GE Energy

Mark VI Industrial Steam Turbine Control Application Overview

GEI-100473A

This document is distributed for informational purposes only. It is not to be construed as creating or becoming part of any General Electric Company contractual or warranty obligation unless expressly stated in a written sales contract.

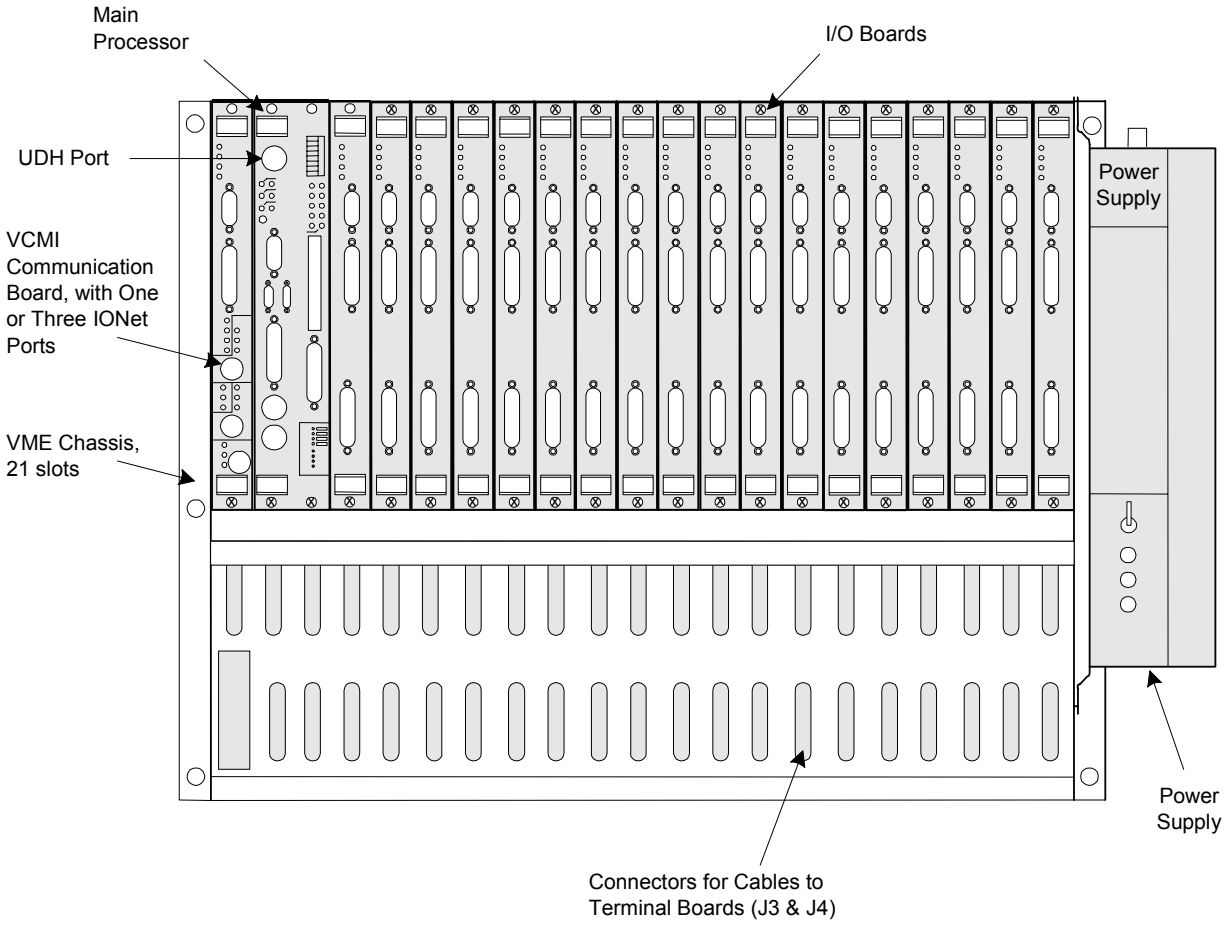
imagination at work

Control System

The GE Industrial Steam Turbine Control (ISTC) is part of the Mark VI turbine controls. The ISTC provides basic control functions. These functions can then be expanded in small increments for various levels of control, protection, and monitoring for the turbine, the auxiliary systems, and the driven load equipment (generator / compressor / pump).

The control can be expanded from a governor to a complete control, protection, and monitoring system.

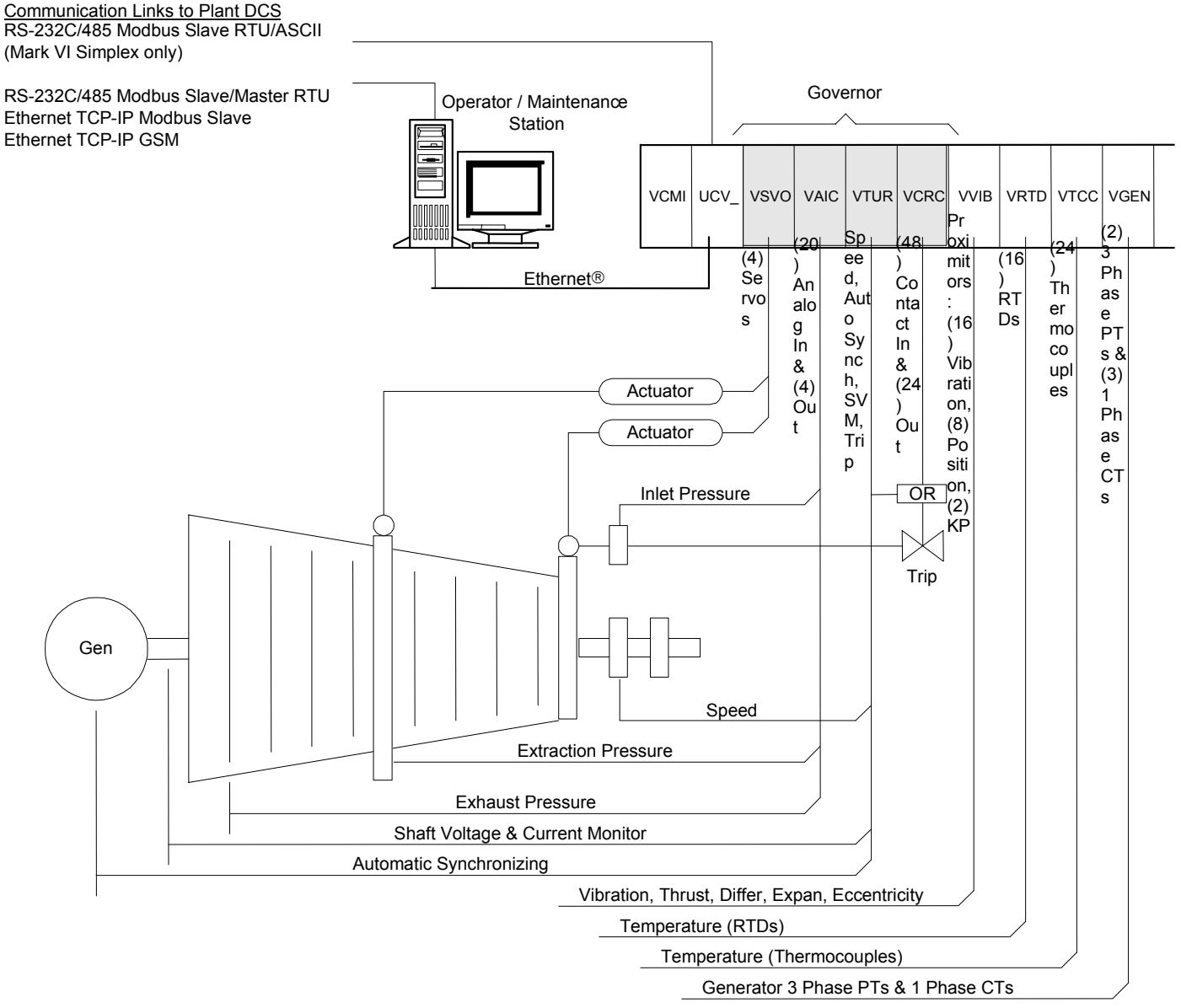
The control module consists of a processor board, communication board, and I/O boards mounted in a single 21-slot (VME type) rack. I/O boards are connected to individual terminal boards by computer-type cables with 37-pin, D-type connectors. The terminal boards have pluggable, barrier-type terminal blocks. I/O and terminal boards can be arranged in various combinations and added in the field for future expansion.



Mark VI Control Module

I/O Interface

The basic system consists of a small core of I/O for control of the speed/pressure governor and optional I/O, which can be added for protection or monitoring options. I/O circuitry is designed for direct interface to the sensors and actuators on the turbine to eliminate the need for interposing equipment with its resultant single-point failures, maintenance, and spare parts. The following diagram shows a typical I/O interface to a single automatic extraction steam turbine with I/O for the governor and some additional protection and monitoring.



Control System Overview