PROJECT MEETING

DESIGN IMPACTS OF INBOARD RF

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M. COLE / D. MAJESKI

OAK RIDGE NATIONAL LABORATORY
U. S. DEPARTMENT OF ENERGY

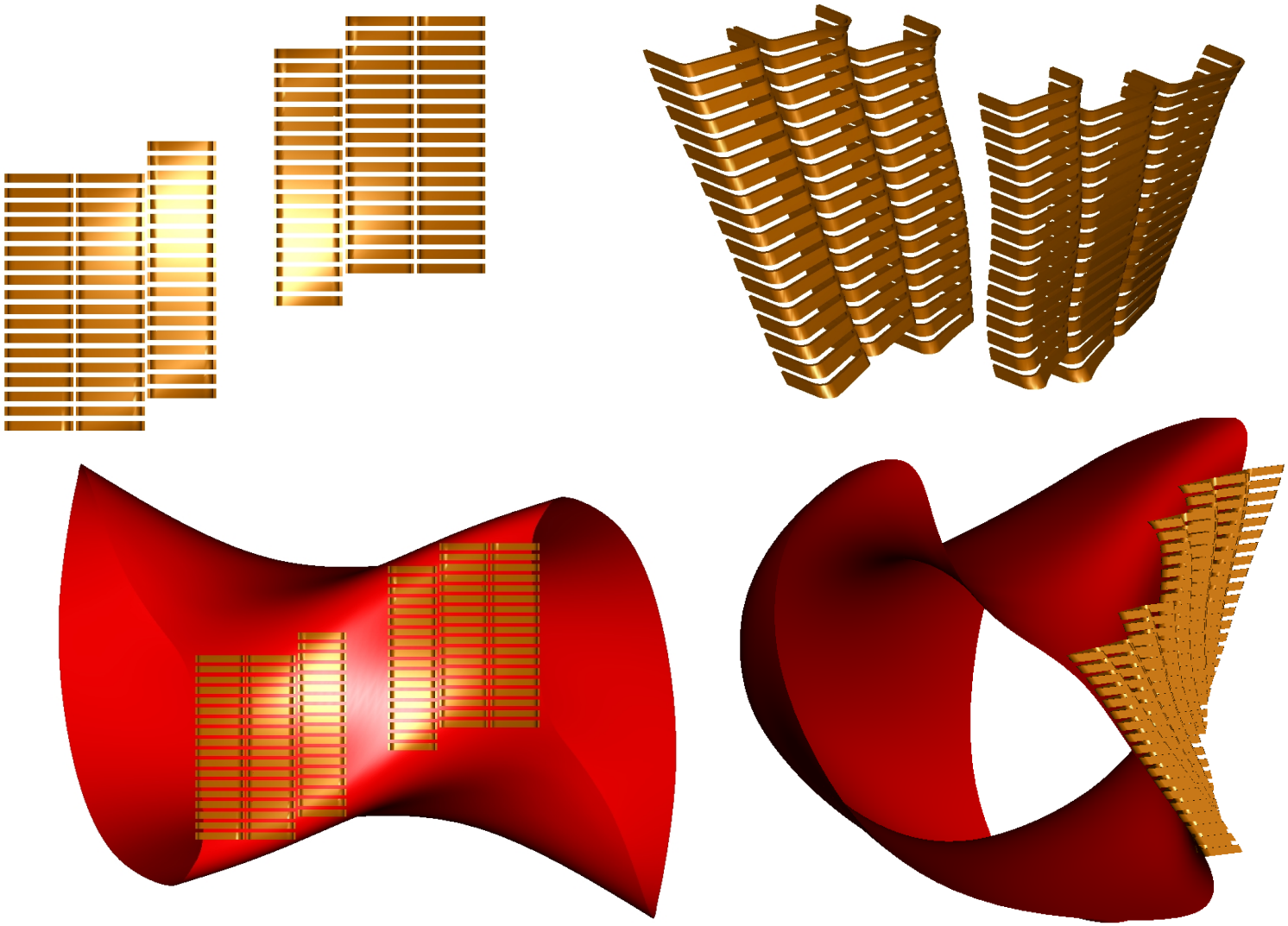
UT-BATTELLE

AGENDA

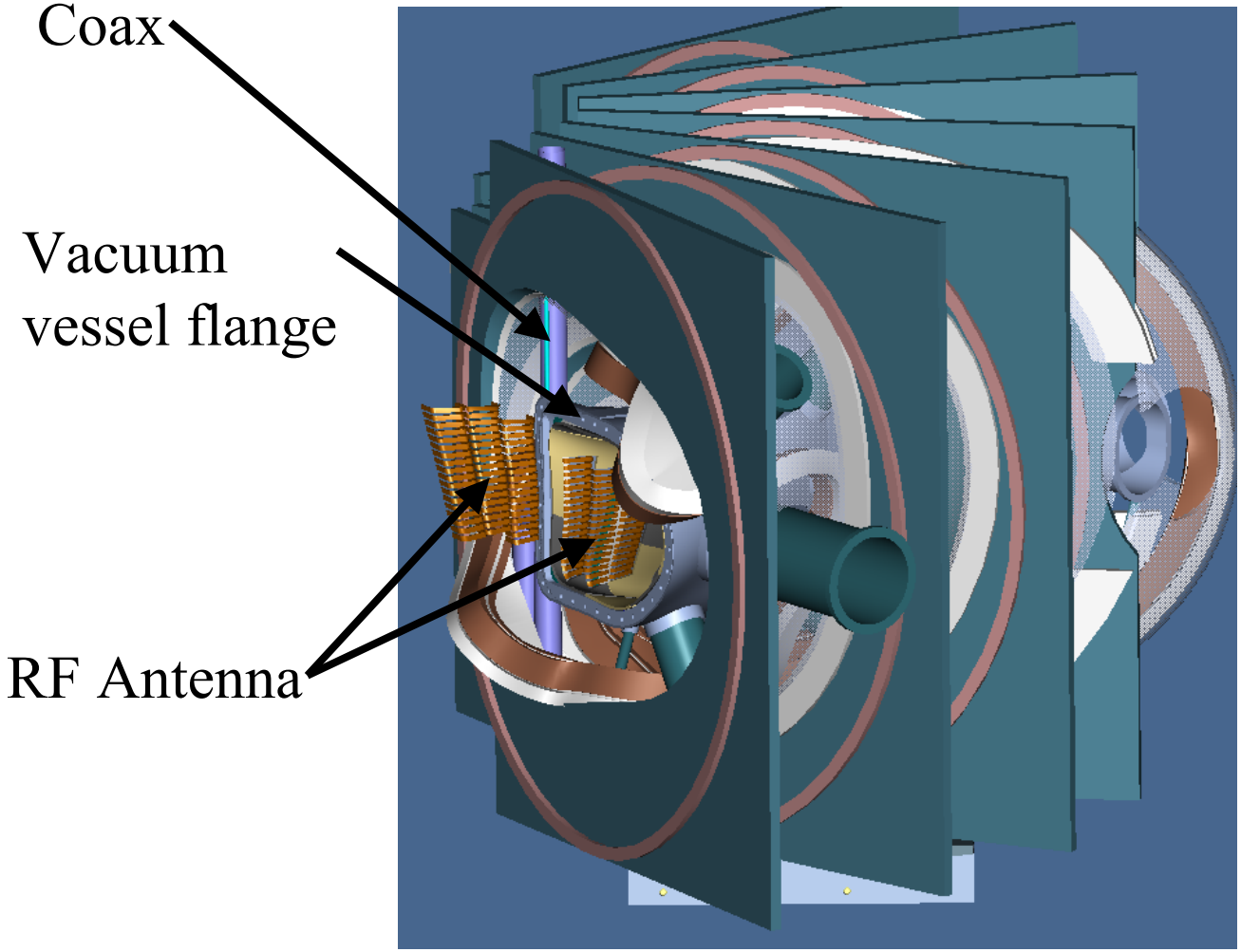
- Basic Concept Review
- Installation of RF
- PFC'S will have to accommodate installation of RF
- Changes to Vacuum Vessel
- MOD COIL ASSEMBLY OVER VESSEL

BASIC CONCEPT REVIEW

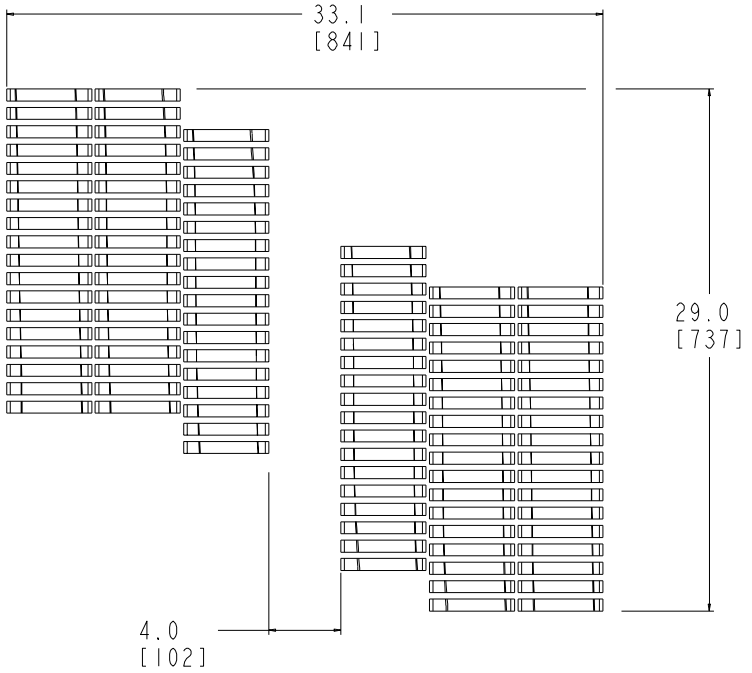
Antenna configuration on either side of vac vessel flange



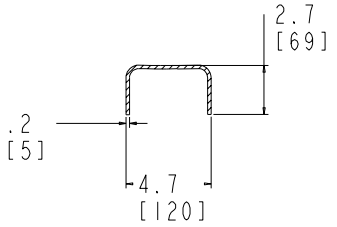
ANTENNA ON EITHER SIDE OF VACUUM FLANGE

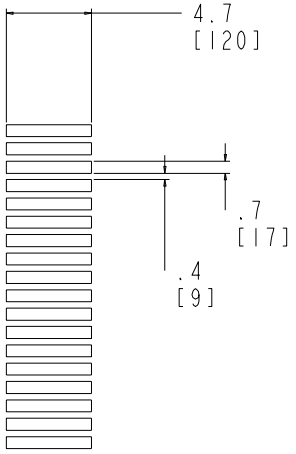


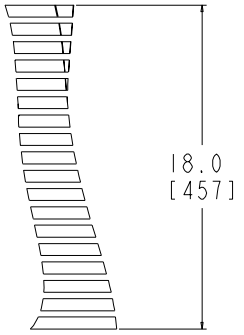
General RF Antenna Dimensions



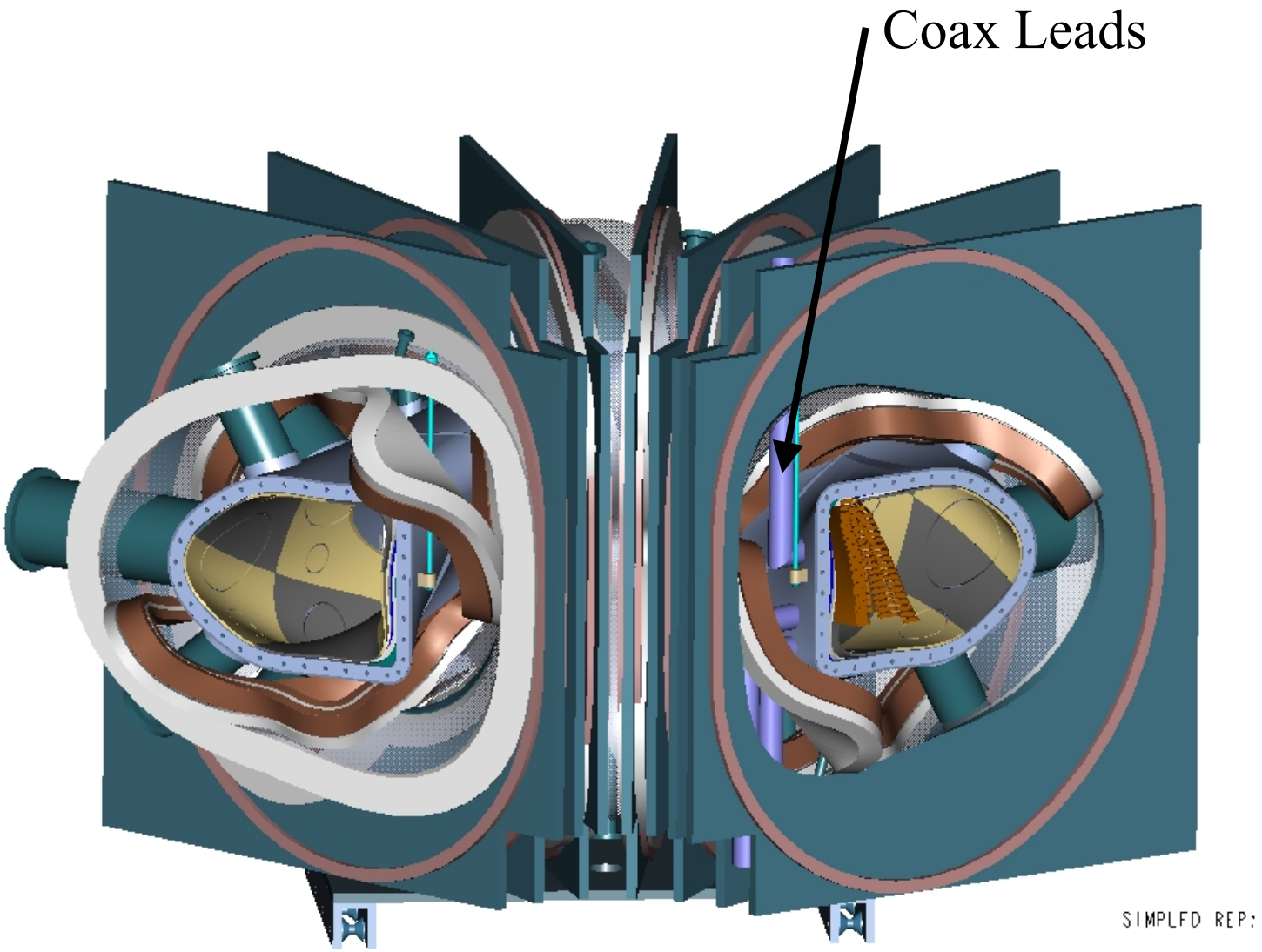
Dimensions are inches over mm



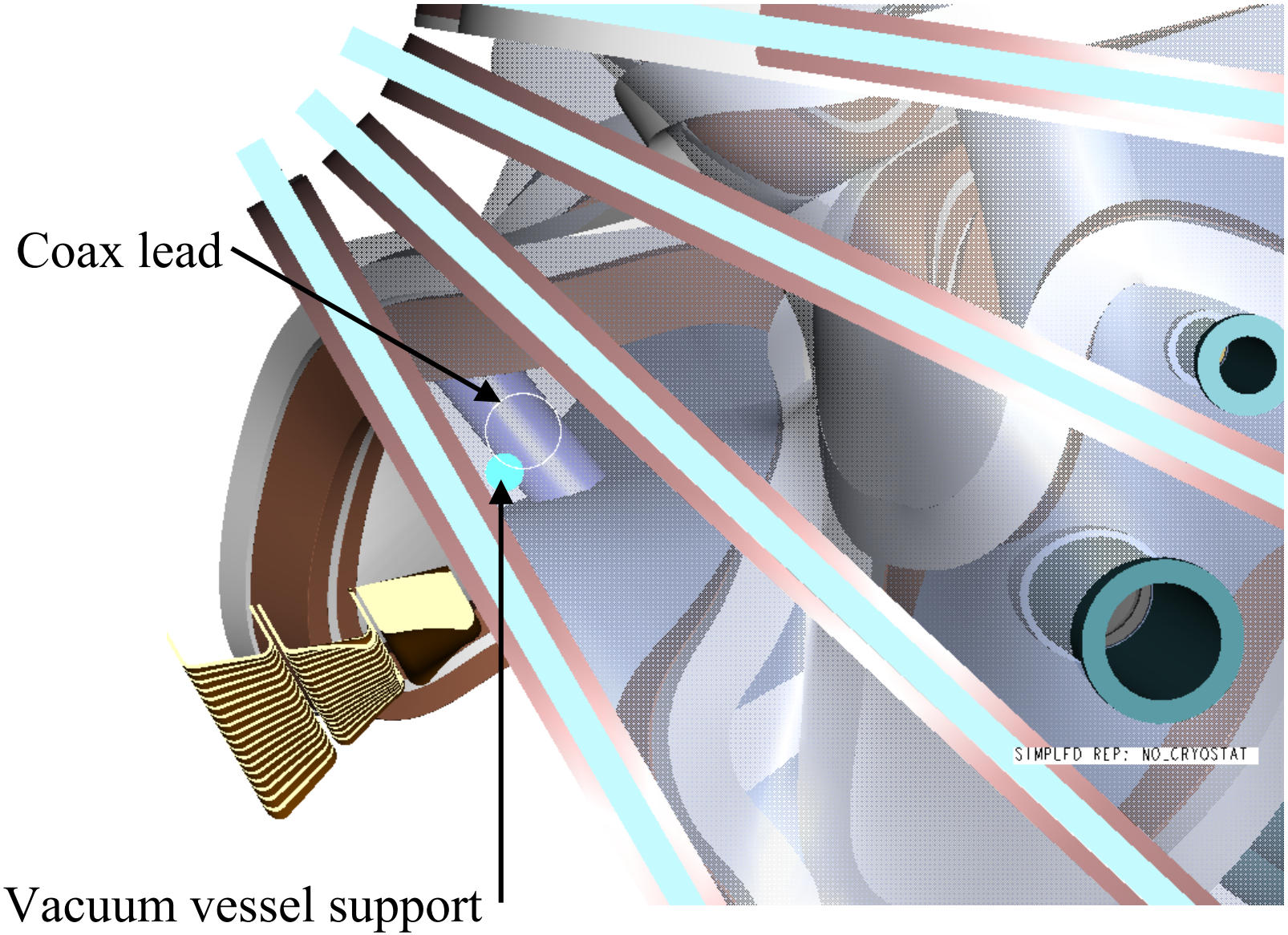




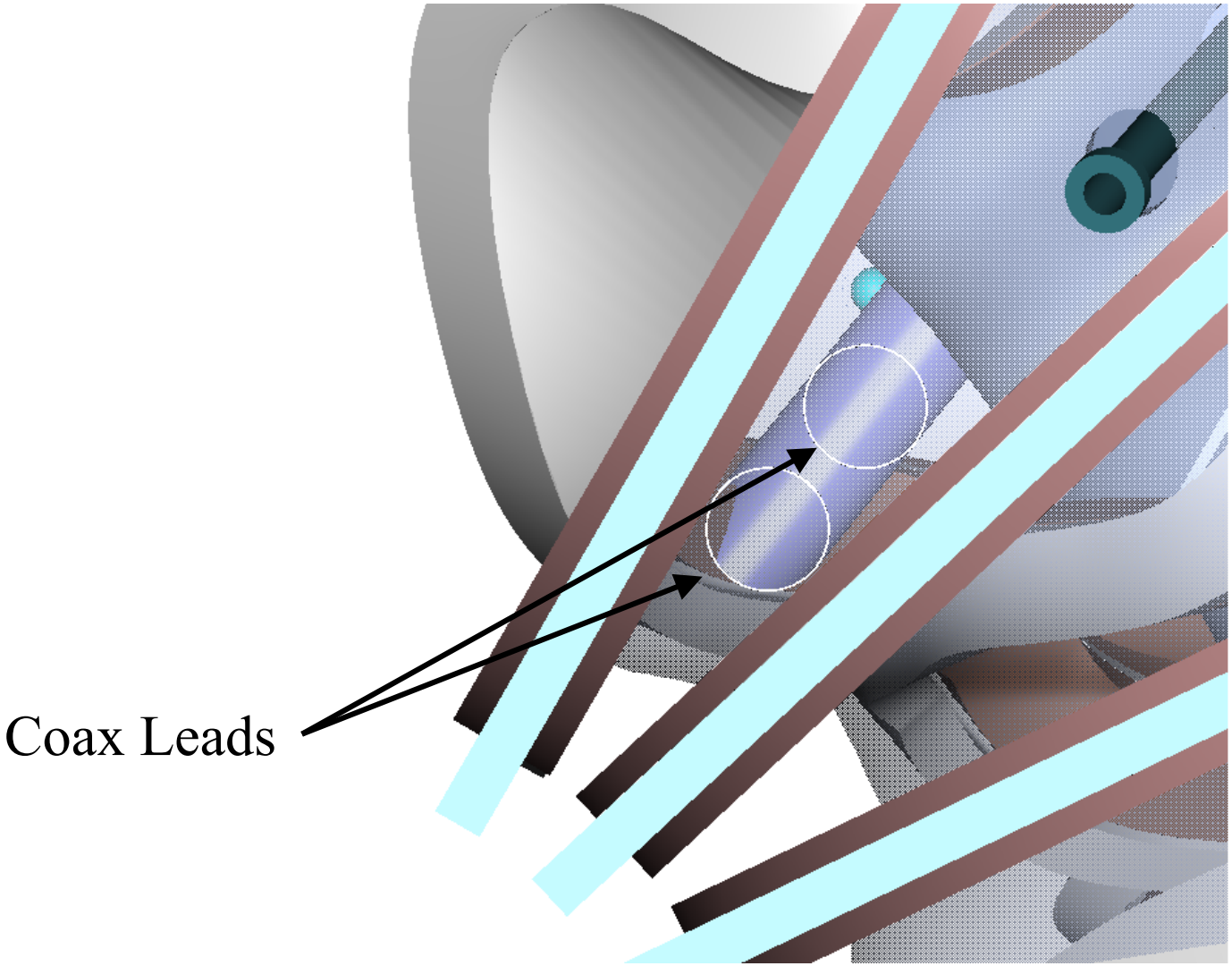
COAX LEADS



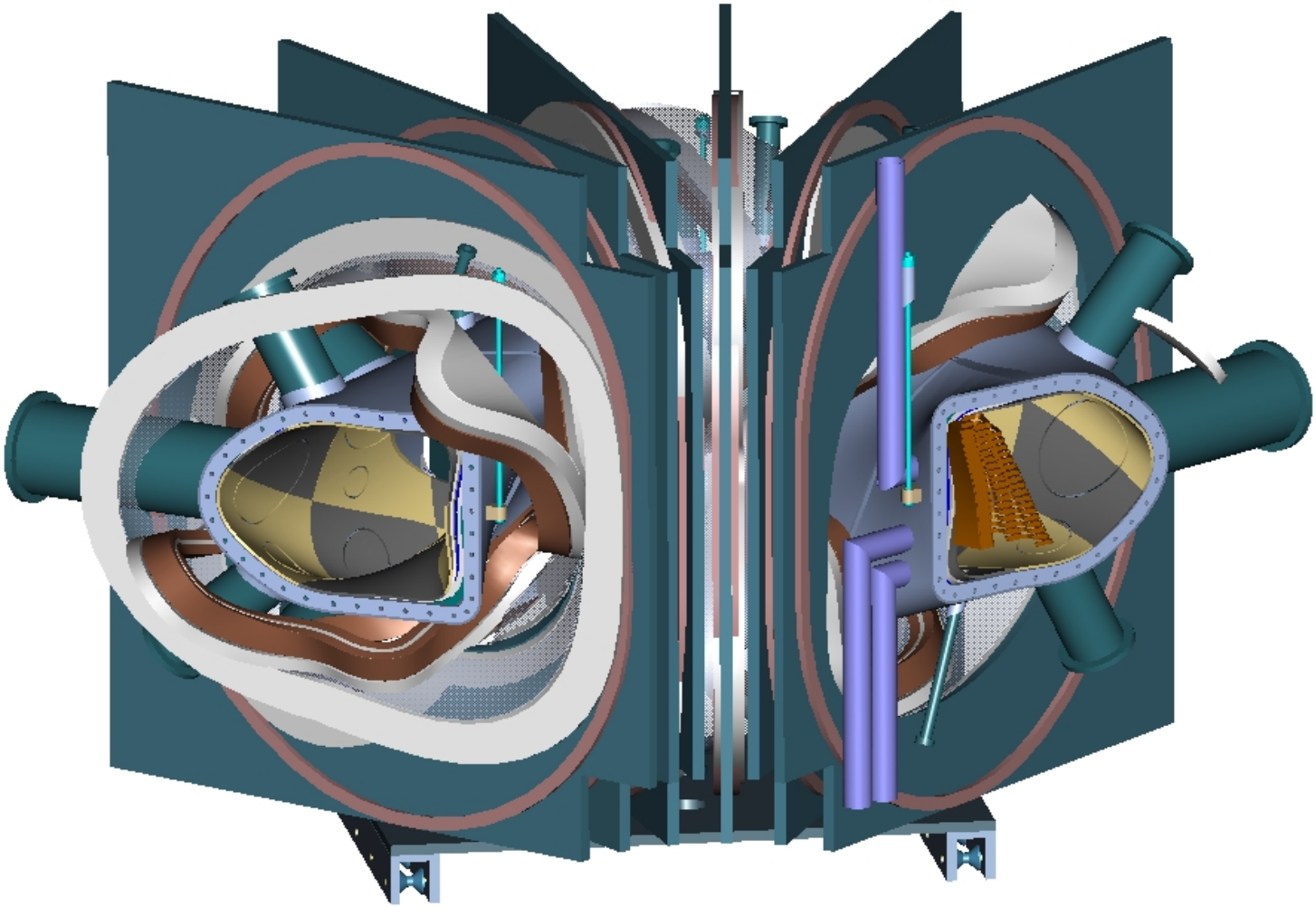
Top View Coax Lead



Bottom View Coax Leads

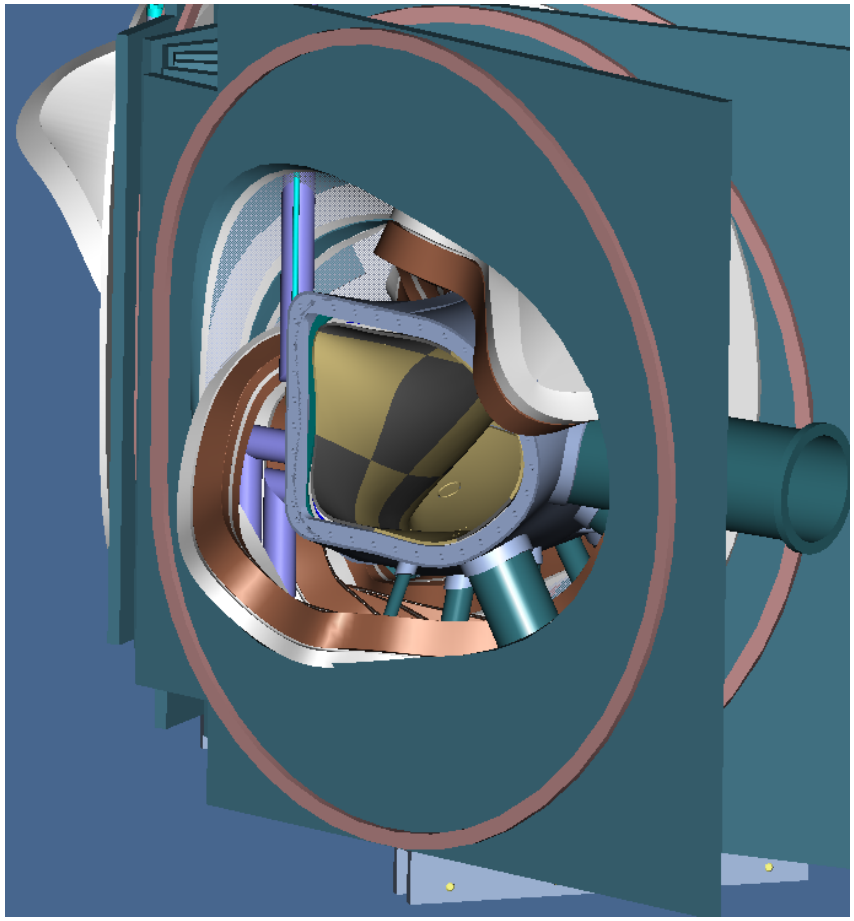


View showing coax leads with TF coils
and Modular coil removed

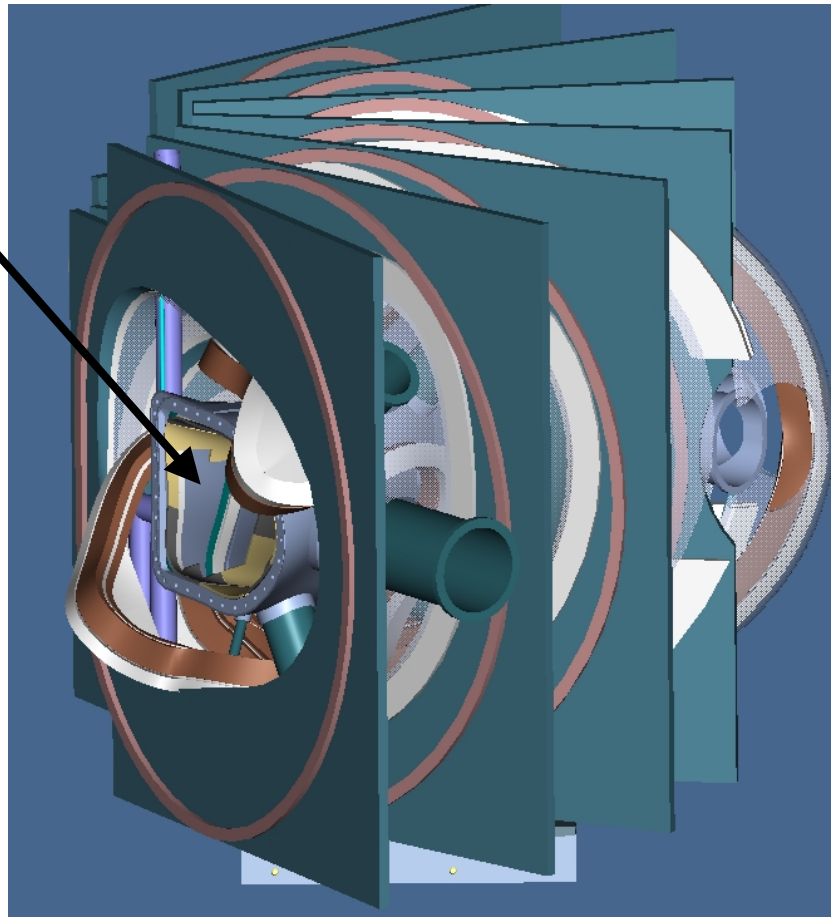


PFC'S will have to accommodate installation of RF

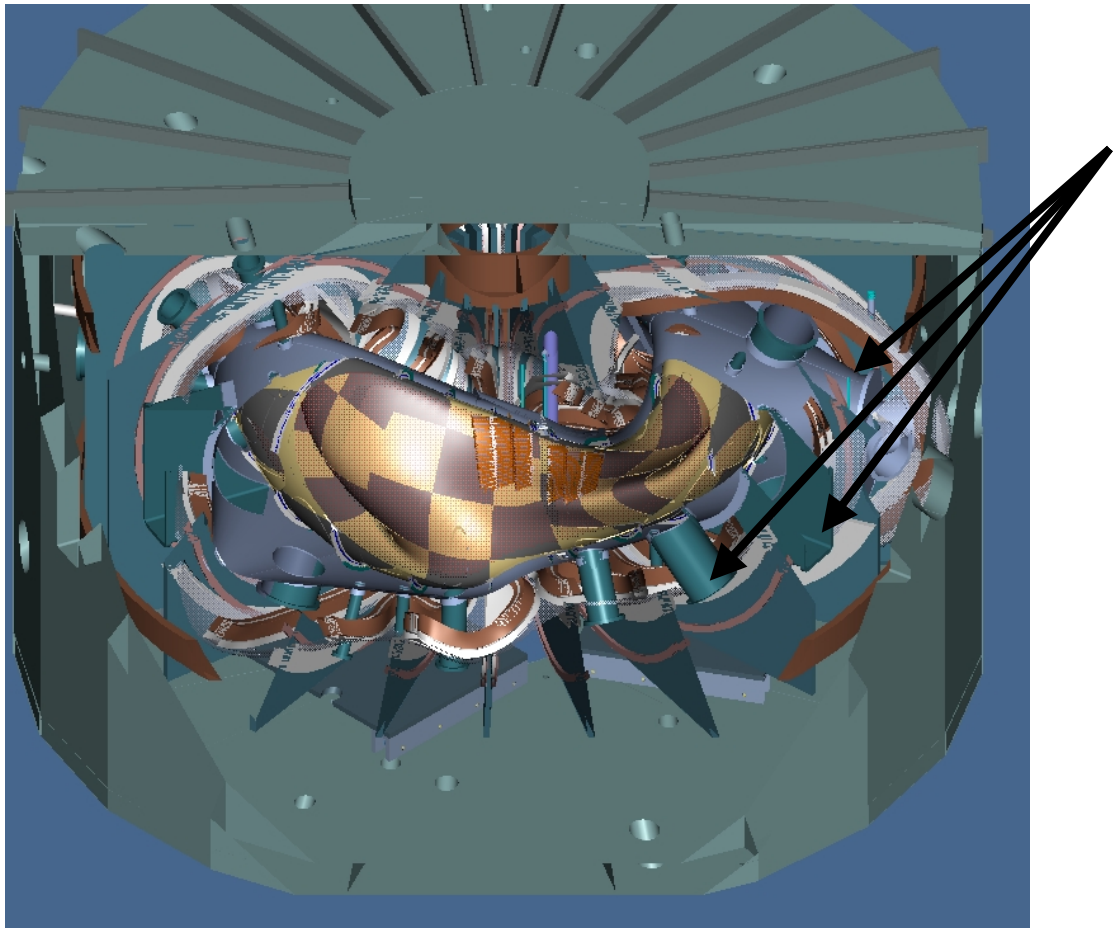
AS INSTALLED PFC'S



FOUR PANELS WILL NEED TO BE MODIFIED



INSTALLATION OF RF

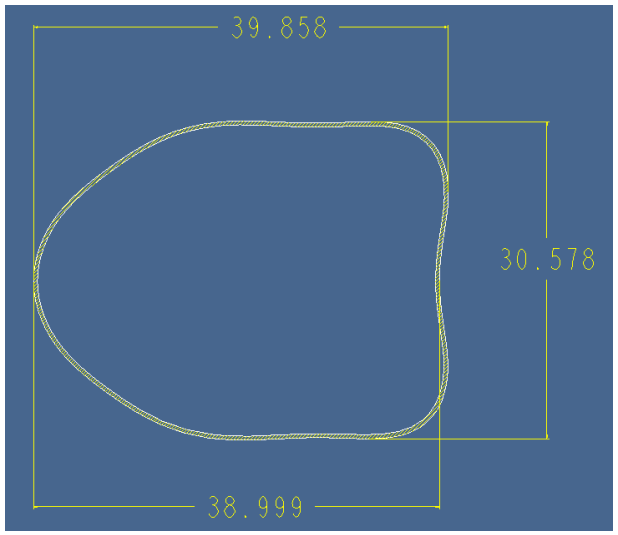


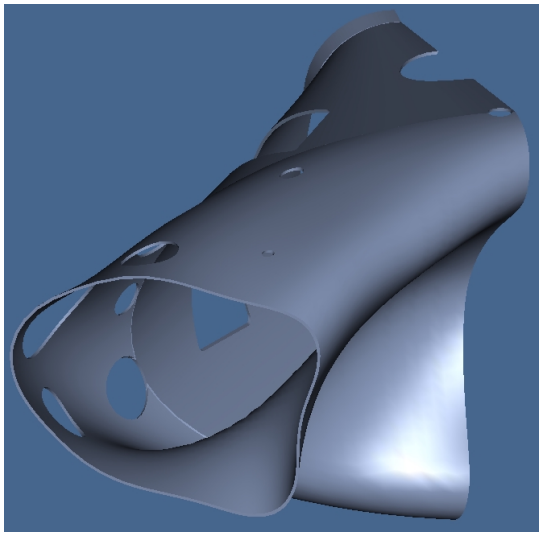
Installation of RF Antenna's

- RF antenna will enter the machine thru one of several large ports around the machine.
- PFC's will have to be modified prior to the installation of the antenna.
- Connections to coax will be made behind the antenna.
- PFC's removed for access to coax will be reinstalled after antenna's are installed.

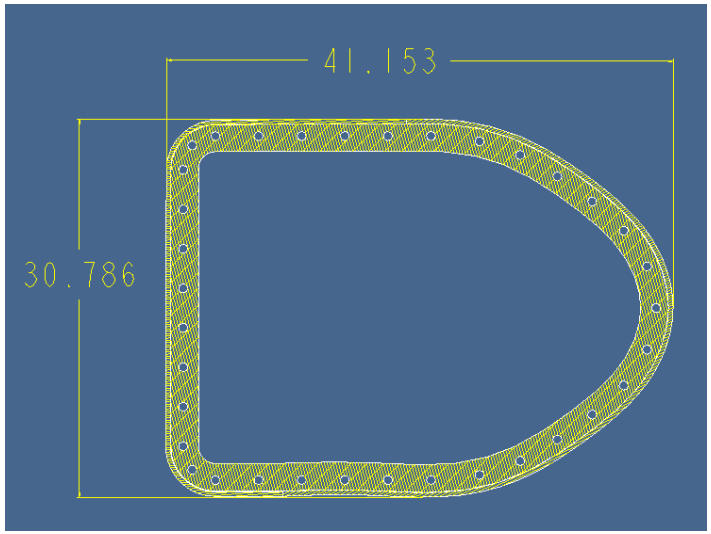
CHANGES TO VACUUM VESSEL

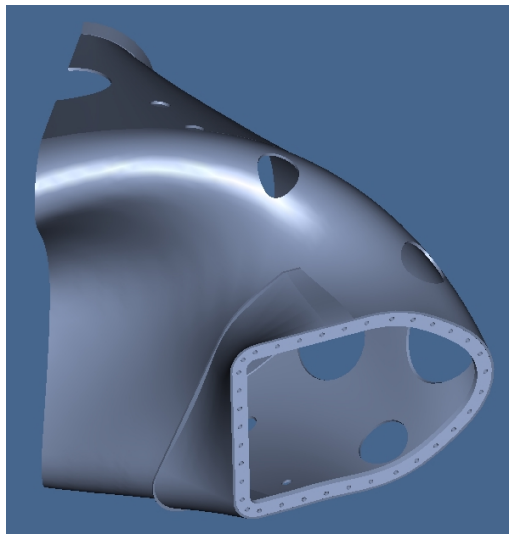
Original concept





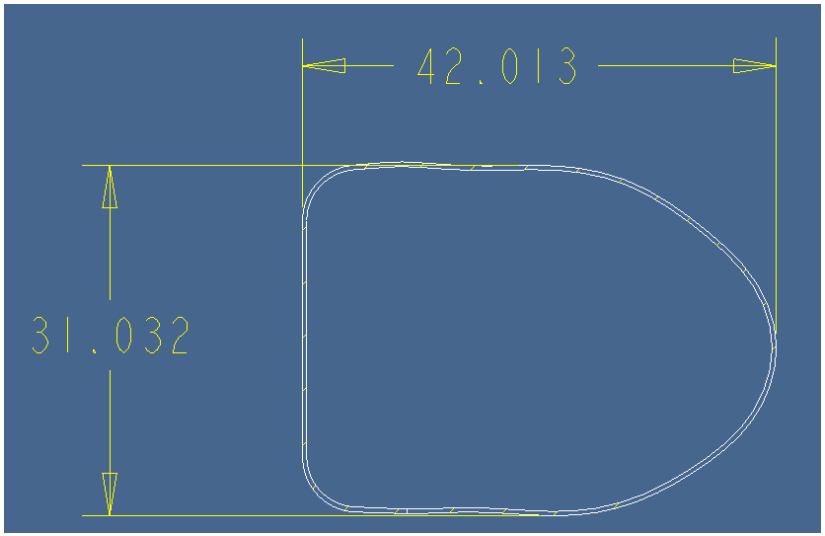
Alternate concept

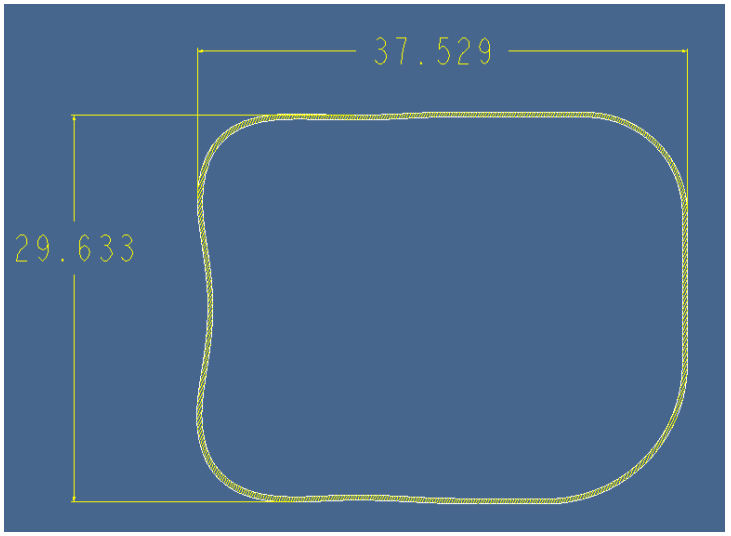


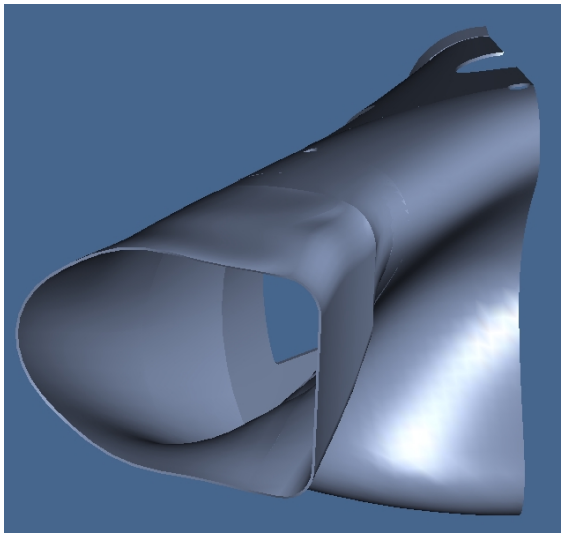


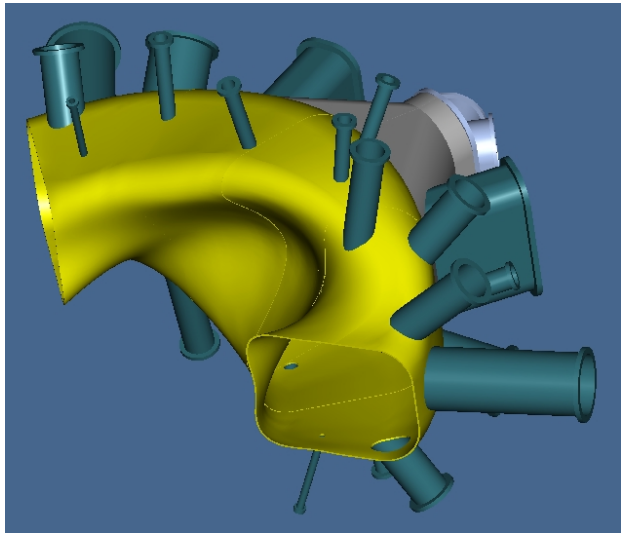
CHANGES TO VACUUM VESSEL

Alternate concepts



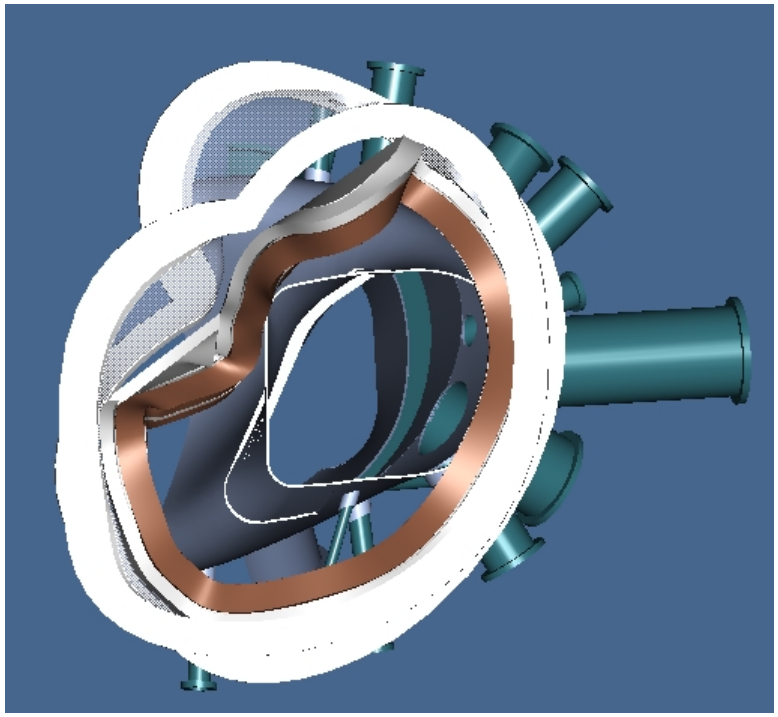


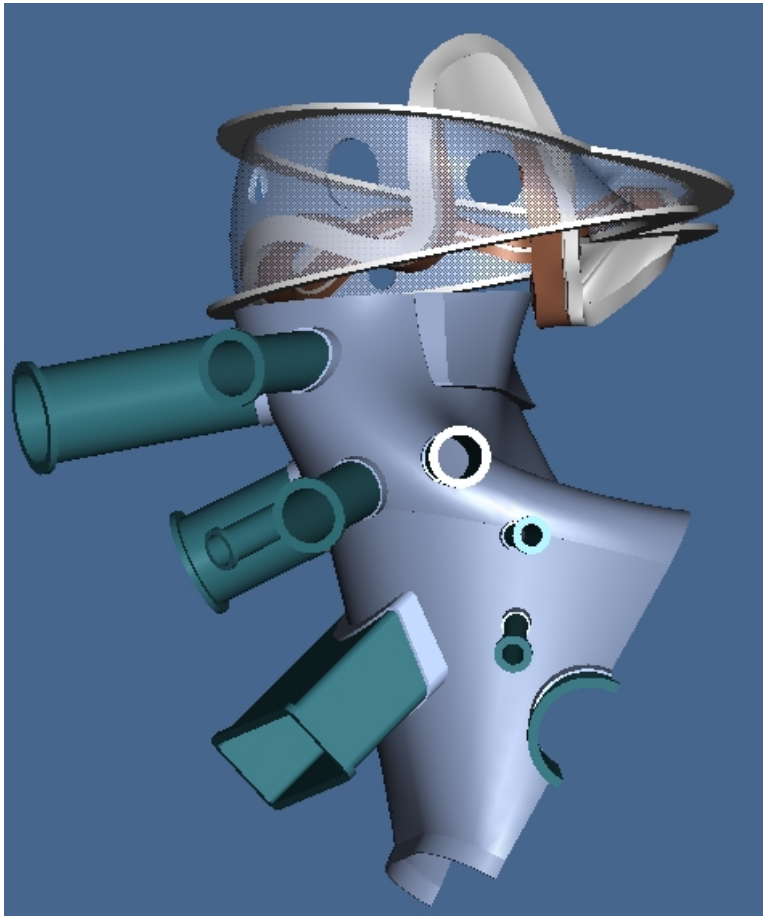




COIL TO VACUUM VESSEL ASSEMBLY

Assembly of coils over vessel is a concern.





SUMMARY

- Adding the RF antenna will involve modifying several components
    - Vacuum vessel
        - Modification to inside surface of vessel
        - Adding ports for coax feeds to antenna
    - PFC's
        - PFC panels will need to be removed/modified or new panels procured.
- Impact of shim between vessel for Thompson Scattering needs to be explored. The current configuration has a 2 inch shim and 1 inch flanges.
- Problems with assembling the modular coils over the vacuum vessel are a concern. I have not been able to rotate the coils relative to the vessel in Pro E to show that this can be done. Additional work is continuing.