



Panel Session

IEC 61850 Solutions

Moderator: Dr. Alexander Apostolov

Why are we doing it?

- There are requirements for improving the quality, reliability and efficiency of PAC systems
- Quality: the standard of something as measured against other things of a similar kind.
- Reliability: the ability of an apparatus or system to consistently perform its intended function without degradation or failure.
- Efficiency: the extent to which a resource is used in order to effectively achieve an objective.

Why IEC 61850?

- Proven technology
- Tens of thousands of substation using IEC 61850 around the world
- 1600 digital substations based on IEC 61850 in China

New NERC Standard



Standard PRC-042-01.1a — Transmission, Distribution and Generation Protection Design

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A. Introduction

1. Title: Transmission, Distribution and Generation Protection Design

2. Number: PRC-042-01.1a

3. Purpose: To ensure all transmission, distribution and generation Protection Systems affecting the reliability of the Bulk Electric System (BES) are designed and implemented based on IEC 61850 GOOSE messages.

4. Applicability

4.1. Transmission Owner.

4.2. Generator Owner.

4.3. Distribution Provider that owns a transmission Protection System.

5. Effective Date: In those jurisdictions where regulatory approval is required, all requirements become effective upon approval. In those jurisdictions where no regulatory approval is required, all requirements become effective upon Board of Trustee's adoption or as otherwise made effective pursuant to the laws applicable to such ERO governmental authorities.

B. Requirements

R1. Each Transmission Owner and any Distribution Provider that owns a transmission Protection System and each Generator Owner that owns a generation or generator interconnection Facility Protection System shall have a Protection System designed and implemented based on IEC 61850 GOOSE messages replacing all hard wired interfaces.

Presenters

- Alternative Solution to Implement Digital Substation Technology - Greg Rzepka - SEL
- Business Case and Standards for Routable GOOSE - Mark Adamiak – GE
- Process Bus Experiences Internationally – Peter Rietmann - ABB