

**Exhibit A**

**VAR-002-WECC-2—Automatic Voltage Regulators**

**And**

**VAR-501-WECC-2—Power System Stabilizer**

**VAR-002-WECC-2—Automatic Voltage Regulators (Clean)**

**A. Introduction**

1. **Title:** Automatic Voltage Regulators (AVR)
2. **Number:** VAR-002-WECC-2
3. **Purpose:** To ensure that Automatic Voltage Regulators on synchronous generators and condensers shall be kept in service and controlling voltage.
4. **Applicability:**
  - 4.1. **Functional Entities:**
    - 4.1.1 Generator Operators
    - 4.1.2 Transmission Operators that operate synchronous condensers
    - 4.1.3 This VAR-002-WECC-2 Standard applies to synchronous generators and synchronous condensers that are connected to the Bulk Electric System
5. **Effective Date:**

On the first day of the first quarter, after applicable regulatory approval.

**B. Requirements and Measures**

- R1. Generator Operators and Transmission Operators shall have AVR in service and in automatic voltage control mode 98% of all operating hours for synchronous generators or synchronous condensers. Generator Operators and Transmission Operators may exclude hours for R1.1 through R1.10 to achieve the 98% requirement. [*Violation Risk Factor: Medium*] [*Time Horizon: Operations Assessment*]
  - R1.1. The synchronous generator or synchronous condenser 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. AVR exhibits instability due to abnormal system configuration.
  - R1.4. Due to component failure, the AVR may be out of service up to 60 consecutive days for repair per incident.
  - R1.5. Due to a component failure, the AVR may be out of service up to one year provided the Generator Operator or Transmission Operator submits documentation identifying the need for time to obtain replacement parts and if required to schedule an outage.
  - R1.6. Due to a component failure, the AVR may be out of service up to 24 months provided the Generator Operator or Transmission Operator submits documentation identifying the need for time for excitation system replacement (replace the AVR, limiters, and controls but not necessarily the power source and power bridge) and to schedule an outage.

- R1.7.** The synchronous generator or synchronous condenser has not achieved Commercial Operation.
- R1.8.** The Transmission Operator directs the Generator Operator to operate the synchronous generator, and the AVR is unavailable for service.
- R1.9.** The Reliability Coordinator directs Transmission Operator to operate the synchronous condenser, and the AVR is unavailable for service.
- R1.10.** If AVR exhibits instability due to operation of a Load Tap Changer (LTC) transformer in the area, the Transmission Operator may authorize the Generator Operator to operate the excitation system in modes other than automatic voltage control until the system configuration changes.
- M1.** Generator Operators and Transmission Operators shall provide quarterly reports to the compliance monitor and have evidence for each synchronous generator and synchronous condenser of the following:
  - M1.1** The actual number of hours the synchronous generator or synchronous condenser was on line.
  - M1.2** The actual number of hours the AVR was out of service.
  - M1.3** The AVR in service percentage.
  - M1.4** If excluding AVR out of service hours as allowed in R1.1 through R1.10, provide:
    - M1.4.1** The number of hours excluded,
    - M1.4.2** The adjusted AVR in-service percentage,
    - M1.4.3** The date of the outage.

## **C. Compliance**

### **1. Compliance Monitoring Process**

#### **1.1 Compliance Monitoring Responsibility**

Compliance Enforcement Authority

#### **1.2 Compliance Monitoring Period**

Compliance Enforcement Authority 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 Enforcement Authority
- Investigations
- Other methods as provided for in the Compliance Monitoring Enforcement Program

The Reset Time Frame shall be a calendar quarter.

**1.3 Data Retention**

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

**1.4 Additional Compliance Information**

**1.4.1** The sanctions shall be assessed on a calendar quarter basis.

**1.4.2** If any of R1.2 through R1.9 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 R1.4 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.

**1.4.3** When calculating the in-service percentages, do not include the time the AVR is out of service due to R1.1 through R1.10.

**1.4.4** The standard shall be applied on a machine-by-machine basis (a Generator Operator or Transmission Operator can be subject to a separate sanction for each non-compliant synchronous generator and synchronous condenser).

**E. Regional Differences**

None

**F. Interpretations**

None

**G. Associated Documents**

None

**Table of Compliance Elements**

R	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
<b>R1</b>	Operational Assessment	Medium	There shall be a Lower Level of non-compliance if AVR is in service less than 98% but at least 90% or more of all hours during which the synchronous generating unit or synchronous condenser is on line for each calendar quarter.	There shall be a Moderate Level of non-compliance if AVR is in service less than 90% but at least 80% or more of all hours during which the synchronous generating unit or synchronous condenser is on line for each calendar quarter.	There shall be a High Level of non-compliance if AVR is in service less than 80% but at least 70% or more of all hours during which the synchronous generating unit or synchronous condenser is on line for each calendar quarter.	There shall be a Severe Level of non-compliance if AVR is in service less than 70% of all hours during which the synchronous generating unit or synchronous condenser is on line for each calendar quarter.

**VAR-002-WECC-2-Automatic Voltage Regulators (Redline)**

## A. Introduction

1. **Title:** Automatic Voltage Regulators (AVR)
2. **Number:** VAR-002-WECC-~~1~~2
3. **Purpose:** To ensure that Automatic Voltage Regulators on synchronous generators and condensers shall be kept in service and controlling voltage.
4. **Applicability:**

### 4.1. Functional Entities:

~~4.1.1~~ ~~4.1.~~ Generator Operators

~~4.2.~~ ~~4.1.2~~ Transmission Operators that operate synchronous condensers

~~4.3.~~ ~~4.1.3~~ This VAR-002-WECC-~~1~~2 Standard ~~only~~ applies to synchronous generators and synchronous condensers that are connected to the Bulk Electric System.

### 5. Effective Date:

~~5.~~ ~~Effective Date:~~ On the first day of the first quarter, after applicable regulatory approval.

## B. Requirements and Measures

- R1.** Generator Operators and Transmission Operators shall have AVR in service and in automatic voltage control mode 98% of all operating hours for synchronous generators or synchronous condensers. Generator Operators and Transmission Operators may exclude hours for R1.1 through R1.10 to achieve the 98% requirement. [*Violation Risk Factor: Medium*] [*Time Horizon: Operations Assessment*]
- R1.1.** The synchronous generator or synchronous condenser 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.** AVR exhibits instability due to abnormal system configuration.
- R1.4.** Due to component failure, the AVR may be out of service up to 60 consecutive days for repair per incident.
- R1.5.** Due to a component failure, the AVR may be out of service up to one year provided the Generator Operator or Transmission Operator submits documentation identifying the need for time to obtain replacement parts and if required to schedule an outage.
- R1.6.** Due to a component failure, the AVR may be out of service up to 24 months provided the Generator Operator or Transmission Operator submits documentation identifying the need for time for excitation system replacement (replace the AVR, limiters, and controls but not necessarily the power source and power bridge) and to schedule an outage.



- R1.7. The synchronous generator or synchronous condenser has not achieved Commercial Operation.
- R1.8. The Transmission Operator directs the Generator Operator to operate the synchronous generator, and the AVR is unavailable for service.
- R1.9. The Reliability Coordinator directs Transmission Operator to operate the synchronous condenser, and the AVR is unavailable for service.
- R1.10. If AVR exhibits instability due to operation of a Load Tap Changer (LTC) transformer in the area, the Transmission Operator may authorize the Generator Operator to operate the excitation system in modes other than automatic voltage control until the system configuration changes.

~~R2. Generator Operators and Transmission Operators shall have documentation identifying the number of hours excluded for each requirement in R1.1 through R1.10. [Violation Risk Factor: Low] [Time Horizon: Operations Assessment]~~

### ~~C. Measures~~

- M1. Generator Operators and Transmission Operators shall provide quarterly reports to the compliance monitor and have evidence for each synchronous generator and synchronous condenser of the following:
  - M1.1 The actual number of hours the synchronous generator or synchronous condenser was on line.
  - M1.2 The actual number of hours the AVR was out of service.
  - M1.3 The AVR in service percentage.
  - M1.4 If excluding AVR out of service hours as allowed in R1.1 through R1.10, provide:
    - M1.4.1 The number of hours excluded, ~~and~~
    - M1.4.2 The adjusted AVR in-service percentage. ~~2~~
- ~~M2. If excluding hours for R1.1 through R1.10, provide the 1.4.3 The date of the outage, ~~the number of hours out of service, and supporting documentation for each requirement that applies.~~~~

### ~~D. C. Compliance~~

#### ~~1.1. Compliance Monitoring Process~~

##### ~~1.1.1 Compliance Monitoring Responsibility~~

Compliance Enforcement Authority

##### ~~1.2.1.2 Compliance Monitoring Period~~

Compliance Enforcement Authority may use one or more of the following methods to assess compliance:

~~2~~ Reports submitted quarterly

- Spot check audits conducted anytime with 30 days notice
  - Periodic audit as scheduled by the Compliance Enforcement Authority
  - Investigations
  - Other methods as provided for in the Compliance Monitoring Enforcement Program
- The Reset Time Frame shall be a calendar quarter.

### **1.3-1.3 Data Retention**

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

### **1.4-1.4 Additional Compliance Information**

~~1.4.1~~ 1.4.1 The sanctions shall be assessed on a calendar quarter basis.

~~1.4.2~~ 1.4.2 If any of R1.2 through R1.9 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 R1.4 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.

~~1.4.3~~ 1.4.3 When calculating the in-service percentages, do not include the time the AVR is out of service due to R1.1 through R1.10.

~~1.4.4~~ 1.4.4 The standard shall be applied on a machine-by-machine basis (a Generator Operator or Transmission Operator can be subject to a separate sanction for each non-compliant synchronous generator and synchronous condenser).

## **~~2. Violation Severity Levels for R1~~**

~~2.1. Lower:~~ There shall be a Lower Level of non-compliance if the following condition exists:

~~2.1.1. AVR is in service less than 98% but at least 90% or more of all hours during which the synchronous generating unit or synchronous condenser is on line for each calendar quarter.~~

~~2.2. Moderate:~~ There shall be a Moderate Level of non-compliance if the following condition exists:

~~2.2.1. AVR is in service less than 90% but at least 80% or more of all hours during which the synchronous generating unit or synchronous condenser is on line for each calendar quarter.~~

~~2.3. High:~~ There shall be a High Level of non-compliance if the following condition exists:

~~2.3.1. AVR is in service less than 80% but at least 70% or more of all hours during which the synchronous generating unit or synchronous condenser is on line for each calendar quarter.~~

~~2.4. Severe:~~ There shall be a Severe Level of non-compliance if the following condition exists:

~~2.4.1.~~ AVR is in service less than 70% of all hours during which the synchronous generating unit or synchronous condenser is on line for each calendar quarter.

~~3. Violation Severity Levels for R2~~

~~3.1. Lower:~~ There shall be a Lower Level of non-compliance if documentation is incomplete with any requirement R1.1 through R1.10.

~~3.2. Moderate:~~ There shall be a Moderate Level of non-compliance if the Generator Operator does not have documentation to demonstrate compliance with any requirement R1.1 through R1.10.

~~3.3. High:~~ Not Applicable

~~3.4. Severe:~~ Not Applicable

**E. Regional Differences**

~~Version History — Shows Approval History and Summary of Changes in the Action Field~~

<del>Version</del>	<del>Date</del>	<del>Action</del>	<del>Change Tracking</del>
<del>1</del>	<del>April 16, 2008</del>	<del>Permanent Replacement Standard for VAR-STD-002a-1</del>	
<del>1</del>	<del>April 21, 2011</del>	<del>FERC Order issued approving VAR-002-WECC-1 (approval effective June 27, 2011)</del>	

~~\* FOR INFORMATIONAL PURPOSES ONLY \*~~

~~Enforcement Dates: Standard VAR-002-WECC-1 — Automatic Voltage Regulators (AVR) (WECC)~~

~~United States~~

<del>Standard</del>	<del>Requirement</del>	<del>Enforcement Date</del>	<del>Inactive Date</del>
<del>VAR-002-WECC-1</del>	<del>All</del>	<del>07/01/2011</del>	

~~None~~

~~E. Interpretations~~

~~None~~

~~G. Associated Documents~~

~~None~~

**Table of Compliance Elements**

<b><u>R</u></b>	<b><u>Time Horizon</u></b>	<b><u>VRP</u></b>	<b><u>Violation Severity Levels</u></b>			
			<b><u>Lower VSL</u></b>	<b><u>Moderate VSL</u></b>	<b><u>High VSL</u></b>	<b><u>Severe VSL</u></b>
<b><u>R1</u></b>	<b><u>Operational Assessment</u></b>	<b><u>Medium</u></b>	There shall be a <u>Lower Level of non-compliance if AVR is in service less than 98% but at least 90% or more of all hours during which the synchronous generating unit or synchronous condenser is on line for each calendar quarter.</u>	There shall be a <u>Moderate Level of non-compliance if AVR is in service less than 90% but at least 80% or more of all hours during which the synchronous generating unit or synchronous condenser is on line for each calendar quarter.</u>	There shall be a <u>High Level of non-compliance if AVR is in service less than 80% but at least 70% or more of all hours during which the synchronous generating unit or synchronous condenser is on line for each calendar quarter.</u>	There shall be a <u>Severe Level of non-compliance if AVR is in service less than 70% of all hours during which the synchronous generating unit or synchronous condenser is on line for each calendar quarter.</u>

**VAR-501-WECC-2—Power System Stabilizer (Clean)**

**A. Introduction**

1. **Title:** Power System Stabilizer (PSS)
2. **Number:** VAR-501-WECC-2
3. **Purpose:** To ensure that Power System Stabilizers (PSS) on synchronous generators shall be kept in service.
4. **Applicability:**
  - 4.1. **Functional Entities:**
    - 4.1.1 Generator Operators
5. **Effective Date:** On the first day of the first quarter after applicable regulatory approval.

**B. Requirements and Measures**

- 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. *[Violation Risk Factor: Medium] [Time Horizon: Operations Assessment]*
- 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.
- 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,
    - M1.4.2** The adjusted PSS in-service percentage,
    - M1.4.3** Date of the outage.

## **C. Compliance**

### **1. Compliance Monitoring Process**

#### **1.1 Compliance Monitoring Responsibility**

Compliance Enforcement Authority

#### **1.2 Compliance Monitoring Period**

Compliance Enforcement Authority 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 Enforcement Authority
- Investigations
- Other methods as provided for in the Compliance Monitoring Enforcement 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** The sanctions shall be assessed on a calendar quarter basis.

**1.4.2** 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.

**1.4.3** 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.

**1.4.4** The standard shall be applied on a generating unit by generating unit basis (a Generator Operator can be subject to a separate sanction for each non-compliant synchronous generating unit or to a single sanction for multiple machines that operate as one unit).

**C. Regional Variances**

None.

**D. Interpretations**

None.

**E. Associated Documents**

None.



Table of Compliance Elements

R	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
R1	Operational Assessment	Medium	There shall be a Lower Level of non-compliance if PSS is in service less than 98% but at least 90% or more of all hours during which the synchronous generating unit is on line for each calendar quarter.	There shall be a Moderate Level of non-compliance if PSS is in service less than 90% but at least 80% or more of all hours during which the synchronous generating unit is on line for each calendar quarter.	There shall be a High Level of non-compliance if is in service less than 80% but at least 70% or more of all hours during which the synchronous generating unit is on line for each calendar quarter.	There shall be a Severe Level of non-compliance if PSS is in service less than 70% of all hours during which the synchronous generating unit is on line for each calendar quarter.

**Version History**

<b>Version</b>	<b>Date</b>	<b>Action</b>	<b>Change Tracking</b>
1	April 16, 2008	Permanent Replacement Standard for VAR-STD-002b-1	
1	April 21, 2011	FERC Order issued approving VAR-501-WECC-1 (approval effective June 27, 2011)	
2		NERC Board of Trustees Approval	Removed documentation requirement from Requirement R2; placed the mandate into the Measures. Deleted Requirement R2.

**VAR-501-WECC-2—Power System Stabilizer (Redline)**

**A. Introduction**

1. **Title:** Power System Stabilizer (PSS)
2. **Number:** VAR-501-WECC-~~1~~2
3. **Purpose:** To ensure that Power System Stabilizers (PSS) on synchronous generators shall be kept in service.
4. **Applicability:**
  - 4.1. Functional Entities:
    - 4.1.1 ~~4.1.~~ Generator Operators
5. **Effective Date:** On the first day of the first quarter~~;~~ after applicable regulatory approval.

**B. Requirements and Measures**

- 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. *[Violation Risk Factor: Medium] [Time Horizon: Operations Assessment]*
- 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.

~~R2. Generator Operators shall have documentation identifying the number of hours excluded for each requirement in R1.1 through R1.12. [Violation Risk Factor: Low] [Time Horizon: Operations Assessment]~~

### 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                                  M1.4.3 Date of the outage.~~

~~M2.2 Supporting documentation for each requirement that applies~~

C.        ~~D.~~ **Compliance**

**1. Compliance Monitoring Process**

**1.1 Compliance Monitoring Responsibility**

Compliance Enforcement Authority

**1.2 Compliance Monitoring Period**

Compliance Enforcement Authority 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 Enforcement Authority
- Investigations
- Other methods as provided for in the Compliance Monitoring Enforcement 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** The sanctions shall be assessed on a calendar quarter basis.

**1.4.2** 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.

**1.4.3** 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.

The standard shall be applied on a generating unit by generating unit basis (a Generator Operator can be subject to a separate sanction for each non-compliant synchronous generating unit or to a single sanction for multiple machines that operate as one unit).

**2. Violation Severity Levels**

~~**2.1. Lower:** There shall be a Lower Level of non-compliance if the following condition exists:~~

~~**2.1.1.** PSS is in service less than 98% but at least 90% or more of all hours during which the synchronous generating unit is on line for each calendar quarter.~~

~~**2.2. Moderate:** There shall be a Moderate Level of non-compliance if the following condition exists:~~

~~**2.2.1.** PSS is in service less than 90% but at least 80% or more of all hours during which~~

~~the synchronous generating unit is on line for each calendar quarter.~~

~~**2.3. High:** There shall be a High Level of non-compliance if the following condition exists:~~

~~**2.3.1.** PSS is in service less than 80% but at least 70% or more of all hours during which the synchronous generating unit is on line for each calendar quarter.~~

~~**2.4. Severe:** There shall be a Severe Level of non-compliance if the following condition exists:~~

~~**2.4.1.** PSS is in service less than 70% of all hours during which the synchronous generating unit is on line for each calendar quarter.~~

### ~~3. Violation Severity Levels for R2~~

~~**3.1. Lower:** There shall be a Lower Level of non-compliance if documentation is incomplete with any requirement R1.1 through R1.12.~~

~~**3.2. Moderate:** There shall be a Moderate Level of non-compliance if the Generator Operator does not have documentation to demonstrate compliance with any requirement R1.1 through R1.12.~~

~~**3.3. High:** Not Applicable~~

~~**3.4. Severe:** Not Applicable~~

### C. ~~E. Regional Differences~~ Variances

None.

### D. Interpretations

None.

### E. Associated Documents

None.

Table of Compliance Elements

<u>R</u>	<u>Time Horizon</u>	<u>VRF</u>	<u>Violation Severity Levels</u>			
			<u>Lower VSL</u>	<u>Moderate VSL</u>	<u>High VSL</u>	<u>Severe VSL</u>
<u>R1</u>	<u>Operational Assessment</u>	<u>Medium</u>	<u>There shall be a Lower Level of non-compliance if PSS is in service less than 98% but at least 90% or more of all hours during which the synchronous generating unit is on line for each calendar quarter.</u>	<u>There shall be a Moderate Level of non-compliance if PSS is in service less than 90% but at least 80% or more of all hours during which the synchronous generating unit is on line for each calendar quarter.</u>	<u>There shall be a High Level of non-compliance if is in service less than 80% but at least 70% or more of all hours during which the synchronous generating unit is on line for each calendar quarter.</u>	<u>There shall be a Severe Level of non-compliance if PSS is in service less than 70% of all hours during which the synchronous generating unit is on line for each calendar quarter.</u>



**Version History**—Shows Approval History and Summary of Changes in the Action Field

Version	Date	Action	Change Tracking
1	April 16, 2008	Permanent Replacement Standard for VAR-STD-002b-1	
1	April 21, 2011	FERC Order issued approving VAR-501-WECC-1 (approval effective June 27, 2011)	
<u><a href="#">2</a></u>		<u><a href="#">NERC Board of Trustees Approval</a></u>	<u><a href="#">Removed documentation requirement from Requirement R2; placed the mandate into the Measures. Deleted Requirement R2.</a></u>

**\* FOR INFORMATIONAL PURPOSES ONLY \***

**Enforcement Dates: Standard VAR-501-WECC-1 — Power System Stabilizer (PSS) (WECC)**

[United States](#)

Standard	Requirement	Enforcement Date	Inactive Date
VAR-501-WECC-1	All	07/01/2011	