

OGRR Number	208	OGRR Title	Voltage Ride-Through (VRT) Requirement
Date of Appeal	October 15, 2008		
Date of TAC Decision	October 2, 2008		
TAC Decision	Approval of OGRR 208 Voltage Ride-Through (VRT) Requirement including provisions for the retrofit of existing generators		
Operating Guide Sections Requiring Revision	3.1.4.1, PGC Data Reporting 3.1.4.6, Protective Relaying Requirement		
Submitter's Information			
Name	Kris Zadlo		
E-mail Address	kzadlo@invenergyllc.com		
Company	Invenergy LLC		
Company Address	One South Wacker Drive, Suite 2020, Chicago, IL 60606		
Phone Number	(312) 447-7332		
Fax Number	(312) 224-1444		
Appeal			

Invenergy is formally appealing the decision of the ERCOT Technical Advisory Committee made at the October 2nd, 2008 TAC meeting to approve the Voltage Ride-Through (VRT) standard described in OGRR 208. The language of OGRR 208 as endorsed by TAC will require new and existing Wind Generation Resources (WGRs) to comply with a new Voltage Ride-Through capability. Invenergy is fully supportive of the need for VRT capability for new WGRs but the addition of language requiring existing WGRs to retrofit to meet the new standard raises serious concerns.

Prior to OGRR 208 there was no VRT requirement for Wind Generation Resources in ERCOT. In the absence of an ERCOT VRT standard many wind developers, including Invenergy, voluntarily installed VRT capability as described in FERC Order 661 and Order 661-A. The VRT standard embodied in OGRR 208 is more restrictive than the standard dictated by either FERC Order 661 or Order 661-A. Under OGRR 208, Wind Generation Resources will be required to retrofit units that were in compliance with the

national standard even though there was no ERCOT VRT requirement at the time these units were installed. Stakeholders have not been provided studies or other concrete justification detailing the necessity of the retrofits that would be required under OGRR 208. Invenergy is respectfully requesting that the Board take action to reverse a decision that will result in significant expense for a certain set of Stakeholders without proper justification and may send negative market signals regarding future development in the ERCOT market.

The following are the main points of contention with TAC's decision to approve OGRR 208:

1. **Deficient Analysis of the Problem** - Stakeholders were not provided with any studies showing that a retrofit was required on existing generation resources. The VRT capabilities of existing WGRs, which are extensive due to the voluntary installation of VRT equipment, were not taken into consideration. Because of the lack of data regarding the need for additional, retrospective VRT requirements, the Wind Coalition, of which Invenergy is a member, proposed language that would require WGRs to fund the necessary studies. This friendly amendment to OGRR 208 was rejected. Therefore, the nature of the situation has not been examined via the rigorous process that should be required to justify an expensive retrofit that could potentially apply to thousands of turbines.
2. **Deficient Analysis of the Solution** – There was no analysis performed as to whether WGRs can be retrofitted (if at all) and what the associated costs of compliance might be. In fact, Invenergy's preliminary discussions with the WGR manufacturer indicate that, short of full replacement, there is no currently available off the shelf solution. It will take the manufacturer several months to determine the scope of work and costs involved in meeting the new standard. Furthermore, the possibilities of other more cost effective solutions have not been explored. Again, these issues underscore the lack of rigorous analysis of the problem and potential solutions.
3. **Nominal Improvement** - The VRT requirements of OGRR 208 are nominally stricter than the FERC 661 and 661-A VRT requirements. No evidence has been presented to prove that a standard that is stricter than the national standard will have a significant effect on reliability, yet this difference between the standards will require costly retrofits to existing equipment that can currently meet the FERC VRT standard. Invenergy takes no issue with the more stringent ERCOT VRT standard as applied prospectively, but retrofits of WGRs that already have comparable VRT capability are unlikely to result in increased system reliability.
4. **Arbitrary and Subjective Policy** - OGRR 208 sets an inappropriate precedent regarding mandated retrofits. Arbitrarily requiring generators to retrofit to meet new standards without the benefit of technical studies has serious market implications. If major retrofits are required by ERCOT without adequate justification, new investment is subject to an additional level of market risk. An unsubstantiated retrofit will be seen by potential market entrants as arbitrary and

capricious market policy. This sets a precedent that will negatively affect future investment decisions in the ERCOT market.

Invenergy fully supports the adoption of the VRT standard for all WGRs that sign an interconnection agreement after November 1, 2008 as dictated in OGRR 208. As an alternative to requiring a mandated retrofit of existing WGRs, Invenergy respectfully proposes the following remedies:

1. The current VRT capabilities of the existing Wind Generation Resources should be evaluated to determine if they are sufficient for system reliability before requiring blanket retrofits.
2. If the VRT capabilities are demonstrably insufficient for system reliability, ERCOT, in conjunction with WGR Owner/Operators and Vendors, should evaluate various solutions to the identified problem and determine the most cost effective solution on a case-by-case basis.

The compliance date of 2015 for VRT retrofits, as proposed by ERCOT Staff, implies that the current situation does not pose an imminent threat to reliability. Instead of hastily imposing a blanket retrofit without detailed analysis of the problem or the solution, Invenergy proposes that ERCOT immediately require all future generation to meet the VRT specifications of OGRR 208 while providing the requisite analysis prior to mandating costly and potentially unnecessary retrofits of existing resources. If implemented, Invenergy's proposal has the potential to discover and address reliability concerns ahead of the 2015 deadline set forth in OGRR 208.