

BUSINESS PARTNERS

Company news

Turbine Generator Maintenance Inc., Cape Coral, Fla, one of the leading independent providers of field and shop services for gas and steam turbine/generators, is acquired by a fund managed by GFI Energy Ventures LLC. Plan is to grow the company, headed by President/CEO Merrick Alpert. TGM celebrated its 20th anniversary last year.

Turbine Energy Solutions, LaPorte, Tex, is launched by Ron Natole. TES essentially is a much larger version of Natole's former business, Natole Turbine Enterprises. Parts currently in stock include GE 5001L/R, 6001B/E, and 7001 B/E combustion liners, transition pieces, IGV kits, R1-R3 (no R3 for Frame 5) turbine buckets, nozzle assemblies, and shroud blocks; W191 fuel nozzles, combustor baskets, transitions, R1-R5 turbine blades, R1 and R2 diaphragms; W501B/D R2-R4 turbine blades and R2 vane segments. Sales manager is Melody Manning (sales@turbineenergysolutions.com, 281-470-9226).

GE Energy, Atlanta, ships its 1000th F-technology gas turbine in mid August from the company's Greenville (SC) plant to Saudi Arabia. The Model 7FA is one of four that will be installed as part of Saudi Electric Co's Riyadh Power Plant No. 8 expansion project. The installed fleet has surpassed 20-million hours of commercial operation. Dominion Resources installed the first F unit at its Chesterfield (Va) site in 1990.

Products/services update

Esco Tool, Medfield, Mass, introduces a welding end-prep tool that handles 1 1/2 in. ID to 8 3/8 in. OD pipe with one mandrel (photo). The Prepzilla Millhog®, available for sale or rent, can bevel any degree of angle on Super Duplex and other hard alloys. It is supplied as a complete kit with all clamp ribs and pads for the entire working range of the tool. Contact Matt Brennan, marketing director, at matt@escotool.com, 800-343-6926.

Ludeca Inc., Doral, Fla, introduces Optalign® smart, a new generation of laser shaft/coupling align-

ment systems for quick, accurate, and reliable maintenance work on rotating equipment. It allows you to design your own shaft alignment system, acquiring the exact features you need, and simply adding more capabilities as job demands grow or when your budget allows it. Remember that proper alignment saves bearings, mechanical seals, couplings, and gears. Contact Alan Luedeking at 305-591-8935.

GT user symposium

ASME International Gas Turbine Institute, Atlanta, co-locates its 2007 Gas Turbine Users Symposium at Power-Gen International, December 11-13, at the Ernest N Morial Convention Center in New Orleans.

Symposium provides a forum for users to exchange ideas and share best practices regarding O&M. Panel discussions and roundtables are a hallmark of this conference. Visit www.asmeconferences.org/gtus07 for details.

Reader comments

Joe Broadwater, operations supervisor, Mustang Station, Denver City, Tex, sent a note to say that we wrongly attributed his plant's 2007 Best Practices submission, "Alternative water supply for lube-oil, generator

coolers," to Morgan Energy Center (1Q/2007, p 24). Likewise, we attributed Morgan's submittal, "Inlet bleed heat," p 33, to Mustang Station. Our apologies to both plants.

David G Daniels, Mechanical & Materials Engineering, Austin, Tex, one of the industry's top water experts, wrote to point out that in the Best Practices Awards section of 1Q/2007, p 29, the staff of Termovale Power Plant recommends laying up heat-recovery steam generators with 200 ppm of hydrazine.

On p 46 of the same issue, Jim Witherow, executive chemist, Sciencetech LLC, Clearwater, Fla, gave the opposite recommendation: "Plants with all-ferrous systems. . . should not feed reducing agents, most specialists agree, because they've been found to be a culprit in single-phase FAC."

Daniels said that the excessive amount of hydrazine, injected while Termovale is off-line, would be resident in the HRSG each time it started, accelerating FAC damage. He added that the "thick magnetite" layer mentioned in the third bullet point of the "Results" section of the submittal is not the positive the plant staff assumes. Rather, it is a clear indication of FAC upstream in the boiler. The "200-ppm hydrazine, pH 10" lay-up practice, Daniels cautioned, should never be applied to an HRSG.

Septimus van der Linden, president, Brulin Associates LLC, Chesterfield, Va, commented on the 1Q/2007 CTOTF report, p 73. He said, ". . . it becomes evident that the market-share leader does not pay attention to the fundamentals to insure quality, or to fully verify components under full operating and cyclic conditions. Certification, as done for aircraft engines, would lead to better-performing machines when delivered, rather than "bench testing" on the customer's site.

"Siemens and Alstom, as well as MHI, having been down that path, recognized the need to install units at their factories to fully evaluate design modifications and performance impact. The end user might potentially pay more for the GT and auxiliaries, but in the long term would be reducing or eliminating the issues documented in the CTOTF report.



Welding end-prep tool



Laser shaft/coupling alignment system

“The data collected by SPS indicate that maturity for the F class has not yet arrived, in spite of the market leader’s long dominant role. It certainly could benefit from a fully instrumented factory test and verification unit to avoid the multiple variations reported in dealing with one particular issue. It would be interesting to get user and readership feedback requiring OEMs to demonstrate mods before field installation. This could be very insightful and helpful to the industry.”

Every combined-cycle plant should have this book

Steam turbines for modern fossil fuel power plants, Dr Alexander S Leyzerovich, The Fairmont Press Inc, hardcover, 6 x 9 in., 537 pages, \$110 plus shipping, ISBN 0-88173-548-5. Available online from AEE Books, Liburn, Ga, www.aeecenter.org, order code: 0590.

“Lean and mean” O&M staffs is today’s business model for combined-cycle plants. It is not unusual to find personnel rosters for 2 x 1, nominal 500-MW systems showing fewer than two dozen names. With fuel accounting for about 80% of the life-cycle cost of these facilities, you have to wonder why owners wouldn’t invest more in personnel to corral Btus not doing useful work. It certainly seems “penny wise and pound foolish.”

But the reality is that reinforce-

ments are not on the way and O&M staffs face mounting challenges as operating hours and numbers of starts accrue. Interesting, too, is the focus of plant personnel on the gas turbines. That makes some sense: If the GTs are not operating the entire combined-cycle plant is shut down. However, if the Rankine cycle is out of commission, the plant also is unable to operate. Virtually all combined-cycle plants are not licensed for simple-cycle service.

Assuming the GTs and heat-recovery steam generators are fit for duty, the key to reliable and efficient combined-cycle operation is the steam turbine and its associated auxiliaries, which includes turbine bypass and steam-temperature matching systems.

Unfortunately, the majority of combined-cycle plants do not have personnel on staff expert in steam-turbine design, operation, and maintenance. These machines historically have been so reliable, they often are taken for granted. This can be a huge mistake. One reason is that combined-cycle steam turbines face far more demanding operating conditions—such as rapid startups, rapid load ramps, intermittent operation, etc—than their counterparts in nuclear and coal-fired stations.

This is why every combined-cycle plant should have at least one copy of Alex Leyzerovich’s new book available for ready reference. It will help answer your initial questions when a problem arises and put you on the

path to a solution.

If you don’t know of Leyzerovich and have not read some of his earlier books on steam turbines (“Large power steam turbines: Design and operation” and “Wet-steam turbines for nuclear power plants,” both published by PennWell Corp, Tulsa) you may need this book even more. He is a true expert on the subject and well respected in the industry for his knowledge of “steamers.”

About one-third of Leyzerovich’s new work is a valuable backgrounder in steam-turbine design, one-third is devoted to transient and cycling operation, and the remainder focuses on diagnostic monitoring and support for operations personnel. It could very well become the “bible” for plant engineers and operations supervisors.

Hundreds of references are cited, so if digging deep to solve a problem is necessary, you have a handy list of information resources, plus a who’s who of steam-turbine experts worldwide. The book also offers about 200 illustrations, including many detail drawings.

If Leyzerovich’s work has a shortcoming, it may be in the quality of some graphics (conversion from color to a black-and-white presentation coupled with size reduction can “muddy” some detail) and the lack of callouts on the illustrations. However, this book is not meant for casual reading and capable users certainly should be able to “figure out” what they have to know. CCJ

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