

APPENDIX A

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INTRODUCTION

The purpose of this document is to provide personnel safety, maintain integrity of service, and protect apparatus used in the transformation, transmission, and distribution of electrical energy. The Clearance and Control procedure shall be followed when isolating overhead and underground transmission circuits, overhead and underground distribution circuits, and substation apparatus.

The System Operator will direct this process through the use of disconnecting devices, tagging, and documentation. Authorized Persons shall be thoroughly familiar with this procedure and shall have a copy readily available for reference.

COORDINATION

This procedure applies only to the performing or directing of work on electrical circuits or apparatus used in the transformation, transmission, and distribution of electrical energy. All individuals involved in such work shall be designated as an Authorized Person.

This procedure applies to all new work or installations as soon as any connection is made which would permit any part of the new work to be energized by the operation of a switch, open loop, or other device. From that time until the new work is placed in service or reported available for normal operation the connecting switch(es), open loops, or device(s) shall be kept tagged at all times. If work is in progress a Red Tag shall be used (Clearance or PRT). If the work will be suspended for an extended period of time, a Hold Tag may be used in lieu of the Red Tag.

REFERENCES

Code of Federal Regulations 29 CFR 1910.269 (d), (m), (n), and (o) de-energizing lines and equipment, grounding, and testing. National Electrical Safety Code NESC ANSI C-2.

DEFINITIONS

Authorized Person: A person designated by a Departmental Manager, or their designee, who has successfully been tested and has demonstrated proficiency and understanding of EOP G014.

Exception: A person who is undergoing on-the-job training and who, in the course of such training, has demonstrated an ability to perform duties safely at his or her level of training and who is under the direct supervision of an Authorized Person is considered to be an authorized person in the performance of those duties. Note: Only Authorized Persons shall issue or be issued Clearances, PRT's, etc.

Authorized Person List: A formal document developed and maintained semiannually by National Grid Control Center management listing all individuals designated as an Authorized Person.

Clearance (for work): Permission to an Authorized Person to perform specified work within a zone of protection.

Clearance Person: The person holding the Clearance.

Controllership: Permission given and documented by the System Operator to only an Authorized Person or to the De-centralized Location(s) to assume all the duties and responsibilities of the System Operator.

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Dead: Isolated, tagged, tested de-energized and grounded.

De-energized: The absence of normal operating voltages associated with the operation of the system or control circuits.

Field Construction Coordinator (FCC): An Authorized Person assigned to coordinate the job with the Contractor and be a liaison with the System Operator.

Grounded: Intentionally connected to earth through a ground connection.

Grounds:

- Mechanical – Switching devices permanently installed in substations that are not to be used for personal protection except in Gas Insulated Substations (GIS), HVDC terminals, or network applications.
- Personal / Bracket / Equipotential Grounds – Portable conductors whose installation is directed by the Clearance Person and applied for the protection of workers.

Guarantee: A Guarantee is a formal statement given to an inter-connected utility that specified apparatus has been de-energized and that certain device(s) are tagged in the Protective Position and will remain so until the Guarantee is released by the recipient.

Higher Authority: An Authorized Person at the same or higher level of Management above the Clearance Person who is holding the Clearance and is knowledgeable in the work to be performed.

Isolated: Disconnected from all sources of electrical supply by open switches, disconnectors, jumpers, taps, or other means and absent from nominal voltages.

Limits: Open devices that define a zone of protection, also known as protective points.

Non-Authorized Contractor: Electrical Contractors who are not trained on the Clearance and Control procedure and are not listed as Authorized Persons that perform work under the authorization of an FCC and the "Contractor Permission to Work" process.

Non-Reclose Assurance: A formal statement from the System Operator to an Authorized Person to perform work on, or near, designated energized lines or apparatus after all its reclosing devices, including SCADA/EMS, are disabled and tagged.

Person in Charge of the Work: A qualified person responsible for the work to be performed.

Personal Red Tagging (PRT): Permission given by the System Operator to an Authorized Person to assume the duties and responsibilities with respect to the switching, tagging, testing, grounding, and restoring specific sections of the electrical system as defined by the System Operator.

Protective Position: The tagged position of a mechanical or electrical device with a visible air gap that prohibits the energizing or the re-energization of a specific work area.

Exceptions to a visible air gap: Oil Fused Cutout, Vacuum switches, network protectors, network Transformer Oil Disconnects (TOD), and other devices approved for this application.

Qualified Person: A person knowledgeable in the construction and operation of electric power generation, transmission, substation, and/or distribution apparatus involved along with the associated hazards in specific duties pertaining to electric operations.

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Re-Issue: The issuance of a surrendered Clearance from the System Operator to a Clearance Person.

Release of Clearance: The act in which a Clearance Person(s) reports to the System Operator that their grounds have been removed (if applicable), all workers and equipment are in the clear, and the status or condition of the line or apparatus they were working on.

Sign-On: Method permitting an Authorized Person to work independently on an existing Clearance with the same zone of protection.

Surrender: Permission from the System Operator to the Clearance Person to be relieved of further work and responsibility in connection with the Clearance. It differs from Release of Clearance in that it definitely implies that the work is unfinished, that tags cannot be removed, that the circuit may still be grounded, and the circuit or apparatus may not be restored to service.

Switch Person: A qualified Authorized Person that is knowledgeable in the operation of electrical apparatus for the purpose of isolation of electrical circuits or apparatus. A Non-Authorized qualified person may switch under the direct supervision of a qualified Authorized Person at the switching location. Direct supervision requires the Authorized Person being at the switching location, directing, and observing the Switch Person performing the work.

System Operator: An Authorized Person, who directs, controls, monitors, and operates the electric system and its associated apparatus.

TOA: An acronym used in the formal application for requesting outages or for other work on lines or apparatus through the System Operator. (Transmission Outage Application).

Transfer: A process to re-assign a Clearance or NRA from one Authorized Person to another through the System Operator.

Voltage Testing: Testing when applied voltages result in voltages greater than 50 volts. This includes but not limited to Fault Finder, Power Factor, Insulation Resistance measurements, TTR, Hi-Pot, or System Voltages, etc. Appropriate minimum approach distances shall be maintained within the area under test.

Zone of Protection: An area defined by opened protective points which isolate all known energy sources. This area is created by isolating, de-energizing and tagging every protective point of isolation from all forms of external sources of energy that could create a hazard for workers.

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1.0 GENERAL INFORMATION

1.1 Responsibilities of Individuals

Only an Authorized Person shall implement any section of this procedure.

1.2 Enforcement of Procedure

1.2.1 It is the duty of every Authorized Person to rigidly enforce this procedure and to assist workers and others to understand and comply with it.

1.2.2 If at any time this procedure has not been strictly complied with, the System Operator shall be notified as soon as possible.

1.2.3 Control Center Management, Operations Management, or their designee shall remove from the Authorized Person List any person who is not familiar with or fails to comply with this procedure and shall notify the department head on whose list the person's name appears.

1.2.4 Any person so removed from the Authorized Person List shall not be reinstated except on orders from the appropriate Operations Management head of the group involved.

1.3 Working on Red Tagged Device

No work may be performed on a Red Tagged device.

Exception: Work on a device that serves as a "tagged point" may be permitted on the de-energized side of a visible air gap provided all of the following are met:

1.3.1 The device is not to be operated.

1.3.2 The apparatus is physically protected against closing.

1.3.3 Working clearances are maintained.

1.4 Control of the Electrical System

Control is under the System Operator until such time that Controllershship and responsibilities are delegated to others.

1.4.1 The System Operator is the controller of **all** disconnecting devices associated with the **transmission, distribution, substation, and network systems** used to energize or de-energize circuits or apparatus. System Operators or those given Controllershship cannot issue themselves a Clearance, an NRA, or grant permission to themselves to use Personal Red Tagging Procedures.

1.4.2 Non System Operator Based Operations.

Permission is not required from the System Operator for the operation of disconnecting devices used to energize or de-energize an individual distribution transformer (single or three phase overhead or underground transformer), distribution capacitor banks, series street lighting circuits or fused radial

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distribution side taps and the application of PRT on the associated disconnecting devices.

1.5 Duties and Responsibilities of the System Operator

The duties and responsibilities of a System Operator include but are not limited to the following:

- 1.5.1 Gives permission to work after necessary precautions are taken.
- 1.5.2 Authorizes qualified field personnel to operate switches or devices and maintains all necessary documentation.
- 1.5.3 Verifies the limits of a TOA Application and has the circuit/apparatus involved isolated from all known sources of energy.
- 1.5.4 Verify that The Clearance Person is on the Authorized Person List.
- 1.5.5 Issues, accepts the releases of, or re-assigns all Clearances on circuits or apparatus using appropriate formal language.
- 1.5.6 Completes appropriate documentation.
- 1.5.7 If any doubts arise regarding the qualifications or knowledge of an Authorized Person, the System Operator shall communicate the facts to the individual's supervisor.
- 1.5.8 Gives permission to use Personal Red Tags and maintains documentation of that information.
- 1.5.9 Issues and Releases HOLD tags.
- 1.5.10 Issues, accepts the release of, and re-assigns Non-Reclose Assurance and documents that information.
- 1.5.11 Issues and accepts release of Customer Tags.
- 1.5.12 Issues and accepts release of guarantees with foreign utilities or generators.
- 1.5.13 Accepts guarantees from foreign utilities or generators.

1.6 Demarcation Line of Authority

At all System device locations where switching and tagging may be done under the authority of System Operators of multiple Control Centers, Customers, or Generating Plants, there shall be one set of disconnecting switches common to both groups. This is the Demarcation Line of Authority.

- 1.6.1 At the Demarcation Line of Authority, either System Operator may issue orders, depending upon who is responsible for the work. Advance notice of the operation of such disconnecting switches shall be exchanged between System Operators.
- 1.6.2 The Demarcation Line of Authority for foreign utilities, generators, or customers shall be identified on System one-line diagrams.

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1.7 Documentation and Records Retention

All field documentation forms, switching orders, and tags shall be maintained by local supervision for a minimum of three (3) years. All System Operator forms shall be maintained for the life of the asset.

1.8 Inability to Release, Transfer, or Surrender

If a Clearance Person is unable to Release, Transfer, or Surrender a Clearance, a Higher Authority, through the System Operator, shall assume full responsibility and be issued the Clearance and then may Release, Transfer, or Surrender the Clearance. The Higher Authority shall also notify the original Clearance Person of the status of the Clearance at the earliest possible convenience.

This process shall also be used under Personal Red Tagging when it is necessary to Release the PRT; and for Non-Reclose Assurance to Release, Transfer, or Surrender and Re-Issue the NRA.

1.9 Public Safety and Protection of the Public

When general clearances can not be maintained on circuits energized at primary voltage, a National Grid Authorized Person shall hold a Clearance or PRT for the line(s) or apparatus and the lines(s) or apparatus shall be grounded. It is the Clearance Holder's responsibility to establish and maintain contact with the contractor to ensure the equipment is returned to service when the public/contractor is complete and all personnel and equipment are in the clear. The Clearance Person shall be responsible for and maintain all documentation regarding meeting, discussions, job briefs, etc. This process shall be documented using the Customer Work Notification Form. A duplicate form or copy shall be prepared and provided to the Customer.

For work in proximity of National Grid circuits or lines, Customer Tags are not to be used when OSHA general clearances to apparatus owned and operated by National Grid cannot be maintained.

1.10 Removal of Circuit or Apparatus for Working Clearances

No circuits are to be removed from service for physical clearances, where minimum working clearances are to be compromised, without being isolated, tagged, tested de-energized, and grounded.

1.11 Non-Authorized Contractors Working on National Grid Apparatus

Contractors (not authorized) shall work under a coordinated effort of an Authorized Person (i.e. FCC).

When utilizing the Clearance and Control procedure, the "Contractor Permission to Work" process shall be followed. See section 2.7.

1.12 Mutual Assistance in Storm Emergencies by Foreign Utility Crews

National Grid Employees who have been given controllership of distribution feeders or permission to use PRT's, may direct foreign crews to utilize their own protective procedures (i.e. tagging) to protect themselves during storm restoration efforts.

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1.13 Overlapping Zones of Protection

Overlapping zones of protection are not allowed when either a Red Tag Clearance is issued or when Personal Red Tags are used at URD/UCD locations. Overlapping zones of protection are allowed for all other PRT applications.

2.0 PROCEDURE:

2.1 Qualification of Individuals

Individuals shall be an Authorized Person and have all of the following qualifications:

2.1.1 Clearance Person

- a. Shall be an employee or contractor working for National Grid.
- b. Shall be trained in and knowledgeable of the Clearance and Control Procedure.
- c. Shall have appropriate knowledge of the type of apparatus included within the Clearance.
- d. Shall have the ability to direct the performance of the work to be done.

2.1.2 System Operator

- a. Shall be employed by National Grid.
- b. Shall be trained in and knowledgeable of the Clearance and Control Procedures.
- c. Shall have operational knowledge of the electrical system to be controlled.

2.1.3 Higher Authority

- a. Shall be a management employee of National Grid at the same or higher level of management.
- b. Shall be trained in and knowledgeable of the Clearance and Control Procedure.
- c. Shall have appropriate knowledge of the type of apparatus included within the Clearance.
- d. Shall have the ability to direct the performance of the work to be done.

2.1.4 Switch Person

- a. Shall be an employee or contractor working for National Grid.
- b. Shall be trained in and knowledgeable of the Clearance and Control Procedure.
- c. Shall have appropriate knowledge of the type of apparatus that is to be operated.
- d. A Non-Authorized qualified person may switch under the direct supervision of a qualified Authorized Person at the switching location.

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2.2 Company Approved Tags

No device shall be operated if it bears a Red Tag, Personal Red Tag, Hold Tag, Customer Tag, Non-Reclose Assurance Tag, or Station Control Tag.

Exception: Approved gang operated three-position disconnecting devices, (CLOSED, OPEN, GROUNDED) may be operated (switched) from the "open" position to the "ground" position without removal of the Red Tag provided a mechanical device is incorporated to prevent inadvertent closing.

All tags used under this procedure shall be completely filled in with all the information called for on the tags.

Disconnecting devices, placed in the open position shall be tagged to provide a visual indication that the operation of the device while tagged is prohibited. The approved National Grid tags shall be securely attached to the energy isolating device so that they cannot be inadvertently or accidentally detached. The tag shall be placed on the lock, or in appropriate tag holders, or other provisions as close as possible to the isolation device. A protective point when so tagged may or may not be energized.

2.2.1 Red Tag:

- a. Shall be placed on protective devices in the open position.
- b. Shall be used for the protection of workers.
- c. Shall be used to establish a zone of protection when used for a Clearance.
- d. When used for Personal Red Tagging, may or may not establish a zone of protection, but prevents closing of the device.
- e. **Does not** imply that grounds are installed. Grounds may or may not be applied as determined by the Clearance Person.
- f. Shall be used for Guarantees between interconnected utilities.
- g. Shall have a Number when a Clearance is issued by the System Operator.
- h. Shall bear the name of an individual when used for Personal Red Tagging.
- i. Can be used for adjacent or same zone of protection with a Customer Tag.
- j. Only one Red Tag shall be applied on a protective point unless it is for a separate and adjacent Clearance.
- k. A Red Tag and a HOLD tag may be applied on the same protective point.
- l. Will provide assurance that a tagged device will not be operated during the switching sequence.

Exception: Approved gang operated three-position disconnecting devices, (CLOSED, OPEN, GROUNDED) may be operated (switched) from the "open" position to the "ground" position without removal of the Red Tag provided a mechanical device is incorporated to prevent inadvertent closing.

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2.2.2 Non-Reclose Assurance (NRA) Tag:

- a. Issued by the System Operator to indicate a Non-Reclose Assurance.
- b. Placed on device(s) and associated supervisory controls to prevent inadvertent line re-energization.
- c. Shall have a Number when issued by the System Operator and if applied by someone given Controllership, the name of the person requesting the NRA shall be placed in the location of the NRA number.

2.2.3 Hold Tag:

The HOLD tag shall be administered by the System Operator and can be applied and released for an Authorized Person or the System Operator.

Hold tags:

- a. Shall identify apparatus that is not to be operated due to system or their condition and/or is unsuitable for service.
- b. May be placed on a device in the open or closed position.
- c. Shall not to be used to provide safety clearance for the protection of employees working on electrical apparatus.
- d. Shall have a Number when issued by the System Operator. If applied by someone given Controllership or Person in Charge of the Work, the name of the person requesting the Hold Tag shall be placed in the On For position of the Hold Tag.

The Clearance Person may use a HOLD tag to maintain ground continuity through a closed disconnecting device.

2.2.4 Station Control (SCT) Tag:

- a. Non System Operator based.
- b. Used for substation related low voltage or control work 600V or less.
- c. May be applied on devices that do not provide a visible open.
- d. Administered by the Authorized Person.
- e. No device tagged with SCT shall be operated.

2.2.5 Customer Tag:

- a. A two part pre-numbered tag used for work to be performed by a Customer or their agent on their apparatus.
- b. The tag bears the Name of a Customer Representative or their agent.
- c. Administered by the System Operator.

2.2.6 Ground Device Identification Ticket (GDIT)

- a. Required for all grounds applied for personal protection.
- b. Used as identification to track/control all ground locations.

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- c. The Person in Charge of the Work shall record the location of the grounds by the use of the GDIT.
- d. The System Operator shall direct and document the application of station mechanical grounds with GDIT.
- e. The System Operator shall direct and document the application of customer requested grounds with GDIT.

2.2.7 Worker Placard

- a. Not System Operator based.
- b. May be placed on an apparatus control (handle, button, switch, etc.) by the person in charge of the work.
- c. Used to identify the apparatus being worked on.
- d. The placard device can only be operated on orders from the person in charge of the work.
- e. Only one Worker Placard shall be placed on a piece of apparatus at a time.
- f. No other tag will be allowed on the control that has a Worker Placard on it.

2.3 Red Tagging

2.3.1 Applying for the Clearance

The person applying for the Clearance shall obtain the Clearance from the System Operator for all isolating devices necessary to isolate the circuit or apparatus being worked on from all known sources of energy. The limits of the Clearance shall be adequate for the work to be performed. Red Tags shall be used to establish the zone of protection. The Clearance can only be obtained by an Authorized Person.

2.3.2 Application Contents

An application for a Clearance shall be submitted to the System Operator or other Authorized Person in advance of the time when the Clearance will be needed. The lead time for submission is defined by the System Operator.

When applying for a Clearance, the application shall indicate the following:

- a. The name of the Clearance Person, if available.
- b. A precise identification of the circuit or apparatus upon which work is to be performed.
- c. The time and date the Clearance is required and its approximate duration.
- d. All devices that shall be tagged, as named and numbered on the operating diagram.
- e. The nature of the work to be done.
- f. A sketch or print shall be furnished at the time of the request to the Outage Coordinator when any system modifications are planned.

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2.3.3 Preparation of the Clearance by the System Operator

- a. The System Operator shall check carefully to make sure that no condition exists which will prevent the switching operations for the proposed Clearance.
- b. The System Operator shall have the section of the circuit or apparatus involved isolated from all known sources of energy by directing that the appropriate devices be placed in the *protective position* and Red Tagged.

2.3.4 Requesting a Clearance

The Clearance Person shall communicate the following information at the time of the request:

- a. Name
- b. Transmission or Distribution or Substation apparatus to be worked on
- c. All limits by number and location requested to be tagged for the Clearance

2.3.5 Issuance of the Clearance

A Clearance shall be issued by the System Operator and acknowledged by the Clearance Person utilizing the proper formal language and communication techniques to ensure all information is provided and repeated back by the Clearance Person. After receiving the Clearance from the System Operator, the Clearance Person shall visibly check all devices that are tagged where practicable.

If the Clearance Person finds it is not possible to finish in the allotted time, the Clearance Person, as soon as possible, shall notify the System Operator.

2.3.6 Release of a Clearance

Prior to the Release of a Clearance to the System Operator, the Clearance Person(s) shall:

- a. Determine if lines or apparatus are ready for service.
- b. Determine that all members in the crew are clear of the lines and/or apparatus.
- c. Determine that all protective grounds (if applicable) installed by or for the crew have been removed.
- d. Inform the System Operator of any change from the original operating position of any device operated within the zone of protection.
- e. Report such to the System Operator that all workers are in the clear, grounds have been removed, and the status or condition of the line or apparatus they were working on
- f. After the Release of Clearance, if additional work is required after the apparatus or circuit has or has not been energized, the System Operator may:

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1. Issue orders to operate the necessary device(s) that will re-establish the original zone of protection for that apparatus or circuit.
2. Issue orders to tag the necessary device(s) using the original Clearance number assigned to that apparatus or circuit.
3. Issue Clearance(s) on the re-established zone of protection.

Note: The Release of Clearance is normally conducted for the Restoration of the circuit or apparatus to normal service. If testing with system voltage is required, the Clearance Person shall inform the System Operator of this requirement and the "Release of a Clearance for Testing with System Voltage" process will be followed.

2.3.7 Release of Clearance for Testing with System Voltages

Testing of apparatus or circuits using Primary System Voltages shall be performed **only** under the direction of the System Operator.

- a. No testing shall be done on apparatus or circuits, until the System Operator has received a "Release of Clearance" from all persons holding the Clearance in that zone of protection.
- b. The Clearance Person in charge of the test and the System Operator shall agree on which tagged device(s) will be operated in order to facilitate the test.
- c. Prior to ordering any device closed, the System Operator will order the tag(s) removed from that device.
- d. Once the apparatus or circuit has been energized, in-service checks may be performed as needed (i.e. phase checks, 3 phase voltage checks, soaking transformers/circuits, etc).
- e. After the Clearance Person in charge of the testing has been satisfied of the test procedure, they shall inform the System Operator that all testing has been completed and the line or apparatus is ready for service.
- f. The System Operator may return that apparatus or circuit to service, provided that no additional work is required.
- g. If additional work is required after the apparatus or circuit has been energized for testing, the System Operator will:
 1. Issue orders to operate the necessary device(s) that will re-establish the original zone of protection for that apparatus or circuit.
 2. Issue orders to tag the necessary device(s) using the original Clearance number assigned to that apparatus or circuit.
 3. Issue Clearance(s) on the re-established zone of protection.

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Note: When testing with system voltages and no Red Tag Clearance or PRT is issued, the System Operator and the person performing the testing (i.e. phasing) will discuss and incorporate the testing into the switching sequence.

2.3.8 Preparation for Work

a. Testing

After receiving the Clearance, an approved test device shall be used to test de-energized before grounding at the point of test. The testing and grounding process shall be continuous. Grounds shall be installed immediately after testing the circuit or apparatus. A re-test shall be conducted if the grounding process is interrupted. Reference the test device EOP for approved test equipment.

b. Working with Grounds Applied

When working with grounds applied, reference appropriate grounding procedures for the application of grounds.

c. Working without Grounds

When working on isolated and tagged substation apparatus and minimum approached distances will be maintained, grounds will not be required to perform work such as mechanism inspections or topping with SF6 gas.

Added safeguards are to be included where possible.

d. Ticketing of Grounds

1. Clearance Person(s) shall ensure that a GDIT is applied on all Personal Grounds and maintain the documentation for the locations and GDIT number(s).
2. When mechanical grounding switches in substations are required, the System Operator will issue orders and apply GDIT and maintain the documentation for the locations and the GDIT number(s).

2.3.9 Routine Job Related Testing

Voltage testing of the apparatus or circuit utilizing a test set can only be directed by the Clearance Person. (Tags remain in place during the voltage test). Notification to the System Operator is not required.

When other person(s) are working under the Clearance Person, the Clearance Person shall conduct testing with the consent of all persons working under the Clearance Person and shall be responsible for the safe conduct of the test.

When multiple persons are signed on to the same zone of protection,

- a. Prior to testing, the Clearance Person performing testing shall notify any other person(s) signed on to the same zone of protection and then request permission to perform testing from the System Operator.

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- b. Prior to the System Operator granting permission for testing, **the other person(s) signed on shall notify the System Operator** that all associated grounds have been removed, members of the crew are clear and will remain clear until notified by the System Operator. This shall be documented by the System Operator for each Clearance Person.
- c. The System Operator will then grant permission to the Clearance Person to perform the test.

Note: Under no circumstances shall a Clearance Person apply a test potential in excess of normal system voltage when a Clearance has been issued on adjoining apparatus for the following tests:

1. Hi-pot testing of GIS Substations
2. Hi-pot testing of vacuum breakers

2.3.10 Multiple Persons Working within the same Zone of Protection

When multiple Clearance Persons must work within the same zone of protection, there are two options available. Only ONE set of tags will be used on the same zone of protection. These methods do not apply to the use of Personal Red Tags.

a. Option One: Working Under someone else's Clearance:

1. Separate crews can work under one Clearance issued to a single Clearance Person if the crews comprise a group of people working in a coordinated manner to accomplish a task on the same lines or apparatus under the direction of a single Clearance Person.
2. The System Operator is not notified of this arrangement.
3. The Clearance Person is responsible for the safety, testing and grounding and the work performed by all people working under their Clearance

b. Option Two: Sign-On Process through the System Operator:

The Sign-On option is not intended to be used to perform a Transfer of work.

This option shall be followed when multiple crews work independently or jointly under the same zone of protection (one set of Red Tags with multiple Clearances issued) provided the following requirements are met:

1. The existing zone of protection is adequate for the additional work at all times.
2. Issuance of another Clearance under the Sign-On process shall be permitted only with the knowledge and consent of the System Operator and all Clearance Person(s) working on the same zone of protection.

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3. The System Operator shall ensure that the name of the Clearance Person signing on has been entered on the existing Clearance sheet for that zone of protection and then the Clearance is issued by the System Operator.
4. See section 2.3.9 for routine job related testing.
5. Each Clearance Person shall Release their Clearance with the System Operator when their work is completed and report to the System Operator that all their grounds have been removed, and that personnel and equipment are in the clear.
6. Each Clearance Person shall explain clearly to the System Operator all changes and/or repairs made by them.
7. While personal safety is the responsibility of each individual worker, the Clearance Person signed on is responsible for the safety, testing and grounding and the work performed by the people under their immediate direction.

2.3.11 Modifying the Zone of Protection

The Clearance Person shall determine if the zone of protection is adequate for the work to be performed and may request that the limits of the zone of protection be modified (expanded or collapsed) only with approval of the System Operator. The System Operator and the Clearance Person shall document all modifications on their appropriate forms when expanding or collapsing a zone of protection including a full Job Briefing for the change of work zone protection.

a. Expanding the Zone of Protection

During the expansion of the zone of protection, work may continue in the original zone of protection.

1. The System Operator shall notify all Clearance Person(s) issued the Clearance that the zone of protection is being expanded.
2. The System Operator shall order the new tag(s) placed to expand the zone of protection. These tag(s) shall have the same Clearance number as the original Clearance.
3. After the zone of protection has been expanded, the System Operator shall notify all Clearance Person(s) issued the Clearance that the zone of protection has been expanded and communicate to all Clearance Person(s) the new limits of the Clearance.
4. Once the expanded Clearance has been issued to all Clearance Person(s), the Clearance Person(s) shall Release the original tag(s) that are no longer needed for their zone of protection. Clearance Person(s) may then test de-energized and ground the newly expanded zone.

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5. The System Operator shall direct the released tag(s) removed and The Clearance Person may close or request the System Operator close the device(s) only after notifying all Clearance Person(s), and confirming that the newly expanded zone has been grounded.
6. If grounding is not required by the work that is being done in the expanded zone, the System Operator shall direct the released tag(s) removed and the Clearance Person may close or request the System Operator close the device(s) only after notifying all Clearance Person(s) and confirming that the newly expanded zone has been tested de-energized.
7. The Clearance Person shall communicate with the System Operator the configuration of the circuit when the work has been completed and the Clearance is being released.

b. Collapsing the Zone-of-Protection

While establishing the new zone of protection within the existing zone of protection, work may continue in any part of the original zone of protection. Prior to releasing any tags associated with the original zone of protection, grounds shall be applied or relocated in the new zone of protection (if necessary) and all workers, equipment, and grounds shall be in the clear of the section to be re-energized.

1. The System Operator shall notify all Clearance Person(s) issued the Clearance that the zone of protection is being collapsed.
2. The System Operator shall order the new tag(s) placed to collapse the zone of protection. These tag(s) shall have the same Clearance number as the original Clearance.
3. After the zone of protection has been collapsed, the System Operator shall notify all Clearance Person(s) issued the Clearance that the zone of protection has been collapsed and communicate to all Clearance Person(s) the new limits of the Clearance.
4. Once the collapsed Clearance has been issued to all Clearance Person(s), the Clearance Person(s) shall Release the original tag(s) that no longer were needed for the original zone of protection.
5. The System Operator shall then direct the released tag(s) removed.

2.3.12 Re-Assignment of a Clearance

A Clearance may be re-assigned by the Transfer or Surrender and Re-issue processes from a Clearance Person to a new Clearance Person only through the System Operator. The Tags remain in place and the same Clearance number is used.

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2.3.13 Transfer Process

Under this process the work can continue.

- a. Prior to contacting the System Operator, both the existing and the new Clearance Person shall conduct a comprehensive job transfer brief covering the Job status, the isolated zone of protection and tag locations, worker status, Ground locations, and GDIT numbers.
- b. The Clearance Person contacts the System Operator and informs them that he has conducted the briefing with the new Clearance Person and request the Transfer of Clearance.
- c. The new Clearance Person contacts the System Operator and requests the Clearance limits by device and location and then is issued the Clearance by the System Operator.
- d. The System Operator shall then inform the original Clearance Person that the Transfer has been completed.

2.3.14 Surrender and Re-Issue Process

Under this process the work under the surrendered Clearance stops.

- a. Grounds may be left in place, work may not be complete, and the Clearance is administratively Surrendered to the System Operator and not Released. During the transition, it must be considered that there is no protection in place until the surrendered Clearance is re-issued. Minimum approach distances shall be maintained for the surrendered Clearance as if the line or apparatus was energized.
- b. The Clearance Person shall contact the System Operator and inform them they are Surrendering their Clearance.
- c. The Clearance Person shall contact the System Operator and fully describe all condition of the circuit or apparatus and the locations of all grounds and GDIT number(s), if still in place.
- d. The new Clearance Person contacts the System Operator and requests that the Surrendered Clearance be Re-Issued. In certain cases, the Surrendered Clearance may be Re-Issued to the original Clearance Person.
- e. The System Operator Re-Issues the Clearance and shall fully describe to the new Clearance Person all conditions and the locations of all grounds and GDIT number(s), if still in place, as reported in the surrender statement.

Note: If the apparatus or circuit are ready for service, all workers are in the clear, and all personal grounds installed by or for the crew have been removed, the Clearance shall be Released.

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2.4 Personal Red Tagging (PRT)

2.4.1 General

- a. The System Operator shall define the scope, limits, reporting requirements, and shall approve when *Personal Red Tagging* is utilized. No part of an area protected by Personal Red Tagging shall cover an area protected by an outstanding Red Tag Clearance issued by the System Operator.

Exception:

Personal Red Tagging may cover an area protected by an outstanding Red Tag Clearance issued by the System Operator and the application of the PRT on the associated disconnecting devices between the limits of a Clearance for the operation of disconnecting devices used:

1. To energize or de-energize an individual transformer (single or three phase overhead or underground transformer)
2. On distribution capacitor banks
3. On series street lighting circuits
4. On fused radial side taps

System Operator permission is required before placing a Personal Red Tag on a device on which there is a Red Tag (Clearance) or HOLD Tag.

- b. Permission is given by the System Operator to the "Person in Charge of the Work," who must be a qualified Authorized Person, to assume the duties and responsibilities with respect to the switching, tagging, testing, grounding, and restoring specific sections of the electrical system as defined by the System Operator. The Person in Charge of the Work shall follow all appropriate steps associated with Appendix A of this procedure.
- c. The use of Personal Red Tags may or may not establish a zone of protection.

In the case where Personal Red Tagging is used to establish a zone of protection, testing and grounding are required before the equipment or circuit can be accepted as dead. Work may be done only after these steps have been completed either personally by the worker, or, at his/her request, by another.

Exceptions: Permission is not required from the System Operator for the operation of disconnecting devices used to energize or de-energize an individual distribution transformer (single or three phase overhead or underground transformer), distribution capacitor banks, series street lighting circuits or fused radial distribution side taps and the application of PRT on the associated disconnecting devices.

- d. When a secondary switch (customer's or company) is used for isolation, a PRT shall be used. A National Grid lock (where possible) and a PRT tag shall be applied at the disconnecting device.

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Note: When an employee has not been trained and authorized through this EOP, the employee will continue to utilize the lock out / tag out procedure to control the hazardous energy associated with the task(s) at hand. Lock out / tag out shall not be used for primary voltage isolation such as a riser pole or switchgear.

- e. No feeder tie switch shall be operated without a switching order from the System Operator.
- f. Personal Red Tags are not transferable. For work under Personal Red Tagging that has not been completed, the System Operator shall determine what appropriate action(s) shall be taken.
- g. If a person is unable to continue their work, a Higher Authority shall assume full responsibility of any Personal Red Tags placed and inform the System Operator. The Higher Authority shall also notify the original Person In Charge of the Work of the status of the Personal Red Tags as soon as practicable.

2.4.2 Documentation

The use of *Personal Red Tagging* shall require written documentation utilizing the Field Clearance and Control form by the Person in Charge of the Work.

2.4.3 Multiple Crews Working in the same Zone of Protection

a. Option One: Working under someone else's Tags

When multiple crews are working in the same zone of protection, and **one Person in Charge of the Work** assumes responsibility for the protection of all the crews working, only that individual's Personal Red Tag(s) is required for the work to be performed. The Person in Charge of the Work shall ensure that all crews working under the protection of their Personal Red Tag(s) are listed under their Field Clearance and Control Form.

b. Option Two: Working with individual Tags

Each Person in Charge of the Work, working independent of each other, shall have their Personal Red Tags placed on all devices necessary to establish the zone of protection for their crew(s). Each Person in Charge of the Work shall maintain their own Field Clearance and Control Form.

Note: Overlapping zones of protection are allowed under the PRT process. Disconnecting devices that have been tagged with a Hold Tag for continuity of grounds shall not be operated.

2.4.4 Removal of Personal Red Tags

Before removing any of their Personal Red Tags or operating any devices, the Person in Charge of the Work shall ensure that all of their workers, tools, equipment are in the clear and grounds have been removed. If no other tags are placed on the same device, the Person in Charge of the Personal Red Tagging shall remove their red tagging and the apparatus may be restored to service.

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2.4.5 URD / UCD Locations

At no time shall multiple Personal Red Tags be placed on the same device unless the sections are separate and adjacent in Underground Residential Developments or Underground Commercial Developments.

2.4.6 Personal Red Tags ordered on by the System Operator

Personal Red Tagging is also used when a System Operator, upon the request of the local field forces, arranges for the switching and tagging of a specific protective point(s) which will not establish a zone of protection but is required to prevent the operation of a device(s).

In such cases the System Operator issues a Personal Red Tag covering the specific point(s) to the Person in Charge of the Work who is then responsible for providing protection from any other source by switching and applying additional Personal Red Tags as required. Personal Red Tags ordered on by the System Operator shall not be removed except under a switch order from the System Operator or by prior permission by the System Operator.

When such a Personal Red Tag is issued by the System Operator to the Person in Charge of the Work, the System Operator Personal Red Tagging Sheet must be filled out in the same manner as for a Clearance. The protective point(s) so covered must be tagged to the Person in Charge of the Work.

2.4.7 Routine Job Related Testing

Voltage testing of the apparatus or circuit utilizing a test set can only be directed by the Person in Charge of the Work. Tags remain in place during the voltage test. Notification to the System Operator is not required.

2.5 Non-Reclose Assurance (NRA)

2.5.1 A Non-Reclose Assurance is not a Clearance and no circuit or apparatus should be considered de-energized.

2.5.2 The System Operator shall tag all devices and all associated supervisory controls (i.e. SCADA/EMS) necessary to secure the Non-Reclose Assurance.

EXCEPTION: If the automatic reclosing feature of a reclosing device is disabled by a Supervisory Control and Data Acquisition System (SCADA), the system shall provide for the following:

- a. At the SCADA Operating Point (Control Center)
 1. A signal is received by the System Operator confirming that the disabling operation has occurred at the reclosing device location, and
 2. A readily visible tag or electronic display is used to inform the System Operator that a disabling operation has been initiated, and
 3. The tag or electronic display (screen tag) is removed before action is taken to re-enable the automatic reclosing feature.
- b. At the Reclosing Device Location (field or substation)

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1. The reclosing feature is disabled in such a manner as to prevent manual override of the normal control by any potential on-site operator, or
2. A signal, flag, or other display is used in such a manner as to alert any potential on-site operator that the reclosing feature has been disabled.

- 2.5.3 A Non-Reclose Assurance can be issued after the reclosing control(s) for a specific circuit have been placed in the non-reclose position and the necessary NRA tags placed.
- 2.5.4 The Authorized Person(s) to whom the Non-Reclose Assurance has been issued has the responsibility to inform the System Operator or the person who has assumed Controllership of any conditions that may have caused the device to operate.
- 2.5.5 Manual reclosing shall not be performed until there is concurrence by the Authorized Person(s) holding the NRA and the appropriate System Operator.
- 2.5.6 The breaker(s) or device shall not be restored to the automatic reclose position until the Non Reclose Assurance has been released.
- 2.5.7 A Non-Reclose Assurance issued by the System Operator may be transferred using the Transfer or Surrender and Re-Issue Process.
- 2.5.8 Recloser Controls that are equipped with HOT LINE TAG feature shall be placed in the "**ON**" position and NRA tagged. (With the HOT LINE TAG "**ON**", the device will not automatically reclose and cannot be manually closed).
- 2.5.9 Only an NRA issued by the System Operator can have others signed on to the NRA.
- 2.5.10 After the Release of a Non-Reclose Assurance, if additional work is required before the reclosing control(s) for a specific circuit have been placed in the automatic position and the necessary NRA tags removed, the System Operator may reissue the Non-Reclose Assurance to the same or another Authorized Person.

Note: When an NRA is required for a prearranged job, the TOA form may be utilized by the System Operator and issued to the Person in Charge of the Work in lieu of completing a Field Clearance and Control Form. The time and date of issuance and release of the NRA as well as those working under the NRA shall be documented on the TOA form. In this case document retention shall be as designated in section 1.7 of this Electric Operating Procedure.

2.6 HOLD Tags

HOLD tags are not to be used to provide safety clearance for the protection of employees or the public working on or near electrical apparatus. The HOLD tag is System Operator based unless used for ground continuity. The HOLD tag means that a device shall not be operated until the reason for the HOLD tag is determined and the tag is removed.

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- 2.6.1 A HOLD tag prevents the operation of apparatus that is not ready for service or is desired to remain open or closed due to other circumstances.
- 2.6.2 A HOLD tag prevents apparatus that is damaged from being operated.
- 2.6.3 A HOLD tag may be used to identify devices that are not in their normal configuration or condition and/or are unsuitable for normal operation.
- 2.6.4 The HOLD tag may be placed on electrical apparatus in the open or closed position.
- 2.6.5 A Red Tag may be applied on an open device without clearing the HOLD tag.
Note: The device must be in the open position and safe for use as an isolation point.
- 2.6.6 HOLD tags may be used on various relay applications as determined by the System Operator where worker protection is not required.
- 2.6.7 The System Operator shall maintain a listing of HOLD tags within their area of responsibility.
- 2.6.8 The Authorized Person may order on and order off a HOLD Tag in their name to maintain ground continuity.
- 2.6.9 Can be applied for an Authorized Person or System Operator.

2.7 Non-Authorized Contractor Permission to Work Process

The FCC shall conduct a job brief with the Non-Authorized Contractor and:

- 2.7.1 Apply and obtain, a Clearance, permission to use PRT, or an NRA from the System Operator.
- 2.7.2 Upon receipt of Clearance, permission to use PRT, or an NRA, the FCC informs the Non-Authorized Contractor of the Clearance, PRT, or NRA and allows them to begin work utilizing the "Contractor Permission to Work" form.
- 2.7.3 Upon completion of the work, the Contractor shall inform the FCC of the completion of the work utilizing the "Contractor Completion of Work" section of the "Contractor Permission to Work" form.
- 2.7.4 The FCC Releases the Clearance, PRT, or NRA to the System Operator.
- 2.7.5 Under this process, the Contractor is solely responsible for the testing and application of required personal grounds and the work practices necessary to protect their employees and ensure safety at the job site.
- 2.7.6 Clearances and NRA's which are held by an FCC can be transferred. All Transfer Process requirements found in Section 2.3.13 shall be followed; additionally, the contractor must be involved in the comprehensive job transfer brief. The transfer shall be noted by the FCC on the Job Brief and by the Contractor in the remarks box of the "Contractor Permission to Work Form".

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2.8 Customer / Customer's Agent Requirements

The following are Rules applicable to Customers working on their apparatus which is connected to apparatus owned and operated by National Grid.

2.8.1 Customer Tag Person

The customer (or their agent) shall furnish the System Operator with the name of the person, and their affiliation, for whom the apparatus will be tagged.

2.8.2 Switching and Tagging for the Customer

- a. Before the System Operator may utilize the Customer Tag to have a line or apparatus removed from service and tagged, a request shall have been received from the customer (or their agent) stating specifically the apparatus involved, the work to be performed, and if grounds are needed. For customers supplied from a primary network feeder, grounds shall be applied. See paragraph 6.2.11.

Note: If the following conditions exist:

1. A Customer plans to perform voltage testing in the zone of protection by applying a test set voltage (e.g. Megger a switch)

AND

2. Other Customer Tag(s) and/or a Clearance is requested by National Grid Personnel on the same zone of protection

THEN

A visible air gap shall be established and tagged to establish a zone of protection for that customer's work separate from the other Customer Tag(s) and/or Clearance.

- b. The System Operator shall order the Switch Person to operate the controls and/or switches, and to fill out Customer Tag(s) and attach the "Work in Progress" section of the tag(s) in the manner provided (tag holders) to all National Grid sources of electrical energy.

2.8.3 Grounding for the Customer (if requested)

- a. Grounds may be installed and removed at the request of the customer (or their agent), as directed by the System Operator after all required protective devices are in the open position and tagged.
- b. Grounding performed by National Grid employees shall be done in accordance with Company testing and grounding EOP's. The Switch Person shall notify the System Operator that grounds have been installed, and identified by the Ground Device Identification Ticket number(s).
- c. The customer (or their agent) will be advised by a National Grid representative that the grounds installed are only a visible indication that

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the line/apparatus has been de-energized at the point of grounding, and should not be considered protection for their workers.

- d. The customer (or their agent) is responsible for grounding for the protection of their workers.

2.8.4 Notification to Customer that apparatus is tagged and Clearance to work

- a. Upon completion of all necessary switching and tagging, and with the "Work In Progress" portion of the tag(s) in place, the System Operator will give direction to the Switch Person to give the customer (or their agent) Clearance to work. At that time, the "Release of Clearance" portion of the tag will be given to the customer (or their agent).
- b. When multiple Customer Tags are used, only one "Release of Clearance" portion is required to be provided to the customer (or their agent).

2.8.5 Customer Release of Clearance

- a. Prior to authorizing the removal of a Customer Tag and restoring service, the System Operator shall be satisfied that the "Release of Clearance" section of the Customer Tag has been received, signed by the customer (or their agent). The "Release of Clearance" indicates that work has been completed and all workers are clear of the line or apparatus, and that it is safe to restore service.
- b. If the customer (or their agent) loses the "Release of Clearance" section of the Customer Tag, the Switch Person shall request the customer or their agent to complete and sign a new "Release of Clearance" section of a new Customer Tag. The original person (or an agent from the same affiliation) receiving the Customer Tag shall complete and sign the new Customer Tag. The Switch Person shall then notify the System Operator who shall document the new Customer Tag Number.

2.8.6 Removal of Grounds Before Restoring Apparatus to Service

The System Operator will order the removal of National Grid installed grounds if applied, identified by the Ground Device Identification Ticket number(s) after being informed by the Switch Person that the completed "Release of Clearance" section of the Customer Tag has been received.

2.8.7 Restoring Apparatus to Service, "OK to go normal"

The System Operator will give direction to the Switch Person to give the customer (or their agent) an "OK to go normal" after required switching has been completed. The Switch Person shall report back to the System Operator after such notification has been given.

2.8.8 Large Industrial Customers

Large industrial customers, as defined by the System Operator, may apply directly to the System Operator for requesting a Customer Tag Clearance. The

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System Operator may order such installed Customer Tags removed without the "Release of Clearance" section of the Customer Tag.

The "Release of Clearance" shall be obtained from the original person issued the Customer Tag unless an alternate has been designated by the original person at the time the Customer Tag was issued.

2.8.9 National Grid Authorized Person(s) and Customer(s) Working Jointly in the same Zone of Protection

- a. For planned work all isolation points shall be tagged with Red Tags and Customer Tags.
- b. For situations where a zone of protection has been established (or is in the process of being established) with Red Tagging and a Customer problem or request is received to work on that same zone of protection, only the source device(s) where the apparatus is normally energized from shall be tagged with the Customer Tag(s). The Red Tag Clearance number shall be cross referenced and documented with the System Operator.

2.8.10 Alternate Tagging Process for Multiple Customer Requests on the Same Zone of Protection

For situations where a zone of protection has been established (or is in the process of being established) using customer tagging and additional customer(s) with problem(s) or request(s) are received to work on that same zone of protection, the source device(s) where the apparatus is normally energized from, shall be tagged with customer tags representing each customer request for that zone of protection. Remaining device(s) shall be tagged with only the initial customer tag and shall remain tagged until all customers receiving the zone of protection have released the Clearance(s) or customer tag(s). The use of the initial customer tag on the remaining devices shall be cross referenced and documented by the System Operator.

2.9 Work on Customer-Owned Primary Voltage Electrical Facilities

This procedure is for National Grid workers that are to perform work on customer-owned electrical facilities circuits or apparatus greater than 600 Volts. Work preparation shall include verification and securing of circuit and facility diagrams, including the existence and implications of on-site generation, UPS systems, transformer back-feed, or induced voltages.

2.9.1 There shall be agreement between the National Grid management and agreed to by the customer on how the work is to proceed. There shall be concurrence between the System Operator and National Grid management as to which of the following two procedures shall be used:

- a. If electrical prints are available or if the circuits involved are known to the System Operator, the Red Tag Clearance or Personal Red Tag procedures shall apply. If a device is accessible to non-National Grid personnel, a National Grid lock must be utilized if possible, OR,

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- b. If electrical prints or circuits are not known by the System Operator, National Grid personnel shall utilize Personal Red Tagging for the control of Hazardous Energy Sources.
 - 2.9.2 Devices for establishing the zone of protection shall remain under control of the Person in Charge of the Work.
 - 2.9.3 Workers must follow all applicable National Grid EOP's and Safety Rules when working on customer facilities.
 - 2.9.4 Any unusual or unsafe conditions of customer apparatus must be reported immediately to your local supervision.
- 2.10 Interconnections with other Utilities and Generators
 - 2.10.1 When foreign utilities or generators require a Guarantee
 - a. A designee of the foreign utility or generator, acting as their System Operator shall be issued a Guarantee by the National Grid System Operator.
 - b. A Red Tag shall be used to tag all protective devices listed on the Guarantee.
 - c. The Guarantee shall have a number issued by the National Grid System Operator.
 - d. The National Grid System Operator issuing the Guarantee shall record the name and contact number of the System Operator of the foreign utility or generator.
 - e. Grounds may be applied at the request of the foreign System Operator. The foreign utility or generator system operator will be advised by the National Grid System Operator that the grounds installed are only a visible indication that the line/apparatus has been de-energized at the point of grounding, and should not be considered protection for their workers.
 - 2.10.2 When National Grid requires isolation from a foreign utility or generators
 - a. A National Grid System Operator will accept the foreign utility's or generator's isolation practices as defined by their rules or will direct a National Grid switch person to red tag the required limits for the Clearance. These limits shall be tagged only after a visual open has been created by the foreign utility or generator.
 - b. The National Grid System Operator shall document the limit(s) as part of the zone of protection in the Clearance to be issued to the National Grid Clearance Person(s).
 - c. The National Grid System Operator may request the foreign utility or generator to close mechanical grounds as part of the Clearance.
 - d. The Clearance shall not be released to the foreign utility or generator System Operator until after the National Grid System Operator receives the Release of Clearance from the National Grid Clearance.

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2.10.3 When a foreign utility Control Center requires an NRA Guarantee

- a. A designee of the foreign utility, acting as their System Operator shall be issued a NRA Guarantee by the National Grid System Operator.
- b. The NRA Guarantee can be issued after the reclosing control(s) and supervisory controls for a specific circuit have been placed in the non-reclose position and the necessary NRA tags placed.
- c. The NRA Guarantee shall have a number issued by the National Grid System Operator.
- d. The National Grid System Operator issuing the NRA Guarantee shall record the name and contact number of the System Operator of the foreign utility.
- e. The designee of the foreign utility, acting as their System Operator to whom the Non-Reclose Assurance has been issued has the responsibility to inform the National Grid System Operator of any conditions that may have caused the device to operate.
- f. Manual reclosing shall not be performed until there is concurrence by the designee of the foreign utility, acting as their System Operator to whom the NRA Guarantee was issued and the National Grid System Operator.
- g. The breaker(s) or device shall not be restored to the automatic reclose position until the NRA has been released by the designee of the foreign utility, acting as their System Operator.

2.10.4 When National Grid requires a NRA Guarantee from a foreign utility Control Center

- a. A National Grid System Operator will accept the foreign utility's Non Reclosing practices as defined by their rules.
- b. The National Grid System Operator shall document the foreign utility's device(s) placed in the necessary position to secure the NRA Guarantee.
- c. Manual reclosing shall not be performed until there is concurrence by the National Grid Authorized Person and the National Grid System Operator.
- d. The NRA Guarantee shall not be released to the foreign utility System Operator until after the National Grid System Operator receives a Release of the NRA from the National Grid Authorized Person.

2.11 Station Control Tag (Non-System Operator Based)

The Station Control Tag is Non System Operator based and shall be utilized exclusively for substation related low voltage or control work at 600V or less. The Station Control Tag shall only be utilized by Authorized Person(s) trained and knowledgeable in the Clearance and Control procedures. Station Control Tag(s) shall be placed at all necessary locations to protect against inadvertent application of energy used for the **control and/or operation** of electrical apparatus such as circuit breakers, pumps, fans, motors, and compressors.

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2.11.1 Application of SCT

- a. The Station Control Tag shall **not** be used in lieu of a Clearance for the protection from system voltage above 600 volts.
- b. Station Control Tag(s) shall be placed on protective point(s) and shall be installed with lock(s) if provisions are available.
- c. Separate Station Control Tags shall be utilized by **each crew** working on the same electrical apparatus control circuit(s).
- d. All Station Control Tags applied by field crews shall be documented. The documentation shall include the location, name of the individual installing the Station Control Tag, the date and time of the installation and the removal of the Station Control Tag. This will be accomplished by the use of the Station Control Tagging Sheet.

2.11.2 Previously Tagged Device

Permission is required before placing a Station Control Tag on a device previously tagged by the System Operator.

2.11.3 Applying SCT on secondary fuses

For secondary fuses, the tags are placed on the latch, lock or handle that holds the fuse cabinet or compartment door closed. When fuses are located behind a control panel in a control house, or other similar location, it is appropriate to place the tag on the de-energized side of the fuse block.

2.12 Delegation of Controllership

When Controllership is to be delegated from the System Operator to an Authorized entity (an Authorized Person or De-centralized location), the System Operator shall document the Authorized entity accepting controllership along with the specific lines and/or apparatus.

The System Operator shall inform the Authorized entity of any known abnormal conditions that exist on the line or apparatus under Controllership.

The Authorized entity shall assume all duties and responsibilities of the System Operator. TOA shall be utilized to establish the numbering system to be used during Controllership.

When the Controllership needs to be delegated further, the notification requirements for individuals or location shall be established with the System Operator at the time of the original delegation.

When blocking reclosing of devices the Authorized Person who has been delegated Controllership shall order the System Operator to have the EMS supervisory control(s) NRA tagged.

When Controllership is released, any known abnormal conditions that exist on the line or apparatus shall be communicated to the System Operator.

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3.0 EXCEPTION APPROVALS:

It is expected that additional special cases (i.e., storm emergencies/field conditions) will be identified that may require clarification, exception or a revision to this procedure. Agreement and approval will be required by concurrence of the Manager of the Operating Department involved, the appropriate Control Center Manager, and the Manager of Corporate Safety & Health or their designees. If concurrence cannot be achieved among these parties, they will seek concurrence of the next higher level of management for the appropriate departments involved.

4.0 PROGRAM ADMINISTRATOR:

Questions and/or clarification regarding this document and proposed changes under the Exception Approval section of this document shall be forwarded to the Director of Distribution Engineering Services.

5.0 RESPONSIBILITIES:

5.1 Distribution Engineering Services

5.1.1 Update this procedure as necessary.

5.2 Management and Supervision

5.2.1 Ensure the components of this procedure are implemented.

5.2.2 Ensure personnel are trained in this procedure.

5.2.3 Provide revision input as necessary.

5.2.4 Ensure that individuals changing jobs are qualified to perform the function requested and must notify the System Operator of the employees status.

5.3 Worker

5.3.1 Demonstrate the understanding and proficiency of this procedure and successfully pass testing requirements annually.

5.3.2 Shall comply with the requirements of this procedure.

5.3.3 Shall only perform work and switching within their capabilities.

5.4 Training

5.4.1 Develop training lesson plans and training aids.

5.4.2 Provide initial training.

5.4.3 Provide annual training.

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6.0 APPENDICES:

These appendices are supplemental to the Clearance and Control procedure and shall be followed as described in each appendix:

- 6.1 - Appendix A - Switching
- 6.2 - Appendix B - Network Switching
- 6.3 - Appendix C - Grounding for the Protection of the Worker
- 6.4 - Appendix D - Formal Statements
- 6.5 - Appendix E - Sample Documents / Forms / Tags

6.1 Appendix A - Switching

6.1.1 Switching

a. Authority to Operate

No device whether on a line or in a station will be operated without permission from the System Operator.

Exception:

1. In an emergency.
2. Within a Zone of Protection.
3. *Disconnecting devices used to energize or de-energize an individual distribution transformer (single or three phase overhead or underground transformer), series street lighting circuits, distribution capacitor banks, or radially fused distribution side taps and the application of PRT on the associated disconnecting devices.*

b. Emergency Switching

Under emergency conditions that endanger life or property a qualified person working for National Grid can perform switching by opening apparatus without first contacting the System Operator to relieve the condition. This person performing the emergency switching assumes full responsibility for the switching and must relate all details to the System Operator as soon as possible. However, if a device is opened for any reason, it shall not be closed without receiving permission to do so from the System Operator to an Authorized Person.

c. Within a Zone of Protection

When a Clearance Person operates devices within their zone of protection, they shall:

1. Notify others that are signed on or requesting to sign on.

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2. Inform the System Operator of any change from the original operating position of any device operated within the zone of protection when the Clearance is released.

d. Safety Stop

In the event that either the System Operator or the Switch Person determines that there is a safety or operational concern they should safely stop all switching, communicate these concerns to each other and, if necessary obtain direction from their supervisor before proceeding.

e. Phasing Responsibilities

Phasing is normally the responsibility of the crew performing the work. If phase integrity may have been compromised after work or repairs, the System Operator shall be notified and an order will be issued to perform phase check(s).

6.1.2 Switching Orders

The System Operator and the Switch Person are both accountable for the proper performance of the switching. Good communication during switching is paramount. To provide the best check and balance possible a pre-switching brief will be initiated by the System Operator before every switching order.

6.1.3 Pre-Switch Brief

The items below will be included in every pre-switching brief between the System Operator and the Switch person.

- a. Exchange full names and truck or phone numbers.
- b. Confirm the proper location of the switching.
- c. Identify what equipment is being switched and why.
- d. Identify any unusual switching schemes or relays.
- e. Provide an overview of the switching procedure.
- f. Verify that the Switch Person understands the procedure.
- g. Ask the Switch Person if they have any questions.

6.1.4 Switching Review

A switching review is required by the switch person prior to any switching step.

The Switch Person shall review the switching instructions, and determine if the steps are listed in a safe order.

All switching orders received from the System Operator shall be repeated verbatim. In all cases of unplanned switching, the switching step(s) shall be written down before they are performed.

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A review shall consist of the following:

- a. Review the associated Station One Line Diagram and other circuit maps where possible.
- b. Identify and become familiar with the devices to be operated at that location.
- c. Determine or check the proper sequence for performing the required switching.
- d. Check for defective or abnormal apparatus that could prevent the switching from being performed safely or properly.
- e. Check for abnormalities in circuit or station loads/voltages, if applicable.
- f. If any issues are discovered, contact the System Operator to discuss concerns.

The Switch Person shall carry the switching order with them while executing the order.

The Switch Person shall verify the device identification number to be operated prior to switching the device.

The Switch Person will denote the completion of each step as it is performed on the switching orders.

The Switch Person will report to the System Operator the completed switching steps and times as required.

6.1.5 Notification Before Switching in a Substation

The Switch Person is responsible for notifying all affected personnel in the station before any switching is performed in that station.

6.1.6 Responsibilities

a. Communications for Switching

1. The System Operator shall read the details of each switching step to the Switch Person.
2. The Switch Person shall write down, if not previously provided in writing, and repeat back the details of each switching order to the System Operator.
3. After the System Operator agrees the switching order read-back is correct, the System Operator authorizes the Switch Person to begin switching in exactly the order as directed, and requests to report back when complete.
4. After the completion of the specified switching, the Switch Person contacts the System Operator and reads back the switching order stating each switching step completed.

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5. The System Operator then fully reads back each switching step completed by the Switch Person.
6. The Switch person verifies the System Operator has correctly read back the completed switching.

b. Responsibilities During Switching

When directed to conduct any switching, the Switch Person shall be responsible to perform the following:

1. Check all switches to be in the fully open or fully closed position on all phases.
2. Check any switch attachment/component to be in the proper position before and after switch operation.
3. Check all circuit breakers that are operated to be open or closed utilizing its position indicator, control lights, indicating meters, and potential lights as applicable.
4. Place locks and tags on apparatus at the proper location as applicable and as directed.
5. Anticipate the effects when performing a particular switching operation.
6. Properly record/report alarms, targets and operations.
7. Check circuit breaker and circuit switcher pressures/contact indicators normal before and after their operation.

6.1.7 Correct Terminology

When switching, both the Switch Person and the System Operator shall use proper terminology. Slang expressions and verbal short cuts shall not be used.

6.1.8 Unclear Switching Order

If any switching order is not clear due to terminology or communications systems interference, neither the System Operator nor the Switch Person shall assume what the other party said. The message shall be repeated until it is understood.

6.1.9 Locking/Unlocking and Tagging Devices

Each manually operated primary voltage switch with an operating rod shall normally be locked when in the open or closed position. The switch shall be unlocked only during the time it is being operated. If a switch cannot be securely locked, the System Operator shall be notified immediately. Tag shall be placed on the lock, or in appropriate tag holders, or other provisions as close as possible to the isolation device. A protective point when so tagged may or may not be energized.

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6.1.10 When Accessible to the Public

When a switching device is accessible to the general public the tags shall be placed at the locking provision or shall be located at a sufficient height from the ground to discourage unauthorized removal.

6.1.11 Motor Operated Switches

Motor operated switches that are opened as an isolation point shall have the motor operator rendered inoperable, unless its design does not so permit, by disengaging the operating rod from the motor mechanism.

After disengaging the operating rod from the motor mechanism, it is to be locked open and properly tagged.

If there is a problem disengaging and/or securely locking the operating rod, the System Operator shall be consulted so that other arrangements can be made.

6.1.12 Tagging of Non-Gang Operated Devices

A single tag is required to be applied to stick-operated switches, open loops/jumpers, fuses or fused cutouts used to isolate apparatus. When tagging a structure the tag should be made obvious for easy identification. If the fuses or fused cutouts are removed (lifted out), the Red Tag must still be placed at the isolation point (in the holders). Oil Fused Cutouts (OFC's) and separable elbows shall have tags placed on each individual phase for added identification.

6.1.13 Tagging of Elbows

The air gap created is the limit for the isolation established and the elbow shall be tagged.

6.1.14 Truck Type Circuit Breakers (Metal-Clad Switchgear)

The air gap created is the protective point for the isolation established and the truck position shall be tagged.

6.1.15 Testing & Grounding – Gang Operated Ground Switches

For locations that have Gang Operated Grounding Switches the line shall be tested deenergized with an approved testing device before closing the Ground Switch.

Exception: For locations that have Gang Operated Grounding Switches where testing with a high voltage tester cannot be performed or is not practicable, the following procedure shall be used as applicable:

- Before a line/apparatus is deenergized and isolated, voltage indication shall be checked at all ends of the line by live line indication and/or voltage readings from the Station control panel and by the EMS, if available.
- The line/apparatus shall then be deenergized and the disconnecting means opened, locked opened, and tagged.

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- c. Check the line/apparatus deenergized at all ends of the line with live line indication, voltage readings, or open indication (GIS) from the Station control panel and by the EMS, if available.
- d. Only after the line/apparatus has been verified deenergized, or open (GIS), and has been tagged and the Clearance issued, can the Gang Operated Grounding Switch(s) be closed. The System Operator will issue switching orders to close and ticket all gang operated grounding switches as required with GDIT's. The Switch Person shall note the GDIT number(s) and report them back to the System Operator when the switching order has been completed.

6.2 Appendix B – Network Switching

This procedure covers the various procedures and requirements applicable to all A.C. Networks; and outlines the proper steps to provide protection for work on network components. All work on network systems shall be in accordance with these procedures.

6.2.1 General Information

- a. Permission of the System Operator shall be obtained before any primary network feeders, network transformers or associated equipment is operated, removed from service, or returned to service.

EXCEPTION: Routine testing and maintenance of general network protectors only require notification to the System Operator. Fuse links shall be removed and tagging is not required.
- b. Requests for prearranged work on network equipment shall be made on the TOA Application. The application shall be submitted to the System Operator in advance of the time when the work will be performed. For emergency work, such requests shall be referred immediately to the System Operator. The Person in Charge of the Work shall determine the zone of protection and protective points (limits) required; and these shall be checked by the System Operator.
- c. Except in an emergency, no more than one primary feeder supplying network transformer units shall be taken out of service for an extended period of time. (Networks are designed to sustain the loss of two primary feeders in an emergency. However, some voltage deterioration may result in this situation.)
- d. The normal operating status of a network transformer unit is that the Transformer Oil Disconnect (TOD) is locked in the CLOSED (TRANSFORMER on some units) position and the network protector is locked in the AUTOMATIC position.
- e. Local operating personnel shall keep the System Operator informed of any condition which may affect the operation of the overall network system. This includes abnormal conditions such as (but not limited to): protector "pumping", protector fuses blown, possible feeder or transformer overloads, high transformer temperatures, etc.

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- f. The TOD of a network transformer shall not be operated unless both sides of the switch are de-energized. If in the course of executing a switch order to operate a TOD the switch person has reason to believe the transformer may be energized, the switch order shall be stopped and the System Operator notified.

EXCEPTION: If a network transformer has a mag-break switch rated to de-energize the transformer under no load conditions, the switch may be used to de-energize the transformer after the associated network protector has been opened, and locked open.

- g. Network TODs typically have three positions (OPEN, CLOSED & GROUND). When placed in the OPEN position, the cable is disconnected from the transformer. When placed in the CLOSED (or TRANSFORMER) position, the cable is connected to the transformer. When the transformer oil disconnect (TOD) is placed in the GROUND position, it places a ground on the primary cable but does not ground the transformer. Some transformer oil disconnect (TOD) switches have Sequential Grounding Positions, which allow a ground to be placed on the primary cable in a specific sequence of phase combinations.

NOTE: Network transformer interlock(s) where they exist prevent the transformer oil disconnect (TOD) from being operated with the transformer energized and/or a closed network protector.

- h. For those protectors that have a three position switch (OPEN, AUTOMATIC, CLOSE), the protector shall not be moved to the CLOSE position unless the transformer is energized.
- i. Switch orders may contain multiple locations (network vaults) in one switching order. The order of the locations to be switched at (vaults) may normally be done at the discretion of the switch person unless otherwise specified by the System Operator, but the sequence of switching steps at each vault shall be in the sequence given by the System Operator.
- j. During work on a network transformer or its transformer oil disconnect (TOD), if the work is of an extended nature and it is deemed necessary to return the feeder itself to service while the work is in progress, this can be accomplished by collapsing the zone of protection with the limit on the primary cable being an air gap established (Red Tagged on the primary network side). See section 2.3.11.b Collapsing the Zone of Protection.

6.2.2 Spot Networks

Spot networks are network transformers and protectors dedicated solely to serve one customer through their collector bus or switchgear and are not connected to the secondary general network grid. When removing a network primary feeder from service that serves one transformer in a two-transformer spot network, the spot network protector which is to remain in service shall be closed and/or checked closed in the AUTOMATIC position. If the network protector that is to remain in service is open, it shall be closed. The spot network protector on the

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feeder to be removed from service shall then be placed in the OPEN position and locked open.

NOTE: Circumstances may require a momentary outage to accomplish this transfer, i.e., the protector to remain in service will not remain closed due to adequate spot network voltage conditions and will only close when the other protector is opened.

Some spot network transformers have mag-break switches rated to de-energize the transformer under no load conditions. The mag-break switch may be used to de-energize the transformer after the associated network protector has been opened, and locked open.

6.2.3 Work on the Network Primary Cable

- a. Take the following preliminary steps:
 1. Open any feeder ties and Red Tag, if applicable.
 2. Remove non-network load from the primary feeder and isolate from the feeder and Red Tag, as required.
 3. Remove spot network loads from the feeder to be removed from service. See discussion in section 6.2.2 Spot Networks.
- b. Open the primary circuit breaker at the source station (this de-energizes the feeder, and all associated general network protectors should open automatically).
- c. Test the feeder de-energized. Refer to section 6.2.12 Network Protector Stuck Closed if the feeder does not test de-energized.
- d. If the feeder tests de-energized, Open switches at the source station for isolation and Red Tag (or disconnect the truck assembly from the bus and line, and Red Tag if a metalclad switchgear).
- e. In all transformer vaults served by the de-energized feeder not tagged in step 6.2.3.a.3 above:
 1. Place (or check) the protector in the OPEN position, lock open and Red Tag.
 2. Open and lock open the TOD (no tagging required).
- f. The System Operator shall issue the requested Clearance.

6.2.4 Restoration of the Primary Network Cable

- a. Release the Clearance when work is complete and grounds have been removed. If a Release for Test (see section 2.3.7) has been performed, de-energize the feeder and open the disconnects (or rack out the truck breaker) prior to switching vaults.

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- b. Perform the following in each transformer vault served by the de-energized feeder:
 1. Close and lock closed the transformer oil disconnect (TOD).
 2. Remove the Red Tag from the protector (or secondary fuse openings or links where applicable). Replace the secondary fuses or links, if applicable. Place and lock the protector in the AUTOMATIC position.
- c. Remove tags from the primary feeder disconnects (or truck position or air gap) at the station, if not previously removed.
- d. Check open the associated circuit breaker and close the feeder disconnects or connect truck assembly to bus and line.
- e. Close the feeder circuit breaker energizing the feeder. The protectors should close automatically.
- f. Check feeder loading and operation.
- g. Restore non-network load.

6.2.5 Work on the Transformer Oil Disconnect (TOD) of a Network Transformer

Use the same switching and tagging sequence as outlined in 6.2.3 Work on the Network Primary Cable, except in the vault where the transformer oil disconnect (TOD) to be worked on is located. Lock open the protector in that vault, (The protector is not tagged.) The network protector secondary fuses (or links where applicable) shall be removed and their open position Red Tagged.

6.2.6 Work on the Network Transformer

- a. De-energize the primary feeder and establish an air gap at the feeder breaker as follows:
 1. Open any feeder ties.
 2. Remove non-network load from the primary feeder and isolate from the feeder.
 3. Remove spot network loads from the feeder to be removed from service.
 4. Open the primary circuit breaker at the source station (this de-energizes the feeder, and all associated general network protectors should open automatically).
 5. Test the feeder de-energized. Refer to section 6.2.12 Network Protector Stuck Closed if the feeder does not test de-energized.
 6. If the feeder tests de-energized, open switches at the source station for isolation (or disconnect the truck assembly from the bus).
- b. At the transformer vault where the network transformer work is to take place; place (or check) the protector handle in the OPEN position and lock open. Then establish a secondary air gap (fuses, links, or open loops) between the protector and secondary network and Red Tag.

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- c. Open, lock open and Red Tag the transformer oil disconnect (TOD).

NOTE: If restoration of the primary feeder is required to restore other transformers supplied by it, the primary feeder may be switched back.

NOTE: When performing work on a network transformer such as adding oil to the transformer, and minimum approach distances will be maintained, grounds will not be required to perform the work, and the work can be performed under a Clearance between the transformer oil disconnect (TOD) and network protector fuses, links, or an air gap created by cutting the secondary cables. Added safeguards are to be included where possible.

6.2.7 Replacement of a Network Transformer

The switching and tagging sequence and the required protective points are the same as previously outlined in 6.2.3 Work on the Network Primary Cable, with the following modification:

Prior to switching out the network feeder, in the vault where the network transformer to be replaced is located:

- a. Open and lock open the protector.
- b. Establish a secondary air gap between the protector and secondary network and Red Tag (on the secondary network side of the air gap). This shall be used as the limit in the vault where the transformer is being replaced.
- c. Switch out and Red Tag the rest of the feeder in accordance with the section 6.2.3 Work on the Network Primary Cable.

6.2.8 Work on Network Protectors

- a. Notify the System Operator.

Note: If the protector to be worked on is part of a customer spot network, the Person in Charge of the Work shall obtain permission from the System Operator and switch the protector out under System Operator switch orders.

- b. Place the protector in the OPEN position and lock the control handle.
- c. Remove fuses and links, and rack out the circuit breaker. Perform work taking necessary precautions (the use of adequate barriers may be considered).

6.2.9 Replacement of a Network Protector (including entire network protector enclosure)

- a. Prior to switching out the network feeder, in the vault where the network protector to be replaced is located, open and lock open the protector.
- b. Establish a secondary air gap between the protector and secondary network and Red Tag (on the secondary network side of the air gap).

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- c. De-energize the primary feeder and establish an air gap at the feeder breaker as follows:
 1. Open any feeder ties.
 2. Remove non-network load from the primary feeder and isolate from the feeder.
 3. Remove spot network loads from the feeder to be removed from service.
 4. Open the primary circuit breaker at the source station (this de-energizes the feeder, and all associated general network protectors should open automatically).
 5. Test the feeder de-energized. Refer to section 6.2.12 Network Protector Stuck Closed if the feeder does not test de-energized.
 6. If the feeder tests de-energized, open switches at the source station for isolation (or disconnect the truck assembly from the bus).
- d. At the transformer vault where the network protector work is to take place, open, lock open and Red Tag the transformer oil disconnect (TOD).

NOTE: If restoration of the primary feeder is required to restore other transformers supplied by it, the primary feeder may be switched back.

6.2.10 Customer Work on a Spot Network Collector Bus

If a spot network customer requires a Clearance (using Customer Tags) for de-energizing the secondary collector bus for work on the receiving switchgear, the protector secondary fuses shall be removed and the opening tagged.

The procedure for removing the fuses is as follows:

- a. Remove load from the collector bus.
- b. Open and lock open all but one protector. Remove the secondary fuses and Customer Tag the fuse opening(s).
- c. Open and lock open the remaining protector, de-energizing the collector bus. Remove the secondary fuses and Customer Tag the fuse opening.
- d. Restore the collector bus by reversing the sequence of the procedure above.

NOTE: A protector closed into an isolated collector bus may not remain closed. Load may be required to be connected to the bus before attempting energization. Some spot network installations are equipped with a load resistor for this purpose.

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6.2.11 Customer Work on Customer Equipment Fed from Primary Network Feeders

If a customer is fed from a primary cable which is also a network feeder, and requires a Clearance (using Customer Tags) for de-energizing the primary feeder cable for the customer's work, the primary cable shall be grounded. Proceed as follows.

- a. Take the following preliminary steps:
 1. Open any feeder ties and Customer Tag, if applicable.
 2. Remove non-network load from the primary feeder and isolate from the feeder and Customer Tag, as required.
 3. Remove spot network loads from the feeder to be removed from service. See discussion in section 6.2.2 Spot Networks.
- b. Open the primary circuit breaker at the source station (this de-energizes the feeder, and all associated general network protectors should open automatically).
- c. Test the feeder de-energized. Refer to section 6.2.12 Network Protector Stuck Closed if the feeder does not test de-energized.
- d. If the feeder tests de-energized, Open switches at the source station for isolation and Customer Tag (or disconnect the truck assembly from the bus and line, and Customer Tag if a metalclad switchgear).
- e. In all transformer vaults served by the de-energized feeder:
 1. Place (or check) the protector in the OPEN position, lock open and Customer Tag.
 2. Open and lock open the TOD (no tagging required).
- f. One set of grounds shall be applied to the primary cable:
 1. Grounding performed by National Grid employees shall be done in accordance with Company testing and grounding EOPs. The Switch Person shall notify the System Operator that grounds have been installed, and identified by the Ground Device Identification Ticket number(s).
 2. The customer (or their agent) will be advised by a National Grid representative that the grounds installed are only a visible indication that the line/apparatus has been de-energized at the point of grounding, and should not be considered protection for their workers.
 3. The customer (or their agent) is responsible for grounding for the protection of their workers.
- g. The System Operator shall issue the requested Customer Tags.

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6.2.12 Network Protector Stuck Closed

If after opening the feeder breaker to de-energize a network the feeder circuit does not check de-energized, a protector(s) has failed to open automatically. Identify and notify the System Operator and local Operating Supervision of which protector(s) failed to open. Open the stuck protector per System Operator and local Supervision direction. Protectors which fail to open automatically shall be repaired and tested prior to being placed back in service.

6.3 Appendix C – Grounding for the Protection of the Worker

6.3.1 General

No Personal grounds shall be applied until the zone of protection has been established and the Clearance has been issued by the System Operator or by those having permission to utilize Personal Red Tagging.

Testing and grounding are required before considering the lines or apparatus dead. Work may be done only after these steps have been completed either by the Clearance Person personally or at their request by another.

When necessary to ground apparatus at points other than where the work is to be done, the request for such grounds shall be made by the Clearance Person. The System Operator can be utilized to transmit the request for remote grounding.

- a. All lines and apparatus, greater than 50 Volts, under the control of the System Operator are not to be considered dead until all of the following have been performed. Line or apparatus is isolated and tagged, tested de-energized, and grounded.
- b. For an employee to work lines or apparatus as dead, the lines or apparatus shall be:
 1. Red Tagged under the provisions of EOP G014, and
 2. Tested and grounded as specified in appropriate Grounding Documents and EOP's.
- c. Lines and apparatus may be worked ungrounded and treated as dead, only if NATIONAL GRID Management can demonstrate that the installation of a ground is impracticable, or conditions resulting from the installation of a ground would present greater hazards than working without grounds, provided the following conditions are met:
 1. The apparatus or lines have been isolated and tested de-energized under the provisions of this documents and other associated referenced EOP's.
 2. There is no possibility of contact with any other energized source.
 3. The hazard of induced voltage is not present.

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When working on isolated and tagged substation apparatus and minimum approached distances will be maintained, grounds will not be required. (I.e. ground level mechanism inspections and maintenance). Appropriate added safeguards are included where possible.

6.3.2 Placement of Grounding Device Identification Tickets (GDIT)

After the zone of protection has been established, the Clearance Person shall determine the number and location(s) of personal grounds needed to ground the apparatus properly. All grounds shall have GDIT applied on each ground clamp connection to ground.

- a. Clearance Person - The Clearance Person shall record on the appropriate document the location and ticket number(s) of the GDIT for each ground connection for the Red Tag or PRT zone of protection. Additional Point of work grounds (A set(s) of grounding jumpers and a cluster bar applied at the pole or structure where the work is to be done) is the responsibility of the person applying the grounds and shall follow the GDIT requirements within this procedure.
- b. GDIT Application – The GDIT shall be attached to the ground clamp connection of the personal ground(s) when applied to a phase conductor in such a manner that does not effect the electrical connection. No personal grounding device(s) shall be used without this ticket.
- c. When using GIS or mechanical grounding switches in a substation, the System Operator will issue orders and apply GDIT and maintain the documentation for the locations and the GDIT number(s).
- d. For network applications of personal grounds, the GDIT shall be attached to the operating handle under the direction of the Clearance Person.

6.3.3 Joint Use of Grounds

Joint use of grounds shall be permitted only with the knowledge and consent of each Clearance Person for whom the apparatus is tagged.

- a. When personal grounds are to be used jointly, the additional Clearance Person(s) shall apply Grounding Device Identification Tickets in the same manner as the previous Clearance Person(s).
 1. If conditions exist which may be deemed more hazardous to the employee to place an additional GDIT, a conversation shall occur between the Clearance Persons to document in the Field Clearance and Control form the number of the GDIT and the name or the persons sharing the personal grounds.
- b. The additional Clearance Person(s) shall ensure that the installation or removal of each additional GDIT shall not interfere with the grounds that are attached.
- c. Personal Grounds shall not be removed until all the GDIT have been ordered removed by each Clearance Person.

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- d. When any Clearance Person who is not the last Clearance Person utilizing joint use of grounds, calls the System Operator to Release their Clearance, it is understood that the formal language used for their "Release of Clearance" does not infer that they have physically removed their jointly used personal grounds, only their GDIT's.
- e. The last Clearance Person to complete their work using the joint grounds in a zone of protection shall be responsible for the removal of their GDIT's and their personal grounds.

6.3.4 Removal of Personal Grounds

- a. When the apparatus is tagged for more than one Clearance Person, and there is a joint use of personal grounds, the Clearance Person desiring to report clear shall inform all other Clearance Person(s).
- b. Upon completion of work, the Clearance Person, or another at the direction of the Clearance Person, shall verify that their appropriate GDIT(s) are removed. If there are no other GDIT(s) placed for others, the personal grounds shall be removed. If the personal grounds are removed by someone other than the Clearance Person, the person removing the personal grounds shall notify the Clearance Person that the grounds identified by ticket number(s) have been removed.

6.4 Appendix D – Formal Statements

6.4.1 Purpose

The intent of formal statements is to have the proper information relayed between individuals that are applying the Clearance and Control procedure.

The uniform wording shall be used in the issuance of Clearances and other control communications as required in the Clearance and Control procedure G014.

It is important that all System Operators and Authorized Persons follow the same procedures and use the same wording. Such uniform application is required to promote proper communications and to prevent misunderstanding or errors.

Since our entire Clearance and Control procedure depends on checks and balances, one cannot over-emphasize the importance of issuing formal statements and reporting them back to verify the correctness. The formal statements below depict typical examples and shall be followed.

This information shall include:

- a. The Clearance Person shall state their name.
- b. State your purpose or the work to be performed.
- c. State the line or apparatus to be worked on.
- d. State the limits as required.

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6.4.2 Requesting a Clearance

The Clearance Person shall request the CLEARANCE.

NOTE: If any station mechanical grounds are required, ground device number and locations will be requested after the Clearance is issued and will be directed closed and ticketed by the System Operator.

Clearance Person:

"I, (state your name), REQUEST A CLEARANCE ON THE (line/apparatus) BETWEEN THE FOLLOWING LIMITS; (list of all limits by number, location)."

6.4.3 Issuing a Clearance

System Operator:

"YOU, (repeat name given), HAVE CLEARANCE NUMBER _____ ON THE (line/apparatus) BETWEEN THE FOLLOWING LIMITS; (list of all limits by number, location). ALL OF THESE DEVICES ARE IN THE OPEN POSITION AND RED TAGGED FOR YOU. TEST AND THEN GROUND BEFORE CONSIDERING THE CIRCUIT (apparatus) DEAD."

Clearance Person:

"I, (state your name), HAVE CLEARANCE NUMBER _____ ON THE (line/apparatus) BETWEEN THE FOLLOWING LIMITS; (list of all limits by number, location). ALL OF THESE DEVICES ARE IN THE OPEN POSITION AND RED TAGGED FOR ME. I WILL TEST AND THEN GROUND BEFORE CONSIDERING THE CIRCUIT (apparatus) DEAD."

System Operator:

"THAT IS CORRECT. DO YOU UNDERSTAND AND ACCEPT THIS CLEARANCE?"

Clearance Person:

"YES, I UNDERSTAND AND ACCEPT THIS CLEARANCE."

6.4.4 Releasing a Clearance

NOTE: Prior to the release of the Clearance, the Clearance Person shall request any station mechanical grounds that were requested closed to have the tickets removed and ordered opened by the System Operator.

Clearance Person:

"I, (state your name), RELEASE CLEARANCE NUMBER _____ ON THE (line/apparatus) BETWEEN THE FOLLOWING LIMITS; (list of all limits by number, location). ALL OF MY WORKERS ARE CLEAR AND HAVE BEEN TOLD TO CONSIDER THE CIRCUIT ENERGIZED. ALL GROUNDS APPLIED BY ME OR FOR ME HAVE BEEN REMOVED. ALL MY WORK UNDER CLEARANCE NUMBER _____ IS COMPLETE AND IS READY FOR SERVICE. THE WORK PERFORMED OR CHANGES MADE BY ME ARE AS FOLLOWS: (Give exact details)."

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System Operator:

"I RELEASE YOU, (state name given), OF CLEARANCE NUMBER _____ ON THE (line/apparatus) BETWEEN THE FOLLOWING LIMITS; (list of all limits by number, location). ALL OF YOUR WORKERS ARE CLEAR AND HAVE BEEN TOLD TO CONSIDER THE CIRCUIT (equipment) ENERGIZED. ALL GROUNDS APPLIED BY YOU OR FOR YOU HAVE BEEN REMOVED. ALL YOUR WORK UNDER CLERANCE NUMBER _____ HAS BEEN COMPLETED AND IS AND READY FOR SERVICE. (Then restate the work done)."

Clearance Person:

"THAT IS CORRECT."

6.4.5 Surrendering and Re-issuing a Clearance

Surrendering a Clearance:

Clearance Person:

"I, (state your name), SURRENDER CLEARANCE NUMBER _____ ON THE (line/apparatus) BETWEEN THE FOLLOWING LIMITS; (list of all limits by number, location). ALL OF MY WORKERS ARE CLEAR AND HAVE BEEN TOLD TO CONSIDER THE CIRCUIT ENERGIZED. THE STATUS IS AS FOLLOWS; (Give exact details as to location of any grounds being left in place, GDIT #'s, and the condition of the circuit or apparatus)."

System Operator:

"YOU, (state name given), SURRENDER CLEARANCE NUMBER _____ ON THE (line/apparatus) BETWEEN THE FOLLOWING LIMITS; (list of all limits by number, location). ALL OF YOUR WORKERS ARE CLEAR AND HAVE BEEN TOLD TO CONSIDER THE CIRCUIT ENERGIZED. THE STATUS IS AS FOLLOWS; (Repeat exact details as to location of any grounds being left in place, GDIT #'s, and the condition of the circuit or apparatus)."

Clearance Person:

"THAT IS CORRECT."

Re-issuing a Surrendered Clearance after Receiving a Formal Request for Clearance:

System Operator:

"YOU, (repeat name given), ARE RE-ISSUED CLEARANCE NUMBER _____ ON THE (line/apparatus) BETWEEN THE FOLLOWING LIMITS; (list of all limits by number, location). ALL OF THESE DEVICES ARE IN THE OPEN POSITION AND RED TAGGED FOR YOU. THE STATUS IS AS FOLLOWS; (Give exact details as to location of any grounds left in place, GDIT #'s, & the condition of the circuit or apparatus). TEST AND THEN GROUND BEFORE CONSIDERING THE CIRCUIT (apparatus) DEAD."

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Clearance Person:

"I, (state your name), AM RE-ISSUED CLEARANCE NUMBER _____ ON THE (line/apparatus) BETWEEN THE FOLLOWING LIMITS; (list of all limits by number, location). ALL OF THESE DEVICES ARE IN THE OPEN POSITION AND RED TAGGED FOR ME. (Repeat exact details as to location of any grounds left in place, GDIT #'s, & the condition of the circuit or apparatus). I WILL TEST AND THEN GROUND BEFORE CONSIDERING THE CIRCUIT (apparatus) DEAD."

System Operator:

"THAT IS CORRECT. DO YOU UNDERSTAND AND ACCEPT THIS CLEARANCE?"

Clearance Person:

"YES, I UNDERSTAND AND ACCEPT THIS CLEARANCE."

6.4.6 Transfer of Clearance

Existing Clearance Person:

"I, (state your name), REQUEST TRANSFER OF MY CLEARANCE NUMBER _____ ON THE (line/apparatus) BETWEEN THE FOLLOWING LIMITS; (list of all limits by number, location) FROM ME TO (name of new Clearance Person)."

System Operator (to existing Clearance Person):

"YOU, (repeat name given), REQUEST TO TRANSFER YOUR CLEARANCE NUMBER _____ ON THE (line/apparatus) BETWEEN THE FOLLOWING LIMITS; (list of all limits by number, location) TO (name of new Clearance Person)."

Existing Clearance Person:

"THAT IS CORRECT."

New Clearance Person:

"I, (state your name), REQUEST TRANSFER OF (name of existing Clearance Person's) CLEARANCE NUMBER _____ ON THE (line/apparatus) BETWEEN THE FOLLOWING LIMITS; (list of all limits by number, location)."

System Operator (to new Clearance Person):

"YOU, (state name given), ARE ISSUED (name of existing Clearance Person's) TRANSFER OF CLEARANCE NUMBER _____ ON THE (line/apparatus) BETWEEN THE FOLLOWING LIMITS; (list of all limits by number, location). DO YOU UNDERSTAND AND ACCEPT THIS CLEARANCE?"

New Clearance Person:

"YES, I UNDERSTAND AND ACCEPT THIS CLEARANCE."

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System Operator (to original Clearance Person):

“(Original Clearance Person’s name), YOUR CLEARANCE NUMBER _____ HAS BEEN TRANSFERRED TO (name of new Clearance Person).”

6.4.7 Personal Red Tagging

The procedure for requesting, issuing and releasing Personal Red Tags is the same as covered under Clearances, however, since such issuance by the System Operator may not necessarily cover all points of required protection, the wording of the formal statement by the System Operator shall be adjusted as follows:

6.4.8 Issuing Personal Red Tags – Ordered On by the System Operator

System Operator:

“(State name given), THE (list of devices by number and location) ARE IN THE OPEN POSITION AND HAVE BEEN PERSONAL RED TAGGED FOR YOU. PROVIDE YOUR OWN PROTECTION FROM ALL OTHER SOURCES OF ENERGY.”

Person In Charge Of the Work:

“I, (state your name), UNDERSTAND AND ACCEPT PERSONAL RED TAGS ON (give devices) AT (give locations) AND WILL PROVIDE MY OWN PROTECTION FROM ALL OTHER SOURCES OF ENERGY.”

System Operator:

“THAT IS CORRECT.”

6.4.9 Issuing Personal Red Tags – Permission Granted by System Operator to use Personal Red Tagging

Person in Charge of the Work:

“I, (state name given), REQUEST PERMISSION TO UTILIZE PERSONAL RED TAGGING ON THE (line/apparatus) BETWEEN THE FOLLOWING LIMITS; (list of all limits by number, location).”

System Operator:

“YOU, (state name given), HAVE PERMISSION TO UTILIZE PERSONAL RED TAGGING ON THE (line/apparatus) BETWEEN THE FOLLOWING LIMITS; (list of all limits by number, location. CALL ME (Give switching and reporting requirements) PROVIDE YOUR OWN PROTECTION FROM ALL OTHER SOURCES OF ENERGY.”

Person in Charge of the Work:

“I, (state name given), HAVE PERMISSION TO UTILIZE PERSONAL RED TAGGING ON THE (line/apparatus) BETWEEN THE FOLLOWING LIMITS; (list of all limits by number, location). I WILL CALL YOU (Give switching and reporting requirements). I WILL PROVIDE MY OWN PROTECTION FROM ALL OTHER SOURCES OF ENERGY.”

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System Operator:

"THAT IS CORRECT."

6.4.10 Releasing Personal Red Tags

Person In Charge of the Work:

"I, (state your name), RELEASE MY PERMISSION TO UTILIZE PERSONAL RED TAGGING ON THE (line/apparatus) BETWEEN THE FOLLOWING LIMITS; (list of all limits by number, location). (Then state the work done)."

System Operator:

"YOU, (state name given), RELEASE YOUR PERMISSION TO UTILIZE PERSONAL TAGGING ON THE (line/apparatus) BETWEEN THE FOLLOWING LIMITS; (list of all limits by number, location). (Restate the work done)."

Person In Charge of the Work:

"THAT IS CORRECT."

6.4.11 Issuance of a Tagging Guarantee

System Operator:

"YOU, (foreign utility, generator), HAVE TAGGING GUARANTEE NUMBER _____ ON (line/apparatus). ALL SOURCES OF POWER SUPPLY, THAT ARE NORMALLY OPERATED BY OR UNDER THE CONTROL OF THIS OFFICE, ARE GUARANTEED TO BE IN THE OPEN POSITION AND TAGGED AT THE FOLLOWING LOCATIONS: (list of all limits by number, location). THE GUARANTEE WILL REMAIN IN EFFECT UNTIL RELEASED BY YOU/YOUR OFFICE. PROVIDE YOUR OWN PROTECTION FROM ALL OTHER SOURCES OF ENERGY."

6.4.12 Release of Tagging Guarantee

System Operator:

"I RELEASE YOU, (utility, generator), OF TAGGING GUARANTEE NUMBER _____ ON THE (line/apparatus) BETWEEN THE FOLLOWING LIMITS; (list of all limits by number, location)."

ALL OF YOUR WORKERS ARE CLEAR AND HAVE BEEN TOLD TO CONSIDER THE CIRCUIT (equipment) ENERGIZED. ALL GROUNDS APPLIED BY YOU HAVE BEEN REMOVED. AS FAR AS YOU ARE CONCERNED, IT IS READY FOR SERVICE."

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6.4.13 Issuance of Tagging Guarantee with Grounds

System Operator:

"YOU, (*foreign utility, generator*), HAVE TAGGING GUARANTEE NUMBER _____, WITH GROUNDS ON (*line/apparatus*), ALL SOURCES OF POWER SUPPLY, THAT ARE NORMALLY OPERATED BY OR UNDER THE CONTROL OF THIS OFFICE, ARE GUARANTEED TO BE IN THE OPEN POSITION AND TAGGED AT THE FOLLOWING LOCATIONS: (*list of all limits by number, location*). GROUNDS HAVE BEEN APPLIED AT THE FOLLOWING LOCATIONS: (*list of ground locations*). YOU ARE ADVISED THAT THE GROUNDS INSTALLED ARE ONLY A VISIBLE INDICATION THAT THE APPARATUS HAS BEEN DEENERGIZED AT THE POINT OF GROUNDING, AND SHOULD NOT BE CONSIDERED PROTECTION FOR YOUR WORKERS."

6.4.14 Release of Tagging Guarantee with Grounds

System Operator:

"I RELEASE YOU, (*foreign utility, generator*), OF TAGGING GUARANTEE NUMBER _____ ON THE (*line/apparatus*) BETWEEN THE FOLLOWING LIMITS; (*list of all limits by number, location*). ALL OF YOUR WORKERS ARE CLEAR AND HAVE BEEN TOLD TO CONSIDER THE CIRCUIT (*equipment*) ENERGIZED. ALL GROUNDS APPLIED BY YOU HAVE BEEN REMOVED. AS FAR AS YOU ARE CONCERNED, IT IS READY FOR SERVICE."

6.4.15 Requesting Non-Reclose Assurance (NRA)

Authorized Person:

"I, (*state your name*), REQUEST AN NRA ON THE (*line/apparatus*) AND THE CONTROLS OF (*list of all device(s) by number, location*) FOR MY WORK AT (*list the location of your work*)."

6.4.16 Issuance of a Non-Reclose Assurance

System Operator:

"You, (*state name given*) HAVE NRA NUMBER _____ ON THE (*line/apparatus*) AND THE CONTROLS OF (*list all device(s) by number, location*) FOR YOUR WORK AT (*List location of work*) DO YOU ACCEPT AND UNDERSTAND THIS NRA?"

Authorized Person:

"YES, I UNDERSTAND AND ACCEPT THIS NRA."

6.4.17 Issuance of a NRA Guarantee with a foreign utility Control Center

System Operator:

"YOU, (*foreign utility*), HAVE NRA GUARANTEE NUMBER _____, ON (*line/apparatus*) AND THE CONTROLS OF (*list all device(s) by number, location*) FOR YOUR WORK AT (*List location of work*). YOU ARE

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RESPONSIBLE TO INFORM THE NATIONAL GRID SYSTEM OPERATOR OF ANY OF ANY CONDITIONS THAT MAY HAVE CAUSED THESE DEVICES(S) TO OPERATE."

6.4.18 Release of a NRA

Authorized Person:

"I, (state your name), RELEASE NRA NUMBER _____ ON THE (line/apparatus). THE CONTROLS OF (list of all device(s) by number, location) MAY BE RESTORED TO THE AUTOMATIC RECLOSE POSITION. (States details of work completed)."

System Operator:

"YOU, (state name given), RELEASE NRA NUMBER _____ ON THE (line/apparatus). THE CONTROLS OF (list of all device(s) by number, location) MAY BE RESTORED TO THE AUTOMATIC RECLOSE POSITION. (Restates details of work completed)."

Authorized Person:

"THAT IS CORRECT."

6.4.19 Release of a NRA Guarantee with a foreign utility Control Center

System Operator:

"I RELEASE YOU, (utility), OF NRA GUARANTEE NUMBER _____ ON THE (line/apparatus). THE CONTROLS OF (list of all device(s) by number, location) MAY BE RESTORED TO THEIR NORMAL POSITION."

6.4.20 Surrendering an NRA when work is not completed

System Operator:

"OK, (state name given), GO AHEAD AND SURRENDER YOUR NRA."

Authorized Person:

"I, (state your name), SURRENDER NRA NUMBER _____ ON THE (line/apparatus) ON THE CONTROLS OF (list of all device(s) by number, location) AND THEY MAY BE RECLOSED IF THEY TRIP WHILE THE NRA IS SURRENDERED."

System Operator:

"YOU, (state name given), SURRENDER NRA NUMBER _____ ON THE (line/apparatus) ON THE CONTROLS OF (list of all device(s) by number, location). THESE DEVICES MAY BE RECLOSED IF THEY TRIP WHILE THE NRA IS SURRENDERED."

Authorized Person:

"THAT IS CORRECT."

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6.4.21 Transfer of Non Reclose Assurance

Existing Authorized Person:

"I, (state your name), REQUEST TRANSFER OF MY NRA NUMBER _____ ON THE (line/apparatus) ON THE CONTROLS OF; (list of all device(s) by number, location) FROM ME TO (name of new Authorized Person)."

System Operator (to existing Authorized Person):

"YOU, (repeat name given), REQUEST TO TRANSFER YOUR NRA NUMBER _____ ON THE (line/apparatus) ON THE CONTROLS OF; (list of all device(s) by number, location) TO (name of new Authorized Person)."

Existing Authorized Person:

"THAT IS CORRECT."

New Authorized Person:

"I, (state your name), REQUEST TRANSFER OF (name of existing Authorized Person's) NRA NUMBER _____ ON THE; (line/apparatus) ON THE CONTROLS OF; (list of all device(s) by number, location)."

System Operator (to new Authorized Person):

"YOU, (state name given), ARE ISSUED (name of existing Authorized Person's) TRANSFER OF NRA NUMBER _____ ON THE (line/apparatus) ON THE CONTROLS OF; (list of all device(s) by number, location). DO YOU UNDERSTAND AND ACCEPT THIS NON RECLOSE ASSURANCE?"

New Authorized Person:

"YES, I UNDERSTAND AND ACCEPT THIS NON RECLOSE ASSURANCE."

System Operator (to original Authorized Person):

"(Original Authorized Person's name), YOUR NRA NUMBER _____ HAS BEEN TRANSFERRED TO (name of new Authorized Person)."

6.4.22 Issuance of Customer Tags Directly to Large Industrial Customers

System Operator:

"YOU, (customer) , HAVE CUSTOMER TAG(s) ON (line/apparatus), ALL SOURCES OF POWER SUPPLY, THAT ARE NORMALLY OPERATED BY OR UNDER THE CONTROL OF THIS OFFICE, ARE IN THE OPEN POSITION AND CUSTOMER TAGGED AT THE FOLLOWING LOCATIONS:(list of all limits by number and location).

Note: If grounds were requested add the following statement:

GROUND(S) HAVE BEEN APPLIED AT THE FOLLOWING LOCATIONS: (list of ground locations). YOU ARE ADVISED THAT THE GROUND(S) INSTALLED ARE ONLY A VISIBLE INDICATION THAT THE APPARATUS HAS BEEN DEENERGIZED AT THE POINT OF GROUNDING, AND SHOULD NOT BE CONSIDERED PROTECTION FOR YOUR WORKERS."

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6.4.23 Release of Customer Tags Directly to Large Industrial Customers

System Operator:

"I RELEASE YOU, (customer), OF CUSTOMER TAG(s) ON THE (line/apparatus) BETWEEN THE FOLLOWING LIMITS; (list of all limits by number and location). ALL OF YOUR WORKERS ARE CLEAR AND HAVE BEEN TOLD TO CONSIDER THE CIRCUIT (equipment) ENERGIZED. ALL GROUNDS APPLIED BY YOU HAVE BEEN REMOVED. AS FAR AS YOU ARE CONCERNED, THE CUSTOMER TAG(S) MAY BE REMOVED AND THE SOURCES OF POWER SUPPLY, THAT ARE NORMALLY OPERATED BY OR UNDER THE CONTROL OF THIS OFFICE MAYBE RETURNED TO SERVICE."

6.4.24 Requesting to Expand or Collapse an Existing Zone of Protection

Requesting a New Clearance

Clearance Person:

"I, (state your name), REQUEST THAT MY CLEARANCE NUMBER _____ ON THE (line/apparatus) BETWEEN THE FOLLOWING LIMITS; (list of all limits by number, location), BE EXPANDED/COLLAPSED. THE NEW LIMIT(S) THAT I AM REQUESTING ARE AS FOLLOWS; (list of all limits by number, location)."

System Operator:

"I UNDERSTAND (repeat name given) YOU HAVE CLEARANCE NUMBER _____ ON THE (line/apparatus) BETWEEN THE FOLLOWING LIMITS; (list of all limits by number, location). YOU ARE REQUESTING THAT YOUR ZONE OF PROTECTION BE EXPANDED/COLLAPSED AND THE NEW LIMIT(S) YOU ARE REQUESTING ARE AS FOLLOWS;(list of all limits by number, location)."

Clearance Person:

"THAT IS CORRECT."

System Operator:

"I WILL CALL YOU BACK WHEN THE RED TAGS ARE IN PLACE."

Issuing a New Clearance

System Operator:

"(Clearance Person), I HAVE ALL RED TAGS IN PLACE THAT YOU HAVE REQUESTED FOR YOUR EXPANDED/COLLAPSED ZONE OF PROTECTION. ARE YOU READY TO RECEIVE YOUR NEW CLEARANCE."

Clearance Person:

"YES I AM."

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System Operator:

"YOU, (repeat name given), HAVE CLEARANCE NUMBER _____ ON THE (line/apparatus) BETWEEN THE FOLLOWING NEW LIMITS; (list of all limits by number, location). ALL OF THESE DEVICES ARE IN THE OPEN POSITION AND RED TAGGED FOR YOU. TEST AND THEN GROUND BEFORE CONSIDERING THE CIRCUIT (apparatus) DEAD."

Clearance Person:

"I, (state your name), HAVE CLEARANCE NUMBER _____ ON THE (line/apparatus) BETWEEN THE FOLLOWING NEW LIMITS; (list of all limits by number, location). ALL OF THESE DEVICES ARE IN THE OPEN POSITION AND RED TAGGED FOR ME. I WILL TEST AND THEN GROUND BEFORE CONSIDERING THE CIRCUIT (apparatus) DEAD."

System Operator:

"THAT IS CORRECT. DO YOU UNDERSTAND AND ACCEPT THIS CLEARANCE?"

Clearance Person:

"YES, I UNDERSTAND AND ACCEPT THIS CLEARANCE."

6.4.25 Releasing of Tags for Expanding or Collapsing a Zone of Protection

System Operator:

"AT THIS TIME (Clearance Person) WOULD YOU RELEASE YOUR RED TAGS ON THE LIMIT(S) THAT WERE PART OF YOUR ORIGINAL CLEARANCE AND ARE NO LONGER NEEDED."

Clearance Person:

Note: for expanding:

"I, (state your name), RELEASE MY RED TAGS ON THE FOLLOWING LIMITS; (list of all limits by number, location)."

Clearance Person:

Note: for collapsing:

"I, (state your name), RELEASE MY RED TAGS ON THE FOLLOWING LIMITS; (list of all limits by number, location). FOR THE SECTION OF THE CLEARANCE I AM RELEASING, ALL OF MY WORKERS ARE CLEAR AND HAVE BEEN TOLD TO CONSIDER THE RELEASED SECTION TO BE ENERGIZED, AND ALL GROUNDS APPLIED BY ME OR FOR ME HAVE BEEN REMOVED."

System Operator:

Note: for expanding:

"I UNDERSTAND (Clearance Person) YOU RELEASE YOUR RED TAGS ON THE FOLLOWING LIMIT(S); (list of all limits by number, location)."

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System Operator:

Note: for collapsing:

"YOU, (state name), RELEASE YOUR RED TAGS ON THE FOLLOWING LIMITS; (list of all limits by number, location). FOR THE SECTION OF THE CLEARANCE YOU ARE RELEASING, ALL OF YOUR WORKERS ARE CLEAR AND HAVE BEEN TOLD TO CONSIDER THE RELEASED SECTION TO BE ENERGIZED, AND ALL GROUNDS APPLIED BY YOU OR FOR YOU HAVE BEEN REMOVED."

Clearance Person:

"THAT IS CORRECT."

6.4.26 Higher Authority

Clearance Person:

"I, (state your name), AS A HIGHER AUTHORITY ASSUME RESPONSIBILITY AND REQUEST THE CLEARANCE CURRENTLY ISSUED TO (state Clearance person's name that you are assuming Clearance for) ON THE (line/apparatus) BETWEEN THE FOLLOWING LIMITS; (list of all limits by number, location), BE ISSUED TO ME (state your name)."

System Operator:

"YOU, (repeat name given), AS A HIGHER AUTHORITY ASSUME RESPONSIBILITY FOR (state Clearance person's name that you are assuming Clearance for) CLEARANCE AND HAVE CLEARANCE NUMBER _____ ON THE (line/apparatus) BETWEEN THE FOLLOWING LIMITS; (list of all limits by number, location). ALL OF THESE DEVICES ARE IN THE OPEN POSITION AND RED TAGGED FOR YOU. TEST AND THEN GROUND BEFORE CONSIDERING THE CIRCUIT (apparatus) DEAD."

Clearance Person:

"I, (state your name), AS A HIGHER AUTHORITY ASSUME RESPONSIBILITY FOR (state Clearance person's name that you are assuming Clearance for) CLEARANCE AND HAVE CLEARANCE NUMBER _____ ON THE (line/apparatus) BETWEEN THE FOLLOWING LIMITS; (list of all limits by number, location). ALL OF THESE DEVICES ARE IN THE OPEN POSITION AND RED TAGGED FOR ME. I WILL TEST AND THEN GROUND BEFORE CONSIDERING THE CIRCUIT (apparatus) DEAD."

System Operator:

"THAT IS CORRECT. DO YOU UNDERSTAND AND ACCEPT THIS CLEARANCE?"

Clearance Person:

"YES, I UNDERSTAND AND ACCEPT THIS CLEARANCE."

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6.5 Appendix E - Sample Documents / Forms/Tags

- 6.5.1 Field Switching Order – NG0042
<http://docuweb3/ngs/ed.aspx?name=NG0042> Field Switching Order Fillable
- 6.5.2 Field Clearance and Control Form – NG0062
<http://docuweb3/ngs/ed.aspx?name=NG0062> Field Clearr-Cntrl Fillable
- 6.5.3 Station Control Tag Form – NG0063
<http://docuweb3/ngs/ed.aspx?name=NG0063> Station Control Tag Fifiable
- 6.5.4 Contractor Permission to Work Form – NG0060
<http://docuweb3/ngs/ed.aspx?name=NG0060> ContrPermToWork Fillable
- 6.5.5 Customer Work Notification Form – NG0061
<http://docuweb3/ngs/ed.aspx?name=NG0061> Cust Work Notif Fillable
- 6.5.6 Red Tag Sample – NG0104
- 6.5.7 Non-Reclose Assurance Tag Sample – NG0103
- 6.5.8 HOLD Tag Sample – NG0102
- 6.5.9 Station Control Tag Sample – NG0099
- 6.5.10 Customer Tag Sample – NG0100
- 6.5.11 Ground Device Identification Ticket Sample – NG0101
- 6.5.12 Worker Placard Sample – NG0228

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6.5.1. Field Switching Order – NG0042

[illegible]

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6.5.2 Field Clearance and Control Form – NG0062

[illegible]

RETURN FIELD CLEARANCE AND CONTROL FORM WITH TAGS TO LOCAL SUPERVISION
RETAIN LOCALLY FOR THREE (3) YEARS

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FIELD CLEARANCE and CONTROL FORM										nationalgrid	
SWITCHING LOCATION and TAG POINTS			TAGS INSTALLED			TAGS REMOVED			GROUNDING INFORMATION		
Location	Device	Description of Switching	Date / Time	Switch Person	Tagged Y / N	Description of Switching	Date / Time	Switch Person	GCIT # or HOLD TAG	REMOVED Date / Time	
CREW MEMBERS and/or OTHER CREW LEADS						CREW MEMBERS and/or OTHER CREW LEADS			DATE / TIME NOTIFIED		
NAME & TRUCK #		To Start Work		Released		NAME & TRUCK #		To Start Work		Released	
		/		/				/		/	
		/		/				/		/	
		/		/				/		/	
TRANSFER / SURRENDER / Re-ISSUE		Date / Time		To		TRANSFER / SURRENDER / Re-ISSUE		Date / Time		To	
		/		/				/		/	
TRANSFER / SURRENDER / Re-ISSUE		Date / Time		To		TRANSFER / SURRENDER / Re-ISSUE		Date / Time		To	
		/		/				/		/	
Comments											

Continued on additional Field Clearance and Control Form(s) YES _____ NO _____

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6.5.3 Station Control Tag Form – NG0063

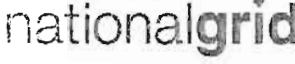
STATION CONTROL TAG FORM				nationalgrid			
<p>Station Control Tag is Non System Operator based for work in Substations. The Station Control Tag shall not be used on system voltages above 600 volts. Conduct a Job Brief and notify all affected workers on the crew of tag location. Locks applied (if applicable), then equipment position before beginning work. Separate Station Control Tags shall be applied by each crew working on the same equipment or circuit. Prior to removal of any tags to operate any device, the lead individual shall ensure all personnel, tools, grounds, and equipment are in the clear.</p>							
AUTHORIZED PERSON UTILIZING STATION CONTROL TAGS							
DESCRIPTION OF WORK SCOPE							
TAGGING POINTS							
STATION:				INSTALLED		REMOVED	
CABINET/PANEL/CIRCUIT NO./LOCATION	PROTECTIVE POSITION	TIME	DATE	BY	TIME	DATE	BY
1							
2							
3							
4							
5							
6							
7							
8							
STATION CONTROL TAG FIELD SWITCHING ORDER							
TIME		SWITCH PERSON	OPERATION				
ISSUED	EXECUTED						
<p>RETURN STATION CONTROL TAG SHEET WITH TAGS TO LOCAL SUPERVISION RETAIN LOCALLY FOR THREE (3) YEARS</p>							

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[illegible]

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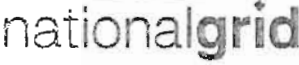
6.5.4 Contractor Permission to Work Form – NG0060

CONTRACTOR PERMISSION TO WORK FORM (Filled out by the FCC)			
DATE	LINE / STATION No	SYSTEM OPERATOR	
In accordance with National Grid Clearance and Control procedures the following devices in the following locations are tagged for:			
NAME OF AUTHORIZED PERSON _____			
LOCATION:	DEVICE:	INSTALLED	REMOVED
1			
2			
3			
4			
5			
6			
7			
<input type="checkbox"/> Additional Devices on back of sheet			
<input type="checkbox"/> Contractor informed to begin work: Date: _____ Time: _____			
By: <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person <input type="checkbox"/> Other: _____			
The Contractor may proceed to <u>test de-energized and ground</u> (if applicable) in accordance with all OSHA, Federal, state and local safety procedures for testing and grounding. Appropriate ground lead size shall be used as directed for specific sites.			
CONTRACTOR COMPLETION OF WORK (Filled out by the Contractor)			
I Certify that All Grounds have been removed, the workers and equipment are in the clear, and the devices listed above may have the tags removed and be returned to service			
SIGNED:		COMPANY:	
DATE:		TIME:	
By: <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person <input type="checkbox"/> Other: _____			

REWORKING (1) (2) (3)

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CONTRACTOR PERMISSION TO WORK FORM
(Filled out by the FCC)



LOCATION	DEVICE	INSTALLED	REMOVED
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			

RETURN CONTRACTOR PERMISSION TO WORK FORM WITH TAGS TO LOCAL SUPERVISION
RETAIN LOCALLY FOR THREE (3) YEARS

REMARKS:

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6.5.5 Customer Work Notification Form – NG0061

CUSTOMER WORK NOTIFICATION FORM <div style="float: right; font-weight: normal;">nationalgrid</div>	
<p>This form shall be used when general clearances can not be maintained by customers on circuits energized at primary voltage and shall establish and document the meeting, discussions, job brief, and the customer contact requirements.</p>	
NATIONAL GRID AUTHORIZED PERSON NAME _____	NATIONAL GRID CONTACT NUMBER _____
<input type="checkbox"/> CLEARANCE NUMBER: _____	<input type="checkbox"/> PRT (NAME): _____
Grounds Location (s) _____	LINE / APPARATUS _____
_____	Ground Device Identification Ticket (s) _____
_____	_____
CUSTOMER SECTION and CONTACT INFORMATION:	
CUSTOMER NAME / RESPONSIBLE PERSON / CONTRACTOR / AGENCY _____	DATE _____
STREET ADDRESS _____	TELEPHONE NUMBER _____
CITY / TOWN / VILLAGE _____	EMERGENCY 24/7 TELEPHONE NUMBER _____
<p>I am requesting that nationalgrid de-energize and ground the electrical conductors at:</p>	
<input type="checkbox"/> CUSTOMER INITIALS _____	(Location where work will be performed) _____
<input type="checkbox"/> CUSTOMER INITIALS _____	I understand that if there any changes required or if the work is completed, I will contact the nationalgrid contact number listed above and inform them of these changes
CUSTOMER SIGNATURE _____	DATE _____
CUSTOMER WORK COMPLETION SECTION:	
<input type="checkbox"/> CUSTOMER INITIALS _____	I acknowledge that all work has been completed and I will treat all line/apparatus as energized as of this date
CUSTOMER SIGNATURE _____	DATE _____

4/20/09

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File: NG-EOP G014 Clearance and Control	Originating Department: Distribution Engineering Services	Sponsor: Patrick Hogan

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6.5.6 Red Tag Sample – NG0104

Electromark Engineering Standard P.O. Box 25 Wolcott, New York 14590		File: Prod_ArtlArtl COREL/TAGS/ EM Part No.: NGR023-T-P1-B34 Cust. Part No.:	@Electromark 2004 8
---	--	---	-------------------------------

.656 dia typ 1 pl
LARGE SNAP GROMMET

1.812" WINDOW

5.75"

3.937" FLAP

2.625" FRONT

←.25 CR

0.656"

BACK

DIE EB-365

Description: TAG Proof Requested: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Proof #: NatGridTags PG 1 Spec:
Construction Code: P1 Size: 5.75 X 2.625 Date: 8/25/04		Rev.#/Date: REV 8, 6/29/06
Material: polyester w/flap Artist: JW		Approved as submitted: <input type="checkbox"/> Yes <input type="checkbox"/> No
Colors: 3652 black, 1008 safety red W.O.:		Approved w/ the following revisions:
white CSR: BRANDY		Revised proof required? <input type="checkbox"/> Yes <input type="checkbox"/> No
Laminate: OM002C Adhesive: Company: National Grid		Approved by: Date:

*DRAWING NOT FOR COLOR MATCH ☐ Meets Ansi Z535.1-2002 Standard if applicable

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6.5.7 Non-Reclose Assurance Tag Sample – NG0103

Electromark Engineering Standard P.O. Box 25 Wolcott, New York 14590		File: Prod_Artl\Artl COREL/TAGS/ EM Part No.: <u>NGR026-T-P1-B34</u> Cust. Part No.: <u>N/A</u>		Electromark 2004
---	--	--	--	---------------------

FRONT

BACK

DIE EB-365

Description: <u>TAG</u> Proof Requested: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Proof #: <u>6202</u> Spec: _____	
Construction Code: <u>P1</u> Size: <u>5.75 X 2.625</u> Date: <u>2/16/05</u>		Rev.#/Date: <u>REV 8, 6/29/06</u>	
Material: <u>10 MIL POLYESTER</u> Artist: <u>JW</u>		Approved as submitted: <input type="checkbox"/> Yes <input type="checkbox"/> No	
Colors: <u>Em2002 ORANGE</u> W.O.: <u>182535</u>		Approved w/ the following revisions: _____	
<u>BLACK, WHITE</u> C&R: <u>BRANDY</u>		Revised proof required? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Laminate: <u>2MIL CLEAR FLAP</u> Adhesive: <u>NA</u> Company: <u>NATIONAL GRID</u>		Approved by: _____ Date: _____	
DRAWING NOT FOR COLOR MATCH <input type="checkbox"/> Meets ANSI Z555.1-2002 Standard if applicable			

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File: NG-EOP G014 Clearance and Control

Originating Department:
Distribution Engineering Services

Sponsor:
Patrick Hogan

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6.5.8 HOLD Tag Sample – NG0102

Electromark Engineering Standard P.O. Box 25 Wolcott, New York 14590		File: Prod. Art./Art. COREL/TAGS/ EM Part No.: NGR024-T-P1-B34 Cust. Part No.: N/A	©Electromark 2004
---	--	---	----------------------

.656 dia typ 1 pl.
LARGE SNAP GROMMET

1.812" WINDOW

5.75" FLAP

3.937"

2.625" FRONT

←.25 CR

0.656"

BACK
THIS SIDE IS WRITABLE

DIE EB-365

Description: CAUTION TAG Proof Requested: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Proof #: NatGridTags PG 2 Spec:
Construction Code: P1 Size: 5.75 X 2.625	Date: 8/25/04	Rev.#/Date: REV 7. 8/16/05
Material: polyester w/flap	Artist: iw/LS	Approved as submitted: <input type="checkbox"/> Yes <input type="checkbox"/> No
Colors: 3652 black, yellow white	W.O.: 182535 CSR: BRANDY	Approved w/ the following revisions:
Laminate: OMB02C Adhesive:	Company: National Grid	Revised proof required? <input type="checkbox"/> Yes <input type="checkbox"/> No
*DRAWING NOT FOR COLOR MATCH <input type="checkbox"/> Meets Ansi Z39.48-2002 Standard if applicable		Approved by _____ Date _____

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Sponsor:
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6.5.9 Station Control Tag Sample – NG0099

Electromark Engineering Standard P.O. Box 25 Wolcott, New York 14590		File: Prod_ArtlArt\ COREL/TAGS/ EM Part No.: NGR025-T-P1-B32 Cust. Part No.:	Electromark 2004
---	--	---	---------------------

1.812" WINDOW

5.75"

3.937" FLAP

2.625" FRONT

25 CR

0.656"

0.656"

BACK

DIE EB-365

Description: TAG Proof Requested: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Proof #: 6224-A Spec:
Construction Code: P1 Size: 5.75 X 2.625 Date: 2/19/05		Rev.#/Date: REV 7. 6/29/06
Material: 10 MIL POLYESTER Artist: JW		Approved as submitted: <input type="checkbox"/> Yes <input type="checkbox"/> No
Colors: RED, WHITE W.O.:		Approved w/ the following revisions:
Laminate: FLAP Adhesive: NA Company: NATIONAL GRID		Revised proof required? <input type="checkbox"/> Yes <input type="checkbox"/> No
DRAWING NOT FOR COLOR MATCH <input type="checkbox"/> Meets Ansi Z535.1-2002 Standard if applicable		Approved by _____ Date _____

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Distribution Engineering Services

Sponsor:
Patrick Hogan

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6.5.10 Customer Tag Sample – NG0100

Electromark Engineering Standard P.O. Box 25 Wolcott, New York 14590		File: Prod_Art\Art1 CORE\TAGS\ EM Part No.: NGR022-T-P1-P84 Cust. Part No.:	©Electromark 2005
---	--	--	----------------------

.656 dia typ 1 pl LARGE SNAP GROMMET 1.812" WINDOW 5.75" 3.875" FLAP 3.25" PERF		2.625" 0.656" 9.00"	
---	--	---------------------------	--

BLACK SEQ# IN 2 PLACES ON FRONT		DIE EB-364	
Description: TAG Construction Code: P1 Size: 9.0 X 2.625 Date: 8/25/04 Material: 10 MIL POLYESTER Artist: JW Colors: 3619 RED, 3652 BLACK W.O.: WHITE CSR: BRANDY Laminate: OM002C Adhesive: NA Company: NIMO "DRAWING NOT TO SCALE or FOR COLOR MATCH" <input type="checkbox"/> Meets Ansi Z535, 2002 Standard if applicable	Proof Requested: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Proof #: 6224-B Spec: Rev.#/Date: REV 6, 8/17/05 Approved as submitted: <input type="checkbox"/> Yes <input type="checkbox"/> No Approved w/ the following revisions: Revised proof required? <input type="checkbox"/> Yes <input type="checkbox"/> No Approved by: Date:		

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Originating Department:
Distribution Engineering Services

Sponsor:
Patrick Hogan

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6.5.11 Ground Device Identification Ticket Sample – NG0101

Electromark Engineering Standard P.O. Box 25 Wolcott, New York 14590		File: Prod_ArtlArtl COREL/TAGS/ EM Part No.: NGR027-T-P1-B32 Cust. Part No.: N/A	@Electromark 2004 2
Rev. Initial Design Rev. 1 / Date: 11/1/05 per email change legend on back 1/30/06 Moved "A" to the left to accommodate a 6 digit sequence number			

.656 dia typ 1 pl.
LARGE SNAP GROMMET

1.812" WINDOW

5.75" FLAP

2.625" FRONT

.25 CR

0.656"

0.656"

BACK

STAMPED SEQ#

NOTE: 16" WEATHER-PROOF STRING INCLUDED WITH THIS ORDER DIE EB-365

Description: TAG Proof Requested: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Proof #: 6206 Spec:
Construction Code: P1 Size: 5.75 X 2.625 Date: 2/9/05	Rev.#/Date: REV 9, 6/29/06	
Material: POLYESTER W/SELF LAM FLAP Artist: JW/LS		Approved as submitted: <input type="checkbox"/> Yes <input type="checkbox"/> No
Colors: 3652 BLACK, EM# 2002 ORANGE W.O.: 182535 C.S.R.: BRANDY		Approved w/ the following revisions:
Laminate: FLAP Adhesive: NA Company: NIMO		Revised proof required? <input type="checkbox"/> Yes <input type="checkbox"/> No
DRAWING NOT FOR COLOR MATCH <input type="checkbox"/> Meets ANSI Z395.1-2002 Standard if applicable		Approved by: Date:

nationalgrid	ELECTRIC OPERATING PROCEDURE	Doc. # NG-EOP G014
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6.5.12 Worker Placard Sample – NG0228

Electromark ENGINEER PRINT		FILE: PROD_ART\ART\ COREL\TAGS EM PART NO.: NGR032-T-P0-X64 CUST. PART NO.:
---	--	--

5.75" DIA.

BACK

5.75" DIA.

FRONT

5.75" DIA.		DESCRIPTION: SAFETY TAG	CONSTRUCTION CODE: P0	PROOF #: 6801
PRODUCT TYPE: <input type="checkbox"/> LABEL <input type="checkbox"/> SIGN <input checked="" type="checkbox"/> TAG		DATE: 8/16/05		
MATERIAL: 10 MIL POLYESTER TOYOB0		ARTIST: JB		
LAMINATE:		W.O.:		
COLORS: BLACK, RED, WHITE		CSR: TAYLOR		
		Co: NATIONAL GRID		
*DRAWING MAY NOT BE TO SCALE		*NOT COLOR MATCH	© ELECTROMARK 2007	REVISION 0: INITIAL DESIGN

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7.0 REVISION HISTORY

<u>Version</u>	<u>Date</u>	<u>Description of Revision</u>
1.0	12/11/09	This document supersedes document dated 01/21/08.

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File: NG-EOP G014.Clearance and Control	Originating Department: Distribution Engineering Services	Sponsor: Patrick Hogan

APPENDIX B

Appendix B
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Appendix B
Delineation Point Lines

Charlestown #32 Substation Charlestown NH, #1 Transformer; The line side tap of the 1T1 Disconnects including connectors. The low side of #1 transformer to the 1T1 Disconnects.

Charlestown #32 Substation Charlestown NH, #2 Transformer; The load side of the 3T2 Disconnects. The high side of #2 transformer to the 43T2 Disconnects.

Vilas Bridge Substation 12L1 Line at the Vermont/New Hampshire State Line; Vermont Shore of the Connecticut River

Vilas Bridge Substation 12L2 Line at the Vermont/New Hampshire State Line; Vermont Shore of the Connecticut River

Wilder Substation 1303 & 1304 Lines at the Vermont/New Hampshire State Line; The Vermont Shore of the Connecticut River

Slayton Hill #39 Substation Lebanon NH #1 Transformer; Line side tap including connector to the 1T13 air brake switch.

Slayton Hill #39 Substation Lebanon NH #2 Transformer; Line side tap including connectors to the 2T13 air brake switch

Mt Support #16 Substation Lebanon NH #2 Transformer; Line side tap including connectors to the 2T-13 load break switch

Monroe #15 Substation Monroe, NH #1 Transformer; Load side tap on metering CT's including connector

Golden Rock #19 Substation Salem NH #1 Transformer; Line side tap including connectors to 1T23 Airbrake switch

Spicket River Substation Salem NH 7653 Line at the Haverhill Massachusetts; Salem NH state Line

Pelham #14 Substation Pelham NH #1 Transformer; Line side tap including connectors to Metering CT's

2353 Line Methuen, Massachusetts/Salem NH State Line

2376 Line Methuen, Massachusetts/Salem NH State Line

South Broadway (Route 28) Salem NH - Methuen, MA State Line

Mammoth Rd, Pelham NH - Dracut MA State line

Bridge St Pelham, NH - Dracut MA State line

Mascoma Hydro GSE side of switch connecting 11L2 line to Mascoma Hydro plant

River Mill Hydro GSE side of switch connecting 1L4 line to Rivermill Hydro plant

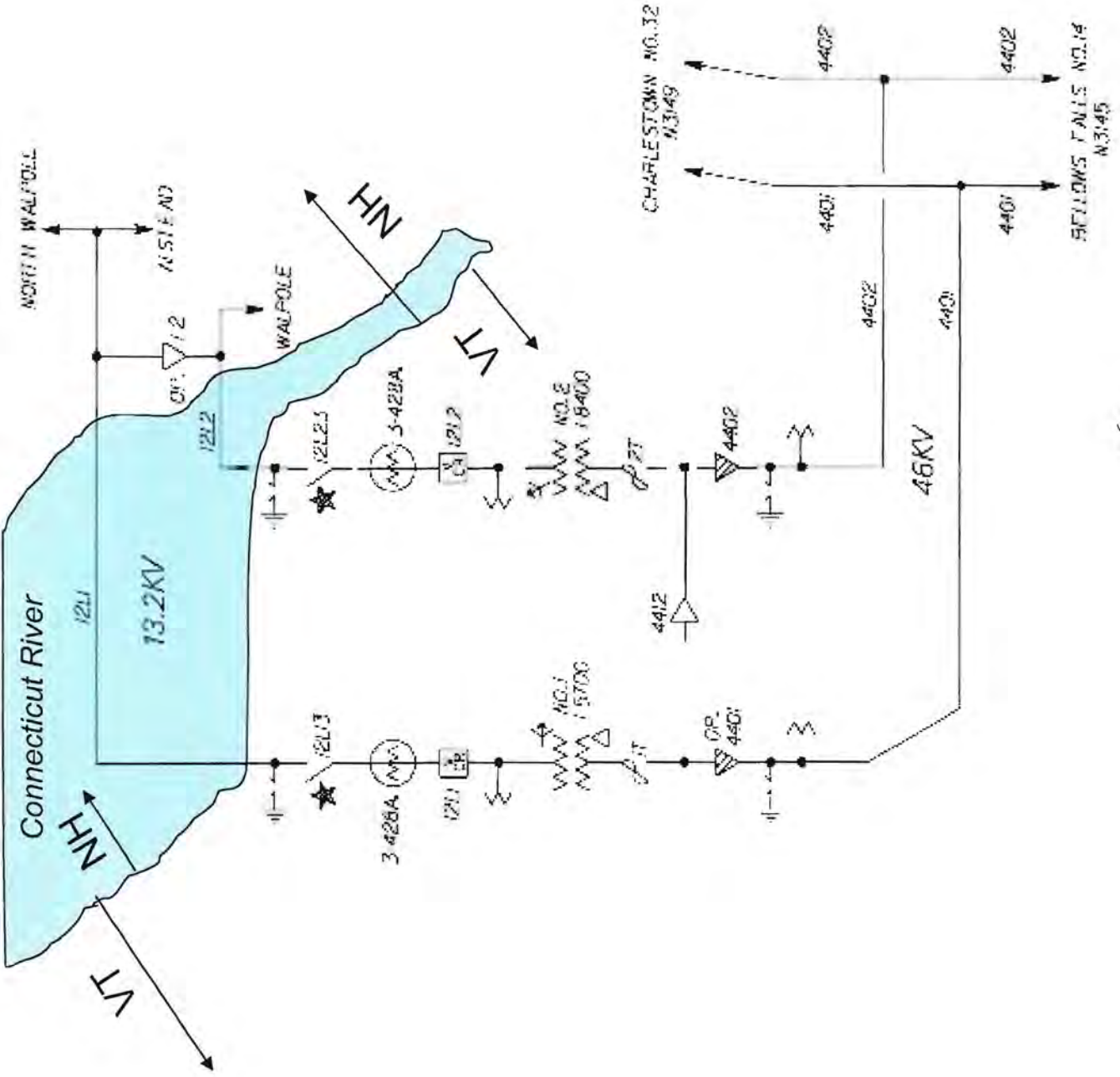
Baltic Mills Hydro GSE side of switch connecting 7L1 line to Baltic Mills Hydro plant

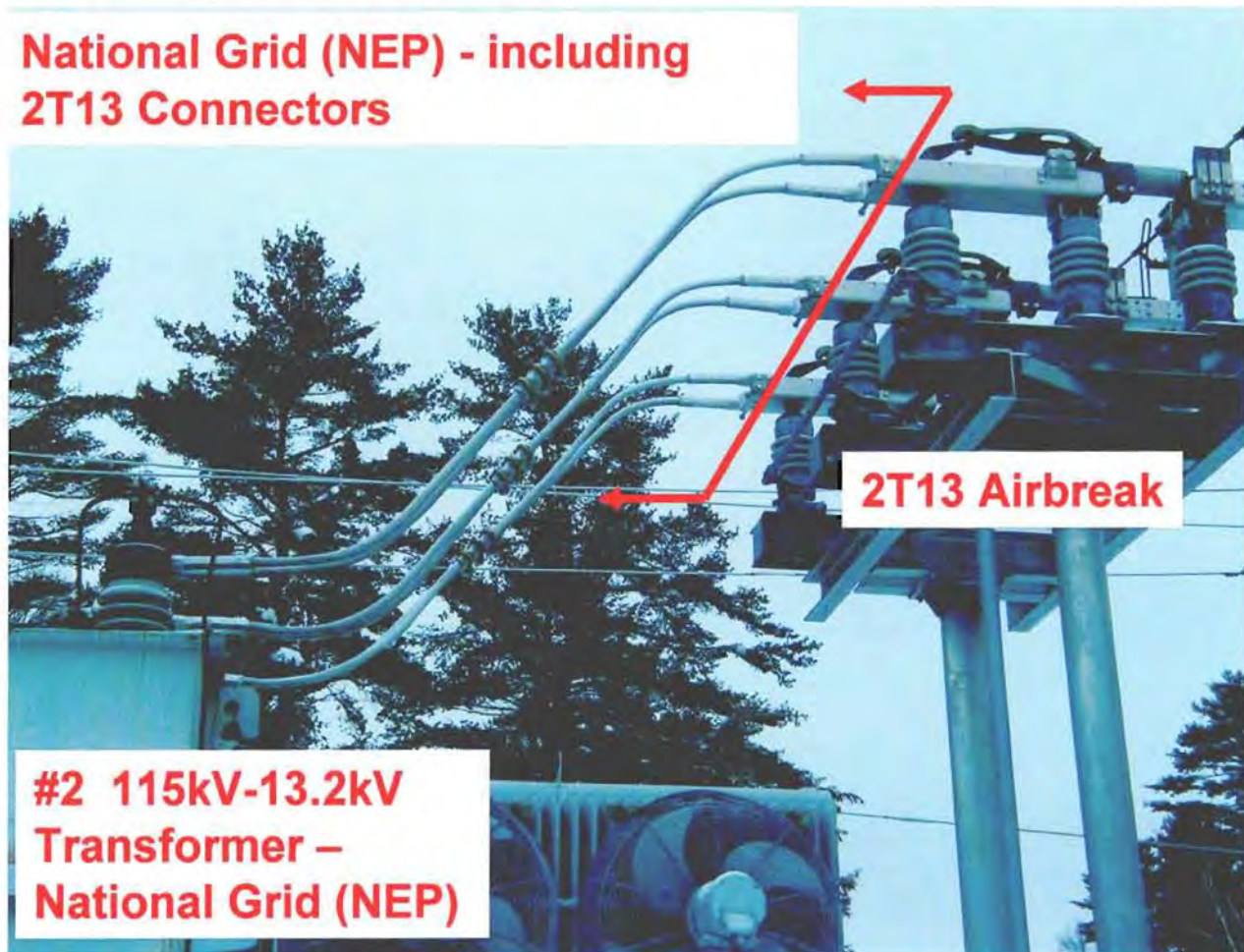
Goose Pond (NHEC) GSE Side of switch connecting the 7L1 to the Goose pond tap to NHEC

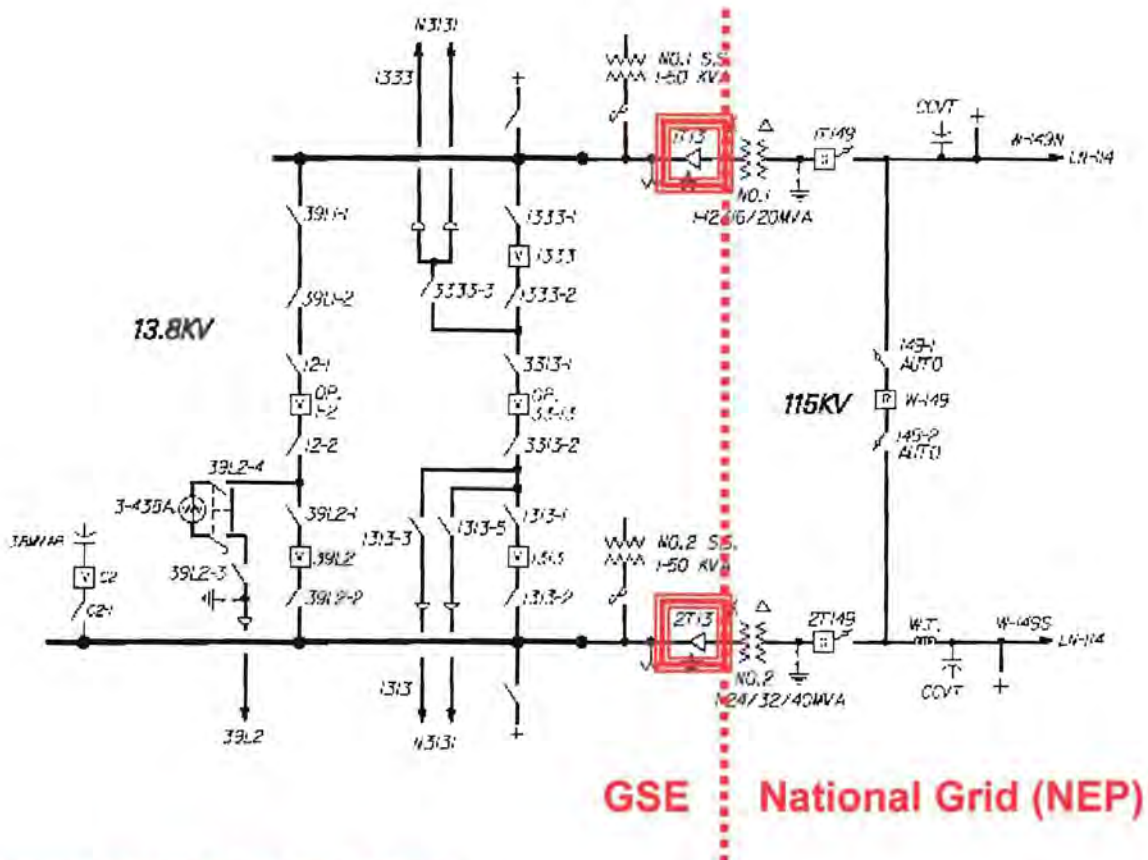
1T1 Disconnects











..... Delineation Point



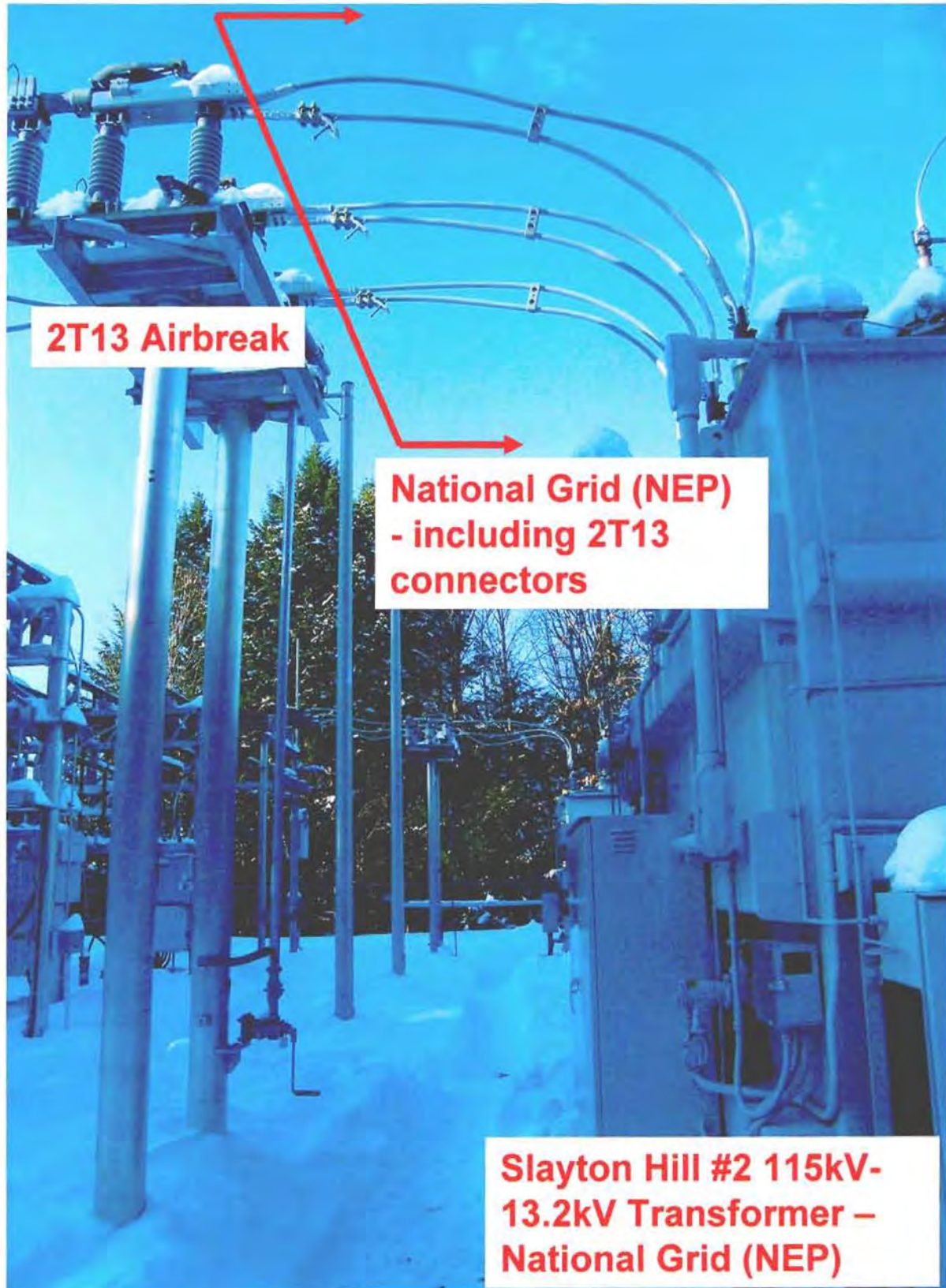
Demarcation Line of Authority

+ MOBILE SUB TAP

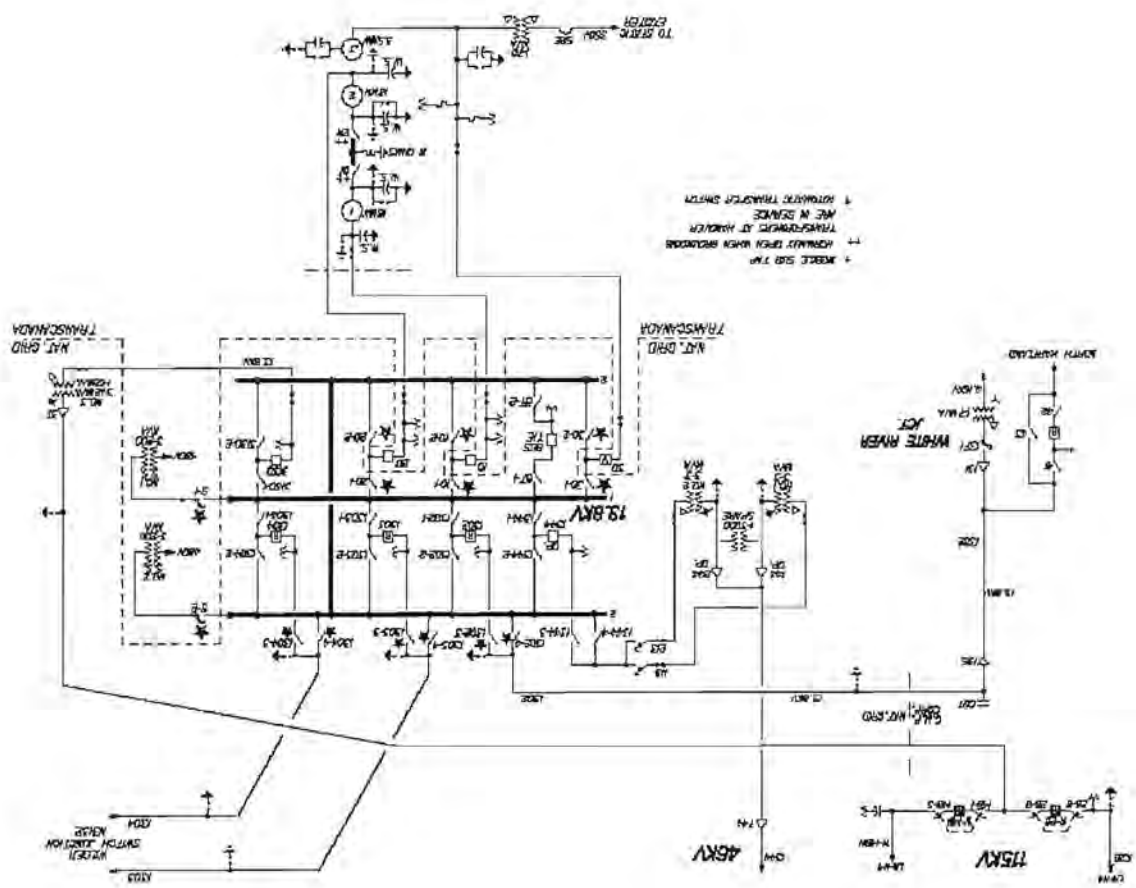
SLAYTON HILL NO. 39
(GRANITE STATE ELECTRIC)
NORTH & GRANITE DIVISION

N3137

06-30-06



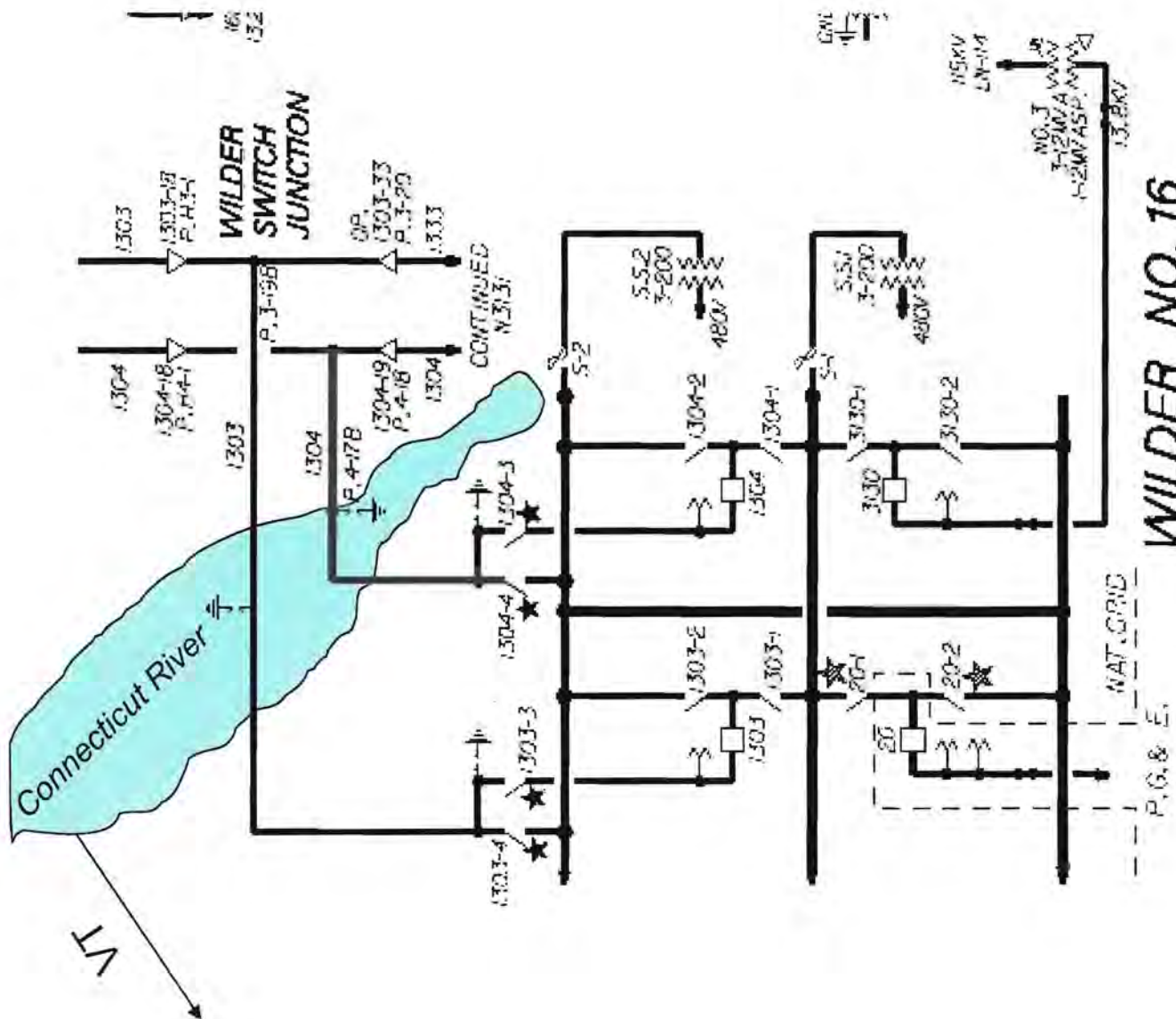


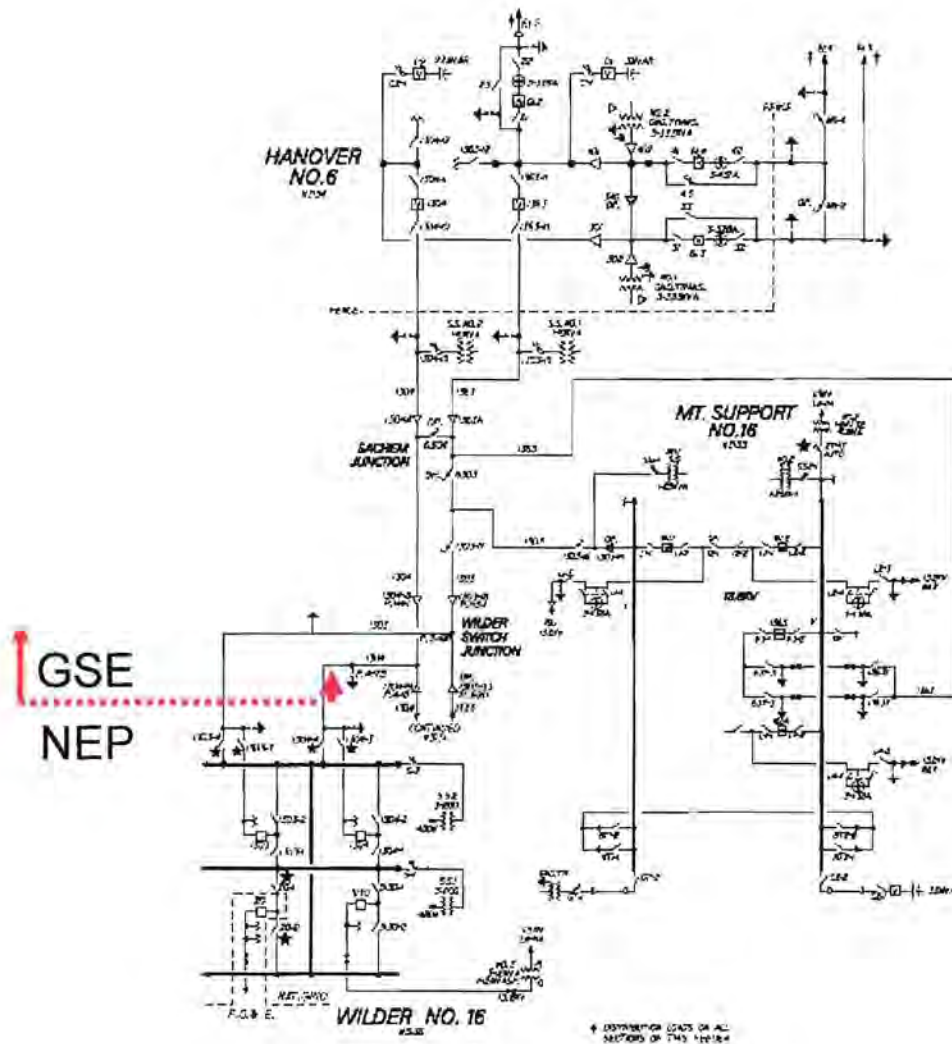


N3136

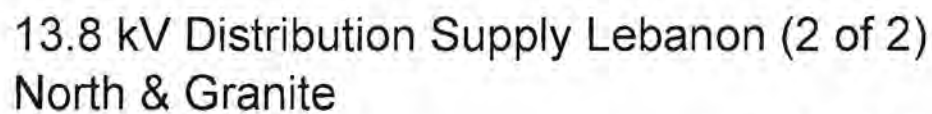
WILDER NO. 16
NORTH & GRANITE DIVISION

0-20-06

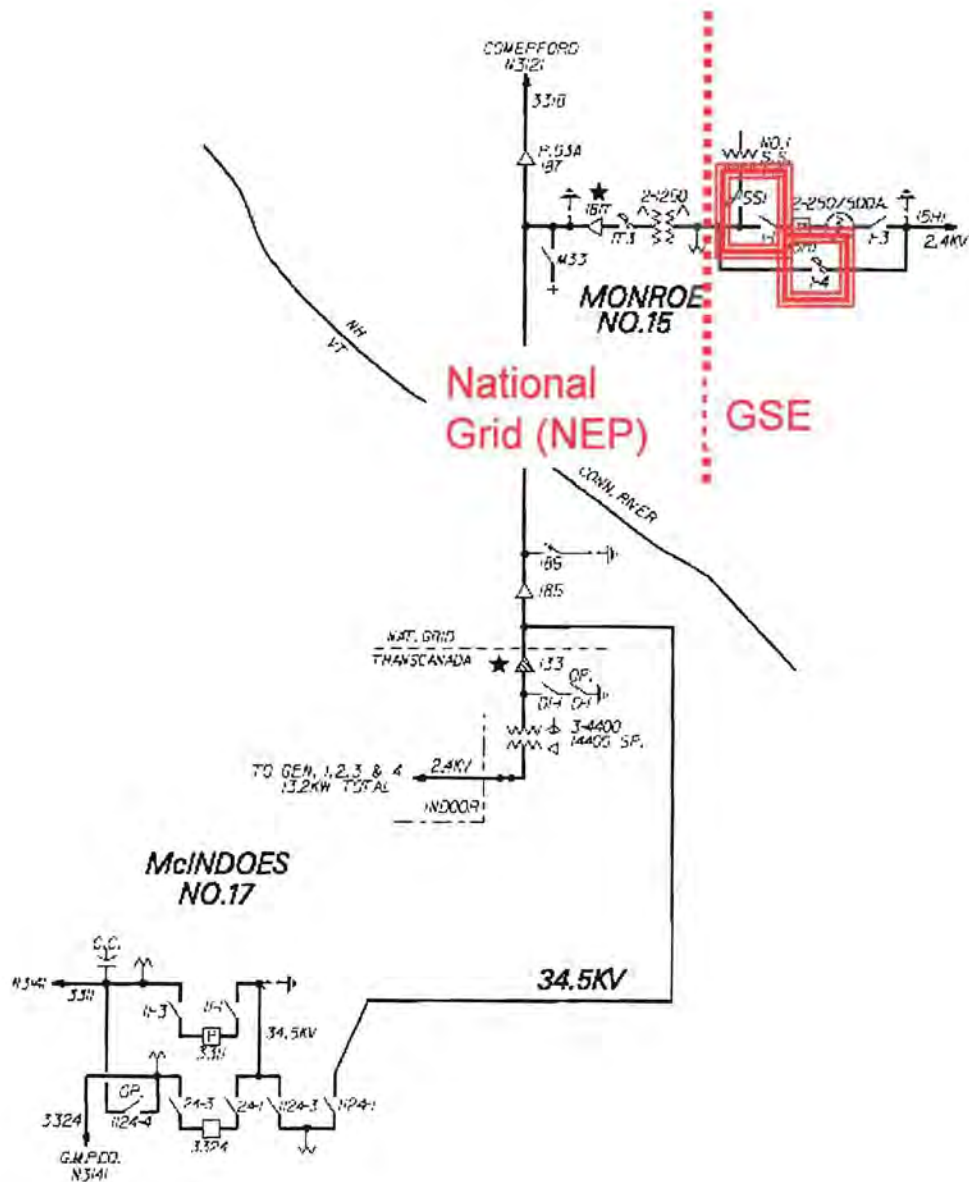




13.8 kV Distribution Supply Lebanon (2 of 2) North & Granite N3132



N3131



- + MOBILE SUB TAP
- * PORCELAIN ENCLOSED
- ++ TWO PER TRANSFORMER UNIT

Delineation Point

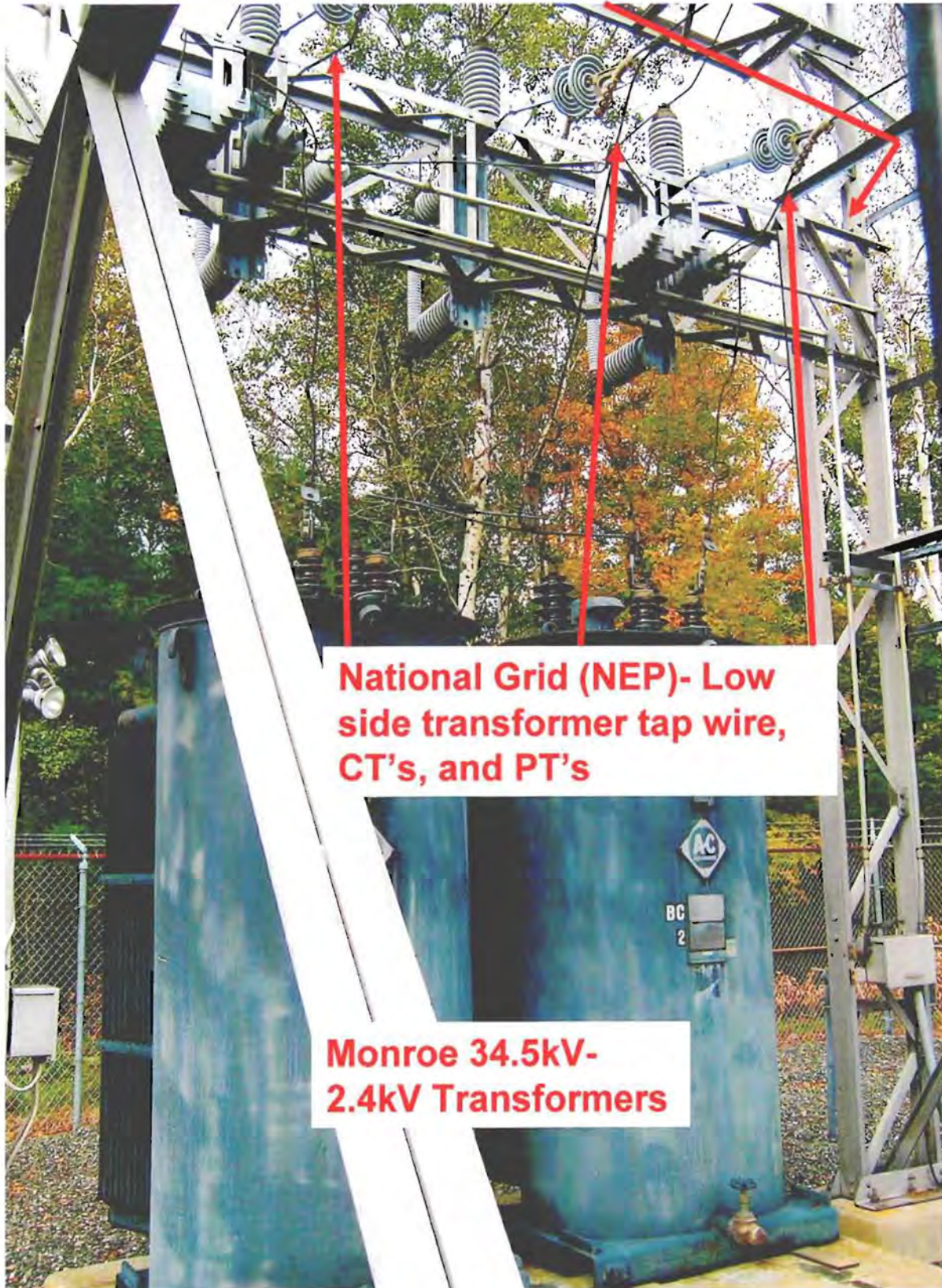
Demarcation Line of Authority

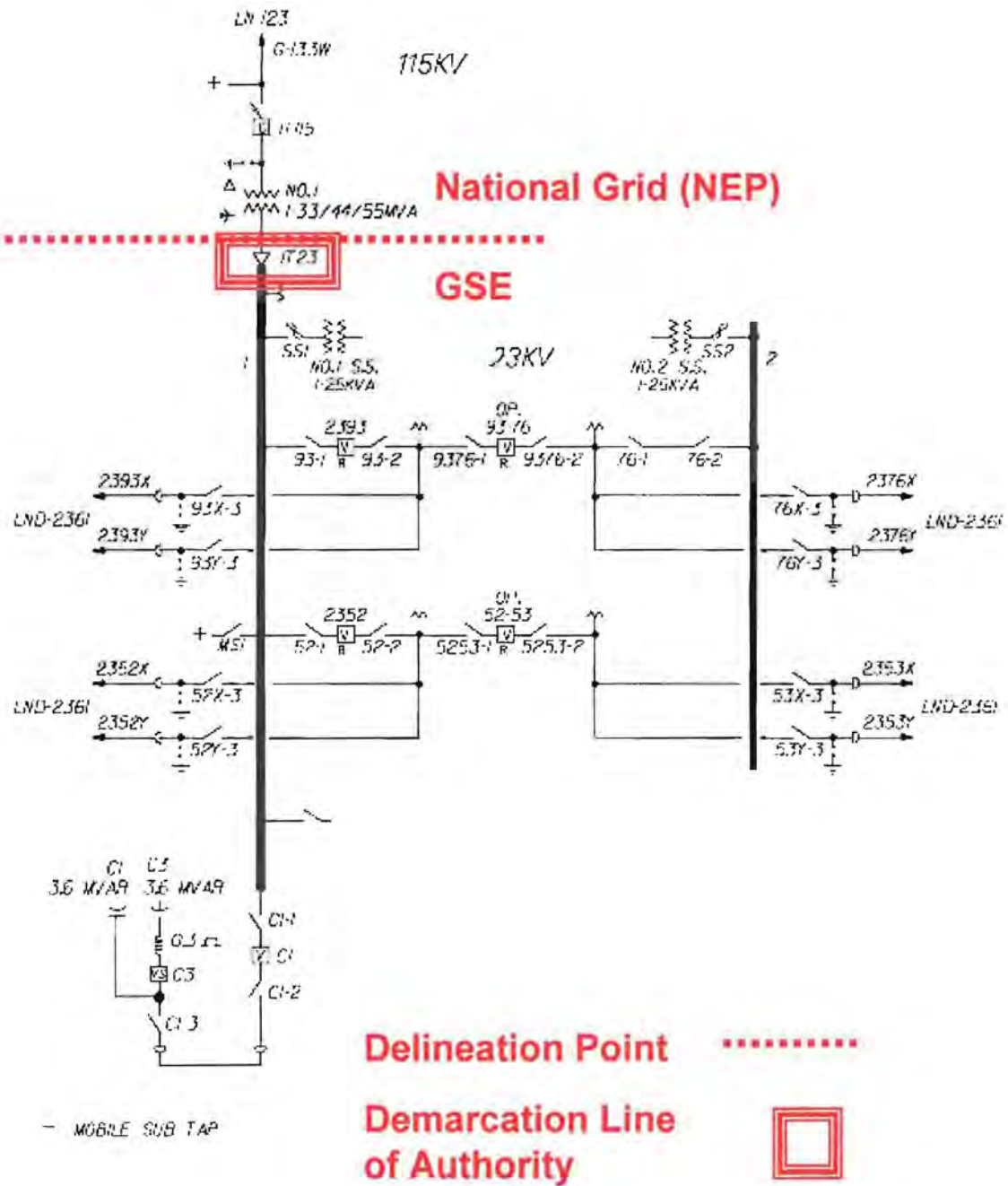


McINDOES NO.17 – MONROE NO.15
NORTH & GRANITE DIVISION

N3124.

10-20-06

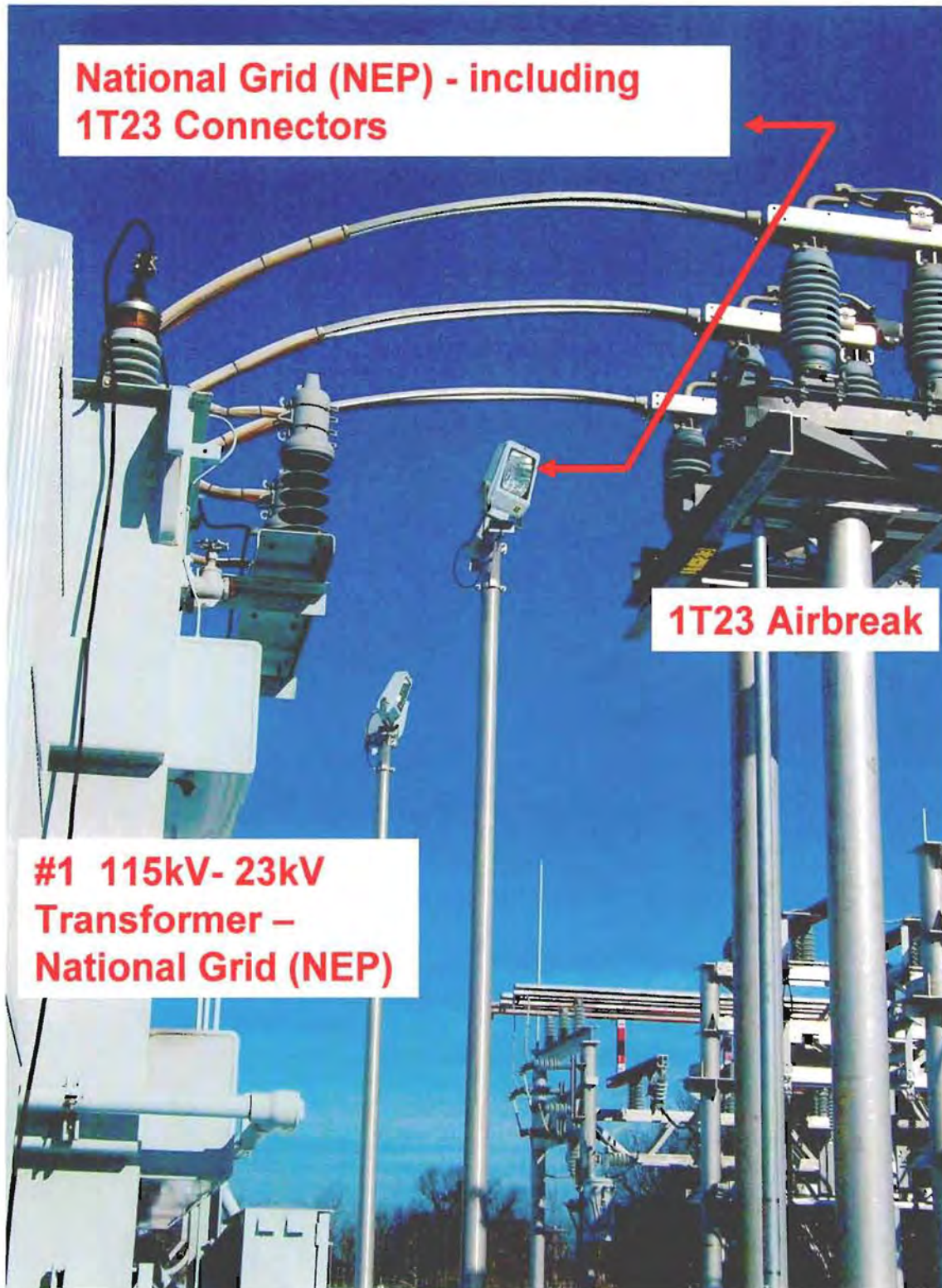




GOLDEN ROCK NO. 19
NORTH & GRANITE DIVISION

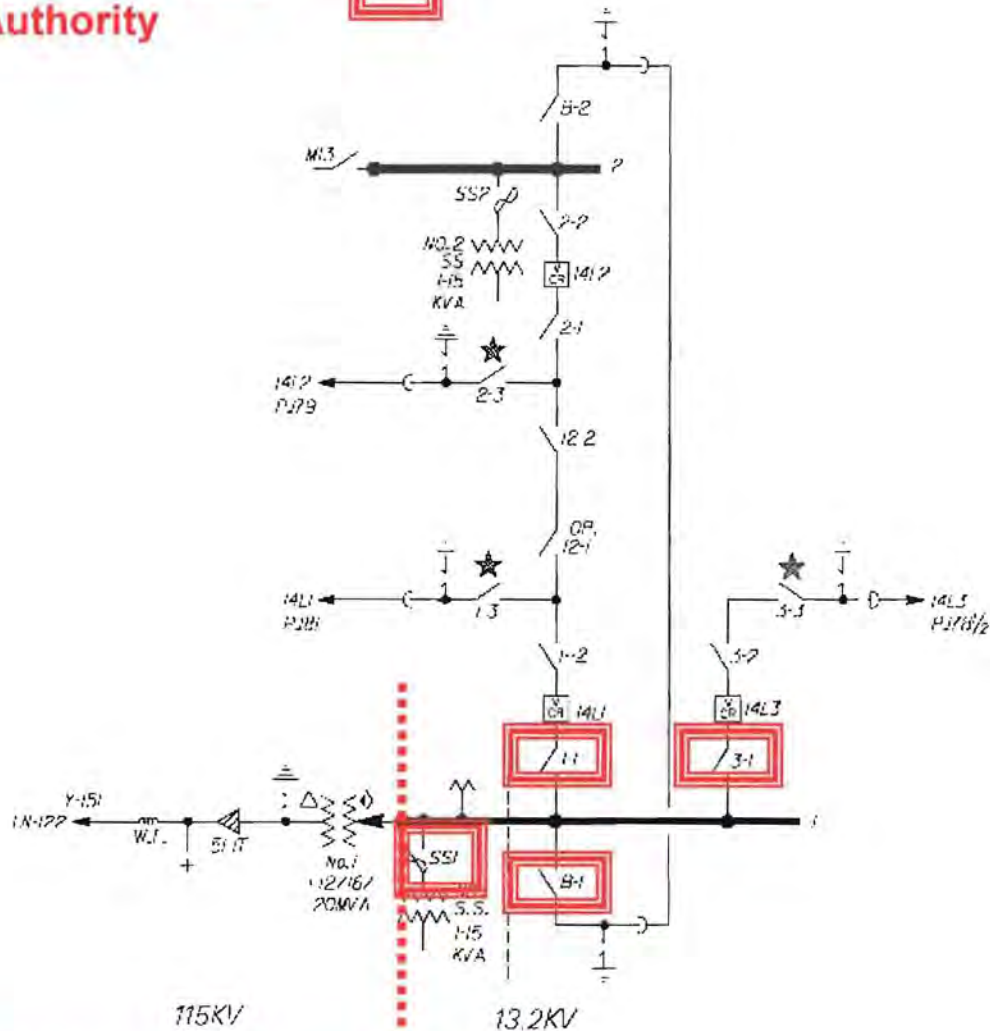
N4342

11-04-02



Delineation Point

**Demarcation Line
of Authority**



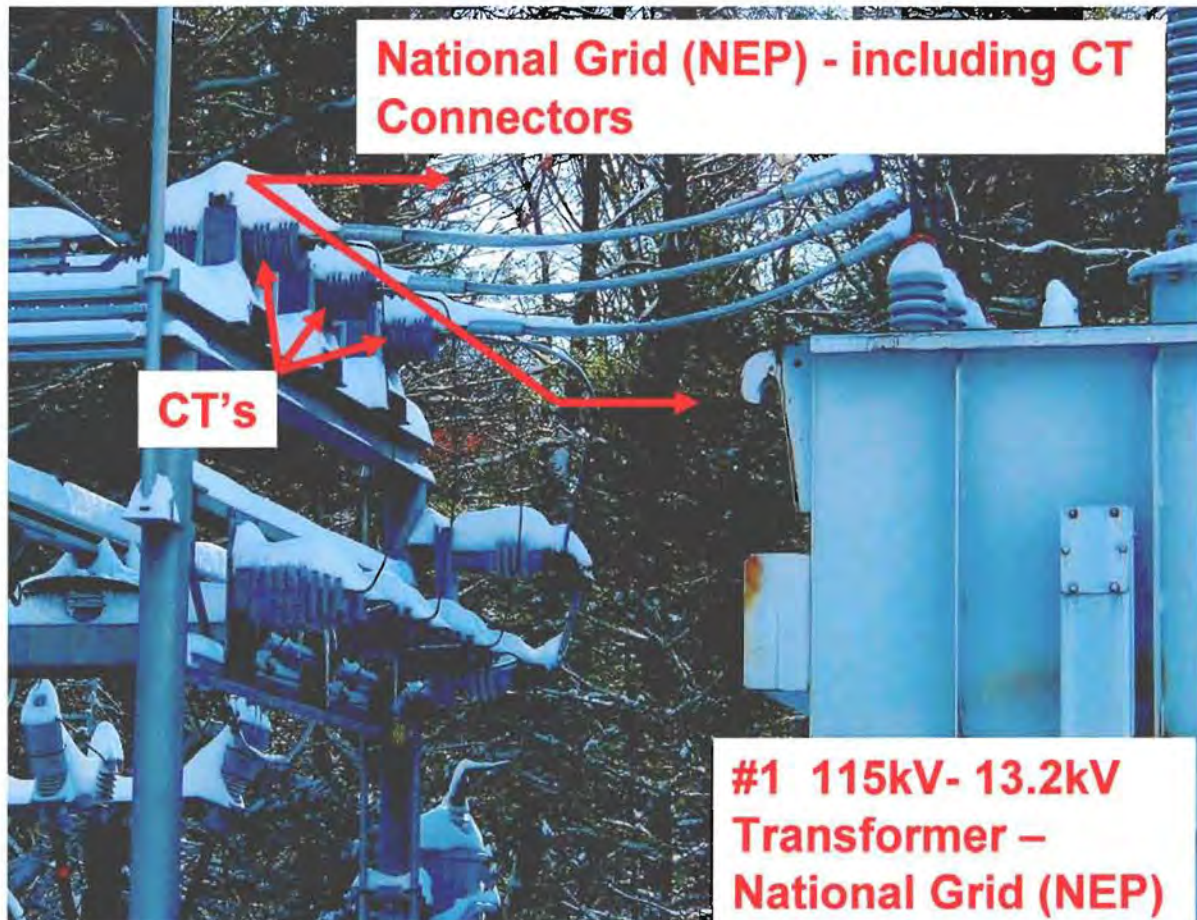
National Grid (NEP) : GSE

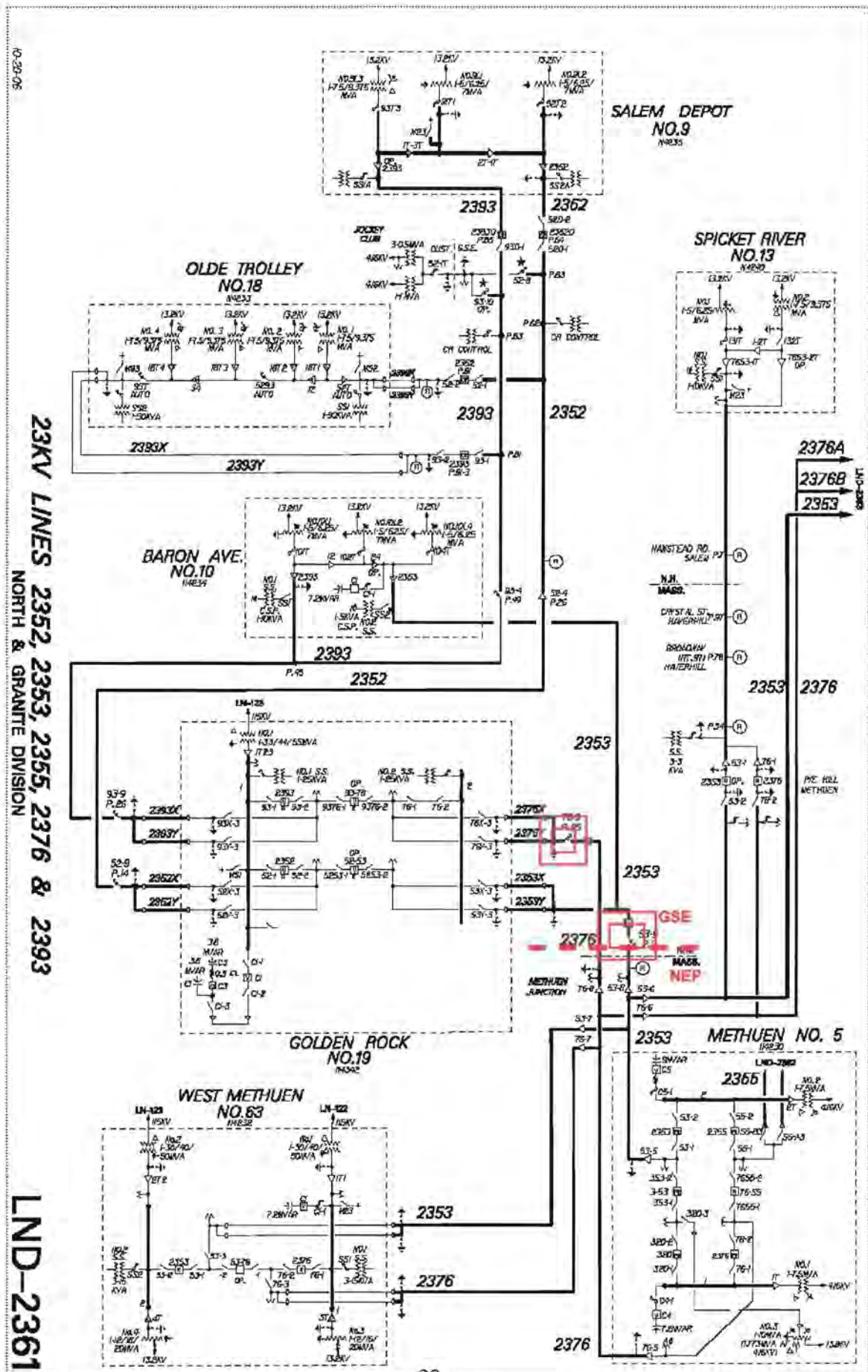
- MGRH1 SUB CONN
- ★ DEMARCATION LINE OF AUTHORITY

11-18-07

PELHAM NO. 14
NORTH & GRANITE DIVISION

N4338



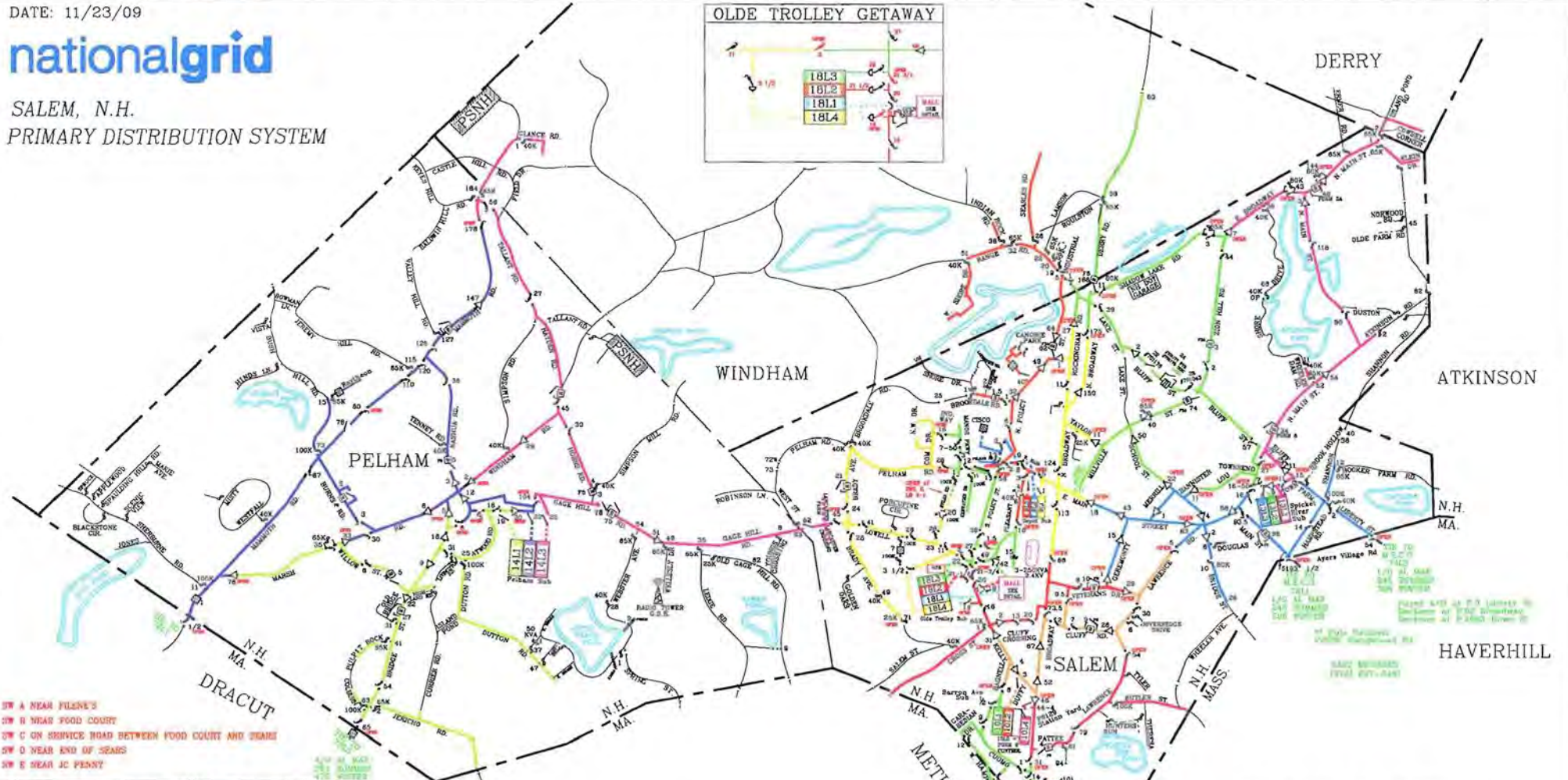
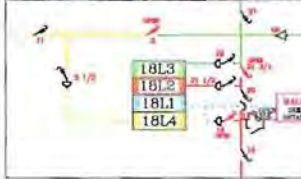


DATE: 11/23/09

nationalgrid

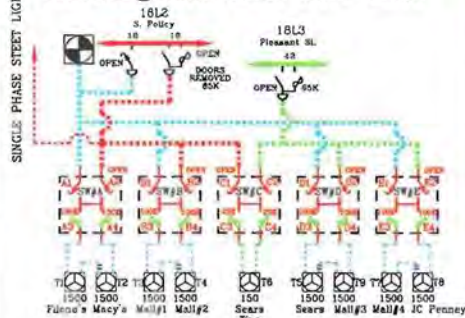
SALEM, N.H.
PRIMARY DISTRIBUTION SYSTEM

OLDE TROLLEY GETAWAY

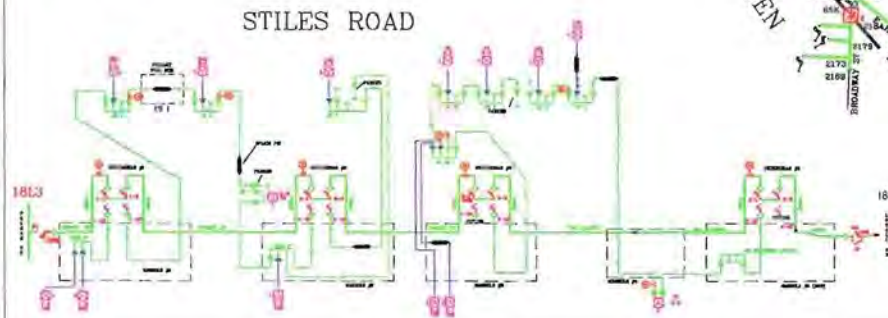


- SW A NEAR FULLEN'S
- SW B NEAR FOOD COURT
- SW C ON SERVICE ROAD BETWEEN FOOD COURT AND DRAME
- SW D NEAR END OF SEAMS
- SW E NEAR JC PENNEY

Rockingham Mall One Line



STILES ROAD



FEEDER LOADING AND CAPACITIES

FEEDER	PREDICTED 2007 SUMMER PEAK (A)	SUMMER NORMAL	SUMMER EMERGENCY RATING (A)	WINTER EMERGENCY RATING (A)
9L1	255	322	371 (XFMR)	446 (XFMR)
9L2	186	322	371 (XFMR)	446 (XFMR)
9L3	432	507	507 (XFMR)	510 (XFMR)
10L1	294	387	435 (H.S. FUSE)	435 (H.S. FUSE)
10L2	415	516	578 (RELAY)	578 (RELAY)
10L4	333	338	407 (XFMR)	446 (XFMR)
13L1	322	338	407 (TRANS)	446 (TRANS)
13L2	515	515	515 OH WIRE	500 (BREAKER)
14L1	310	476	476 (RELAY)	476 (RELAY)
14L2	308	476	476 (RELAY)	476 (RELAY)
14L3	235	476	476 (RELAY)	476 (RELAY)
18L1	442	434	565 (XFMR)	578 (RELAY)
18L2	424	516	612 (RELAY)	612 (RELAY)
18L3	490	516	515 (OH)	612 (RELAY)
18L4	387	305	385 (OH)	525 (RELAY)

GRANITE
STATE
ELECTRIC

Rockingham Mall One Line

APPENDIX C

After recording, return to:

National Grid USA
40 Sylvan Road
Waltham, MA 02451
Attention: Patricia Yung Wong, Esq.

GRANT OF EASEMENT AND AGREEMENT
(Charlestown Substation #32)

THIS GRANT OF EASEMENT AND AGREEMENT (this “Agreement”) is made as of the 25th day of June, 2012, by and between NEW ENGLAND POWER COMPANY, a Massachusetts corporation having a principal place of business at 40 Sylvan Road, Waltham, Massachusetts 02451 (hereinafter “Grantor”), and GRANITE STATE ELECTRIC COMPANY, a New Hampshire corporation having a principal place of business at 9 Lowell Road, Salem, New Hampshire 03079 (hereinafter the “Grantee”).

Grantor for consideration paid, grants to Grantee, with Quitclaim Covenants, the following perpetual rights and easements: (a) to access, construct, reconstruct, install, repair, replace, maintain, test (or witness testing), inspect, operate, and remove electrical substation equipment owned by Grantee over, under, through, across, and upon a portion of the Grantor’s Land (hereinafter defined) located in Charlestown, New Hampshire shown as “Easement Area A” on a plan entitled: “Tax Map 235 Lot 5, Easement Plan, Charlestown Substation No. 32, South Main Street, Charlestown, NH, owned by and prepared for New England Power Company d/b/a nationalgrid, 40 Sylvan Rd., Waltham, MA 02451” dated July 22, 2011, last revised 11/17/11, prepared by TFMoran, Inc. 48 Constitution Drive, Bedford, NH 03110 (the “Plan”) to be recorded with the Sullivan County Registry of Deeds (the “Registry”) herewith, and (b) to access, repair, replace, maintain, inspect, operate and remove Grantee’s 8L1 and 8L2 feeder lines and associated equipment located over, under through, across and upon that portion of Grantor’s Land identified and shown as “Easement Area B” on the Plan (together “Easement Area A” and “Easement Area B” are hereinafter collectively referred to as the “Easement Area”). Such electrical substation equipment shall include, without limitation, circuit breakers, circuit switchers, power transformers, disconnect switches, structures, and secondary facilities, all as necessary (i) for Grantee’s distribution feeders to interconnect with Grantor’s facilities, including those located within the structure identified on the Plan as the “Control House” (collectively, the “Grantee’s Facilities”), as more particularly described in that certain Site Agreement by and between Grantor and Grantee dated July 3, 2012 (the “Site Agreement”); (ii) to operate and maintain the Grantee’s Facilities consistent with Good Utility Practice (as defined in the Site Agreement); (iii) to exercise Grantee’s rights and perform Grantee’s obligations under the Site Agreement; and (iv) subject to the terms of the Site Agreement, to disconnect and/or remove Grantee’s Facilities upon termination of the Site Agreement. The Easement Area is more particularly described, according to the Plan, on Exhibit A attached hereto and made a

part hereof. The use of the Easement Area shall be in common with the use thereof by Grantor and neither party shall unreasonably hinder or interfere with the operations of the other party within the Easement Area or with each other's access to existing or future structures or utility facilities, unless such interference is otherwise permitted by this Grant of Easement or the Site Agreement.

Together with the right to enter upon Grantor's Land from the public way over the driveway located on Grantor's Land and to pass and repass over the Grantor's Land on foot and in vehicles as reasonable and necessary for the purpose of accessing Grantee's Facilities within the Easement Area and the Control House in order to operate, maintain, construct, repair, replace, test (or witness testing), inspect, and remove Grantee's Facilities (but not including any right to install additional facilities, expand or increase existing Grantee's Facilities, or physically alter the location of Grantee's Facilities within the Control House), such right and easement to be exercised in compliance with the terms and conditions set forth in the Site Agreement and in a manner that will not unreasonably interfere with the operations of the Grantor on the Grantor's Land.

The easement rights granted herein may, subject to the terms and conditions of this Agreement, be exercised and enjoyed by the Grantee and its employees, representatives, agents, servants, contractors, subcontractors, successors and/or assigns (collectively, "Grantee's Responsible Parties").

The Grantee covenants and agrees that during the location, construction, maintenance, operation, repair, replacement and use of the Grantee's Facilities, neither Grantee nor any of Grantee's Responsible Parties will injure or damage the Grantor's Land or injure or damage the Grantor's utility facilities now or hereafter placed upon Grantor's Land. Insofar as practical, the Grantee will properly replace all earth and soil removed or disturbed by the location, construction, maintenance, operation, repair and/or removal of the Grantee's Facilities and the Grantee, insofar as practical, will fill all excavations made by it and restore the Grantor's Land to its original grade and contour.

It is understood between the parties that the Grantee's Facilities shall remain the sole property of the Grantee, the Grantee shall be solely responsible for the maintenance and repair of the said facilities, and the Grantee shall pay all taxes thereon.

This Grant of Easement and Agreement shall be co-terminous with the Site Agreement and shall terminate when the Site Agreement is terminated. Grantee covenants and agrees to execute and record a document releasing all rights and easements granted herein within sixty (60) days of such termination.

In the event of the permanent abandonment, in whole or in part, of an easement granted to the Grantee herein, the Grantee will provide written notice thereof to the Grantor and will cause to be recorded in the applicable land title recording office an instrument sufficient to release the Grantee's rights in such portion of the easement as has been permanently abandoned.

It is the intention of the parties that the rights and easements hereby granted to the Grantee are a commercial easement in gross for the benefit of Grantee, its successors and

assigns, and shall be assignable. Insofar as permitted by law, the provisions hereof are intended to bind and inure to the benefit of the successors and assigns in title to the parties hereto.

The rights and easements granted herein are subject to, and have the benefit of, all matters appearing of record at the Registry.

This Agreement may be executed in one or more counterparts, each of which will be deemed an original but all of which together will constitute one and the same instrument. For purposes of recording this Agreement, the signature and acknowledgment pages of one original counterpart hereof may be detached and re-attached to another original counterpart hereof so that a single form of this Agreement containing all original signature and acknowledgment pages may be recorded.

As used herein, the term "Grantor's Land" shall mean that certain parcel of land described in deed dated December 14, 1929, and recorded with the Sullivan County Registry of Deeds in Book 235, Page 83, and in deed dated July 31, 1946, and recorded with Sullivan County Registry of Deeds in Book 301, Page 179.

[SIGNATURE PAGES FOLLOW]

IN WITNESS WHEREOF, the undersigned has caused these presents to be executed by its duly authorized representative(s) as of the 25th day of June, 2012.

GRANTOR:

NEW ENGLAND POWER COMPANY

By Shannon Larson

Name: Shannon Larson

Title: Authorized Representative

COMMONWEALTH OF MASSACHUSETTS

Middlesex, ss.

On this 25th day of June, 2012 before me, the undersigned notary public, personally appeared **Shannon Larson**, proved to me through satisfactory evidence of identification, which was ☐ photographic identification with signature issued by a federal or state governmental agency, ☐ oath or affirmation of a credible witness, ☒ personal knowledge of the undersigned, to be the person whose name is signed on the preceding or attached document(s), and acknowledged to me that she signed it voluntarily for its stated purpose as Authorized Representative of New England Power Company.

Before me,

Patricia Yung Wong
(type or print name)

My commission expires:



IN WITNESS WHEREOF, the undersigned has caused these presents to be executed by its duly authorized representative(s) as of the 25th day of June, 2012.

GRANTEE:

GRANITE STATE ELECTRIC COMPANY

By Shannon Larson

Name: Shannon Larson

Title: Authorized Representative

COMMONWEALTH OF MASSACHUSETTS

Middlesex, ss.

On this 25th day of June, 2012 before me, the undersigned notary public, personally appeared **Shannon Larson**, proved to me through satisfactory evidence of identification, which was ☐ photographic identification with signature issued by a federal or state governmental agency, ☐ oath or affirmation of a credible witness, ☒ personal knowledge of the undersigned, to be the person whose name is signed on the preceding or attached document(s), and acknowledged to me that she signed it voluntarily for its stated purpose as Authorized Representative of Granite State Electric Company.

Before me,

Patricia Yung Wong
(type or print name)

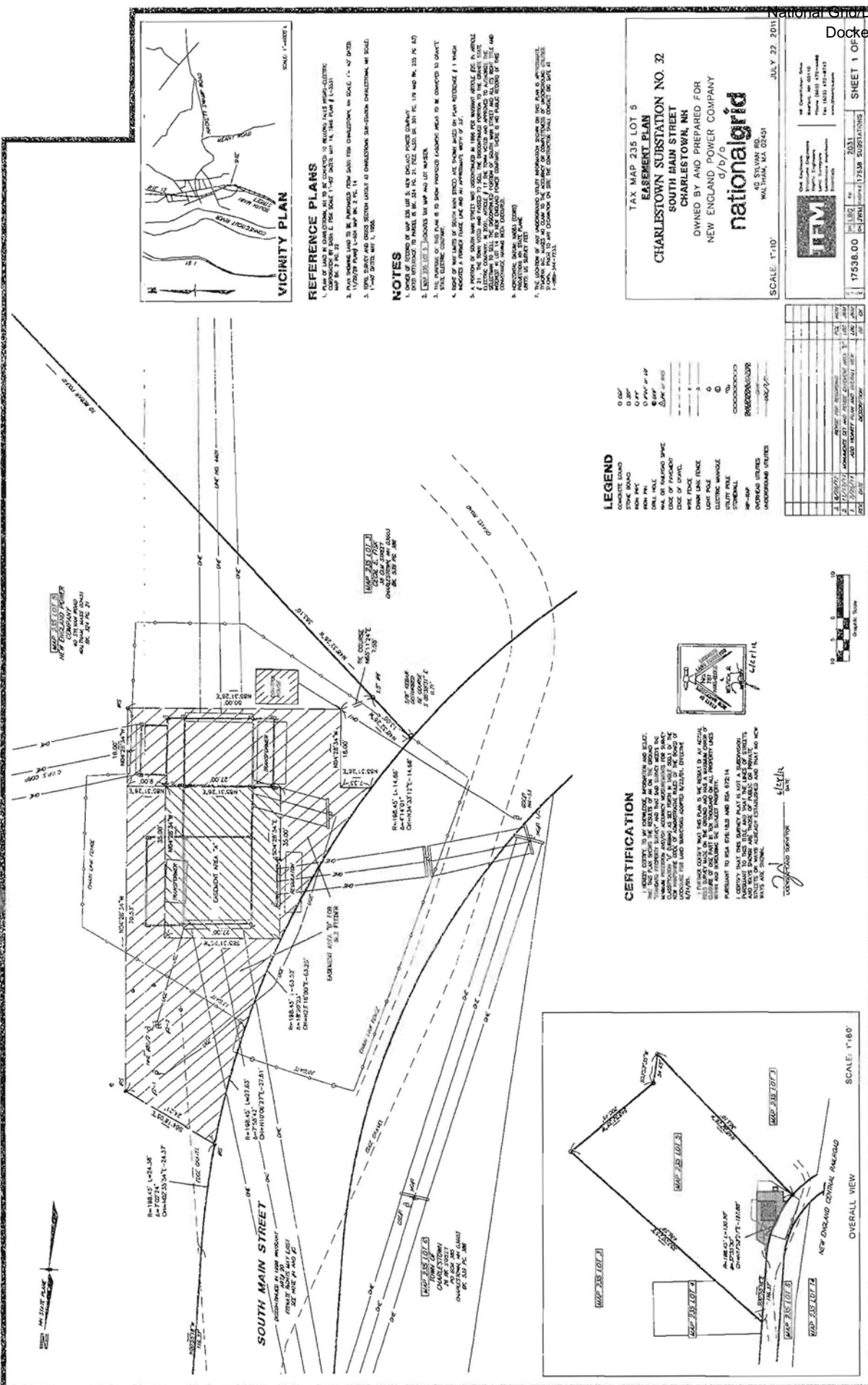
My commission expires:



EXHIBIT A

Easement Area

“Easement Area A” and “Easement Area B” as shown on a plan entitled: “Tax Map 235 Lot 5, Easement Plan, Charlestown Substation No. 32, South Main Street, Charlestown, NH, owned by and prepared for New England Power Company d/b/a nationalgrid, 40 Sylvan Rd., Waltham, MA 02451” dated July 22, 2011, last revised 11/17/11, prepared by TFMoran, Inc. 48 Constitution Drive, Bedford, NH 03110 to be recorded herewith at the Sullivan County Registry of Deeds.



After recording, return to:

National Grid USA
40 Sylvan Road
Waltham, MA 02451
Attention: Patricia Yung Wong, Esq.

GRANT OF EASEMENT AND AGREEMENT
(Slayton Hill Substation #39)

THIS GRANT OF EASEMENT AND AGREEMENT (this "Agreement") is made as of the 25th day of June, 2012, by and between NEW ENGLAND POWER COMPANY, a Massachusetts corporation having a principal place of business at 40 Sylvan Road, Waltham, Massachusetts 02451 (hereinafter "Grantor"), and GRANITE STATE ELECTRIC COMPANY, a New Hampshire corporation having a principal place of business at 9 Lowell Road, Salem, New Hampshire 03079 (hereinafter the "Grantee").

Grantor for consideration paid, grants to Grantee, with Quitclaim Covenants, the following perpetual rights and easements: (a) to access, construct, reconstruct, install, repair, replace, maintain, test (or witness testing), inspect, operate, and remove electrical substation equipment owned by Grantee over, under, through, across, and upon a portion of the Grantor's Land (hereinafter defined) located in Lebanon, New Hampshire shown as "Easement Area A" on a plan entitled: "Tax Map 117 Lot 6, Easement Plan, Slayton Hill Substation No. 39, 17 Poverty Lane, Lebanon, NH, owned by and prepared for New England Power Company d/b/a nationalgrid, 40 Sylvan Rd., Waltham, MA 02451" dated July 14, 2011, last revised 6/01/12, prepared by TFMoran, Inc. 48 Constitution Drive, Bedford, NH 03110 (the "Plan") to be recorded with the Grafton County Registry of Deeds (the "Registry") herewith, (b) to access, install, construct, repair, replace, maintain, inspect, operate and remove Grantee's future capacitor located over, under through, across and upon that portion of Grantor's Land identified and shown as "Easement Area B" on the Plan, (c) to access, repair, replace, maintain, inspect, operate and remove Grantee's 39L1 and 39L2 feeder getaways located over, under through, across and upon that portion of Grantor's Land identified and shown as "Easement Area C" on the Plan, (d) to access, repair, replace, maintain, inspect, operate and remove Grantee's 1313 feeder getaway located over, under through, across and upon that portion of Grantor's Land identified and shown as "Easement Area D" on the Plan, (e) to access, repair, replace, maintain, inspect, operate and remove Grantee's 1333 feeder getaway located over, under through, across and upon that portion of Grantor's Land identified and shown as "Easement Area E" on the Plan, and (f) to access, repair, replace, maintain, inspect, operate and remove Grantee's trenwa located over, under through, across and upon that portion of Grantor's Land identified and shown as "Easement Area F" on the Plan (together "Easement Area A", "Easement Area B", "Easement Area C", "Easement Area D", "Easement Area E" and "Easement Area F" are hereinafter collectively referred to as the "Easement Area"). Such electrical substation equipment shall include, without

limitation, circuit breakers, circuit switchers, power transformers, disconnect switches, structures, and secondary facilities, all as necessary (i) for Grantee's distribution feeders to interconnect with Grantor's facilities, including those located within the structure identified on the Plan as the "Control House" (collectively, the "Grantee's Facilities"), as more particularly described in that certain Site Agreement by and between Grantor and Grantee dated July 3, 2012 (the "Site Agreement"); (ii) to operate and maintain the Grantee's Facilities consistent with Good Utility Practice (as defined in the Site Agreement); (iii) to exercise Grantee's rights and perform Grantee's obligations under the Site Agreement; and (iv) subject to the terms of the Site Agreement, to disconnect and/or remove Grantee's Facilities upon termination of the Site Agreement. The Easement Area is more particularly described, according to the Plan, on Exhibit A attached hereto and made a part hereof. The use of the Easement Area shall be in common with the use thereof by Grantor and neither party shall unreasonably hinder or interfere with the operations of the other party within the Easement Area or with each other's access to existing or future structures or utility facilities, unless such interference is otherwise permitted by this Grant of Easement or the Site Agreement.

Together with the right to enter upon Grantor's Land from the public way over the driveway located on Grantor's Land and to pass and repass over the Grantor's Land on foot and in vehicles as reasonable and necessary for the purpose of accessing Grantee's Facilities within the Easement Area and the Control House in order to operate, maintain, construct, repair, replace, test (or witness testing), inspect, and remove Grantee's Facilities (but not including any right to install additional facilities, expand or increase existing Grantee's Facilities, or physically alter the location of Grantee's Facilities within the Control House), such right and easement to be exercised in compliance with the terms and conditions set forth in the Site Agreement and in a manner that will not unreasonably interfere with the operations of the Grantor on the Grantor's Land.

The easement rights granted herein may, subject to the terms and conditions of this Agreement, be exercised and enjoyed by the Grantee and its employees, representatives, agents, servants, contractors, subcontractors, successors and/or assigns (collectively, "Grantee's Responsible Parties").

The Grantee covenants and agrees that during the location, construction, maintenance, operation, repair, replacement and use of the Grantee's Facilities, neither Grantee nor any of Grantee's Responsible Parties will injure or damage the Grantor's Land or injure or damage the Grantor's utility facilities now or hereafter placed upon Grantor's Land. Insofar as practical, the Grantee will properly replace all earth and soil removed or disturbed by the location, construction, maintenance, operation, repair and/or removal of the Grantee's Facilities and the Grantee, insofar as practical, will fill all excavations made by it and restore the Grantor's Land to its original grade and contour.

It is understood between the parties that the Grantee's Facilities shall remain the sole property of the Grantee, the Grantee shall be solely responsible for the maintenance and repair of the said facilities, and the Grantee shall pay all taxes thereon.

This Grant of Easement and Agreement shall be co-terminous with the Site Agreement and shall terminate when the Site Agreement is terminated. Grantee

covenants and agrees to execute and record a document releasing all rights and easements granted herein within sixty (60) days of such termination.

In the event of the permanent abandonment, in whole or in part, of an easement granted to the Grantee herein, the Grantee will provide written notice thereof to the Grantor and will cause to be recorded in the applicable land title recording office an instrument sufficient to release the Grantee's rights in such portion of the easement as has been permanently abandoned.

It is the intention of the parties that the rights and easements hereby granted to the Grantee are a commercial easement in gross for the benefit of Grantee, its successors and assigns, and shall be assignable. Insofar as permitted by law, the provisions hereof are intended to bind and inure to the benefit of the successors and assigns in title to the parties hereto.

The rights and easements granted herein are subject to, and have the benefit of, all matters appearing of record at the Registry.

This Agreement may be executed in one or more counterparts, each of which will be deemed an original but all of which together will constitute one and the same instrument. For purposes of recording this Agreement, the signature and acknowledgment pages of one original counterpart hereof may be detached and re-attached to another original counterpart hereof so that a single form of this Agreement containing all original signature and acknowledgment pages may be recorded.

As used herein, the term "Grantor's Land" shall mean that certain parcel of land described in deed dated August 1, 1979, and recorded with the Grafton County Registry of Deeds in Book 1377, Page 15.

[SIGNATURE PAGES FOLLOW]

IN WITNESS WHEREOF, the undersigned has caused these presents to be executed by its duly authorized representative(s) as of the 25th day of June, 2012.

GRANTOR:

NEW ENGLAND POWER COMPANY

By Shannon Larson
Name: Shannon Larson
Title: Authorized Representative

COMMONWEALTH OF MASSACHUSETTS

Middlesex, ss.

On this 25th day of June, 2012 before me, the undersigned notary public, personally appeared **Shannon Larson**, proved to me through satisfactory evidence of identification, which was ☐ photographic identification with signature issued by a federal or state governmental agency, ☐ oath or affirmation of a credible witness, ☒ personal knowledge of the undersigned, to be the person whose name is signed on the preceding or attached document(s), and acknowledged to me that she signed it voluntarily for its stated purpose as Authorized Representative of New England Power Company.

Before me,

Patricia Yung Wong
(type or print name)

My commission expires:



IN WITNESS WHEREOF, the undersigned has caused these presents to be executed by its duly authorized representative(s) as of the 25th day of June, 2012.

GRANTEE:

GRANITE STATE ELECTRIC COMPANY

By Shannon Larson
Name: Shannon Larson
Title: Authorized Representative

COMMONWEALTH OF MASSACHUSETTS

Middlesex, ss.

On this 25th day of June, 2012 before me, the undersigned notary public, personally appeared **Shannon Larson**, proved to me through satisfactory evidence of identification, which was ☐ photographic identification with signature issued by a federal or state governmental agency, ☐ oath or affirmation of a credible witness, ☒ personal knowledge of the undersigned, to be the person whose name is signed on the preceding or attached document(s), and acknowledged to me that she signed it voluntarily for its stated purpose as Authorized Representative of Granite State Electric Company.

Before me,

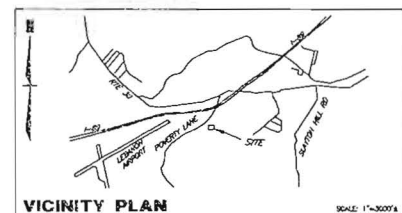
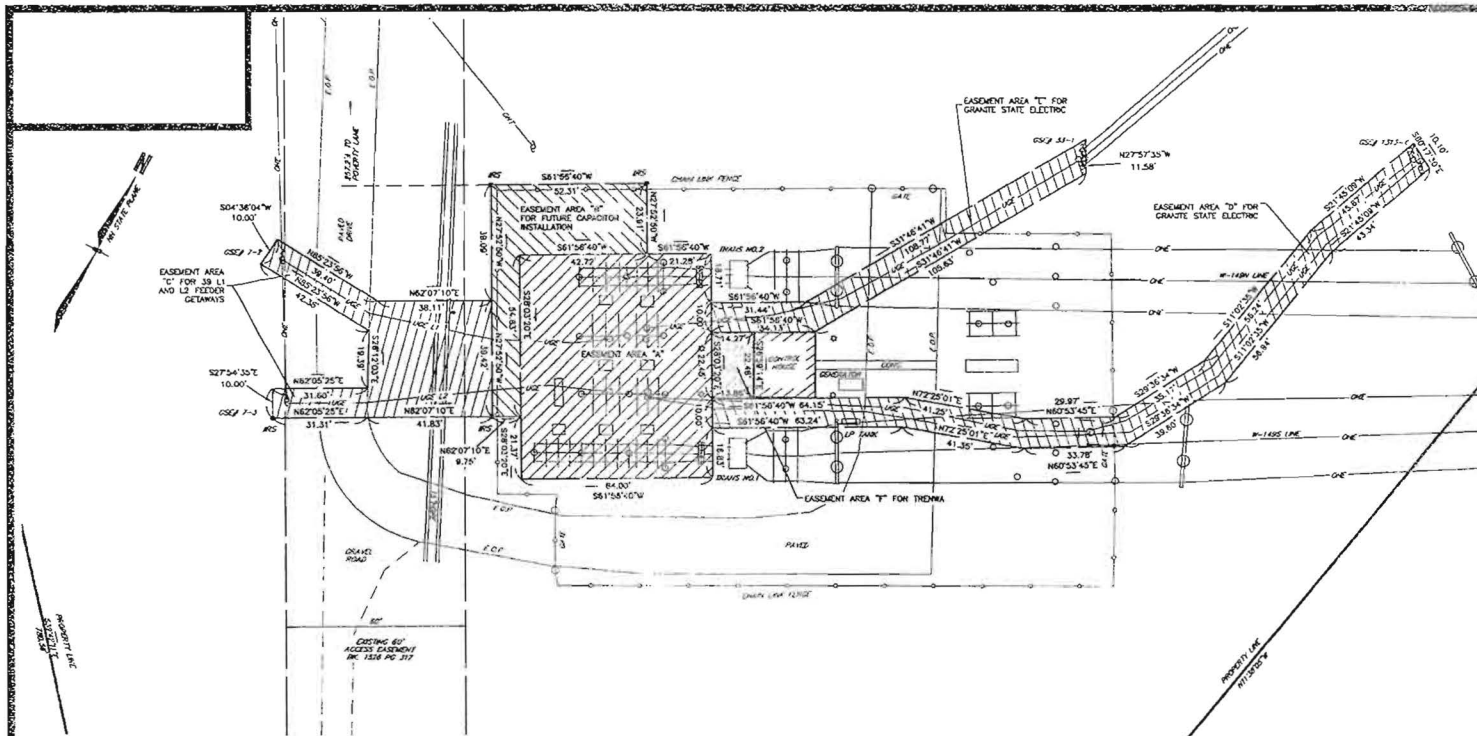
Patricia Yung Wong
(type or print name)
My commission expires:



EXHIBIT A

Easement Area

“Easement Area A”, “Easement Area B”, “Easement Area C”, “Easement Area D”, “Easement Area E” and “Easement Area F” as shown on a plan entitled: “Tax Map 117 Lot 6, Easement Plan, Slayton Hill Substation No. 39, 17 Poverty Lane, Lebanon, NH, owned by and prepared for New England Power Company d/b/a nationalgrid, 40 Sylvan Rd., Waltham, MA 02451” dated July 14, 2011, last revised 6/01/12, prepared by TFMoran, Inc. 48 Constitution Drive, Bedford, NH 03110 to be recorded herewith at the Grafton County Registry of Deeds.



- ### REFERENCE PLANS
- PLAN OF LAND IN LEVANT, NEW HAMPSHIRE TO BE CONVEYED TO NEW ENGLAND POWER COMPANY BY JOSHUA H. AND JENNIFER C. BARNES, JR., BY NUMBER 8, 2007, SCALE 1"=100' DATED JAN. 30, 1979 E.C.D. PLAN 330
 - PLAN SHOWING EASEMENT IN LEVANT, NEW HAMPSHIRE TO BE CONVEYED TO GRANITE STATE ELECTRIC COMPANY BY JOSHUA H. AND JENNIFER C. BARNES, JR., BY NUMBER 8, 2007, SCALE 1"=100' DATED SEPT. 18, 1984 E.C.D. PLAN 338
- ### NOTES
- OWNER OF RECORD OF MAP 117 LOT 6, NEW ENGLAND POWER COMPANY, DEED REFERENCE TO PARCEL 6, BK. 1, LOT 15, AREA OF PARCEL = 8.9 ACRES.
 - MAP 117 LOT 6 INDICATES TAX MAP AND LOT NUMBER.
 - THE PURPOSE OF THIS PLAN IS TO SHOW PROPOSED EASEMENT AREAS TO BE CONVEYED TO GRANITE STATE ELECTRIC COMPANY.
 - HORIZONTAL DATUM: NAD 83 (2011) PROJECTION: NAD 83 STATE PLANE UNITS: US SURVEY FEET.
 - THE LOCATION OF ANY UNDERGROUND UTILITY INFORMATION SHOWN ON THIS PLAN IS APPROXIMATE. THOUGH THE MAPS AND CLAIM TO THE ACCURACY OF COMPLETENESS OF UNDERGROUND UTILITIES MARKS, PRIOR TO ANY LOCATION OF SITE THE CONTRACTOR SHALL CONTACT THE TOWN AT 1-800-344-7133.

CERTIFICATION

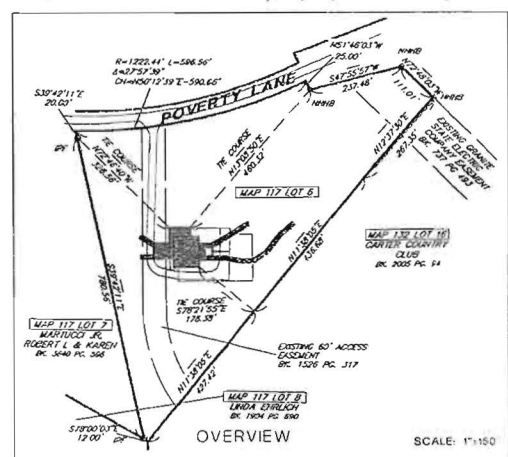
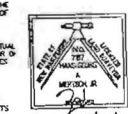
I HEREBY CERTIFY TO MY KNOWLEDGE, INFORMATION AND BELIEF, THAT THIS PLAN SHOWS THE RESULTS OF AN AS-ON-THE-GROUND SURVEY AND THAT THE SURVEY MEETS THE MINIMUM PRECISION AND/OR ACCURACY REQUIREMENTS FOR SURVEY CLASSIFICATION "1" GRADING AS SET FORTH IN TABLE 500.1 OF THE NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES OF THE BOARD OF LAND SURVEYORS ADOPTED 6/21/01, EFFECTIVE 6/21/01.

I FURTHER CERTIFY THAT THIS PLAN IS THE RESULT OF AN AS-ON-THE-GROUND SURVEY MADE ON THE GROUND AND HAS A MAXIMUM ERROR OF 0.04" OF THE PART IN THE INDICATED OR ALL PROPERTY LINES, METERS AND BORDERING THE SUBJECT PROPERTY.

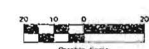
PURSUANT TO RSA 876:146 AND RSA 876:144.

I CERTIFY THAT THIS SURVEY PLAT IS NOT A SUBORDINARY SURVEY PURSUANT TO THIS TITLE AND THAT THE LINES OF STRAIGHT AND WAYS SHOWN ARE THOSE OF PUBLIC OR PRIVATE STRAIGHT OR WAYS ALREADY ESTABLISHED AND THAT NO NEW WAYS ARE SHOWN.

DATE: 6/21/12
 SURVEYOR: [Signature]
 DATE: 6/21/12



- ### LEGEND
- CORNER ROUND
 - STONE BOUND
 - IRON PIPE
 - IRON PIN
 - DRILL HOLE
 - WALL OF RAILROAD SPIKE
 - EDGE OF FENCE
 - EDGE OF GRAVEL
 - WIRE FENCE
 - CHAIN LINK FENCE
 - LIGHT POLE
 - ELECTRIC MAST
 - UTILITY POLE
 - STONEWALL
 - ROAD
 - OVERHEAD UTILITIES
 - UNDERGROUND UTILITIES



TAX MAP 117 LOT 6
EASEMENT PLAN
 SLAYTON HILL SUBSTATION NO. 39
 17 POVERTY LANE
 LEBANON, NH
 OWNED BY AND PREPARED FOR
 NEW ENGLAND POWER COMPANY
 d/b/a
nationalgrid
 40 SILVER RD.
 WALTHAM, MA 02451

SCALE: 1"=20' JULY 14, 2011

NO.	DATE	REVISION	BY	CHKD.
1	6/21/12	REVISION FOR RECORDING	PC	MM
2	6/21/12	AND EASEMENT AREA 1	PC	MM
3	6/21/12	EASEMENTS SET AND EASE AREA 1 AND 2	PC	MM
4	6/21/12	AND POVERTY RD. AND EASE	PC	MM
5	6/21/12	DESCRIPTION	PC	MM

17538.00 17538 SUBSTATIONS SHEET 1 OF 1

National Grid Energy Services Corporation
 Docket DG 11-040

After recording, return to:

National Grid USA
40 Sylvan Road
Waltham, MA 02451
Attention: Patricia Yung Wong, Esq.

GRANT OF EASEMENT AND AGREEMENT
(Golden Rock Substation #19)

THIS GRANT OF EASEMENT AND AGREEMENT (this "Agreement") is made as of the 25th day of June, 2012, by and between NEW ENGLAND POWER COMPANY, a Massachusetts corporation having a principal place of business at 40 Sylvan Road, Waltham, Massachusetts 02451 (hereinafter "Grantor"), and GRANITE STATE ELECTRIC COMPANY, a New Hampshire corporation having a principal place of business at 9 Lowell Road, Salem, New Hampshire 03079 (hereinafter the "Grantee").

Grantor for consideration paid, grants to Grantee, with Quitclaim Covenants, the following perpetual rights and easements: (a) to access, construct, reconstruct, install, repair, replace, maintain, test (or witness testing), inspect, operate, and remove electrical substation equipment owned by Grantee over, under, through, across, and upon a portion of the Grantor's Land (hereinafter defined) located in Salem, New Hampshire and Methuen, Massachusetts shown as "Easement Area A" on a plan entitled: "Tax Map 151 Lot 9466, Parcel ID #510-125-32, Easement Plan, Golden Rock Substation No. 19, Hampshire Road, Salem, NH, Methuen, MA, owned by and prepared for New England Power Company d/b/a nationalgrid, 40 Sylvan Rd., Waltham, MA 02451" dated July 22, 2011, last revised 11/17/11, prepared by TFMoran, Inc. 48 Constitution Drive, Bedford, NH 03110 (the "Plan") to be recorded with the Rockingham County Registry of Deeds and the Essex North Registry of Deeds (collectively, the "Registry") herewith, (b) to access, repair, replace, maintain, inspect, operate and remove Grantee's feeder manhole and conduit system located over, under through, across and upon that portion of Grantor's Land identified and shown as "Easement Area B" on the Plan, (c) to access, repair, replace, maintain, inspect, operate and remove Grantee's 2376/2393 pole and appurtenances located over, under through, across and upon that portion of Grantor's Land identified and shown as "Easement Area C" on the Plan, and (d) to access, repair, replace, maintain, inspect, operate and remove Grantee's 2352, 2353, 2376 and 2393 feeder manholes and conduit system located over, under through, across and upon that portion of Grantor's Land identified and shown as "Easement Area D" on the Plan (together "Easement Area A", "Easement Area B", "Easement Area C" and "Easement Area D" are hereinafter collectively referred to as the "Easement Area"). Such electrical substation equipment shall include, without limitation, circuit breakers, circuit switchers, power transformers, disconnect switches, structures, and secondary facilities, all as necessary (i) for Grantee's distribution feeders to interconnect with Grantor's facilities, including those located within the structure identified on the Plan as the "Control House"

(collectively, the "Grantee's Facilities"), as more particularly described in that certain Site Agreement by and between Grantor and Grantee dated July 3, 2012 (the "Site Agreement"); (ii) to operate and maintain the Grantee's Facilities consistent with Good Utility Practice (as defined in the Site Agreement); (iii) to exercise Grantee's rights and perform Grantee's obligations under the Site Agreement; and (iv) subject to the terms of the Site Agreement, to disconnect and/or remove Grantee's Facilities upon termination of the Site Agreement. The Easement Area is more particularly described, according to the Plan, on Exhibit A attached hereto and made a part hereof. The use of the Easement Area shall be in common with the use thereof by Grantor and neither party shall unreasonably hinder or interfere with the operations of the other party within the Easement Area or with each other's access to existing or future structures or utility facilities, unless such interference is otherwise permitted by this Grant of Easement or the Site Agreement.

Together with the right to enter upon Grantor's Land from the public way over the driveway located on Grantor's Land and to pass and repass over the Grantor's Land on foot and in vehicles as reasonable and necessary for the purpose of accessing Grantee's Facilities within the Easement Area and the Control House in order to operate, maintain, construct, repair, replace, test (or witness testing), inspect, and remove Grantee's Facilities (but not including any right to install additional facilities, expand or increase existing Grantee's Facilities, or physically alter the location of Grantee's Facilities within the Control House), such right and easement to be exercised in compliance with the terms and conditions set forth in the Site Agreement and in a manner that will not unreasonably interfere with the operations of the Grantor on the Grantor's Land.

The easement rights granted herein may, subject to the terms and conditions of this Agreement, be exercised and enjoyed by the Grantee and its employees, representatives, agents, servants, contractors, subcontractors, successors and/or assigns (collectively, "Grantee's Responsible Parties").

The Grantee covenants and agrees that during the location, construction, maintenance, operation, repair, replacement and use of the Grantee's Facilities, neither Grantee nor any of Grantee's Responsible Parties will injure or damage the Grantor's Land or injure or damage the Grantor's utility facilities now or hereafter placed upon Grantor's Land. Insofar as practical, the Grantee will properly replace all earth and soil removed or disturbed by the location, construction, maintenance, operation, repair and/or removal of the Grantee's Facilities and the Grantee, insofar as practical, will fill all excavations made by it and restore the Grantor's Land to its original grade and contour.

It is understood between the parties that the Grantee's Facilities shall remain the sole property of the Grantee, the Grantee shall be solely responsible for the maintenance and repair of the said facilities, and the Grantee shall pay all taxes thereon.

This Grant of Easement and Agreement shall be co-terminous with the Site Agreement and shall terminate when the Site Agreement is terminated. Grantee covenants and agrees to execute and record a document releasing all rights and easements granted herein within sixty (60) days of such termination.

In the event of the permanent abandonment, in whole or in part, of an easement granted to the Grantee herein, the Grantee will provide written notice thereof to the Grantor and will cause to be recorded in the applicable land title recording office an instrument sufficient to release the Grantee's rights in such portion of the easement as has been permanently abandoned.

It is the intention of the parties that the rights and easements hereby granted to the Grantee are a commercial easement in gross for the benefit of Grantee, its successors and assigns, and shall be assignable. Insofar as permitted by law, the provisions hereof are intended to bind and inure to the benefit of the successors and assigns in title to the parties hereto.

The rights and easements granted herein are subject to, and have the benefit of, all matters appearing of record at the Registry.

This Agreement may be executed in one or more counterparts, each of which will be deemed an original but all of which together will constitute one and the same instrument. For purposes of recording this Agreement, the signature and acknowledgment pages of one original counterpart hereof may be detached and re-attached to another original counterpart hereof so that a single form of this Agreement containing all original signature and acknowledgment pages may be recorded.

As used herein, the term "Grantor's Land" shall mean that certain parcel of land described in deed dated February 5, 1997, and recorded with the Rockingham County Registry of Deeds in Book 3198, Page 1313, and recorded with Essex North Registry of Deeds in Book 4687, Page 264.

[SIGNATURE PAGES FOLLOW]

IN WITNESS WHEREOF, the undersigned has caused these presents to be executed by its duly authorized representative(s) as of the 25th day of June, 2012.

GRANTOR:

NEW ENGLAND POWER COMPANY

By Shannon Larson
Name: Shannon Larson
Title: Authorized Representative

COMMONWEALTH OF MASSACHUSETTS

Middlesex, ss.

On this 25th day of June, 2012 before me, the undersigned notary public, personally appeared **Shannon Larson**, proved to me through satisfactory evidence of identification, which was ☐ photographic identification with signature issued by a federal or state governmental agency, ☐ oath or affirmation of a credible witness, ☒ personal knowledge of the undersigned, to be the person whose name is signed on the preceding or attached document(s), and acknowledged to me that she signed it voluntarily for its stated purpose as Authorized Representative of New England Power Company.

Before me,

Patricia Yung Wong
(type or print name)
My commission expires:



IN WITNESS WHEREOF, the undersigned has caused these presents to be executed by its duly authorized representative(s) as of the 25th day of June, 2012.

GRANTEE:

GRANITE STATE ELECTRIC COMPANY

By Shannon Larson

Name: Shannon Larson

Title: Authorized Representative

COMMONWEALTH OF MASSACHUSETTS

Middlesex, ss.

On this 25th day of June, 2012 before me, the undersigned notary public, personally appeared **Shannon Larson**, proved to me through satisfactory evidence of identification, which was ☐ photographic identification with signature issued by a federal or state governmental agency, ☐ oath or affirmation of a credible witness, ☒ personal knowledge of the undersigned, to be the person whose name is signed on the preceding or attached document(s), and acknowledged to me that she signed it voluntarily for its stated purpose as Authorized Representative of Granite State Electric Company.

Before me,

Patricia Yung Wong
(type or print name)

My commission expires:



EXHIBIT A

Easement Area

“Easement Area A”, “Easement Area B”, “Easement Area C” and “Easement Area D” as shown on a plan entitled: “Tax Map 151 Lot 9466, Parcel ID #510-125-32, Easement Plan, Golden Rock Substation No. 19, Hampshire Road, Salem, NH, Methuen, MA, owned by and prepared for New England Power Company d/b/a nationalgrid, 40 Sylvan Rd., Waltham, MA 02451” dated July 22, 2011, last revised 11/17/11, prepared by TFMoran, Inc. 48 Constitution Drive, Bedford, NH 03110 to be recorded herewith at the Rockingham County Registry of Deeds and the Essex North Registry of Deeds.

☐ GPF
☐ SGP
☐ MGP
☒ #1 of 20
☒ Conf
☐ PK or HRP

[illegible]

1. PLAN OF LAND IN SALDA, NEW HAMPSHIRE AS BETWEEN MASS SURVEY FOR HAMPSHIRE PEASE TRUST
 SCALE: 1" = 50' DATED: MAY 1973 R.C.R.D. PLAN C-3842, N.E.D.C. PLAN 6849

1. DATE OF RECORD MAY 15/1 LSI 2468, AND PERIOD OF 510-123-32 IS NEW ENGLAND POWER
 (SEE REFERENCE TO FASIS) FILE 3185 9/6 1312 RALPH, AND 4037 PG 264 N.E.C.B.D

2. MAY 15/1 LSI 2468) PROVIDES THE MAP AND LSI NUMBER

3. THE PURPOSE OF THIS PLAN IS TO SHOW PROPOSED EXCAVATION AREAS TO BE CONVEYED TO GRANT
 STATE EXISTING COMPANY

4. HORIZONTAL DATUM: NAD83 (2005)
 PROJECTION: MASS STATE PLANE
 UNITS: US SURVEY FEET

5. THE LOCATION OF ANY UNDERGROUND UTILITY RECREATION SHOWN ON THIS PLAN IS APPROXIMATE.
 THEREFORE THE USER SHOULD NOT RELY ON THIS INFORMATION FOR COMPLETION OF UNDERGROUND UTILITIES
 INFORMATION. FOR MORE INFORMATION ON THE CONTRACT, PLEASE CONTACT THE STATE OF MASS AT
 1-800-344-7233

I CERTIFY THAT THE PROPERTY LINES SHOWN ARE THE LINES DIVIDING EXISTING OWNERSHIPS, AND THE LINES OF STREETS AND RAYS SHOWN ARE THOSE OF PUBLIC OR PRIVATE STREETS AND RAYS ESTABLISHED, AND THAT NO NEW LINES FOR DIVISION OF EXISTING OWNERSHIP OR FOR NEW RAYS ARE SHOWN.

I FURTHER CERTIFY THAT THIS PLAN CONFORMS TO THE RULES AND REGULATIONS OF THE REGISTRY OF DEEDS OF MASSACHUSETTS.



I HEREBY CERTIFY, TO MY KNOWLEDGE, INFORMATION AND BELIEF, THAT THIS PLAN SHOWS THE RESULTS OF AN ON THE GROUND "STANDARD PROPERTY SURVEY" AND THAT SAID SURVEY MEETS THE MINIMUM PRECISION AND/OR ACCURACY MEASUREMENTS FOR SURVEY CLASSIFICATION "V" (URBAN) AS SET FORTH IN TABLE 300.1 OF THE NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES OF THE BOARD OF LANDSUSE FOR LAND SURVEYORS ADOPTED 8/23/01, EFFECTIVE 8/24/01.

I FURTHER CERTIFY THAT THIS PLAN IS THE RESULT OF AN AERIAL FIELD SURVEY MADE ON THE GROUND AND HAS A MAXIMUM ERROR OF CLOSURE OF ONE PART IN TEN THOUSAND ON ALL PROPERTY LINES WITHIN AND BORDERING THE SUBJECT PROPERTY.

I CERTIFY THAT THE SURVEY PLAT IS NOT A SUBDIVISION PURSUANT TO THIS TITLE AND THAT THE LINES OF STREETS AND WAYS SHOWN ARE THOSE OF PUBLIC OR PRIVATE STREETS OR WAYS ALREADY ESTABLISHED AND THAT NO NEW WAYS ARE SHOWN.

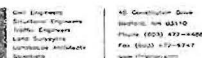
2/22/12

TAX MAP 151 LOT 9406 PARCEL ID# 510-125-32

SALEM, NH
METHUEN, MASS
OWNED BY AND PREPARED FOR
NEW ENGLAND POWER COMPANY
d/b/a
nationalgrid
40 SYLVAN RD.
WALTHAM, MA 02451

SCALE 1"=30'

JULY 22, 2014



17538.00	DB	LBG	FE	2031
	CON	JWM	CA50 LE	17538 SUBSTATIONS

SHEET 1

Docket DG 11-040

After recording, return to:

National Grid USA
40 Sylvan Road
Waltham, MA 02451
Attention: Patricia Yung Wong, Esq.

GRANT OF SUBEASEMENT AND AGREEMENT
(Monroe Substation #15)

THIS GRANT OF EASEMENT AND AGREEMENT (this "Agreement") is made as of the 25th day of June, 2012, by and between **NEW ENGLAND POWER COMPANY** a Massachusetts corporation having a principal place of business at 40 Sylvan Road, Waltham, Massachusetts 02451 (hereinafter "Grantor"), and **GRANITE STATE ELECTRIC COMPANY** a New Hampshire corporation having a principal place of business at 9 Lowell Road, Salem, New Hampshire 03079 (hereinafter the "Grantee").

Grantor for consideration paid, grants to Grantee, with Quitclaim Covenants, the following perpetual rights and subeasements: (a) to access, construct, reconstruct, install, repair, replace, maintain, test (or witness testing), inspect, operate, and remove electrical substation equipment owned by Grantee over, under, through, across, and upon a portion of the Land (hereinafter defined) located in Monroe, New Hampshire shown as "Easement Area A" on a plan entitled: "Tax Map U3 Lot 13, Easement Plan, Monroe Substation No. 15, McIndoe Falls Road, Monroe, NH, owned by TransCanada Hydro Northeast, Inc., prepared for New England Power Company d/b/a nationalgrid, 40 Sylvan Rd., Waltham, MA 02451" dated July 22, 2011, last revised 6/25/12, prepared by TFMoran, Inc. 48 Constitution Drive, Bedford, NH 03110 (the "Plan") to be recorded with the Grafton County Registry of Deeds (the "Registry") herewith, (b) to access, repair, replace, maintain, inspect, operate and remove Grantee's 15H1 overhead line and future feeder expansion located over, under through, across and upon that portion of Land identified and shown as "Easement Area B" on the Plan, and (c) to access, repair, replace, maintain, inspect, operate and remove Grantee's bus and related equipment located over, under through, across and upon that portion of Land identified and shown as "Easement Area C" on the Plan (together "Easement Area A", "Easement Area B" and "Easement Area C" are hereinafter collectively referred to as the "Easement Area"). Such electrical substation equipment to include, without limitation, circuit breakers, circuit switchers, power transformers, disconnect switches, structures, and secondary facilities, all as necessary (i) for Grantee's distribution feeders to interconnect with Grantor's facilities, including those located within the structure identified on the Plan as the "Utility House" (collectively, the "Grantee's Facilities"), as more particularly described in that certain Site Agreement by and between Grantor and Grantee dated July 3, 2012 (the "Site Agreement"); (ii) to operate and maintain the Grantee's Facilities consistent with Good Utility Practice (as defined in the Site Agreement); (iii) to exercise Grantee's rights and

perform Grantee's obligations under the Site Agreement; and (iv) subject to the terms of the Site Agreement, to disconnect and/or remove Grantee's Facilities upon termination of the Site Agreement. The Easement Area is more particularly described, according to the Plan, on Exhibit A attached hereto and made a part hereof. The use of the Easement Area shall be in common with the use thereof by Grantor and others with rights therein, including without limitation, the fee owner of the Land pursuant to the terms and conditions of the Deed (hereinafter defined) and neither party shall unreasonably hinder or interfere with the operations of the other party within the Easement Area or with each other's access to existing or future structures or utility facilities, unless such interference is otherwise permitted by this Grant of Subeasement or the Site Agreement. The easement rights granted herein by Grantor to Grantee are an apportionment of the easement rights reserved by Grantor under the Deed and are subject to the terms and provisions thereof.

Together with the right to enter upon Land from the public way over the driveway located on Land and to pass and repass over the Land on foot and in vehicles as reasonable and necessary for the purpose of accessing Grantee's Facilities within the Easement Area and the Utility House in order to operate, maintain, construct, repair, replace, test (or witness testing), inspect, and remove Grantee's Facilities (but not including any right to install additional facilities, expand or increase existing Grantee's Facilities, or physically alter the location of Grantee's Facilities within the Utility House), such right and subeasement to be exercised in compliance with the terms and conditions set forth in the Site Agreement and in a manner that will not unreasonably interfere with the operations of the Grantor on the Land.

The subeasement rights granted herein may, subject to the terms and conditions of this Agreement, be exercised and enjoyed by the Grantee and its employees, representatives, agents, servants, contractors, subcontractors, successors and assigns (collectively, "Grantee's Responsible Parties").

The Grantor covenants and agrees that it will not take any action or fail to take any action in violation of its obligations in the Deed.

The Grantee covenants and agrees that during the location, construction, maintenance, operation, repair, replacement and use of the Grantee's Facilities, neither Grantee nor any of Grantee's Responsible Parties will injure or damage the Land or injure or damage the Grantor's utility facilities now or hereafter placed upon Land. Insofar as practical, the Grantee will properly replace all earth and soil removed or disturbed by the location, construction, maintenance, operation, repair and/or removal of the Grantee's Facilities and the Grantee, insofar as practical, will fill all excavations made by it and restore the Land to its original grade and contour.

It is understood between the parties that the Grantee's Facilities shall remain the sole property of the Grantee, the Grantee shall be solely responsible for the maintenance and repair of the said facilities, and the Grantee shall pay all taxes thereon.

This Grant of Subeasement and Agreement shall be co-terminous with the Site Agreement and shall terminate when the Site Agreement is terminated. Grantee

covenants and agrees to execute and record a document releasing all rights and easements granted herein within sixty (60) days of such termination.

In the event of the permanent abandonment, in whole or in part, of a subeasement granted to the Grantee herein, the Grantee will provide written notice thereof to the Grantor and will cause to be recorded in the applicable land title recording office an instrument sufficient to release the Grantee's rights in such portion of the subeasement as has been permanently abandoned.

It is the intention of the parties that the rights and subeasements hereby granted to the Grantee are a commercial easement in gross for the benefit of Grantee, its successors and assigns, and shall be assignable. Insofar as permitted by law, the provisions hereof are intended to bind and inure to the benefit of the successors and assigns in title to the parties hereto.

The rights and subeasements granted herein are subject to, and have the benefit of, all matters appearing of record at the Registry, including without limitation the terms and conditions of the Deed.

This Agreement may be executed in one or more counterparts, each of which will be deemed an original but all of which together will constitute one and the same instrument. For purposes of recording this Agreement, the signature and acknowledgment pages of one original counterpart hereof may be detached and re-attached to another original counterpart hereof so that a single form of this Agreement containing all original signature and acknowledgment pages may be recorded.

As used herein, the term "Land" shall mean that certain parcel of land described in deed dated August 21, 1998, and recorded with the Grafton Registry in Book 2338, Page 879 (the "Deed").

[SIGNATURE PAGE FOLLOWS]

IN WITNESS WHEREOF, the undersigned has caused these presents to be executed by its duly authorized representative(s) as of the 25th day of June, 2012.

GRANTOR:

NEW ENGLAND POWER COMPANY

By Shannon Larson
Name: Shannon Larson
Title: Authorized Representative

COMMONWEALTH OF MASSACHUSETTS

Middlesex, ss.

On this 25th day of June, 2012 before me, the undersigned notary public, personally appeared **Shannon Larson**, proved to me through satisfactory evidence of identification, which was ☐ photographic identification with signature issued by a federal or state governmental agency, ☐ oath or affirmation of a credible witness, ☒ personal knowledge of the undersigned, to be the person whose name is signed on the preceding or attached document(s), and acknowledged to me that she signed it voluntarily for its stated purpose as Authorized Representative of New England Power Company.

Before me,

Patricia Yung Wong
(type or print name)
My commission expires:



IN WITNESS WHEREOF, the undersigned has caused these presents to be executed by its duly authorized representative(s) as of the 25th day of June, 2012.

GRANTEE:

GRANITE STATE ELECTRIC COMPANY

By Shannon Larson

Name: Shannon Larson

Title: Authorized Representative

COMMONWEALTH OF MASSACHUSETTS

Middlesex, ss.

On this 25th day of June, 2012 before me, the undersigned notary public, personally appeared **Shannon Larson**, proved to me through satisfactory evidence of identification, which was ☐ photographic identification with signature issued by a federal or state governmental agency, ☐ oath or affirmation of a credible witness, ☒ personal knowledge of the undersigned, to be the person whose name is signed on the preceding or attached document(s), and acknowledged to me that she signed it voluntarily for its stated purpose as authorized Representative of Granite State Electric Company.

Before me,

Patricia Yung Wong
(type or print name)

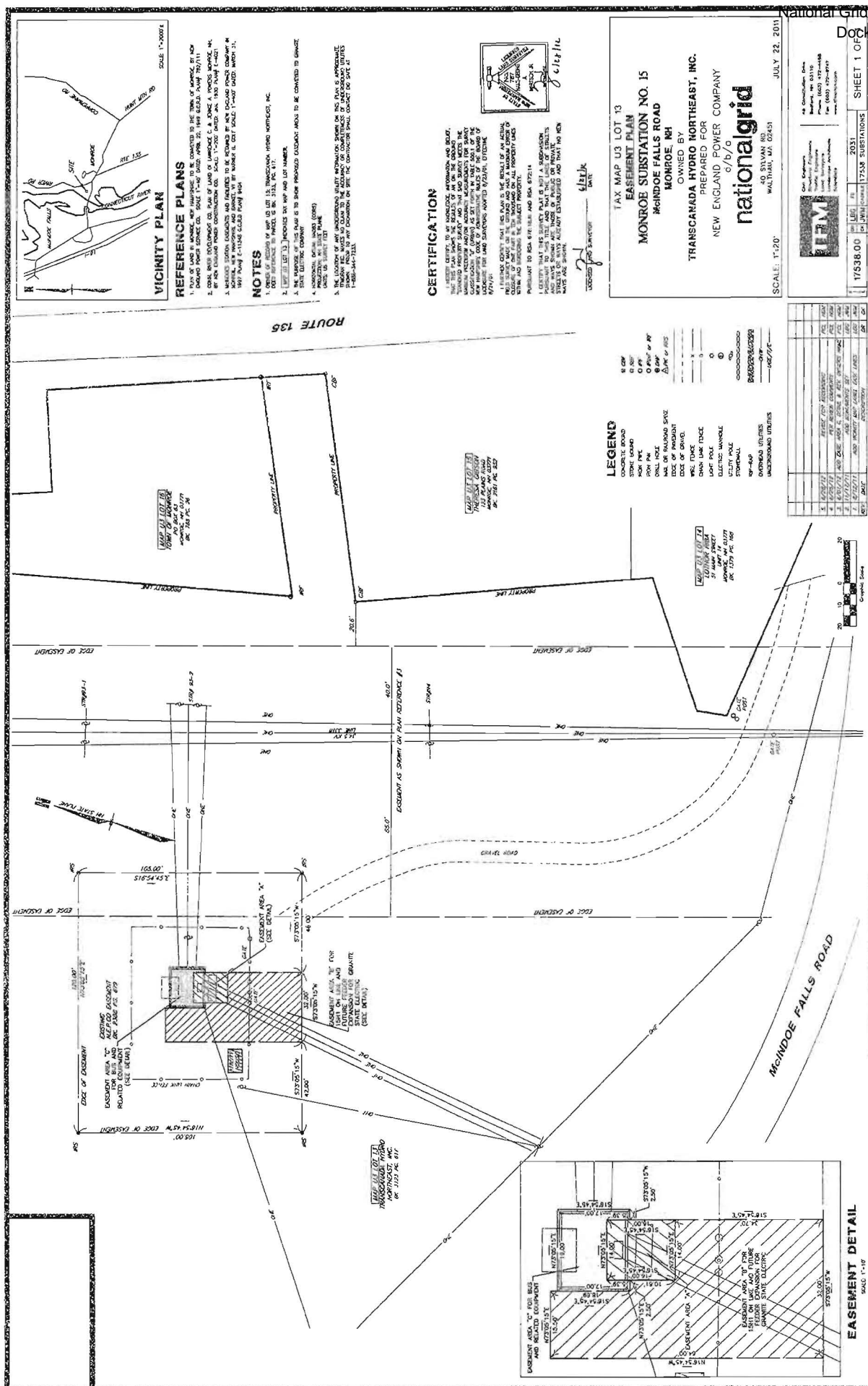
My commission expires:



EXHIBIT A

Easement Area

“Easement Area A”, “Easement Area B” and “Easement Area C” as shown on a plan entitled: “Tax Map U3 Lot 13, Easement Plan, Monroe Substation No. 15, McIndoe Falls Road, Monroe, NH, owned by TransCanada Hydro Northeast, Inc., prepared for New England Power Company d/b/a nationalgrid, 40 Sylvan Rd., Waltham, MA 02451” dated July 22, 2011, last revised 6/25/12, prepared by TFMoran, Inc. 48 Constitution Drive, Bedford, NH 03110 to be recorded herewith the Grafton County Registry of Deeds.



After recording, return to:

National Grid USA
40 Sylvan Road
Waltham, MA 02451
Attention: Patricia Yung Wong, Esq.

GRANT OF EASEMENT AND AGREEMENT
(Mt. Support Substation #16)

THIS GRANT OF EASEMENT AND AGREEMENT (this "Agreement") is made as of the 25th day of June, 2012, by and between GRANITE STATE ELECTRIC COMPANY, a New Hampshire corporation having a principal place of business at 9 Lowell Road, Salem, New Hampshire 03079 (hereinafter "Grantor"), and NEW ENGLAND POWER COMPANY, a Massachusetts corporation having a principal place of business at 40 Sylvan Road, Waltham, Massachusetts 02451 (hereinafter the "Grantee").

Grantor for consideration paid, grants to Grantee, with Quitclaim Covenants, the perpetual right and easement to access, construct, reconstruct, install, repair, replace, maintain, test (or witness testing), inspect, operate, and remove electrical substation equipment owned by Grantee over, under, through, across, and upon a portion of the Grantor's Land (hereinafter defined) located in Lebanon, New Hampshire shown as "Easement Area A" (the "Easement Area") on a plan entitled: "Tax Map 6 Lot 1, Easement Plan, Mt. Support Substation No. 16, 'Dump Road', Lebanon, NH, owned by Granite State Electric Company, prepared for New England Power Company d/b/a nationalgrid, 40 Sylvan Rd., Waltham, MA 02451" dated July 14, 2011, last revised 6/01/12, prepared by TFMoran, Inc. 48 Constitution Drive, Bedford, NH 03110 (the "Plan") to be recorded with the Grafton County Registry of Deeds (the "Registry") herewith. Such electrical substation equipment shall include, without limitation, circuit breakers, circuit switchers, power transformers, disconnect switches, structures, and secondary facilities, all as necessary (i) for Grantee's transmission facilities to interconnect with Grantor's facilities, including those located within the structure identified on the Plan as the "Control House" (collectively, the "Grantee's Facilities"), as more particularly described in that certain Site Agreement by and between Grantor and Grantee dated July 3, 2012 (the "Site Agreement"); (ii) to operate and maintain the Grantee's Facilities consistent with Good Utility Practice (as defined in the Site Agreement); (iii) to exercise Grantee's rights and perform Grantee's obligations under the Site Agreement; and (iv) subject to the terms of the Site Agreement, to disconnect and/or remove Grantee's Facilities upon termination of the Site Agreement. The Easement Area is more particularly described, according to the Plan, on Exhibit A attached hereto and made a part hereof. The use of the Easement Area shall be in common with the use thereof by Grantor and neither party shall unreasonably hinder or interfere with the operations of the other party within the Easement Area or with each

other's access to existing or future structures or utility facilities, unless such interference is otherwise permitted by this Grant of Easement or the Site Agreement.

Together with the right to enter upon Grantor's Land from the public way over the driveway located on Grantor's Land and to pass and repass over the Grantor's Land on foot and in vehicles as reasonable and necessary for the purpose of accessing Grantee's Facilities within the Easement Area and the Control House in order to operate, maintain, construct, repair, replace, test (or witness testing), inspect, and remove Grantee's Facilities (but not including any right to install additional facilities, expand or increase existing Grantee's Facilities, or physically alter the location of Grantee's Facilities within the Control House), such right and easement to be exercised in compliance with the terms and conditions set forth in the Site Agreement and in a manner that will not unreasonably interfere with the operations of the Grantor on the Grantor's Land.

In addition to the foregoing, Grantor further grants to Grantee the perpetual right and easement, in common with Grantor, in and to the right of ways and easement rights granted to Grantor (or Grantor's predecessor in interest) in, over, across and upon certain lands situated in the City of Lebanon as more particularly described in the instruments listed on Exhibit B attached hereto and made a part hereof (collectively, the "Transmission Right of Way Easements"), in order to construct, reconstruct, install, repair, replace, maintain, operate, use, inspect and patrol Grantee's transmission line(s), together with all other easement rights granted to Grantor in the Transmission Right of Way Easements. The easement rights granted herein by Grantor to Grantee are an apportionment of the easement rights granted to Grantor under the Transmission Right of Way Easements and are subject to the terms and provisions thereof.

The easement rights granted herein may, subject to the terms and conditions of this Agreement, be exercised and enjoyed by the Grantee and its employees, representatives, agents, servants, contractors, subcontractors, successors and/or assigns (collectively, "Grantee's Responsible Parties").

The Grantee covenants and agrees that during the location, construction, maintenance, operation, repair, replacement and use of the Grantee's Facilities, neither Grantee nor any of Grantee's Responsible Parties will injure or damage the Grantor's Land or injure or damage the Grantor's utility facilities now or hereafter placed upon Grantor's Land. Insofar as practical, the Grantee will properly replace all earth and soil removed or disturbed by the location, construction, maintenance, operation, repair and/or removal of the Grantee's Facilities and the Grantee, insofar as practical, will fill all excavations made by it and restore the Grantor's Land to its original grade and contour.

It is understood between the parties that the Grantee's Facilities shall remain the sole property of the Grantee, the Grantee shall be solely responsible for the maintenance and repair of the said facilities, and the Grantee shall pay all taxes thereon.

This Grant of Easement and Agreement shall be co-terminous with the Site Agreement and shall terminate when the Site Agreement is terminated. Grantee covenants and agrees to execute and record a document releasing all rights and easements granted herein within sixty (60) days of such termination.

In the event of the permanent abandonment, in whole or in part, of an easement granted to the Grantee herein, the Grantee will provide written notice thereof to the Grantor and will cause to be recorded in the applicable land title recording office an instrument sufficient to release the Grantee's rights in such portion of the easement as has been permanently abandoned.

It is the intention of the parties that the rights and easements hereby granted to the Grantee are a commercial easement in gross for the benefit of Grantee, its successors and assigns, and shall be assignable. Insofar as permitted by law, the provisions hereof are intended to bind and inure to the benefit of the successors and assigns in title to the parties hereto.

The rights and easements granted herein are subject to, and have the benefit of, all matters appearing of record at the Registry.

This Agreement may be executed in one or more counterparts, each of which will be deemed an original but all of which together will constitute one and the same instrument. For purposes of recording this Agreement, the signature and acknowledgment pages of one original counterpart hereof may be detached and re-attached to another original counterpart hereof so that a single form of this Agreement containing all original signature and acknowledgment pages may be recorded.

As used herein, the term "Grantor's Land" shall mean those certain parcels of land described in the following instruments: (i) deed dated April 3, 1978, and recorded with the Grafton County Registry of Deeds in Book 1340, Page 427, (ii) deed dated August 2, 1994, and recorded with said Registry in Book 2106, Page 73, and (iii) deed recorded on August 24, 1994 with said Registry in Book 2106, Page 77.

[SIGNATURE PAGES FOLLOW]

IN WITNESS WHEREOF, the undersigned has caused these presents to be executed by its duly authorized representative(s) as of the 25th day of June, 2012.

GRANTOR:

GRANITE STATE ELECTRIC COMPANY

By Shannon Larson

Name: Shannon Larson

Title: Authorized Representative

COMMONWEALTH OF MASSACHUSETTS

Middlesex, ss.

On this 25th day of June, 2012 before me, the undersigned notary public, personally appeared **Shannon Larson**, proved to me through satisfactory evidence of identification, which was ☐ photographic identification with signature issued by a federal or state governmental agency, ☐ oath or affirmation of a credible witness, ☒ personal knowledge of the undersigned, to be the person whose name is signed on the preceding or attached document(s), and acknowledged to me that she signed it voluntarily for its stated purpose as Authorized Representative of Granite State Electric Company.

Before me,

Patricia Yung Wong
(type or print name)

My commission expires:



IN WITNESS WHEREOF, the undersigned has caused these presents to be executed by its duly authorized representative(s) as of the 25th day of June, 2012.

GRANTEE:

NEW ENGLAND POWER COMPANY

By Shannon Larson
Name: Shannon Larson
Title: Authorized Representative

COMMONWEALTH OF MASSACHUSETTS

Middlesex, ss.

On this 25th day of June, 2012 before me, the undersigned notary public, personally appeared **Shannon Larson**, proved to me through satisfactory evidence of identification, which was ☐ photographic identification with signature issued by a federal or state governmental agency, ☐ oath or affirmation of a credible witness, ☒ personal knowledge of the undersigned, to be the person whose name is signed on the preceding or attached document(s), and acknowledged to me that she signed it voluntarily for its stated purpose as Authorized Representative of New England Power Company.

Before me,

Patricia Yung Wong
(type or print name)

My commission expires:



EXHIBIT A

Easement Area

"Easement Area A" as shown on a plan entitled: "Tax Map 6 Lot 1, Easement Plan, Mt. Support Substation No. 16, 'Dump Road', Lebanon, NH, owned by Granite State Electric Company, prepared for New England Power Company d/b/a nationalgrid, 40 Sylvan Rd., Waltham, MA 02451" dated July 14, 2011, last revised 6/01/12, prepared by TFMoran, Inc. 48 Constitution Drive, Bedford, NH 03110 to be recorded herewith at the Grafton County Registry of Deeds.

EXHIBIT B

Transmission Right of Way Easements

1. Easement rights granted in deed dated April 3, 1978 from the Town of Hanover, recorded at the Grafton County Registry of Deeds (the "Registry") in Book 1340, Page 427 and shown on plan recorded at the Registry in Plan Book 1331, Page 31.
2. Easement dated October 20, 1988 from the Trustees of Dartmouth College, recorded at the Registry in Book 1771, Page 39 and shown on plan recorded at the Registry in Book 1771, Page 38.
3. Easement dated November 13, 1929 from Sarah J. Goold, recorded at the Registry in Book 616, Page 468.
4. Easement dated January 27, 1959 from the Trustees of Dartmouth College, recorded in Book 910, Page 400 and shown on plan recorded at the Registry in Plan Book 980, Page 523.
5. Easement dated November 7, 1929 from Ira H. Buck and Gertrude M. Buck, recorded at the Registry in Book 616, Page 467.
6. Easement dated June 12, 1950 from Ira H. Buck and Gertrude M. Buck, recorded at the Registry in Book 800, Page 144.
7. Easement dated June 21, 1957 from Ira H. Buck, recorded at the Registry in Book 897, Page 278 and shown on plan recorded at the Registry in Plan Book 980, Page 524.
8. Easement dated November 7, 1929 from William M. Bomhower and Ella E. Bomhower, recorded at the Registry in Book 616, Page 69.
9. Easement dated June 27, 1957 from William M. Bomhower and Thelma L. Bomhower, recorded at the Registry in Book 897, Page 279 and shown on plan recorded at the Registry in Plan Book 980, Page 525.
10. Easement dated August 14, 1941 from Ira H. Buck and Gertrude M. Buck, recorded at the Registry in Book 700, Page 412.
11. Easement dated January 15, 1924 from Ira H. Buck, recorded at the Registry in Book 577, Page 503.
12. Easement dated July 13, 1924 from Ira H. Buck, recorded at the Registry in Book 587, Page 556.

After recording, return to:

National Grid USA
40 Sylvan Road
Waltham, MA 02451
Attention: Patricia Yung Wong, Esq.

GRANT OF EASEMENT AND AGREEMENT
(Pelham Substation #14)

THIS GRANT OF EASEMENT AND AGREEMENT (this “Agreement”) is made as of the 25th day of June, 2012, by and between NEW ENGLAND POWER COMPANY, a Massachusetts corporation having a principal place of business at 40 Sylvan Road, Waltham, Massachusetts 02451 (hereinafter “Grantor”), and GRANITE STATE ELECTRIC COMPANY, a New Hampshire corporation having a principal place of business at 9 Lowell Road, Salem, New Hampshire 03079 (hereinafter the “Grantee”).

Grantor for consideration paid, grants to Grantee, with Quitclaim Covenants, the following perpetual rights and easements: (a) to access, construct, reconstruct, install, repair, replace, maintain, test (or witness testing), inspect, operate, and remove electrical substation equipment owned by Grantee over, under, through, across, and upon a portion of the Grantor’s Land (hereinafter defined) located in Pelham, New Hampshire shown as “Easement Area A” on a plan entitled: “Tax Map 22 Lot 8-21, Easement Plan, Pelham Substation No. 14, Gage Hill Road, Pelham, NH, owned by and prepared for New England Power Company d/b/a nationalgrid, 40 Sylvan Rd., Waltham, MA 02451” dated July 15, 2011, last revised 11/17/11, prepared by TFMoran, Inc. 48 Constitution Drive, Bedford, NH 03110 (the “Plan”) to be recorded with the Hillsborough County Registry of Deeds (the “Registry”) herewith, and (b) to access, repair, replace, maintain, inspect, operate and remove Grantee’s 14L1, 14L2 and 14L3 feeders lines located over, under through, across and upon that portion of Grantor’s Land identified and shown as “Easement Area B” on the Plan (together “Easement Area A” and “Easement Area B” are hereinafter collectively referred to as the “Easement Area”). Such electrical substation equipment shall include, without limitation, circuit breakers, circuit switchers, power transformers, disconnect switches, structures, and secondary facilities, all as necessary (i) for Grantee’s distribution feeders to interconnect with Grantor’s facilities, including those located within the structure identified on the Plan as the “Control House” (collectively, the “Grantee’s Facilities”), as more particularly described in that certain Site Agreement by and between Grantor and Grantee dated July 3, 2012 (the “Site Agreement”); (ii) to operate and maintain the Grantee’s Facilities consistent with Good Utility Practice (as defined in the Site Agreement); (iii) to exercise Grantee’s rights and perform Grantee’s obligations under the Site Agreement; and (iv) subject to the terms of the Site Agreement, to disconnect and/or remove Grantee’s Facilities upon termination of the Site Agreement. The Easement Area is more particularly described, according to the Plan, on Exhibit A attached hereto and made a part hereof. The use of the Easement Area shall be in

common with the use thereof by Grantor and neither party shall unreasonably hinder or interfere with the operations of the other party within the Easement Area or with each other's access to existing or future structures or utility facilities, unless such interference is otherwise permitted by this Grant of Easement or the Site Agreement.

Together with the right to enter upon Grantor's Land from the public way over the driveway located on Grantor's Land and to pass and repass over the Grantor's Land on foot and in vehicles as reasonable and necessary for the purpose of accessing Grantee's Facilities within the Easement Area and the Control House in order to operate, maintain, construct, repair, replace, test (or witness testing), inspect, and remove Grantee's Facilities (but not including any right to install additional facilities, expand or increase existing Grantee's Facilities, or physically alter the location of Grantee's Facilities within the Control House), such right and easement to be exercised in compliance with the terms and conditions set forth in the Site Agreement and in a manner that will not unreasonably interfere with the operations of the Grantor on the Grantor's Land.

The easement rights granted herein may, subject to the terms and conditions of this Agreement, be exercised and enjoyed by the Grantee and its employees, representatives, agents, servants, contractors, subcontractors, successors and/or assigns (collectively, "Grantee's Responsible Parties").

The Grantee covenants and agrees that during the location, construction, maintenance, operation, repair, replacement and use of the Grantee's Facilities, neither Grantee nor any of Grantee's Responsible Parties will injure or damage the Grantor's Land or injure or damage the Grantor's utility facilities now or hereafter placed upon Grantor's Land. Insofar as practical, the Grantee will properly replace all earth and soil removed or disturbed by the location, construction, maintenance, operation, repair and/or removal of the Grantee's Facilities and the Grantee, insofar as practical, will fill all excavations made by it and restore the Grantor's Land to its original grade and contour.

It is understood between the parties that the Grantee's Facilities shall remain the sole property of the Grantee, the Grantee shall be solely responsible for the maintenance and repair of the said facilities, and the Grantee shall pay all taxes thereon.

This Grant of Easement and Agreement shall be co-terminous with the Site Agreement and shall terminate when the Site Agreement is terminated. Grantee covenants and agrees to execute and record a document releasing all rights and easements granted herein within sixty (60) days of such termination.

In the event of the permanent abandonment, in whole or in part, of an easement granted to the Grantee herein, the Grantee will provide written notice thereof to the Grantor and will cause to be recorded in the applicable land title recording office an instrument sufficient to release the Grantee's rights in such portion of the easement as has been permanently abandoned.

It is the intention of the parties that the rights and easements hereby granted to the Grantee are a commercial easement in gross for the benefit of Grantee, its successors and assigns, and shall be assignable. Insofar as permitted by law, the provisions hereof are

intended to bind and inure to the benefit of the successors and assigns in title to the parties hereto.

The rights and easements granted herein are subject to, and have the benefit of, all matters appearing of record at the Registry.

This Agreement may be executed in one or more counterparts, each of which will be deemed an original but all of which together will constitute one and the same instrument. For purposes of recording this Agreement, the signature and acknowledgment pages of one original counterpart hereof may be detached and re-attached to another original counterpart hereof so that a single form of this Agreement containing all original signature and acknowledgment pages may be recorded.

As used herein, the term "Grantor's Land" shall mean that certain parcel of land described in deed dated April 30, 1971, and recorded with the Hillsborough County Registry of Deeds in Book 2130, Page 311.

[SIGNATURE PAGES FOLLOW]

IN WITNESS WHEREOF, the undersigned has caused these presents to be executed by its duly authorized representative(s) as of the 25th day of June, 2012.

GRANTOR:

NEW ENGLAND POWER COMPANY

By Shannon Larson
Name: Shannon Larson
Title: Authorized Representative

COMMONWEALTH OF MASSACHUSETTS

Middlesex, ss.

On this 25th day of June, 2012 before me, the undersigned notary public, personally appeared **Shannon Larson**, proved to me through satisfactory evidence of identification, which was ☐ photographic identification with signature issued by a federal or state governmental agency, ☐ oath or affirmation of a credible witness, ☒ personal knowledge of the undersigned, to be the person whose name is signed on the preceding or attached document(s), and acknowledged to me that she signed it voluntarily for its stated purpose as Authorized Representative of New England Power Company.

Before me,

Patricia Yung Wong
(type or print name)

My commission expires:



IN WITNESS WHEREOF, the undersigned has caused these presents to be executed by its duly authorized representative(s) as of the 25th day of June, 2012.

GRANTEE:

GRANITE STATE ELECTRIC COMPANY

By Shannon Larson
Name: Shannon Larson
Title: Authorized Representative

COMMONWEALTH OF MASSACHUSETTS

Middlesex, ss.

On this 25th day of June, 2012 before me, the undersigned notary public, personally appeared **Shannon Larson**, proved to me through satisfactory evidence of identification, which was ☐ photographic identification with signature issued by a federal or state governmental agency, ☐ oath or affirmation of a credible witness, ☒ personal knowledge of the undersigned, to be the person whose name is signed on the preceding or attached document(s), and acknowledged to me that she signed it voluntarily for its stated purpose as Authorized Representative of Granite State Electric Company.

Before me,

Patricia Yung Wong
(type or print name)
My commission expires:



EXHIBIT A

Easement Area

“Easement Area A” and “Easement Area B” as shown on a plan entitled: “Tax Map 22 Lot 8-21, Easement Plan, Pelham Substation No. 14, Gage Hill Road, Pelham, NH, owned by and prepared for New England Power Company d/b/a nationalgrid, 40 Sylvan Rd., Waltham, MA 02451” dated July 15, 2011, last revised 11/17/11, prepared by TFMoran, Inc. 48 Constitution Drive, Bedford, NH 03110 to be recorded herewith at the Hillsborough County Registry of Deeds.

