

<i>Location</i>	<i>Upgrade</i>	<i>Need</i>	<i>Category</i>	<i>Affected DUs</i>	<i>Lead DU</i>	<i>Reasons for selecting Affected utilities</i>	<i>Reasons for Lead DU</i>
<b>Colchester</b>	Upgrade of a 34.5 kV line from Lime Kiln to McNeil, and the installation of 34.5 kV capacitor banks	Loss of transformer causes low voltages and overloads	Predominantly Bulk	GMP, BED	GMP	The low voltage and overload concerns affect load served on the 34.5 kV system near Essex, LimeKiln, and East Avenue. Utilities served from this system are GMP and BED	GMP is directly supplied from most of these substations and has the highest amount of load affected
<b>St. Albans/E Fairfax</b>	Add a 115/34.5 kV transformer at Georgia	Loss of St. Albans tap causes voltage collapse. Transformers overload for loss of either of the transformers or loss of East Fairfax transformer	Predominantly Bulk	CVPS, VEC	CVPS	The voltage collapse concern affects load served at St Albans and East Fairfax. Utilities supplied at these locations are CVPS and VEC.	CVPS is directly supplied from St Albans and has the highest amount of load affected
<b>North Rutland/Cold River/Blissville</b>	Add a 115/46 kV transformer at West Rutland, 46 kV capacitor banks, and rebuild 46 kV lines	Loss of North Rutland or Cold River transformer causes sub-transmission and transformer overloads	Predominantly Bulk	CVPS	CVPS	CVPS is the only utility whose load is affected by loss of either transformer	CVPS is the only directly affected utility
<b>Hartford/Chelsea</b>	Install 2 <sup>nd</sup> 115/46 kV transformer at Hartford & Rebuild to ring station	Loss of transformer causes low voltages and overloads. Breaker failures cause voltage collapse.	Predominantly Bulk	CVPS, GMP	CVPS	The low voltage concern affects load served from Hartford. The utilities supplied at that location are CVPS and GMP (Norwich load).	CVPS is directly supplied from Hartford and has the highest amount of load affected
<b>Northern area (Highgate, Jay, Newport, Irasburg, Burton Hill)</b>	Upgrade the Newport 115 kV station. Add 46 kV capacitor banks. Upgrade of the Irasburg transformer and the Moshers Tap	Loss of the Stanstead tie line	Predominantly Bulk	VEC, CVPS, Swanton, Enosburg, Barton, Orleans	VEC	The low voltage concern affects load served at Highgate, Jay, Irasburg and Newport. Utilities supplied at these locations are CVPS, Swanton, Enosburg, Barton, Orleans, and VEC	VEC is directly supplied from Newport and has the highest amount of load affected
<b>IBM</b>	Reconfigure the IBM Taps	Loss of IBM taps causes loss of load.	Predominantly Bulk	GMP	GMP	Loss of load occurs at IBM who is supplied by GMP.	GMP is the only directly affected utility
<b>Vernon Road</b>	Install 115 kV breaker at Vernon Road	Loss of K-186 line causes loss of load at Vernon Rd.	Predominantly Bulk	CVPS, GMP, NGRID	CVPS	After the load is disconnected, some of the load may be restored by closing a normally open switch that connects the CVPS system to NGRID. GMP load is fed off of the NGRID line.	CVPS is directly supplied from the Vernon Road sub and has the highest amount of load affected.
<b>Southeast VT</b>	Upgrade the VT portion of the 381 line	Loss of generation sources in NH overloads the 381 line	Bulk	CVPS, NU, NGRID	CVPS	This overload is caused mostly by regional transfers and New Hampshire load. The affected utilities are CVPS, and mostly NU and NGRID whose load affects the violation.	CVPS has the highest amount of load near Vernon
<b>Connecticut River</b>	Install a 2nd K-31 line and upgrade the K-149 line	Line overloaded with the F-206 line out of service and for loss of I135N/J135N DCT	Bulk	CVPS, Ludlow, GMP, NU, NGRID	GMP	This overload is caused mostly by regional transfers and New Hampshire load. The affected utilities are GMP and those that are in the vicinity of the 115 kV line (CVPS and Ludlow), and mostly NU and NGRID whose load affects the violation.	Of the Vermont utilities, only GMP load can affect this overload
<b>Central VT</b>	Install a 2nd 350 line	Lines overloaded with the 350 line out of service and for loss of K-54	Bulk	NY, All DUs except Jacksonville & Readsboro	CVPS	All VT load except load connected to the southern loop can affect the overloaded lines.	CVPS has the highest amount of load affected
<b>Northwest VT</b>	Upgrade lines K-30, K43, K27	Lines overloaded with Highgate out of service and for loss of K-64 or line 370	Bulk	All except Ludlow, Jacksonville & Readsboro	GMP	The overload and voltage concerns are systemwide, except for the central VT area, and the southern Loop system connected to Bennington and Brattleboro.	GMP load is the most effective at reducing the overloads if disconnected.

**MOU Definitions**

Affected DU:

- a. "Affected DU" means an Affected Utility that is a DU.
- b. "Affected Utility" means:
  - i. During Steps 1 through 6, above, a Vermont Utility, the facilities or load of which cause, contribute to, or would experience an impact from, a Reliability Deficiency, and
  - ii. During Steps 7 through 9, above, a Vermont Utility, the facilities or load of which cause, contribute to, or would experience an impact from, a Reliability Deficiency, or in whose territory a proposed solution to a Reliability Deficiency would be implemented.

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Lead DU: v. "Lead DU" means an Affected DU selected by agreement of the Affected Utilities, or in accordance with paragraph 70.h, above, absent such agreement, in order to serve the functions of coordination, ensuring performance of NTA Analysis and facilitating necessary decision-making, and primary contact point for the Reliability Deficiency for which the Lead DU has been selected. Nothing in the selection or activities of a Lead DU shall be deemed to lessen the rights or responsibilities of any other DU under applicable law or this MOU.

Predominantly Bulk: ee. "Predominantly Bulk System" means a set of additions or modifications to the Transmission system to address a Reliability Deficiency, at least 50 percent of the elements of which are Bulk Transmission System, when examined on a forecasted cost basis. For the purpose of determining the design and specification for transformers that connect to the Bulk Transmission System, and not for the purpose of determining ownership or cost allocation, such transformers will be considered part of the Bulk Transmission System. Where a transformer steps down to a distribution voltage, VELCO shall consult with the Affected DU or DUs to determine the applicable reliability criteria.