

RIC
2021
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Ameren Callaway Energy Center

Innovation and Technology



Callaway working together with the Corporate innovation team has led the innovation effort for Ameren

- Callaway Wireless Remote Sensors started at Callaway and scaled to Ameren Fossil plants in 2020
- Callaway AR/VR Training has scaled to Ameren Power Operations Training. Enterprise license purchased in 2020. Project implementation includes seven divisions of Ameren Training including Corporate Safety.

Remote Wireless Sensors

- Remote vibration monitoring of Important Equipment
- Pilot successful in June 2017
- Callaway implemented a Smart Deployment in September 2017
- Worker safety improved by not climbing scaffolds to take monthly readings
- Multiple issues identified in 2018
 - Iso-phase bus duct cooling fan motor
 - Circulating water pump vibration increase identified in August and monitored continuously, maintenance scheduled and completed in December
- Wireless Remote Thermal Performance Monitoring installed in November 2019
 - Data normally taken once a month now taken every 10 minutes
 - 10 man-hours per month saved and eliminated 6 Procedures
 - Callaway Team TIP Award in 2020 for Wireless Remote Sensors

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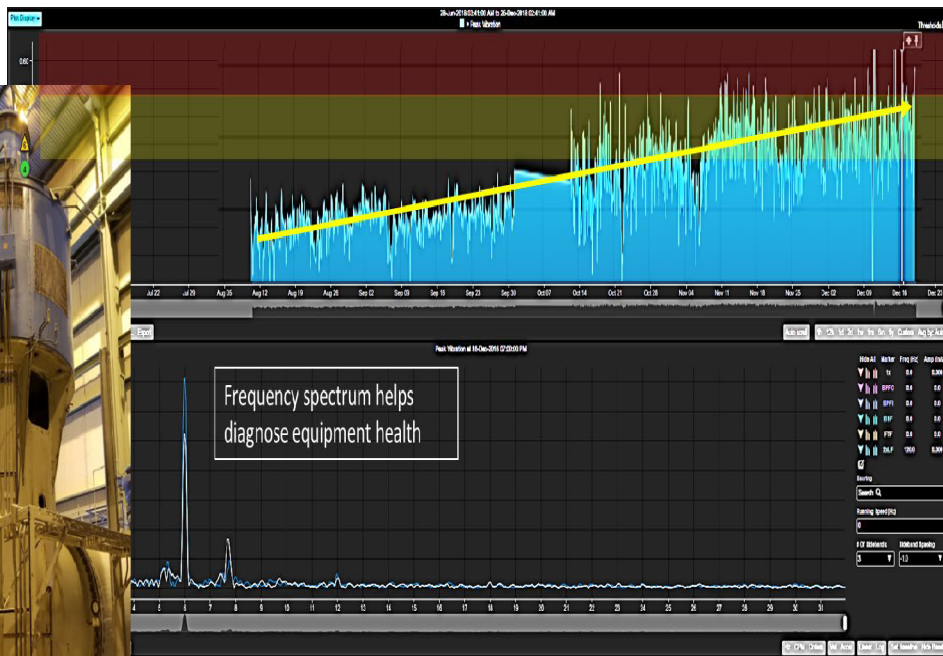
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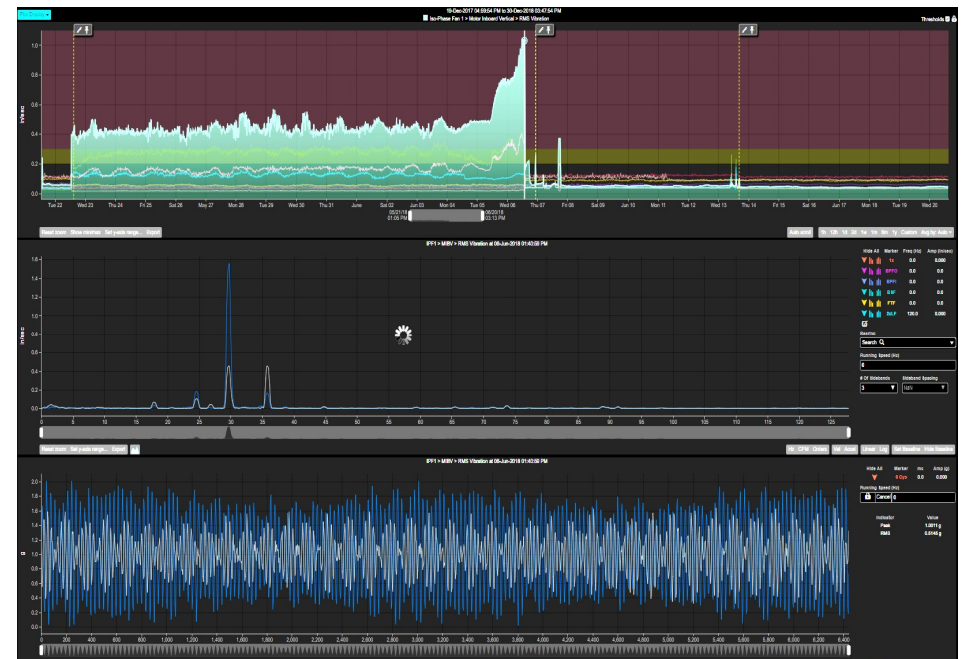
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Circulation Pump (Aug 2018 – Dec 2018)



Iso-Phase Cooling Fan Motor June 2018

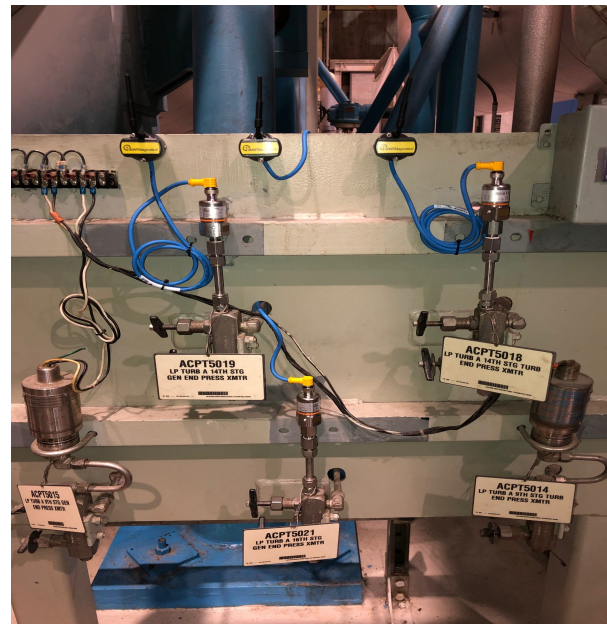


NEI Tip Award 2020

Remote wireless
Sensor Pilot 2017



Pressure transducers and
remote wireless sensors



Installed Thermocouples and RTDs and
remote wireless sensors



Virtual Reality Training Modules

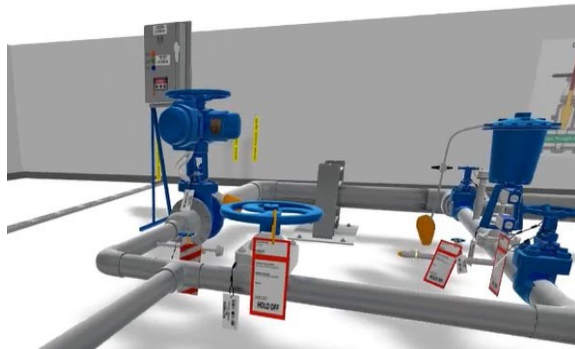
- Worker Protection Assurance (Lock-Out/Tag-Out) Pilot successful during in-processing Spring 2019 refueling outage - safety verification module
 - Improved worker safety with no tagging errors made during refueling outage
 - Improved efficiency to provide 50-minute training module to replace 4-hour Classroom, CBT, and Lab
- 2020 Hazard Recognition Module successful results in 2020 fall refueling outage
 - All employees and contractors given the module resulted in improved safety performance
 - Used advanced software to provide the training to classes during COVID-19 restrictions
 - Managers logged into the 3D interactive software and provided the training via Teams to classes as large as 25 students

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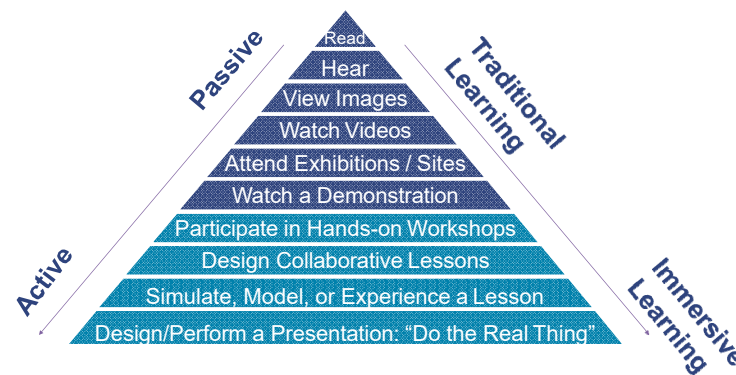
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Lock-out/Tag-out Training

Contractors trained in 2019, as a result of pre-outage training, no lock-out/tag-out errors made during the refueling outage



Hazard Recognition Training

The Hazard Recognition Training given at Callaway has produced improved co-worker safety, no recordable injuries, 1 first-aid case, and 10 near-miss reports in a long refueling outage

