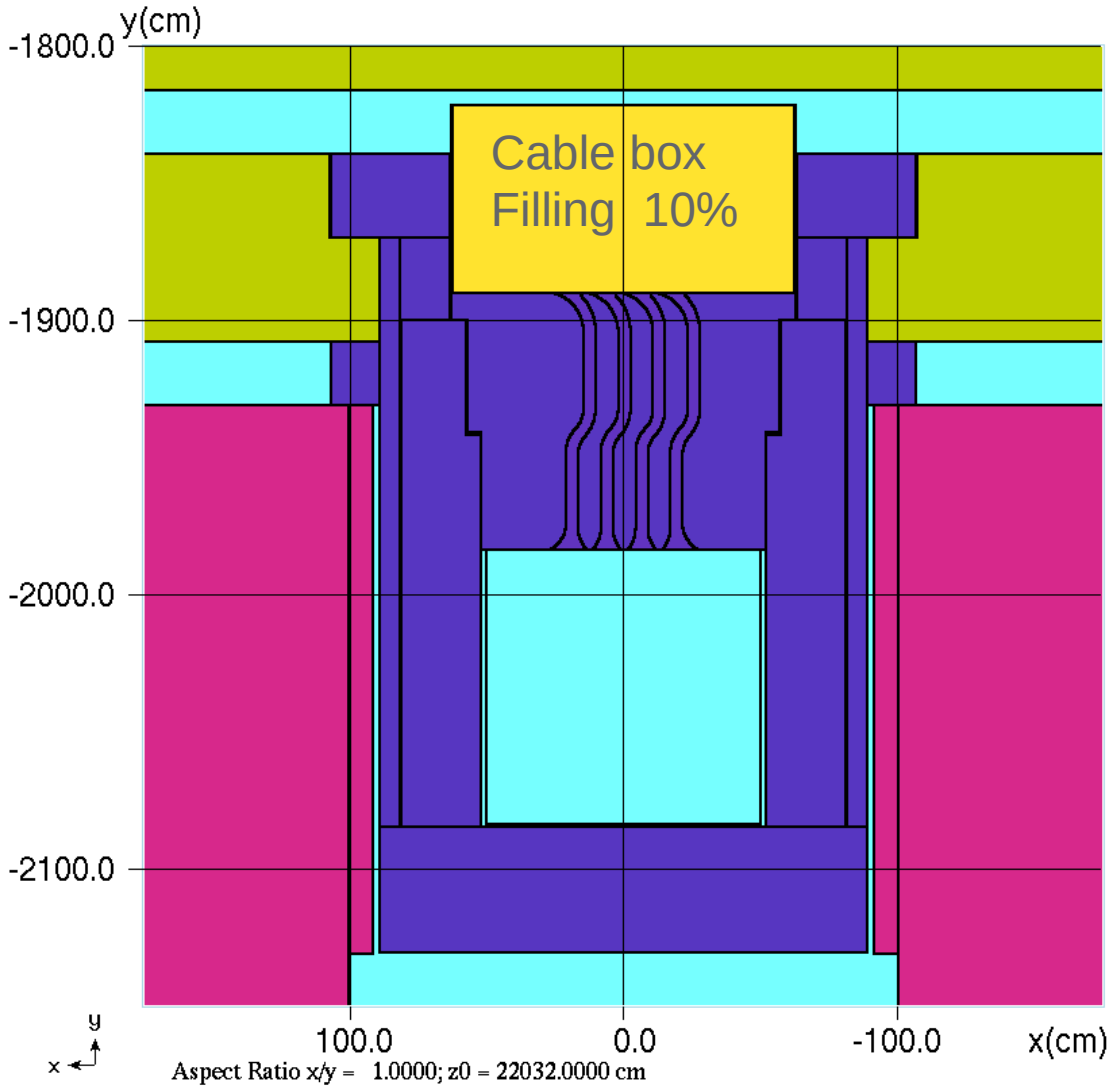




131.NSCFB.03.01.01.02 – Radiation Modeling – Absorber Complex and Decay Pipe

F10224562--_1-HADES Retractive system version-3

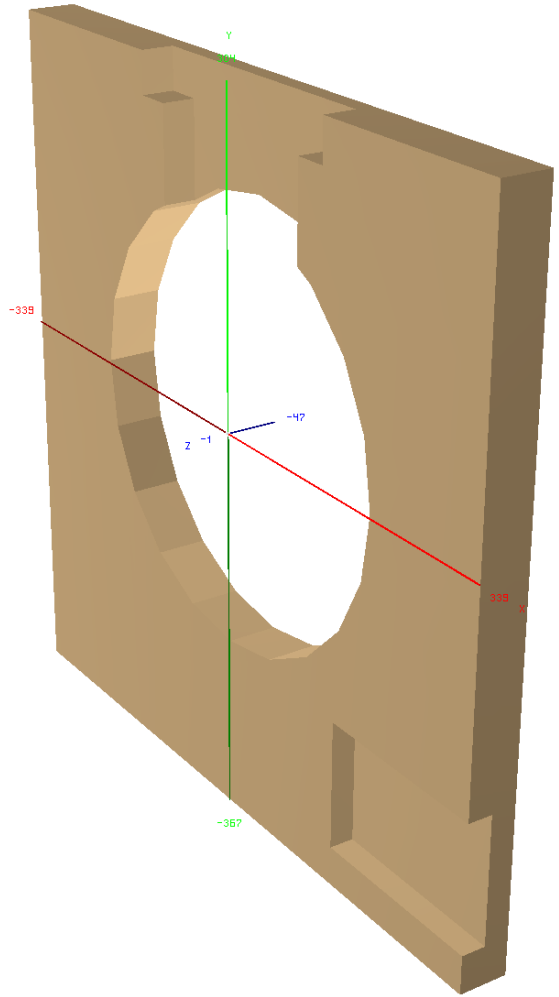




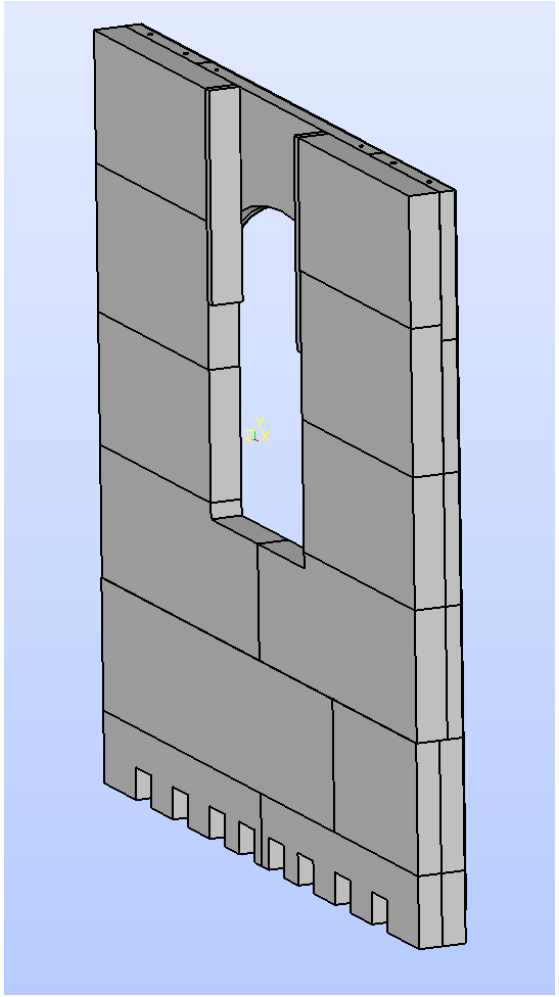
131.NSCFB.03.01.01.02 – Radiation Modeling – Absorber Complex and Decay Pipe

Updated Front Shielding

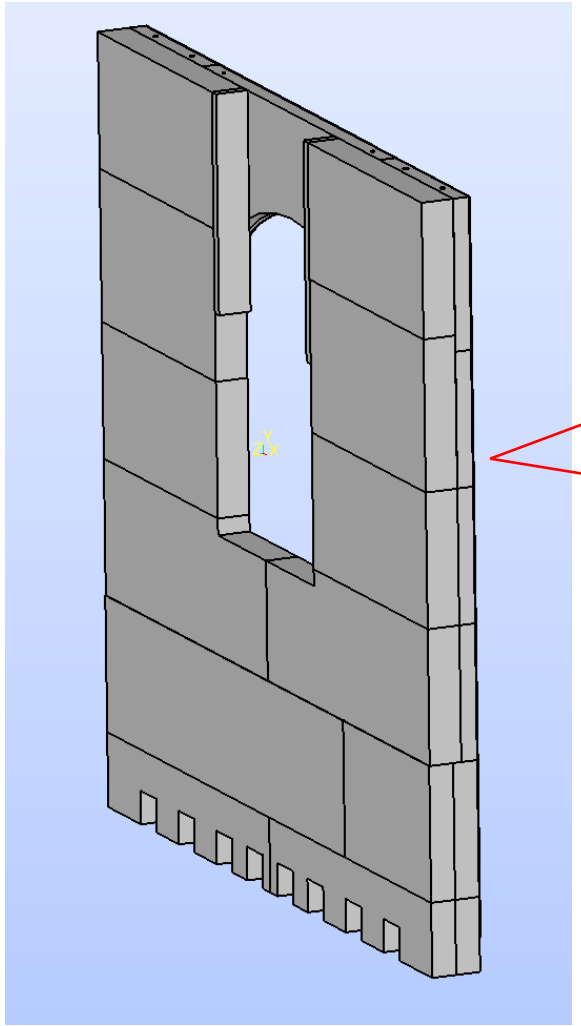
Previous

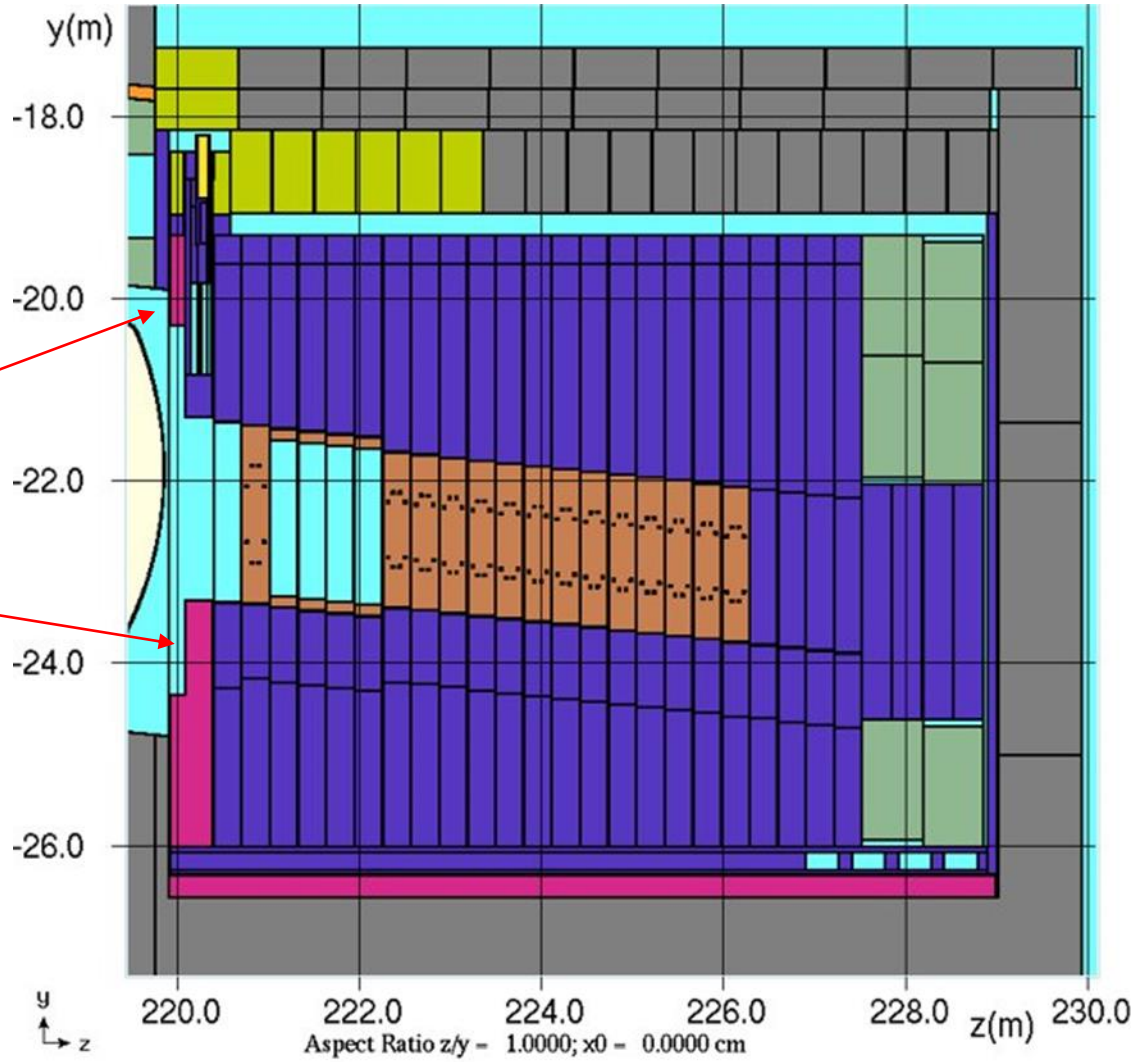


Current



131.NSCFB.03.01.01.02 – Radiation Modeling – Absorber Complex and Decay Pipe

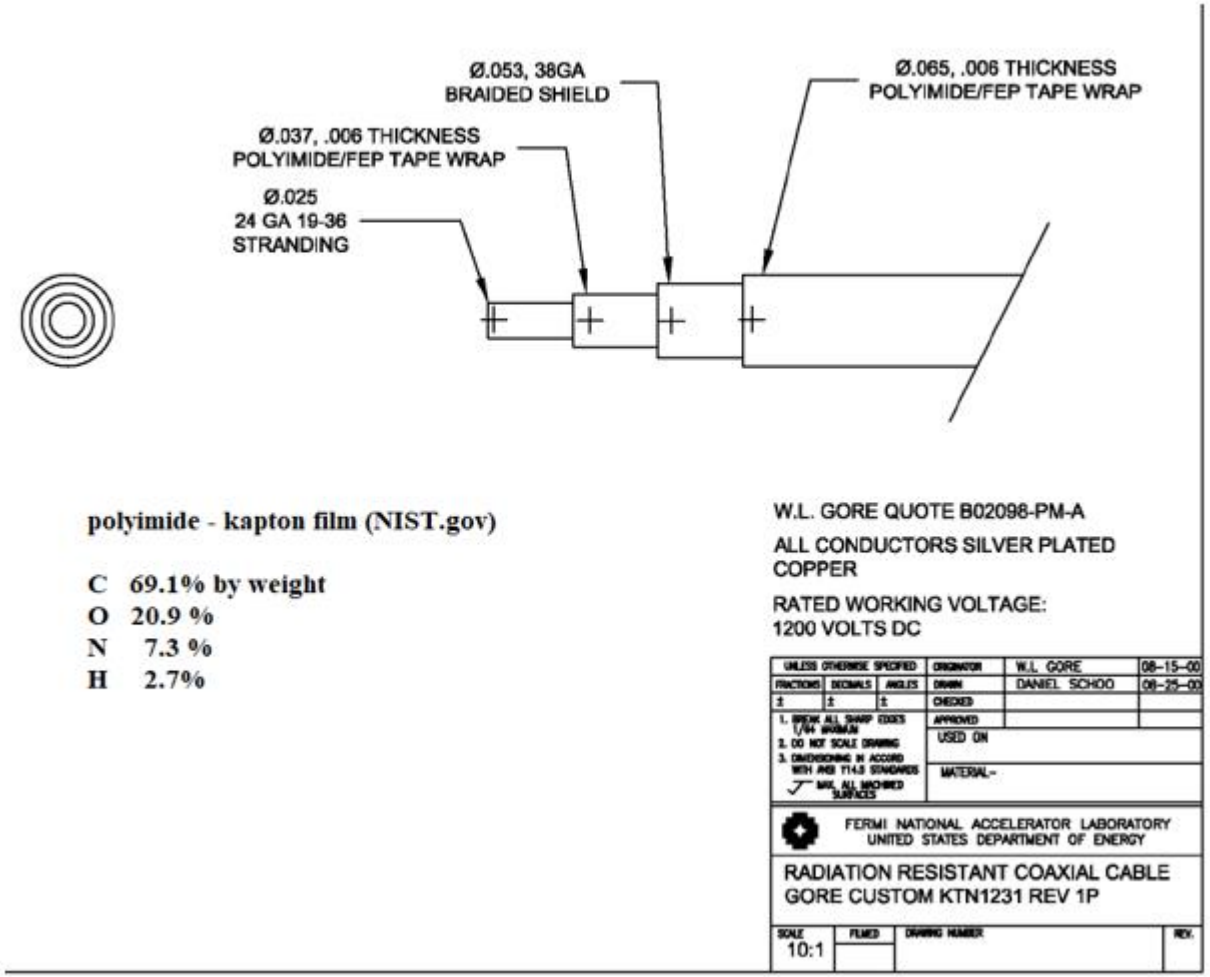




Pre-defined conditions for residual dose calculations

- The residual dose calculations should be done for 200-day irradiation and for several cooling times (1 day, 3 days, 7 days, 14 days).
- Irradiation geometry corresponds to the recent drawings by V. Sidorov (with Hadron Monitor in upper position).
- For cooling geometry, 2 cases should be considered: (i) 4 upper leftmost blocks are removed; (ii) 4 upper leftmost blocks are removed, and 2 lower leftmost blocks are removed as well (that is 6 blocks total). For both the scenarios, the Hadron Monitor assembly is in place.
- Regarding the cable box filling (see p. 3) above, the 10% filling with cables is assumed as a conservative estimate.
- The geometry model of the cables should correspond to the right figure shown on the next page (p. 7, AWG 50-Ohm coaxial cable). Composition of the kapton insulation is shown on the left figure, and both the conductor and pleated layer are assumed to be natural copper.

Pre-defined conditions for residual dose calculations



For last 3 Hadron Monitors we used wire similar to;