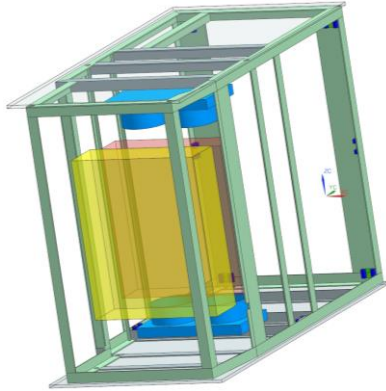


NPS sensor locations in NX12

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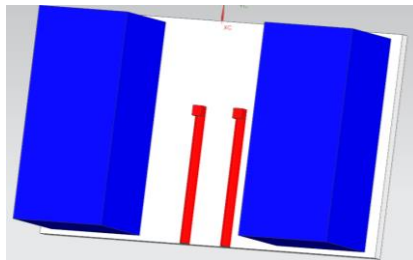
NPS sensor locations in NX12

This month I used NX12 to display the location of 10 sensor boards in the NPS enclosure. This model will help with the determination of the humidity and temperature sensors needed to monitor the NPS enclosure.



Isometric view of the NPS enclosure model, displaying the crystal array area (yellow), heat exchangers (blue), and electronics (red).

I designed a 76 mm x 44 mm board to act as a substrate for two Ohmic SC-600 humidity sensors and two Omega four-wire RTDs. The duplicate sensors provide redundancy for each position in the detector enclosure. I then designed block models for each sensor based on the sensor dimensions from the datasheets.



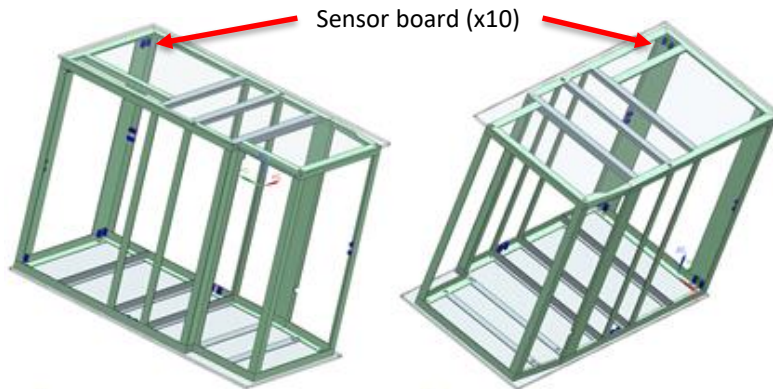
Redundant sensor board model with SC-600 humidity sensor (blue) and RTDs (red).

- Develop a solid model representation of the NPS sensor locations proposed by DSG
- The representation will be used to show the location of the humidity and temperature sensors needed to monitor the NPS enclosure

NPS sensor locations in NX12

Initially, the selected positions were; midway between the bottom and top of the enclosure, on the front and back ends of the right and left side panels. The bottom and center of each of the side panels. Finally, the four corners of the rear panel.

To illustrate positions, the sensor boards are color-coded to indicate what panel each is associated with. The three boards on the right panel are white. The three boards on the left panel are orange. All four boards on the rear panel are green.



Left and right views of the enclosure frame with positions viewable.

After the initial positioning of the boards on the panels, it was noted that in reality that mounting the boards on the panels would create accessibility issues due to the sensor cables. I decided it would be helpful to import the detector frame and position the boards on the frame itself.

In conclusion, we refer to this model in our weekly meetings to discuss sensor positions, and we are constantly coming up with new positions during the discussions. The model is evolving.