

### A. Introduction

1. **Title:** Subsynchronous Resonance (SSR) Requirement

2. **Number:** MTPL-007-0

3. **Purpose:**

System simulations and system assessments are needed periodically to ensure that subsynchronous resonance is avoided in the Midwest Reliability Organization (MRO)

4. **Applicability**

4.1. Planning Authority

4.2. Transmission Planner

5. **(Proposed) Effective Date:** January 1, 2006

### B. Requirements

**R1.** The Planning Authority and Transmission Planner shall each demonstrate through a valid assessment that all series capacitors or other system additions or enhancements that are added to their portion of the interconnected system that have the potential to excite subsynchronous oscillations are planned, designed, and constructed to avoid creating a subsynchronous resonance condition. To be valid, the Planning Authority and Transmission Planner assessments shall be made prior to the in-service date of the series capacitor or other system additions or enhancements and as required by changes in the interconnected system (e.g. addition of new turbine-generator).

**R2.** Conduct initial studies (such as frequency scanning) to demonstrate that there is no evidence of a subsynchronous resonance (SSR) condition for all turbine-generators that are electrically close to the series capacitor or other system additions or enhancements.

**R3.** Conduct detailed studies (such as frequency scanning, eigenvalue analysis or electromagnetic transient simulation) if results from MTPL-007\_R1.2 indicate evidence of a SSR condition. The most accurate data available from the generator manufacturer and from field tests shall be provided to confirm the condition.

**R4.** When assessments confirm a SSR condition as prescribed in Reliability Standard MTPL-007-0 \_R1, the Planning Authority and Transmission Planner shall each provide a written summary of its plans to achieve the required system performance, such as installing a SSR countermeasure, to the MRO.

**R5.** The Planning Authority and Transmission Planner shall each document the results of its subsynchronous resonance assessments and mitigation plans and shall provide the results to the Midwest Reliability Organization within thirty (30) days upon completion of the assessment.

### C. Measures

**M1.** The Planning Authority and Transmission Planner shall have a valid SSR assessment and mitigation plan as specified in MTPL-007-0 \_R1 and MTPL-007-0\_R2.

**M2.** The Transmission Planner and Planning Authority shall have evidence it reported documentation of results of its SSR assessment and mitigation plan per Reliability Standard MTPL-007-0\_R3.

**D. Compliance**

**1. Compliance Monitoring Process**

**1.1. Compliance Monitoring Responsibility**

Midwest Reliability Organization

**1.2. Compliance Monitoring Period and Reset Timeframe**

On request (within 30 calendar days)

**1.3. Data Retention**

None specified

**1.4. Additional Compliance Information**

None

**2. Levels of Non-Compliance**

**2.1. Level 1:** A SSR assessment and mitigation plan were provided as requested, but were incomplete.

**2.2. Level 2:** A valid SSR assessment and mitigation plan was not provided.

**2.3. Level 3:** Not applicable

**2.4. Level 4:** Not applicable

**Version History**

<b>Version</b>	<b>Date</b>	<b>Action</b>	<b>Change Tracking</b>