



The Institution of Engineers, Malaysia

Bangunan Ingenieur, Lots 60/62, Jalan 52/4, Peti Surat 223,
46720 Petaling Jaya, Selangor Darul Ehsan
Tel: 03-79684001/2 Fax: 03-79577678

E-mail: sec@iem.org.my IEM Homepage: <http://www.myiem.org.my>

Technical Talk Common Operational Challenges and R&D Opportunities in Malaysian Thermal Power Plants

(Jointly Organised by Oil, Gas & Mining Technical Division and Electrical Engineering Technical Division IEM)

Date : 24th November 2018 (Saturday)
Time : 9.00am – 11.00am (Refreshment will be served at 10.30am)
Venue : TUS and C&S Lecture Room, 2nd Floor, Wisma IEM, Petaling Jaya
Speaker : Ir. Dr. Mohd Shiraz Aris

SYNOPSIS

The Malaysian energy generation sources from which power is generated and injected into the national grid originate from coal, natural gas, hydro and small amounts of renewables. Power from coal and natural gas are categorized as generation from conventional thermal power plants, collectively making-up more than 50% of the Malaysian energy mix. The coal plants contribute to the base load supply whilst the gas turbine plants, with the exception of a few, inject peak load demand into the grid. The contribution of the thermal power plants in the Malaysian energy scenario and their role as base load producers suggest operational criticality and reliability of the relevant assets. One of the common challenge in thermal power plants is the quality of fuel source. Both coal and natural gas supply play a significant role in ensuring the power generation process is not compromised in terms of unplanned outages and heat rate targets. Especially in coal power plants, a fuel quality issue can translate into several operational hiccups such as ash deposition, clinker formations, unbalanced firing and overdesigned furnace exit gas temperatures to name a few. In gas turbine plants, an increase in inert content from sour gas sources, higher hydrocarbons from LNG injection and high rate of changes in gas supply compositions are known causes of plant tripping associated to poor combustion.

The listed challenges for thermal power plants are not exhaustive and are merely high level examples of what one can expect to find when engaging with power plant operators. Through careful synthesis and exploration of these issues there are many solutions which can be offered to the thermal power plant operators. These solutions may utilize tools which have become more acceptable such as computational fluid dynamics, machine learning optimization and modelling capabilities. The tools are enablers which are filling in the gaps and, in many instances, have become solution drivers for the plants. This talk will provide an overview of the challenges faced by coal and gas fired power plants, focusing on fuel quality, supply and some of the upstream gaps which are critical to the plant's performance and reliability. There will be insights on the latest findings and related solutions for operational excellence in thermal power plants.

SPEAKER'S BIODATA

Ir. Dr. Mohd Shiraz Aris has over 26 years combined experience in engineering, research and consultancy within the oil and gas and power industries. After graduation, he worked for Esso Production Malaysia Inc., Beloit Asia Pacific (Singapore) and PETRONAS prior to his current position as Principal Researcher at TNB Research Sdn. Bhd. He has published articles related to Heat Transfer, Thermal Design, Renewable Energy and Energy Optimization in numerous journals and presented at major international conferences around the world. Ir. Dr. Mohd Shiraz completed his Bachelor of Science in 1998 and he is a member of The Institution of Engineers, Malaysia.

Ir. Azwira Mohd Azmi
Chairman,
Oil, Gas and Mining Technical Division, IEM

Ir. Chong Chew Fan
Chairman,
Electrical Engineering, Technical Division IEM

BEM Approved CPD/PDP Hours: 2
Ref No: IEM18/HQ/462/T

FEE ANNOUNCEMENT

(Effective: 1st October 2017)

Members:

- (i) Registration Fee: No Charge
- (ii) Administrative Fee:
 - (a) Online RM15
 - (b) Walk-In RM20

Non-Members:

- (i) Registration Fee: RM50
- (ii) Administrative Fee: RM20

- Limited seats are available on a "first come first served" basis (maximum 100 participants).
- To secure your seat, kindly register online at www.myiem.org.my

Personal Data Protection Act:

I have read and understood IEM's Personal Data Protection Notice published on IEM's website at www.myiem.org.my and I agree to IEM's use and processing of my personal data.

CPD Hours Validation:

Name:

Membership No.:

Signature: