ENSURING ACCURACY OF SOLAR PILE LOAD TESTING

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Solar projects require thousands of foundation piles to support trackers and panels. Typically, there are two stages at which load testing occurs: pre-design and construction. Because of the potential for variability in the type of reaction force utilized during pile load testing, Ensuring accuracy in pile load testing is a critical part of PV solar power projects. Providing a portable system, which meets the ASTM specifications developed for deep foundation load testing, is essential. Pile load testing, using a proper rigid system, offers project developers the highest level of data reliability for increased confidence and cost savings in foundation design.

Variable Approaches to Pile Load Testing – Issues:
- Pile load testing is essential to foundation design optimization and proof testing during construction
- Accuracy can be compromised by a variety of factors including:
  - Unstable reaction frame
  - Distance between frame and test pile
  - Eccentric loading of the pile
  - Indicator quantity and placement
- Data integrity can be compromised if it is not reproducible

Pile Load Testing – Improved:
- Custom-built tripod apparatus is a defensible method that will withstand the scrutiny of independent engineering reviews
- Meets the ASTM specifications developed for deep foundation load testing
- Testing accuracy is improved because the system is stable and rigid
- Able to withstand high axial loads
- Does not rely on heavy equipment for reaction force
- Reduces footprint of equipment traffic on sensitive sites
- Tripod system combined with real-time data entry using customized spreadsheets allows field engineers visual feedback on pile performance

Benefits:
- Offers lower cost approach reducing equipment and personnel during load testing
- Useful for remote project sites
- Provide project developers the highest level of data reliability by reducing or removing variables affecting data reproducibility
- Direct entry of load and deflection data shortens time between testing and review
- Reduces potential for data processing errors because of direct entry in the field
- Increases data reliability providing cost savings in design certainty