AGENDA

KNOWLEDGE DISSEMINATION WORKSHOP ON COAL GENERATION FLEXING PRACTICES TO SUPPORT VARIABLE RENEWABLE ENERGY INTEGRATION

UNDER GREENING THE GRID (GTG) PROGRAM RENEWABLE INTEGRATION AND SUSTAINABLE ENERGY (RISE) INITIATIVE,

A JOINT INITIATIVE BY USAID AND MOP

IN PARTNERSHIP WITH NTPC LIMITED

August 24-25, 2018

Venue: Power Management Institute NTPC Limited, Sector 16-A Noida, India
GREENING THE GRID/INDIA

USAID’s Greening the Grid (GTG) is a five-year program implemented in partnership with the Ministry of Power (MOP) under the U.S.-India partnership to Advance Clean Energy Deployment (PACE-D). This program aims to support the Government of India’s (GOI) efforts to manage large-scale integration of Renewable Energy (RE) into the grid. The program combines the following three components:

- Power system planning reforms and targeted analysis for large RE parks and RE integration pilots
- Renewable Integration and Sustainable Energy (RISE) initiative to implement innovation pilots to improve the integration of RE
- Peer-to-Peer exchanges between U.S.-India system operators and regulators

Under the GTG-RISE initiative, six grid integration pilots will be implemented aimed at testing and evaluating building blocks to improve the integration of RE in India’s state and national power grids. One of the pilots focuses on introducing flexibility in the operations of conventional coal based power generation plants to address the variance and intermittency of RE generation. The pilot is being implemented in partnership with NTPC at two units at Jhajjar and Ramagundam power stations.

WORKSHOP BACKGROUND & OBJECTIVES

**Workshop Background:**
The two-days workshop aims to discuss flexing operational practices, infrastructure improvements and damage mitigation techniques to limit impacts caused by flexing. Traditionally, coal power plants are designed to run at constant output, and electric utilities feel that ramping and cycling may reduce efficiency, increase costs, lower equipment lifetime, and is generally ill-advised or even impossible. However, in a number of countries, such ramping and cycling has long been considered normal practice. India with high coal dependence but ambitious goals for integration of variable renewable energy, “hourly ramping” and “daily cycling” of coal power plants, that is, varying their output over a wide range during the day and on a daily basis, and even shutting them down, is becoming an increasing operational necessity.

**Workshop Objectives:**
The objective of this two-days workshop is to advance participants’ knowledge of coal flexing generation operational improvements and mitigation techniques to confront impacts. During the workshop, delegates will discuss:

- Operational modifications to existing coal plants to increase their flexibility to allow for increased load gradients (ramping rates), reduced minimum stable outputs, faster startup (from zero output).
- Infrastructure improvements that can be made to coal generators, including control software and equipment.
- Measures to minimize operational and maintenance (O&M) impacts.
- Successful international case studies on coal based flexible power operations including cost implications.
- Key findings from studies and analysis carried out under GTG-RISE Coal flexibility pilot at NTPC Jhajjar and Ramagundam stations.
ORGANIZERS

Mr. A K Sinha
Program Coordinator
NTPC Limited
Mobile: 9650992971
Landline: 011-24366183
Email: anjansinha01@ntpc.co.in

Mr. Dharmendra Singh
Program Coordinator
NTPC Limited
Mobile: 9650998599
Email: dharmendrasingh@ntpc.co.in

Anuj Vashistha
Pilot Coordinator
GTG-RISE Initiative, Deloitte India
Mobile: 9871004932
Landline: 011-40450737/38 Ext. 105
Email: avashistha@deloitte.com

Kakoli Guha
Event Coordinator
GTG-RISE Initiative
Mobile: 9811913430
Landline: 011-40450737/38 Ext. 110
Email: kguha@gtg-india.com
AGENDA (DAY 1 - AUGUST 24, 2018)

9:00 am Welcome Tea & Registration

INAUGRAL SESSION

9.30 - 9:40 am Welcome of dignitaries & Introduction of speakers and participants
*Moderated by Mr. A K Sinha, NTPC*

9.40 - 9.50 am Welcome remarks
*Monali Zeya Hazra, USAID*

9.50 - 10.00 am Special Address
*Director, NTPC*

10.00 - 10:10 am Inaugural address
*Shri S K Kassi, Director, MoP (TBC)*

10.10 - 10:20 am Key Note Address
*CEA (TBC)*

10.20 - 10.30 am Vote of Thanks
*Shubhranshu Patnaik, Chief of Party, GTG-RISE*

10:30 - 10.50 pm Group photo followed by tea

TECHNICAL SESSIONs

10.50 - 11:20 am Coal Based Flexible Operations- NTPC's perspective
*Speaker: Mr. A.K.Sinha, NTPC*

11.20 - 1.00 pm Coal Flexing Operational Practices: Session One
*Cycling damage and damage or life management of steam turbines in cyclic operation*
*Doug H/Dave R, Intertek*

1.00 - 2.00 pm Lunch

2:00 - 3.00 pm Coal Flexing Operational Practices: Session Two
*Introduction to Cost of Cycling*
*Nikhil Kumar, Intertek*

3:00 - 3.45 pm Operational Strategies for Flexing in Thermal Plants
*NTPC & GE Power*

3.45 - 4.00 pm Tea

4.00 - 5.00 pm ASME B31.1 and High Energy Piping
*Marv C, Intertek*

5:00 pm Adjourn
AGENDA (DAY II- AUGUST 25, 2018)

9:00 am  Welcome Tea & Registration

9:30 - 9:40 am  Welcome of dignitaries & Introduction of speakers
  Moderated by Mr. A K Sinha, NTPC

9:40 - 11am  USAID GTG RISE Flexible Generation Pilot – Ramagundam
  Report Review
  Nikhil Kumar/Doug H, Intertek

11:00 – 11:30am  Cycling damage and damage or life management of BOP
  equipment
  Dave R, Intertek

11:30 - 11:45 am  Tea

11:45 – 12:45 pm  HEP Industry Concerns and Walkdown Issues
  Marv C, Intertek

12:45 - 2:00 pm  Group photo and Lunch

2:00 - 2:45 pm  USAID GTG RISE Flexible Generation Pilot – Jhajjar Report Review
  Nikhil Kumar/Doug H, Intertek

2:45 - 3:30 pm  Boiler Flexible Operation (Impacts & Countermeasures)
  Doug H, Intertek

3:30 - 4:00 pm  Water Chemistry Review
  Doug H/Nikhil Kumar, Intertek

4:00 - 4:30 pm  Low Load Operation for Tangentially Fired Boilers (Web
  Presentation)
  Flame Stability, Challenges and Mitigation
  Tom B, Intertek

4:30 – 4:45 pm  Tea

4:45 – 5:30 pm  Report Review & Q&A

5: 30pm  Adjourn