



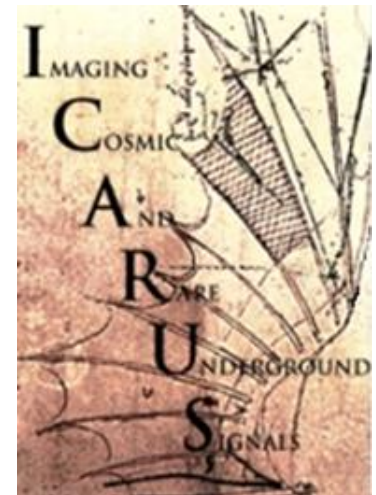
Short Baseline Neutrino



ICARUS Ground Short Saga (w/ plans and recommendations)

Linda F. Bagby

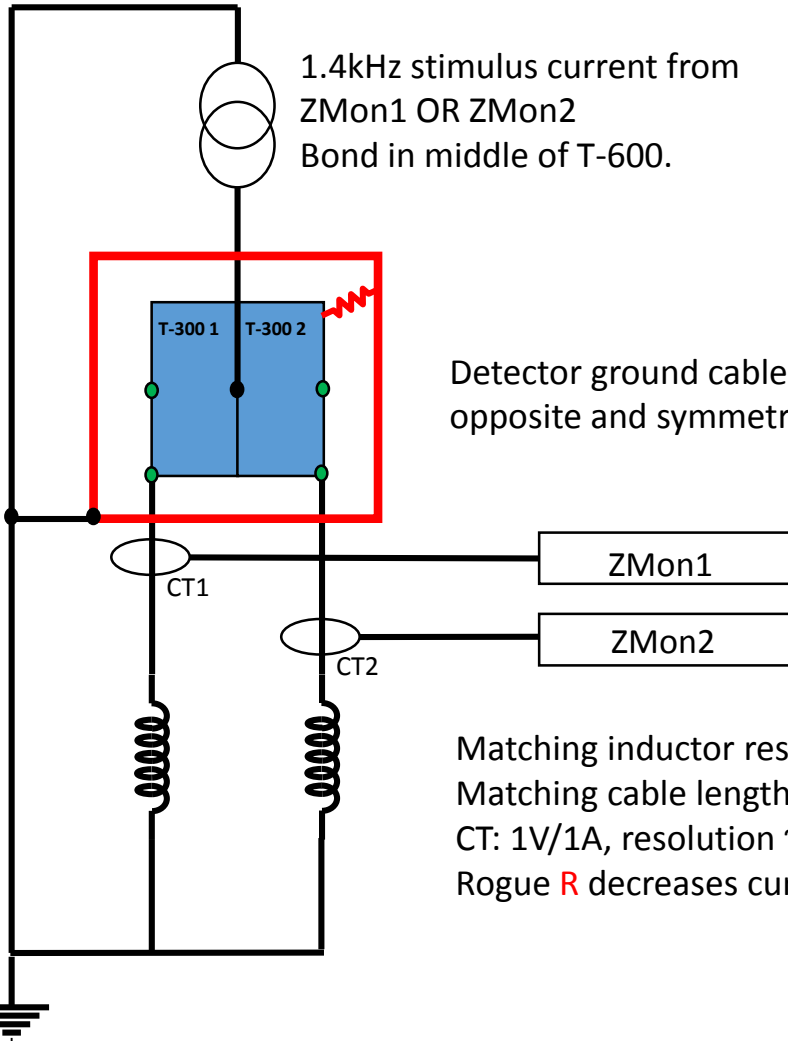
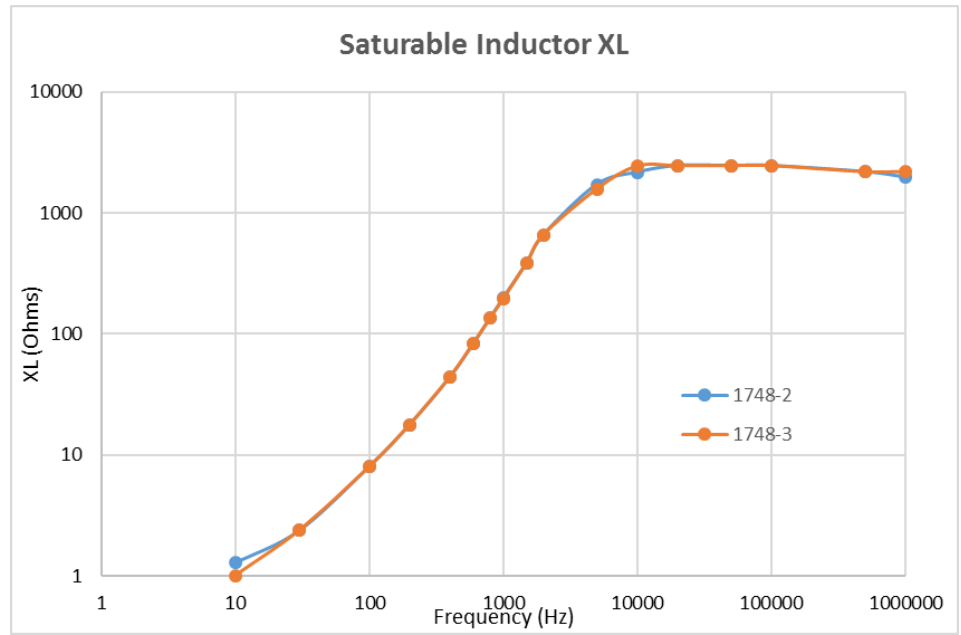
August 14, 2019



Outline

- How the system works
- Findings to date
- Plans and Recommendations

Impedance Monitoring



Matching inductor response curves.
Matching cable length L to T-300.
CT: 1V/1A, resolution $\sim 10\mu\text{A}$.
Rogue **R** decreases current seen by specific CT.

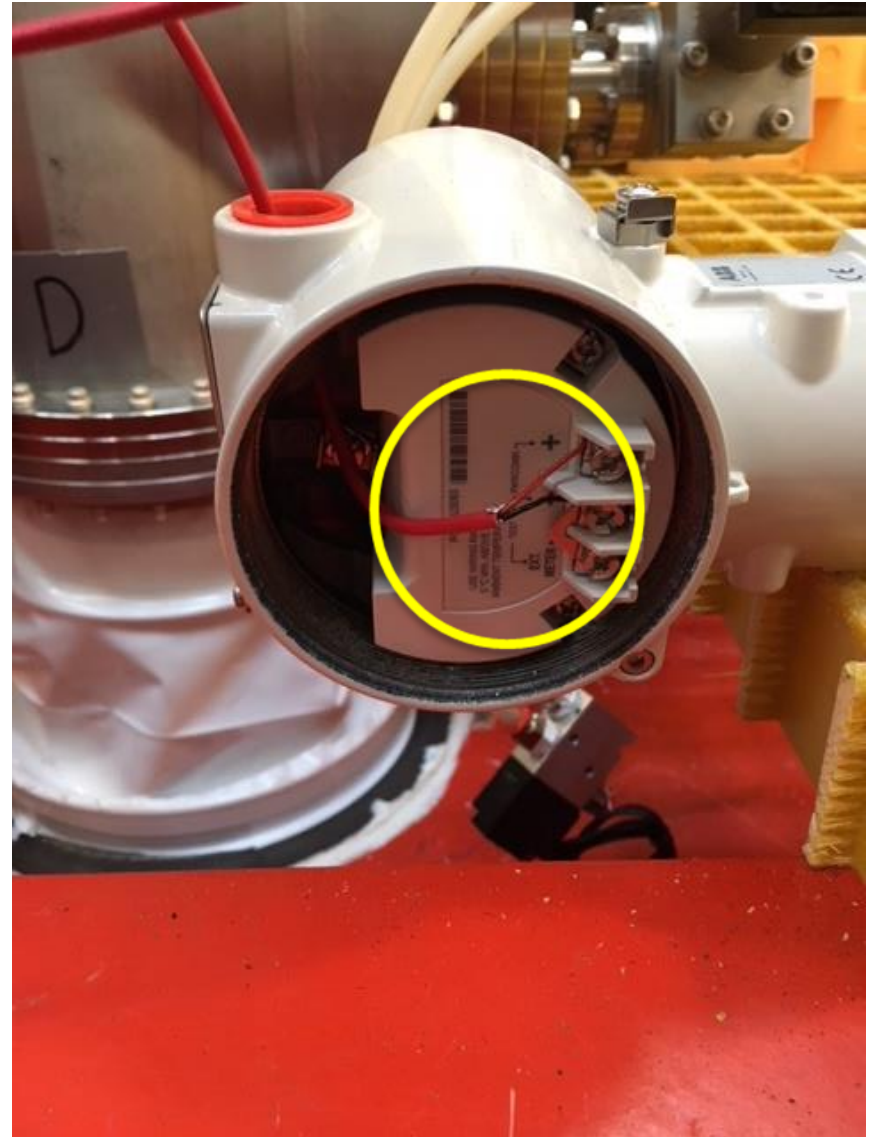
Ground Short Search

- Began in earnest June 27
- Day to day updates are in the SBN elog and DocDB #12639
- A variety of sources were found for two types of shorts
 - Stable direct connection
 - Vibrational intermittent

Short Source Gallery

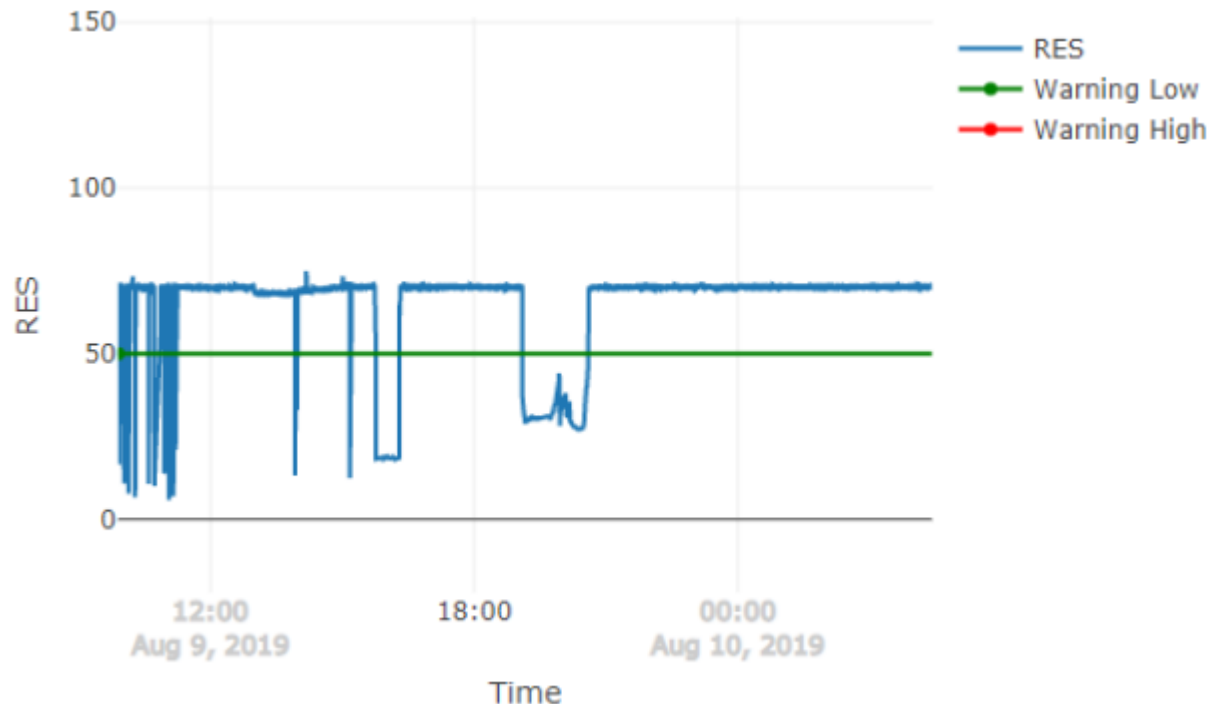


Photo Gallery



Current Status

- Friday afternoon, August 9, an 18Ω short developed and disappeared.
 - An effort was made to resolve the short. No definitive source was found.
- Friday evening, between 7-8:40PM another intermittent, resistive short (33Ω) developed and disappeared. Appears to be vibrational in nature. Do not know if anyone was on the top plate.



Plans and Recommendations

- Plans
 - Due to the sensor cable shield finding, all currently installed cables, attached to detector referenced sensors from Cryogenic cabinet electronics, are being inspected and heat shrink applied to cover trimmed foil edge.
 - All subsequent sensor cables will be terminated in the same fashion.
- Recommendations: ACTIVE ALARM
 - While working on the top plate, be aware of the alarm.
 - If the alarm sounds (gong) and the beacon illuminates (flashing orange), stop what you are doing and try to resolve the source.
 - The normal display impedance value is $\sim 68-73\Omega$.
 - If unable to resolve, send email to bagby@fnal.gov.
 - Record where the work was being done, the time, and monitor display values in the elog.
 - If you know what is causing the short but need to finish the job, try to remove the short before you leave for the day.