D11 HP/IP Enhanced Steam Path

Today’s energy market has placed increased importance on generation from combined cycle power plants. Unit availability and component reliability of the steam turbine fleet are key focus areas for owners. In addition, many of these units have seen significant start/stop cycles which can lead to greater than normal distortion, wear and performance deterioration. A number of Technical Information Letters (TILs) have been issued to address concerns with various components of the High Pressure and Intermediate Pressure turbine sections of these units. These TILs address diaphragm dishing as well as shell and N2 packing head cracking. Bowing of rotors is an additional concern. Careful outage planning is required to ensure that addressing these concerns does not significantly impact maintenance costs, return to service dates or long term performance and reliability.

GE has a suite of solutions to address the HP/IP issues affecting the D11 steam turbine fleet. The Enhanced Steam Path may be an attractive alternative to a full section replacement in cases where HP/IP shell condition is not a major concern.

Improved Reliability & Performance
Reduced downtime for inspections, reduced risk of unplanned outages, and increased unit performance are the value drivers of the Enhanced Steam Path retrofit. The offering addresses several open TILs with a pre-engineered solution, eliminating the need for inspection of those existing components and the risk of emergent repairs which can impact outage cost and duration. The modern steam path and enhanced sealing features also provide improved thermal efficiency for increased MW output and reduced plant heat rate.

Features
• Advanced Singlet high efficiency diaphragms
• New bucketed rotor with Integral cover buckets
• Modern N2 packing head
• Enhanced sealing features including abradable coatings and brush seals
• New steam path can be designed to accommodate uprate of the combined cycle plant
• Components designed to fit in the existing HP/IP shell
• Option to incorporate Opflex™ Agility & a shell warming system

Benefits
• Eliminates the risk of outage extension for repairs to the HP/IP steam path
• Extends turbine life with new rotor and diaphragms
• Delivers up to 2.2% increase in steam turbine output (in the same bottoming cycle) from recovery of aging losses and improved technology
• Provides improved combined cycle heat rate
• Improves sustained performance
• Starting and loading improvements

Application
This upgrade is available for D11 steam turbines operating at 60 Hz.

To learn more about this offering, contact your GE sales representative or visit powergen.gepower.com.