A. Introduction

1. **Title:** **Power System Stabilizer (PSS)**

2. **Number:** VAR-501-WECC-MX-0

3. **Purpose:** To ensure that Power System Stabilizers (PSS) on synchronous generators shall be kept in service.

4. **Applicability**

   4.1. Generator Operators

5. **Effective Date:** January 1, 2014

B. Requirements

R1. Generator Operators shall have PSS in service 98% of all operating hours for synchronous generators equipped with PSS. Generator Operators may exclude hours for R1.1 through R1.12 to achieve the 98% requirement.

   R1.1. The synchronous generator operates for less than five percent of all hours during any calendar quarter.

   R1.2. Performing maintenance and testing up to a maximum of seven calendar days per calendar quarter.

   R1.3. PSS exhibits instability due to abnormal system configuration.

   R1.4. Unit is operating in the synchronous condenser mode (very near zero real power level).

   R1.5. Unit is generating less power than its design limit for effective PSS operation.

   R1.6. Unit is passing through a range of output that is a known "rough zone" (range in which a hydro unit is experiencing excessive vibration).

   R1.7. The generator AVR is not in service.

   R1.8. Due to component failure, the PSS may be out of service up to 60 consecutive days for repair per incident.

   R1.9. Due to a component failure, the PSS may be out of service up to one year provided the Generator Operator submits documentation identifying the need for time to obtain replacement parts and if required to schedule an outage.

   R1.10. Due to a component failure, the PSS may be out of service up to 24 months provided the Generator Operator submits documentation identifying the need for time for PSS replacement and to schedule an outage.

   R1.11. The synchronous generator has not achieved Commercial Operation.

R1.12. The Transmission Operator directs the Generator Operator to operate the synchronous generator, and the PSS is unavailable for service.

C. Measures

M1. Generators Operators shall provide quarterly reports to the Compliance Monitor and have evidence for each synchronous generator of the following:

M1.1 The number of hours the synchronous generator was on line.

M1.2 The number of hours the PSS was out of service with generator on line.

M1.3 The PSS in service percentage

M1.4 If excluding PSS out of service hours as allowed in R1.1 through R1.12, provide:

M1.4.1 The number of hours excluded, and

M1.4.2 The adjusted PSS in-service percentage

M2. If excluding hours for R1.1 through R1.12, provide:

M2.1 The date of the outage

M2.2 Supporting documentation for each requirement that applies

D. Compliance

1. Compliance Monitoring Process

1.1 Compliance Monitoring Responsibility

Regional Reliability Organization.

1.2 Compliance Monitoring Period

The Compliance Monitor may use one or more of the following methods to assess compliance:

- Reports submitted quarterly

- Spot check audits conducted anytime with 30 days notice

- Periodic audit as scheduled by the Compliance Monitor

- Investigations

- Other methods as provided for in the Compliance Monitoring Program

The Reset Time Frame shall be a calendar quarter.

1.3 Data Retention

The Generator Operators shall keep evidence for Measures M1. and M2. for three years plus current year, or since the last audit, whichever is longer.

1.4 Additional Compliance Information

1.4.1 If any of R1.2 through R1.12 continues from one quarter to another, the number of days accumulated will be the contiguous calendar days from the beginning of the incident to the end of the incident. For example, in R1.8 if the 60 day repair period goes beyond the end of a quarter, the repair period does not reset at the beginning of the next quarter.

1.4.2 When calculating the adjusted in-service percentage, the PSS out of service hours do not include the time associated with R1.1 through R1.12.

1.4.3 The standard shall be applied on a generating unit by generating unit basis.

Version History

Version	Date	Action	Change Tracking