Beamex calibration solutions help standardize processes and save costs

Lawrenceburg Power, LLC, USA

BEAMEX CASE STORY

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A BETTER WAY TO CALIBRATE

Ron Cash, Senior Combined Cycle Tech at the Lawrenceburg Energy Facility, was the visionary that led the maintenance department to streamline their calibration processes, automate documentation and standardize tools. Thus far, the results have included the retirement of 80 measurement standards which saves them $18,000 annually in recertification costs, implementation of a paperless system that is intuitive and easy to learn, improved data integrity and reliability, exposure of shortfalls in calibration of mission-critical instrumentation, and time savings of up to 50% on calibration work.

Ron explains, "I took over the instrument calibration duties without any instrument calibration experience. Our program was a mess to say the least. We were still using paper and pen for our calibration reports. I started looking at calibration reports and talking to others who performed calibrations in the past and realized that everyone completed the phases of the process differently. I found all these issues to be a huge problem that could end up costing the company money. With the permission of the Plant Manager, I purchased two Beamex MC6 documenting calibrators, two external modules and the CMX software. And the rest is how legends begin."

About the Lawrenceburg Energy Facility

Lawrenceburg Power, LLC is a wholly-owned subsidiary of Lightstone Generation, and Lightstone Generation in turn is a joint venture of the Blackstone Group LP and ArcLight Capital Partners LLC. The Lawrenceburg facility which began commercial operation in 2004, is a combined cycle 4X2 (Four GE 7FA Combustion Turbines and Two GE D11 Steam Turbines) nominal 1,186MW gas-fired power plant located in Lawrenceburg, Indiana.

Maintenance Superintendent, Dustin Ketchem (left) and Combined Cycle Tech, Ron Cash (right).

THE RESULTS HAVE INCLUDED THE RETIREMENT OF 80 MEASUREMENT STANDARDS WHICH SAVES THEM $18,000 ANNUALLY IN RECERTIFICATION COSTS, IMPLEMENTATION OF A PAPERLESS SYSTEM THAT IS INTUITIVE AND EASY TO LEARN, IMPROVED DATA INTEGRITY AND RELIABILITY, EXPOSURE OF SHORTFALLS IN CALIBRATION OF MISSION-CRITICAL INSTRUMENTATION, AND TIME SAVINGS OF UP TO 50% ON CALIBRATION WORK.

The situation

Prior to implementing the Beamex integrated calibration solution the plant's labor-intensive calibration process began with paper-based procedures from a simple Microsoft Access database. Based on a manual review and assessment of the calibrations to be completed, a tool set would then be assembled from the vast inventory of test equipment the plant maintained such as gauges, meters, decade boxes, etc. Execution of the calibration required the technician to manage the multiple pieces of equipment while referring to the printed calibration procedures, determining pass/fail status, and recording the results on the hard copy document. The documents served as the permanent record and were eventually stored in a physical filing cabinet.

Although this system worked, Ron noticed several problems. User controls were non-existent leading to questionable data integrity, a lack of standardization caused inconsistent work results, and there were clerical errors associated with hand-written records and the paper-based workflow. The work was also very time consuming and introduced the opportunity for many process uncertainties. The final straw was a costly delay on unit start-up when they did not have the resources to competently calibrate multivariable transmitters which proved to be particularly challenging to calibrate.

Easily executing a big vision

Like Ron, the technicians in the maintenance department are all multi-craft and responsible for a wide responsibility of daily tasks, including instrument calibration. For this reason and the sheer amount of instrumentation they manage, comprised of approximately 3,600

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BEAMEX SOLUTION

- Beamex MC6 calibrator and communicator
- Beamex CMX calibration software
- Beamex EXT pressure modules
- Beamex professional services training

CASE STORY IN BRIEF

pieces of instrumentation, 300 of which that are critical calibrations during outages, they needed a data management system that was easy to use and implement. As Ron explains, “It’s like the Geico commercial. I wanted a system that was so easy – even Ron Cash could do it.”

Furthermore, Ron wanted to standardize tools and reduce the considerable amount of equipment required to be used and maintained. Ensuring NIST traceability was an absolute requirement and had to be easily enforced. To improve data integrity, he aimed to minimize the opportunities to “cheat the system” or “pencil whip.” He also sought a solution that would provide a professional calibration certificate, audit trail and provide analytics of the results, such as data trending and hysteresis errors.

Ron found the Beamex integrated calibration solution on YouTube and recognized this system would meet all the requirements—ease of use, standardization, automated workflow and high data integrity.

The results

Ron summarizes, “The amount of equipment required to perform calibrations in the field has dropped from an average of 5 to 1 due to the built-in modules and 80 standards have been retired due to the multifunction capabilities of the MC6. No matter who uses the system, the work is performed and results are recorded in the same manner inside of CMX, which creates a more reliable system and high data confidence.”

Ron was able to integrate some of his existing standards with the Beamex technology, for instance a HART Scientific temperature dry-block that he used with the MC6 to automate temperature calibrations. From using a more accurate system, they found that many of their switches and drum levels were out of tolerance, which could have caused an emergency outage and cost the plant at a minimum, thousands of dollars and into the millions, if not resolved quickly. Finally, the inability to calibrate multivariable transmitters, which proved to be extremely costly previously, was completely resolved with the capability to make all the required measurements with the multifunctionality of the MC6.

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