

PARTIAL LIST OF PUBLICATIONS

- *Power Plant Cycling Costs*, with P. Besuner, S. Lefton, D. Agan, and D. Hilleman, Intertek APTECH Report AES 11077844-2-1 (April 2012).
- *High Renewable Penetration Impacts on the Fossil Fleet*, Utility Variable Integration Group (UVIG) Fall Workshop (October 2014).
- *Impact of Plant Cycling on Availability*, N. Kumar, M. Liu (Intertek), M Ouellette K. Miller (Portland General Electric) ASME Power 2015
- *Cost benefits of a cycling analysis on a combined-cycle unit*, ASME Power 2014
- *Reconciling the Past Decade of Gas Turbine and Combined Cycle Fleet Operations*, Electric Power (April 2014).
- *Finding Flexibility, Cycling the Conventional Fleet*, D. Lew, G. Brinkman, N. Kumar, S. Lefton, G. Jordan, and S. Venkataraman IEEE Power & Energy Magazine (December 2013).
- *Cost-Benefit Analysis of Flexibility Retrofits for Coal and Gas-Fueled Power Plants: NREL Report NREL/SR-6A20-60862*, S. Venkataraman, G. Jordan, and M. O'Connor (GE Energy), N. Kumar and S. Lefton (Intertek AIM) D. Lew, G. Brinkman, D. Palchak, and J. Cochran National Renewable Energy Laboratory (NREL) (December 2013).
- *Flexible Coal, Evolution from Baseload to Peaking Plant*, Jaquelin Cochran, Debra Lew and Nikhil Kumar (November 2013).
- *The Western Wind and Solar Integration Study Phase 2: NREL Report NREL/TP-5500-55588*, with D. Lew, G. Brinkman, E. Ibanez, A. Florita, M. Heaney, B.-M. Hodge, M. Hummon, and G. Stark (NREL), J. King (RePPAE) S. Lefton and D. Agan (Intertek AIM), G. Jordan and S. Venkataraman (GE Energy) (September 2013).
- *A new paradigm – Cycling Operations at Nuclear Power Plants in U.S.*, N. Kumar, S. Lefton, D. Hilleman, and D. Agan, ASME 2013 Power Conference (July 2013).
- *Increase Reliability and Profitability while Adapting Maintenance to Changing Market Demands*, Douglas Hilleman and Nikhil Kumar, Electric Power Conference Session 2D (April 2016).
- *Gainesville Regional Utilities Kelly Plant Asset Management with Cycling Operations Demands*, with John Lindsay, ASME Power Conference 2015-49148 (June 2015).
- *Cost Benefits of a Cycling Analysis on a Combined-Cycle Unit*, Proceedings of PVP2014, 2014-32026 ASME Power Conference (July 28, 2014).
- *Smart Asset Management - Using Real Time Transient Data to Determine Equipment Damage, Maintenance Costs, and Operational Strategy in Power Plants*, N. Kumar, S. Lefton et al, A. Nissen and G. Christensen (Intermountain Power Service Corp.) ASME 2013 Power Conference (July 2013).
- *Power Plant Cycling Measure - Evaluating Historical Cycling to Model Future Grid Operations*, N. Kumar, S. Paterson, K Coleman (EPRI), C. Lee, D. Agan, and S. Lefton 2013 IEEE PES General Meeting (July 2013).
- *Impacts of Renewable Generation on Fossil Fuel Unit Cycling: Costs and Emissions*, with G. Brinkman (NREL) et al, International Workshop on Large-Scale Integration of Wind Power into Power Systems as well as on Transmission Networks for Offshore Wind Power Plants, Lisbon, Portugal (November 2012).
- *Impacts of Wind and Solar on Emissions and Wear and Tear of Fossil-Fueled Generators*, with D. Lew (NREL) et al, 2012 IEEE PES General Meeting (July 2012).
- *A View of a Smart Grid enabled Energy Market with increased Wind Energy – Opportunities and Challenges*, with S. Lefton, Proceedings PCIM Europe 2011, Nuremberg Germany (May 2011).





- *Renewable integration—Challenges with Reliability and Costs, and Opportunities*, with S. Lefton, Electric Power 2011, Rosemont IL USA (May 2011).
- *A New Paradigm- Cycling Operations at Nuclear Power Plants in the United States*, Proceedings of ICON 2014, ICONE 22-30241 International Conference on Nuclear Engineering (July 7, 2014).
- *Cost Benefit of a Cycling Analysis on a Combined Cycle Unit*, CEATI 6th Annual TGIG Workshop, “Impact of Cycling Operation on Thermal Generating Plants.” Conference Session 2 (October 16, 2013).
- *Assessment of HRSG Startup Data After Capital Improvements at a Combined Cycle Plant, HRSG 2*, APTECH Report AES 05035709-2-5.
- *Technical Status Report Evaluation and Root Cause of Thermal Fatigue Cracking in Supercritical Boilers*, APTECH Report AES 06026094-2-1
- *The Cost of Cycling Coal Fired Power Plants*, Power Plant O&M and Asset Optimization, Coal Power Magazine (Winter 2006).
- *Temperature Ramp Rate Effect on Rotor Life and Maintenance Costs*, EPRI Report Chapter (February 2006).
- *Engineering Study to Determine the Effects of Load Cycling on Production Costs and Availability for Nuclear Generating Station*, APTECH Report
- *Engineering Reliability Analysis of Pipe Welds Subject to Creep Failures*, APTECH Report
- *Determining Costs for Cycling and "Baseload" Variable Operations and Maintenance f for Submittals to ERCOT Based on the "Verifiable Cost Manual"*, Intertek-APTECH Report
- *Wind Integration and Cycling at Excel Energy*, Fossil Operations and Maintenance Conference with Xcel Energy, FOMIS Conference, June 9, 2009
- *Using Real-Time Temperature, Stress, and Flow Readings to Determine Equipment Damage, Maintenance Costs, and Operational Strategy in Power Plants*, APTECH TP151 (August 2005).
- *Outage Handbook, Identifying Damage Mechanisms in Combined-Cycle Steam Systems*, Combined Cycle Journal, (Summer 2004),
- *The Real Cost of Cycling Powerplants: What You Don't Know Will Hurt You*, with P. Besuner and G. Grimsrud, Electric Light & Power Magazine (November/December 2002).
- *Power Plant Operations and Cost Optimization Using Real Time Cost Analysis Tools*, with P. Besuner and T. Kuntz, Presented at the International Conference on Advances in Life Assessment and Optimization of Fossil Power Plants, APTECH TP136 (January 2002).
- *Power Plant Cycling Operations and Unbundling Their Effect on Plant Heat Rate*, APTECH TP134 (October 2001).
- *Cycling Fossil-fired Units Proves Costly Business*, Electric Light & Power Magazine (July 1997).
- *Failure to Achieve Hot Section Component Service Intervals -- Why and What to Do about it*, Presented at the American Society of Mechanical Engineers Turbo Expo '97 - Land, Sea, and Air in Orlando, Florida (1997).
- *Understand What it Really Costs to Cycle Fossil-fired Units*, Power Magazine (March/April 1997).
- *Economics of Cycling 101: What Do You Need to Know About Cycling Costs and Why?*, APTECH TP098 (May 1995).
- *True Cost of Cycling Enhances the Value of Dispatchable Hydro*, APTECH TP093 (February 1995).
- *Estimating the Total Cost of Cycling Operations at the Los Angeles Department of Water and Power*, , Presented at the 1996 EPRI Plant Maintenance Conference Baltimore, Maryland (August 1996).
- *HRSG Pressure Part Thermal Transient Life Evaluation and Recommendations*, APTECH Report AES 06046150-2-1 (November 2008).