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On the cover. Rotor for new 60Hz M501J series gas turbine rated at 320MW and over 41% efficiency at 1600°C inlet temperature

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Utility co-op is building USD405 million 300MW combined cycle project, GE expanding full load test facility for advanced technology designs, 830MW Korea plant, 1700MW Riyadh PP11 project, Brazil to test LM6000PC on ethanol fuel

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Westar Energy is phasing in operation of 4xLM6000PC and 3xFr 7FA gas turbines for renewable energy grid support and summer peak load generating capacity that includes 150MW of spinning reserve

20 Fired 335MW combined cycle conversion

Wood Group is converting a two-unit 170MW peaking station to a 270MW combined cycle plant that can be duct fired to increase output to 335MW, under an estimated USD150 million EPC contract

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Raising the bar

Kansai Electric M501J launch order for six 1x1 combined cycles will save them USD360 million a year for fuel, expand capacity by 370MW and eliminate 1700 tpy of CO2 site emissions, *page 10*



Power to rely on

Westar Energy can ramp up LM6000s to full 37MW output in under 10 minutes (to back up shortfalls in wind farm power) and add 170MW Fr 7FAs to augment summer peaking capacity, *page 15*



Turnkey EPC uplift

Wood Group EPC contract for USD150 million includes refurbishing and upgrading two 7EA peakers, turnkey supply of steam turbine, HRSG and condenser, plus BOP equipment, *page 20*



New gas turbine users group will meet in Dubai next year

By Bill Owen

Gas Turbine Users International (GTUI) is following up its successful meeting in Calgary last March with a third annual conference and agenda scheduled for Dubai in April 2011.

GTUI is an end-user oriented organization that concerns itself primarily with operation, performance and maintenance of heavy frame and aeroderivative gas turbines for upstream oil & gas; industrial cogeneration and pipeline applications.

It provides a venue for the exchange of information between these end user peer groups and Original Equipment Manufacturers (OEMs) to examine newly experienced or unique operational and technical issues and problems for joint resolution through interactive discussions with user peers and OEMs.

Diverse GT population

Collectively, a survey of users who participated in the Calgary conference showed they owned and operated over twenty different gas turbine models (supplied by a variety of OEMs) ranging from around 5,000kW to 30,000kW in unit output deployed in large and small fleets.

Specific models discussed during the sessions covered both heavy frame engines (with special attention to GE Fr 3 and 5 mechanical drives) and aeroderivatives such as the Rolls Royce RB-211, Spey and Avon engines.

They included GE Aero LM2500 and LM6000 engines, Solar models (Mars, Titan, Centaur, and Saturn) and Siemens small SGT series industrial engines – along with several orphaned units no longer in production such as old Ruston TA & TB units.

GTUI functions primarily via Round Table discussions dealing with individual OEM engine families, relying on the specialized experience of several users who function as leaders to guide and prompt the flow and exchange of information.

Strong OEM support

OEMs sit in on table sessions by invitation only; they are there primarily to answer questions and share their extensive experience and field report data on the models they manufacture for different applications.

Typically, they respond to technical issues raised and pass along solutions to problems with emphasis on availability, reliability, extension of overhaul interval, efficiency and emissions.

GTUI is unique in the participation of Emeritus Members in the conference. Usually, they are highly experienced former users, respected in the gas turbine community, who often chair other user and professional society meetings.

Another distinctive feature of the GTUI conferences is the attendance of “Knowledge Providers” who actively participate in Round Table discussions to supplement and expand on OEM technical input or to provide alternative views on the subject matter.

A highlight of the Calgary 2010 conference was Dr. Henry Bernstein of Gas Turbine Materials Associates who shared insights and examples

on the application of failure analysis techniques by users to identify causes of operating problems and possible solutions.

Value in case studies

“User Case Studies” presentations at both general and Round Table sessions also can materially assist in defining and understanding current problems and solutions.

Hospitality rooms and other vendor social functions are not a function of GTUI’s conferences. User groups focus almost exclusively on experience with specific engine models with respect to type application, operation



Dr. Omar Shams. GTUI's president, Dr. Shams, is a 25-year veteran of the Dubai Natural Gas Company where he is responsible for all onshore and offshore facility operations. He holds a PhD from the University of Bath in the UK.

and duty cycle.

After the conference is over, GTUI normally publishes "Notes" taken at round table sessions for distribution to registered attendees.

While there is no "typical" GTUI member or conference attendee, it is interesting to see who some of them are and what they do. In general, they are specialized senior managers and executives with years of experience. Representative examples:

- A senior maintenance planning and overhaul manager for a major oil company who is currently involved in arctic North American operations that include a fleet of MS5002 mechanical drives, Fr 5 and 6 genset plants, and a large group of Ruston TA/TB units. He is a well known member of the global gas turbine community with years of experience of special interest to multiple unit fleet operators.

- A compression operations manager who oversees all aspects of operations and maintenance for a major Canadian gas transmission and storage operator in south-eastern Canada. The company operates a large fleet of RB-211 gas turbines (various models) in high criticality service providing natural gas to the Toronto and Windsor regions.

- A senior manager at a Dubai natural gas company with responsibility for operations of a mixed fleet of gas turbines (including Rolls Royce Avon, GE Fr 5, Siemens GT 35, Dresser-Rand 990 and Ruston TA units) in mechanical drive, power generation, regeneration air supply and waste heat recovery. These units are located both onshore and offshore Dubai.

- A senior technical specialist in gas turbine operations and maintenance for a major oil company with worldwide onshore, offshore, refinery and petrochemical operations including several very large mechanical drive gas turbines and large, critical service cogeneration facilities.

- Three Emeritus Board Members, although now retired from major gas transmission and oil companies, con-

GTUI Business Goals

GTUI recognizes that to be a successful non-profit organization in the current business environment the value of information exchanged and gained at and through the GTUI must clearly exceed all costs to participate. To make this happen, GTUI has established the following goals:

1. Provide an annual forum for the convergence of Users and OEMs to exchange information.
2. Provide a clear benefit to our target audience of User operations, maintenance, and technical personnel; OEM representatives; and knowledge providers responsible for the procurement, system design, application, operation, and maintenance of gas turbines in land and marine applications by:
 - a) assisting our Users in information gathering and exchange,
 - b) focused networking with fellow Users of like equipment,
 - c) interaction with OEM suppliers in a technically focused venue, and
 - d) the opportunity to meet and interact with industry experts.
3. Focus on the gas turbine end user by defining current issues affecting User's gas turbines and focusing OEMs and Users clearly on technical solutions that extend overhaul intervals and better utilize gas turbines.
4. Provide a forum in which Users and OEMs can exchange information and experience to improve the safety of gas turbine operations; increase availability and reliability, improve safety, emissions and noise performance to minimize public impact.
5. Operate in a self-funding, non-profit mode so as to maintain appropriate organizational independence.
6. Be governed in an open, representative manner by a Board of Directors with defined succession and rotation policy.
7. Promote excellence in service to gas turbine Users by establishing a select Board of Advisors who will monitor and report on the culture and health of the organization and its service to Users.
8. Recognize the evolution of the gas turbine industry and its User organizations by including vetted knowledge providers in GTUI membership although their attendance at certain sessions may be restricted depending on membership class.
9. Recognize the contribution of invited OEM organizations and address their legitimate concerns regarding information management (including conflict of interest and preservation of intellectual property) without infringing on needs of Users for current, accurate information.
10. Provide a forum for selected, invited technical papers of special interest to the gas turbine User community. The Board of Directors will identify these topics and solicit technical presentations by objective authors with the requisite knowledge and experience to make a meaningful contribution.

Source: Abstracted from GTUI's Rules and Bylaws

tinue to be active in the industry and freely share their extensive experience with conference attendees.

These members and others like them make up the backbone of GTUI

membership and attendance at the conferences. It is worth noting, however, you don't have to be a large fleet operator to qualify or benefit; the GTUI is also open to users with only

one or two units.

The glue that holds everyone together is the opportunity to find solutions to common problems and to build long term networking and personal relationships with fellow users around the world who operate similar equipment. That is what helps create a support structure for personal contact and exchange of information throughout the year outside the annual conference meetings.

Networking in combination with participation in the annual conferences can pay big dividends for end users as demonstrated by the following case history examples:

- A major Middle Eastern end user wanted advice on inlet air plenum fire/gas detection for his aeroderivative gas turbine fleet and tips on specifications, application and performance. Senior GTUI members were able to assist him in developing responses and questions for qualified

OEM suppliers as well as on other issues he should know about and might need to address.

- The GTUI Board and other network members were able to assist a small, isolated gas turbine operator to establish contact with other users of a rather limited class of power generation gas turbine.

- Network members were able to provide specific recommendations to a user seeking information about a new rotor inspection technique at a major gas turbine OEM in Europe that minimized cost to the user and provided an opportunity for dedicated rotor build inspection.

- The forum provided a venue for a major Middle Eastern user to discuss issues with certain aeroderivative power turbine blade failures. Other users had the opportunity to comment in light of their machines and operations, while providing him with direct feedback on possible solutions.

- An Austral-Asia attendee provided “ad-hoc” information about a rare inlet guide vane issue on Fr 3 gas turbines for general consideration at the conference. An attendee from the Middle East was able to directly and expeditiously use this information to modify his inspection techniques to ensure this failure mode did not occur in their local engines.

This strong networking and the building of user contacts is invaluable to attendees. It facilitates sharing of information and experience directly with potentially affected operators and other attendees via the GTUI conference information provided to attendees.

If you are interested in finding out more about GTUI or who to contact, check their website www.gtui.org. The GTUI 2011 Conference, to be held at The Meydan hotel in Dubai on 10-15 April 2011, is also covered on the website. ■

BY THE BOOK.



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