

Active/Reactive Power

ACTIVITY TITLE: Active/Reactive Power

TARGET AUDIENCE: ☒ Transmission Operator ☒ Market Operator
☒ Reliability Operator ☒ Operations and Planning Eng
☒ Balancing & Interchange ☒ Supervisor/Manager/Support
☒ Generator Operator ☐ Other _____

NERC CEHs: Operating Topics CE Hours: 2.5
NERC Standards CE Hours: 0.0
Simulation CE Hours: 0.0
Professional Related CE Hours: 2.5

NERC EMERGENCY TRAINING HOURS: 2.5 hours

ACTIVITY SUBJECT MATTER: ☒ Basic Concepts ☐ Power System Restoration
☒ Power Transfer ☐ Market Operations
☐ System Protection ☐ Tools
☒ Interconnected Operation ☐ Operator Awareness
☐ Emergency Operations ☐ Policies and Procedures

DELIVERY SCHEDULE: Activity is expected to be delivered over a 2.75 hour period with 2.5 hours intended for material deliveries and activity exercises and .25 hours for activity assessment.

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A. ACTIVITY OVERVIEW

This course is intended for real-time system operators and support personnel operating on the Bulk Electric System who wish to expand their knowledge related to active and reactive power concepts. It is intended to provide attendees with the necessary knowledge for understanding power concepts and how it relates to the reliability of the power system. The activity addresses the fundamentals of phase angle, power angle and torque angle, equations for power transfer, and power transfer limits.

B. METHOD OF INSTRUCTION

The activity is expected to be delivered in an Instructor Led environment. The activity is expected to be delivered utilizing a PowerPoint presentation in conjunction with the various examples that are integrated into the material.

C. ACTIVITY OBJECTIVES

Upon completion of this training activity, the trainee shall be able to:

1. Identify Phase Angle, Power Angle and Torque Angle
2. Define equations for power transfer
3. Identify power transfer limits

D. ACTIVITY CONTENT

1. Active and Reactive Power
2. Power Transfer Equations
3. Power Transfer Limits

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E. ASSESSMENT VEHICLE

The activity assessment is accomplished through a multiple choice quiz that addresses the activity objectives and content.

F. MISCELLANEOUS ELEMENTS

None identified for this activity.

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