Asset Insight: Using Data & Analytics to Effectively Manage a Power Plant’s Capital Equipment

Presented by S.A. DellaVilla Jr., CEO
Edward Fuselier, Director – Asset Mgmt
Connected Services focuses on Service Providers

A simple, secure technical and commercial framework for key **service providers** to obtain the data they need to drive aftermarket service excellence.
Kindle Energy – Formerly Lonestar Generation

- Ed Fuselier – Director, Asset Management
- Kindle Energy, LLC – Asset Management Division of Blackstone Investment Group
- Lonestar Generation
  - 3 Combined Cycle Power Generation Plants in TX
  - Gas Turbines – GE Technology
  - Steam Turbines – ALSTOM Technology
SPS – Data First

Power, Platforms, Pipelines

Renewables…Wind & PV

Deep sea Drilling… BOP

ORAP® - A Global Database
RAM Data for Large-Scale Capital Equipment
Power, Platforms, Pipelines

Data Since

1987

A Global Customer Base
ORAP Process

- Events
  - Planned
  - Maintenance
  - Forced
  - Others...

- Age
  - Fired Hours
  - Fired Starts
  - Accumulated Cycles
  - Others...

- Operations
  - Service Hours
  - Reserve Hours
  - Outage Hours
  - Others...

Standard Data Required

Automated Data Validation
Over 650 rules applied

Manual Data Validation
Engineering Review of Event for Data Quality

ORAP Benefits

- Standardization across fleets
  - Data Input
  - RAM KPIs

- Benchmarking
  - RAM KPI’s
  - Inspections
  - Events

- Summary of Outage Duration and Causes

- Fleet event details

- Communication with OEM
The Challenge

• Reduce Manual Input
• Improve Data Fidelity & Quality
• Improve Timeliness

Optimize Data Collection and Reduce Requirements on Plant Staff

Kindle Energy

• Three Distinct Plants
• Multiple Processes, Calculations, and Report Formats
  • Took approximately 1 person week to gather and document
• Reporting Was Difficult “Second Job” for Plant Operators
• Results Often Questioned and Modified
• No Benchmarking Available
Building a Partnership… 5 Years in the Making

• First Proof of Concept 1994
• Began Discussions in 2011
• Goal to Merge Technologies
  • Directly send PI System data into ORAP
  • Enable Scalability & Reach
• Hurdles Existed in Accessibility of Data
• PI Cloud Connect and Asset Framework Changed Everything
• Connected Services Partnership Signed in August 2015
The Kindle Energy Solution

- Streamlined Process
- Data flows securely through PI Cloud Connect
- Scalable & maintainable
- Reduced cost and logistical issues
- Leverage customers existing PI System infrastructure
How Kindle Uses the Data

• Weekly Production Reporting Requirements
• Accurate Understanding of Each Mission
  • Completed successfully and profitably
• Operational Planning and Risk Management
• Benchmarking versus Peer Fleet
• Key Performance Indicators (KPIs)
• NERC GADS Regulatory Reporting
• Tracking Cumulative Life and Repair Cycles of Critical Parts
• Thermal Performance Monitoring - MapEx
Leveraging Strengths

- Expertise in real-time data capture
- >70% of North American Energy Market
- Interface to almost any database platform
- PI Cloud Connect
- Scalable & Maintainable

- 30+ Years of Reliability Engineering Experience
- Global Database of Power Plant Performance Analytics
- Sophisticated Total Plant Data Validation Process
- Built In Transformation Algorithms Focused on Specific Technologies
Cohesive Vision…Kindle Energy

OSIsoft’s Real-Time Data Capture Expertise

SPS’ Data Validation & Transformation Algorithms

Helping Power Plant Owner/Operators Make Data-Driven Decisions

“Run Your Plants, Not Reports”
Connected Services – Benefit for Kindle Energy

COMPANY and GOAL

Kindle Energy, operating 3 power plants in TX, had the goal of optimizing their plant operations while ensuring “best in class” availability, reliability, and Thermal Performance metrics relative to corporate pro forma and market expectations.

CHALLENGE

Three separate plants, with varying reporting requirements and different processes and personnel need to streamline and standardize their reporting

- Data would come in different formats with varying data quality
- Reporting burden on already busy power plant staff
- Process not scalable

SOLUTION

Leverage OSIsoft’s expertise and PI Cloud Connect technology combined with SPS’ data validation and transformation algorithms to help streamline reporting

- Already utilizing PI System Infrastructure
- Secure process with imbedded layers of security
- Scalable and maintainable

RESULTS

Allows Kindle Energy to “Run their Plants, not Reports”

- Reduce data reporting requirement by 85% for plant staff – engineers can focus on decision-making
- Access to both the PI System and ORAP applications – added benefit
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Questions

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State your **name & company**

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