

*FirstEnergy invites you to...*

## **Introduction to Energy Efficiency in Chiller Plant Systems**

May 22, 2018 - Toledo, OH

### **Overview**

As one of the founding members of the Ohio Center for Industrial Energy Efficiency, we invite our clients to the 1-day class "Introduction to Energy Efficiency in Chiller Plant Systems" hosted by Ohio Edison in Toledo, OH. Participants attending the one-day workshop will learn:

- The fundamentals of chiller plant systems
- To apply a systems approach to improve energy efficiency in chiller plants
- Predictive and preventive maintenance best practices
- To identify and prioritize energy conservation measures in chiller plants

This workshop provides fundamental information in a practical manner to chiller plant operators, utility engineers, supervisors, energy managers, consultants, etc. Hands-on exercises provide an understanding of the issues and economic impacts associated with chiller plant operations. The workshop uses actual operating data from existing chiller plants to demonstrate the impact of energy conservation measures.

Participants will have the ability to take some of the Fault Detection and Diagnostics (FD&D) techniques and directly apply them at their facility. The participants are expected to bring basic information of their chiller plant system to allow them to better understand and comprehend the course. Additionally, group discussions and one-on-one interactions with the instructor are highly encouraged.

### **Instructor**

#### **Mr. Riyaz Papar, PE, CEM, Fellow ASHRAE**

Mr. Papar is currently Director, Global Energy Services at Hudson Technologies Company, USA and has over 25 years of experience in Industrial Energy Systems and Best Practices. Mr. Papar is an Instructor and an International Energy Expert for the US DOE and UNIDO. He is responsible for the development and delivery of capacity building energy assessments, project implementation for industrial system optimization, and energy consulting services to 150+ industrial plants in the US and internationally. He has also provided best practices training to over 5,000 plant personnel in the US and internationally.



Mr. Papar has been the past Chair of ASME's Process Industries Division and ASHRAE's Technical Committees on Centrifugal Machines (TC8.2) and Cogeneration Systems (TC1.10) and is a registered, licensed professional Mechanical Engineer. His graduate-level education specialized in the area of thermal engineering (heat transfer, energy conversion, refrigeration, etc.). Mr. Papar is the author of more than 40 Technical Publications in Journals, Conference Proceedings & Trade Magazines.

## Agenda

**8:00 – 8:30 am Registration**

**8:30 – 12:00 pm Morning Session**

- The Systems Approach
- Fundamentals of Refrigeration
- Basic Chiller Components
- Types of Chillers
- Chiller Plant Efficiency Calculations

**12:00 – 12:45 pm Lunch**

**12:45 – 1:00 Ohio Energy Efficiency Funding Programs**

**1:00 – 4:00 pm Afternoon Session**

- Predictive and Preventive Maintenance Best Practices
- Gap Analysis – Identifying Inefficiencies
- Energy Conservation Measures (ECMs)
- Conclusions

## Location

**Toledo Edison  
Holland Building B Auditorium  
6099 Angola Rd.  
Toledo, OH 43528**

## Registration

There is no fee for this workshop, but preregistration is required. Attendance limited to 40.

- Online Registration at: <https://www.cvent.com/d/ygg7kb>

## For Additional Information Contact:

**Larry Boyd**  
Lawrence Boyd and Associates  
216-323-1898  
[lcb26@hotmail.com](mailto:lcb26@hotmail.com)

**Pat Kelly**  
First Energy  
330-384-5822  
[kellyp@firstenergycorp.com](mailto:kellyp@firstenergycorp.com)