STATE OF VERMONT
PUBLIC UTILITY COMMISSION

Case No. 26-___-PET

Petition of Green Mountain Power for a Certificate of Public Good, pursuant to 30 V.S.A. § 248, authorizing the rebuild of the Georgia Substation located at 2066 Ballard Road in the Town of Georgia, Vermont	

DIRECT TESTIMONY OF WITNESS JOHN R. FISKE ON BEHALF OF GREEN MOUNTAIN POWER

April 8, 2026

Mr. Fiske describes the equipment arrangement proposed for the GMP Georgia Substation located at 2066 Ballard Road in the Town of Georgia, Vermont, the required temporary substation, reconfiguration of the existing 34.5 kV transmission line 127, and the temporary and proposed modification of the existing two (2) distribution circuits. He also provides the project construction schedule.

DIRECT TESTIMONY OF JOHN R. FISKE

1. Q. Please state your name, occupation, and business address.

A. My name is John Fiske, and I have been retained by Green Mountain Power (GMP) for Project Manager Services. I am an employee of JRF Engineering, PC located in Rutland, Vermont 05701.

2. Q. Please describe your background and experience.

A. I earned a Bachelor of Science Degree in Electrical Engineering from the University of Vermont and am a Licensed Professional Engineer in the State of Vermont. Prior to my current employment, I held the position of Director of Engineering at Green Mountain Power, Manager of Substation Design/Relay Protection, System Protection Engineer, and Division Engineer at Central Vermont Public Service Corporation (CVPS). I also worked as a Manager of Engineering and System Protection Engineer at Vermont Electric Power Company in Rutland, Vermont.

3. Q. Have you previously testified before the Vermont Public Utility Commission (the "Commission")?

A. Yes, I have provided testimony in numerous matters. Most recently, I have testified in the following cases: Docket Nos. 7857 (GMP Randolph 15 Substation), 7887 (GMP Vernon Road Substation Breaker Addition), 8029 (GMP St. Johnsbury Substation 16 Upgrade), 8030 (GMP Woodstock Substation Upgrade), 8205 (GMP Georgia Interconnection Project), 8308 (GMP Waterbury/Duxbury Substation), 2017 GMP rate case (Case No. 17-3112-INV),

GMP Airport Substation (Case No. 18-2910-PET), GMP B20, B22 and Lowell Substation upgrade Project (Case No. 19-4464-PET), GMP East St. Albans installation of two SCADA-controlled capacitor banks and other substation upgrades (Case No. 20-0295-PET), GMP North Brattleboro Substation rebuild (Case No. 20-0776-PET), GMP Castleton Substation upgrade (Case No. 20-3966-PET), GMP Putney Substation upgrade (Case No. 21-1559-PET), GMP Pleasant Street Substation upgrade (Case No. 21-4149-PET), GMP Richmond Substation upgrade (Case No. 21-5164-PET), GMP Rebuild 46kV Transmission Line Taftsville substation to the Windsor substation (Case No. 22-3085-PET), GMP Hydeville Substation Upgrade (Case 22-4230-PET), VELCO St. Johnsbury Substation Upgrade (Case No. 23-3761-PET), GMP Upgrades and resupply of the 46kV Transmission Line 60 in the Towns of Salisbury, Middlebury, New Haven, and Weybridge, Vermont (Case No. 24-0636-PET), GMP relocation and rebuild of the Fair Haven Substation (Case No. 25-0593-PET), VELCO Sandbar Advanced Power Flow Controller (Case No. 25-1259-PET) and GMP Rebuild of the Irasville #39 Substation (Case No. 25-2468-PET).

4. Q. What is the purpose of your testimony?

A. I describe the proposed construction of the rebuilt Georgia Substation, the temporary substation, the reconfiguration of the 34.5 kV transmission line 127, the temporary and proposed modifications of the 12.47 kV distribution circuits, as well as the construction schedule. My testimony supports a finding that the proposed rebuilt Georgia Substation will be designed and constructed in accordance with the requirements of the National Electrical Safety Code (NESC).

5. Q. Please describe the existing GMP Georgia Substation.

A. The existing GMP Georgia Substation Operating Diagram is **Exhibit GMP JRF-1**. The existing GMP Georgia Substation consists of the following: a driveway mostly covered with grass except for an approximate 13' wide x 45' long gravel area intersecting with Ballard Road, and a fenced-in yard (approximately 69' x 78' in size); one (1) 34.5 kV steel structure; one (1) Gang Operated Air Break (GOAB) disconnect (354); three (3) 34.5 kV power fuses for transformer protection (PF-T1); three (3) 34.5 kV station class lightning arresters, one (1) 1974 vintage 10/14 MVA 34.5/12.47 kV power transformer (T1); three (3) 12.47kV station class lightning arresters, one (1) 12.47 kV wooden structure; one (1) 12.47 kV steel structure, three (3) bus voltage instrument transformers (VT2) with associated fuses (PF-VT2), one (1) 25 kVA station service transformer (SS1) with associated fusing (PF-SS1); two (2) 12.47 kV Line breakers (70 & 71); six (6) sets of three 12.47 kV single blade line breaker disconnect switches (719, 718, 709, 708); three (3) 438 amp regulators, three (3) 328 amp regulators; six (6) 12.47 kV intermediate class lightning arresters.

6. Q. Please describe the equipment arrangement proposed for the rebuilt Georgia Substation.

A. The proposed rebuilt Georgia Substation Operating Diagram, and Site Plan are provided as **Exhibit GMP JRF-2,** and **Exhibit GMP JRF-3,** respectively. The proposed rebuilt Georgia Substation Plan View, North Elevation AA, East Elevation BB, West Elevation CC, & South Elevation DD are attached as **Exhibit GMP JRF-4, Exhibit GMP JRF-5, Exhibit GMP**

JRF-6, Exhibit GMP JRF-7, and Exhibit GMP JRF-8, respectively. The proposed oil containment appears as **Exhibit GMP JRF-9**.

The plans for the proposed rebuilt Georgia Substation construction will consist of:

(1) Installation of a new driveway, vehicle turn around, and access to the transmission line 127. The new proposed gravel driveway is approximately 27' wide x 123' long and the associated vehicle turn around is approximately 18' wide x 20' long. The new proposed 12' wide transmission line access road will extend from the eastern end of the substation driveway approximately 272' feet east where it will intersect with an existing farm road providing access to the transmission line. Upgrades to the existing farm road are not proposed. The new substation driveway and transmission access road is the proposed route to access the temporary substation.

(2) Installation of a new fence with foundations to create a polygon shaped fenced in yard (approximately 110' x 135' in area, 9' high). Please see Exhibit GMP JRF-4 for the details of the fence layout. The new fence will meet NESC requirements and facilitate access to construction and maintenance vehicles. Substation yard lighting and security cameras will be installed on steel poles inside the substation fence to accommodate maintenance, emergency, and surveillance activities. The steel poles will be approximately 18 feet in height. Additional yard lighting will be installed on the fence. The yard lighting will be operated from a switch

located within an enclosure mounted to the substation steel tower leg.

(3) Installation of new equipment foundations, ground grid, and below grade trench and conduit systems.

(4) Installation of two (2) new 34.5 kV line vacuum circuit breakers (VCB) (B-34 & B-35), two bays of 34.5 kV steel structure (each 18 feet wide, 26 feet 2 inches tall, and 16 feet deep) with associated 16 foot lightning rods, 34.5 kV bus work and insulators, two (2) sets of three 34.5 kV single blade disconnect switches (349, 348, 359, 358), two (2) gang operated load break (GOLB) switches (X999, 355), two (2) 34.5 kV phase to phase line potential transformers (VT34 & VT35) with associated fusing (PF-VT34 & PF-VT35), three (3) 34.5 kV phase to ground bus potential transformers (VT1) with associated fusing (PF-VT1), and six (6) 34.5 kV intermediate class lightning arresters.

(5) The existing 10/14 MVA, 34.5/12.5 kV power transformer (T1) will be replaced with an in kind replacement, along with three (3) single blade disconnect switches (929), three (3) 34.5 kV station class lightning arresters, three (3) 12.5 kV station class lightning arresters and one (1) pedestal mounted GOLB switch (928).

(6) Installation of two (2) new 12.47 kV VCBs (70 & 71), two (2) bays of steel structures (each 18 feet wide, 26 feet 2 inches tall, and 5 feet deep) with associated 16 foot lightning rods, 12.47 kV bus work and insulators, five (5) sets of three 12.47 kV single blade line disconnect switches (719,

718, 709, 708, X888), three (3) 12.47 kV phase to ground bus potential transformers (VT2) with associated fusing (PF-VT2), two (2) 12.47 kV phase to ground line potential transformers (VT70 & VT71) with associated fusing (PF-VT70 & PF-VT71), six (6) 12.47 kV intermediate class lightning arresters, and a station service transformer (SS1) with associated fusing (PF-SS1).

(7) Installation of six (6) new 438 Amp voltage regulators with associated regulator controls.

(8) Installation of a new control building (approximately 18 feet wide, 28 feet long, 15 feet tall with a peaked roof). The control building will house the protection and control switchgear, the communications equipment, the DC battery system, the AC and DC distribution panels, the Supervisory Control and Data Acquisition (SCADA) equipment, and other various control equipment. The substation will utilize fiber optic cable for SCADA communications between the GMP Control Center and the Remote Terminal Unit (RTU) in the substation, voice-grade communications, and engineering access for retrieval of fault records from the microprocessor relays. The fault records are utilized to estimate fault locations and analyze power system events for restoration efforts. The SCADA system will provide control and monitoring of the two (2) 34.5 kV VCBs (B-34 & B-35), the two (2) 12.47 kV VCBs (70 & 71), and the regulator controls for the two 12.47 kV distribution circuits. A GPS

receiver antenna and a "Gatekeeper" antenna (each approximately 12" in height) will be mounted on the side of the control building. The GPS antenna will provide accurate time stamp for the SCADA system and microprocessor relay event records. The "Gatekeeper" antenna is to collect data from Smart Meters.

(9) Installation of a new security system. The security system will be housed in the new control building.

The proposed rebuilt Georgia Substation improves equipment layout and clearances for operational activities and improves system reliability and stability. GMP Witness Kamran Hassan testifies further as to Project need and history.

7. Q. Will an oil containment system be added to the proposed rebuilt Georgia Substation?

A. Yes, a new oil containment system will be constructed with a perimeter berm including filter drains to allow rainwater to escape. The proposed oil containment system has a volume of no less than 110% of the proposed power transformer's oil capacity plus 5 inches of freeboard rain. Please see Exhibit GMP JRF-9 for the details of the oil containment design.

8. Q. Please describe the existing Transmission Line 127 connected to the existing Georgia Substation.

A. The existing Transmission Line 127 (TL127) is a 7.57 mile 34.5 kV networked line that serves three distribution substations. The line serves the Georgia distribution substation

with an 0.06-mile-long radial tap off from TL127 P105X. There are no automatic sectionalized devices on the TL127 between Nason Street and Ballard Road substations. The two other distribution stations served off from TL127 are radial taps and have SCADA controlled Motor Operated Load Breaker (MOLB) switches on each side of the radial taps for sectionalizing.

9. Q. Please describe the Transmission Line (TL127) modifications associated with the rebuilt Georgia Substation.

A. The proposed TL127 modifications include the installation of two (2) 55' poles (P105 & PX106), six (6) 50' pole (P104X, P105-1, P105-2, P105-3, P105-4, & P106) and one (1) 45' pole (P105-2-1), approximately 709' of three phase overhead transmission line, one (1) SCADA controlled MOLB switch (457) to create a loop feed into the Georgia Substation. The line modifications also include the retirement of approximately 382' of three phase overhead transmission line, one (1) 45' 1955 vintage pole, one (1) 45' 1986 vintage pole, one (1) 45' 1988 vintage pole and one (1) 65' 1978 vintage pole.

The proposed SCADA controlled MOLB switch (457) and associated lightning arresters will be installed on P105-2-1 to facilitate a bypass of the rebuilt Georgia Substation for future maintenance efforts. This bypass switch is located between the new P105-2 and the new P105-3 on TL127.

Two sets of three (3) in-line disconnect switches are proposed for working clearance during construction of the proposed rebuilt Georgia Substation and for future maintenance efforts, one set (356) between new P105-2 and new P105-2-1 with the second set (346) between new P105-2-1 and new P105-3.

10. Q. Please describe the distribution line modifications associated with the rebuilt Georgia Substation.

A. There are two (2) existing 12.47 kV three phase overhead distribution circuits (70 & 71) emanating from the Georgia substation. The proposed substation will retain the existing distribution line right of way for both the 70 and 71 circuits. On the 70 circuit, the existing 40' 1986 vintage G70 P1 pole will be replaced with a 50' pole to accommodate the installation of an alternate station service transformer and the installation of secondary cable from G70 P1 to the Georgia Substation. On the 71 circuit, the existing 45' 1977 vintage G71 P1 pole will be replaced with a 50' pole to accommodate the temporary substation connection to the existing distribution line and fiber cable. The existing in-line single blade disconnects on the 70 circuit (632) and 71 circuit (442) will be retired and two sets of pole mounted single blade disconnects will be installed, one on G70 P1(704) and the other on G71 P1 (714).

A new 50' pole will be installed at G70 P3 equipped with a permanent Gang Operated Load Break switch (7017) to provide a circuit tie for future maintenance needs.
Please see Exhibits GMP JRF-2 and GMP JRF-3 for the details of the distribution line design.

11. Q. Will a temporary substation be necessary to serve customers during construction?

A. Yes, the construction of the proposed rebuilt Georgia Substation will require the use of a temporary substation to serve customers during construction. The proposed rebuilt Georgia Substation has been designed to accommodate the installation of a portable substation for future needs.

12. Q. Please describe the proposed temporary Georgia Substation.

A. The proposed temporary Georgia Substation's details are shown in the Site View provided in Exhibit GMP JRF-3 and the Temporary Substation Operating Diagram provided in **Exhibit GMP JRF-10.** The temporary substation will be supplied from the Transmission Line 127 Temporary Pole TP3. The plans for the proposed temporary Georgia Substation construction will consist of:

(1) Installation of a temporary fence to create a fenced in yard (approximately 44' x 80' in area, 8' high). The temporary fence will meet NESC requirements and facilitate access to construction and maintenance vehicles.

(2) Installation of a temporary 45' pole (TP4) equipped with a set of three single blade disconnects (T999).

(3) Installation of a mobile substation complete with one (1) 34.5 kV GOAB switch (X919), three (3) 34.5 kV power fuses (PF-T1), and three (3) 34.5 kV station class lightning arresters, one (1) 15 MVA Power Transformer, three (3) 12.47 kV station class lightning arresters, one (1) 12.47 kV distribution breaker, three (3) 668-amp bus regulators, one (1) single phase station service transformer (SS1) with associated fuses (TPF-SS1), one (1) three phase station service (SS2), three (3) – 668 amp regulators, and a new 45' pole (TP5) equipped with a set of three single blade disconnects (T888).

(4) The temporary substation will be constructed with oil containment with a volume of no less than 110% of the proposed power transformer's oil capacity plus 5 inches of freeboard rain. The oil containment will be constructed with

a perimeter berm and include filter drains to allow rainwater to escape.

(5) Installation of temporary relay and communication equipment cabinets.

The fence, oil containment berm and filters, poles and all equipment associated with the temporary substation will be removed after the project is complete. The gravel and ground grid will be removed, and the area will be topsoiled, seeded and mulch after construction.

13. Q. Please describe the temporary transmission line construction required to connect the temporary substation.

A. A temporary 34.5 kV line bypass is proposed to maintain continuity of TL127 during construction of the proposed lines into the Georgia Substation. The bypass consists of replacing TL127 P104X with a new 50' pole, addition of two (2) temporary 50' poles (TP1 & TP2) and associated guying, and approximately 225' of three phase 34.5 kV conductor. The proposed temporary GOLB switch (T820) on P106, the set of three in-line disconnects (T643) between PX106 and TP3, the set of three in-line disconnects (T666) between P104X and TP1, and the set of three in-line disconnects (T653) between P104X and P105 will be installed as sectionalizing points to facilitate the installation of a temporary substation and construction of the loop feed into the Georgia Substation without a customer outage.

14. Q. Please describe the temporary distribution line construction required to connect the temporary substation to the existing distribution circuits.

A. A temporary three phase overhead 12.47kV distribution line will extend from the temporary substation pole TP5 to G71 P1, approximately 425 feet via two (2) 50' poles (TP6 & TP7). At G71 P1, the temporary overhead line will connect to the existing 71 circuit.

The existing pole at G71 P2 will be replaced with a new 50' pole to accommodate the installation of a temporary recloser (TPG71) equipped with six (6) intermediate class lightning arresters and associated bypass fuses (TP-F71).

The existing pole at G70 P2 will be replaced with a new 50' pole to accommodate the installation of a temporary recloser (TPG71) equipped with six (6) intermediate class lightning arresters and associated bypass fuses (TP-F72).

Temporary overhead fiber optic cable will be installed from the temporary substation to each of the temporary reclosers at G70 P2 and G71 P2. This temporary fiber will be installed on the temporary distribution line to G71 P1 where it will then follow the existing distribution line to G71 P2 providing communications to the temporary recloser on this pole. The fiber optic cable will then extend from G71 P2 to G70 P2 via G70 P3 to provide communications to the recloser on G70 P3. These reclosers are being installed to maintain reliability of the 70 and 71 circuits while in the temporary configuration and will be removed after the proposed Georgia substation is commissioned.

15. Q. Will an outage be necessary to perform the proposed Georgia Substation upgrades?

A. No, the construction of the substation upgrades will be performed without an outage of the Georgia Substation.

16. Q. Will lay down areas be utilized during construction?

A. No, lay down areas will not be utilized during construction.

17. Q. Will the Project have any adverse effects on the safety of the public or adjoining landowners?

A. The Project will be designed and constructed in accordance with current National Electrical Safety Code requirements. GMP will use quality materials and adhere to careful construction practices throughout the construction phase. The Project will not unnecessarily or unreasonably endanger the public or adjoining landowners.

18. Q. What is the anticipated construction schedule?

A. Subject to Commission approval, this Project is proposed to commence March 2027 and conclude by September of 2027.

19. Q. What are the anticipated construction hours for the Project?

A. Construction hours for the Project will be from 7:00 a.m. to 7:00 p.m. Monday through Friday, 8:00 a.m. to 5:00 p.m. on Saturday, and shall cease on Sundays and state and

federal holidays except where construction activities must be performed during required outages needed to maintain system reliability.

20. Q. Does this conclude your testimony?

A. Yes.

DECLARATION OF JOHN R. FISKE

I declare that the testimony and exhibits that I have sponsored are true and accurate to the best of my knowledge and belief and were prepared by me or under my direct supervision. I understand that if the above statement is false, I may be subject to sanctions by the Commission pursuant to 30 V.S.A. § 30.

April 8, 2026
Date

/s/ John R. Fiske
John R. Fiske