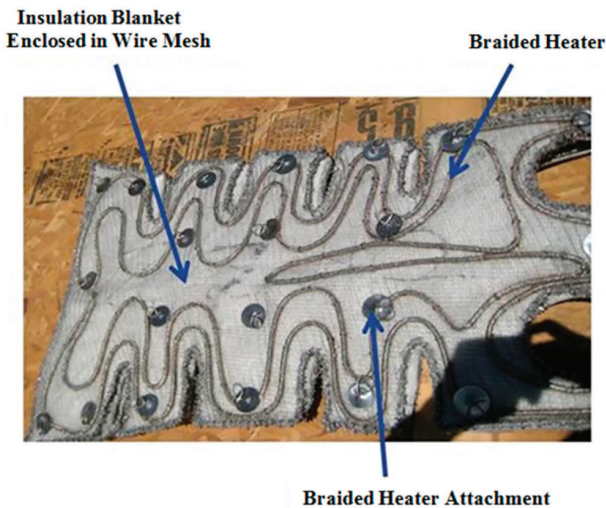




# Shell Warming System

The shell warming system delivers a significant reduction in start times and rub induced vibration events while enabling longer sustained HP/IP section efficiencies. 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. Based on GE's D11 fleet experience, minimizing top-to-bottom shell temperature differentials greatly reduces the likelihood of rub induced vibration events.



Through domain knowledge regarding unit operation and component design GE has developed a robust system to allow customers the flexibility during start-up by ensuring temperature uniformity across shells. This upgrade is intended for the HP/IP shell (single shell configuration), and is designed to enable the unit to maintain a set temperature for the turbine shell and reduce transient shell deflections, targeting reduced seal wear corresponding to longer sustained HP/IP section efficiencies. When combined with GE Agility™ offering, there will be added benefit in reduction of start times (cold, warm, and hot).

## Product Description

The offering consists of a heating blanket system, junction boxes, cabling, thermocouples, and a stand-alone control system. As a separate customer option, the system can also be connected to plant DCS for all the automated control functions in replacement of stand-alone control system. This integration will typically be performed by the customer with instructions provided by the thermal blanket system supplier.

## Features

- Insulated heating blanket system
- Junction boxes
- Cabling and thermocouples
- Stand-alone control system

## Benefits

- Faster start up times (e.g. 0.5 – 1 hour reduction)
- Works with OpFlex™
- Longer sustained HP/IP section efficiencies
- Reduces likelihood of rub induced vibration events

## Applicability

GE 50 Hz or 60 Hz single shell steam turbines

To learn more about this offering, contact your GE sales representative or visit [powergen.gepower.com](http://powergen.gepower.com).