
	© ISO New England, Inc. 2023	M/LCC Procedure No. 8 - Coordination of Generator Voltage Regulator and Power System Stabilizer Outages, Attachment C
		Revision Number: 5.1 Revision Date: September 7, 2023
Owner: ISO Director, Operations Support Services		Approved by: M/LCC Heads
		Review Due Date: September 7, 2025

Attachment C - Generators Requiring a Reactive Control System

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NOTE

The Reactive Control System (RCS) status for each Generator listed below is represented by an Automatic Voltage Regulator (AVR) ON/OFF flag in the ISO Energy Management System (EMS). All components of the RCS must be functional for the AVR flag to indicate "ON"; conversely, failure of or limited operation of any RCS component should result in the AVR flag indicating "OFF".

The ISO Transmission Operating Guides (TOGs) refer to each Generator RCS as an AVR.

- Generators listed in the Table 1 below have an RCS, and the components that comprise their RCS are indicated by "X" in Table 1
- Assuming correct functioning of the Generator's AVR flag in the ISO EMS, outage of any RCS equipment will cause the AVR flag to toggle to "OFF", and ISO operators will be notified via EMS alarm. Generator operators shall also notify ISO control room of an RCS component that is compromised.
- In the event that an RCS is **not** fully functional, any identified impact of the AVR OFF flag will be indicated in applicable TOGs, and may be reflected in any limits in ILC. The real time on-call engineer may be contacted if there are any questions.

Table 1 - Generators Requiring a Reactive Control System

LCC	Asset ID	ISO EMS ID	Generator Name	Load Tap Changing Transformer	FACTS*/ Synchronous Condenser	Capacitors	Dynamic Reactive Controller Equipment
Maine	37105	BNGW	Bingham Wind		X		X
Maine	40343	BLHW	Bull Hill Wind	X			X
Maine	48082	HANW	Hancock Wind	X	X		X
Maine	12551	KIBY	Kibby Wind Power	X	X	X	X
Maine	46951	OAKW	Oakfield Wind		X		X
Maine	38417	PASW	Passadumkeag Wind		X		X
Maine	68734	WEVW	Weaver Wind	X	X		X



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Table 1 - Generators Requiring a Reactive Control System

LCC	Asset ID	ISO EMS ID	Generator Name	Load Tap Changing Transformer	FACTS*/ Synchronous Condenser	Capacitors	Dynamic Reactive Controller Equipment
New Hampshire	14595	GRPW	Granite Reliable Power Wind		X	X	X
New Hampshire	37050	GROW	Groton Wind		X		X
VELCO	35979	KCW	Kingdom Community Wind	X	X		X

* A Flexible AC Transmission System (FACTS) device is defined by the IEEE as "a power electronic based system and other static equipment that provide control of one or more AC transmission system parameters to enhance controllability and increase power transfer capability". Generic examples of a FACTS device are: SVC (Static VAr Compensator), STATCOM (Static Synchronous Compensator), etc.

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Revision History

Rev. No.	Date	Reason
0	04/03/12	New initial version.
0.1	03/12/14	Periodic review performed requiring no changes; Made required administrative changes to publish a Minor Revision per SOP-RTMKTS.0210.0010;
1	05/30/14	Biennial review by procedure owner; Replaced “online” with “operate at full output” and added additional verbiage to clarify the impact on Generator output for having one or more RCS element out of service in the “NOTE”; Added a new column “Load Tap Changing Transformer” to indicate whether a Load Tap Changing transformer is required as one of the RCS devices; Added “Synchronous Condenser” to the “FACTS” column title; Added “LCC” column to Table 1; Added the following Generators: BLHW, GROW, KCW, ROLL, STET and STE2; Added the IEEE definition of FACTS devices and examples of such devices.
2	04/29/16	Biennial review by procedure owner; Added the following Generators: RCHW, PASW, JERW, and HOSW and modified to alphabetically list the Generators, in each LCC, by Generator Name;
3	10/16/17	Biennial review by procedure owner; Added required corporate document identity to all page footers; NOTE prior to Table 1, added “...or solar...”; Table 1, added data rows for the following Generators: HANW, BIW, and HARS;
4	10/03/19	Biennial review by procedure owner; NOTE, 1 st paragraph was deleted; former 2 nd paragraph was broken into 2 new paragraphs; Modified new 1 st paragraph (defined acronym RCS); Modified new 2 st paragraph (defined acronym TOGs); Added guidance and clarification steps applicable to Table 1 following the NOTE and Table 1; Table 1: <ul style="list-style-type: none"> Added data rows for Generator BNGW, OAKW and ANTW; Replaced “REMVEC/NGRID” with “NGRID” in LCC column and reordered table by LCC (i.e., moved NGRID to be before New Hampshire);
5	09/10/21	Biennial review by procedure owner; Table 1: <ul style="list-style-type: none"> Added data row for Generator Weaver (WEVW); Added missing entries for PASW and KCW Removed single entry generators – they do not have a “system” (RCHW, ROLL, STET, STE2, BIW, HARS, HOSW, ANTW, JERW) Removed instruction and revised language in note and following instructions
5.1	09/07/23	Biennial review performed by procedure owner requiring no intent changes; Corrected Granite Wind to Granite Reliable Power Wind; Made required administrative changes to publish a Minor Revision.