

# TAC Recommendation Report

NPRR Number	081	NPRR Title	Automatic Voltage Regulator (AVR) Status	
Timeline	Normal	Recommended Action	Approval	
Date of Decision		March 6, 2008		
Protocol Section Requiring Revision		3.15.3, QSE Responsibilities Related to Voltage Support		
Proposed Effective Date		Upon Texas Nodal Market implementation		
Priority and Rank Assigned		N/A		
Revision Description		This Nodal Protocol Revision Request (NPRR) adds a requirement for telemetry of Generation Resource Automatic Voltage Regulator (AVR) status to comply with North American Electric Reliability Corporation (NERC) Reliability Standards.		
Overall Market Benefit		Facilitates compliance to NERC Reliability Standards		
Overall Market Impact		Unknown.		
Consumer Impact		Unknown.		
Credit Impacts		ERCOT credit staff and the Credit Working Group (Credit WG) have reviewed NPRR081 and do not believe that it requires changes to credit monitoring activity or the calculation of liability.		
Procedural History		<ul style="list-style-type: none"><li>➤ NPRR081 was posted on 8/31/07.</li><li>➤ On 9/10/07, the Transition Plan Task Force (TPTF) reviewed NPRR081 and posted comments.</li><li>➤ On 9/20/07, PRS considered NPRR081.</li><li>➤ On 11/08/07, the Impact Analysis (IA) was posted.</li><li>➤ On 11/15/07, PRS considered the Recommendation Report and IA.</li><li>➤ On 11/29/07, TAC considered NPRR081.</li><li>➤ On 2/19/08, the Reliability and Operations Subcommittee (ROS) comments were posted.</li><li>➤ On 3/6/08, TAC again considered NPRR081.</li></ul>		
PRS Decision		<p>On 9/20/07, PRS voted to recommend approval of NPRR081 as revised by TPTF and PRS. The motion passed with three abstentions from the Independent Generator (IG)(1) and Independent Power Marketer (IPM)(2) Market Segments. All Market Segments were present for the vote.</p> <p>On 11/15/07, PRS voted to forward the Recommendation Report and IA to TAC. There was one abstention from the IG Market Segment. All Market Segments were present for the vote.</p>		

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<b>Summary of PRS Discussion</b>	<p>On 9/20/07, PRS discussed the responsibilities of the Qualified Scheduling Entity (QSE) and the IG; NERC standards for modes and frequency of communication; and addressed issues related to power system stabilizers. PRS requested that ERCOT inform the operators of the pending changes.</p> <p>On 11/15/07, there was no discussion.</p>
<b>TAC Decision</b>	<p>On 11/29/07, TAC voted to refer NPRR081 to ROS pending deliverables from the Power System Stabilizer (PSS) Task Force. The motion passed with two abstentions from the Consumer (1) and Municipally Owned Utility (MOU)(1) Market Segments. All Market Segments were present for the vote.</p> <p>On 3/6/08, TAC unanimously voted to recommend approval of NPRR081 as revised by ROS comments. All Market Segments were present for the vote.</p>
<b>Summary of TAC Discussion</b>	<p>On 11/29/07, participants raised concerns that NPRR081 overlaps with issues regarding PSS being discussed by the PSS Task Force. It was stated that language in the NPRR was in contradiction with how PSS are currently being operated. The Chair directed ERCOT Staff to inform TAC if and when the delay of NPRR081 becomes a problem for the nodal implementation timeline.</p> <p>On 3/6/08, TAC noted that the ROS comments would make NPRR081 consistent with OGRR204, Hotline Technology Update, and would reject revisions proposed in TPTF comments.</p>

### ERCOT/Market Segment Impacts and Benefits

<b>Assumptions</b>	1	
<b>Market Cost</b>	1	Unknown.
<b>Market Benefit</b>	1	Facilitates compliance with NERC Reliability Standards
<b>Additional Qualitative Information</b>	1	
<b>Other Comments</b>	1	

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Original Sponsor	
Name	John Dumas
Company	ERCOT
Segment	NA

Comments Received	
Comment Author	Comment Description
TPTF 091007	Endorsed NPPR081 as revised by TPTF comments.
ROS 021908	Proposed revised language relating to notification of the AVR and PSS status changes

Proposed Protocol Language Revision
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### 3.15.3 QSE Responsibilities Related to Voltage Support

- (1) QSE Generation Resources required to provide VSS shall have and maintain Reactive Power capability at least equal to the Reactive Power capability requirements specified in these Protocols and the ERCOT Operating Guides.
- (2) QSE Generation Resources providing VSS shall be compliant with the ERCOT Operating Guides for response to transient voltage disturbance.
- (3) QSE Generation Resources providing VSS must meet technical requirements specified in Section 8.1.2.1, Ancillary Service Qualification and Testing, and the performance standards specified in Section 8.1.2, QSE Ancillary Service Performance Standards.
- (4) Each QSE's Generation Resource providing VSS shall operate with the unit's Automatic Voltage Regulator (AVR) in the voltage control mode unless specifically directed to operate in manual mode by ERCOT, or when the unit is going On-Line or Off-Line or the QSE determines a need to operate in manual mode in the event of an Emergency eEmergency Conditions Condition at the generating plant. Each QSE shall, within 30 minutes of a change in the operational mode of the AVR for online generation, send to ERCOT via telemetry the AVR and power system stabilizer (PSS) status of each Generation Resource providing VSS. For AVR's, aAn "On" status will indicate the AVR is on and set to regulate the Resource's terminal voltage in the voltage control mode and an "Off" status will indicate the AVR is off or in a manual mode. When the QSE changes the mode, the QSE shall promptly inform ERCOT. Any QSE-controlled power system stabilizers must be kept in service unless specifically permitted to operate

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~~otherwise by ERCOT.~~ Each QSE shall monitor the status of their regulators and stabilizers, and shall report abnormal status changes to ERCOT.

- (5) Each QSE shall meet, within established tolerances, and respond to changes in the Voltage Profile established by ERCOT subject to the stated QSE Reactive Power and actual power operating characteristic limits and voltage limits.
- (6) The reactive capability required must be maintained at all times that the Generation Resource is On-Line.