

ConocoPhillips Trainer Refinery

Entellisys™ Low-Voltage Switchgear

End User

ConocoPhillips
Trainer Refinery
Trainer, PA

Project Description

The Trainer Refinery project provided a clean fuel upgrade to the site. To ensure overall project success, GE was challenged to minimize plant downtime. The whole project had a 30-day turnaround, which was of critical importance to our customer.

Customer Needs

The customer needed a solution that provided advanced systems capabilities, flexibility to make changes at a later date, access to information that would solve reliability issues, and a commitment to meet the 30-day turnaround. Specific needs included:

- Provide safe remote operation for maintenance personnel, minimizing risks associated with arc flash.
- Allow equipment to be upgraded and changed easily at a later date as needs change.
- Maximize uptime and availability so that production can be maintained. Provide a SCADA interface for remote monitoring, control, trouble shooting and diagnostics.
- High resistance ground fault detection
- Flawless project execution in 30 days



Solution

GE provided the Entellisys™ Low-Voltage Switchgear system and other equipment to meet the needs defined by the customer. The GE Project Manager – a single point of contact – managed the order, manufacture processing and installation for this challenging project.

System Solution

- Entellisys Low-Voltage Switchgear
- Power/Vac Medium Voltage Switchgear
- Evolution Low-Voltage Motor Control Centers
- Transformers, Busway, Panelboards
- Full start-up and commissioning services

The specification of the Entellisys system included:

- 480V system with bus differential protection to detect and clear lower level arcing faults quickly, minimizing the arc flash energy while maintaining selectivity
- Dynamic zone selective interlocking (ZSI)
- Reduced Energy Let-Thru (RELT) mode to allow operators to easily implement temporary minimum pick up and maximum speed settings to limit let-thru energy prior to working near the equipment
- Remote Racking Device that allows operators to be outside of the arc flash zone when racking circuit breakers between positions
- An intuitive touch screen Near-Gear Human Machine Interface (HMI) for control, monitoring and diagnostics away from the lineup
- Waveform analysis tool to make it easier to identify and correct faults
- Remote monitoring, communication and event logging with alarms sent via email

