

## Human Machine Interface Systems

Using original operator interfaces running on outdated, discontinued equipment and unsupported operating systems dramatically reduces reliability and increase maintenance costs. Limited hard drive space, inadequate diagnostic functions, archaic or proprietary communication protocols and difficult/complex procedures for basic changes are just some of the issues that add to the difficulty of working with these original systems. NERC cybersecurity compliance is also not possible with older operating systems because security updates are no longer supported.

## TMOS - Maximum Performance / Minimal Hassle

Turbine Monitoring System (TMOS) is a replacement Human Machine Interface (HMI) for existing and new turbine operator interface systems, and can also be used on the balance of plant (BOP) control system interfaces for most gas and steam turbine applications. Designed to provide ease of operation and flexibility, TMOS provides robust reliability on modern off the shelf hardware.

In the case of GE <I> or Cimplicity <HMI> operator interface systems, the TMOS is a simple and quick “plug and play” replacement for single unit systems and can be used to dramatically simplify multi-unit systems while bringing complete operator interface system redundancy. TMOS allows for the migration of the existing screens from original system, allowing the operator to use familiar screens on TMOS. The operators can then learn the additional new TMOS graphical displays which are also provided at their own pace.

Installation of TMOS DOES NOT require a Mark V firmware (PROM) upgrade OR a gas turbine outage. All the functions previously performed on the old machine interfaces are available on the TMOS with significant new features provided.



## Features

- Improved and user-friendly interface. Fast access to instrument or tag related documents directly from an animated display.
- Drag-and-drop signals from animated display to graphical display (TrendViewer) for easy and fast trends set up.
- Multiple animated displays can be viewed simultaneously.
- Direct access to Mark V ladder logic with powerful search capabilities.
- Mark V signals, Alarms, Diagnostics, Events and SOE historian function is standard in the base offering. Important data can be recalled at any time.
- Connection and integration with other turbine monitoring systems is supported by the TMOS system. Supported systems include those using Modbus Master and Slave, OPC DA 3.0 and AE server.
- TMOS is <C> core friendly and DOES NOT load up the Mark V communication core like the Cimplicity <HMI> system does. The standard TrendViewer graphical package is used to trend and analyze both historical and real-time analog and digital data.
- Mark V software or I/O changes can be automatically applied to TMOS SCADA just by updating the specific files, no project recompilation is required.
- TMOS can be installed in parallel with an existing <I> or <HMI>.

