NIAGARA MOHAWK POWER CORPORATION d/b/a National Grid

Case 11-T-0068 - Niagara Mohawk Power Corporation d/b/a National Grid
Mohican to Battenkill Article VII Application

Request for Information

FROM: Edward Schrom and Vijay Puran

TO:

Request

Subject: Danger Tree Easements

Reference:

1. Provide a copy of Niagara Mohawk’s danger tree easement policy and a copy of a typical easement.

2. Please describe how and when Niagara Mohawk’s real estate division will acquire danger tree easements.

Response:

1. National Grid has no specific written policy on danger tree easements. The Company’s Transmission Right-of-Way Management Program, filed with the Commission, contains a description of National Grid’s danger tree program. This is set forth at Section VIII, pages 113-116 of the Transmission Right-of-Way Management Program. A copy of those pages is attached as Attachment A, “Danger Tree Program.”

National Grid also has no danger tree easements in effect at this time on the ROW, so it is unable to provide a copy of a typical easement document. National Grid does have existing danger tree rights on much of the Project’s ROW, but these rights were obtained not by easement but in the deeds by which Adirondack Power and Light Corporation, as predecessor to Niagara Mohawk Power Corporation, purchased the lands on which the Project is located. The following is typical danger tree language in such deeds:

“Together with the right at all times to trim, cut or remove such brush or trees or other obstructions upon the remaining premises of the [Grantor] adjacent to the above described parcel of land, as may be likely in the opinion of [Adirondack Power and Light Corporation], its successors or assigns, to interfere with the
successful operation of an electrical transmission line or lines to be erected upon
the said above described parcel of land.”

As part of the Project, National Grid intends to obtain additional danger tree rights where
needed to supplement its existing rights. These additional rights will be obtained via the
same easement documents by which National Grid would acquire vegetation
management and associated rights (temporary project construction purposes, permanent
rights to access the ROW, environmental mitigation, etc.).

2. National Grid’s Real Estate Department will negotiate in good faith with the relevant
landowners to acquire danger tree easements. If good faith negotiations and a voluntary
approach are unsuccessful, National Grid will review its alternatives and then may also
consider exploring other legal avenues to obtain necessary rights.

Typically, National Grid’s Real Estate Department will not commence acquisition of
easements for an Article VII project until it has received the Article VII certificate.

Name of Respondent: Halina M. Gajewski        Date of Reply: July 11, 2011
Title of Respondent: Senior Real Estate Representative (National Grid)
VIII. **Danger Tree Program**

The danger tree program addresses trees located off the right-of-way. A danger tree is defined as any tree located off the right-of-way that could upon failure contact the electric conductors (ANSI A-300 part 7-2006 IVM). A danger tree has to be simply tall enough to hit the line. Hazard trees are any structurally unsound trees rooted outside the right-of-way that could strike an electrical conductor when it fails (ANSI A-300 part 7-2006 IVM). This is a tree, due to its proximity and physical condition (i.e. mortality, lean, decay, cavities, cracks, weak branching, root lifting, or other instability), poses a particular danger to a conductor or other key component of a transmission facility, (see New York Public Service Commission Case 04-E-822). In addition to the above definitions, tree species with known inherent weaknesses that have a history of failing either statewide or regionally i.e: red maple or balsam fir, are considered danger trees regardless of their condition.

Trees located off the right-of-way have branches that can grow into minimum clearance distances, but may or may not be danger trees. Such trees will be pruned or removed to achieve At Time of Vegetation Management Clearance distances.

National Grid’s strategic approach to manage danger trees is to prune and/or remove danger trees, where property rights allow; and to seek permission from landowners for pruning and/or removal, where such rights are limited.

Danger trees falling into the lines present the greatest risk of tree caused outages on transmission circuits. The risk is primarily related to 2 non-biotic variables, 1) distance from conductor to the adjacent tree line (clear width), and 2) conductor distance above the ground; and 3 biotic factors; 1) height of trees, 2) tree species, and 3) tree health and condition. National Grid seeks to mitigate risk of outages from danger trees through site specific management of these variables.

Risk can be quantified using the Optimal Width Calculator (OWC) software licensed to National Grid by Ecological Solutions, Inc. The OWC calculates a Risk Factor based on the variables discussed above. Data was collected in 2004 across NG’s NY 115 kV, 230 kV and 345 kV transmission system to calculate average Risk Factor by voltage class. Data are presented in the table below:

<table>
<thead>
<tr>
<th>Voltage Class</th>
<th>Risk Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>345 kV</td>
<td>0.19</td>
</tr>
<tr>
<td>230 kV</td>
<td>2.30</td>
</tr>
<tr>
<td>115 kV</td>
<td>6.19</td>
</tr>
</tbody>
</table>

NG will prune or remove trees adjacent rights-of-way to 1) achieve At Time of Vegetation Management Clearances, and 2) reduce the Risk Factor for each
voltage class. The Side Line Tree Risk Assessment and Mitigation Strategies study conducted by National Grid indicates that reduction of Risk Factor to equal or less than the average Risk Factor for each voltage class, will result in a 50% to 80% reduction in the Risk Factor for each voltage class. Essentially this approach targets the pruning and removal of danger trees to areas where it will be most effective in reducing risk.

1. **Danger Tree Inspections:**

Inspections for danger tree problems will be part of routine Division Forester ground based and aerial inspections discussed in Section A.

2. **Ranking by Voltage Class:**

High voltage transmission lines, 230 kV and 345 kV, are ranked above lower voltages in terms of allowed risk to the system from trees. These circuits are also subject to the NERC Vegetation Management Standard FAC-03-001. These lines are built with greater ground clearances and clear widths, resulting in the much lower Risk Factors shown above. The present tree condition and Risk Factors result in very few outages. Due to their importance to system reliability and minimal exposure to danger trees, these lines will be the first lines treated under the danger tree protocol presented above. All 230 kV and 345 kV circuits will be treated in the first 5-8 year maintenance cycle (2006-2013).

Sub-transmission lines, 23 kV to 69 kV serve customer load. Tree caused outages on these circuits contribute to about 4% (2006 data) of customer non-storm SAIFI. Given the contribution to SAIFI, National Grid has prioritized this group of circuits below bulk (345 and 230 kV) but above 115 kV transmission lines. As mentioned above, National Grid plans to complete the right-of-way widening program by 2012. In addition, routine danger tree and hazard tree work will continue on the regular DT maintenance cycle one year prior to IVM work.

115 kV transmission lines also serve customer load. While customer load is very important to National Grid, tree caused outages on these lines contribute very little to customer non-storm SAIFI – significantly less than 1% (2006 data). Risk Factors for 115 kV lines clearly reflect the lower conductor height and smaller clear width on these lines (compared to high voltage transmission lines). A much higher percentage of the system will require danger tree work than on high voltage transmission lines. National Grid proposes to carry-out the danger tree protocol on these 115 kV lines over 2 maintenance cycles (2006-2022).

3. **Prioritization within Voltage Classes:**

National Grid determines a Line Importance Factor (LIF) for all 115 kV, 230 kV and 345 kV circuits. The LIF takes into account impacts to generators, customers, redundancy of supply, etc. The LIF will be reviewed and serve as one factor.
including reliability history, maintenance history and system configuration to prioritize lines within these transmission voltage classes.

Prioritization of work on the Sub-Transmission voltages, 23 kV to 69 kV, is a collaborative effort between the Transmission and Distribution Forestry Strategy Groups. Transmission Forestry Strategy generates a list of lines to be worked on each year. The Distribution Forestry Strategy Asset Management group reviews, adjusts and approves the list. Factors such as the numbers of customers served, reliability history, maintenance history, and system configuration (radial or redundant feed) are considered during this process. Transmission Forestry Strategy, being the service provider for distribution, then schedules the work for the approved lines.

4. **Danger Tree Program Protocol for 230 kV and 345 kV Transmission lines:**

   a) Off right-of-way trees will be pruned or removed to achieve ATVM clearances.

   b) Off right-of-way trees that could strike the line that meet the ANSI A300 hazard tree definition will be assessed for risk and pruned or removed where rights or landowner permissions allow.

   c) For danger trees, National Grid staff determines areas with above average Risk Factors.

5. **Danger Tree Program Protocol for 115 kV Transmission lines:**

   a) Off right-of-way trees will be pruned or removed to achieve ATVM clearances.

   b) Off right-of-way trees that could strike the line that meet the ANSI A300 hazard tree definition will be assessed for risk and pruned or removed where rights or landowner permissions allow.

   c) For danger trees, National Grid staff determines areas with above average Risk Factors.
6. **Danger Tree Program Protocol for 23 kV to 69 kV Sub-Transmission lines:**

The most critical factor for lower Sub-Transmission lines is clear width. National Grid began a sub-transmission widening program in the mid-1990's. Approximately 1,500 miles of the 2,600 miles of sub-transmission was widened through 1998. Beginning in late 2005, National Grid renewed the sub-transmission widening program. National Grid will complete the widening program on approximately 1,000 miles of Sub-Transmission by 2012.

Where rights or landowner permissions allow, Sub-Transmission right-of-ways will be widened to achieve a clear width of not less than 30 feet. Note: 37.5 feet from center line of circuit.

Routine danger tree and hazard tree pruning and removal will continue on a 5-14 year cyclic basis during the same time frame.