

Community Partner

Jamestown S’Klallam Tribe
7 Cedars Casino

Community Liaison: Robert Knapp

Special Thanks: Ken Lane, David Lane, 7 Cedars team



Project Goals

Electronic games are susceptible to damage from poor power quality. Our plan explores load balance, harmonics, and thermal performance, aiming to:

- > **Future-proof growth in gaming loads**
- > **Identify monitoring & mitigation strategies**



Methodology

- > **Team meetings:** Weekly exchange with liaison; site visit walkthrough and review of power quality issues
- > **Testing plan:** Developed testing plan to guide casino partners in systematically recording electrical data with FLUKE PQ loggers
- > **Data analysis:** Quantified load imbalance, harmonics, demand distortion, and breaker temperatures to locate power issues

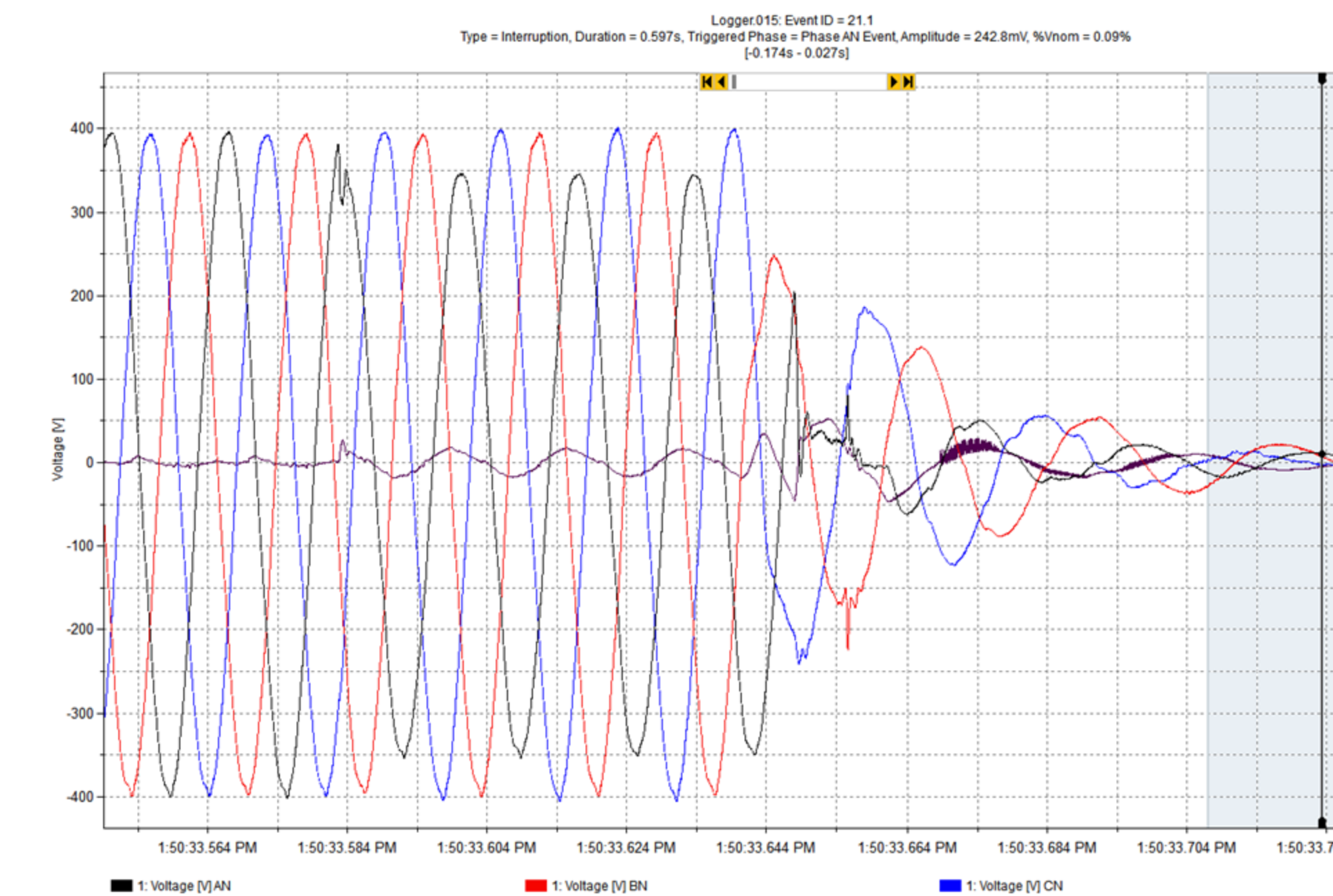
Outcomes

- > **Identified** concerning harmonics and provided resiliency and mitigation options to minimize damaging effects
- > **Created** balancing plan using collected load data
- > **Provided** guidance on proposed system improvements, such as transformer upgrades and branch circuit monitoring
- > **Notified** team of ongoing quiet overload, prompting immediate mitigation action

Project Plan

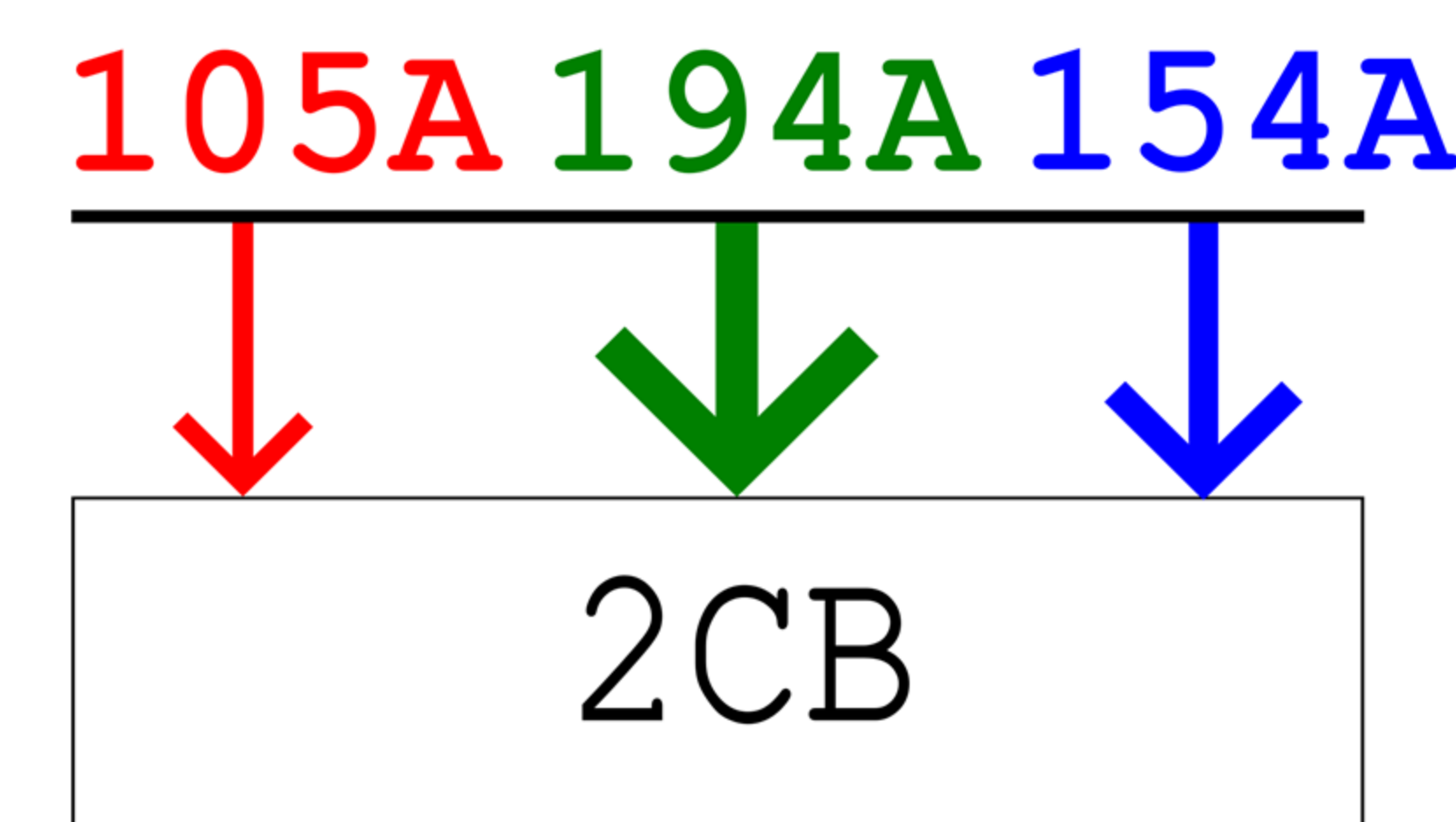
Site visit: March 2024

Reviewed hardware with electrical staff and discussed consequences of power issues



Testing: Feb–April 2024
Example of fault detected during testing period

Analysis: Panel approaching near the limit of recommend operational conditions



Analysis: Panel 2CB - Load imbalance causes high neutral currents