

James Koch

Power Plant Performance Specialist

Performance Testing Heat Balance Analysis Optimization Studies Heat Rate Improvement Economic Dispatch

JAMES KOCH - EXPERIENCE SUMMARY

Mr. Koch is in his thirty-first year specializing in the thermal performance analysis of generating units, the last seventeen being as an independent consultant. Previously, he has been with the Heat Balance Group of Stone & Webster Engineering Corporation, and with the Boston Edison Company. He has extensive experience in all aspects of power performance testing and analysis.

In his seventeen years as an independent consultant, he has conducted numerous tests for combined cycle plants of all sizes, as well as for conventional steam units. In addition, he has done studies for various cost effective performance improvements, such as GT inlet air cooling, fuel gas heating, cooling tower cell operation, and maintenance scheduling optimization.

His clients have included:

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| Athens Generating | Morris Energy Group |
| Millennium Power | MASSPOWER |
| Exelon | PSE&G |
| Competitive Power Ventures (CPV) | Linden Cogen |
| Calpine | Arizona Electric Power |
| NRG | Saranac Energy |
| Ocean State Power | Empire Generating |

Mr. Koch has either directly supervised or participated in the testing and analysis of a wide range of unit types and sizes, foreign and domestic. The scope of these tests included both performance improvement and contract acceptance, with clients being owners, operators, vendors and lenders.

Mr. Koch has calculated heat balances for well over a hundred units, including design of basic cycle configuration, sizing and selection of major equipment, development of performance data for pro forma analyses, as well as studies for cost effective retrofits. He is an experienced user of FCYCLE/CCYCLE heat balance software, which he uses regularly as a part of his work.

While with Boston Edison, whose fossil stations totaled 1700-MW in oil- and gas-fired capacity, Mr. Koch was responsible for monitoring and improving all aspects of unit performance. He developed a unique format for quantifying heat rate losses, tabulating the effects of individual parameters. He continues to use this "thermal accounting" approach in combined cycle analysis.

Most recently, Mr. Koch has developed a computer package that takes the approach of "thermal accounting" to identify and quantify all losses in cycle performance, using data from a plant's DCS archival system (such as PI). The result is a complete breakdown of all kW losses in the cycle.

Education

Rensselaer Polytechnic Institute, Troy, NY, B.S. Mechanical Engineering, 1980
Rensselaer Polytechnic Institute, Troy, NY, M.E. Mechanical Engineering, 1982

Professional Societies

American Society of Mechanical Engineers - Member
ASME Boston Section, Past Vice Chairman, Power Division, Past Chairman

Teaching Experience

Part Time Faculty, School of Engineering Technology, Northeastern University, Boston, MA
Guest Lecturer, "Application of Thermodynamics," Rensselaer Polytechnic Institute, Troy, NY

Selected Publications

"In-Place Calibration of a Power Plant Flow Meter," EPRI Performance Monitoring and System Dispatch Workshop, Washington, DC, November 1986.

"The Economics of Unit Ramp Rate: System Fuel Cost vs. Unit Cyclic Life," EPRI Fossil Plant Cycling Seminar, Princeton, NJ, October 1987.

"Maintenance Scheduling Using Performance Data," "Onderhoud Meetbar" Industrial Maintenance Exhibition and Conference, Rotterdam, Netherlands, May 1989.

"Start Up Analysis at Boston Edison," UMS PACE Fossil Generation Workshop, Los Angeles, CA, June 1993.

"Common Sense Performance Testing for Combined Cycle Plants in a Competitive Industry," ASME Joint Power Generation Conference, Houston, TX, October, 1996.

"An Improved Cooling Tower Optimization Guideline Based on Performance Test Data," EPRI Heat Rate Improvement Conference, Baltimore, MD, September, 1998.

"Chasing Megawatts and Recovering Lost Performance: A Cost Effective Case History," EPRI Heat Rate Improvement Conference, Baltimore, MD, September, 1998.

"How to eliminate thermal losses, identify equipment deficiencies," Combined Cycle Journal, Second Quarter, 2012.