

2019 AGU Fall Meeting Abstract

Title: Reusing Operations & Maintenance Records: Moving from Reactive to Proactive Management of Solar Photovoltaic Sites

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Targeted Session: IN001 - Achieving the 'R' of the FAIR Data Principles: Reusability is the Biggest Challenge, but the Most Rewarding!

Technical Abstract: Similar to many energy systems, large amounts of information is collected at solar photovoltaic energy sites to capture current performance, including generation and other site conditions. Additionally, information is also collected about ongoing operation activities, including event records about grid events, preventative maintenance, and work orders for corrective actions. Although performance Information is routinely analyzed for trends; computerized maintenance management systems of operations information is primarily used for day-to-day troubleshooting, including tracking of work orders, managing inventory, and scheduling tasks. As such, diverse data collection and associated database design and management practices have risen within the industry, leading to significant challenges associated with data aggregation and subsequent analysis of trends across industry partners. Our team will discuss efforts currently underway in PV O&M to standardize metadata, develop well-defined data dictionaries, and create a consistent structure by leveraging data science and machine learning techniques. These activities will significantly expand the reusability of O&M records from short-term, reactive event management to longer-term, portfolio- and industry-level proactive management. Synergistic efforts focused on developing a consistent taxonomy for O&M records and development of international standards for calculating reliability and availability of PV sites will also be discussed.

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