



Status of 2x2 Installation

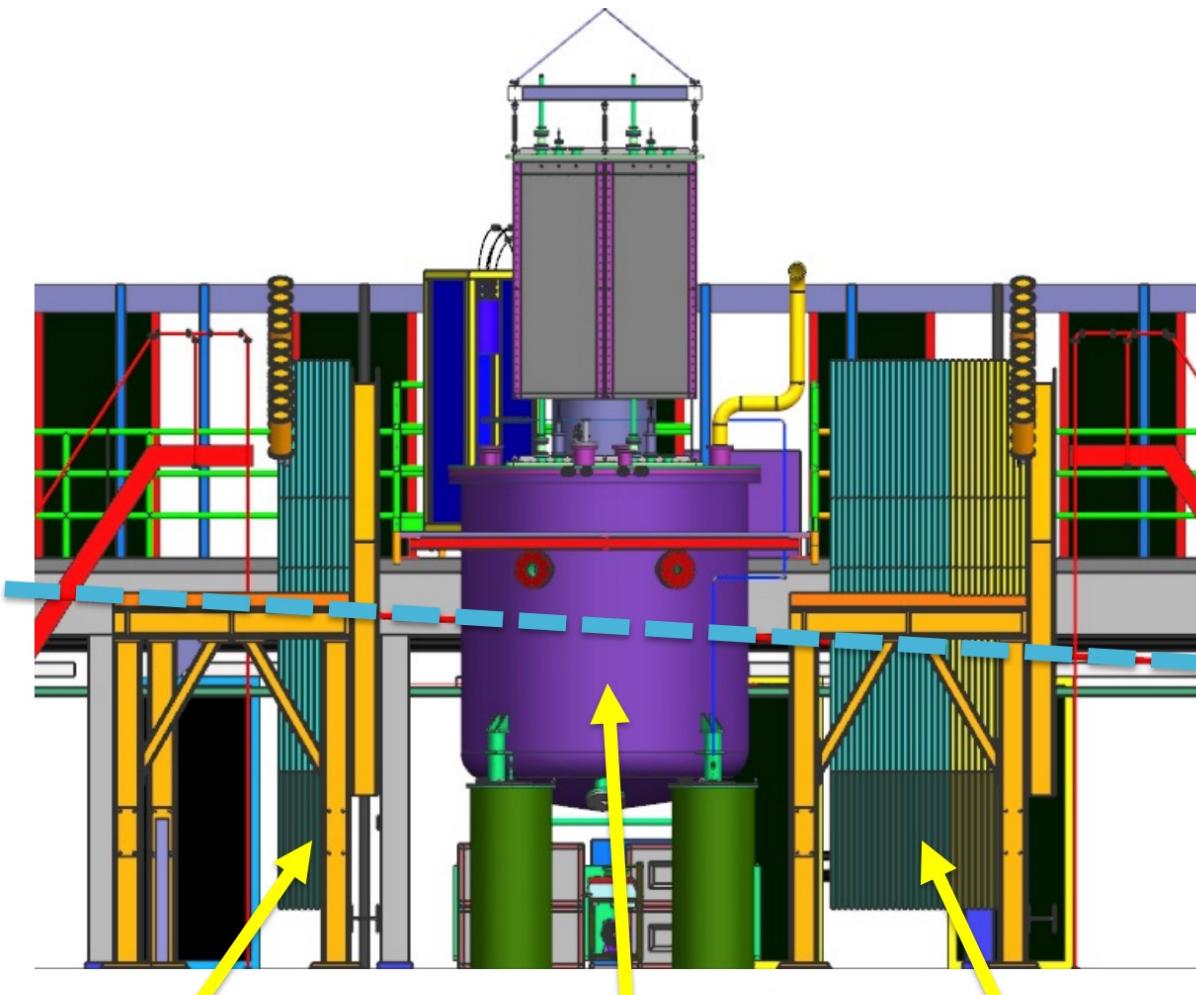
Jen Raaf

ND-LAr Consortium Management Meeting

March 15, 2023



2x2 Demonstrator

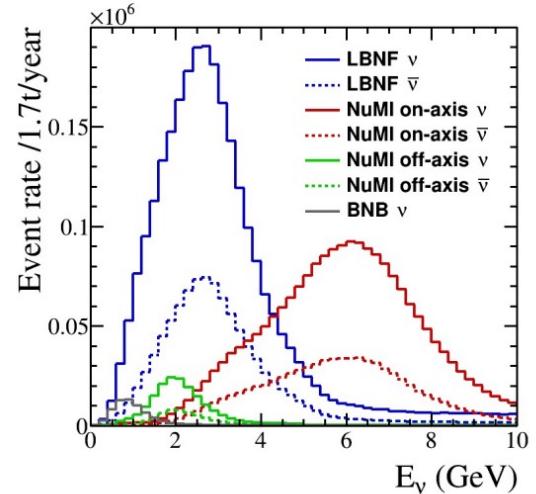


12 MINERvA
Modules

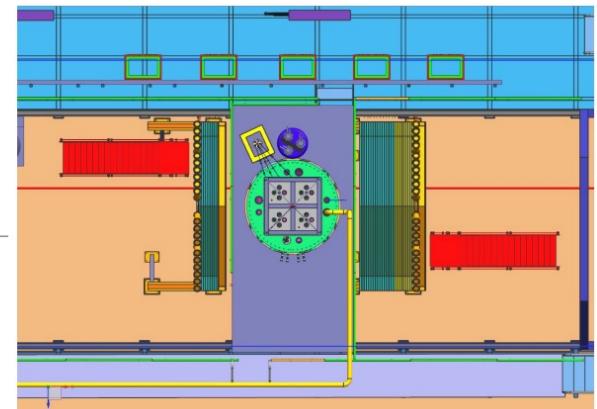
2x2 Cryostat
and 4 TPCs

32 MINERvA
Modules

Expected event rates for 2x2



NuMI Beamlne



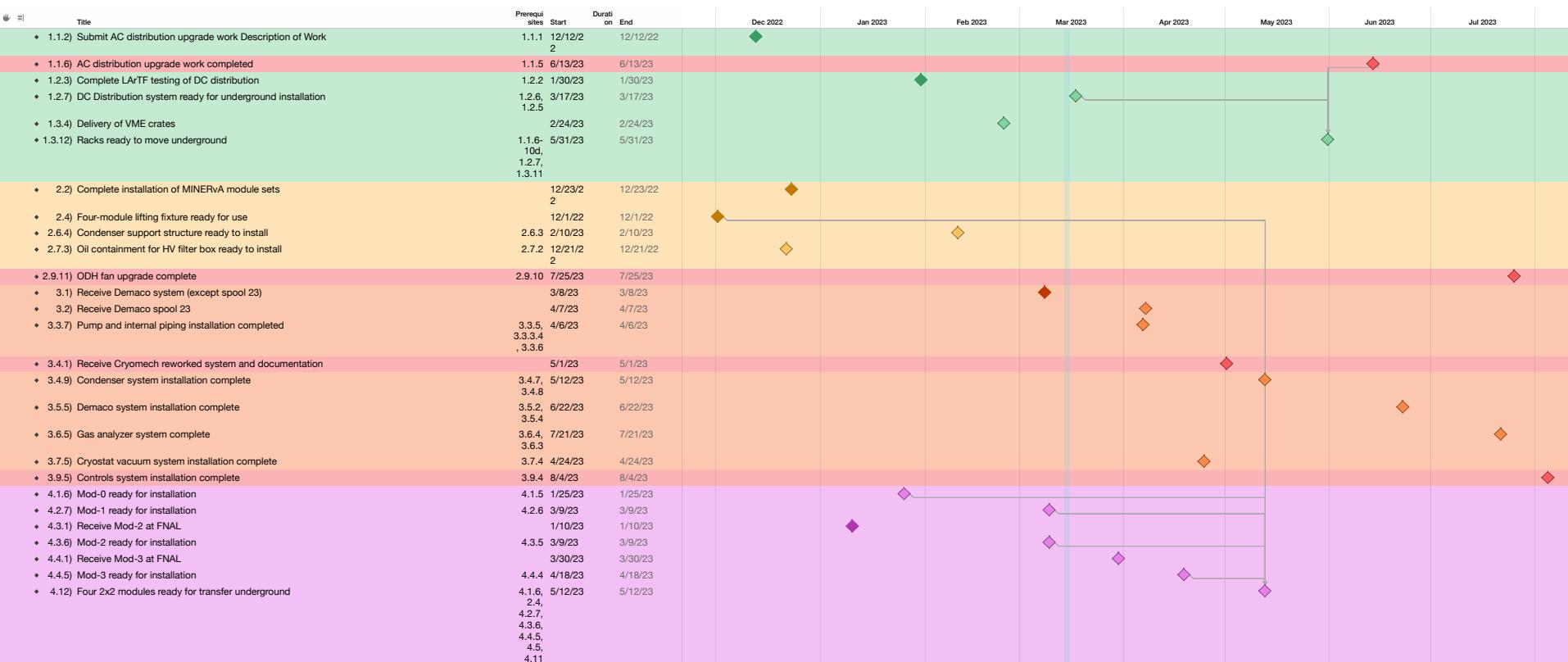
Infrastructure & Supporting Systems

- Installation of ND-LAr 2x2 in MINOS also requires infrastructure upgrades and other supporting systems work:
 - Upgrades
 - AC electrical
 - ODH fans & venting
 - Networking equipment
 - Supporting systems
 - MINERvA module installation & checkout
 - Mechanical support structures, access platform, & lifting fixtures
 - Cryogenics & monitoring
 - Racks & cable management
- Documentation for safety reviews

Detectors Installation & Checkout

- Once the infrastructure is sufficiently advanced to allow installation of detectors, more collaboration/consortium effort will be needed
 - Development of commissioning plan (can be started now)
 - Commissioning of TPC modules with full readout chains for light and charge (incl. data handling through (unified?) DAQ)
 - Timing sync of all detector readouts (if handled independently for charge, light, and MINERvA)
 - Development of reconstruction tools for new MINERvA configuration together with TPCs (can be started now)

Milestones



- Large uncertainties on:
 - AC distribution upgrade work timeline (contractor)
 - ODH fan upgrade work timeline (FESS/ISD prioritization)
 - Cryomech condenser system rework completion (external company)
 - Controls system completion (procurement delays)

Schedule

- Full schedule Gantt chart
<http://home.fnal.gov/~jlraaf/NDLAr2x2/schedule/JLR2x2.pdf>
- Milestones-only Gantt chart
http://home.fnal.gov/~jlraaf/NDLAr2x2/schedule/JLR2x2_milestones.pdf

