

# CEATI Thermal Generation

Today's competitive energy market and environmental concerns require operators to improve efficiency, reduce greenhouse gas emissions and maximize the useful life of their conventional thermal power plants while minimizing both operating costs and capital investments.

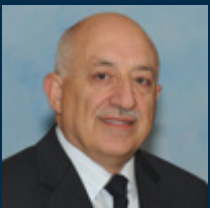
The objective of the Thermal Generation Group is to bring together participants from thermal generation and related industries to identify immediate design, operational, and maintenance issues, and to monitor and develop emerging thermal technologies. The penetration of renewables has, and is increasingly having, a dramatic effect on the normal operation of thermal power systems. Moreover, operators are forced to manage this issue by adjusting their operation to allow the integration of these new resources through cycling. This has brought significant challenges to the industry. The Thermal Generation Group is working with owners and operators to understand these challenges and develop workable solutions to help manage them.

Through collaboration on specific projects, the group delivers cost effective technological and asset management solutions to meet today's industry needs. The program is designed to assist owners and operators of thermal electric-generating units in their efforts to: improve environmental performance; lower capital and operation & maintenance costs; extend equipment life; improve efficiency; increase reliability and reduce outage times for equipment repair and maintenance; improve safety; improve risk-based asset management decision making; and improve performance evaluation and benchmarking techniques.

## Topics & Issues

1. Reliability improvement
2. Greenhouse gas mitigation and effective pollution control strategies
3. Improvements in operations and maintenance programs
4. Future developments for continued operation of coal-fired plants
5. Efficiency enhancement
6. Cost optimization
7. Life extension
8. Training, personnel practices, and safety

## Technical Advisor



**Mr. Joe Siracusa** graduated from the University of Toronto in Mechanical Engineering in 1975, and joined Ontario Hydro/Ontario Power Generation (OPG) at the R.L. Hearn Generating Station in an engineering capacity. During the 41 years of employment with OPG, Joe has worked at all the major coal fired plants in Ontario (Lakeview, Lambton, and Nanticoke), as well as at the Corporate Office. He has held numerous senior positions in Plant Management, Production, Engineering, and Business, and was a member of the Executive Team.

## Projects

- Technology and Economic Evaluation Methodology for Fast and Flexible Generation
- Reliability and Performance Issues with Combustion Turbines
- Impacts of Cyclic Operation on Maintenance Programs
- Primer on Power Plant Asset Management
- Preservation Guidelines for CCGT & Conventional Power Plants during Short & Long Term Shutdowns
- Guidelines for Conversion of Pulverized Coal Boilers to Natural Gas
- Impact of Cycling/Two Shift Damage on the O&M Cost and Reliability of NGCC Power Plants
- On-Line Monitoring and Evaluation of Critical Components
- Assessment of Potential for Increasing Thermal Efficiency of Existing Generating Units
- Evaluating the Benefits of Optimized Condenser Cleaning
- Generator Maintenance and Condition Assessment Guide
- Damage to CCGT Plant due to Cyclic Operation
- Technical and Economic Analysis, Comparison and Review of Available Materials for Replacement of Components in Ageing Power Plant Boilers/ HRSGs
- Damage to Power Plant Due to Cyclic Operation and Guidelines for Best Practices
- Best Practice Guidelines for the Operation and Maintenance of Steam Condensers and Their Auxiliaries
- On-Line Monitoring Technologies & Implementation



## Workshops

- Advanced Equipment Diagnostics: Current Status and New Developments
- Current Issues and Future Trends for Thermal Power Generation
- Re-Energizing Power Plants and Related Issues/Cycling of Units and its Impacts
- Going for the Green: Reducing Generation's Environmental Footprint
- Evaluation of New Generation Technologies for Fast Response

## Working Groups

- Impacts of Fast & Flexible Generation Working Group

## Annual Activities

- 2 Meetings and 1 Workshop
- 4 Working Group Calls
- Quarterly Conference Calls
- Ongoing Information Exchange

\*Participation is open to all Electrical Utilities, Independent Power Producers, and Government Agencies.