Training Requiremets and Roles

Gaining Access to Fermilab

General Trainings to Get Access at NM4

Definitions of the Target Roles

Reference --> Service Commitments

Polarized Target Expert:

The position requires expertise in all polarized target subsystems including:

- Liquid Helium and Liquid Nitrogen Cryogenics
- Operation of evaporation refrigerator
- Superconducting magnet
- Microwave system
- NMR and polarization measurements
- Target material handling and loading

Duties include operation and maintenance of the target system including all the subsystems, cryogenics, and optimization of polarization while the experiment is running. The target experts are responsible for keeping the target system up and running and making repairs as fast as possible when the system is not up and running. Also, the target experts are responsible for taking calibration measurements of the polarization and making online assessments of the quality of the polarization calibration. The experts must be prepared to serve as a local experts and will be on-call 24 hrs/day 7 days week. Each target expert alternates as the leader Target Expert and contact a while being responsible for the full system with the help of the SpinQuest polarized target group. To serve as target expert you must be proficient in operating the cryogenic system, superconducting magnet, microwaves, and NMR. You must be able to load the insert with target material and load the insert in and out of the fridge safely. You must also know how to leak check with snoop and how to use a vacuum leak checker. There is an important distinction between a Target Expert and a Target Trainee; a Target Expert is expected to have the target system be their primary responsibility so they should always be available to the target effort even outside of the Target Expert shift.

Requirements: Resident at Fermilab during service as local target expert. Polarized target training on the above mentioned systems is required (See D. Keller). Knowledge of LabView and slow controls will be useful. Understanding the operation of oscilloscopes, RF electronics, and cryogenics is necessary.

Additional information can be found here: Target Expert

Polarized Target Trainee:

In this position you will learn about all polarized target subsystems including:

- Liquid Helium and Liquid Nitrogen Cryogenics
- Operation of evaporation refrigerator
- Superconducting magnet
- Microwave system
- NMR and polarization measurements
- Target material handling and loading

Duties include learning to operation and maintenance of the target system with the polarized target expert including all the subsystems, cryogenics, and optimization of polarization while the experiment is running. Learning from the target experts you will focus how to keeping the target system up and running and making repairs as fast as possible when the system is not operational. You will also learn how to taking calibration measurements of the polarization and making online assessments of the quality of the polarization calibration and prepare the system for production data taking. The trainee is a training position for those looking to at some point become a target expert. Target Trainees are not required to serve full time unless fulfilling a Target Helper shift. Target Trainees may take on other activities or responsibilities while training and will not be called on to take Target Expert shifts but the expectation is that eventually the Target Trainee should at some point arrange to take at least 3 Target Helper Shifts (each shift is 1 week long) and one supervised trial Target Expert Shift. At the end of this Target Expert shift you are qualified to take the Target Expert Walkthrough Exam (see D. Keller) to become a qualified Target Expert.

Requirements: Resident close to Fermilab. Knowledge of LabView and experience with cryogenics will be useful but not required. Understanding the operation of oscilloscopes, RF electronics, and cryogenics is necessary. Ability to communicate clearly both written and orally.

See Target Expert information above for additional information.

Polarized Target Helper:

The target helper has shifts with the Target Expert and serves to help the Target Expert with any activities that are required to keep the polarized target system up and running. The target helper should be will the target expert as needed throughout the time of the Target Helper shift. The Target Helper must be prepared to be available be 24 hrs/day and always be ready to be the buddy of the Target Expert or others in the SpinQuest Target Group. This role also has its own distinct responsibilities which include check out various various subsystems and checking on the inventory of consumables used by the target group. This requires filling out a spreadsheet every day when possible.

Additional information can be found here: Target Helper

Anyone in the collaboration can serve as target helper (Contact the present Target Expert or D. Keller). Serving as a Target Helper can be use as credit towards shifts.

Polarized Target Operator:

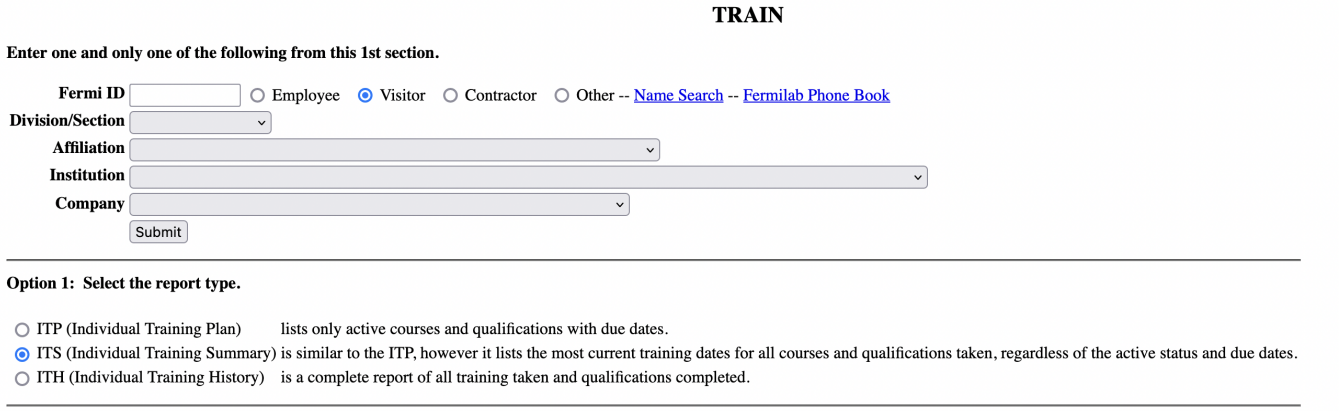
The Target Operator has shifts in the counting house to maintain and maximize the target polarization. The Target Operator must pass the basic training to run and operate the target system, This role also has its own distinct responsibilities from the Target Helper as the Target Operators job is solely to run the target system from the main control run and be responsible for target polarization target data and keeping records during the shifts. This requires logging all changes and activities that occur with the target which system is both running and not running. This role also requires contacting the appropriate expert what a subsystem fails or polarization optimization in not working. There is no rule against the Target Operator and Target Helper being the same person, but each have distinct responsibilities.

Additional information can be found here:

All SpinQuest collaboration full members who are not Target Experts or Target Trainees are by default Target Operators.

FERMILAB TRAINING MODULES

Training page: https://www-esh.fnal.gov/pls/default/itp.html (Please contact Dee Hahn <dhahn@fnal.gov> to add training modules to your ITNA)
To see your ITNA (enter your FERMI ID, check "Visitor"), press "Submit"



Below is the list of training modules that need to be completed to work on the SpinQuest Polarized Target

Course Code	Course Title
FN000470 / CR	Radiological Worker - Classroom (Virtual)
FN000731 / CB	Radiological Worker - Just-in-Time (Virtual)

FN000471 / OJ	Radiological Worker - Practical Factors
FN000787/CR/01	Radiological Worker Gap Training
PDNM3NM4 / CB	NM3 and NM4 Experimental Enclosure Hazard Awareness Training
FN000412 / CR	Protecting Personal Information
FN000240 / CR	Chemical Waste Generator
FN000639 / CB	Electric Shock Contact Release
FN000523 / CB	Phishing Fundamentals
FN000374 / CB	Basic Computer Security
ES000012 / CR	Fire Extinguisher Use
FN000567 / CB	Hazard Communication Refresher
FN000692 / CB	Escort Responsibilities
FN000682 / CR	Work Planning & Controls
FN000311 / CR	Fermilab Controlled Access
FN000212 / CR	Lockout/Tagout Level 2
FN000605 / CB	Hazardous Energy Control for Pressurized Systems
FN000213 / CR	Compressed Gas Cylinder Safety
FN000005 / CR	Crane Operator Training
FN000005 / EV	Crane Operator Training (EV)
FN000005 / OJ	Crane Operator Training (OJ)
FN000385 / CR	Electrical Safety in the Workplace (NFPA 70E)
FN000387 / CR	Electrical Safety Orientation
FN000377 / CR	Environmental Management System (EMS)
FN000304 / CR	Fall Protection User Training
FN000741 / CB	Fermilab Emergency Preparedness Awareness Training
FN000156 / CR	Hazard Communication
FN000654 / CB	Ladder User Safety
FN000475 / OJ	Large (160L / 240L) Portable Liquefied Gas Dewar Handling
FN000532 / CR	Mobile Elevating Work Platforms (MEWPs)
FN000034 / CR	New Employee ES&H Orientation
FN000029 / CR	O.D.H. Training
FN000199 / CR	PPE (Personal Protective Equipment) Availability And Use
FN000271 / CR	Pressure Safety Orientation
FN000742 / CB	Site Access and Badging
FN000749 / CB	Site Access and Badging (Addendum)
FN000583 / EV	Vertical Mobile Lift Evaluation (3a)
FN000684 / CB	Working Safely in the Era of COVID-19 and the Return to On-site Work
FN000115 / CR	Cryogenic Safety (General)
FN000735 / CB	GERT - (General Employee Radiation Training)
FN000717 / CB	New User/Affiliate Orientation
FN000761 / RR	SpinQuest Ammonia Target Handling
FN000762 / OJ	SpinQuest Ammonia Target Handling On the Job Training

"How to use OSENCO EEBD escape packs"	Video

- FN000717 / CB New User/Affiliate Orientation
- FN000508 / CR Workplace Violence and Active Shooter/Active Threat Awareness Training
- FN000531 / CB Sexual Harassment Awareness and Prevention
- FN000755 / CB Changes to Wilson Hall Access
- FN000789 / CR Radiological Worker - DLA FN000788 / CB Radiological Worker - Virtual
- FN000742 / CB Site Access and Badging FN000749 / CB Site Access and Badging (Addendum)
- FN000787 / CR Radiological Worker Gap Training
- FN000311 / CR Fermilab Controlled Access FN000735 / CB GERT - (General Employee Radiation Training)
- PDNM3NM4 / CB NM3 and NM4 Experimental Enclosure Hazard Awareness Training

Previous List