



# Vessel Systems and Target Station Shielding Installation Plan

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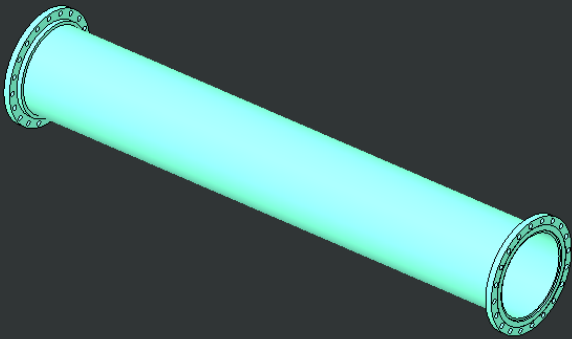
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**ENERGY**

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FOR THE US DEPARTMENT OF ENERGY



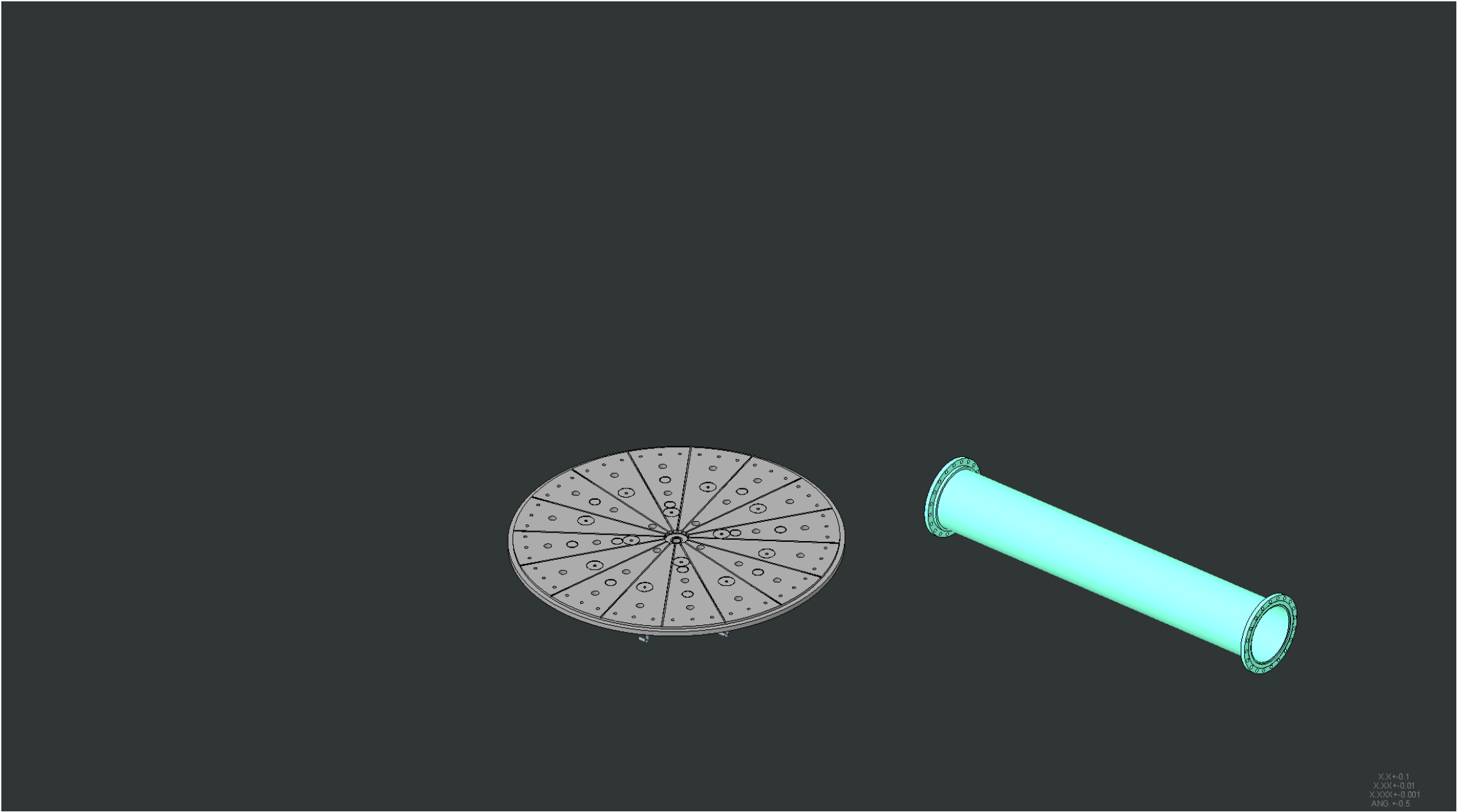


# Proton Beam Tube pipe imbedded in concrete (not shown)

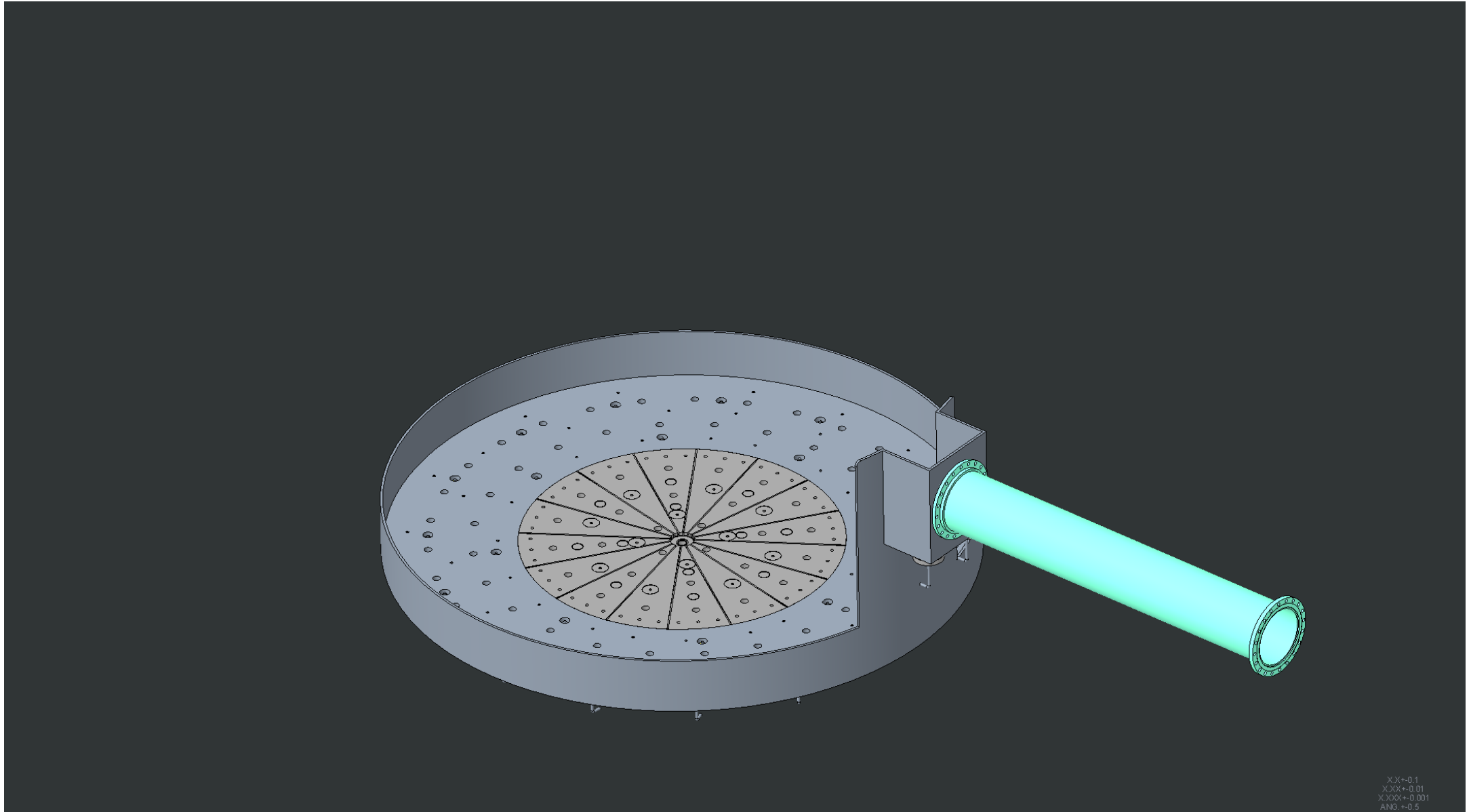


XX+0.1  
XXX+0.01  
XXXX+0.001  
ANG +/-0.5

# Core Vessel Baseplate Installed

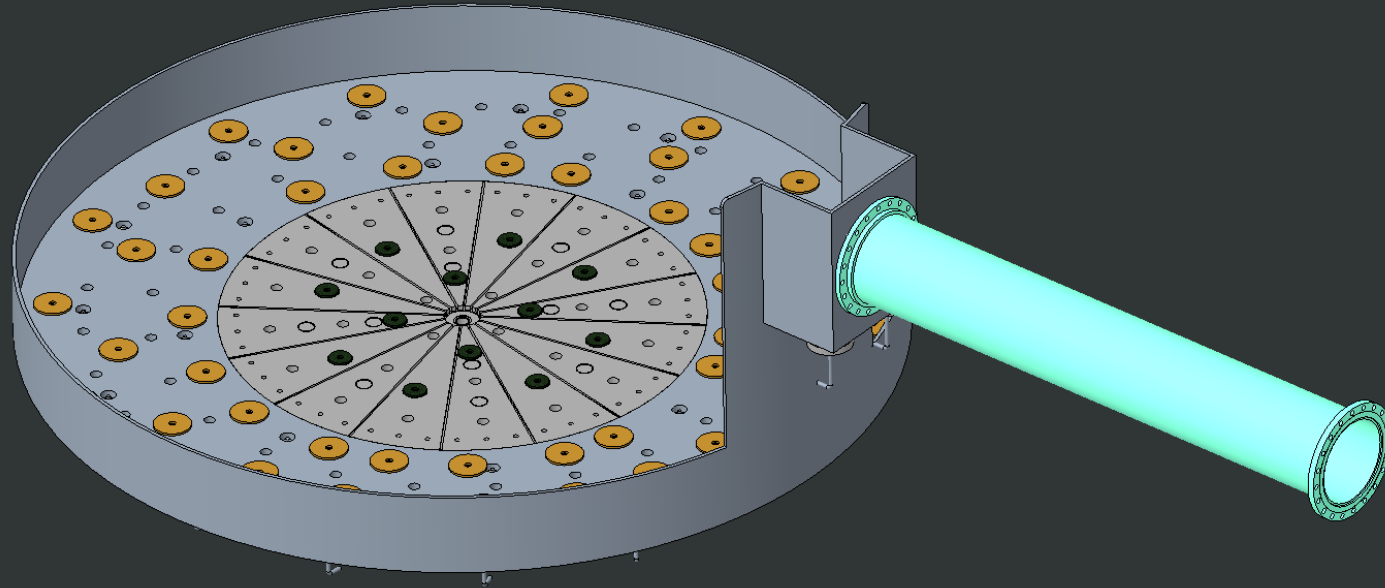


# Bulk Shielding Liner Installed



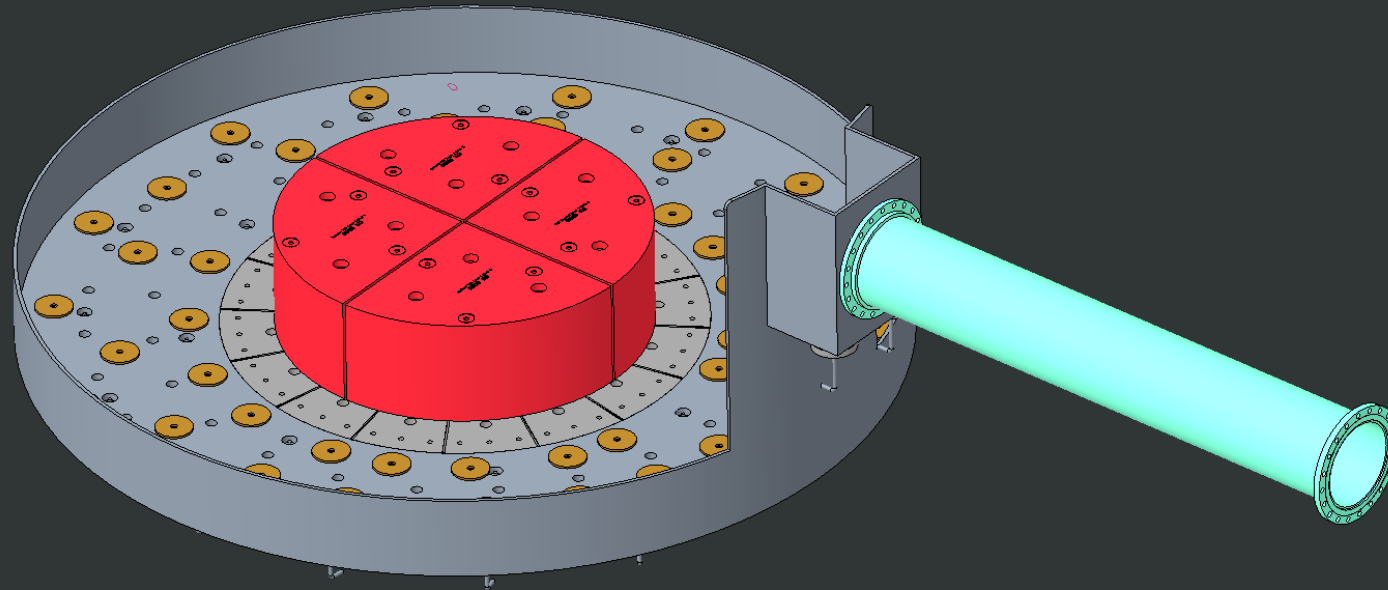


# Bulk shielding layer 1 bottom shims installed



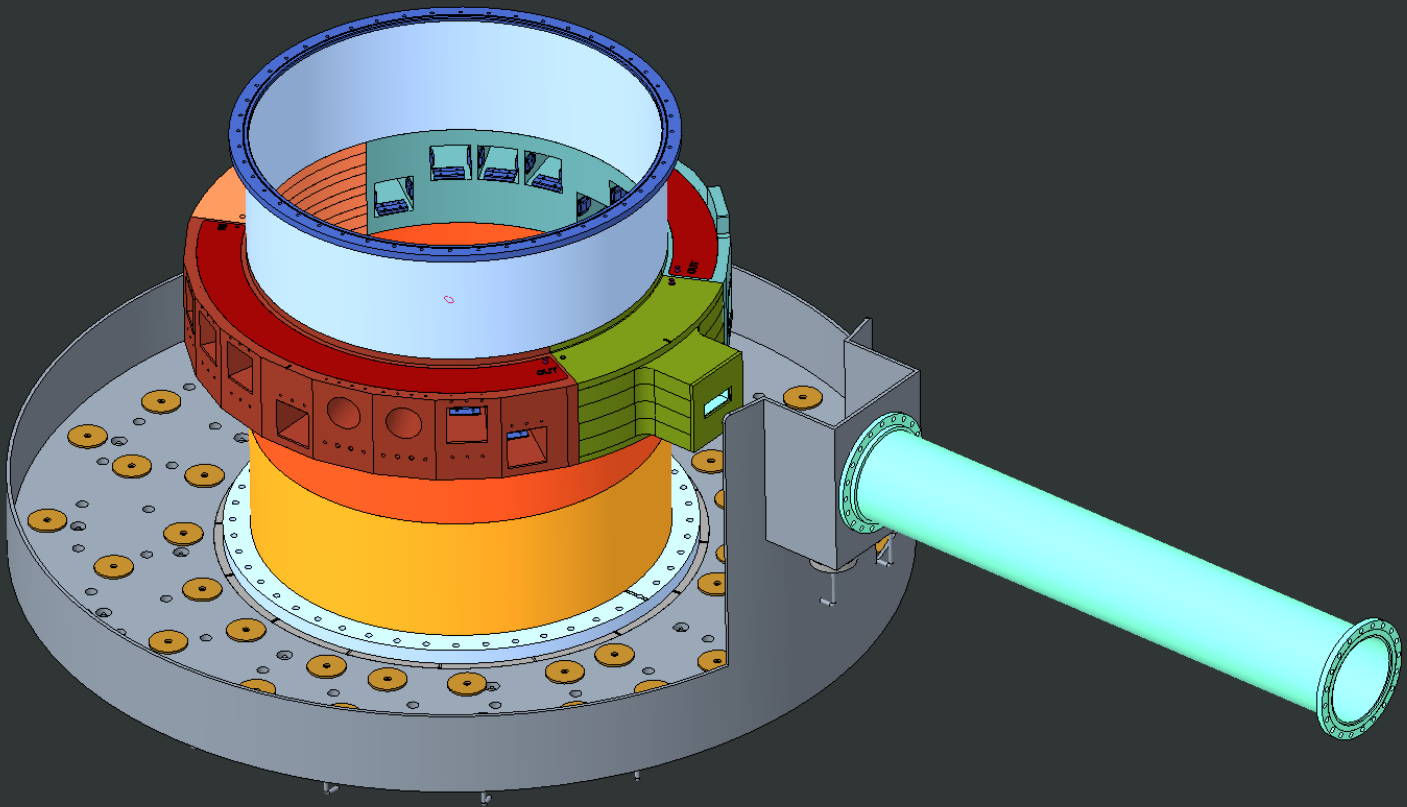
XX+0.1  
XX+0.01  
XXX+0.001  
ANG. +0.5

# Layer 1 shield blocks under Core Vessel installed



XX+0.1  
XXX+0.01  
XXXX+0.001  
ANG. +0.5

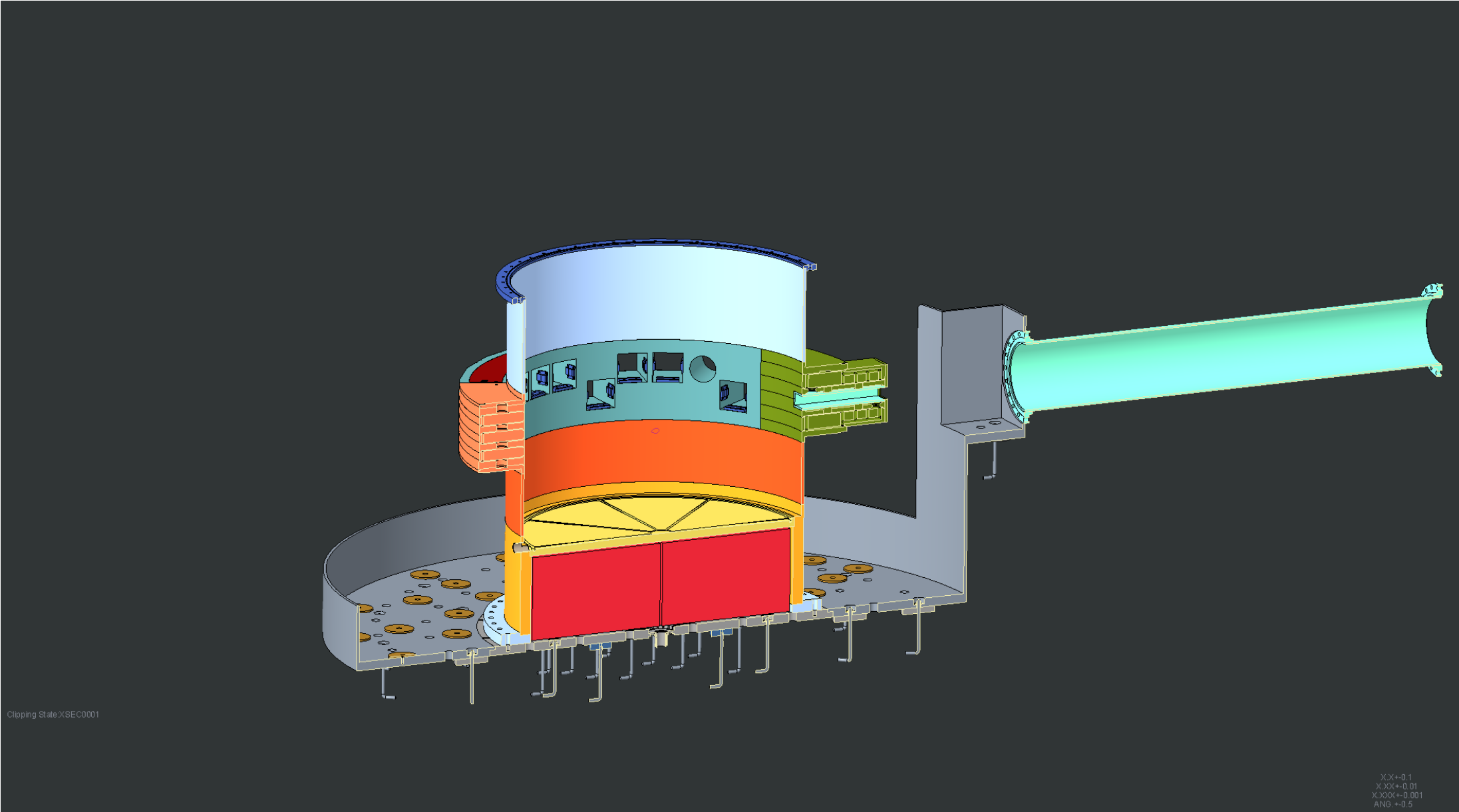
# Lower Core Vessel weldment installed



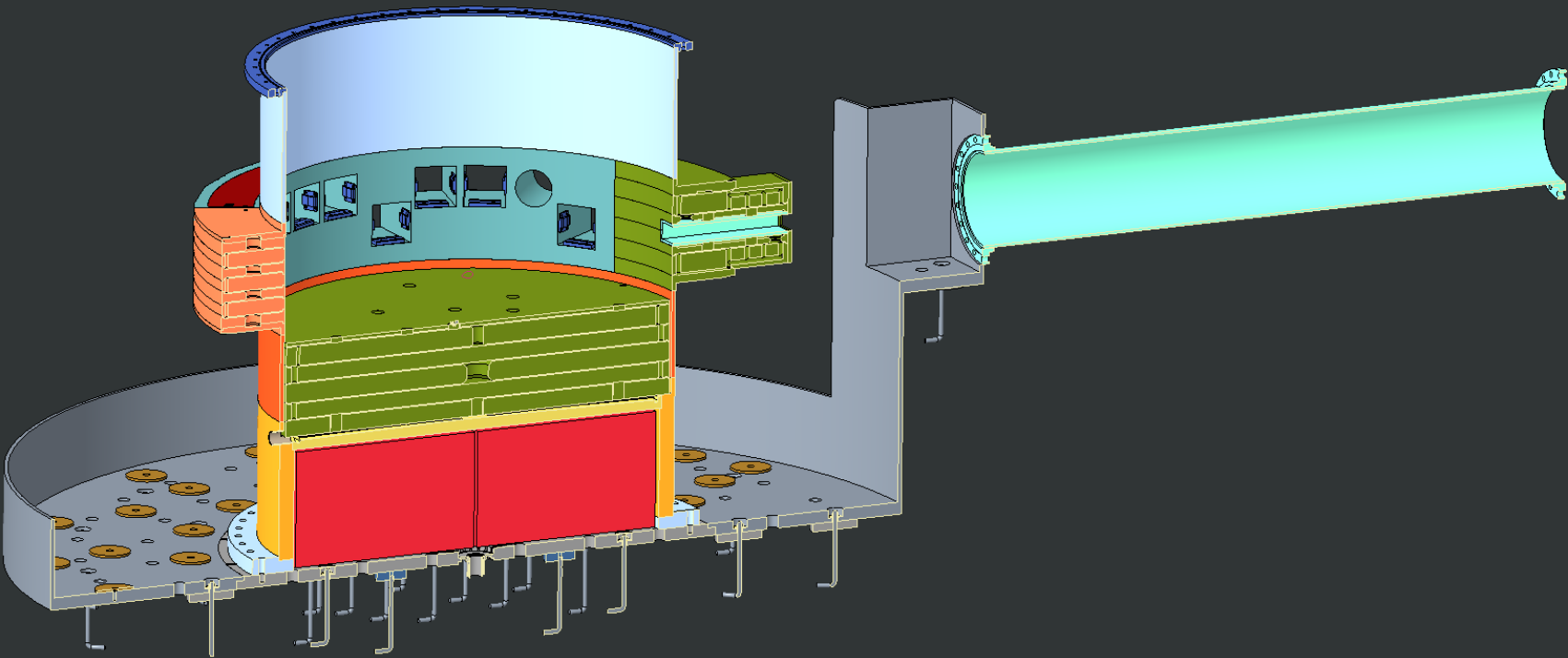
XX+0.1  
XXX+0.01  
XXXX+0.001  
ANG +/-0.5



# Cross Section view of lower Core Vessel installation



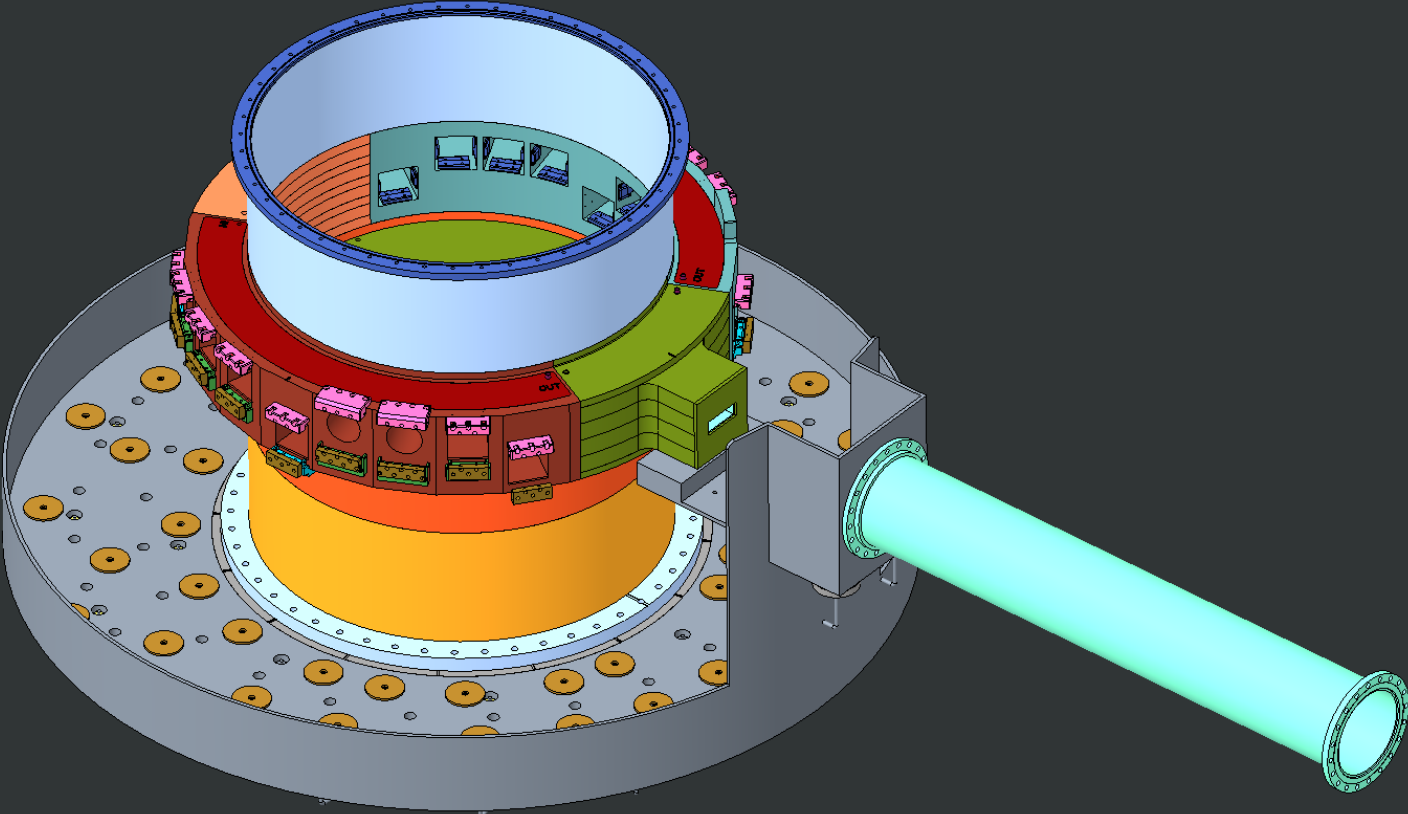
# Core Vessel internal shield block #1 installed



Clipping State: XSEC0001

XX+0.1  
XXX+0.01  
XXXX+0.001  
ANG +0.5

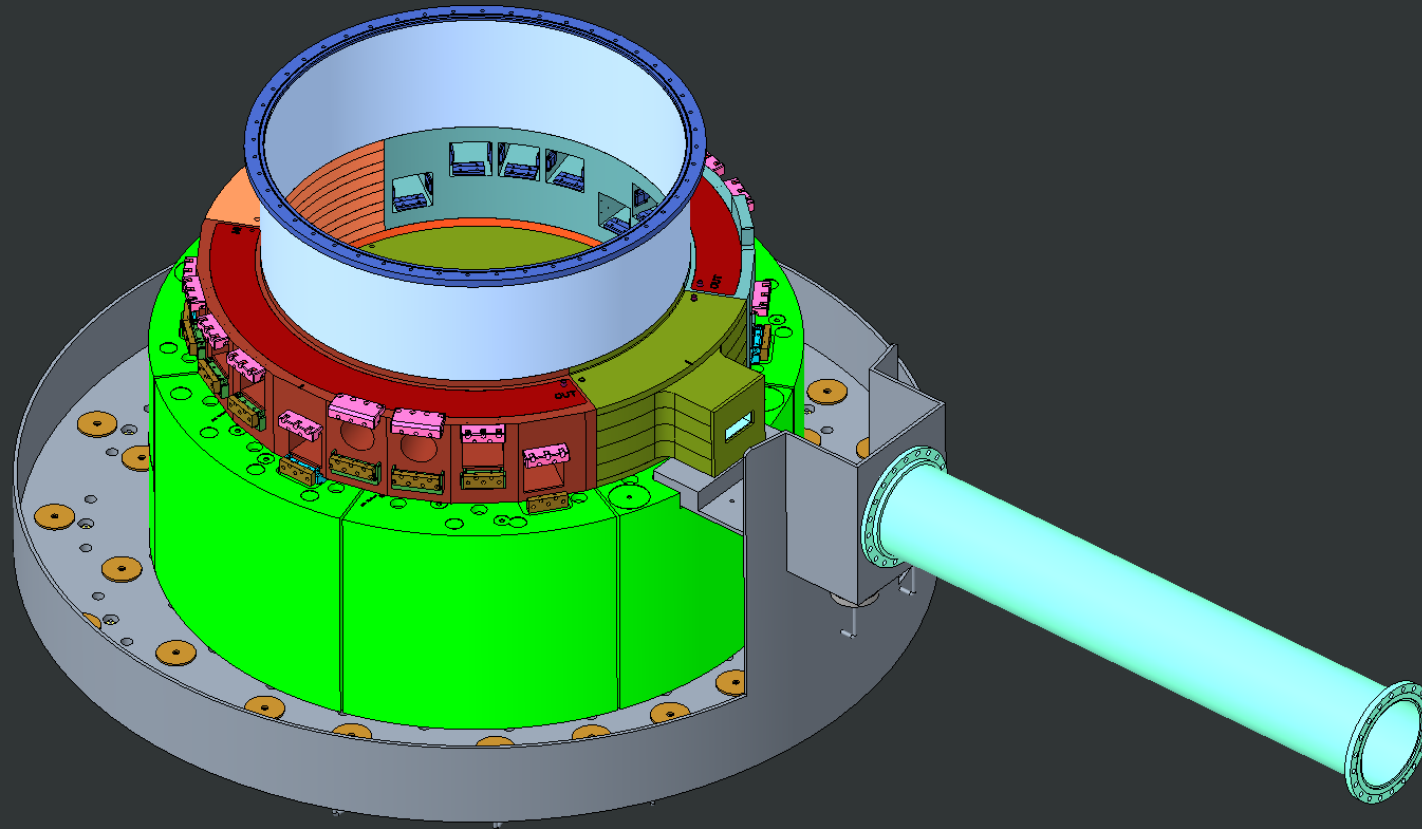
# Nozzle extension mounting hardware shown out of sequence



XX+0.1  
XXX+0.01  
XXXX+0.001  
ANG. +0.5

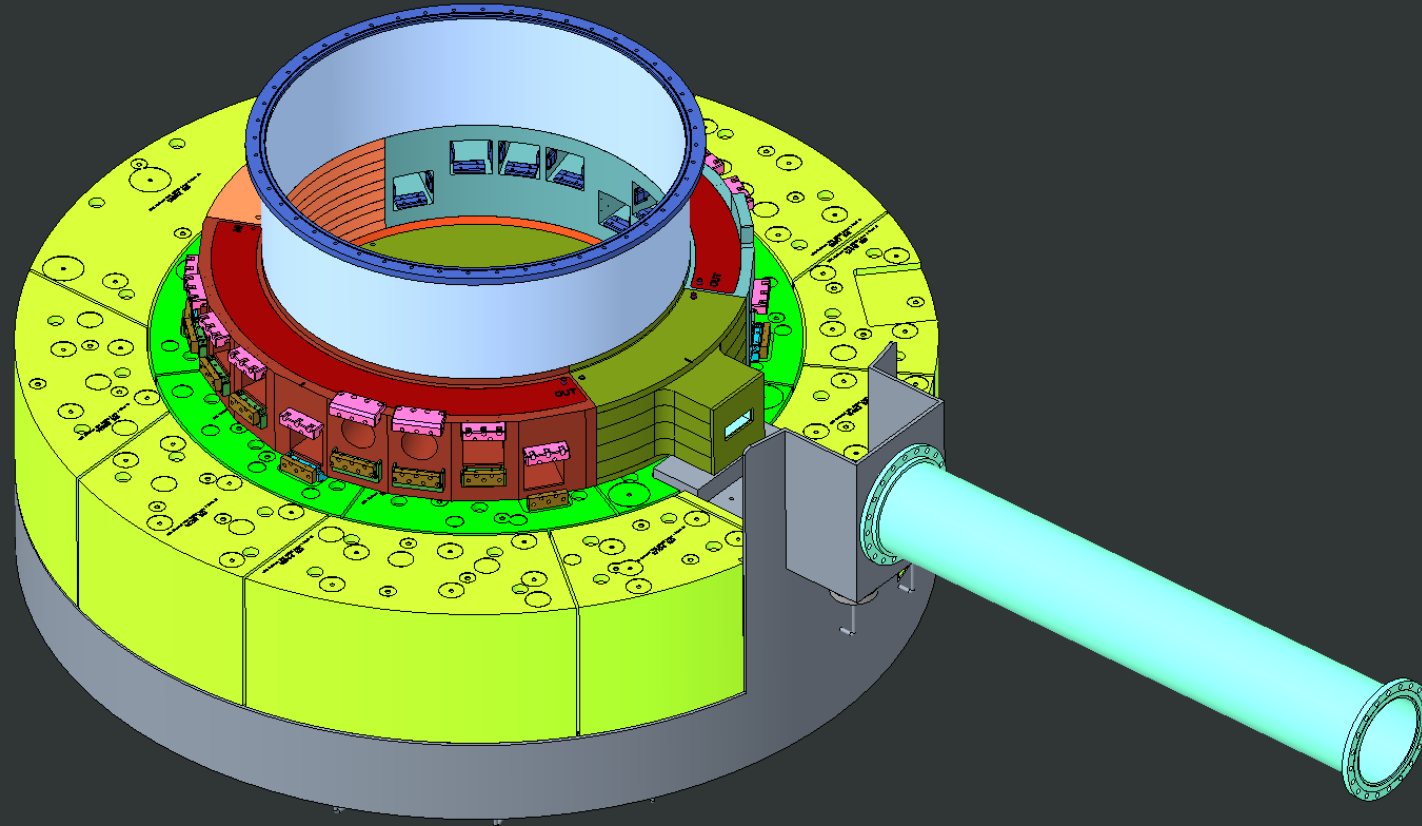


# Inside course of Bulk Shielding Layer #1 installed

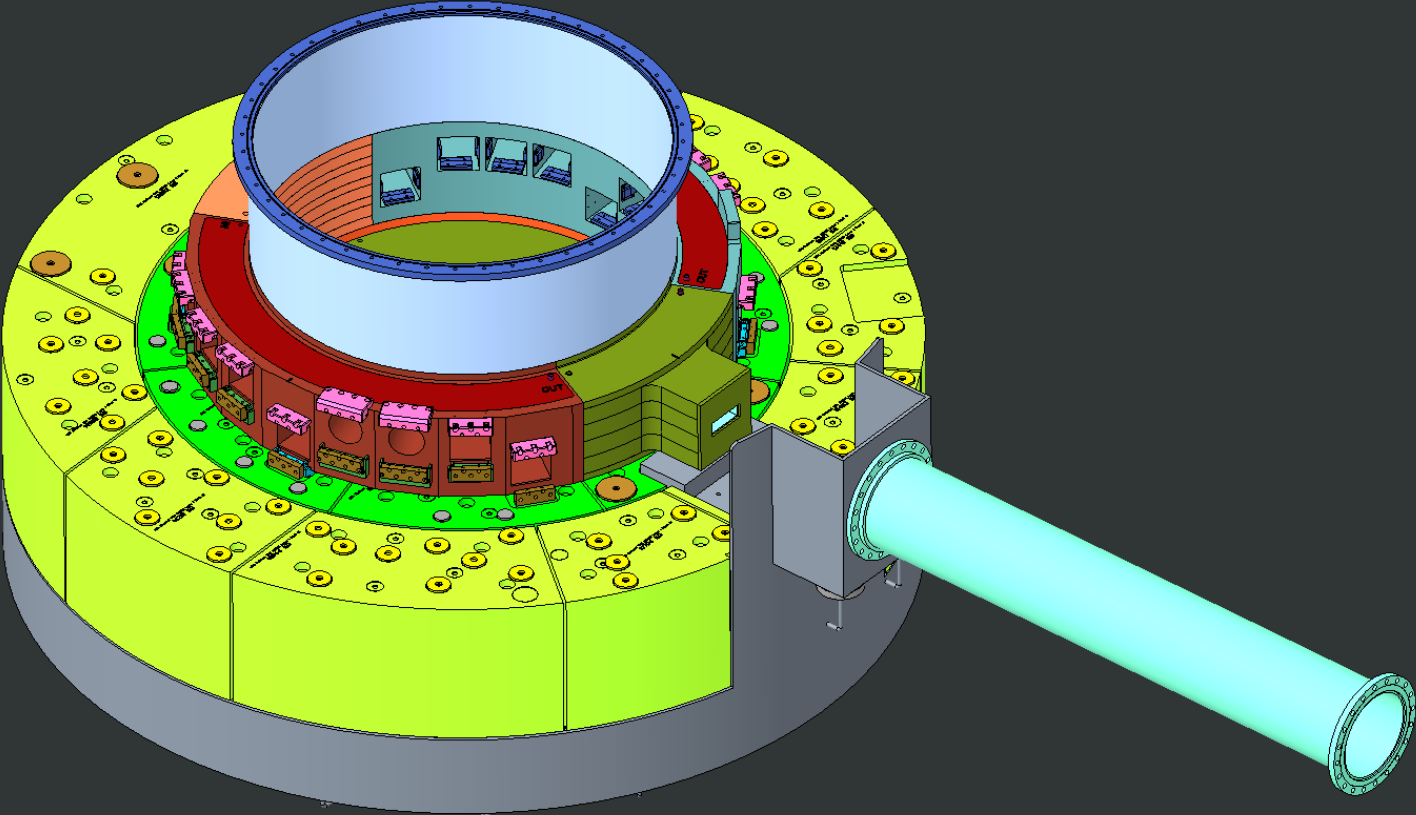


XX+0.1  
XXX+0.01  
XXX+0.001  
ANG. +0.5

# Outer course of Bulk Shielding layer #1 installed



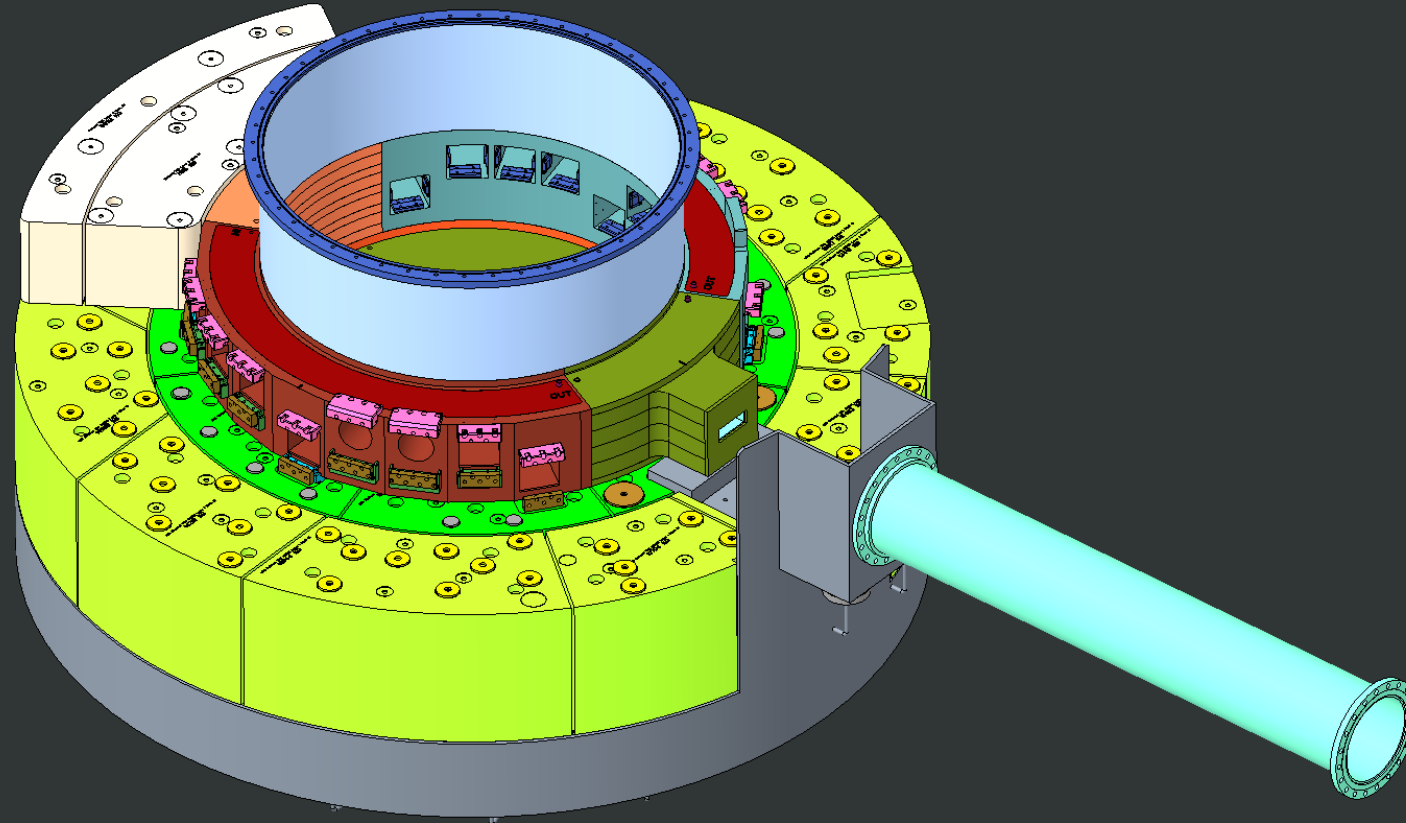
# Layer 2 shim pucks installed



XX+0.1  
XXX+0.01  
XXXX+0.001  
ANG. +0.5

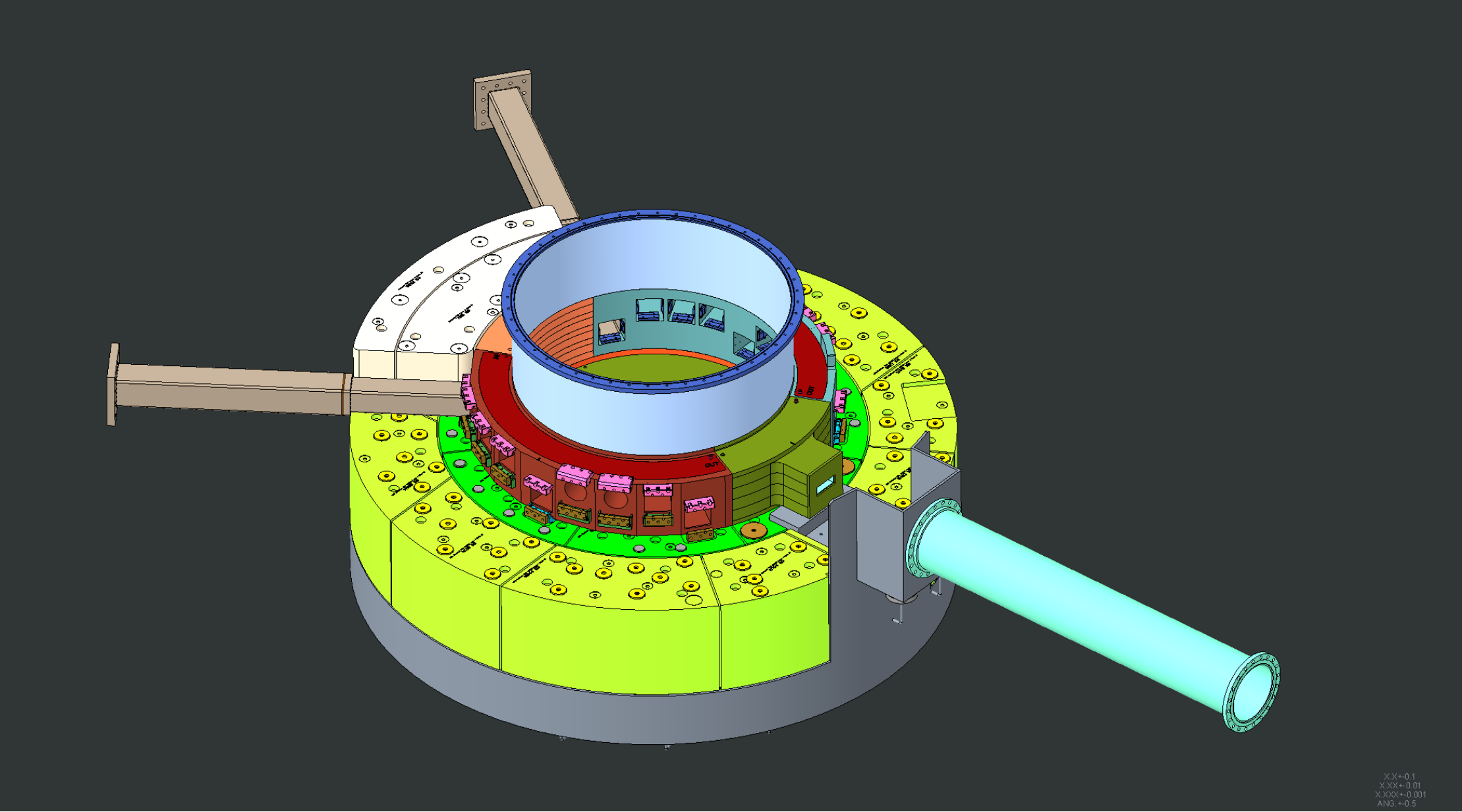


# Bulk Shielding layer #2 downstream blocks installed



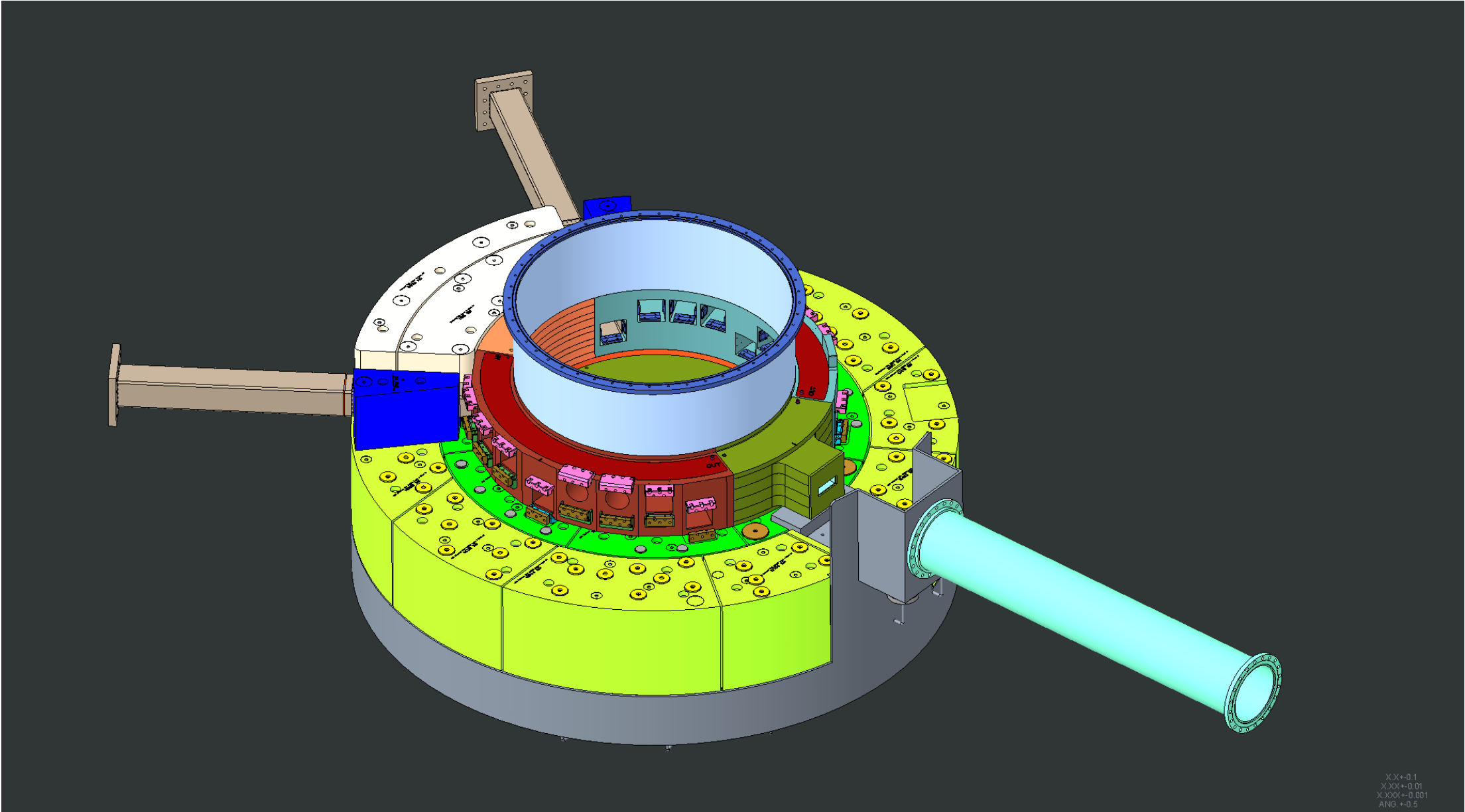
XX+0.1  
XXX+0.01  
XXXX+0.001  
ANG. +0.5

# Nozzle Extensions #9 and #10 installed



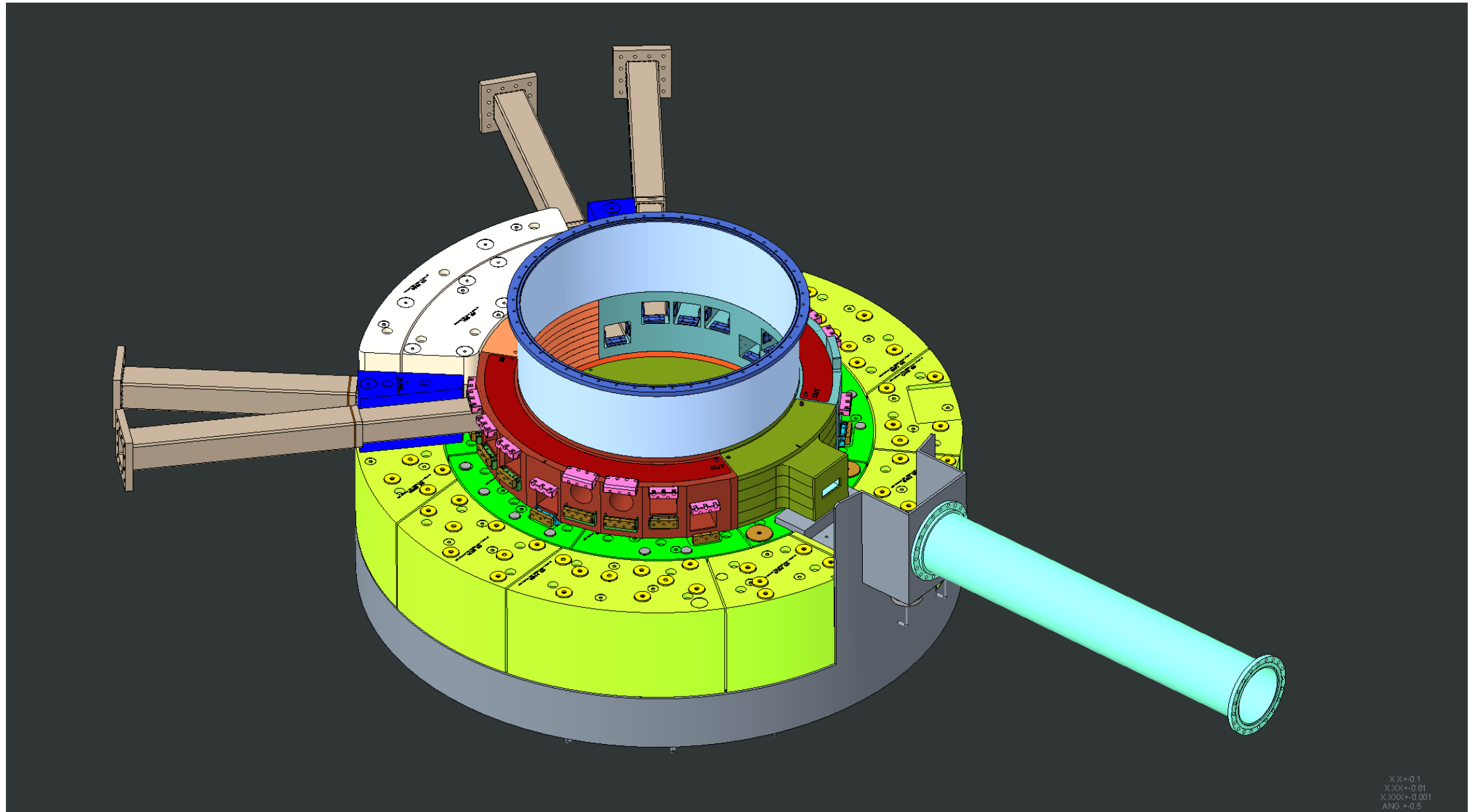
XX+0.1  
XXX+0.01  
XXXX+0.001  
ANG +0.5

# Shielding around Nozzle Extensions #9 and #10 installed

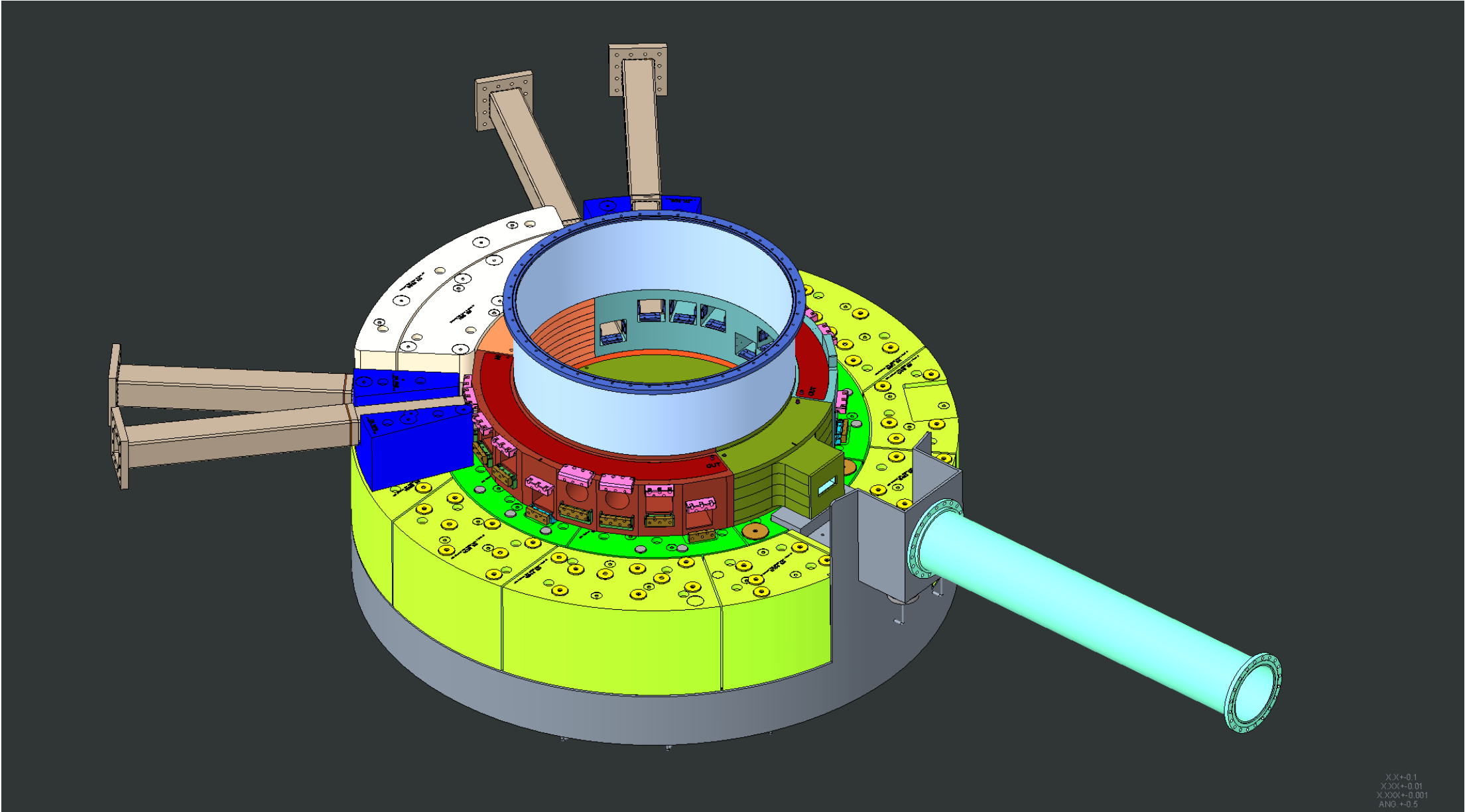




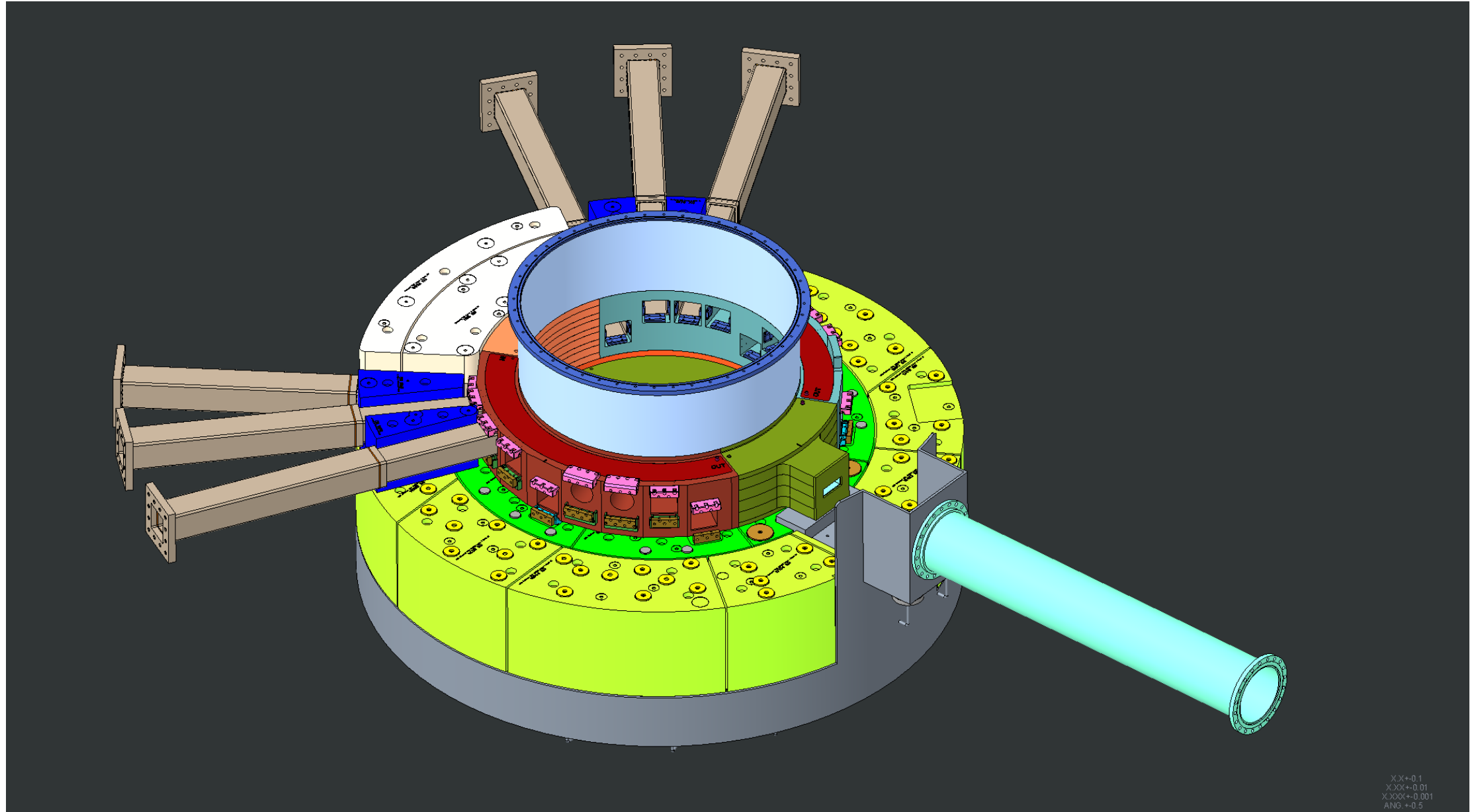
# Nozzle Extensions #8 and #11 installed



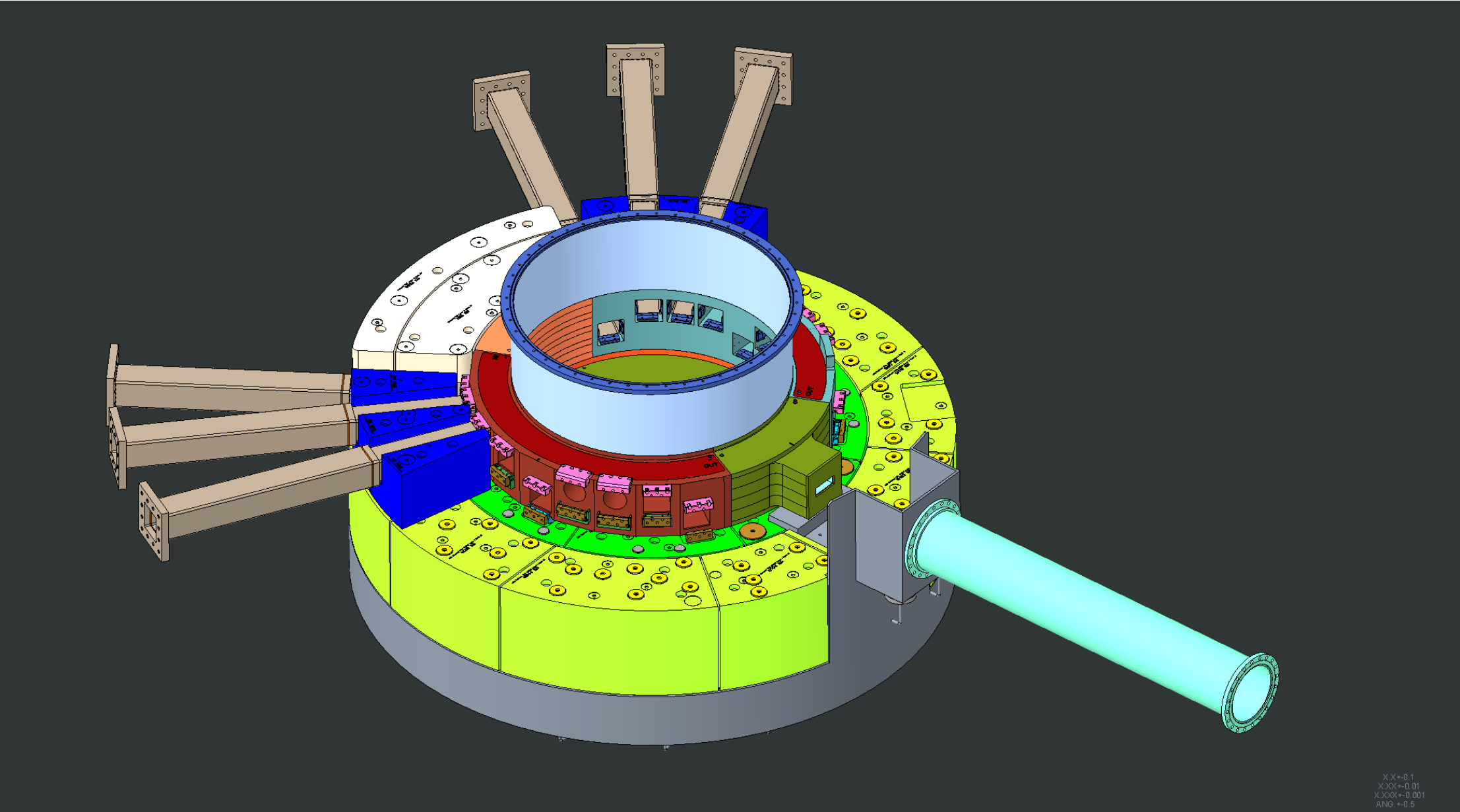
# Shielding around Nozzle Extensions #8 and #11 installed



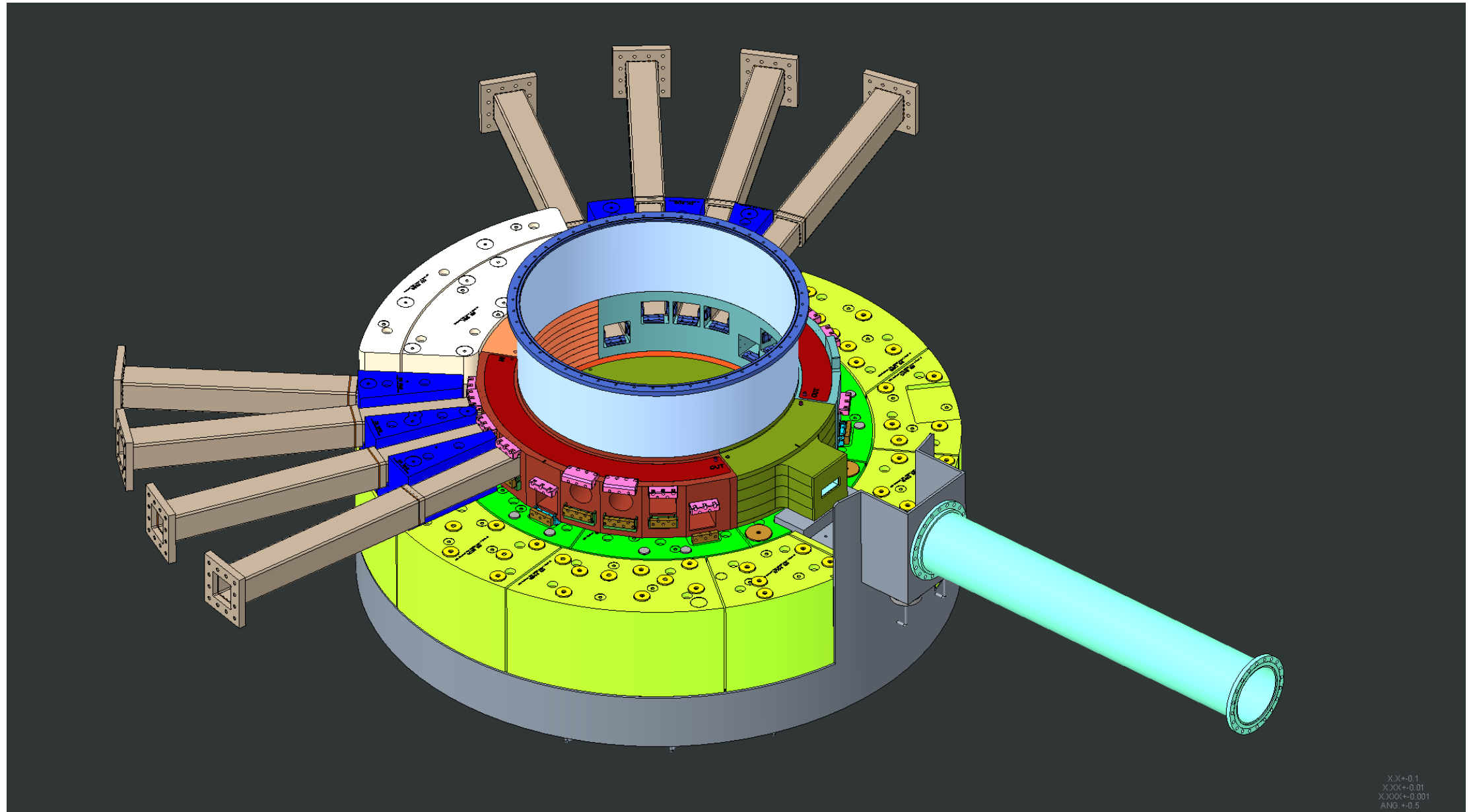
# Nozzle Extensions #7 and #12 installed



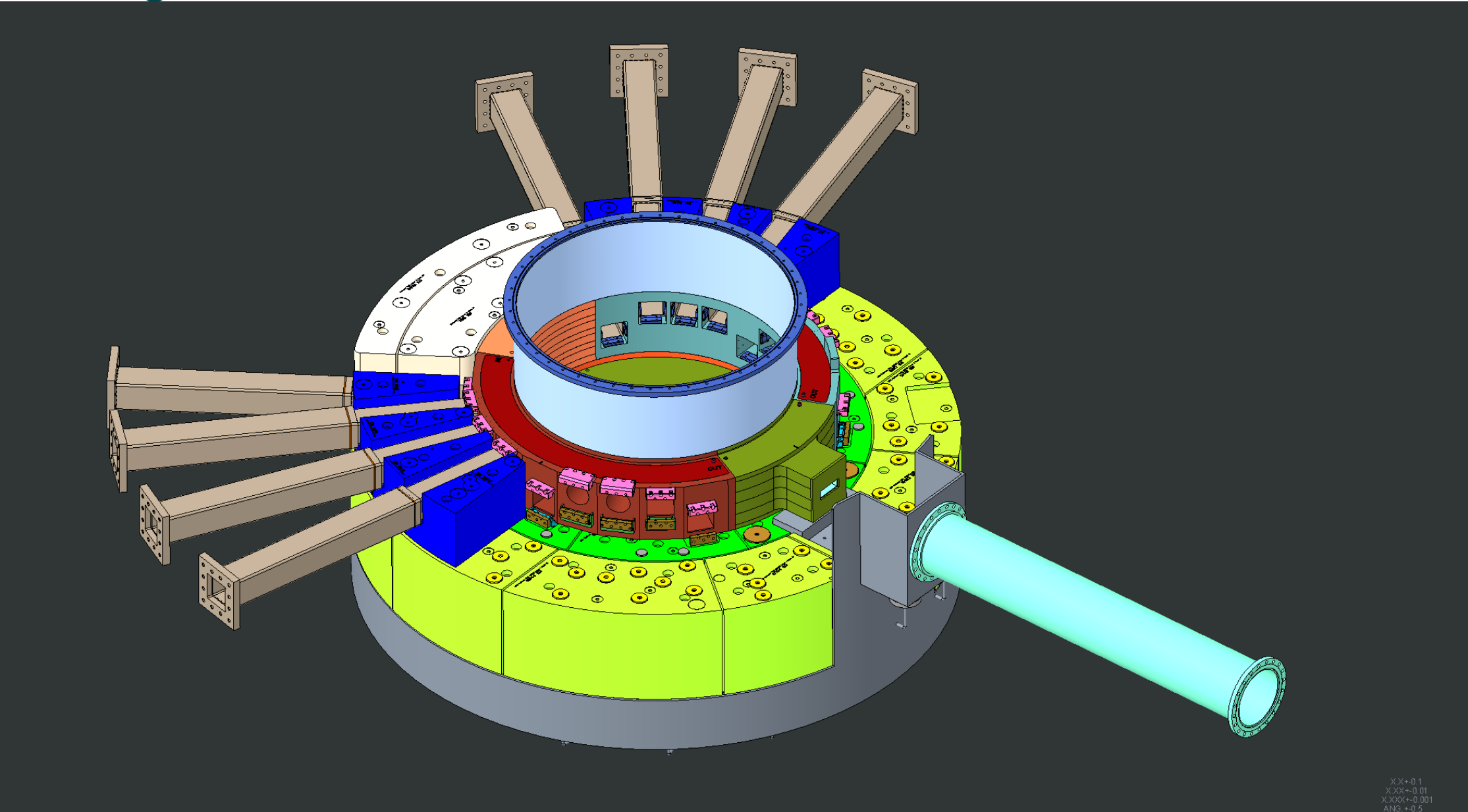
# Shielding around Nozzle Extensions #7 and #12 installed



# Nozzle Extensions #6 and #13 installed



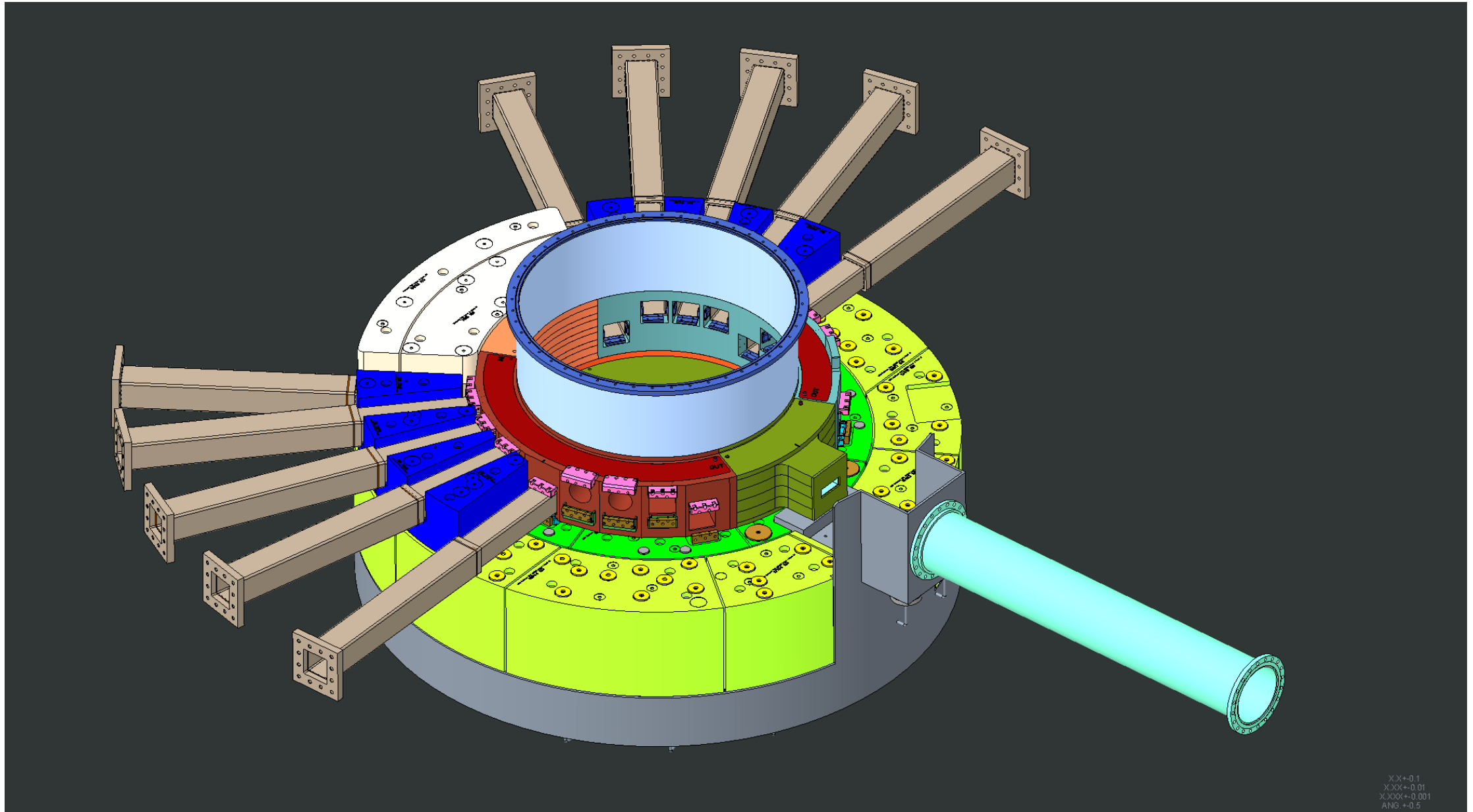
# Shielding around Nozzle Extensions #6 and #13 installed



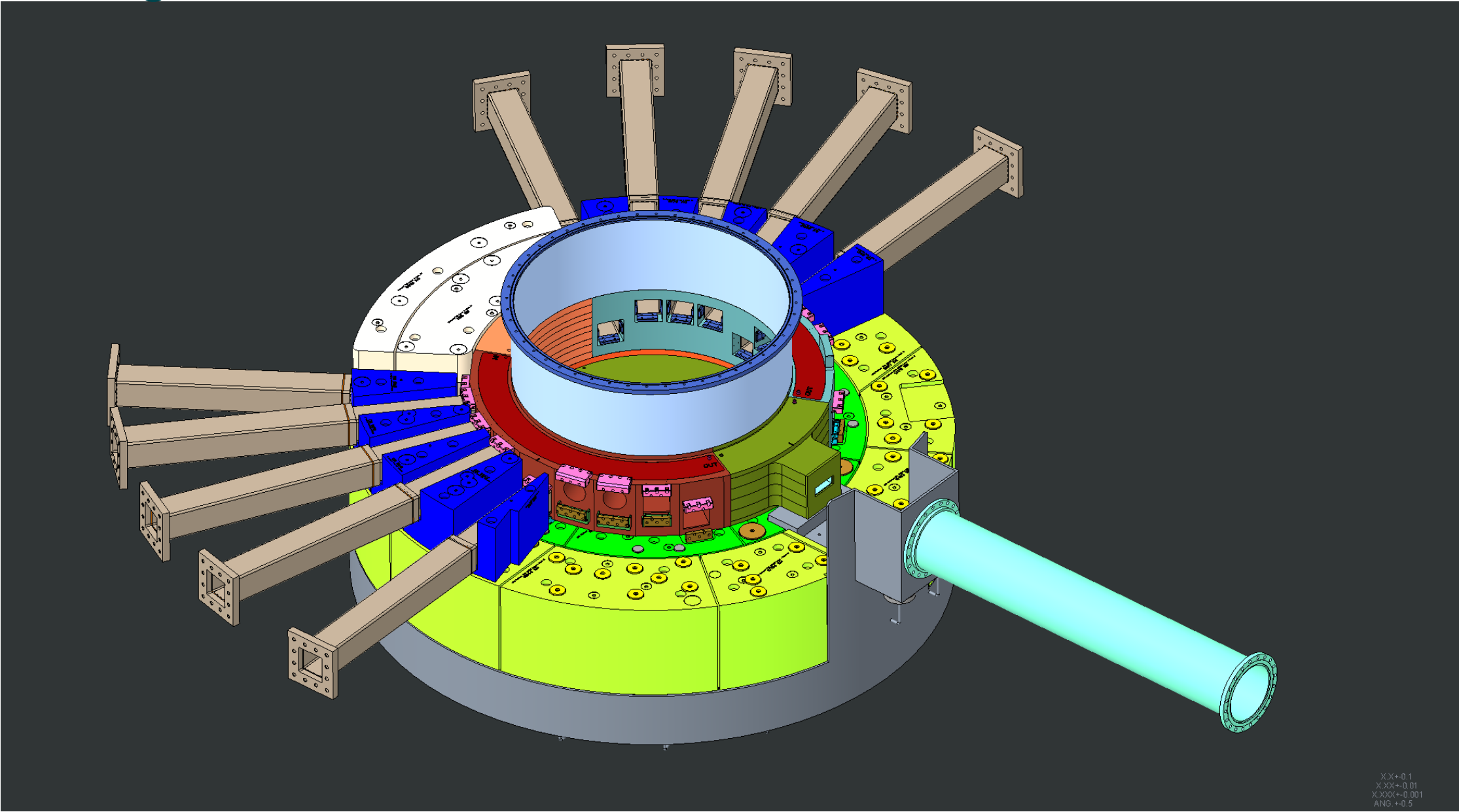
XX+0.1  
XXX+0.01  
XXXX+0.001  
ANG. +0.5



# Nozzle Extensions #5 and #14 installed

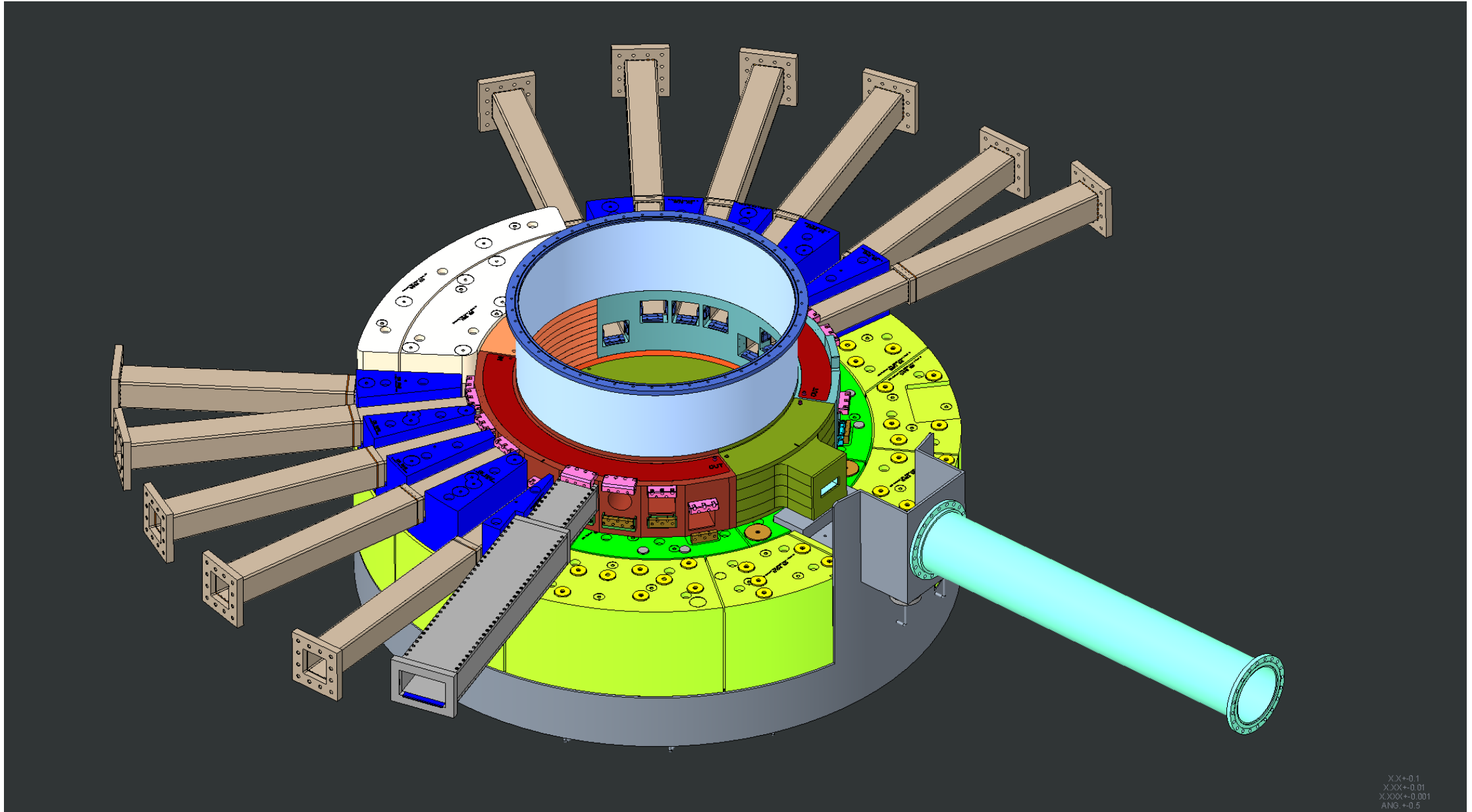


# Shielding around Nozzle Extensions #5 and #14 installed

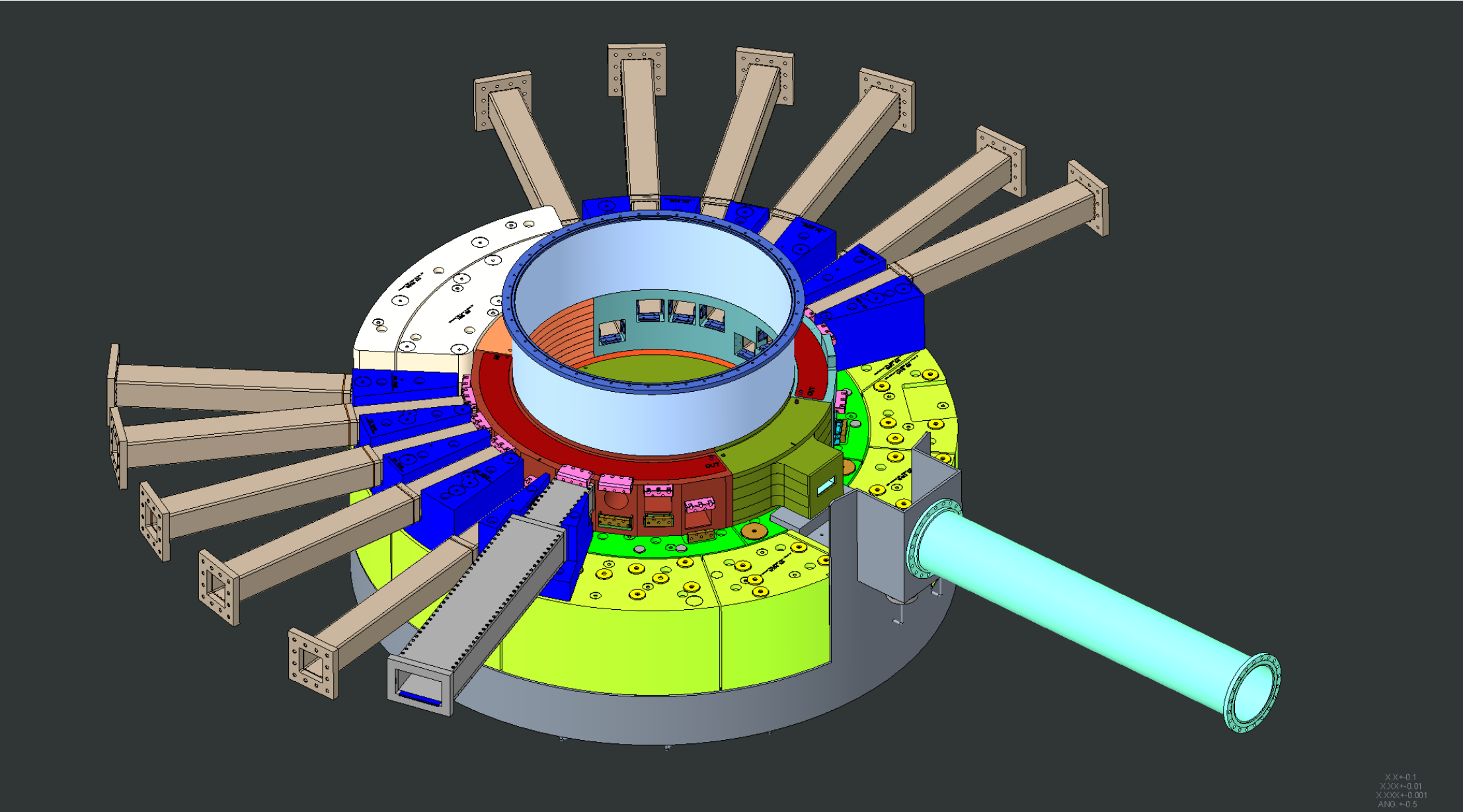


XX+0.1  
XXX+0.01  
XXXX+0.001  
ANG: +0.5

# Nozzle Extensions #4 and #15 installed

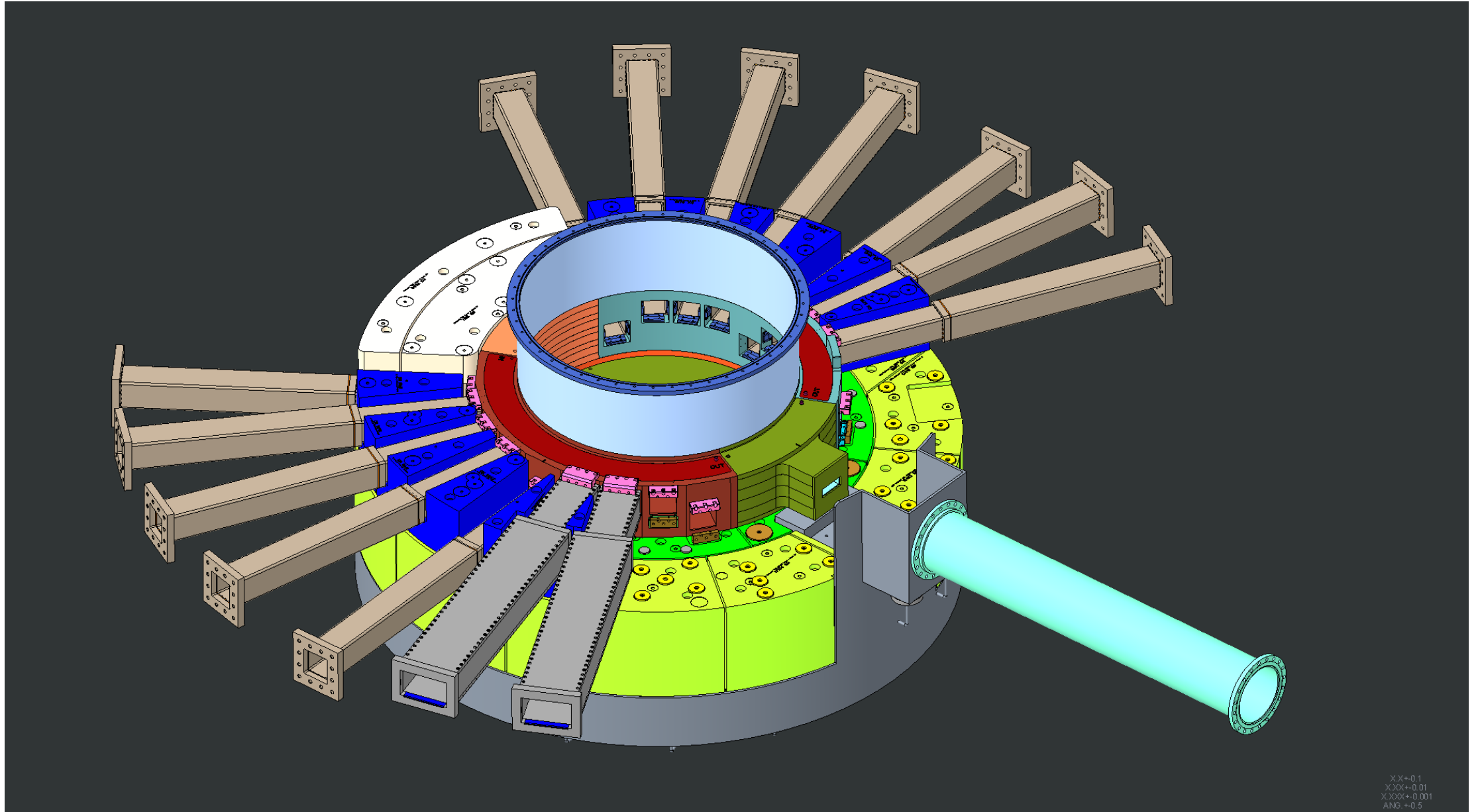


# Shielding around Nozzle Extensions #4 and #15 installed



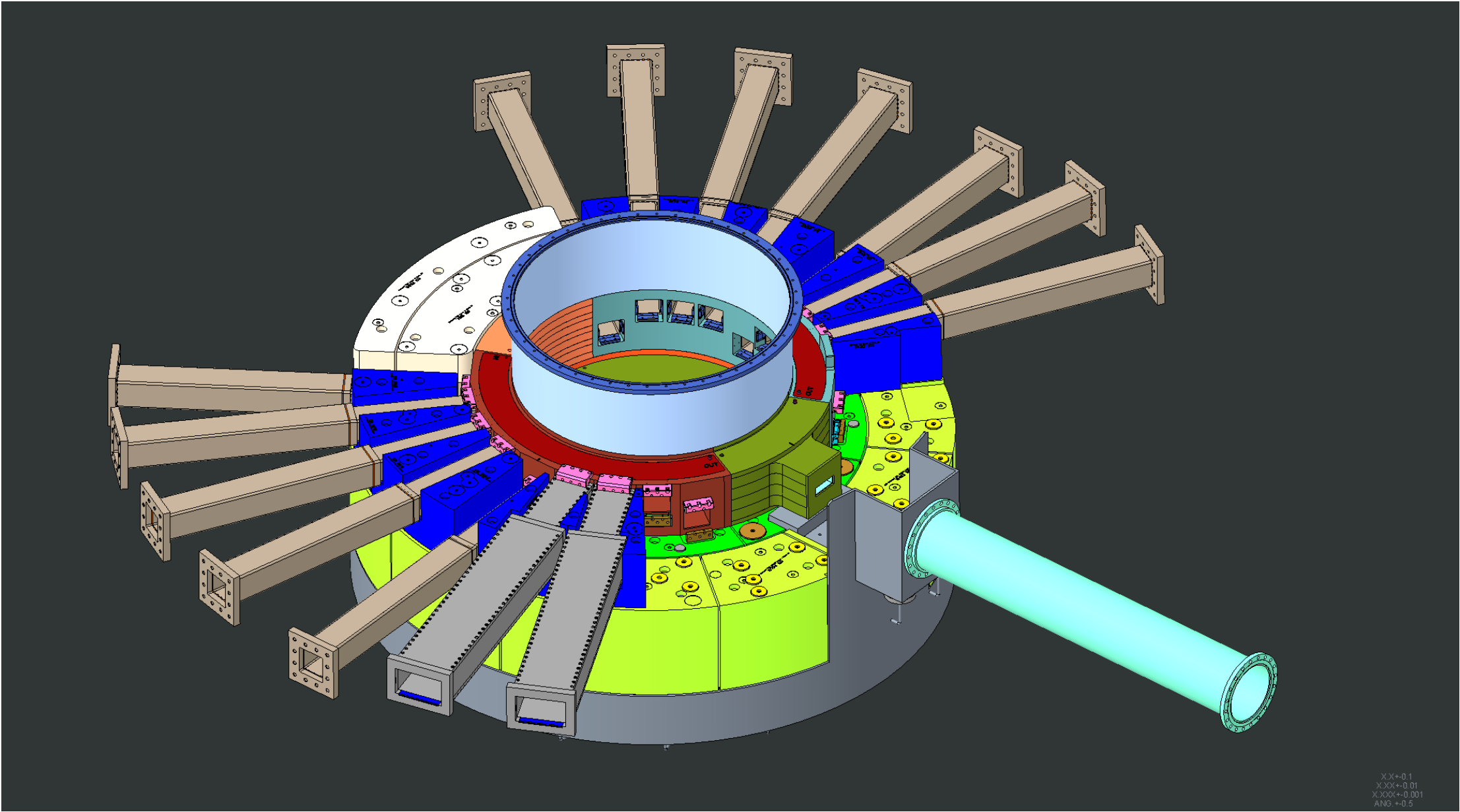
X.X+0.1  
X.XX+0.01  
X.XXX+0.001  
ANG. +0.5

# Nozzle Extensions #3 and #16 installed



XX+0.1  
XXX+0.01  
XXXX+0.001  
ANG. +0.5

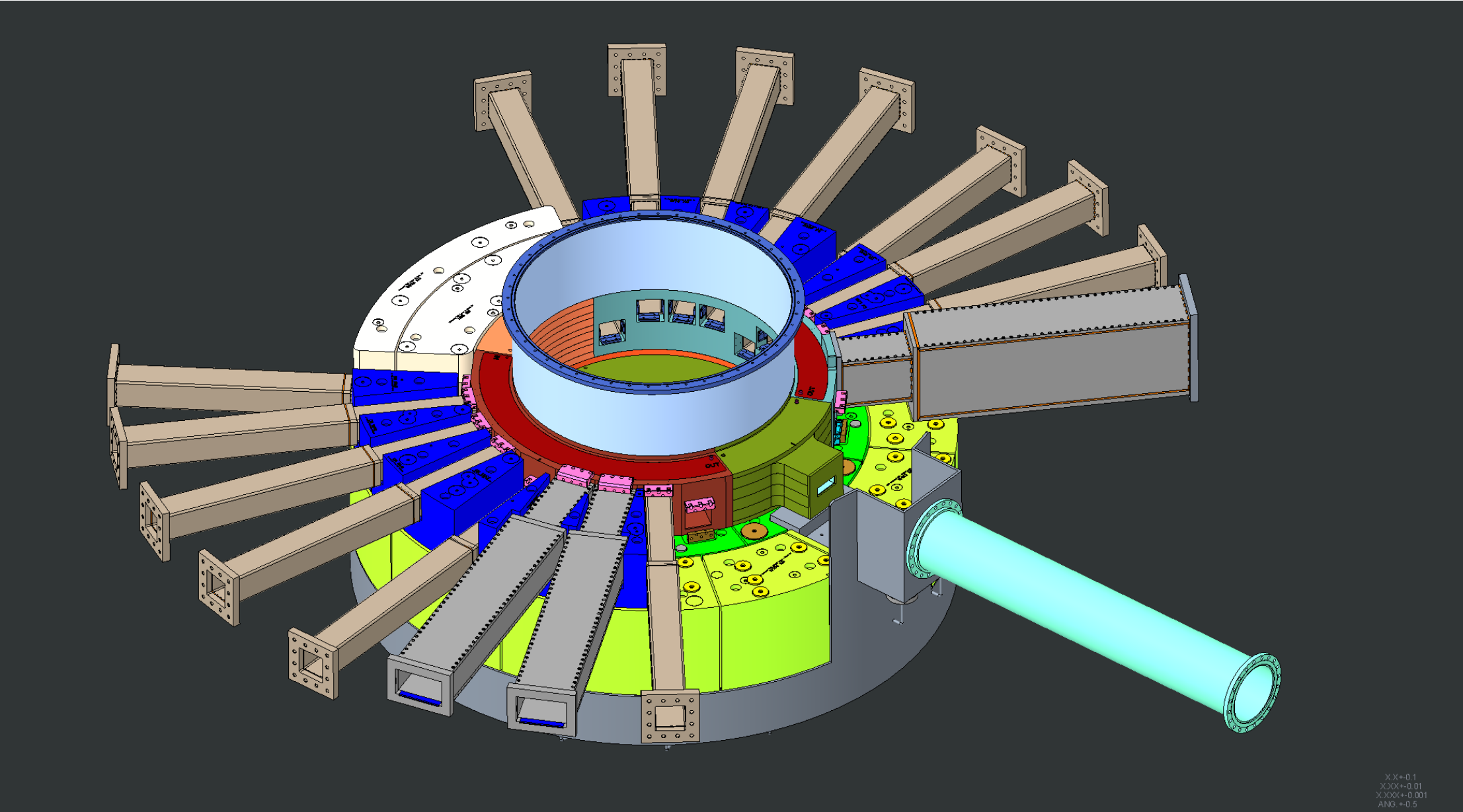
# Shielding around Nozzle Extensions #3 and #16 installed



XX+0.1  
XXX+0.01  
XXXX+0.001  
ANG. +0.5

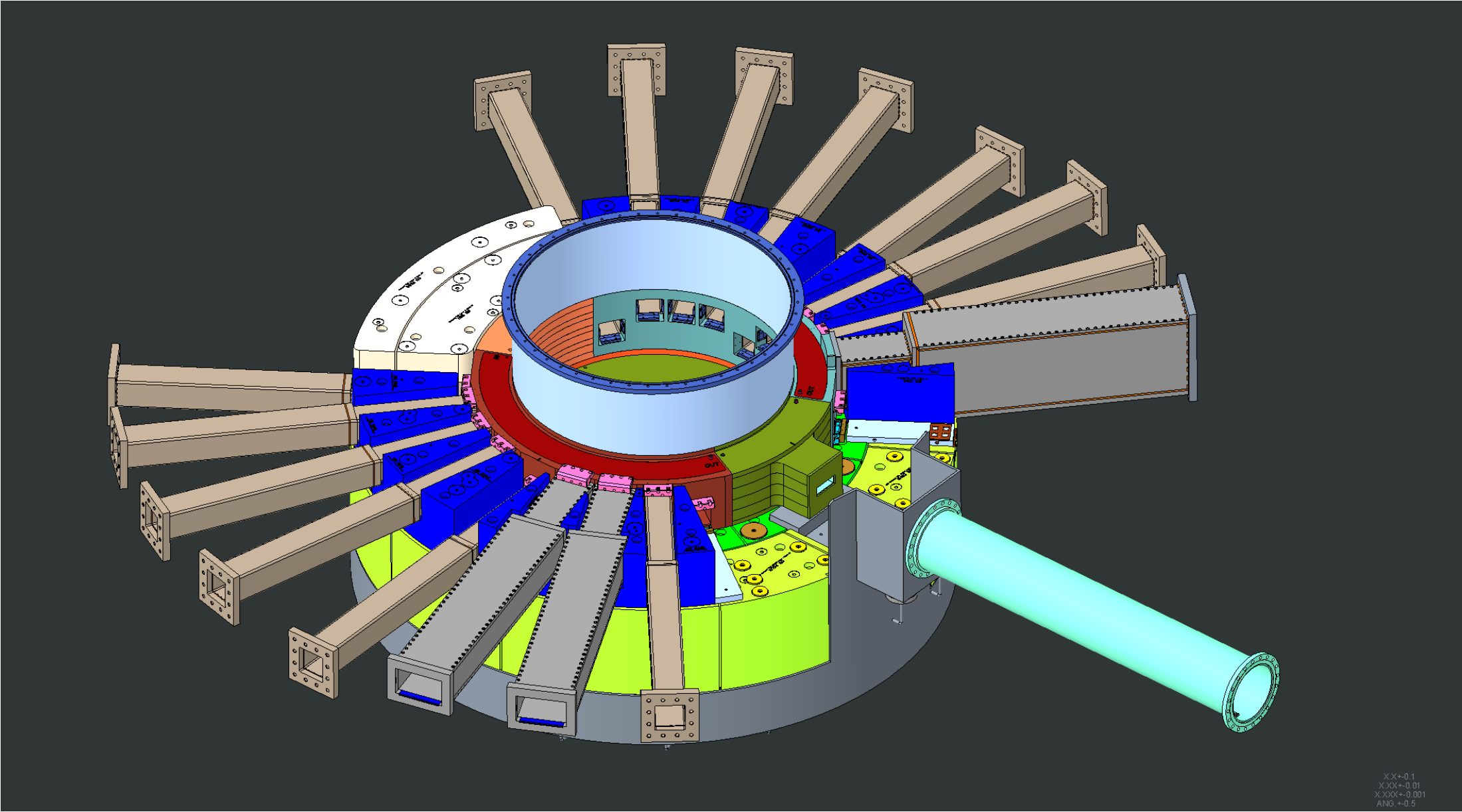


# Nozzle Extensions #2 and #17 installed

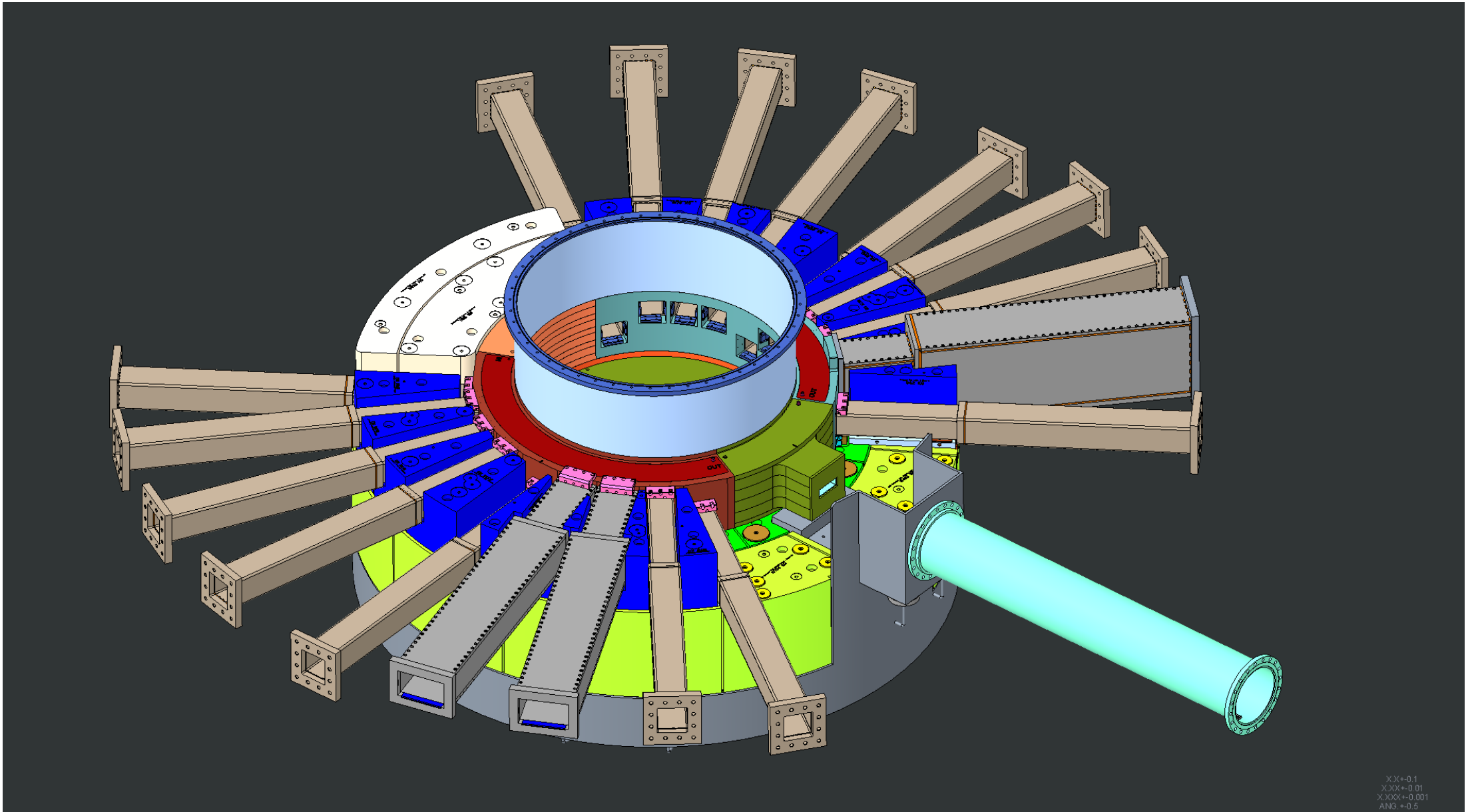


XX+0.1  
XXX+0.01  
XXXX+0.001  
ANG. +0.5

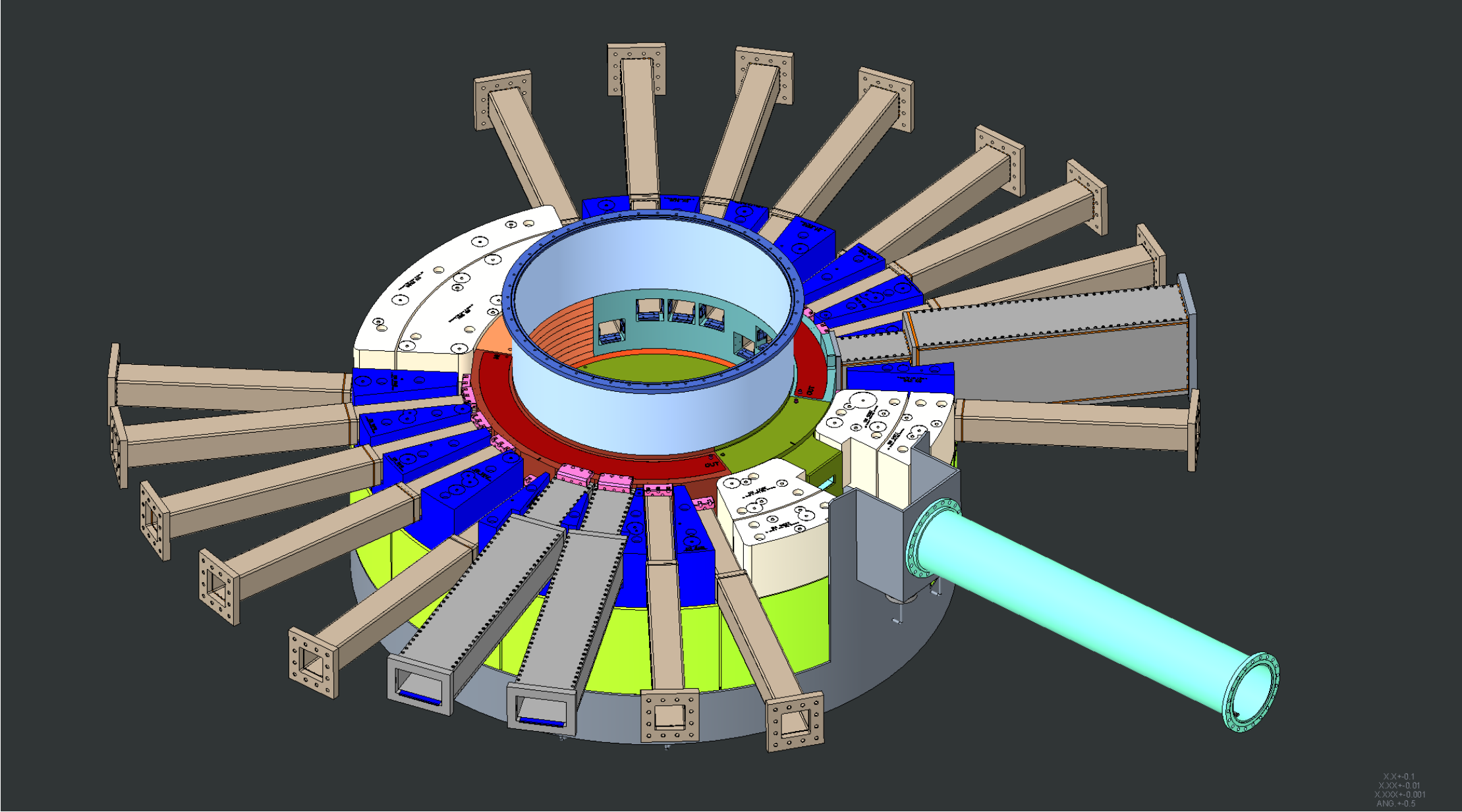
# Shielding around Nozzle Extensions #2 and #17 installed



# Nozzle Extensions #1 and #18 installed

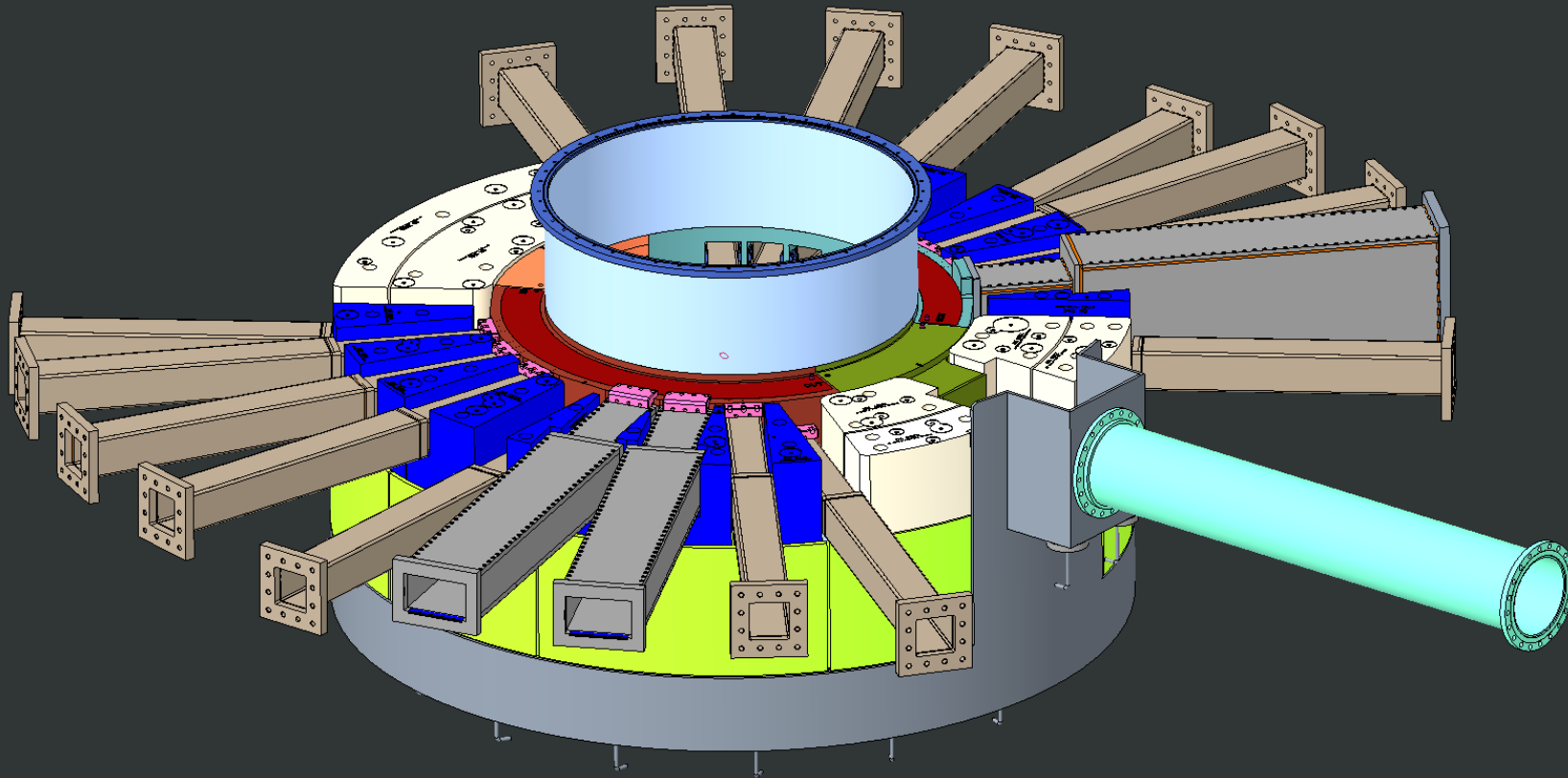


# Shielding around Nozzle Extensions #1 and #18 installed



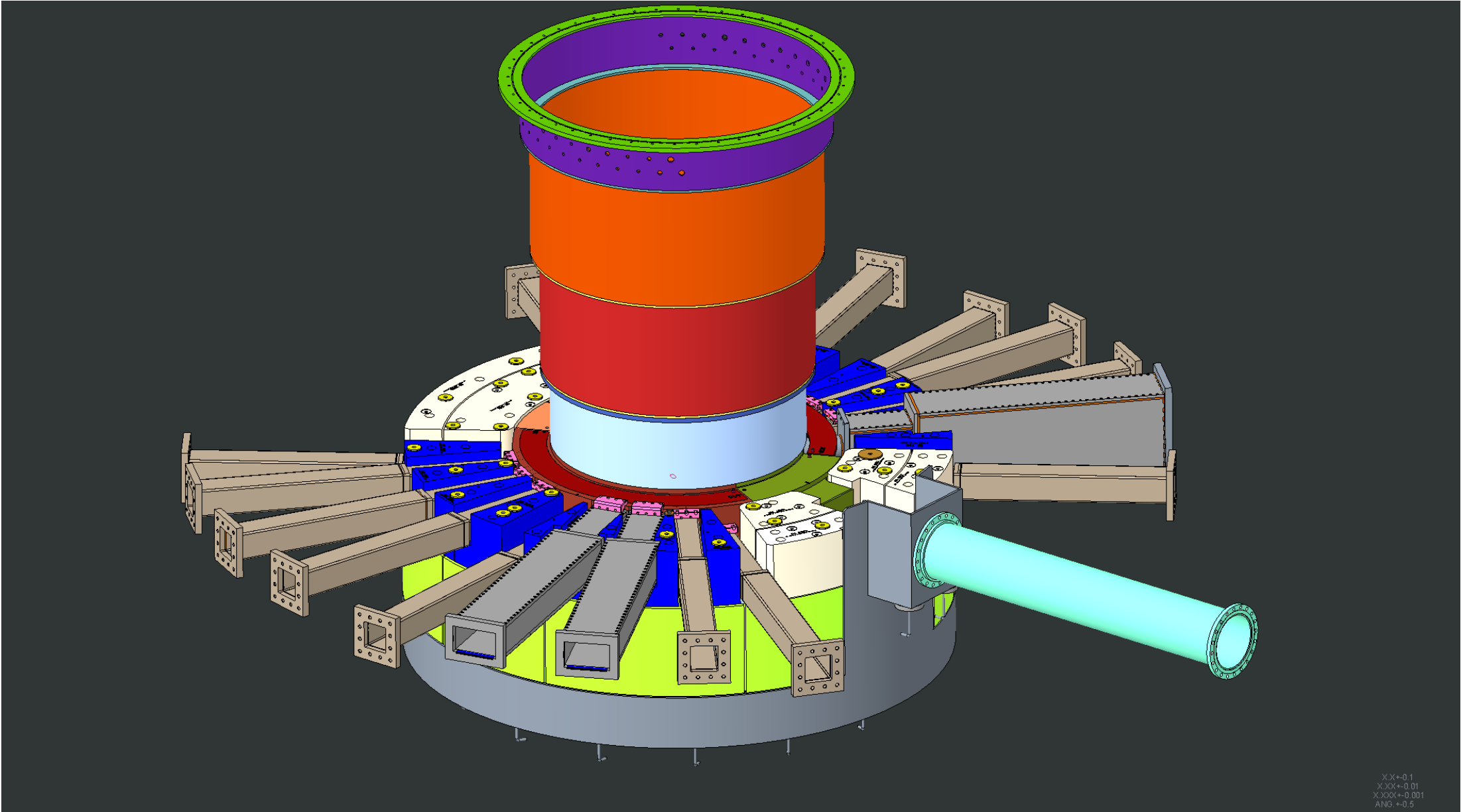
XX+0.1  
XXX+0.01  
XXXX+0.001  
ANG +0.5

# Upstream Bulk Shielding layer #2 installed



XX+0.1  
XXX+0.01  
XXXX+0.001  
ANG +0.5

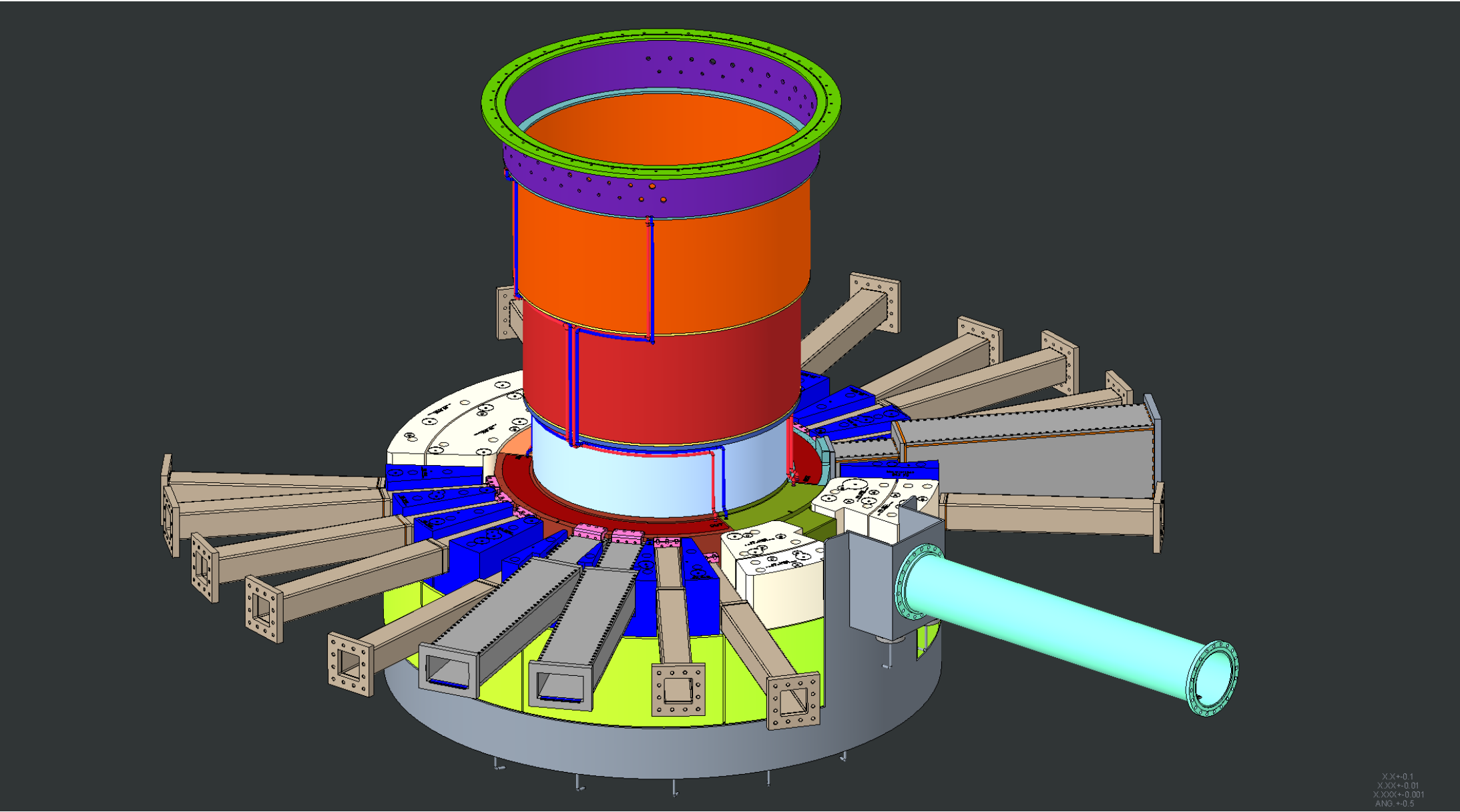
# Layer 3 shim pucks installed



XX ±0.1  
XXX ±0.01  
XXXX ±0.001  
ANG ±0.5

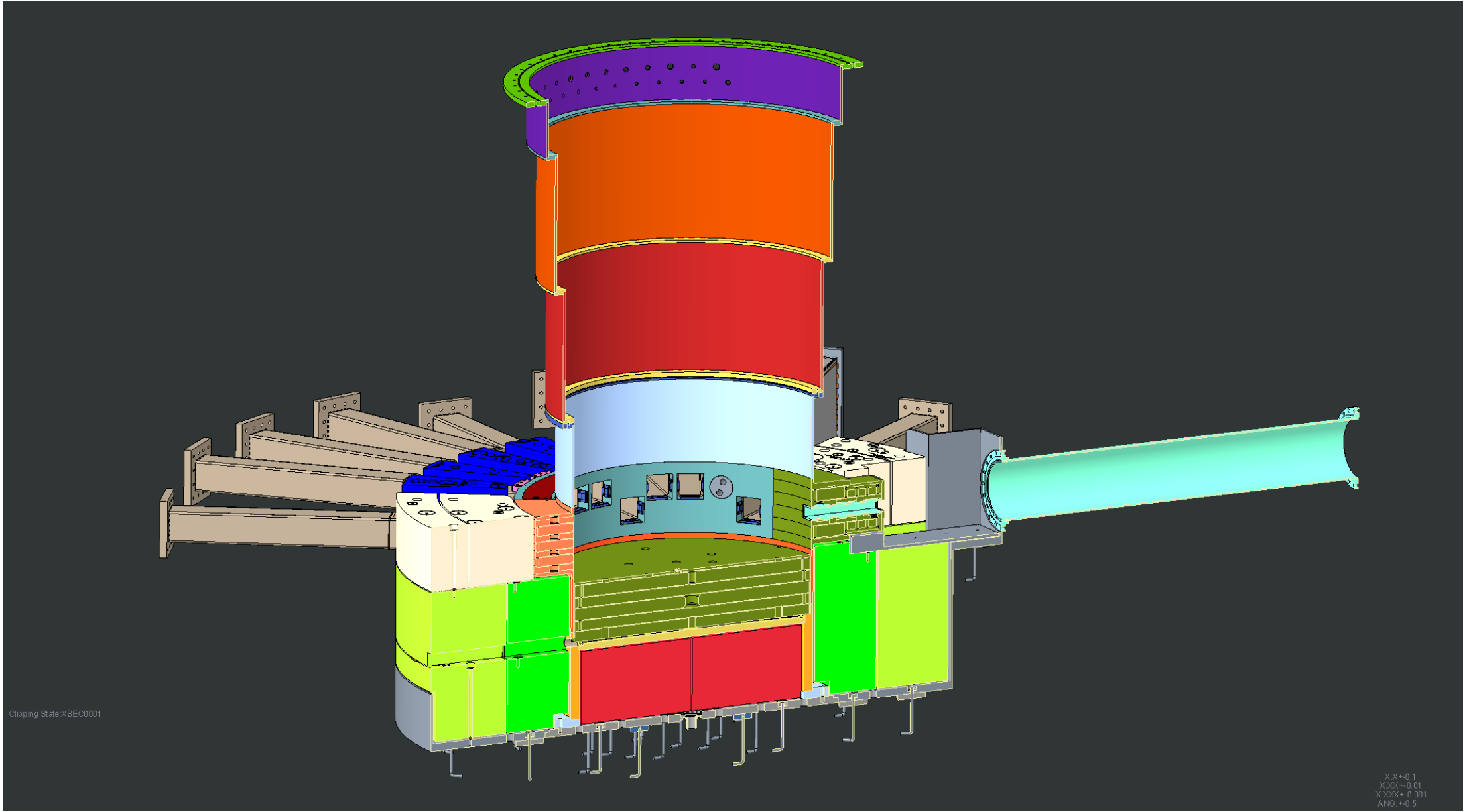


# Core Vessel beltline water lines welded in place

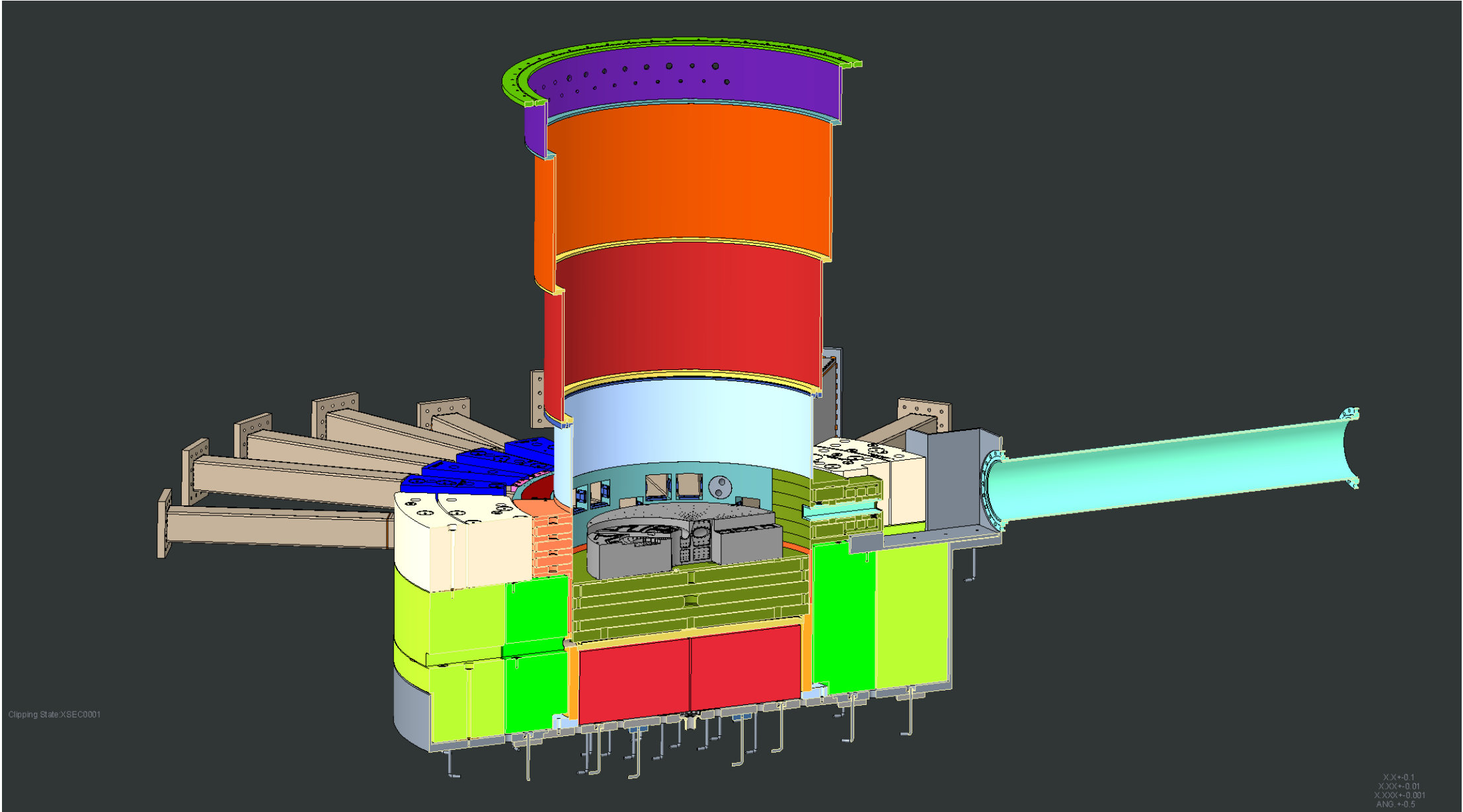


XX+0.1  
XXX+0.01  
XXXX+0.001  
ANG: +0.5

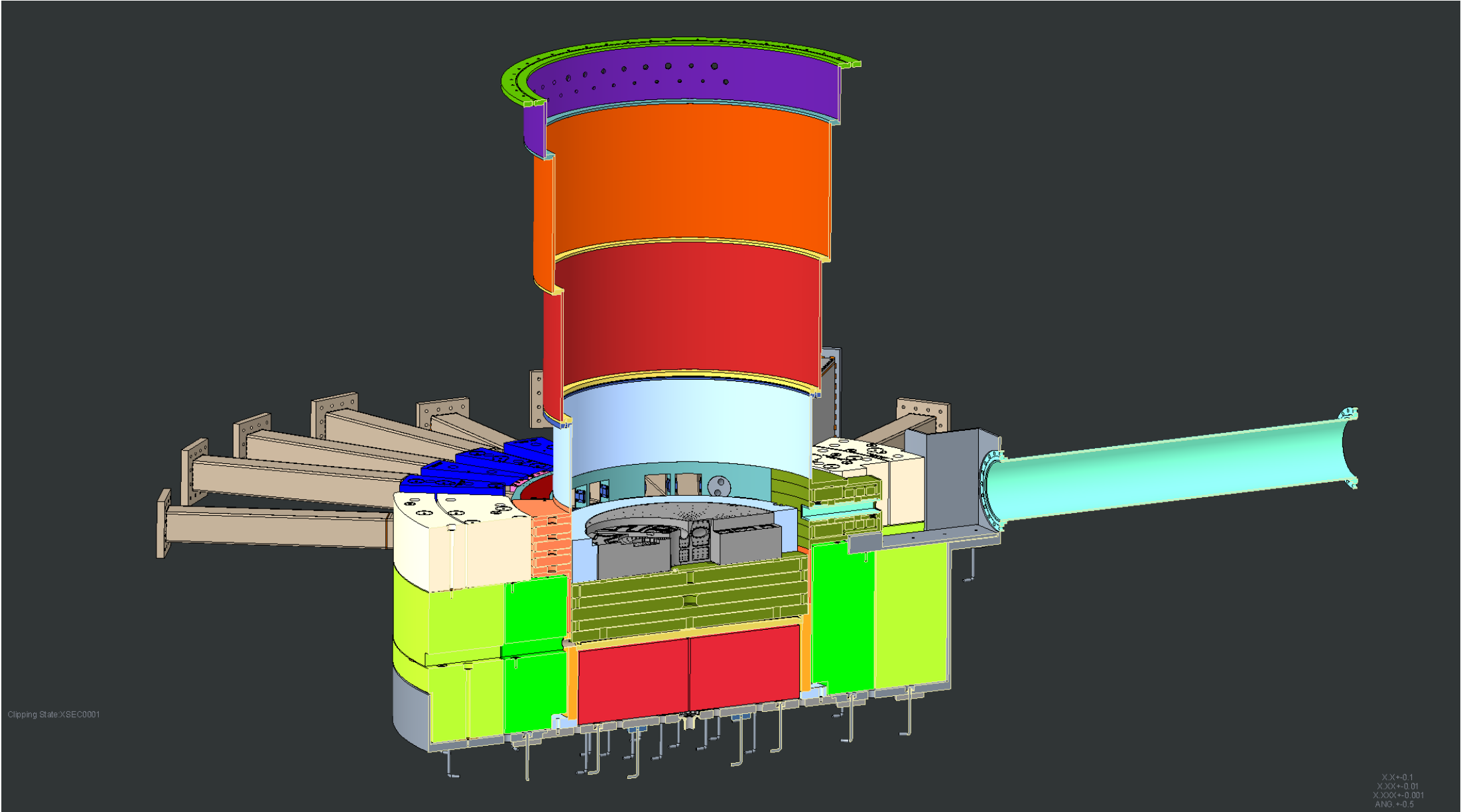
# Cross section view of installation up to this point



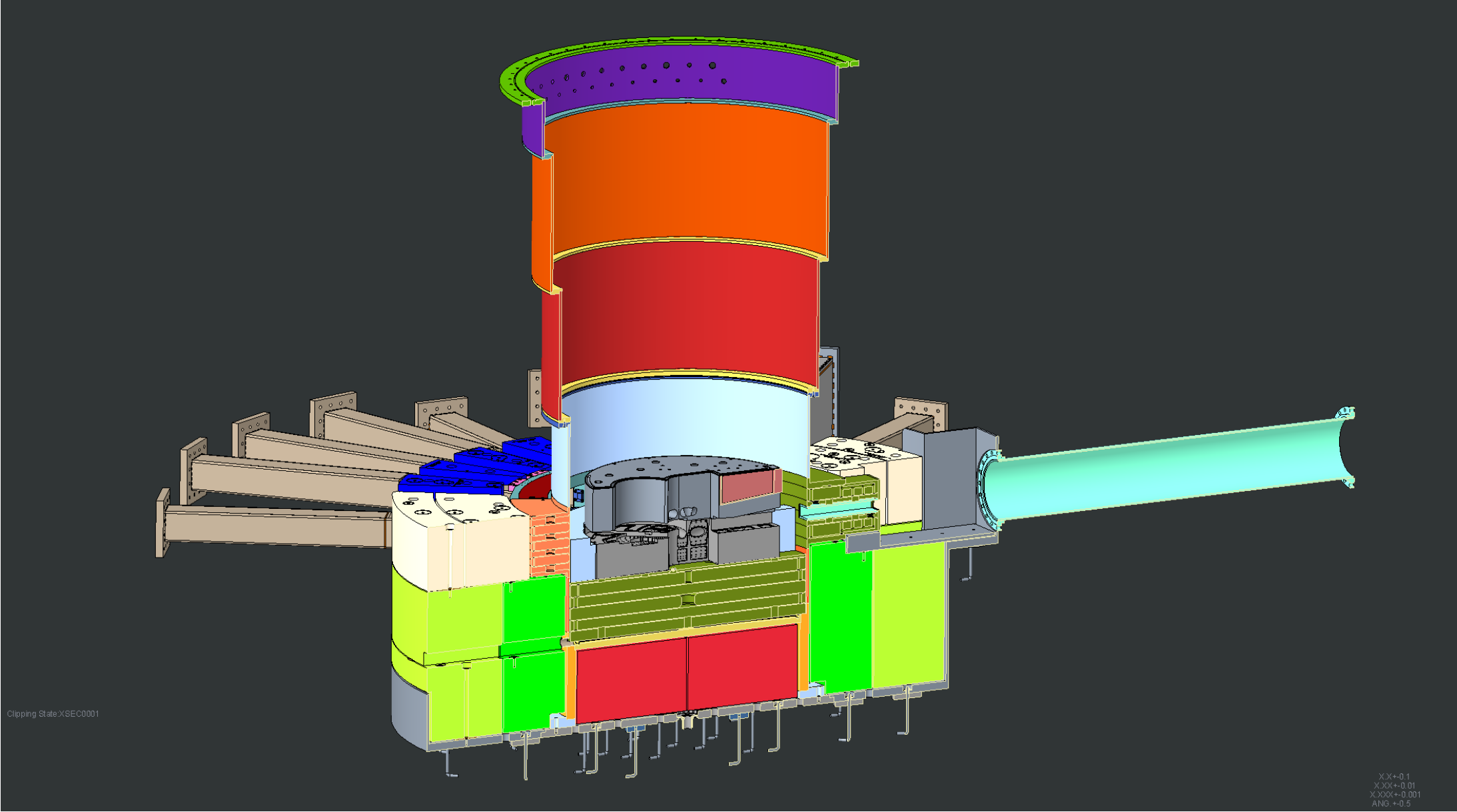
# Core Vessel cooled layer #2 shield blocks installed



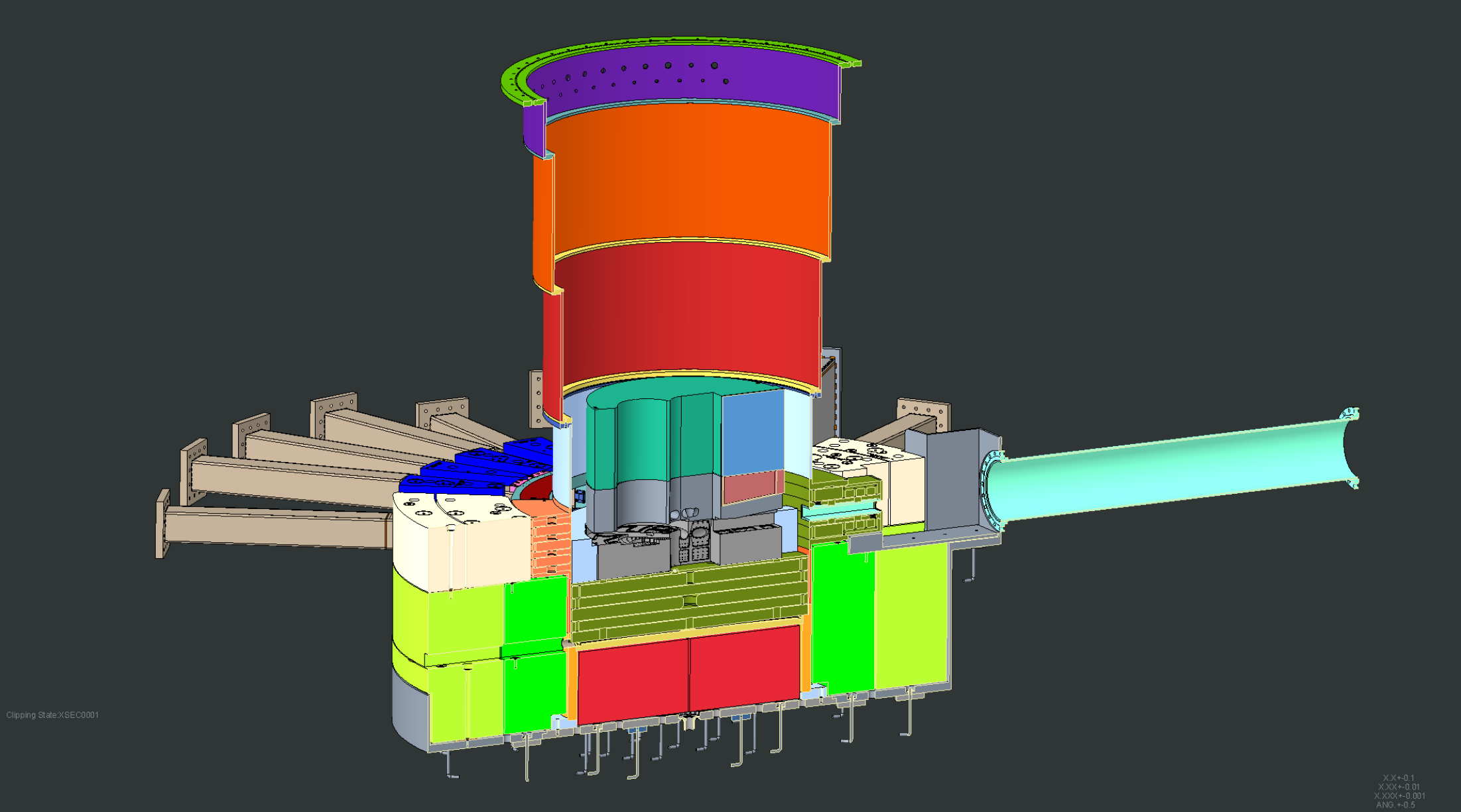
# Core Vessel uncooled layer #2 shield blocks installed



# Core Vessel cooled layer #3 cooled shield blocks installed



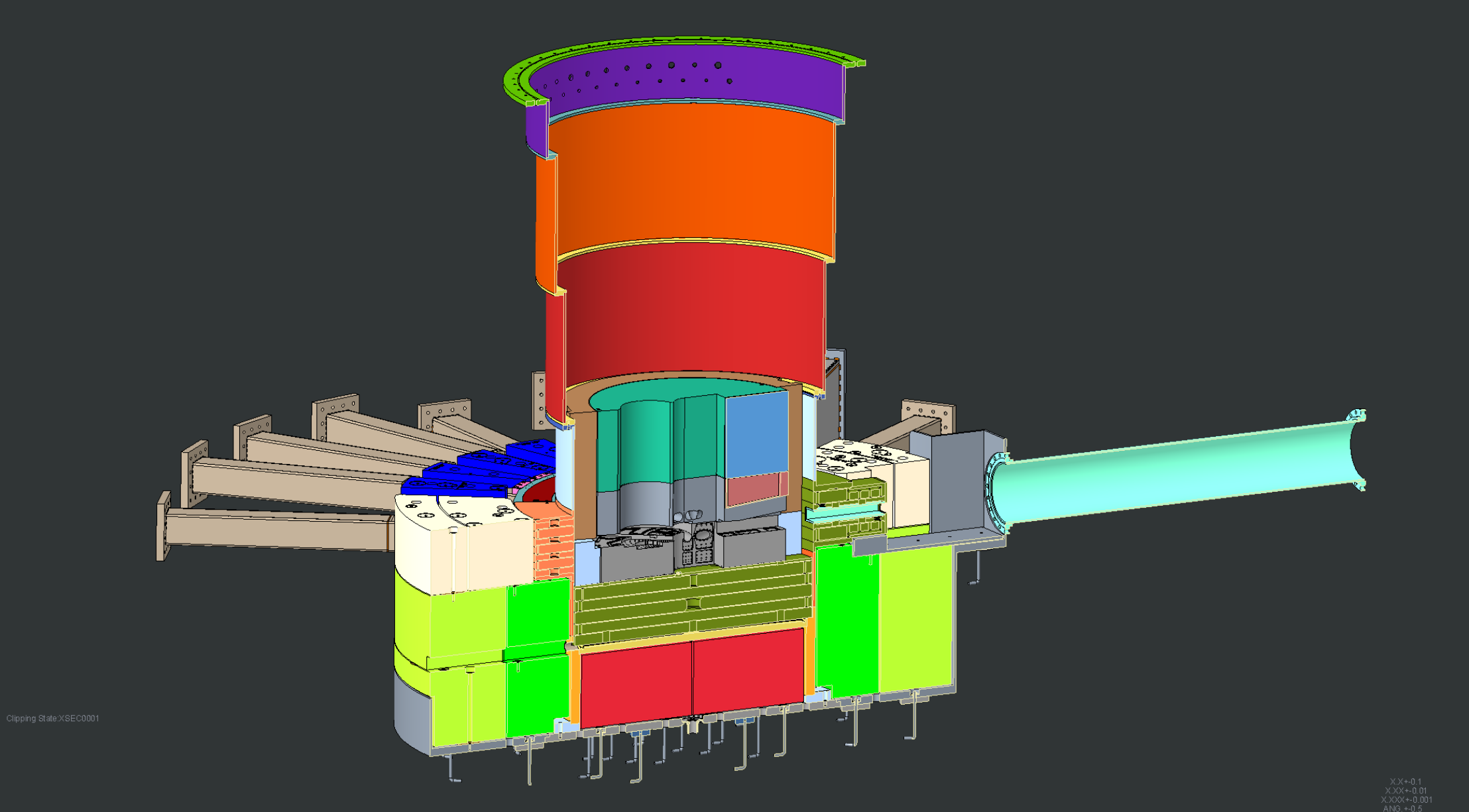
# Core vessel uncooled layer #3 inner shield blocks installed



Clipping State: XSEC0001

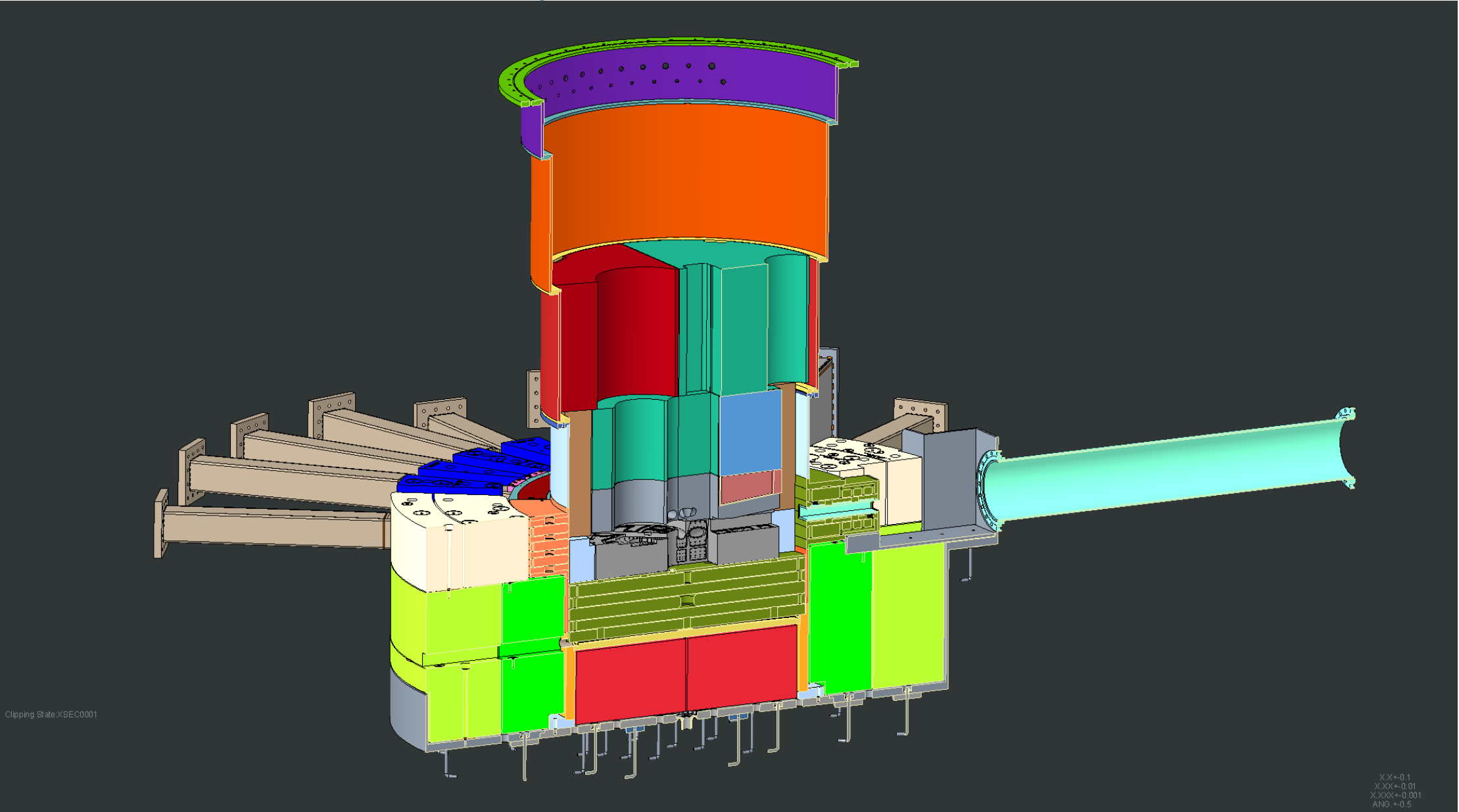
XXX+0.1  
XXX+0.01  
XXXX+0.001  
ANG +/-0.5

# Core vessel uncooled layer #3 outer shield blocks installed

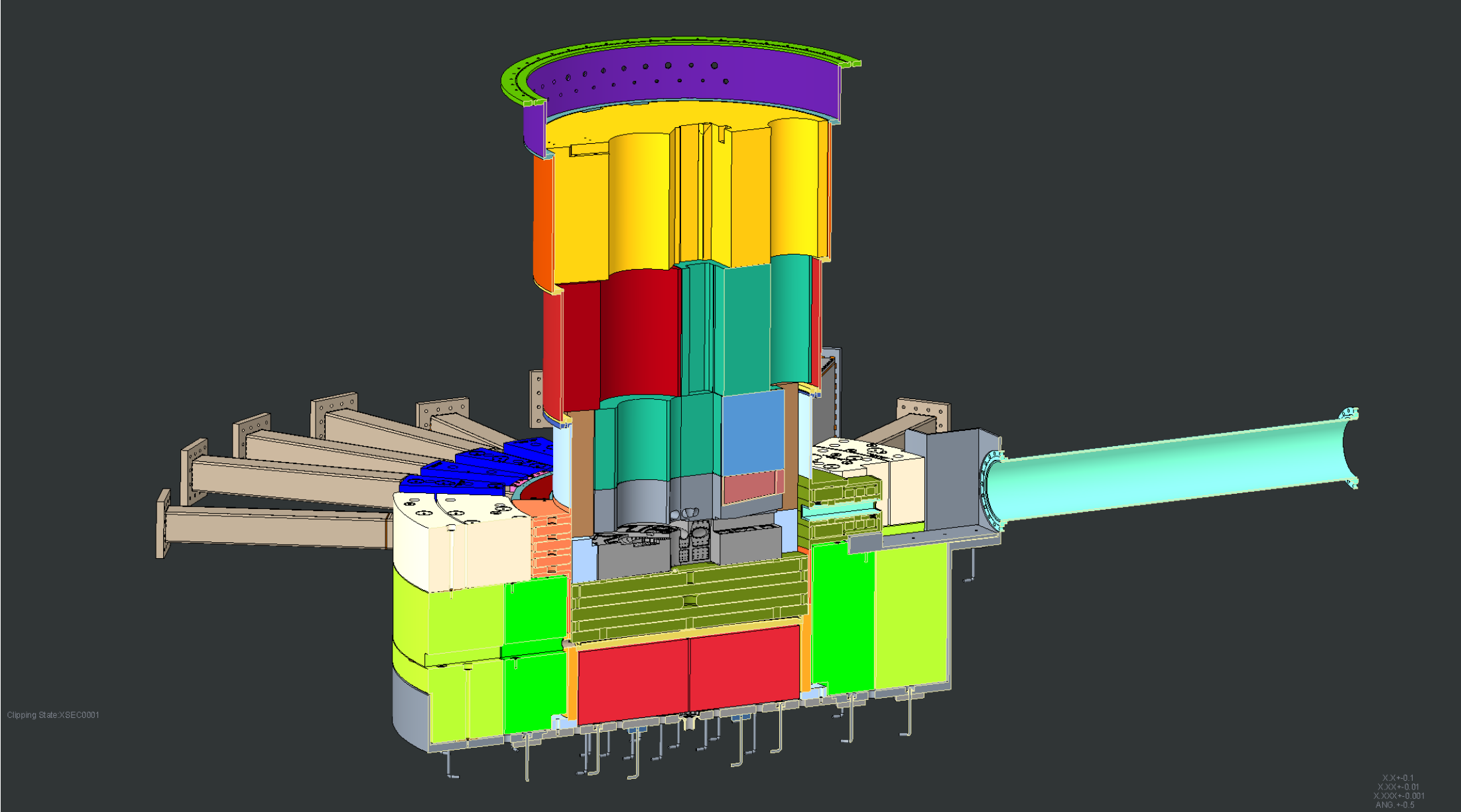




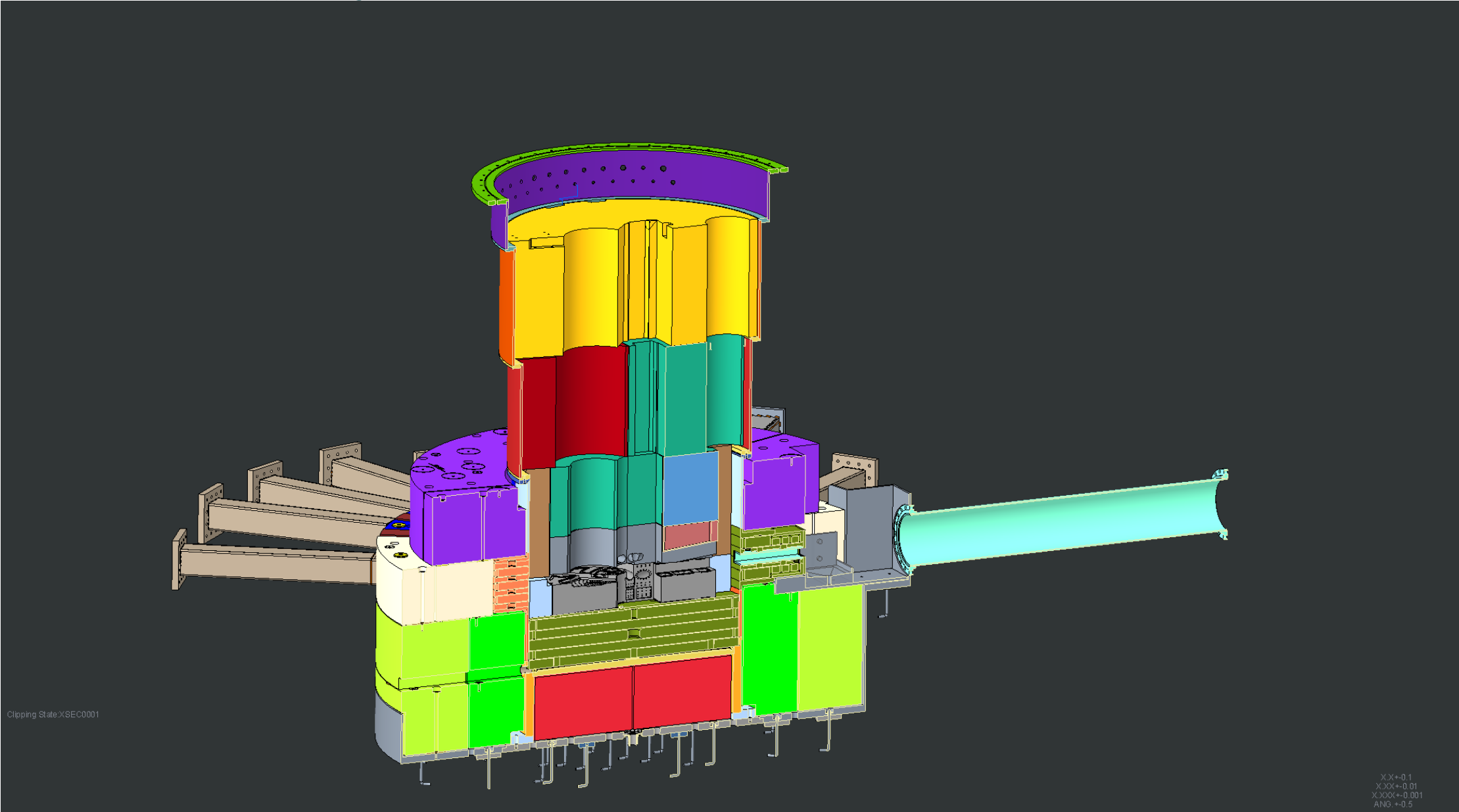
# Core vessel uncooled layer #4 shield blocks installed



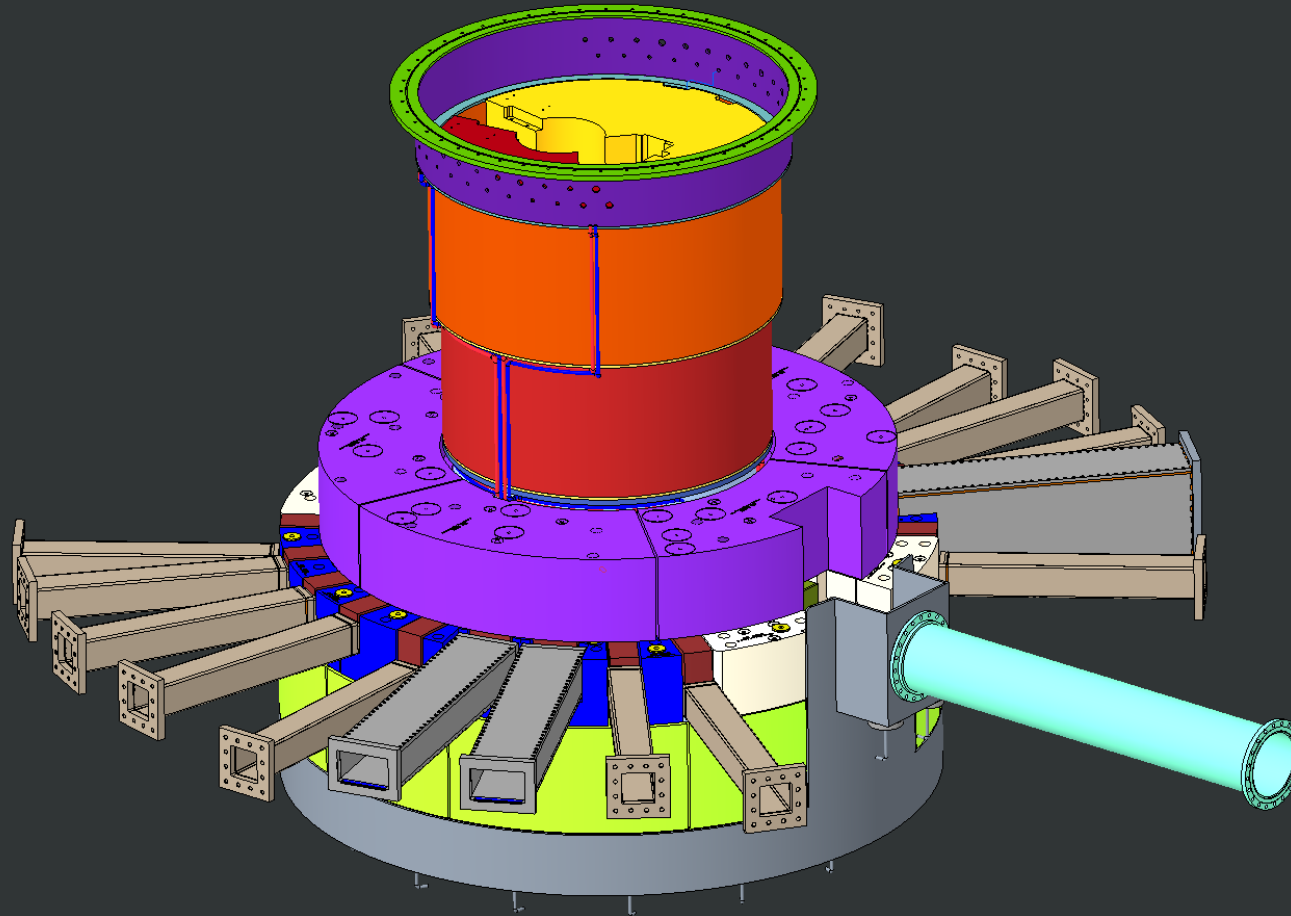
# Core vessel uncooled layer #5 shield blocks installed



# Bulk Shielding layer #3 inside course installed

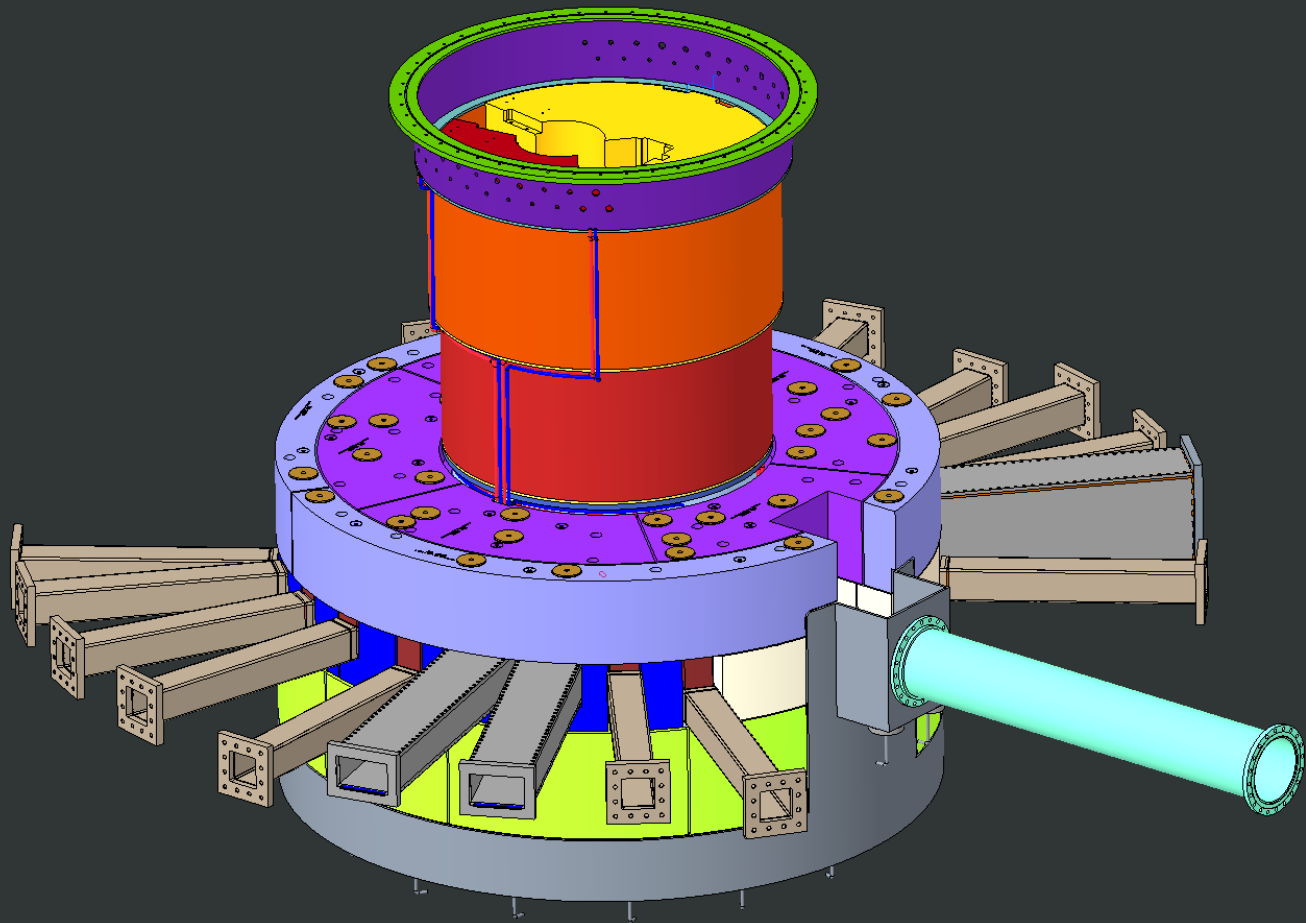


# Bulk Shielding layer #3 inside course installed



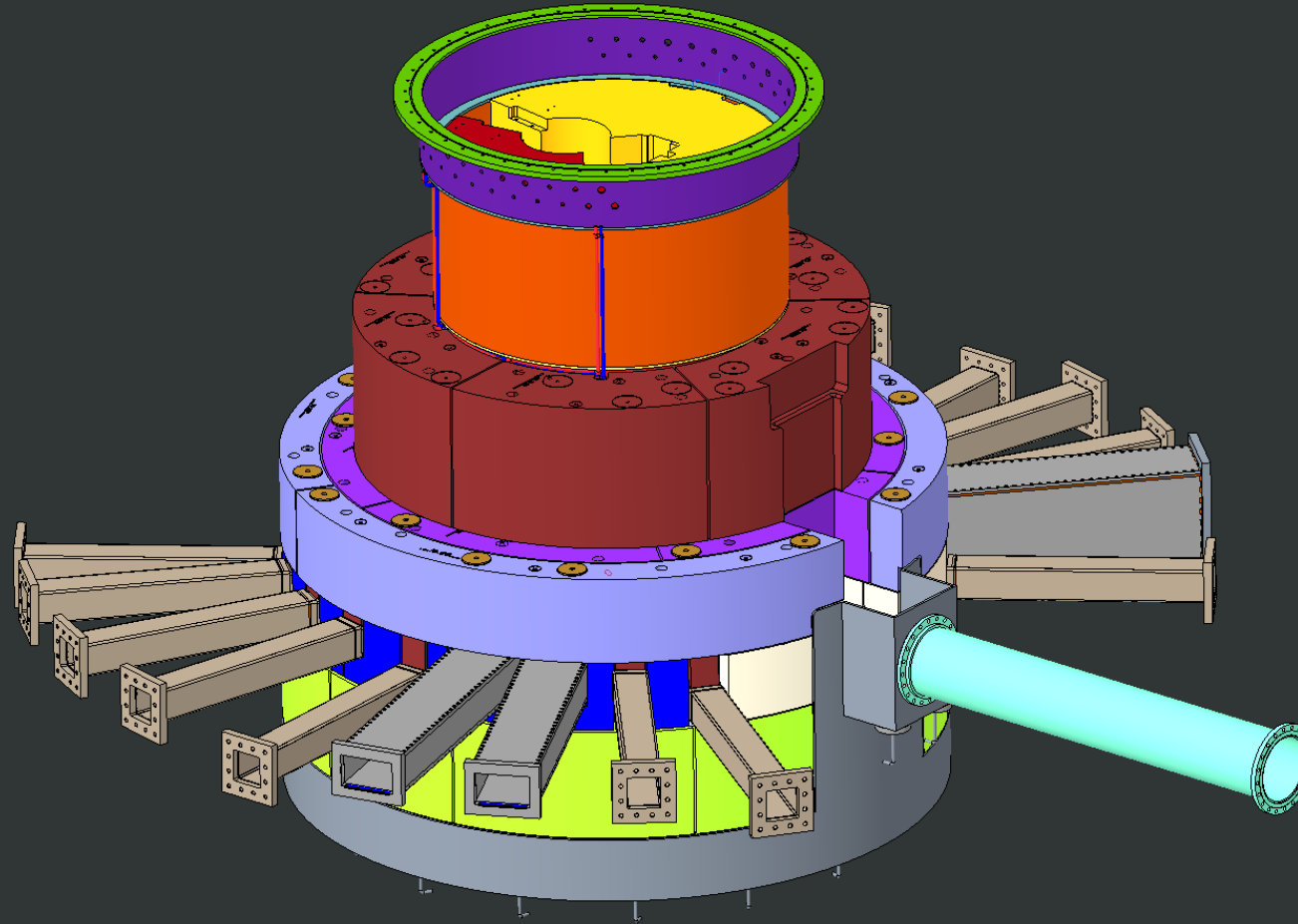
XX+0.1  
XXX+0.01  
XXXX+0.001  
ANG +0.5

# Bulk Shielding layer #3 outside course installed



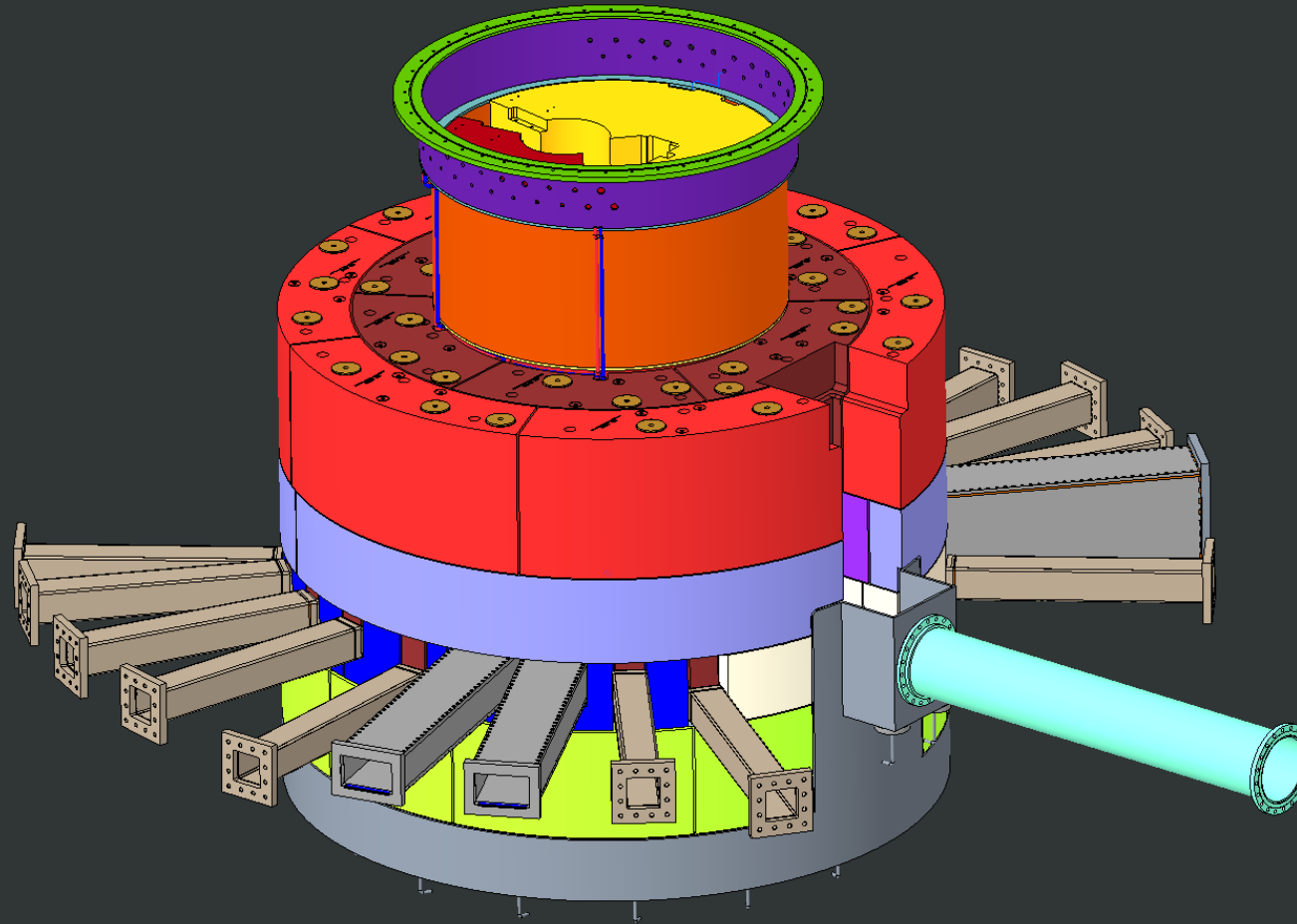
XXX+0.1  
XXXX+0.01  
XXXXX+0.001  
ANG. +/-0.5

# Bulk Shielding layer #4 inside course installed



XX+0.1  
XXX+0.01  
XXXX+0.001  
ANG +0.5

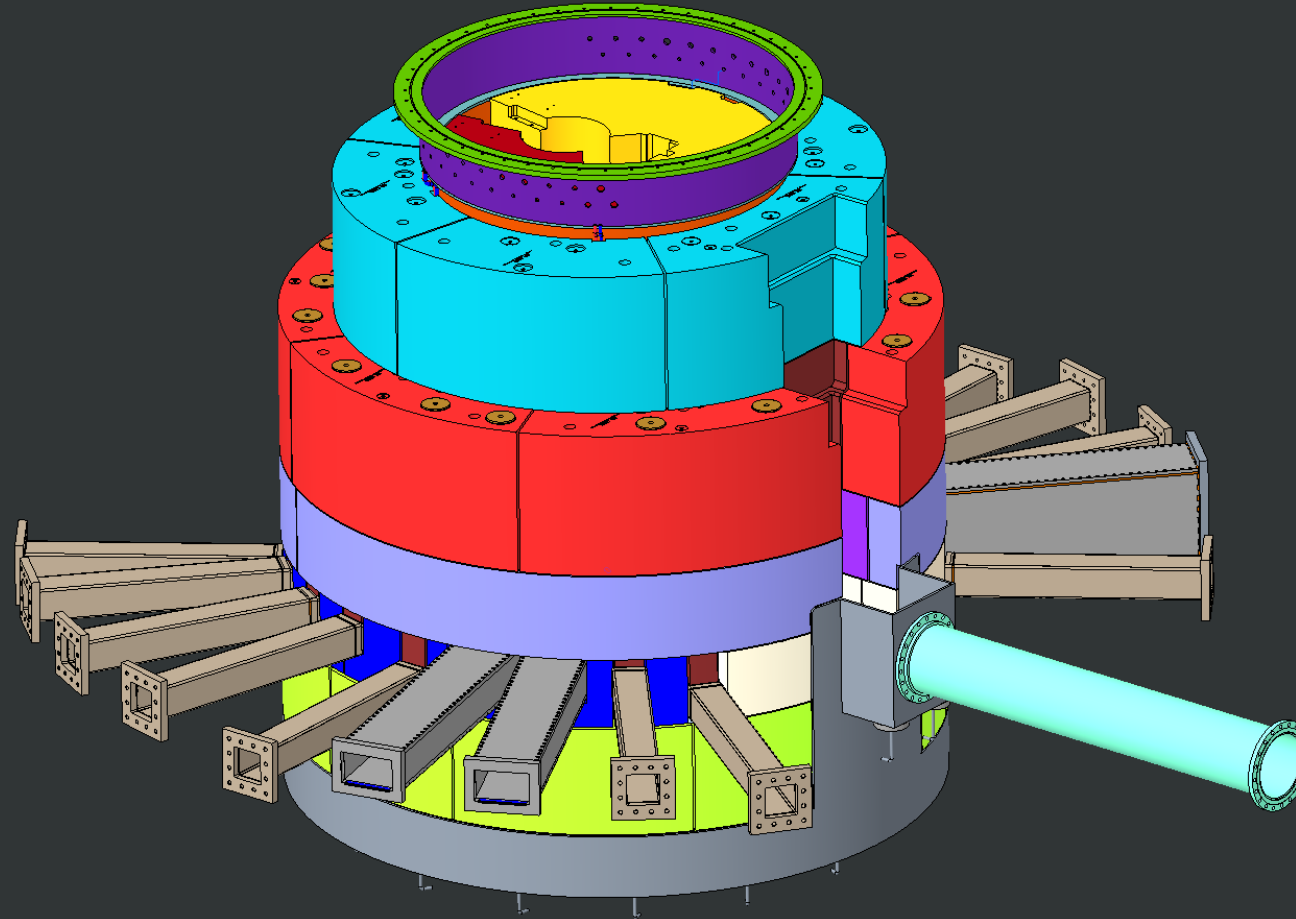
# Bulk Shielding layer #4 outside course installed



XX+0.1  
XXX+0.01  
XXXX+0.001  
ANG +0.5

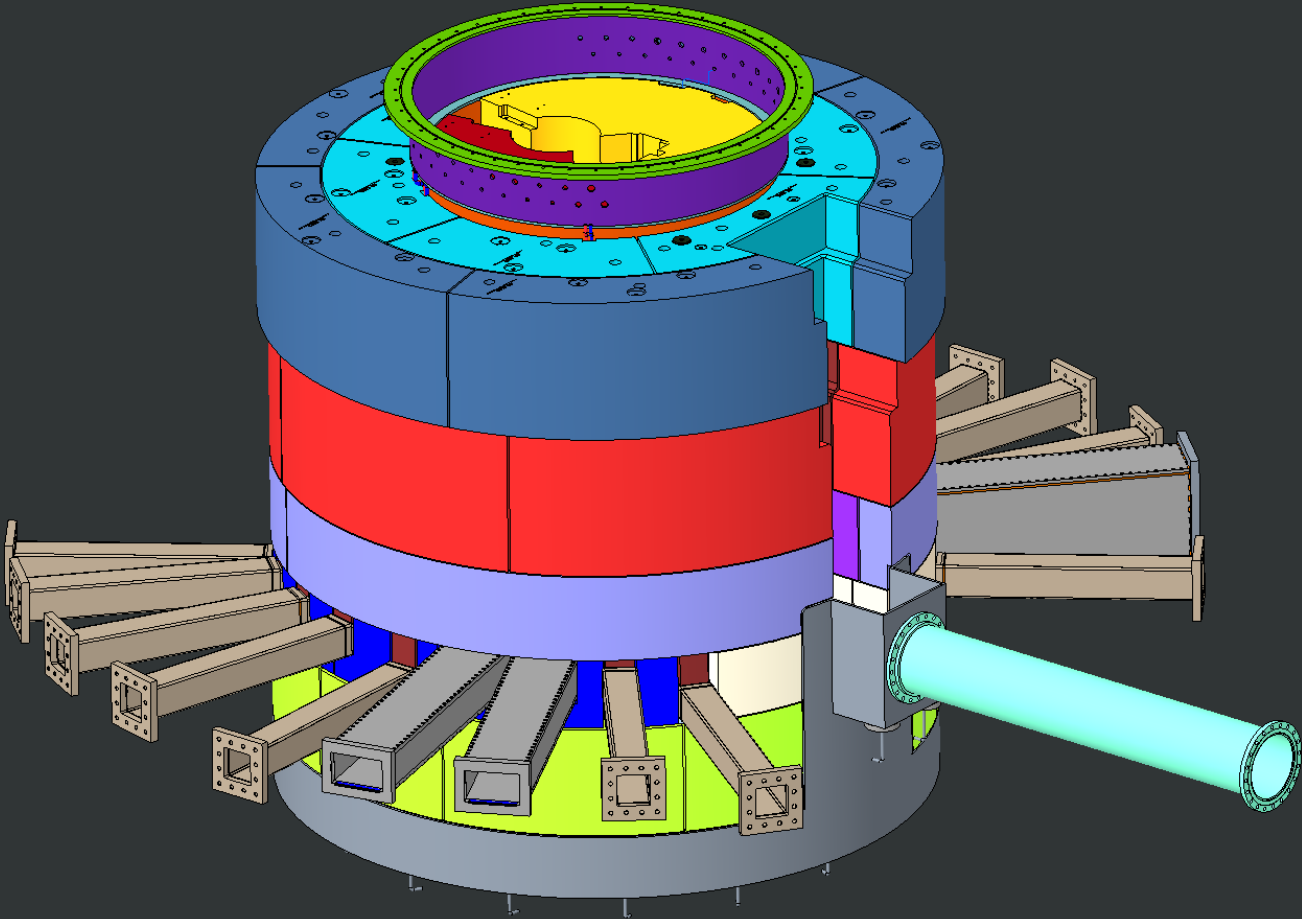


# Bulk Shielding layer #5 inside course installed



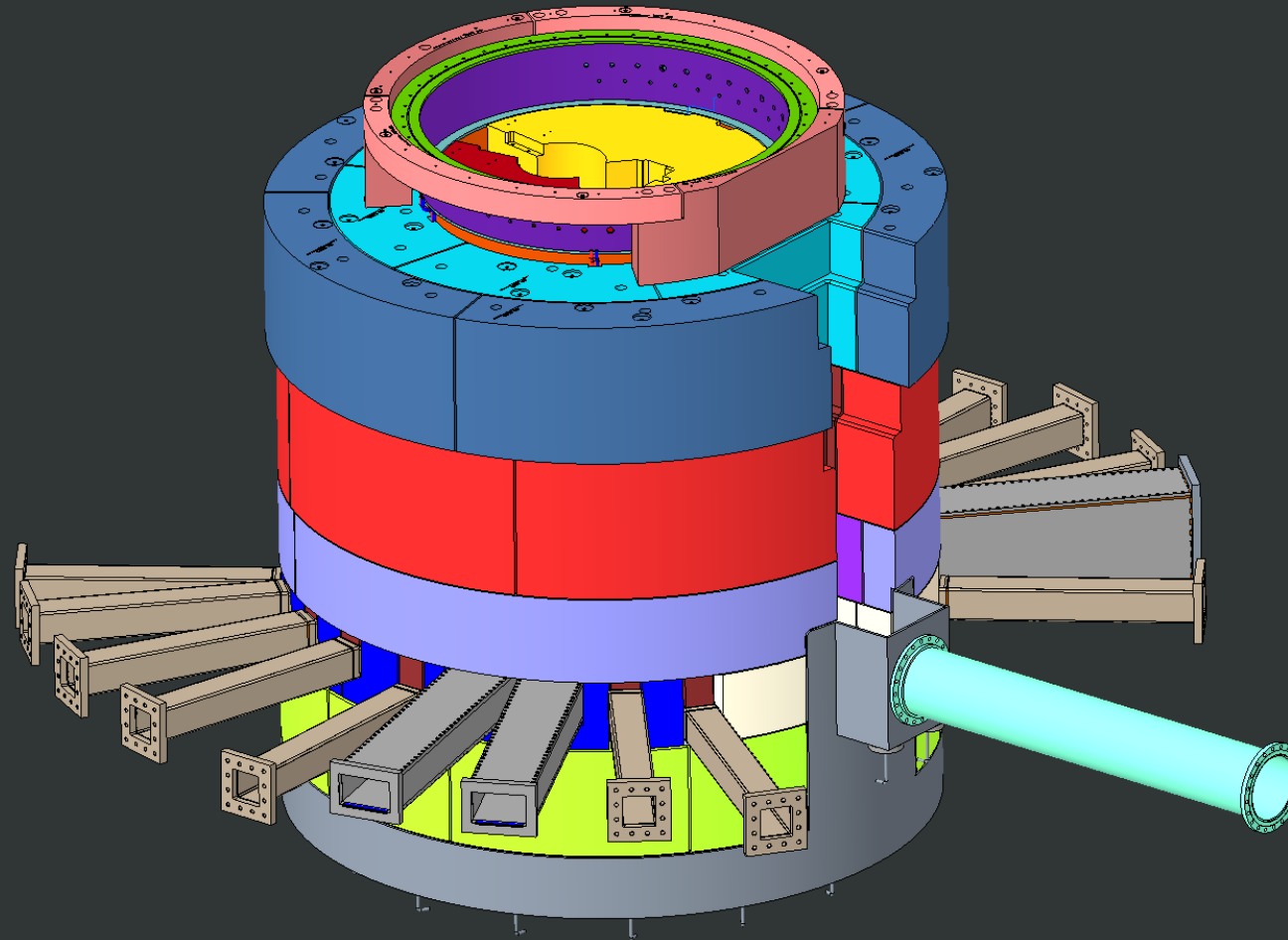
XXX+0.1  
XXX+0.01  
XXXX+0.001  
ANG. +0.5

# Bulk Shielding layer #5 outside course installed



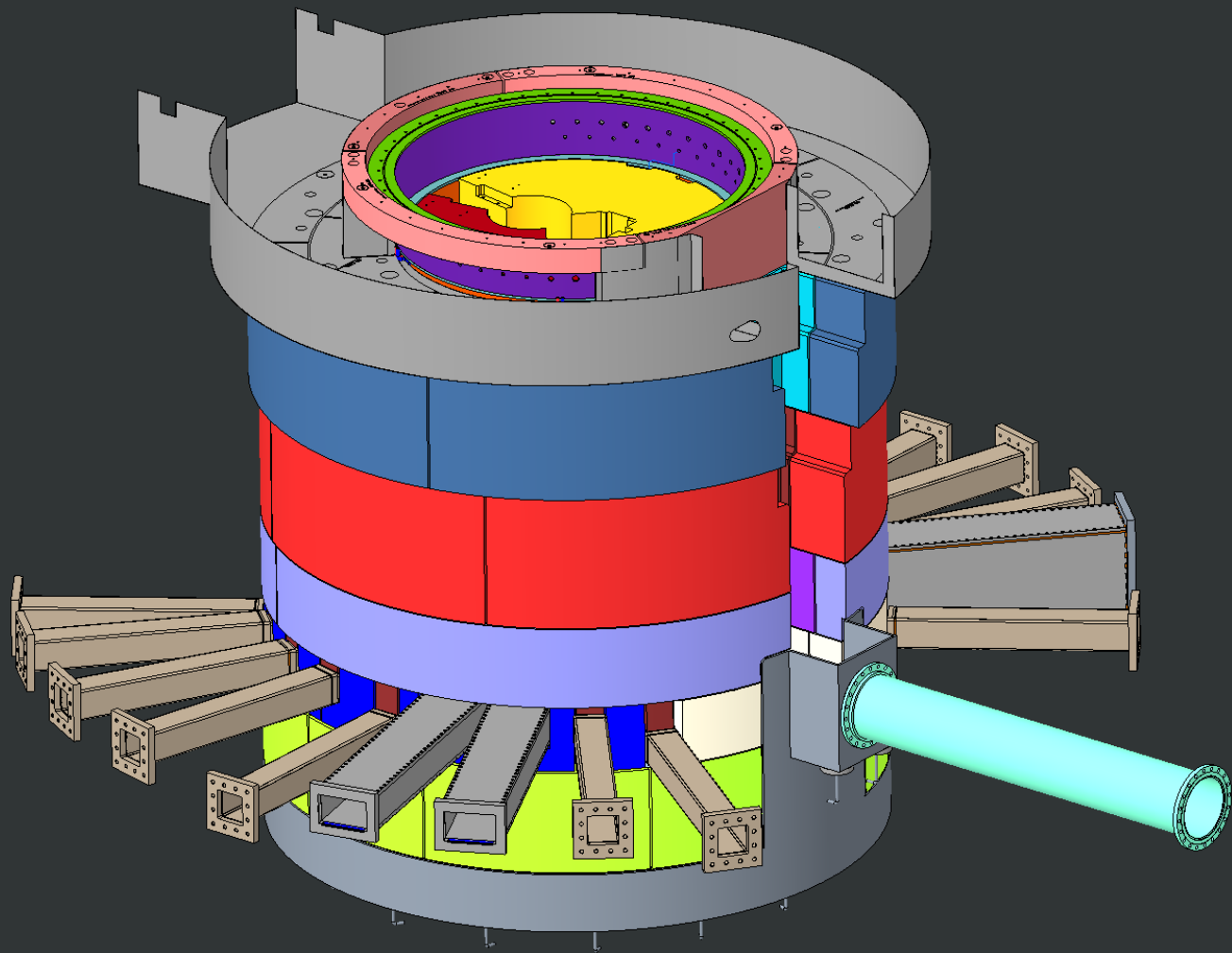
XX+0.1  
XXX+0.01  
XXXX+0.001  
ANG. +0.5

# Bulk Shielding layer #6 inside course installed



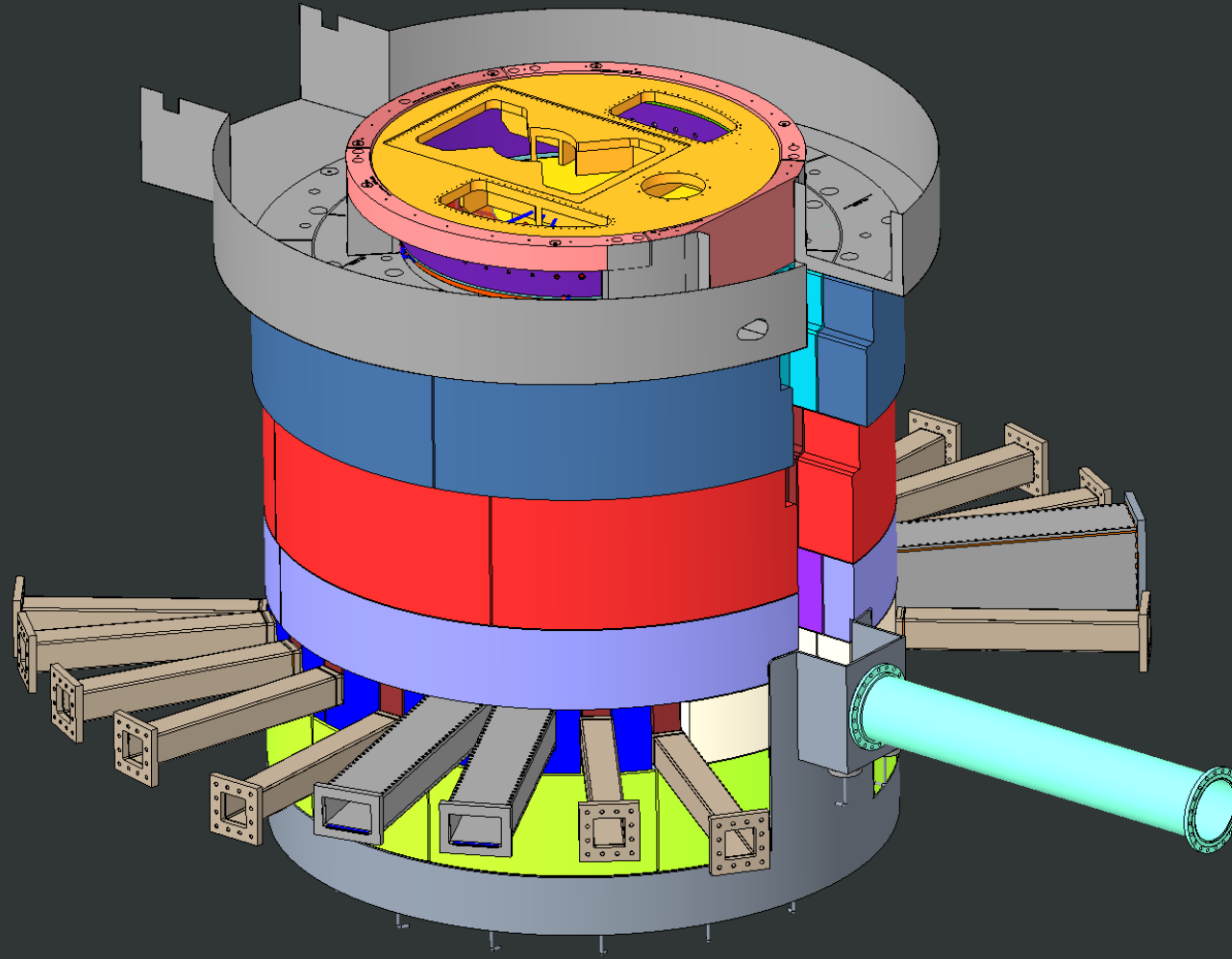
XXX+0.1  
XXXX+0.01  
XXXXX+0.001  
ANG +/-0.5

# Pipe pans installed



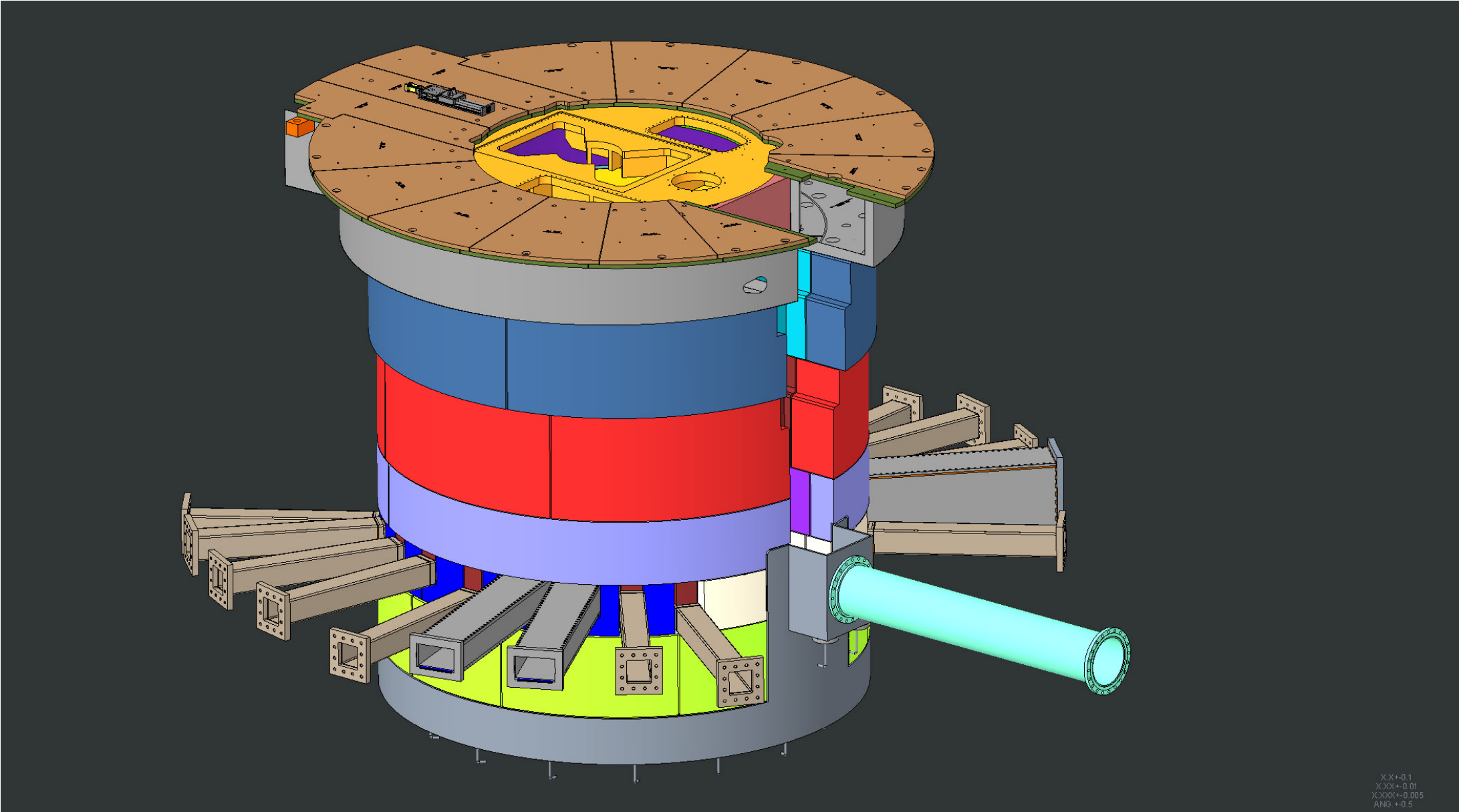
XX+-0.1  
XXX+-0.01  
XXXX+-0.001  
ANG +/-0.5

# Core Vessel lid installed

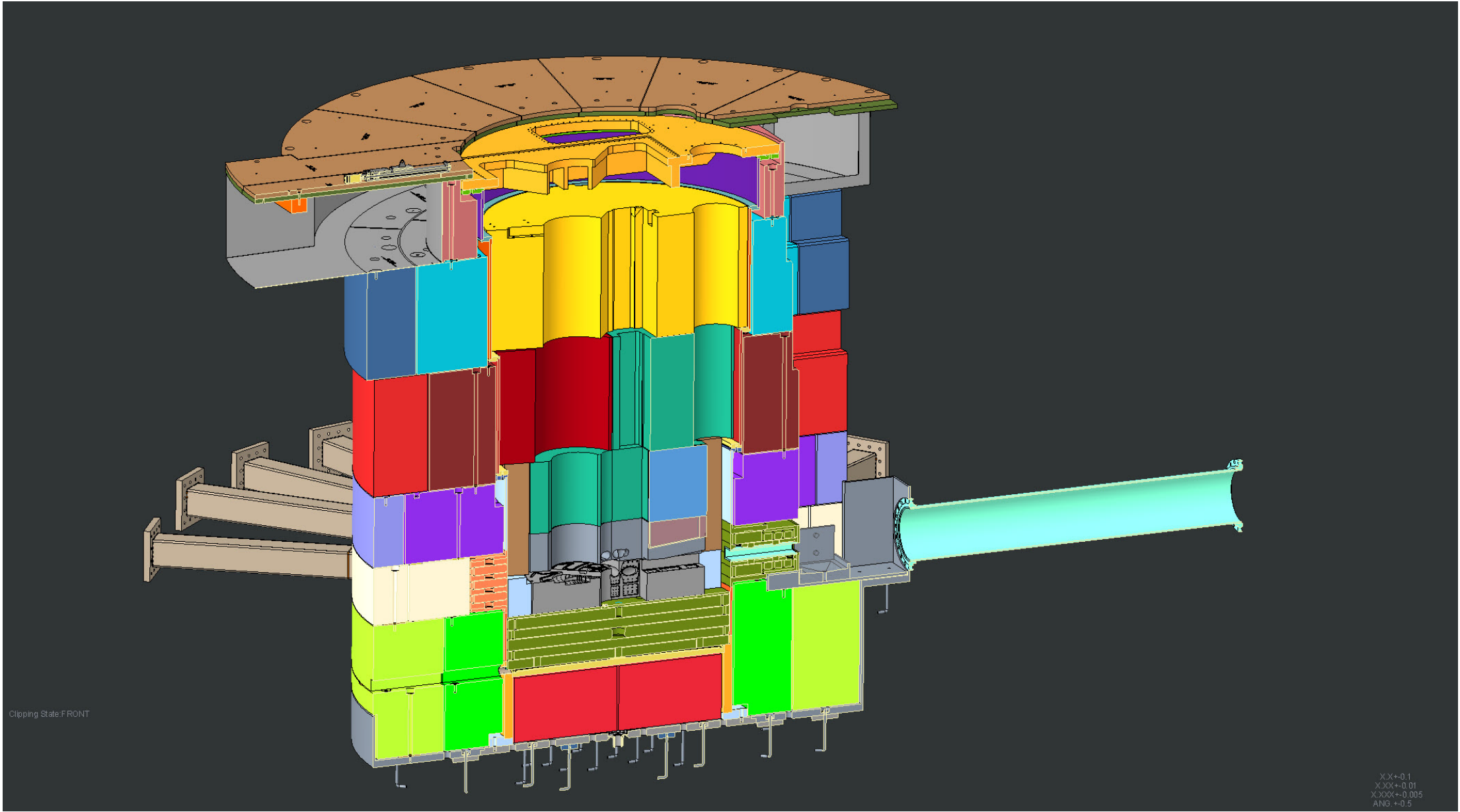


XX+0.1  
XXX+0.01  
XXXX+0.001  
ANG. +0.5

# Pipe pan cover shield plates installed

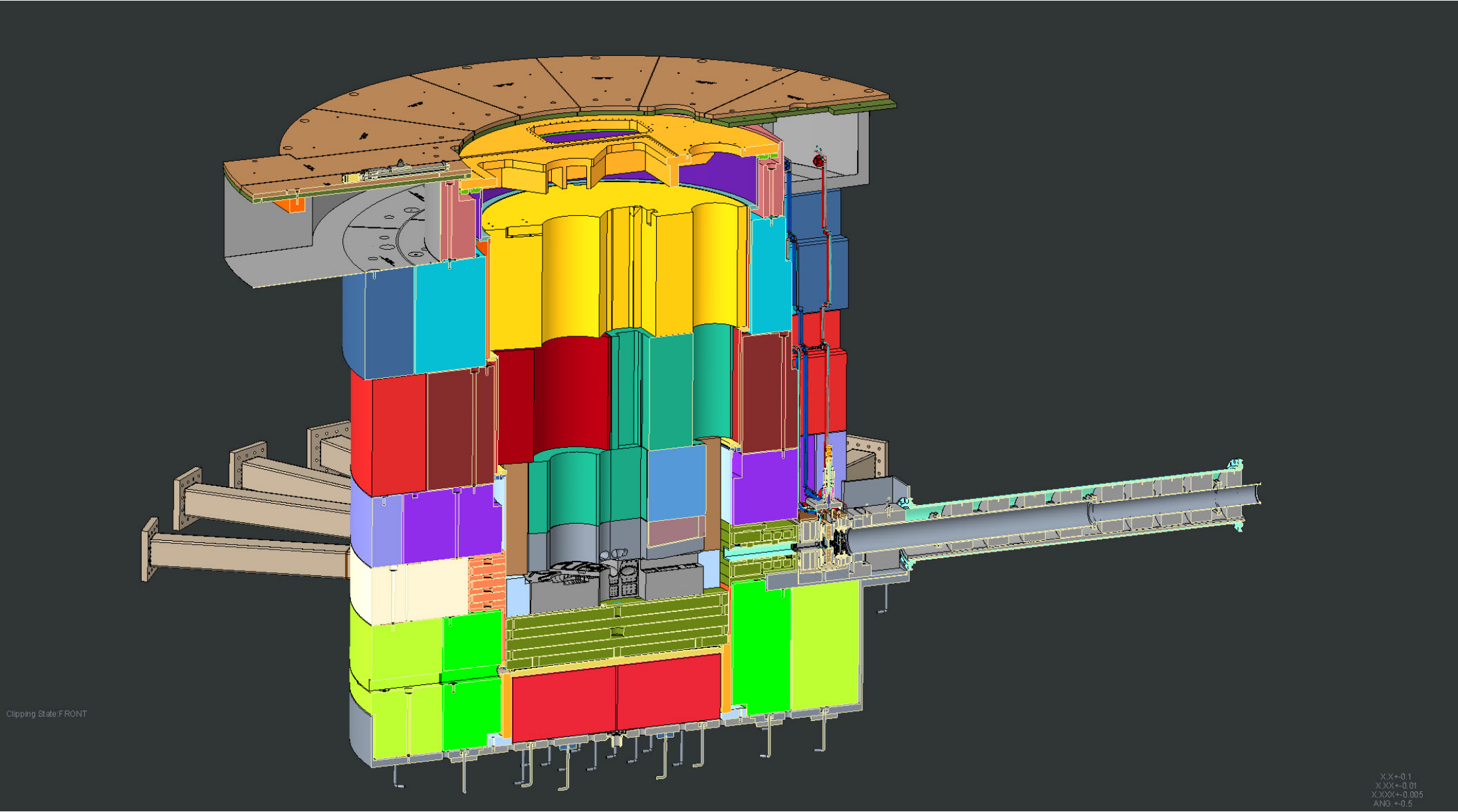


# Cross section view of installation to this point

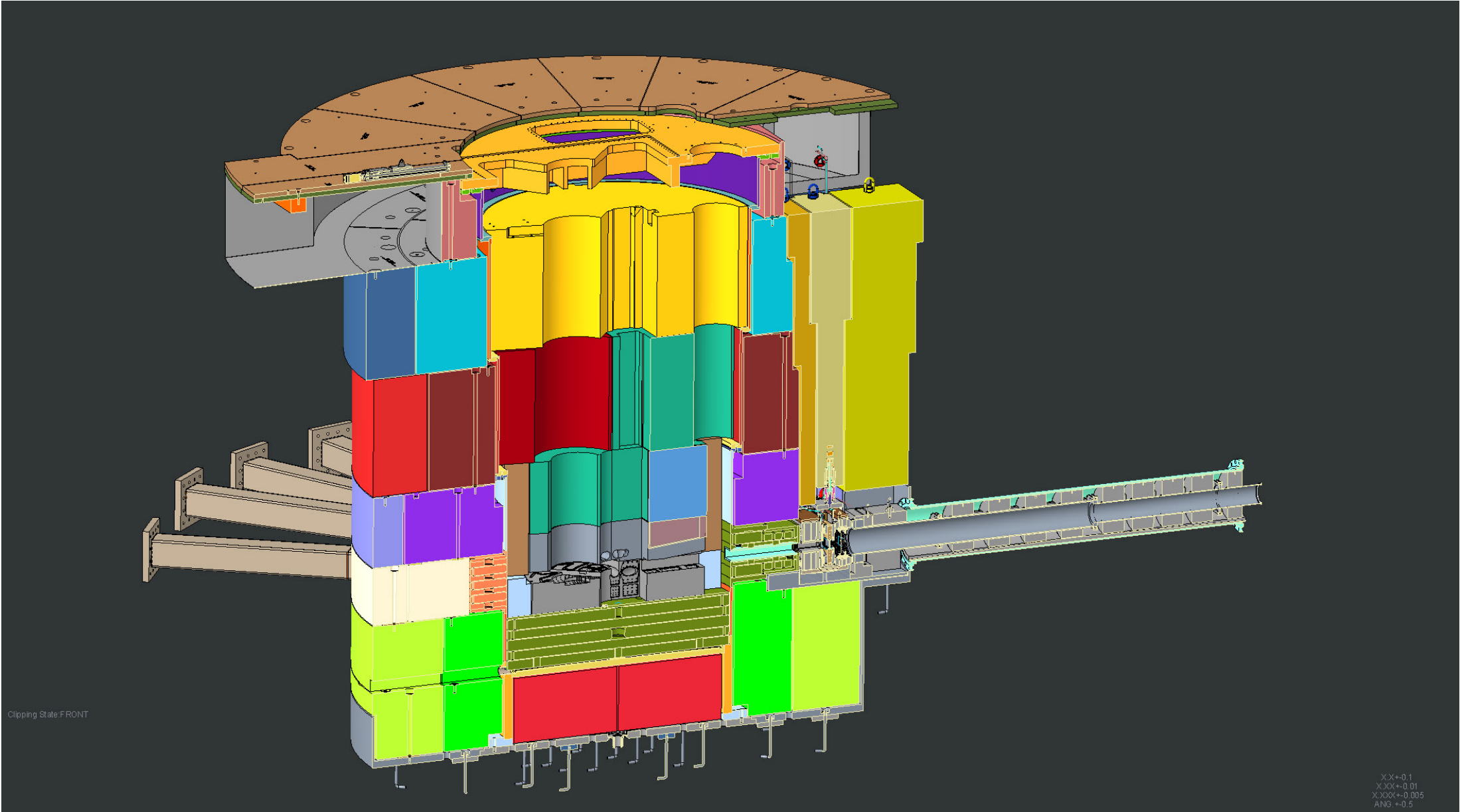




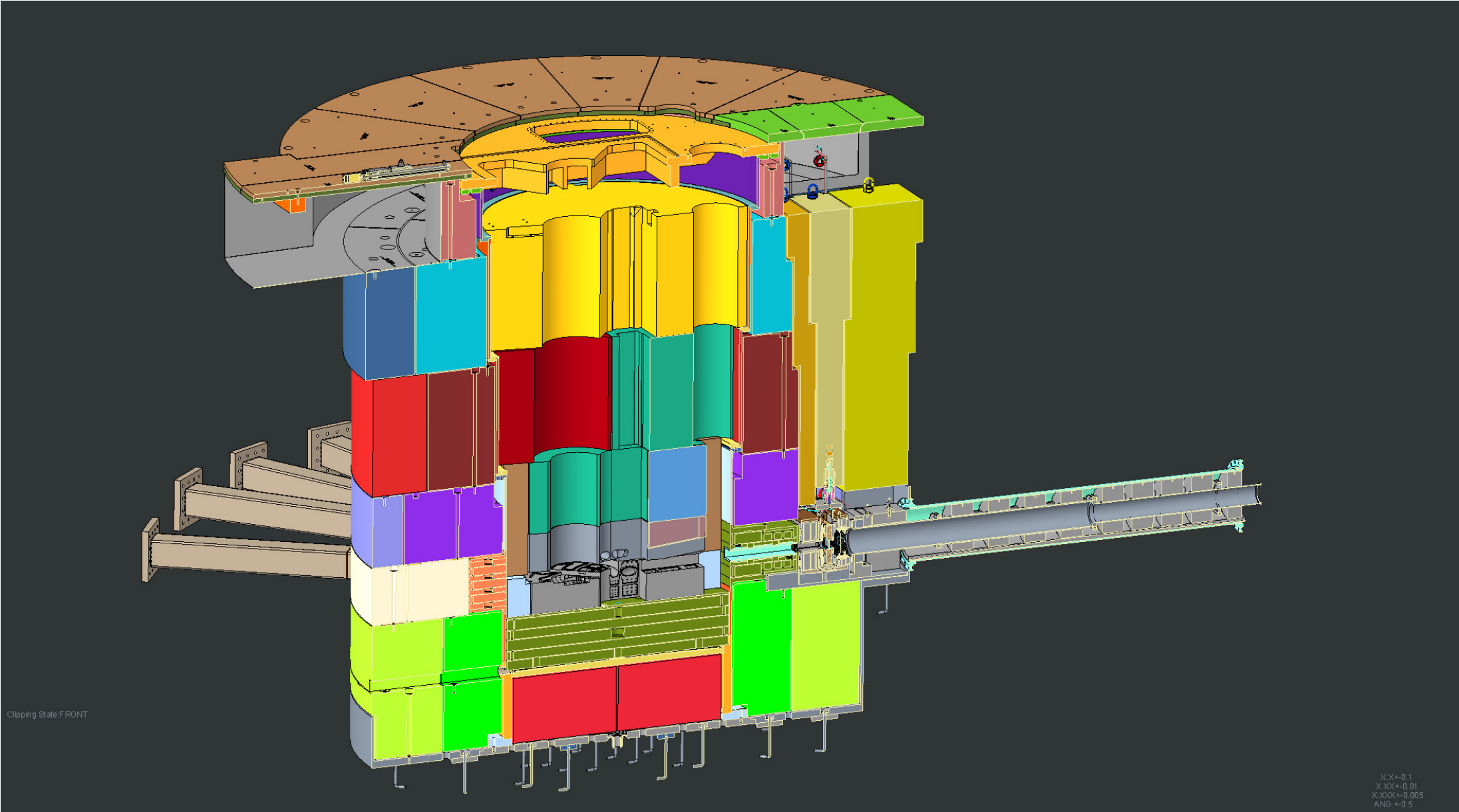
# Proton Beam Window, PBW Shielding, PBTA Clamp installed



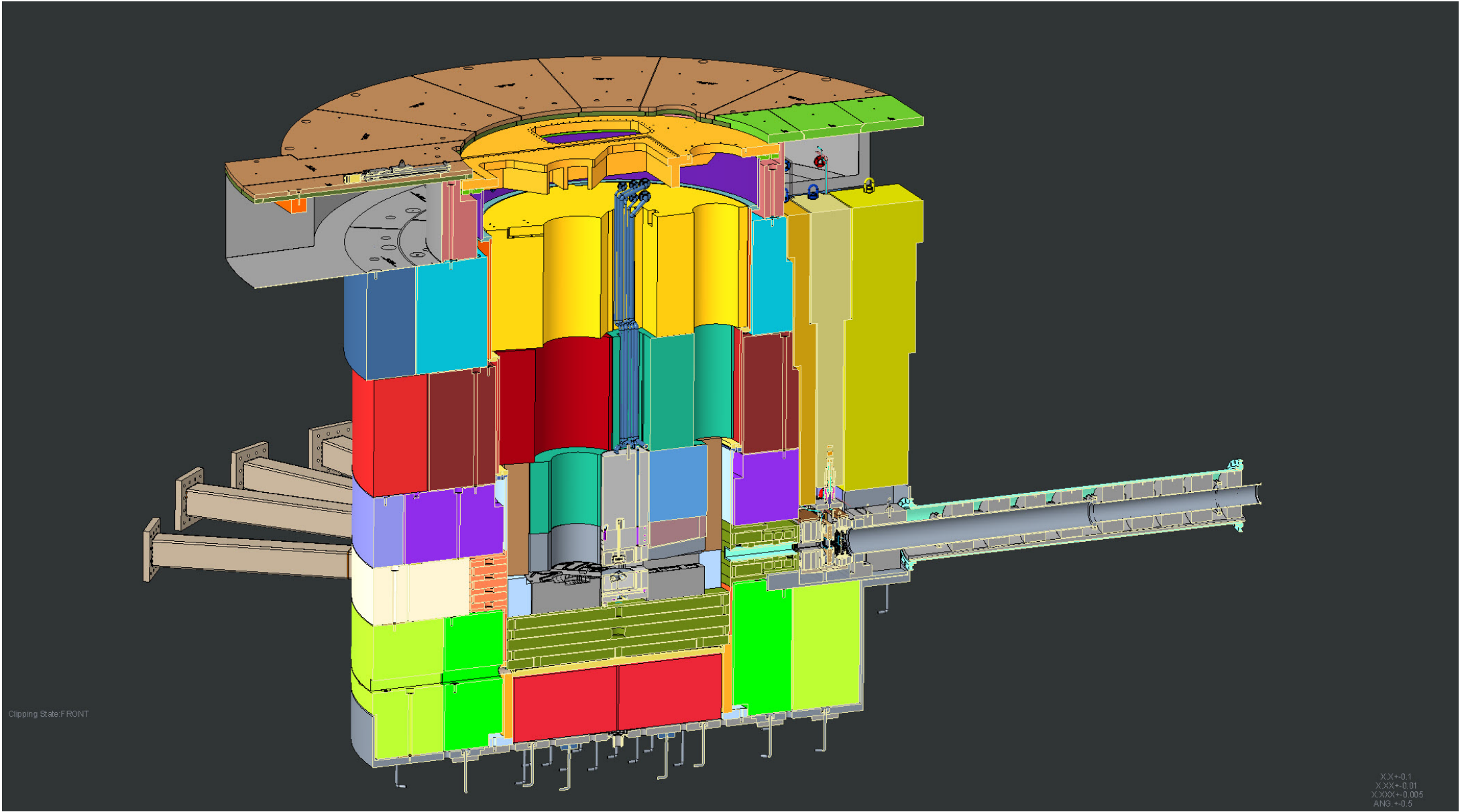
# Removable bulk shielding above AIC installed



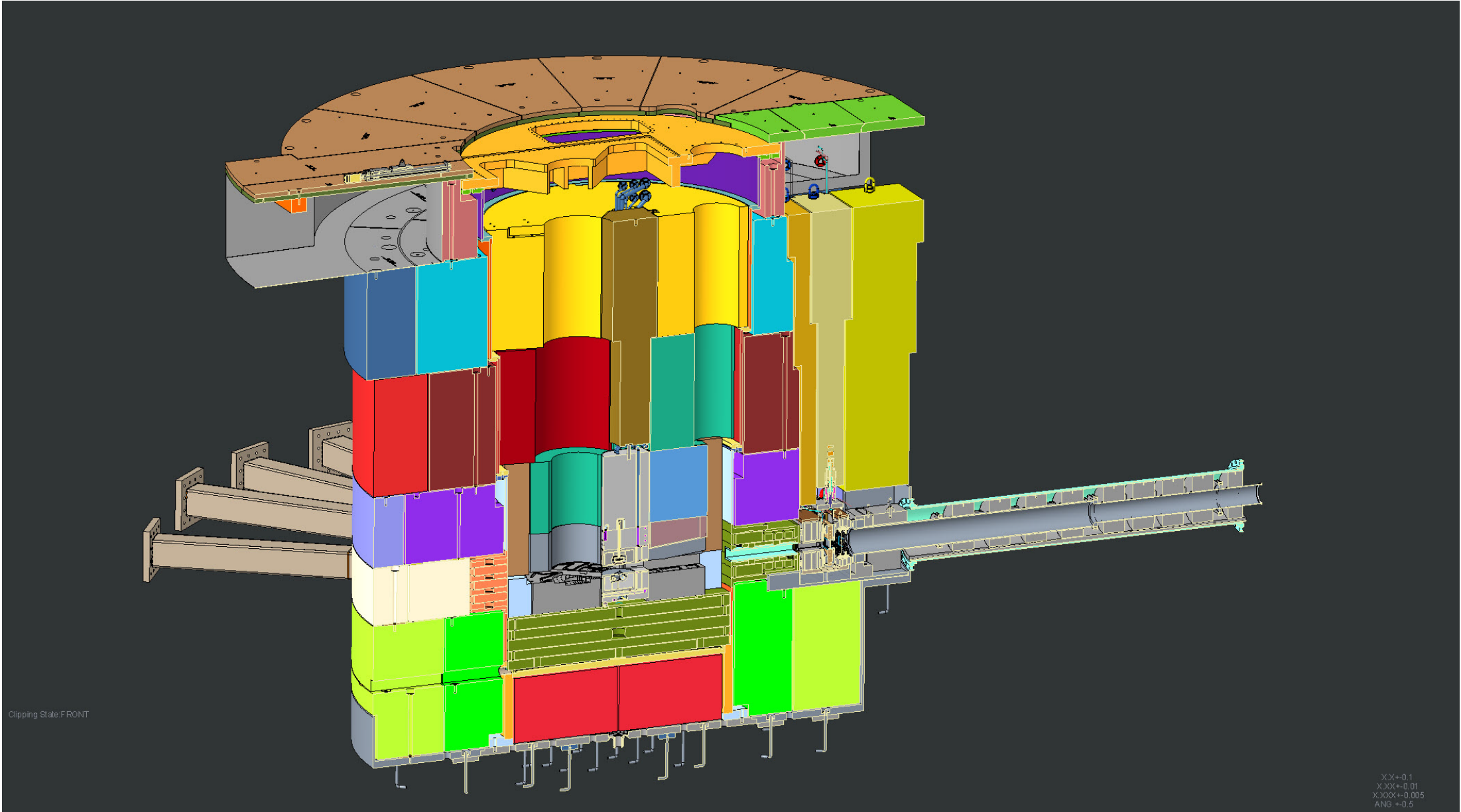
# Removable shielding plates above AIC installed



# Moderator Reflector Assembly installed

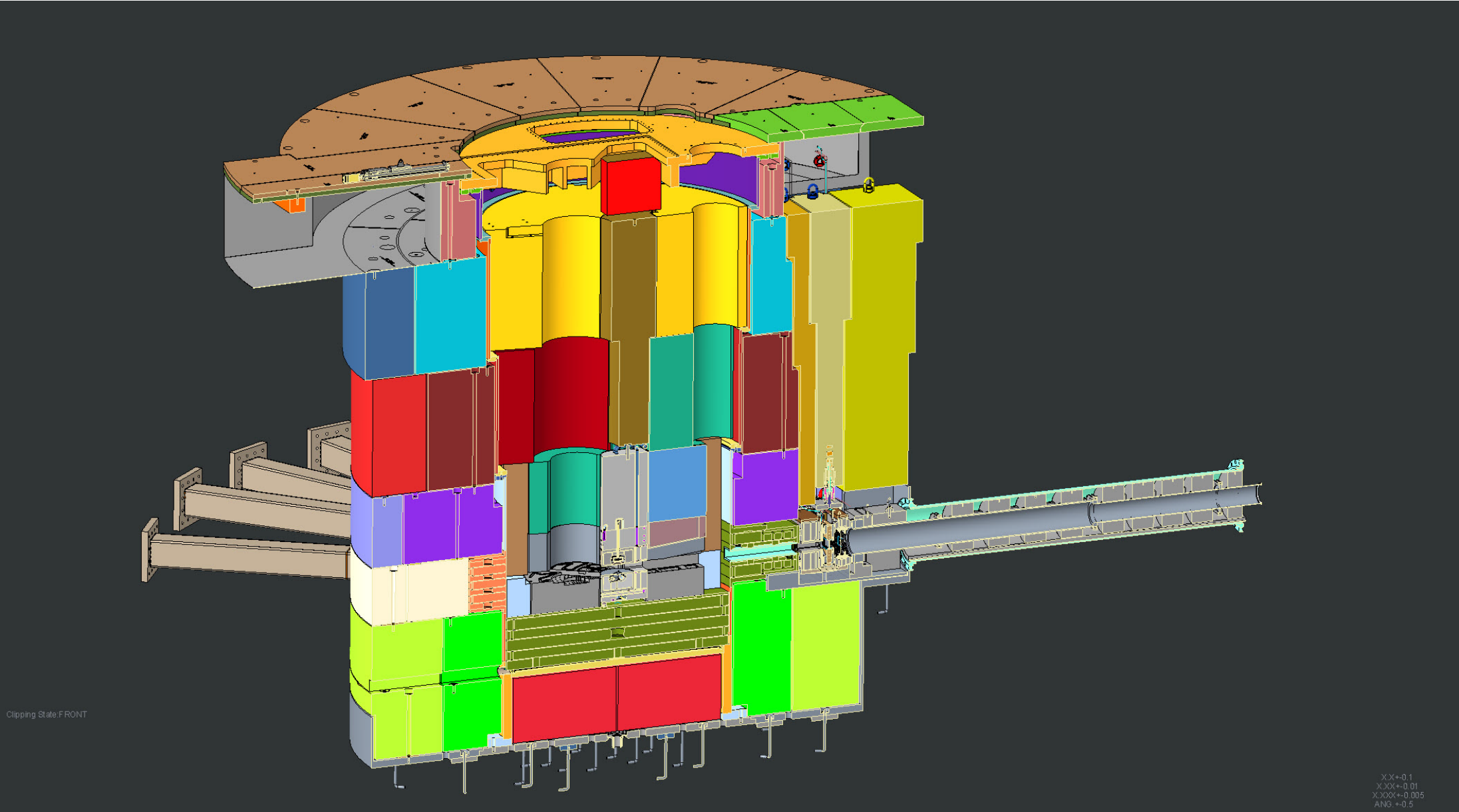


# Moderator Reflector Assembly removable shielding installed

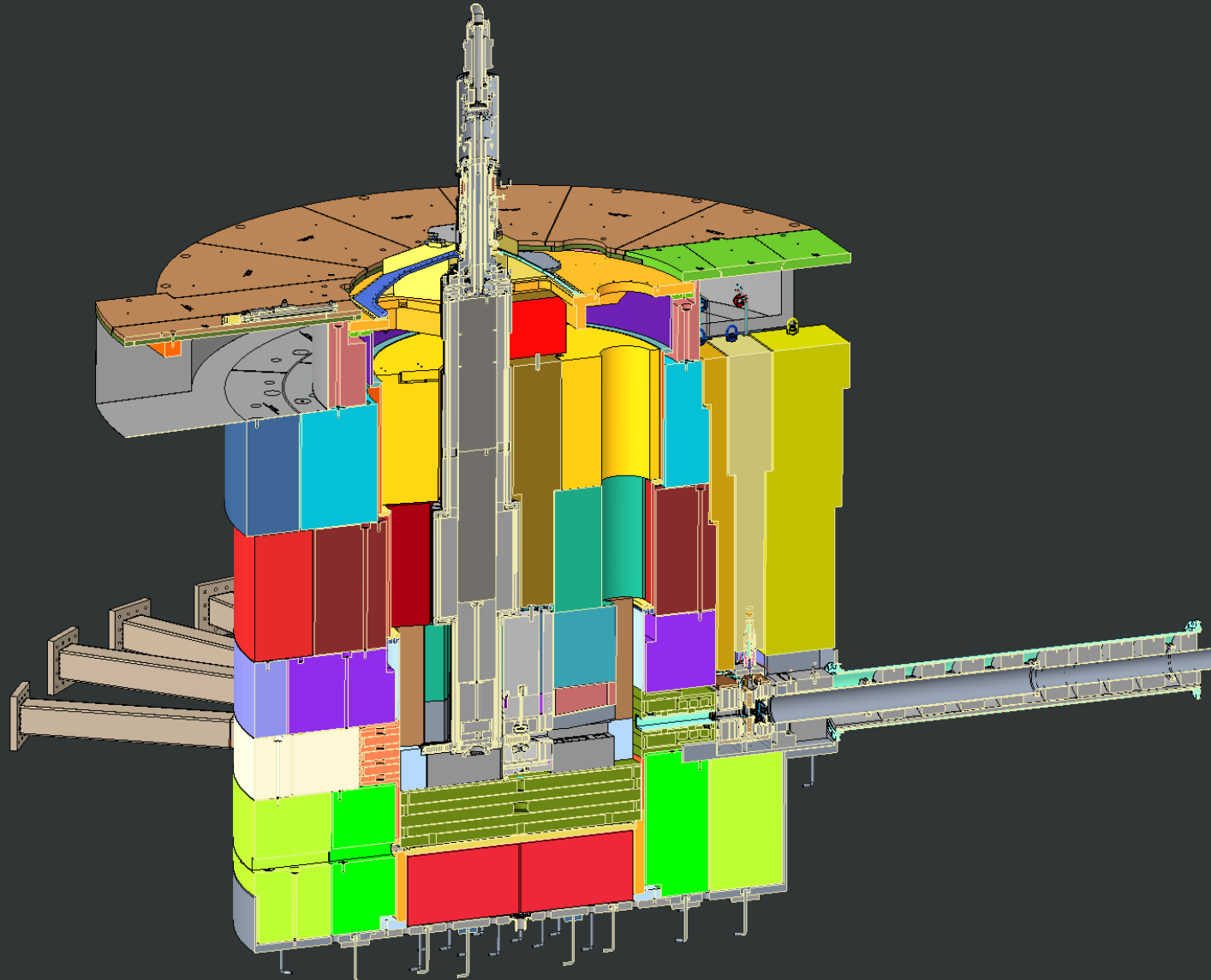




# MRA utility pipe shielding installed



# Target Assembly and lid tent installed

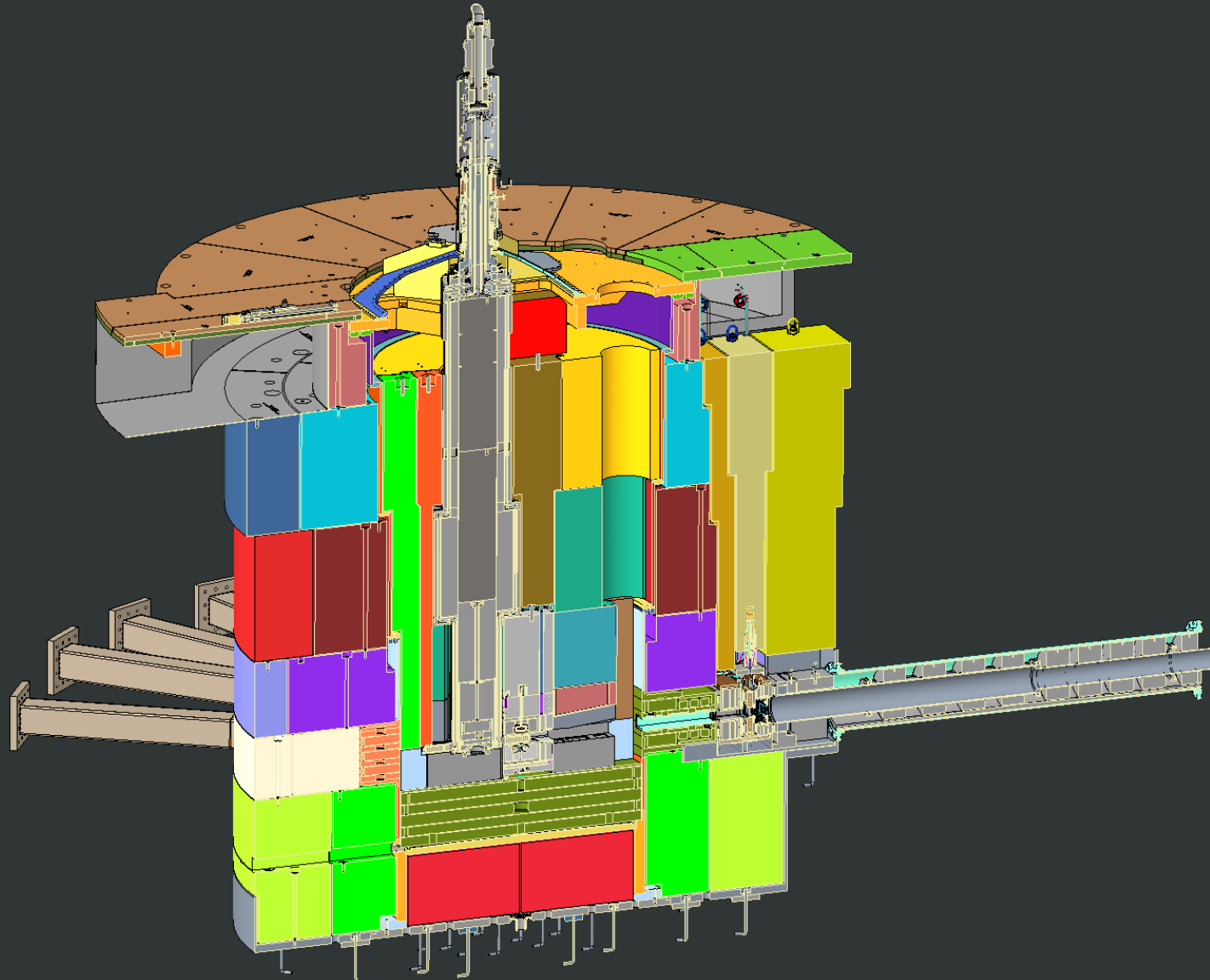


Clipping State: XSEC0001

XX+-0.1  
XXX+-0.01  
XXXX+-0.001  
ANG. +-0.5



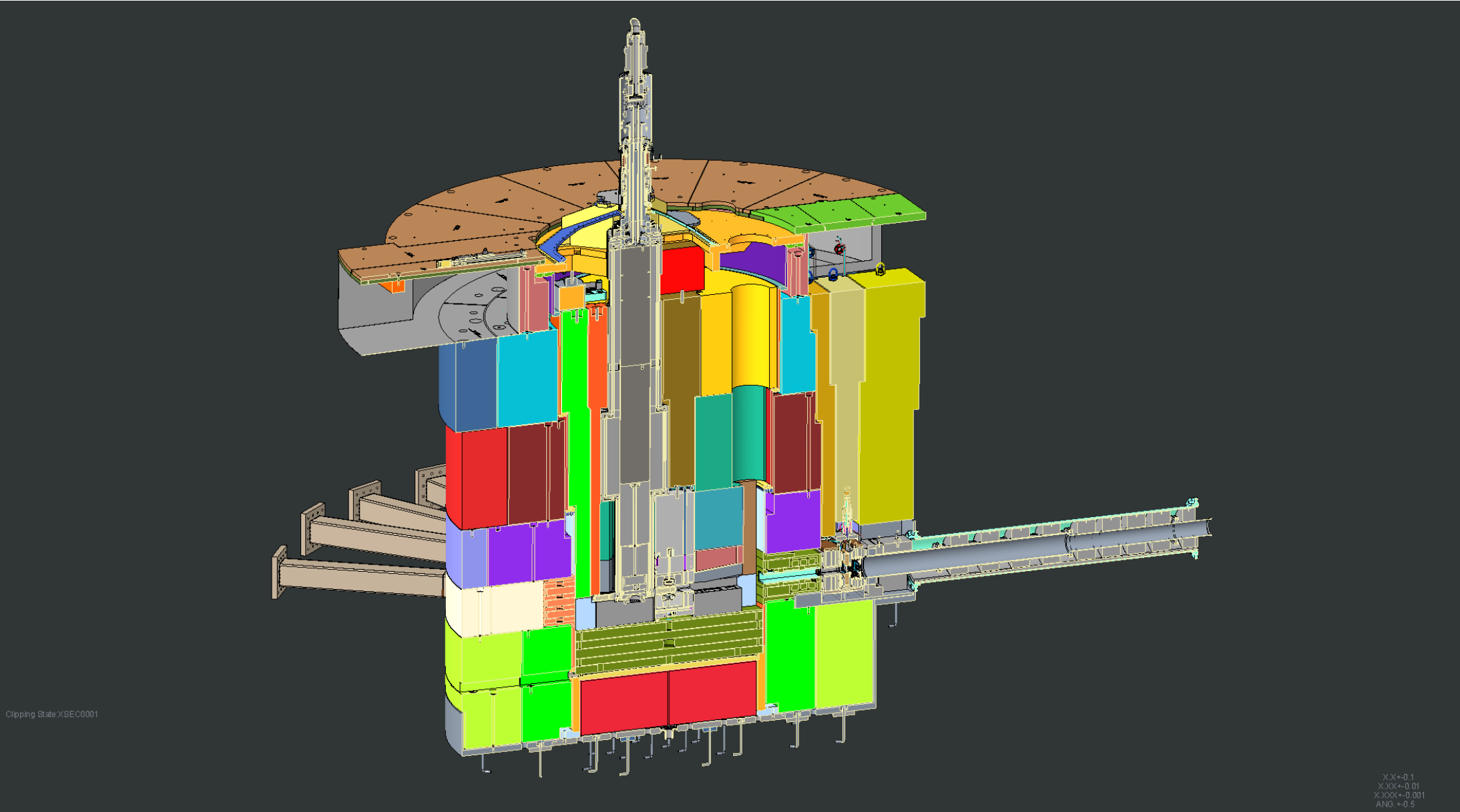
# Target segment removable shielding installed



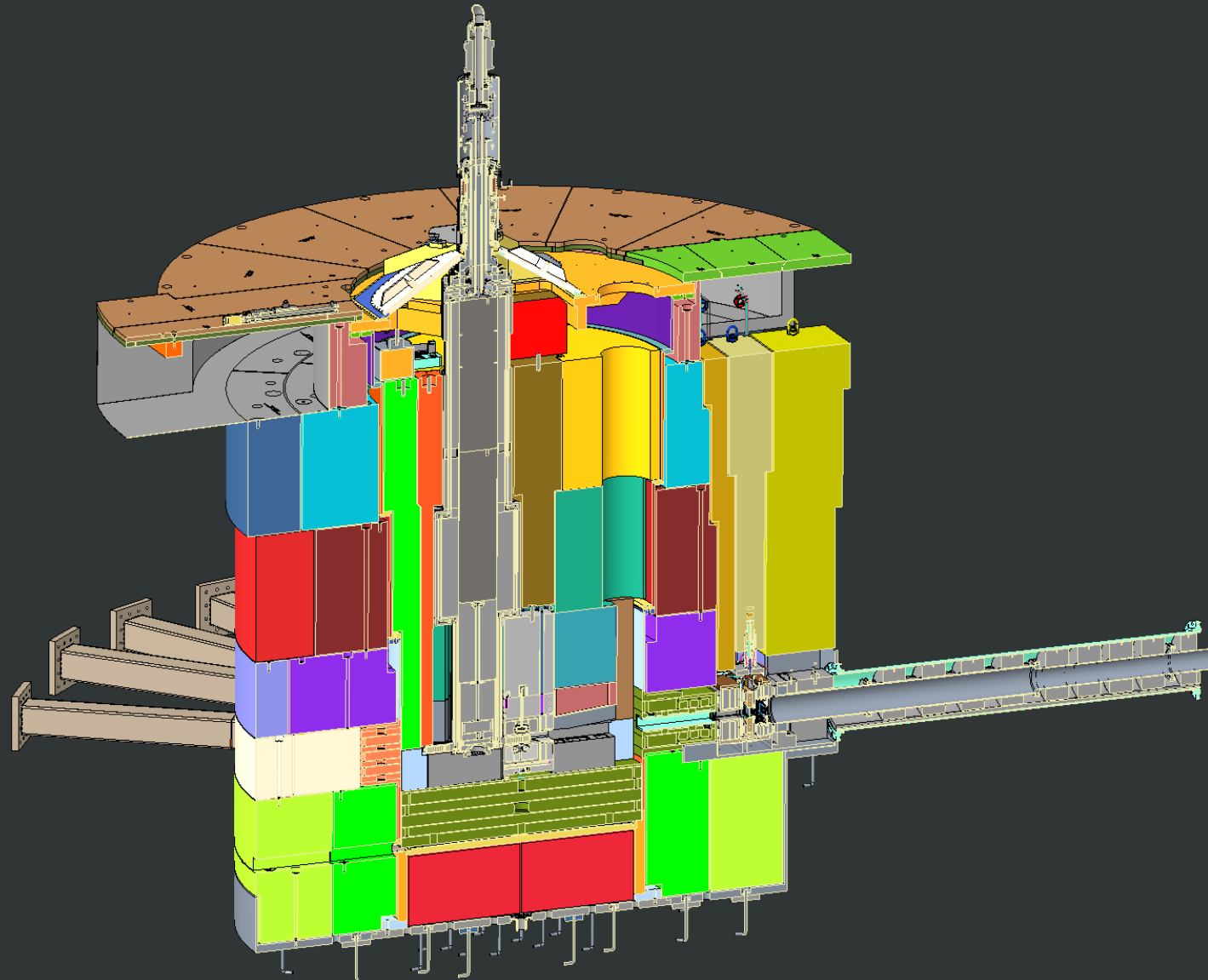
Clipping State:XSEC0001

XX+0.1  
XXX+0.01  
XXXX+0.001  
ANG. +0.5

# Gamma Gate installed



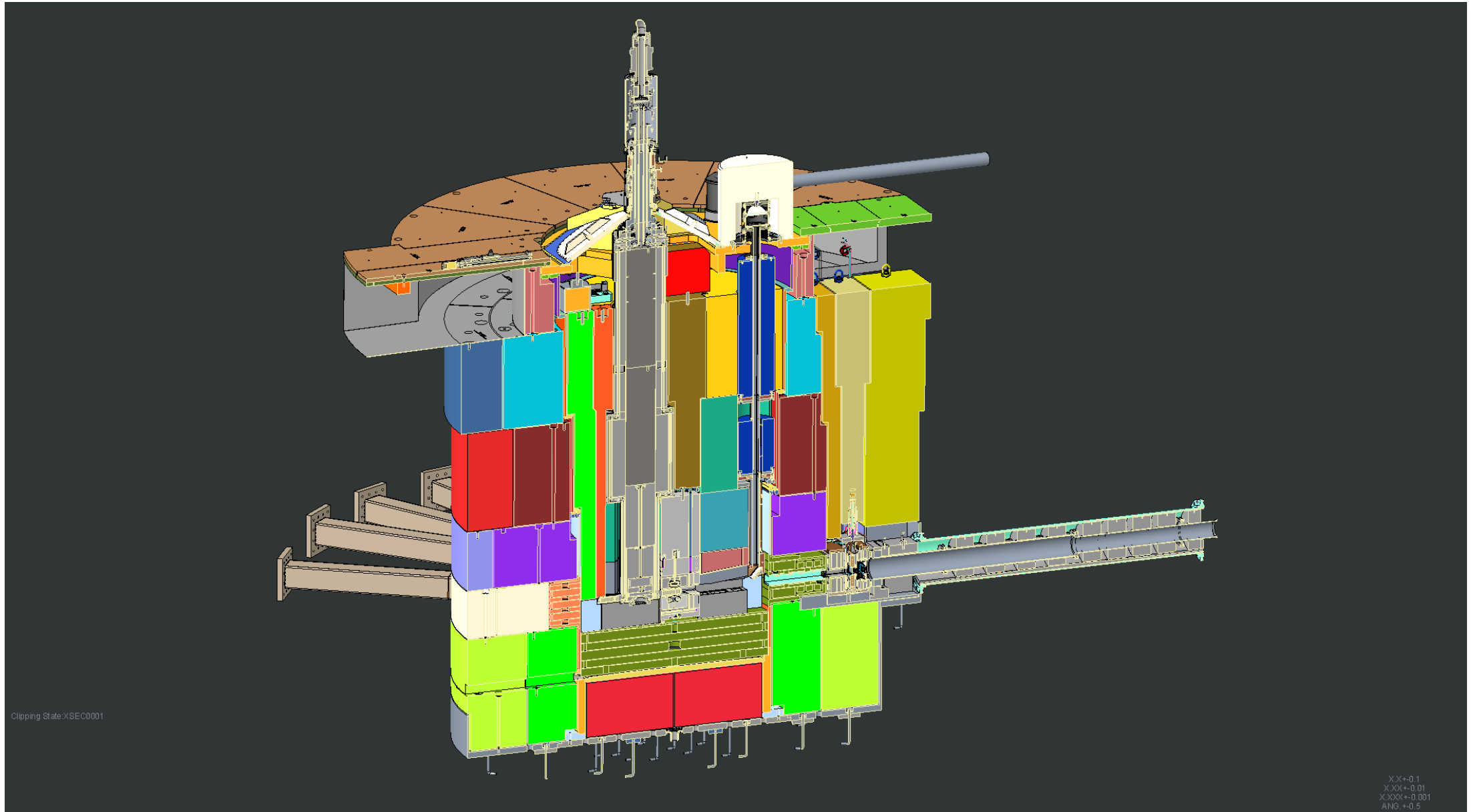
# Target and MRA lid hatches installed



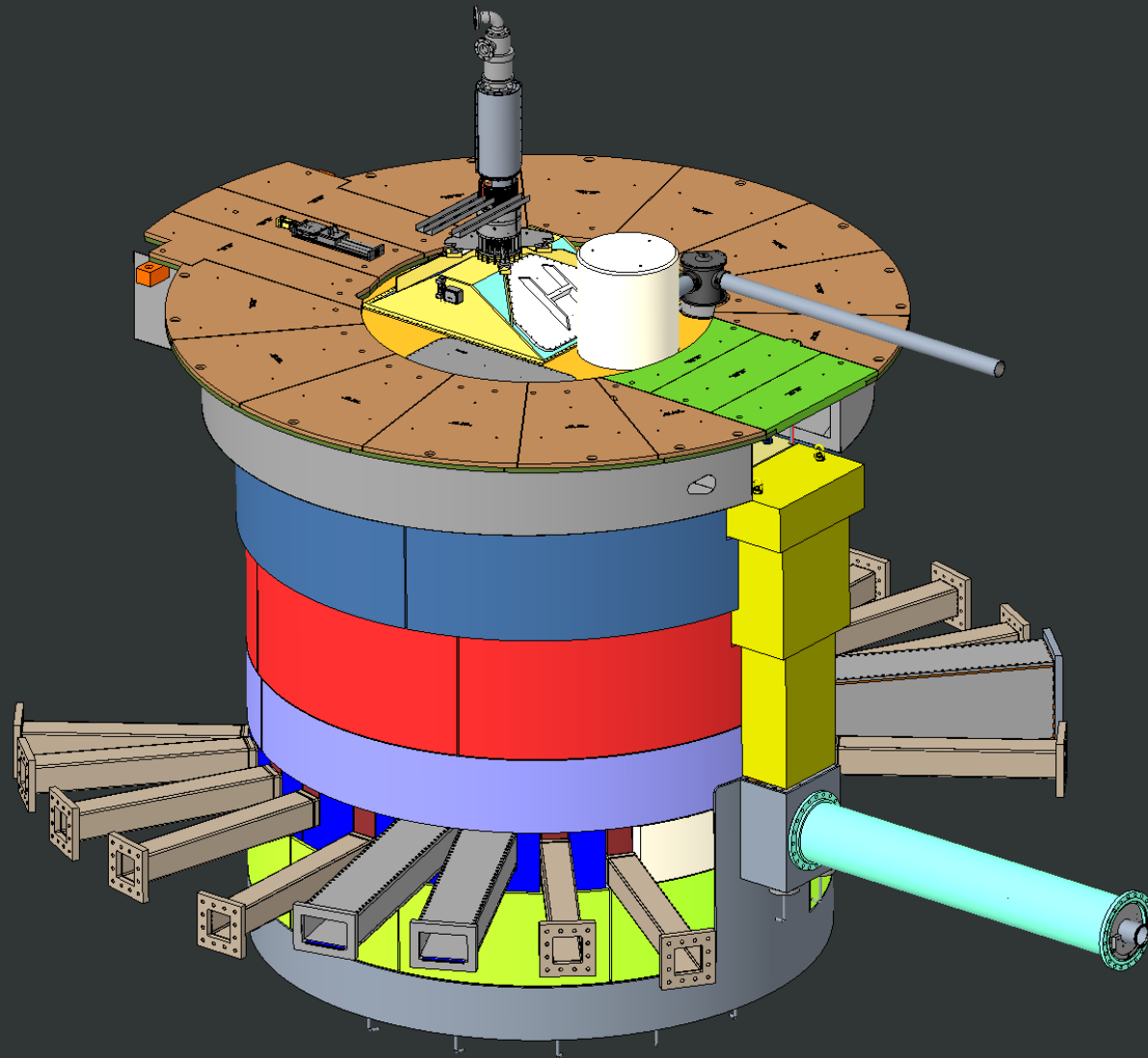
Clipping StateXSEC0001

XX+0.1  
XXX+0.01  
XXXX+0.001  
ANG. +0.5

# Target Viewing Periscope installed



# Monolith technical components fully installed



XX+0.1  
XXX+0.01  
XXXX+0.001  
ANG: +0.5