Fact Sheet

STEAG Energy Services
Power Plant Simulator Systems

STEAG Energy Services develops and supplies high-fidelity Simulator Systems for use as an effective tool for operator training and critical "what if" engineering analyses.

The practical applications of the Simulator system enable power plant operators to upgrade the skills of their work-force or study complex abnormal conditions and even design modification - ultimately ensuring better operation practices and enhanced profitability.

High Fidelity Simulators

STEAG's High Fidelity Simulators, developed using the ProTRAX toolkit - aim at providing real world experience during normal plant operation as well as invaluable "what if" experience in abnormal situations.

- Plant dynamics and control system functions - identical to the plant DCS/graphics.
- Start up, shutdown procedures
- Start up, shutdown & abnormal behavior
- Emergency and abnormal operations and failure handling
- Other customized complex operations

The Simulator is designed using the plant P&ID's and physical plant data, tuned with plant operating data, and then validated to meet ANSI/ISA-77.20 standards for steady state and transient behavior.

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ENERGY SERVICES

STEAG is an exclusive partner of TRAX International, USA - world leader in the delivery of realistic, plant specific Simulators for the supply of Simulators based on their well proven ProTRAX Simulation toolkit.

- Over 150 Simulators delivered worldwide, since 1987
- ProTRAX modeling tools include a comprehensive module library for all fossil plants and related subsystems: Drum boiler I supercritical once-through I circulating fluidized bed I combined cycle I IGCC hydro I reservoir systems I electrical system I auxiliaries

ProTRAX Runtime Executive

The feature-rich Runtime Executive enables scenario-based training, and allows users to dynamically create/invoke malfunctions, record/retain training results, and control the over all simulation. Special features:

- Realistic operator environment
- Available DCS configurations-Virtual, emulated, translated.
- Structured drag & drop modeling environment
- Intuitive instructor executive
- Training/runtime executive capabilities
- Proficiency - records & archives training session results
- Button overlay bar interface
- Session controls include:
- Run/freeze, fast/slow time, malfunction, snapshots, suspend/resume

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Simulator Configurations

DCS controls are integrated into each simulator, providing the same control behavior as in the actual plant. Supported solutions may vary by DCS supplier.

- Virtual - software hosting of actual DCS logic with supplier HMI
- Emulated - translated DCS logic with emulated DCS HMI or emulation of DCS logic in ProTRAX and DCS HMI using other tools
- Integrated solutions for all major DCS suppliers

Benefits of STEAG Simulators

- Train new & experienced operators
- Validate DCS logic and screens
- Increase operating plant efficiency
- Maximize plant availability

Selected Project References:

STEAG has a rich experience of supplying OTS with:

- Various power plant technologies such as (supercritical, sub critical, CCGT, oil fired, hydro and solar)
- Control logic & HMI of different DCS manufacturers

STEAG's experience includes following OTS to Indian and international clients:

- Coal-fired Simulator - (120 MW to 800 MW)
- Oil-fired plant Simulator (840 MW)
- Combined cycle plant (CCP) Simulator (440 MW, 430 MW & 116 MW)
- Hydro power plant Simulator (250 MW)
- Solar thermal parabolic trough Simulator (50 MW)