

## DSG Ansys R&D Meeting Minutes

**Date:** November 2, 2023

**Time:** 2:00 PM – 2:30 PM

*Attendees: Peter Bonneau, Aaron Brown, Pablo Campero, Brian Eng, George Jacobs, Tyler Lemon, and Marc McMullen*

### 1. NPS thermal analysis with Ansys Mechanical

*Aaron Brown and Pablo Campero*

1. Meshing model with crystal array, cooling plate, and dividers
  - Received mesh files from Ansys support
    - Partitions for the created regions were removed
    - Mesh for the crystal only had eight mesh cells
  - Adding face sizing features to improve mesh quality of the crystals
  - Discussed methods of adding convection to the air, front, and back regions of the crystal
    - Convection will be assigned to the mesh cells of the crystal's wall, so may not need five regions
    - The dimensions of the air region will determine the mesh cells to which convection is applied

### 2. EIC beampipe Ansys Fluent thermal analysis

*Pablo Campero and Brian Eng*

1. Discussed graphics display issue with Ansys Mechanical Mesh software; computer might not have required graphics capacity
2. Reworking mesh due to issues found during first attempt of simulation
  - Added multizone and face sizing options to improve mesh of the aluminum parts of the model
  - Utilized sweep method and size option to achieve two layers in the thickness of the beryllium part; will resize the mesh cells in the  $z$ -axis direction
  - Mesh of the inner volume of the beampipe in progress

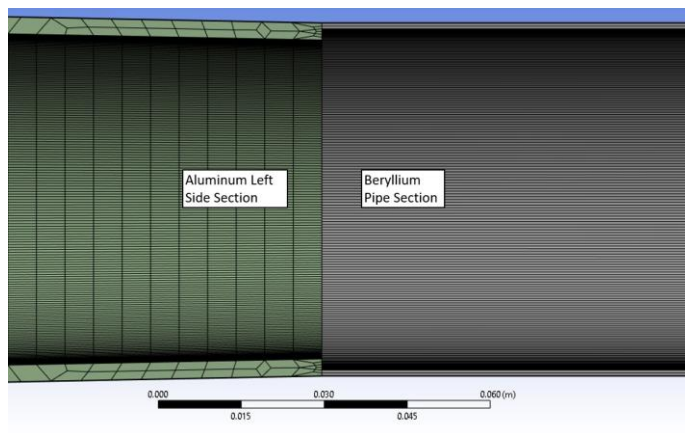


Fig.1. Close-up view, cross-section of the beryllium and aluminum sections of the meshed model