

***PJM Generator Interconnection
Queue #Q70
Lawrenceville 34.5 kV (12 MW)***

Feasibility / Impact Study

February 2007

DOCS#: 404660

General

Industrial Power Generating Company, LLC (INGENCO) is requesting to interconnect, as a capacity resource, a new landfill gas generating facility located in Lawrenceville, Brunswick County, Virginia. The proposed in service date for this new generating facility is 3/7/07.

Direct Connection Requirements

The generation facilities are proposed to be connected to Dominion's 34.5 kV Circuit 353 from Lawrenceville Substation as detailed in the Dominion Assessment Results below, and as depicted in the attached Figure 1. In addition to the modifications to the Dominion facilities detailed below, the Interconnection Customer is responsible for ensuring that metering equipment is in conformance with PJM Manuals 01 and 14D for a Capacity Resource.

Dominion Assessment Results

Ingenco has requested a 12 mW interconnection for its proposed Brunswick County Landfill facility onto Dominion Virginia Power's 34.5 kV Circuit 353 from Lawrenceville Substation. Alternatively, Ingenco asked for the maximum mW interconnection that would not require distribution line reconductoring upgrades. An 8 mW interconnection can be provided from existing conductors without reconductoring. Reconductoring 1.1 miles of distribution line conductors would allow for an 11 mW interconnection while reconductoring of an additional 1.4 miles of distribution line conductors would allow for the requested 12 mW interconnection. These three options are presented below.

Option one - 8 mW

Modifications required to Dominion Virginia Power's distribution system to accommodate 8 mW of generation capacity injected into Dominion Virginia Power's 3-phase 34.5 kV Circuit 353 from Lawrenceville Substation include the following construction requirements:

1. Replacement of a 3-phase hydraulic recloser (353 R12) with a 3-phase electronic recloser with transfer trip capability.
2. Replacement of a 3-phase line fuse installation with a 3-phase electronic recloser with transfer trip capability.
3. Installation of transfer trip capability on the Circuit 353 circuit breaker in Lawrenceville Substation.

The estimated cost for rearranging existing Dominion Virginia Power facilities to accommodate the interconnection request is \$110,000.

Installation of new facilities to provide the interconnection will include construction of approximately 500 feet of a 3-phase line extension from the existing 3-phase line, a 3-phase switch and pole mounted bi-directional metering at the point of interconnection.

The estimated cost for the installation of new facilities to provide the interconnection is \$75,000.

In addition to the Dominion Virginia Power facilities indicated above, the customer will be responsible for providing and maintaining telephone communication lines to Dominion Virginia Power's metering equipment, and from the customer's main generator breaker to two Dominion Virginia Power upline reclosers and Dominion Virginia Power's Circuit 353 circuit breaker in Lawrenceville Substation.

The estimated time for engineering, material acquisition and construction of this option is approximately 6 months.

Option two - 11 mW

Modifications required to Dominion Virginia Power's distribution system to accommodate 11 mW of generation capacity injected into Dominion Virginia Power's 3-phase 34.5 kV Circuit 353 from Lawrenceville Substation include the following construction requirements:

1. Replacement of a 3-phase hydraulic recloser (353 R12) with a 3-phase electronic recloser with transfer trip capability.
2. Replacement of a 3-phase line fuse installation with a 3-phase electronic recloser with transfer trip capability.
3. Installation of transfer trip capability on the Circuit 353 circuit breaker in Lawrenceville Substation.
4. Reconductoring of 1.1 miles of an existing 3-phase distribution circuit from #4 aluminum conductor to 1/0 aluminum conductor.

The estimated cost for rearranging existing Dominion Virginia Power's facilities to accommodate the interconnection request is \$490,000.

Installation of new facilities to provide the interconnection will include construction of approximately 500 feet of a 3-phase line extension from the existing 3-phase line, a 3-phase switch and pole mounted bi-directional metering at the point of interconnection.

The estimated cost for the installation of new facilities to provide the interconnection is \$75,000.

In addition to the Dominion Virginia Power facilities indicated above, the customer will be responsible for providing and maintaining telephone communication lines to Dominion Virginia Power's metering equipment, and from the customer's main generator

breaker to two Dominion Virginia Power upline reclosers and Dominion Virginia Power's Circuit 353 circuit breaker in Lawrenceville Substation.

The estimated time for engineering, material acquisition and construction of this option is approximately 8 months.

Option three – 12 mW

Modifications required to Dominion Virginia Power's distribution system to accommodate 12 mW of generation capacity injected into Dominion Virginia Power's 3-phase 34.5 kV Circuit 353 from Lawrenceville Substation include the following construction requirements:

1. Replacement of a 3-phase hydraulic recloser (353 R12) with a 3-phase electronic recloser with transfer trip capability.
2. Replacement of a 3-phase line fuse installation with a 3-phase electronic recloser with transfer trip capability.
3. Installation of transfer trip capability on the Circuit 353 circuit breaker in Lawrenceville Substation.
4. Reconductoring of 1.1 miles of an existing 3-phase distribution circuit from #4 aluminum conductor to 1/0 aluminum conductor.
5. Reconductoring of 1.4 miles of an existing 3-phase distribution circuit from #2 aluminum conductor to 1/0 aluminum conductor.

The estimated cost for rearranging existing Dominion Virginia Power facilities to accommodate the interconnection request is \$975,000.

Installation of new facilities to provide the interconnection will include construction of approximately 500 feet of a 3-phase line extension from the existing 3-phase line, a 3-phase switch and pole mounted bi-directional metering at the point of interconnection.

The estimated cost for the installation of new facilities to provide the interconnection is \$75,000.

In addition to the Dominion Virginia Power facilities indicated above, the customer will be responsible for providing and maintaining telephone communication lines to Dominion Virginia Power's metering equipment, and from the customer's main generator breaker to two Dominion Virginia Power upline reclosers and Dominion Virginia Power's Circuit 353 circuit breaker in Lawrenceville Substation.

The estimated time for engineering, material acquisition and construction of this option is approximately 10 months.

Network Impacts

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The #Q70 project was studied as an injection of 12 MW (capacity) into the Lawrenceville Substation. Project #Q70 was evaluated for compliance with reliability criteria for summer peak conditions in 2011. Potential network impacts were as follows:

Generator Deliverability

No problem identified.

Multiple Facility Contingency

No problem identified.

Contribution to Previously Identified Overloads

None

New System Reinforcements

No problem identified

Contribution to Previously Identified System Reinforcements

None

Short Circuit

No problem identified

PJM QUEUE Q-70
INGENCO Brunswick Co, VA Landfill
Diagram of Interconnection

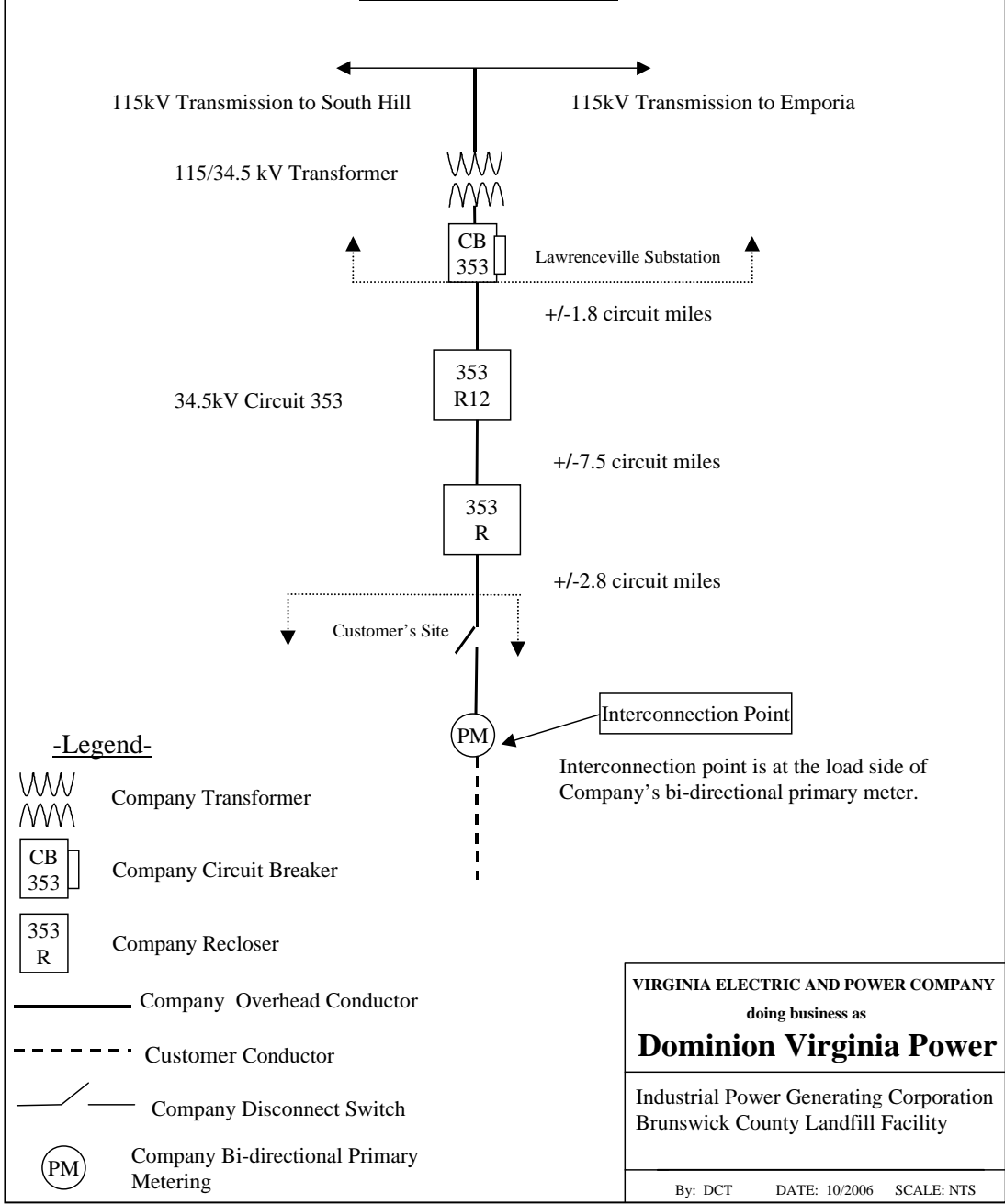


Figure 1