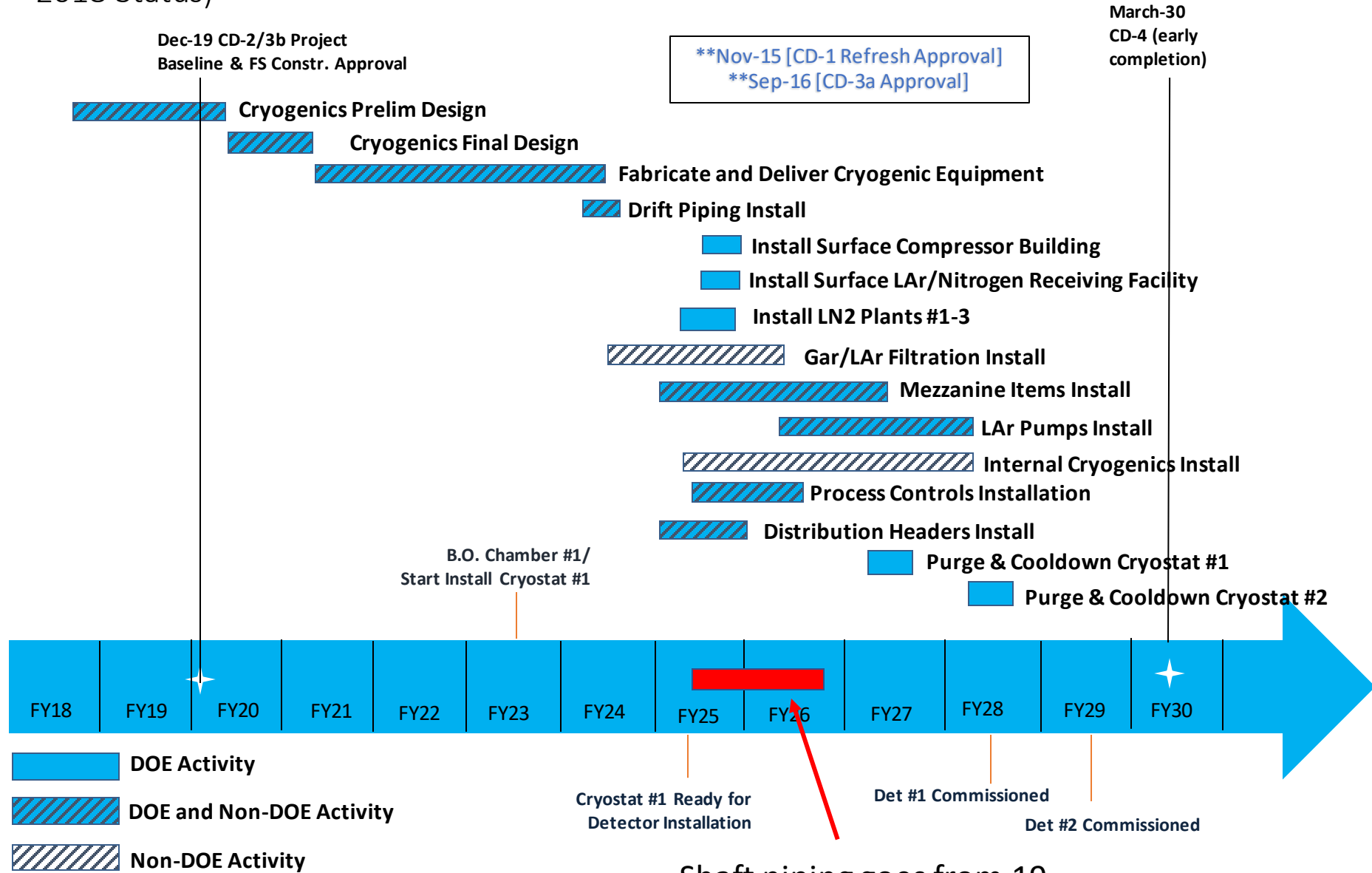


Sequencing and scheduling
discussions at SURF - Cryo

Cryogenics Infrastructure – Cryogenic Equipment Summary Overview (Based on Sept 2018 Status)



Shaft piping goes from 19-Feb-2025 to 22-May-2026

Cryogenic schedule logic

Schedule Logic of Cryogenics supporting Detectors #1, #2.									
Cryostat #1.									
Internal Cryogenics F-F with Membrane Cryostat Completion. May end up being earlier depending on the installation sequence: when is the floor done??									
Proximity Cryogenics on Mezzanine S-F with Mezzanine Platform (Finishes 1 mo before completion of Membrane Cryostat).									
Distribution Piping on Mezzanine S-F with Mezzanine Platform. S-S with Proximity Cryogenics on Mezzanine.									
LAr Pumps #1 S-F with completion of Part 1 of FD #1 installation (before closing the TCO).									
Cryostat #2.									
Internal Cryogenics #2 F-F with Membrane Cryostat Completion #2. May end up being earlier depending on the installation sequence: when is the floor done??									
Proximity Cryogenics on Mezzanine #2 S-F with Proximity Cryogenics on Mezzanine #1.									
Distribution Piping on Mezzanine #2 S-S with Proximity Cryogenics on Mezzanine #2 (S-F with Proximity Cryogenics on Mezzanine #1).									
LAr Pumps #2 S-F with completion of Part 1 of FD #2 installation (before closing the TCO).									
Surface Facilities.									
Nitrogen System Compressors S-F with availability of CF on the surface.									
LAr/LN2 Receiving Facilities on surface S-F with availability of CF on the surface.									
Piping in the Drifts.									
S-F with Beneficial Occupancy of Cavem #1 and CUC.									
CUC.									
LN2 Storage Tanks S-F + 10 mo with Beneficial Occupancy of CUC (Smoothing of funding profile).									
Nitrogen System S-F with LN2 Storage tanks.									
Nitrogen System units all in parallel.									
Distribution Headers + 7.5 mo with Beneficial Occupancy of CUC (Smoothing of funding profile).									
LAr Purification #1 S-F with Beneficial Occupancy of CUC.									
LAr Purification #2 S-F with LAr Filtration #1.									
LAr Purification #3 S-F with LAr Filtration #2.									
LAr Purification #4 S-F with LAr Filtration #3.									
GAr Filtration #1-2 S-F with Beneficial Occupancy of CUC (also at same time as LAr Purification #1).									
GAr Filtration #3-4 S-F with LAr Purification #2.									
Regen #1 S-F with Beneficial Occupancy of CUC.									
Regen #2 S-F with Regen #1 AND S-F with LAr Purification #1.									
Regen #3-4 S-F with Regen #2 AND S-F with LAr Purification #2.									
Process Controls Integration S-F with #1, #2, #3, #4 Controls Activities.									