Preliminary Specifications 45X45 LAr Detector tank

Contents: Liquid Argon
Contents: Refrigerated, loss-less.
Liquid Argon NBP = 87.28 K
Liquid Argon density = 1.4 g/cc

Normal Tank operating pressure: 1-2 psig
Tank Capacity: 50,000 metric tons = 50,000,000 kg.
70.0 k cubic meters
Inner Active Diameter: 45 m
Inner Active Height: 45 m
Tank: Hermetic
Tank Wall Insulation: Unevacuated Perlite, wall depth required ca. 1 m.
Tank floor insulation: TBD (insulating value, specific load)
Tank roof insulation: TBD (insulation value)

Notes:
1). Tank to be purged and precooled with Liquid Nitrogen (NBP = 77.4 K).
2). The Gaseous Nitrogen is to be displaced by the GAr/LAr that is slowly, probably over 12 months time, filled. Filling is by individual tanker-trailer to a holding tank (dewar) and then to the detector.
3). Expected erection location is Wisconsin.