

Cell Rupture Containment Idea – TA, BW 08/09/2023

- Our single biggest time loss is a cell rupturing due to radiation cleanup (~1 week)
- New safety rules about after-hours hazardous work will increase time lost – glass cleanup, cell install, laser alignment, EPR, repolarization and optimization of new cell.....
- Idea (BW) to contain glass pieces:
 - Wrap with Kapton tape – we already use in small quantities and have never seen indication that it damages the cells
 - 5 mil, 20x smaller rad. length than glass = negligible
 - Coefficient of linear thermal expansion: 4x GE180
 - Effect on convection? Maybe an improvement due to insulating effect.....

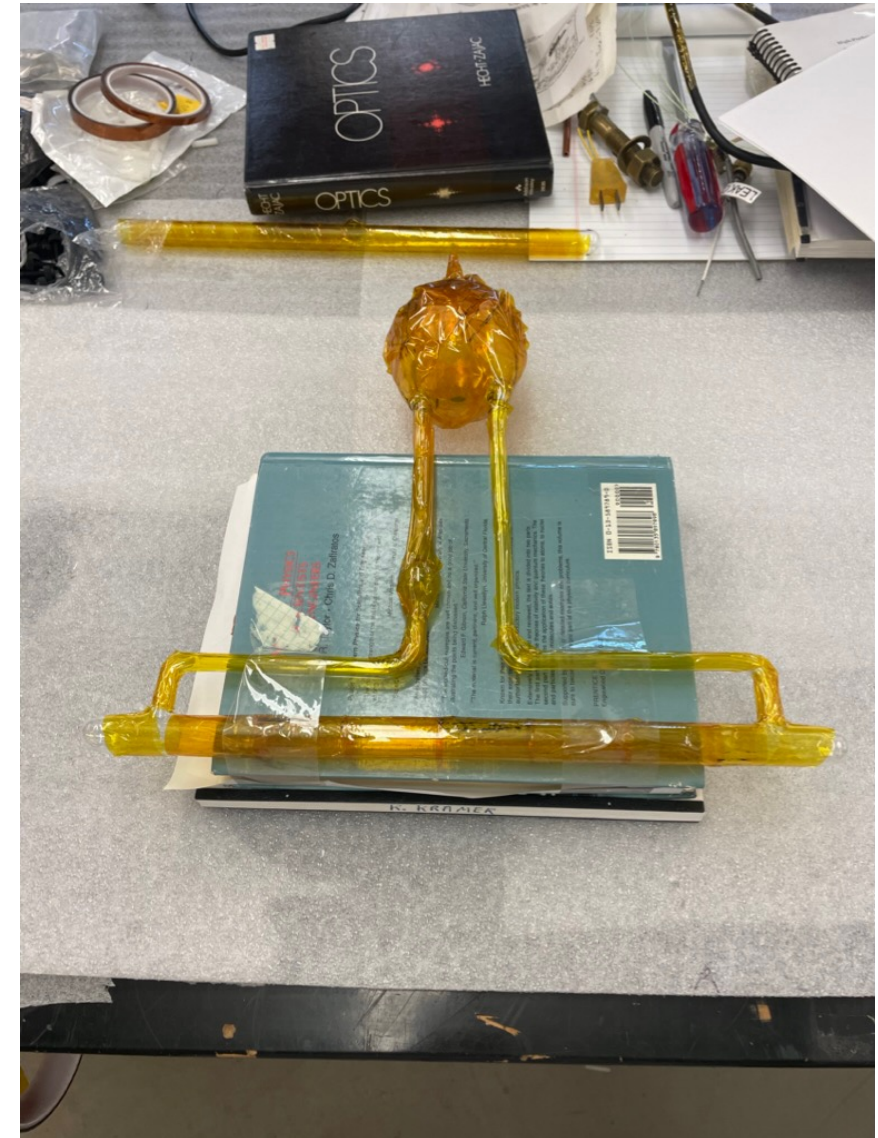
This idea was explored at WM:



PC tape only for testing



Old reference cell



A1n/d2n cell ZOE

- Tried a test with cell ZOE from A1n/d2n
- Suspect this cell had leaked. ~ 2% pol'n, but weren't sure.
 - It was indeed at low pressure → inconclusive test

- Willing to repeat this test with a poor GEn-II cell, A1n or reference cell.
- Prefer GEn-II cell because it has the correct volume, TC size, pressure and stored energy.

Highly advanced rupturing mechanism

