

General Plant Project: Cryogenic Test Facility Upgrade Project



- **Mission Need:** The TJNAF cryogenic systems are experiencing failure at increasing frequencies. This system capability gap jeopardizes TJNAF's ability to deliver its mission, perform a complementary role within the DOE laboratory system, and attain the vision for scientific excellence and pre-eminence in the structure of nuclear building blocks, the underlying quark-gluon structure of the nucleus.
- **Scope:** The upgrade of the CTF equipment will consist of the replacement of the CTF Shield Refrigerator (CB1N) and the upgrade of the CTF Cryogenics Distribution System including the Valve Box (VB), Junction Box (JB), and Transfer Line (TL). The Cryogenics Test Facility Building that will house this equipment already exists. Engineering, design, equipment lead-time and installation will take approximately three years.
- **Drivers:** This facility contributes to TJNAF's capability to support enabling technologies and emerging fields in photon science and electron-light ion colliders, 2K cryogenic engineering technology, photon science, advanced high-power free electron lasers, energy recovering linear accelerator (ERLs), and electron-light ion collisions at ultra-high luminosity. The CTF Upgrade GPP will help to address this capability and performance gap in the TJNAF cryogenic system which is critical to supporting Superconducting Radio Frequency activities in the Test Lab.
- **TPC/Planned Completion:** \$5.2M/ 1st QFY26