



Market OPS

System Operations Success Intl Preparing Energy Professionals for Tomorrow

As central power markets and power exchanges spread across the country, power marketers have discovered that energy pricing is affected in many ways. Overloaded transmission lines, line outages and unexpected generation facility outages can suddenly cause a large increase in energy cost. When these conditions occur, it is important for the merchants to understand the impacts.

SOS Intl's Market OPS training course provides power marketers the ability to learn how the grid works and then master situational awareness, decision-making and action in real time marketing operations on desktop PCs, laptops and over the internet.

Who Needs Market OPS?

Purchase-Selling Entities, Generation Owners, Generation Operators and Load Serving Entities are facing increasing challenges in the power industry and will benefit from the knowledge, skills and experience that can be gained from **Market OPS**.

What Will You Learn?

Through four main areas of study, **SOS Intl** offers a comprehensive course curriculum package:

Generation Management (EGM)

EGM brings students up to speed on how power is generated and distributed in North America:

- Intro to North American Generation Markets
- Fuel and Energy Source Characteristics
- Types of Power Plants
- Economic Dispatch
- Preparing a Daily Dispatch Plan

Balancing (EBAL)

EBAL displays the infrastructure and techniques used to keep the system operating and under control:

- NERC Balancing Structure and Principles
- Frequency Control
- Automatic Generation Control
- Reserve Monitoring and Scheduling

Interchange (EINT)

EINT introduces students to the process by which energy is exchanged and traded between local systems across North America:

- Open Access for North American Transmission Systems
- ATC Calculations
- Transmission Reservation and Tagging Operations

Fundamentals of Power Markets (FPM)

(in-depth description of FPM on the next page)

FPM helps students understand the role markets play in today's electricity industry, by instructing in the calculation and use of LMPs. Furthermore the coursework shows students how to uncover traps to save money and increase profits:

- Introduction to Central Markets
- Electricity Economics
- LMP Concepts
- LMP Situational Recognition

The Market OPS Experience

Market OPS is remarkably realistic. The curriculum trains students to recognize the cues and patterns that signal con-

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The Market OPS contains the following courses:

- Introduction to Power Simulator for Market Operations
- EOPS Generation Management
- EOPS Balancing
- EOPS Interchange
- Fundamentals of Power Markets

CREDITS AVAILABLE: 16 : CEH 16 : SIM 16 : EO

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NERC
NORTH AMERICAN ELECTRIC
RELIABILITY CORPORATION

SOS Intl. and NERC ID SOS_INTL_001 is recognized by the North American Electric Reliability Corporation as a continuing education provider who adheres to NERC Continuing Education Program Criteria.

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gestion and price spikes. By incorporating generic and actual historic crisis situations the simulation sensitizes students to potential market risks. When lines overload and costs skyrocket, **Market OPS** participants can re-play the events and learn to avoid them in the future.

Market OPS is a self-paced online training program designed for electricity industry professionals using simulation software and model driven animations with *PowerSimulator™*. Learning content is accessed over the web using a standard web-browser and tracked on the **SOS Intl** Learning Management System.

Computer-based simulators are invaluable training tools in countless situations, including electric utility trading. With **Market OPS** any power marketer can have access to training on one of today's leading-edge simulators.

Fundamentals of Power Markets (FPM) is a four hour online self-paced course within **Market OPS** and designed to familiarize marketers with the intricacies of power markets. **FPM** brings marketers up to speed on the principles of market design and trains students to take strong positions while minimizing risks. Students will learn to operate effectively in Locational Marginal Pricing systems by using two powerful tools: the **Market Training Simulator** and **PowerSimulator**.

Who Needs FPM?

FPM is a valuable educational resource for Generator Operators, Power Marketers, Load Serving Entities, Purchasing and Selling Entities and other industry professionals.

What Will You Learn in FPM?

Introduction to Power Markets

This module walks students through the Market Training Simulator while introducing several major concepts in Power Markets:

- Regulatory framework and market design
- Current trends in centrally dispatched markets
- New challenges utilities are facing.

Electricity Economics & Financial Hedges

This module presents the economic argument for centrally dispatch markets:

- Interaction of supply and demand in the electrical systems
- Connection of supply and demand to rapid price adjustments
- Financial hedging instruments

LMP Calculations

In this module you will learn to calculate LMPs manually and then use the MTS to predict prices throughout the system:

- Effects of transmission constraints on the optimal dispatch
- Benefits of well timed Demand Side Response programs.

Security Constrained Economic Dispatch

In this module you run a merit-order dispatch on the real-time system while monitoring system operational limits. Students will:

- Apply reliability action scripts to perform a generator re-dispatch
- Respond to ISO calls to ramp up or down units
- Perform processes to minimize costs while respecting system limits

The Market Training Simulator

FPM utilizes a fantastic advance in educational training: the **Market Training Simulator (MTS)**. This simulator runs a generic model that solves the algorithms present in today's central markets. The simulator's easy to use graphical user interface clearly shows the cues and patterns needed for sound decision making. The **MTS** is a fantastic tool for instructing the nuances of the modern Power Markets.

Why Fundamentals of Power Markets?

Today's Power Markets are complicated but with training and simulation they can be demystified. The state-of-the-art training in **FPM** shows you how to make strong positions to maximize profits and minimize risks.

In the modern power industry, the difference between a rookie and an incumbent can be many thousands of dollars in lost opportunities or profits, and **FPM** offers training that provides insight and expertise in the Power Markets field...

