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NLC Control  
318609  
LIC 21-03039-01

## Service Training Schedule Michigan DOT January 25-28, 2010

- Monday January 25<sup>th</sup>, 2010

**Morning:**

- Radiation Safety (confirm radiation safety training)
- Received TLD badges for radiation monitoring
- Tour of Service and Calibration facilities

**Afternoon:**

- Working in Service Cell – Focus on 3440 Series Gauges
  - Including but not limited to:
    - Top shell cleaning and removal
    - Removal, cleaning, and weld checking of the Caesium-137 source
    - Removing the scaler and inspecting the gauge seals
    - Battery pack inspection and removal
    - Lower electronics removal
    - Cleaning and greasing of the bearing cavity
    - Proper reinstallation of all previously noted removed components
    - Inspection and realignment of the inner and outer GM tubes as well as the moisture tube
    - Resetting the memory and all functions impacted by doing so

- Tuesday January 26<sup>th</sup>, 2010

**Morning:**

- Continued preventative maintenance and recondition training that began on January 25<sup>th</sup>, 2010.

**Afternoon:**

- Trained on proper testing of electronics with a factory service technician.
  - Including but not limited to:

- Removal of antiquated EPROM chips
  - Adding EPROM sockets to the gauge motherboards
  - Installing EPROM chips that possess the current software versions
  - Identifying and remedying common electronics issues on 3440 series boards
- Wednesday January 27<sup>th</sup>, 2010

**Morning:**

- Continued electronics testing and diagnosis that began on January 26<sup>th</sup>, 2010

**Afternoon:**

- Repair troubleshooting
  - Common field problems including but not limited to:
    - Issues regarding operating standards
    - Replacing lost gauge constants and why it occurs
    - Using the gauge in manual mode if automatic depth strip malfunctions
- Calibration training hands on started

- Thursday January 28<sup>th</sup>, 2010

**Morning:**

- Continued calibration training hands on
  - Warmed up gauges before calibration
  - Input gauge information into the computer
  - Connected and linked gauge and computer
  - Followed factory calibration procedures
    - Moving source to the depths required on screen to obtain readings on known block densities
  - Downloaded new calibration constants to the gauge

Lunch: Provided by Troxler Electronic Laboratories

**Afternoon**

- Continued calibration training
- Miscellaneous training
- Received factory service and repair manuals and reviewed them with Troxler personnel

