#### **SCHEDULE 21 - UES**

## UNITIL ENERGY SYSTEMS, INC. LOCAL SERVICE SCHEDULE

#### **SCHEDULE 21-UES**

#### Unitil Energy Systems, Inc. Local Service Schedule

#### I. COMMON SERVICE PROVISIONS

Unitil Energy Systems, Inc. ("UES") is a participant in the New England Control Area and has agreed to provide transmission and ancillary services over PTF pursuant to the Tariff. The services provided under this Schedule 21-UES apply only to Non-PTF, except in the case of service to Network Customers that have all or part of their Network Load directly connected to the PTF in the Local Network. These Network Customers shall pay for Local Network Service pursuant to Attachment F of ISO New England Inc. Transmission, Markets, and Services Tariff (ISO-NE Tariff), Section II, Open Access Transmission Tariff (OATT). Provisions of this Schedule 21-UES shall have priority over any conflicting provisions in the Tariff.

#### 1 Definitions

- **1.0 Annual Transmission Costs**: The total annual cost of the Local Network for purposes of Local Network Service shall be the amount specified in Attachment F of the OATT until amended by UES or modified by the Commission.
- **1.1 Curtailment**: A reduction in firm or non-firm transmission service in response to a transmission capacity shortage as a result of system reliability conditions.
- **1.2 Load Ratio Share**: Ratio of a Transmission Customer's Network Load to UES's total load computed in accordance with Sections II.10 and II.10(a) of this Schedule under Sections Supplementing Schedule 21 of the OATT and calculated on a rolling twelve month basis.
- **1.3.1** Local Network: The transmission facilities owned, controlled, or operated by UES that are used to provide transmission service under Schedule 21 of the OATT.
- **1.4** Local Network Service (LNS): The transmission service provided under Schedule 21 of

the OATT and this Schedule.

- 1.5 Network Load: The load that a Network Customer designates for Local NetworkService under Schedule 21 of the OATT. The Network Customer's Network Load shall include all load served by the output of any Network Resources designated by the Network Customer. A Network Customer may elect to designate less than its total load as Network Load but may not designate only part of the load at a discrete Point of Delivery. Where a Eligible Customer has elected not to designate a particular load at discrete points of delivery as Network Load, the Eligible Customer is responsible for making separate arrangements under Schedule 21 of the OATT for any Local Point-To-Point Service that may be necessary for such non-designated load.
- **1.6 Network Upgrades**: Modifications or additions to transmission-related facilities that are integrated with and support the UES's overall Local Network for the general benefit of all users of such Local Network.
- **1.7 Parties**: UES and the Transmission Customer receiving service under this Schedule and the OATT.

#### SECTIONS SUPPLEMENTING THE BODY OF THE TARIFF

#### **Preamble**

The following provisions supplement the provisions of the Tariff. Provisions of this Schedule 21-UES shall have priority over any conflicting provisions in the Tariff. The section numbers of this Schedule 21-UES correspond to or are consecutive to the section numbers in the body of the Tariff that are affected by the additional provisions herein.

#### **Sections Supplementing Section I: General Terms and Conditions**

**1.7 Creditworthiness**: For the purpose of determining the ability of the Transmission Customer to meet its obligations related to service hereunder, UES may require reasonable credit review procedures in accordance with Attachment L of Schedule 21-UES.

Sections Supplementing Section II of the Tariff: Open Access Transmission Tariff (OATT)

II.A. COMMON SERVICE PROVISIONS

**II.4** Ancillary Services

Ancillary Services are needed with transmission service to maintain reliability within and among the Control Areas affected by the transmission service. UES is required to provide (or offer to arrange with the ISO as discussed below), and the Transmission Customer is required to purchase, Local Scheduling, System Control and Dispatch Service. The following Ancillary Services are available pursuant to Section II.4 of the Tariff only to the Transmission Customer serving load within the New England Control Area (i) Reactive Supply and Voltage Control Service, (iii) Regulation and Frequency Response, (iii) Energy Imbalance, (iv) Ten-Minute Spinning Reserve Service, (v) Ten-Minute Non-Spinning Reserve Service

and (vi) Thirty-Minute Operating Reserve Service.

II.8 Billing and Invoicing; Accounting

**8.2 Invoicing**: Within a reasonable time after the first day of each month, UES shall submit an invoice to the Transmission Customer for the charges for all services furnished

under the OATT during the preceding month. The invoice shall be paid by the Transmission

Customer within twenty (20) days of receipt. All payments shall be made in immediately

available funds payable to UES, or by wire transfer to a bank named by the UES.

**8.4** Customer Default: In the event the Transmission Customer fails, for any reason other

than a billing dispute as described below, to make payment to UES on or before the due date as

described above, and such failure of payment is not corrected within thirty (30) calendar days

after UES notifies the Transmission

Customer to cure such failure, a default by the Transmission Customer shall be deemed to exist.

Upon the occurrence of a default, UES may initiate a proceeding with the Commission to

terminate service but shall not terminate service until the Commission so approves any such

request. In the event of a billing dispute between UES and the Transmission Customer, UES will

continue to provide service under the Service Agreement as long as the Transmission Customer

(i) continues to make all payments not in dispute, and (ii) pays into an independent escrow account the portion of the invoice in dispute, pending resolution of such dispute. If the Transmission Customer fails to meet these two requirements for continuation of service, then UES may provide notice to the Transmission Customer of its intention to suspend service in sixty (60) days, in accordance with Commission policy.

#### II.10.2 Stranded Cost Recovery

UES may seek to recover stranded costs from the Transmission Customer pursuant to this OATT in accordance with the terms, conditions and procedures set forth in FERC Order No. 888. However, UES must separately file any specific proposed stranded cost charge under Section 205 of the Federal Power Act.

#### SECTIONS SUPPLEMENTING SCHEDULE 21 OF THE OATT

#### I. Local Point-to-Point Service Over the Local Network Owned by UES

#### **Preamble**

In addition to the provisions set forth in Schedule 21 of the OATT, the provisions of this Schedule 21-UES shall govern Local Point-To-Point transactions using the Local Network owned by UES. Provisions of this Schedule 21-UES shall have priority over any conflicting provisions in the Tariff. The section numbers of this Schedule 21-UES correspond to or are consecutive to the sections of Schedule 21 of the OATT that are affected by the additional provisions herein.

To the extent not otherwise covered in the OATT, the then-current ISO New England Operating Documents, or the TOA, or the rules adopted thereunder, whenever UES implements least-cost redispatch procedures in response to a transmission constraint, UES and the Transmission Customer(s) taking Local Point-To-Point Service will each bear a proportionate share of the total redispatch cost.

#### 3 Service Availability

**b) Determination of Available Transfer Capability (ATC):** A description of UES's specific methodology for assessing ATC is contained in Attachment C of this Schedule. In the

event sufficient transfer capability may not exist to accommodate a service request, UES will respond by performing a System Impact Study.

g) Real Power Losses: Real power losses are associated with all transmission service.

UES is not obligated to provide real power losses. The Transmission Customer is responsible for replacing losses associated with all transmission service as calculated by UES. The applicable real power loss factors tabulated below will be applied to metered loads and Reserved Capacity amounts to account for losses on UES's system. The applicable real power loss factors are as follows:

Firm Local Point-to-Point Service = 0.53% at 34.5 kV subtransmission.

Non-firm Local Point-to-Point Service = 0.53% at 34.5 kV subtransmission

#### 6) Procedures for Arranging Non-Firm Local Point-To-Point Service

Determination of Available Transfer Capability: Following receipt of a tendered schedule UES will make a determination on a non-discriminatory basis of ATC pursuant to Attachment C of this Schedule. Such determination shall be made as soon as reasonably practicable after receipt (during UES's normal business hours of 8:00 a.m. to 4:30 p.m., Monday to Friday), but not later than the following time periods for the following terms of service (i) thirty (30) minutes for hourly service, (ii) thirty (30) minutes for daily service, (iii) four (4) hours for weekly service, and (iv) two (2) days for monthly service.

#### 11 Sale or Assignment of Local Point-to-Point Service

c) Information on Assignment or Transfer of Service: UES currently has waiver from the obligations of FERC Order No. 889 to maintain an OASIS. In the future, upon implementation of any UES OASIS site, resellers may use UES's OASIS site to post transmission capacity available for resale.

#### II. Local Network Service using Non-PTF Owned by UES

**Preamble** 

In addition to the provisions set forth in Schedule 21 of the OATT, the provisions of this Schedule 21-UES shall govern Local Network Service using Non-PTF owned by UES. Provisions of this Schedule 21-UES shall have priority over any conflicting provision in the Tariff. The section numbers of this Schedule 21-UES correspond to the sections of Schedule 21 of the OATT that are affected by the additional provisions herein.

Local Network Service allows the Network Customer to integrate, economically dispatch, and regulate its current and planned Network Resources to serve its Network Load in a manner comparable to that in which UES utilizes its Non-PTF to serve its Native Load Customers. Local Network Service also may be used by the Network Customer to deliver economy energy purchases to its Network Load from non-designated resources on an as-available basis without additional charge. Transmission service for sales to non-designated loads will be provided pursuant to the applicable terms and conditions of Schedule 21 of the OATT.

#### 2) Availability of Local Network Service

**f)** Real Power Losses: The Network Customer is responsible for replacing losses associated with all transmission service as calculated by UES. The applicable real power loss factors tabulated below will be applied to metered loads and Reserved Capacity amounts to account for losses on UES's system. The applicable real power loss factors are as follows:

Local Network Service = 0.53% at 34.5 kV subtransmission.

#### 8) Load Shedding and Curtailments

- a) Procedures: Prior to the Service Commencement Date, UES and the Network Customer shall establish Load Shedding and Curtailment procedures pursuant to Section II.20 of the Tariff, with the objective of responding to contingencies on the Local Network. The Parties will implement such programs during any period when the ISO, the Local Control Center or UES determines that a system contingency exists and such procedures are necessary to alleviate such contingency. UES will notify all affected Network Customers in a timely manner of any scheduled Curtailment.
- b) Transmission Constraints: During any period when UES determines that a transmission

constraint exists on the Local Network, and such constraint may impair the reliability of UES's system, UES will take whatever actions, consistent with then-current ISO New England Operating Documents or the TOA, and the rules adopted thereunder, and with Good Utility Practice, that are reasonably necessary to maintain the reliability of UES's system. To the extent ISO determines that the reliability of the ISO New England transmission system can be maintained by redispatching resources, UES will initiate procedures pursuant to the OATT, the then-current ISO New England Operating Documents, or the TOA, and the rules adopted thereunder to redispatch all Network Resources and UES's own resources on a least-cost basis without regard to the ownership of such resources. Any redispatch under this section may not unduly discriminate between UES's use of the Local Network on behalf of its Native Load Customers and any Network Customer's use of the Local Network to serve its designated Network Load.

- c) Cost Responsibility for Relieving Transmission Constraints: To the extent not otherwise covered in the OATT, the then-current ISO New England Operating Documents, or the TOA, or the rules adopted thereunder, whenever UES implements least-cost redispatch procedures in response to a transmission constraint, UES and the Network Customer(s) will each bear a proportionate share of the total redispatch cost based on their respective Load Ratio Shares.
- **d)** Curtailments of Scheduled Deliveries: If a transmission constraint on UES's Local Network cannot be relieved through the implementation of least-cost redispatch procedures and UES determines that it is necessary to Curtail scheduled deliveries, the Parties shall Curtail such schedules in accordance with Section II.22 of the Tariff.
- e) Allocation of Curtailments: The ISO, the Local Control Center or UES shall, on a non-discriminatory basis, Curtail the transaction(s) that effectively relieve the constraint. However, to the extent practicable and consistent with Good Utility Practice, any Curtailment will be shared by UES and Network Customers in proportion to their respective Load Ratio Shares. Neither the ISO, the Local Control Center nor UES shall direct the Network Customer to Curtail schedules to an extent greater than either would Curtail UES's schedules under similar circumstances.
- f) Load Shedding: To the extent that a system contingency exists on UES's Local Network and the ISO, the Local Control Center or UES determines that it is necessary for UES and the Network Customers to shed load, the Parties shall shed load in accordance with previously established procedures

in accordance with Section II.22 of the Tariff, the then-current ISO New England Operating Documents, or the TOA, and the rules adopted thereunder.

g) System Reliability: Notwithstanding any other provisions of this Schedule, UES reserves the right, consistent with Good Utility Practice and on a not unduly discriminatory basis, to Curtail Local Network Service without liability on the part of UES for the purpose of making necessary adjustments to, changes in, or repairs on UES's lines, substations, and facilities, and in cases where the continuance of Local Network Service would endanger persons or property. In the event of any adverse conditions or disturbances on UES's Local Network or on any other system(s) directly or indirectly interconnected with UES's Local Network, UES, consistent with Good Utility Practice, also may Curtail Local Network Service in order to (i) limit the extent or damage of the adverse condition(s) or disturbance(s), (ii) prevent damage to generating or transmission facilities, or (iii) expedite restoration of service. UES will give the Network Customer as much advance notice as is practicable in the event of such Curtailment. Any Curtailment of Local Network Service will be not unduly discriminatory relative to UES's use of its Local Network on behalf of its Native Load Customers. UES shall specify the rate treatment and all related terms and conditions applicable in the event that the Network Customer fails to respond to established Load Shedding and Curtailment procedures.

#### 9) Rates and Charges

In addition to the above sections that correspond to sections in Schedule 21 of the OATT, the following additional provision shall apply to Local Network Service over UES's Local Network.

- a) Monthly Demand Charge: The Network Customer shall pay a Monthly Demand Charge which shall be determined by multiplying its Load Ratio Share times one twelfth (1/12) of UES's Annual Transmission Revenue Requirement as specified in Attachment F to the OATT.
- 10) Determination of Network Customer's Local Monthly Network Load: The Network Customer's local monthly Network Load is its hourly load (including its designated Network Load not physically interconnected with UES under Section II.5(c) of Schedule 21 of the OATT) coincident with UES's Monthly Local Network Peak. Monthly revenue requirements not otherwise paid for through charges to Eligible Customers for Local Point-to-Point Service will be allocated among UES's Network

Customers receiving service under the tariff on the basis of their loads during the hour in the month in which the total connected load to the local network is at its maximum, without any adjustment for credits for generation.

In addition to the above sections that correspond to sections in Schedule 21 of the OATT, the following three provisions shall apply to Local Network Service over UES's local network.

- **10a**) **Determination of UES's Monthly Local Network Load**: UES's monthly Local Network Load is UES's Monthly Local Network Peak minus the coincident peak usage of all firm Local Point-To-Point Service customers pursuant to Schedule 21 of the OATT plus the Reserved Capacity of all firm Local Point-To-Point Service customers.
- **10b**) **Recovery of PTF Transmission Revenue Requirements**: The portion of UES's annual transmission revenue requirements with respect to PTF which is not recovered through the distribution of revenues from Regional Network Service or Local Point-to-Point Service shall be recovered from Eligible Customers taking Regional Network Service or Local Point-to-Point Service pursuant to Section II.13 of the Tariff.

#### Local Scheduling, System Control and Dispatch Service

This service is required to schedule the movement of power through, out of, within, or into UES's Local Network Control Area. Local Scheduling, System Control and Dispatch Service is to be provided directly by UES and the ISO. The Transmission Customer must purchase this service from UES. The charges for UES's Local Scheduling, System Control and Dispatch Service are to be based on the rates set forth below. To the extent that the ISO performs this service for UES, charges to the Transmission Customer are to reflect only a pass-through of the costs charged to UES by the ISO.

Each firm Local Point-To-Point Service Customer under this Tariff will be charged for Local Scheduling, System Control and Dispatch Services for the total Reserved Capacity specified in each reservation for firm Local Point-To-Point Service made under the Tariff at the rates set forth in Appendix A of this Schedule 1.

Each Network Customer under this Tariff will be charged a monthly Local Scheduling, System Control and Dispatch Service Demand Charge, which shall be determined by multiplying its Load Ratio Share times one twelfth (1/12) of the Formula Requirements specified in Appendix B of this Schedule 1. Each Transmission Customer with generation within the ISO's Control Area shall be required also to provide for Scheduling, System Control and Dispatch Service for that generation. It is anticipated that the Transmission Customer will obtain these services by contracting with the ISO for these services on an unbundled basis. UES will make available Generation Scheduling, System Control and Dispatch Service at the rates set forth in Appendix C of this Schedule 1.

Each Transmission Customer with generation located outside of the ISO Control Area shall be required to provide for Scheduling, System Control and Dispatching Service for that generation. It is anticipated that the Transmission Customer will obtain these services by contracting for these services from the provider of these services within the Control Area where the generation is located. UES shall have the right, at any time, unilaterally to file for a change in any of the provisions of this Schedule 1 in accordance with Section 205 of the Federal Power Act and the Commission's implementing regulations.

#### Appendix A

#### Determination Of UES's Local Network Point-To-Point Formula Rate For Local Scheduling, System Control and Dispatch Service

UES's Formula Rate for Point-To-Point Local Scheduling, System Control and Dispatch Service ("Formula Rate") is an annual rate determined from the following formula.

$$FORMULA \ RATE_i = \begin{array}{c} A_{i\text{-}1} - B_{i\text{-}1} \\ \hline \\ C_{i\text{-}1} \end{array}$$

#### WHERE:

- i equals the calendar year during which service is being rendered ("Service Year").
- A<sub>i-1</sub> is the Annual Control Center Expenses (expressed in dollars) of UES for the calendar year prior to the Service Year. The Annual Control Center Expenses are determined pursuant to the formula specified in Exhibit 1 to this Appendix A of Schedule 1.
- B<sub>i-1</sub> is the actual local scheduling, system control and dispatch revenues (expressed in dollars) provided from the provision of transmission services to others. The actual local scheduling and dispatch revenues shall be those recorded on the books of UES in FERC Account No. 456 pertaining to Transmission of Electricity for Others and such other applicable FERC Account for the calendar year prior to the Service Year.
- C<sub>i-1</sub> is the single annual coincident peak transmission and distribution load (expressed in kilowatts) of UES for the calendar year prior to the Service Year, as reported in FERC Form No.
   1.

#### Schedule 1

#### Appendix A

#### Exhibit 1

#### **Determination Of Annual Control Center Expenses**

The rate formula for determination of the annual control center expenses revenue requirements for UES is determined as follows:

A. <u>ANNUAL CONTROL CENTER EXPENSES</u> = Sum of UES's (Account 556 System Control and Load Dispatching Expense) + (Account 557 Other Expense) X .50\* for the calendar year prior to the Service Year.

\*This factor reflects allocation to the transmission function of a portion (50 percent) of the costs recorded in Accounts 556 and 557 associated with dispatching transmission and generating facilities. This 50 percent allocation of control center costs is based on two functions performed by the control center (i) control of generation and (ii) control of transmission.

#### Appendix B

# Determination Of UES's Network Formula Requirements For Local Scheduling, System Control And Dispatch Service

UES's formula requirements for Network Local Scheduling, System Control and Dispatch Service is determined from the following formula.

Formula Requirements<sub>i</sub> =  $A_{i-1} - B_{i-1}$ 

#### WHERE:

- i equals the calendar year during which service is being rendered ("Service Year").
- A<sub>i-1</sub> is the Annual Control Center Expenses (expressed in dollars) of UES for the calendar year prior to the Service Year. The Annual Control Center Expenses are determined pursuant to the formula specified in Exhibit 1 to Appendix A of Schedule 1.
- B<sub>i-1</sub> is the actual local scheduling, system control and dispatch revenues (expressed in dollars) provided from the provision of transmission services to others. The actual local scheduling, system control and dispatch revenues shall be those recorded on the books of UES in FERC Account No. 456 pertaining to Transmission of Electricity for Others and such other applicable FERC Account for the calendar year prior to the Service Year.

#### Appendix C

## Determination Of UES's Formula Rate For Generation Scheduling, System Control And Dispatch Service

UES's Formula Rate for Generation Scheduling, System Control and Dispatch Service ("Formula Rate") shall be calculated using the Formula Rate for Point-to-Point Local Scheduling, System Control and Dispatch Service in Appendix A of Schedule 21 - UES.

### Lorg-Term Firm Local and Short-Term Firm Local Point-to-Point Service

The Transmission Customer shall compensate UES each month for firm Reserved Capacity at the sum of the applicable charges set forth below:

- Yearly delivery: one-twelfth of the demand charge of
   N/A /KW of firm Reserved Capacity per year.
- 2) **Monthly delivery**: \$ N/A /KW of firm Reserved Capacity per month.
- 3) **Weekly delivery**: \$ N/A /KW of firm Reserved Capacity per week.
- 4) **Daily delivery**: \$ N/A /KW of firm Reserved Capacity per day.

  The total demand charge in any week, pursuant to a reservation for Daily delivery, shall not exceed the rate specified in section (3) above times the highest amount in kilowatts of firm Reserved Capacity in any day during such week.
- Discounts: Three principal requirements apply to discounts for transmission service as follows (1) any offer of a discount made by UES must be announced to all Eligible Customers solely by posting on Unitil.com, (2) any customer-initiated requests for discounts (including requests for use by one's wholesale merchant or an Affiliate's use) must occur solely by posting on Unitil.com, and (3) once a discount is negotiated, details must be immediately posted on Unitil.com. For any discount agreed upon for service on a path, from point(s) of receipt to point(s) of delivery, UES must offer the same discounted transmission service rate for the same time period to all Eligible Customers on all unconstrained transmission paths that go to the same point(s) of delivery on UES's Local Network.
- Resales: The rates and rules governing charges and discounts stated above shall not apply to resales of transmission service, compensation for which shall be governed by section I.11 (a) of Schedule 21 of the OATT.

#### Non-Firm Local Point-To-Point Service\*

The Transmission Customer shall compensate UES for non-firm Local Point-To-Point Service up to the sum of the applicable charges set forth below:

- 1) Monthly delivery: \$ N/A /KW of Reserved Capacity per month.
- 2) Weekly delivery: \$ N/A /KW of Reserved Capacity per week.
- 3) Daily delivery: \$ N/A /KW of Reserved Capacity per day.

  The total demand charge in any week, pursuant to a reservation for Daily delivery, shall not exceed the rate specified in section (2) above times the highest amount in kilowatts of Reserved Capacity in any day during such week.
- **Hourly delivery**: The basic charge shall be that agreed upon by the Parties at the time this service is reserved and in no event shall exceed \$ N/A /MWH. The total demand charge in any day, pursuant to a reservation for Hourly delivery, shall not exceed the rate specified in section (3) above times the highest amount in kilowatts of Reserved Capacity in any hour during such day. In addition, the total demand charge in any week, pursuant to a reservation for Hourly or Daily delivery, shall not exceed the rate specified in section (2) above times the highest amount in kilowatts of Reserved Capacity in any hour during such week.
- Discounts: Three principal requirements apply to discounts for transmission service as follows (1) any offer of a discount made by UES must be announced to all Eligible Customers solely by posting on Unitil.com, (2) any customer-initiated requests for discounts (including requests for use by one's wholesale merchant or an Affiliate's use) must occur solely by posting on Unitil.com, and (3) once a discount is negotiated, details must be immediately posted on Unitil.com. For any discount agreed upon for service on a path, from point(s) of receipt to point(s) of delivery, UES must offer the same discounted transmission service rate for the same time period to all Eligible Customers on all unconstrained transmission paths that go to the same point(s) of delivery on UES's Local Network.

Resales: The rates and rules governing charges and discounts stated above shall not apply to resales of transmission service, compensation for which shall be governed by section I.11 (a) of Schedule 21 of the OATT.

\* Rates reflect a 25% discount off the firm Point-To-Point rates

#### **DISTRIBUTION ADDER UNDER TARIFF**

In the case where distribution facilities of UES are employed in providing service under Schedule 21 of the OATT, the Transmission Customer shall compensate UES for the use of such facilities. In addition to the charges contained in this Tariff, the compensation for such distribution facilities will be determined on a case-by-case basis.

All such charges shall be subject to appropriate regulatory approval.

#### ATTACHMENT C

#### Methodology To Assess Available Transfer Capability

#### 1. Introduction

ISO is the regional transmission organization (RTO) for the New England Control Area. The New England Control Area includes the transmission system located in the states of Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont, but does not include the transmission system in northern Maine (i.e., Aroostook and parts of Penobscot and Washington Counties) that is radially connected to New Brunswick and administered by the Northern Maine Independent System Administrator. The New England Control Area is comprised of PTF, non-PTF, OTF, MTF, and is interconnected to three neighboring Balancing Authority Areas ("BAA") with various interface types.

As part of its RTO responsibilities, the ISO is registered with the North American Electric Reliability Corporation ("NERC") as several functional model entities that have responsibilities related to the calculation of ATC as defined in the following NERS Standards: MOD-001 – Available Transmission System Capability ("MOD-001"). MOD-004 – Capacity Benefit Margin ("MOD-004"), and MOD-008 – Transmission Reliability Margin Calculation Methodology ("MOD-008"). The extent of those responsibilities is based on various Commission approved transmission operating agreements and the provisions of the ISO New England Operating Documents.

While the ISO is the Transmission Service Provider for regional transmission service ("Regional Transmission Service") associated with Pool Transmission Facilities, the Participating Transmission Owners ("PTOs") provide local transmission service over Non-Pool Transmission Facilities within the RTOP footprint and are responsible for calculating TTC and ATC associated with Local Transmission Service provided under Schedule 21 pursuant to the Transmission Operating Agreement ("TOA"). Pursuant to CFR § 37.6(b)<sup>1</sup> of the FERC Regulations, Transmission Provider's are obligated to calculate and post TTC and ATC for each Posted Path. The ISO is not responsible for the calculation of these values.

<sup>1</sup> Section §37.6(b) Posting transfer capability. The available transfer capability on the Transmission Provider's system (ATC) and the total transfer capability (TTC) of that system shall be calculated and posted for each Posted 1 2 Path as set out in this section.

Posted Path is defined as any control area to control area interconnection; any path for which service is denied, curtailed or interrupted for more than 24 hours in the past 12 months; and any path for which a customer requests to have ATC or TTC posted. For this last category, the posting must continue for 180 days and thereafter until 180 days have elapsed from the most recent request for service over the requested path. For purposes of this definition, an hour includes any part of any hour during which service was denied, curtailed or interrupted.<sup>2</sup>

UES does not currently have any Posted Paths based on the above definition. However, to the extent that UES does in the future have a Posted Path, UES will calculate TTC using the NERC Standard MOD-029 – Rated System Path Methodology ("MOD-029") as outlined below.

#### 1.1 Scope of Document

The scope of this document is limited to those functions performed by UES as the Transmission Service Provider of Schedule 21-UES Point-to Point transmission service over Local Facilities pursuant to the PTOs' Transmission Operating Agreement and the ISO OATT:

- Methodology for calculating Total Transfer Capability (TTC)
- Methodology for calculating Available Transfer Capability (ATC)
- Existing Transmission Commitment (ETC)
- Use of Transmission Reliability Margin (TRM)
- Use of Capacity Benefit Margin (CBM)
- Use of Rollover Rights (ROR) in the calculation of ETC

TTC and ATC are required to be calculated only for certain non-PTF internal Posted Paths over which Point-to-Point transmission service is provided under Schedule 21-UES. TTC and ATC is not calculated by UES for Local Network Service because ISO employs a market model for economic, security constrained dispatch of generation, and UES does not require advance reservation for such network

Section § 37.6(b)(1)(i).

service.

#### 2. Transmission Service in the New England Markets

Since the inception of the OATT for New England, the process by which generation located inside New England supplies energy to the bulk electric system has differed from the Commission pro forma OATT. The fundamental difference is that internal generation is dispatched in an economic, security constrained manner by the ISO rather than utilizing a system of physical rights, advance reservations and point-to-point transmission service. Through this process, internal generation provides offers that are utilized by the ISO in the Real-Time Energy Market dispatch software. This process provides the least-cost dispatch to satisfy Real-Time load on the system.

In addition to offers from generation within New England, entities may submit External Transactions to move energy into the New England Control Area, out of the New England Control Area or through the New England Control Area. The New England Real-Time Energy Market clears these External Transactions based on forecast Locational Marginal Pricing (LMPs) and the transfer capability of the associated external interfaces. With those External Transactions in place, the Real-Time Energy Market dispatches internal generation in an economic, security constrained manner to meet Real-Time load within the region.

The process for submitting External Transactions into the Real-Time Energy Market does not require an advance physical reservation for use of the PTF. In the event that the net of the economic External Transactions is greater than the transfer capability of the associated external interface, the External Transactions selected to flow are selected based on the rules specified in the tariff. For any External Transactions that are confirmed to flow in Real-Time based on the economics of the system, a transmission reservation for RNS or Through or Out Service is created after-the-fact to satisfy the transparency needs of the market.

The process described above is applicable to the PTF within the ISO Area, and non-PTF Local Facilities where utilized for Local Network Service by generation or load. However, UES owns Local Facilities over which an advance transmission service reservation for firm or non-firm transmission service may be required. On those Local Facilities, the market participant may obtain a transmission service reservation

from UES under Schedule 21-UES prior to delivery of energy into the Real-Time Energy Market.<sup>3</sup> This document addresses the calculation of ATC and TTC for these non-PTF internal paths.

#### 3. Schedule 21-UES Total Transfer Capability (TTC)

The TTC on UES' non-PTF Local Facilities that require Point-to-Point transmission service reservations are relatively static values and are calculated using the NERC Standard MOD-029 – Rated System Path Methodology. TTC is the amount of electric power that can be moved or transferred reliably from one area to another area of the interconnected transmission systems by way of all transmission lines (or paths) between those areas under specified system conditions. UES calculates TTC according to this definition applying the process as described below.

#### 3.1 Guidelines and Principles

When estimating TTC, UES will apply the following, as amended and/or adopted from time to time

- Good Utility Practice
- NERC criteria and guidelines
- ISO New England criteria, rules and reliability standards
- Northeast Power Coordinating Council (NPCC) criteria and guidelines
- Unitil Energy Systems, Inc. guides

#### 3.2 Transmission System Model Representation

UES will estimate TTC using transmission system load flow models developed for UES' system. The models may include representations of other neighboring systems. UES will use system models that it deems appropriate for study of the request for firm transmission service. Additional system models and operating conditions, including assumptions specific to a particular analysis, may be developed for conditions not available in the library of load flow cases. The system models may be modified, if necessary, to include additional system information on load, transfers and configuration, as it becomes available.

#### 3.3 Contingency Analysis

3 See n - 2, 3 and 6, supra.

UES will perform, if necessary, power flow and transient stability analysis to ensure that the interface's physical limits will not be violated for credible system contingencies per NERC, NPCC and ISO reliability criteria. TTC, based on contingency analysis, is the incremental transfer capability of the transmission system following the loss of the most critical element while maintaining thermal, and stability performance of the system within acceptable regional practices and consistent with guidelines of Item 3.1 of this Attachment.

#### 3.4 Posting TTCs

When necessary, UES will estimate TTC as outlined above and post on its website.

#### 4. Capacity Benefit Margin (CBM)

CBM is defined as the amount of firm transmission transfer capability set aside by a TSP for use by the Load Serving Entities. The ISO does not set aside any CBM for use by the Load Serving Entities, because of the New England approach to capacity planning requirements in the ISO New England Operating Documents. Load Serving Entities operating within the New England Control Area are required to arrange for their Capacity Requirements prior to the beginning of any given month in accordance with ISO Tariff, Section III.13.7.3.1 (Calculation of Capacity Requirement and Capacity Load Obligation). Load Serving Entities do not utilize CBM to ensure that their capacity needs are met; therefore, CBM is not applicable within the New England market design. Accordingly, for purposes of ATC calculation, CBM for the New England Control Area is set to zero (0).

#### Existing Transmission Commitments, Firm (ETC<sub>F</sub>)

The ETC<sub>F</sub> are those confirmed firm transmission reservations (PTP<sub>F</sub>) plus any rollover rights for firm transmission reservations (ROR<sub>F</sub>) that have been exercised. There are no allowances necessary for Native Load forecast commitments (NL<sub>F</sub>), Network Integration Transmission Service (NITS<sub>F</sub>), grandfathered Transmission Service (GF<sub>F</sub>) and other service(s), contract(s) or agreement(s) (OS<sub>F</sub>) to be considered in the ETC<sub>F</sub> calculation.

#### Existing Transmission Commitments, Non-Firm(ETC<sub>NF</sub>)

The  $(ETC_{NF})$  are those confirmed non-firm transmission reservations  $(PTP_{NF})$ . There are no allowances

necessary for non-firm Network Integration Transmission Service (NITS<sub>NF</sub>), non-firm grandfathered Transmission Service (GF<sub>NF</sub>) or other service(s), contract(s) or agreement(s) (OS<sub>NF</sub>).

#### 5. Transmission Reliability Margin (TRM)

TRM is the amount of transmission transfer capability set aside to provide reasonable assurance that the interconnected transmission network will be secure. TRM accounts for the inherent uncertainty in system conditions and the need for operating flexibility to ensure reliable system operation as system conditions change. It is used only for external interfaces under the New England market design. UES, under Schedule 21, does not have any external interfaces, and therefore, TRM for UES' non-PTF facilities is zero.

#### 6. Calculation of ATC for UES' Local Facilities

#### **General Description**

This section defines the ATC calculations performed by UES for its non-PTF internal interfaces.

Consistent with the NERC definition, the equation for Available Transfer Capability is: ATC = (TTC – CBM – TRM – Existing Transmission Commitments + Postbacks + counterflows). As discussed above, the CBM and TRM for the PTF interfaces for which UES calculates ATC are zero (0). As consistent with the ISO calculation, the equations for firm and non-firm Available Transfer Capability are:

As discussed above, the TRM and CBM for UES's non-PTF paths are zero. The purpose of the Existing Transmission Commitments ("ETC") component of the ATC equation is for FG&E to reduce the amount of ATC by the amount of existing firm transmission commitments that are not otherwise included in CBM or TRM. There is no requirement to purchase transmission service in advance of flowing energy in Real-Time, and there is no MW amount set aside by FG&E on any interface. One such example is point-to-point service commitments. Point-to-point service commitments sharing common transmission paths would be combined through system modeling to calculate the net existing transmission capacity (ETC)

<sup>4</sup> Existing Transmission Commitments ("ETC")

impact. This ETC value is then used in the ATC calculation shown above. Therefore there are no Existing Transmission Commitments to be applied in the ATC equation. For this reason, ETC equals zero (0) for the purposes of ATC calculation. Because Postbacks and counterflows are related to ETC and ETC is zero (0), both Postbacks and counterflows also are equal to zero (0).

As described in Section 2, under Schedule 21-UES, UES requires the purchase of transmission service in advance of delivery of energy to the New England Wholesale Market over certain non-PTF paths, and those existing transmission commitments would be applied to the ATC equation for the specific posted path. As a practical matter, the ratings of the radial transmission paths are always higher than the transmission requirements of the Transmission Customers connected to that path. As such, transmission services over these posted paths are considered to be always available.

Entities submit their bids and offers to move energy into, out of and through the Energy Market through External Transactions. As Real-Time approaches, the ISO determines which of the submitted External Transactions will be scheduled in the coming hour in accordance with the rules set forth in the ISO New England Operating Documents. Basically, the ATC of the non-PTF assets in the New England market is almost always positive. The ATC is equal to the amount of External Transactions that the ISO will schedule on an interface for the designated hour. With this simplified version of ATC, there is no detailed algorithm to be described or posted other than: ATC equals TTC. Thus, for those non-PTF facilities that serve as a path for the UES' Schedule 21-UES Point-to-Point Transmission Customers, UES would post the ATC as 9999, consistent with industry practice. ATC on these paths varies depending on the time of day. However, it would be posted with an ATC of "9999" to reflect the fact that there are no restrictions on these paths for commercial transactions.

#### 6.1 Calculation of Schedule 21-UES Firm ATC (ATC<sub>F</sub>)

#### **6.1.1** Calculation of ATC<sub>F</sub> in the Planning Horizon (PH)

For purposes of this Attachment C, PH is any period before the Operating Horizon.

Consistent with the NERC definition, ATC<sub>F</sub> is the capability for firm transmission reservations that remain after allowing for TRM, CBM, ETC<sub>F</sub>. Postbacks<sub>F</sub> and counterflows<sub>F</sub>.

As discussed above, TRM and CBM are zero. Firm Transmission Service under Schedule 21-UES that is available in the Planning Horizon (PH) includes: Yearly, Monthly, Weekly, and Daily. Postbacks<sub>F</sub> and counterflows<sub>F</sub> of Schedule 21-UES transmission reservations are not considered in the ATC calculation. Therefore, ATC<sub>F</sub> in the PH is equal to the TTC minus ETC<sub>F</sub>

#### **6.1.2** Calculation of ATC<sub>F</sub> in the Schedule 21-UES Operating Horizon (OH)

For purposes of this Attachment C, OH is noon eastern prevailing time each day. At that time, the OH spans from noon through midnight of the next day for a total of 36 hours. As time progresses the total hours remaining in the OH decreases until noon the following day when the OH is once again reset to 36 hours.

Consistent with the NERC definition, ATC<sub>F</sub> is the capability for firm transmission reservations that remain after allowing for ETC<sub>F</sub>, CBM, TRM, Postbacks<sub>F</sub> and counterflows<sub>F</sub>.

As discussed above, TRM and CBM is zero. Daily firm Transmission Service under Schedule 21-UES is the only firm service offered in the Operating Horizon (OH). Postbacks $_{\rm F}$  and counterflows $_{\rm F}$  of Schedule 21-UES transmission reservations are not considered in the ATC $_{\rm F}$  calculation. Therefore, ATC $_{\rm F}$  in the OH is equal to the TTC minus ETC $_{\rm F}$ .

**6.1.3** Because firm Schedule 21-UES transmission service is not offered in the Scheduling Horizon (SH): ATC<sub>F</sub> in the SH is zero.

#### 6.2 Calculation of Schedule 21-UES Non-Firm ATC (ATC<sub>NF</sub>)

#### **6.2.1** Calculation of ATC<sub>NF</sub> in the PH

 $ATC_{NF}$  is the capability for non-firm transmission reservations that remain after allowing for  $ETC_{F}$ ,  $ETC_{NF}$ , scheduled CBM (CBM<sub>S</sub>), unreleased TRM (TRM<sub>U</sub>), non-firm Postbacks (Postbacks<sub>NF</sub>) and non-firm counterflows (counterflows<sub>NF</sub>).

As discussed above, the TRM and CBM for Schedule 21-UES are zero. Non-firm ATC available in the PH includes: Monthly, Weekly, Daily and Hourly. TRM  $_{\rm U}$ , Postbacks $_{\rm NF}$  and counterflows $_{\rm NF}$  of Schedule 21-UES transmission reservations are not considered in this calculation. Therefore, ATC $_{\rm NF}$  in the PH is equal to the TTC minus ETC  $_{\rm F}$  and ETC $_{\rm NF}$ .

#### **6.2.2** Calculation of ATC<sub>NF</sub> in the OH

ATC<sub>NF</sub> available in the OH includes: Daily and Hourly.

As discussed above TRM and CBM for Schedule 21-UES are zero. TRM<sub>U</sub>, counterflows and ETC<sub>NF</sub> are not considered in this calculation. Therefore, ATC<sub>NF</sub> in the OH is equal to the TTC minus ETC<sub>F</sub>, plus postbacks of PTP<sub>F</sub> in OH as PTP<sub>NF</sub> (Postbacks  $_{NF}$ ).

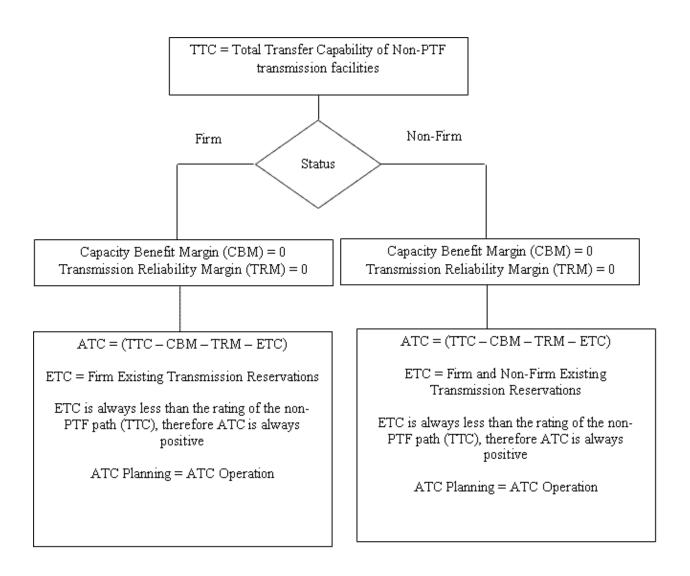
#### 6.3 Negative ATC

As stated above, the ratings of the radial transmission paths are always higher than the transmission requirements of the Transmission Customers connected to that path. As such, transmission services over these posted paths are considered to be always available.

As stated above, UES' non-PTF facilities are primarily radial paths that provide transmission service to directly interconnected generators. It is possible, in the future, that a particular radial path may interconnect more nameplate capacity generation than the path's TTC. However, due to the ISO's security constrained dispatch methodology, the ISO will only dispatch an amount of generation interconnected to such path so as not to incur a reliability or stability violation on the subject path. Therefore, ATC in the PH, OH and SH may become zero, but will not become negative.

#### **ATC Process Flow Diagram for Non-PTF Interfaces**

The process flow diagram illustrates the steps through which ATC is calculated both on an operating and planning horizon.



#### 7. Posting of Schedule 21-UES ATC

#### 7.1 Location of ATC Posting.

When necessary, UES will estimate ATC values for these internal paths as outlined above and post on its website, <a href="http://www.unitil.net/nepool/nh/pdf/atc\_cbm\_ttc\_trm\_ues.pdf">http://www.unitil.net/nepool/nh/pdf/atc\_cbm\_ttc\_trm\_ues.pdf</a>.

#### 7.2 Updates To ATC

When any of the variables in the ATC equations change, the ATC values are recalculated and immediately posted.

#### 7.3 Coordination of ATC Calculations

Schedule 21-UES non-PTF has no external interfaces. Therefore it is not necessary to coordinate the values.

#### 7.4 Mathematical Algorithms

A link to the actual mathematical algorithm for the calculation of ATC for UES' non-PTF internal interfaces is located at <a href="http://www.unitil.com/sites/default/files/pdfs/ues\_atc\_algorithms\_3\_11.pdf">http://www.unitil.com/sites/default/files/pdfs/ues\_atc\_algorithms\_3\_11.pdf</a>.

#### ATTACHMENT D

#### Methodology for Completing a System Impact Study

UES will perform System Impact Studies for the purpose of determining the feasibility of integrating Network Load and Network Resources into UES's Local Network under Schedule 21 of the OATT, or for the purpose of determining the feasibility of providing Local Point-To-Point Service under this Tariff. All System Impact Studies will be completed using the same method employed by UES to integrate into UES's Local Network (i) generation resources owned or acquired to serve its Native Load Customers, and (ii) its Native Load Customers' load. Specifically, System Impact Studies will be performed by applying the applicable criteria, rules, standards and operating procedures. In addition to applying the aforementioned applicable criteria, rules, standards and operating procedures , to determine the feasibility of providing service to Network Load and/or Local Point-To-Point Service, System Impact Studies will also be performed by applying Unitil Service Corp.'s "Electric System Planning Guide."

#### ATTACHMENT E

#### **Index Of Local Point-To-Point Service Customers**

Date of Service Agreement

#### ATTACHMENT I

#### **Index Of Local Network Service Customers**

Date of

<u>Customer</u> <u>Service Agreement</u>

Unitil Energy Systems, Inc. December 1, 2002

## Attachment L Creditworthiness Policy

#### 1. Introduction

This guide establishes creditworthiness standards for transmission service and/or interconnection service customers ("Customers") entering into new or amended service agreements with Unitil Energy Systems, Inc. ("UES") under the ISO New England Open Access Transmission Tariff ("ISO-NE OATT").<sup>5</sup> In accordance with the Federal Energy Regulatory Commission's Policy Statement on Credit-Related Issues for Electric OATT Transmission Providers, Independent System Operators and Regional Transmission Organizations ("Policy Statement"), this Creditworthiness Policy is intended to make UES's credit-related practices more transparent and comprehensive. The following describes UES credit review procedures and the types of security that are acceptable to UES to protect against the risk of non-payment.

#### 2. Creditworthiness

UES will evaluate the creditworthiness of Customers entering into new or amended transmission or interconnection service agreements with UES in order to assess a Customer's credit risk relative to the exposure of "Total Outstanding Obligation" as defined in Section 2.1 below, created by the transaction or transactions that UES has with the Customer. For purposes of determining the ability of a Customer to meet its obligations, UES may require the Customer to submit financial information for the credit review, including credit ratings, credit reports and audited financial statements for the last five years, including audited quarterly reports for the prior two years, if available. Further, the Customer will be expected to provide calculations of the following: Current Total Capitalization Ratio, Including Short-Term Debt; Tangible Net Worth for a period within sixty days of a Customer's request; Earnings Before Interest, Taxes, Depreciation and Amortization for twelve of the last fifteen consecutive months; and additional calculations and other information deemed necessary for the evaluation credit. In completing its evaluation, UES may consider other factors including but not limited to past billing history or the characteristics of service being requested.

<sup>5</sup> See ISO New England Inc., ISO New England Inc. Transmission, Markets and Services Tariff, Section II. This policy is applicable to transmission or interconnection service agreements established from time-to-time under Schedules 21 - UES of the ISO-NE OATT and to individually negotiated agreements for similar transmission or interconnection services.

#### 2.1 Total Outstanding Obligation

The Customer's Total Outstanding Obligation to UES will be the sum total of the following components:

- 2.1.1 If the Customer is making payments to UES for ongoing expenses (including, but not limited to, O&M expenses related to interconnections or other monthly charges such as monthly transmission charges under Schedule 21 UES) the Customer will be required to provide security pursuant to Section 2.2 below, for four months' worth of the Customer's average payment obligation for such charges.
- 2.1.2 In accordance with the provisions of the ISO-NE OATT, a Customer will pay a Contribution in Aid of Construction ("CIAC") or transfer ownership of facilities to UES for transmission or interconnection facilities that are to be constructed on behalf of a Customer at the Customer's sole expense. If UES determines in good faith that the receipt of CIAC payments or property from the Customer are non-taxable, UES will require a form of security from the customer pursuant to Section 2.2 below for the amount of the potential tax liability to UES that would occur if such facilities were deemed taxable.
- 2.1.3 In accordance with the provisions of Schedule 21 UES to the ISO-NE OATT, a Customer will pay a formula rate over time for return of and on the cost of capital incurred by UES on behalf of a Customer at the Customer's sole expense. The Customer will also be required to provide security pursuant to Section 2.2 below, for the unamortized balance of plant in service reserved for the sole use of the Customer.

#### 2.2 Creditworthiness Requirements

A Customer will be considered creditworthy upon satisfying at least one of the following conditions or a combination of those conditions at the time that the customer enters into a transmission or interconnection service agreement and for so long as the Customer maintains satisfaction of at least one of these conditions for any outstanding obligations thereunder:

2.2.1 The Customer maintains a minimum credit rating from Standard & Poor's Long-term Issuer Credit Rating of BBB- or better or Moody's Investors Service Long-term Issuer Credit

Rating of Baa3 or better so long as the Customer's Total Outstanding Obligation plus any other unsecured obligations with UES does not exceed the Credit Limits discussed in Section 4 below. When UES reviews a Customer's rating from two or more rating agencies and a split rating is present, the lower debt rating will apply. In the event that the Customer has no rating from either Standard & Poor's or Moody's Investors Service, a rating from Fitch may also be used with acceptable ratings equivalent to those from either Standard and Poor's or Moody's Investors Service. If unrated, the Customer's financial statements will be reviewed to determine an equivalent rating based on the Customer's unsecured credit limits and/or financial statements.

If, at any time, the Customer's rating falls below investment grade (BBB- from Standard and Poor's and/or Baa3 from Moody's or equivalent ratings from Fitch), the Customer will be required to (i) notify UES within 10 days and, (ii) within 30 days, provide another form of security reasonably acceptable to UES, as described in this Section 2.2.

2.2.2 The Customer provides and maintains in effect during the term of and until full and final payment and performance of the service agreement an unconditional and irrevocable standby letter of credit for the Total Outstanding Obligation in the form and substance and issued by a bank reasonably acceptable to UES. A draft, acceptable form letter of credit is attached. Any such bank must satisfy the creditworthiness criteria described in 2.2.1 above.

If, at any time, the bank's rating falls below investment grade (BBB- from Standard and Poor's and/or Baa3 from Moody's or equivalent ratings from Fitch), the Customer will be required to (i) notify UES within 10 days and, (ii) within 30 days, provide another form of security reasonably acceptable to UES, as described in this Section 2.2.

2.2.3 If the Customer's parent or an affiliate company satisfies the creditworthiness criteria described in 2.2.1 above and, subject to the Credit Limits stated in Section 4 below, such company submits to UES and maintains in effect a letter of guaranty reasonably acceptable to UES as to amount, form and substance for the term of and until full and final payment and performance of the service agreement.

If, at any time, the credit rating of the Customer's parent or affiliate providing the guaranty falls

below investment grade (BBB- from Standard and Poor's and/or Baa3 from Moody's or equivalent ratings from Fitch), the Customer will be required to (i) notify UES within 10 days and, (ii) within 30 days, provide another form of security reasonably acceptable to UES, as described in this Section 2.

2.2.4 The Customer makes an advance payment to UES in immediately available funds for the Total Outstanding Obligation.

#### 3. Customer Costs Requiring Prepayment

In accordance with the provisions of the ISO-NE OATT, a Customer will pay a Contribution in Aid of Construction ("CIAC") for transmission or interconnection facilities to be constructed by UES on behalf of a Customer at the Customer's sole expense. The Customer will have the option to (i) prepay the CIAC in immediately available funds to UES, or (ii) make periodic CIAC progress payments, as defined in the Customer's service agreement, to prepay in increments capital costs scheduled to be incurred by UES. If UES determines in good faith that such payments or property transfers made by the Customer should be reported as income subject to taxation, the Customer shall also prepay all costs associated with the cost consequences of the current tax liability imposed on UES by those facilities (the "Tax Gross- up").

#### 4. Determination of Credit Limits

UES reserves the right to limit the total amount of unsecured credit extended to a Customer under 2.2.1 and 2.2.3 above such that the sum of all unsecured credit that such Customer has with UES, including the Total Outstanding Obligation, shall not exceed the Credit Limits defined below. Such limitations are based on an assessment of the Customer's or its Guarantor's credit rating and the net worth of the Customer's or its Guarantor's assets.

Standard and Poor's (or Equivalent) Rating	Unsecured Credit Limit as Percent of Customer's or Guarantor's Tangible Net Worth
A and above	1.00%
A-	0.50%
BBB+	0.30%
BBB	0.20%
BBB-	0.10%

Once UES has evaluated or reevaluated and determined the maximum Credit limits for each Customer, it will inform the prospective Customer of the amount of such credit limits. A customer may request in writing a reevaluation of the maximum Credit limits, within 14 days from the date that they were informed by UES of such limits. Justification for such a reevaluation should be contained in the request. All requests for reevaluation must be submitted directly to the UES Contract Administrator.

From time to time, principally due to unknown factors such as changing market, economic, banking or other financial conditions, but not solely limited to these factors, UES may find it necessary to modify or amend its creditworthiness policies and guidelines after a 15 day notice period and require that present and future Transmission Customers fulfill any additional conditions contained in the modified Creditworthiness Guide. Transmission Customers will have 30 days after the notice period to cure any deficiency.

#### FORM LETTER OF CREDIT

				Bank
	(address)			
	IRREVOC	CABLE STA	ANDBY LETTER OF C	REDIT
DATE:				
AMOUNT U.S. \$		_		
		NAL IDEN	ΓΙFICATION PURPOS	ES ONLY
Our Number:				
Beneficiary:			Applicant:	
		-		
		-		
		-		
		_		
Attn: At the request of	of:			
D - C.				

#### LADIES AND GENTLEMEN:

WE HEREBY ESTABLISH THIS IRREVOCABLE, AND UNCONDITIONAL, EXCEPT AS STATED
HEREIN, LETTER OF CREDIT NUMBER (LETTER OF CREDIT), BY ORDER OF,
FOR THE ACCOUNT OF, AND ON BEHALF OF [CUSTOMER NAME] (ACCOUNT PARTY) IN
FAVOR OF UNITIL ENERGY SYSTEMS, INC. (BENEFICIARY) FOR DRAWINGS, IN ONE OF
MORE DRAFTS, UP TO AN AGGREGATE AMOUNT NOT EXCEEDING U.S. \$
EFFECTIVE IMMEDIATELY. THE TERM 'BENEFICIARY' INCLUDES ANY SUCCESSOR OF
THE NAMED BENEFICIARY.
THIS LETTER OF CREDIT CANNOT BE AMENDED, MODIFIED OR REVOKED WITHOUT THE
PRIOR WRITTEN CONSENT OF BOTH THE BANK AND THE BENEFICIARY. THE
BENEFICIARY SHALL NOT BE DEEMED TO HAVE WAIVED ANY RIGHTS UNDER THIS
LETTER OF CREDIT, UNLESS AN OFFICER OF THE BENEFICIARY SHALL HAVE SIGNED A
WRITTEN WAIVER EXPRESSLY REFERENCING THE RIGHT TO BE WAIVED. NO SUCH
WAIVER SHALL BE EFFECTIVE AS TO ANY TRANSACTION THAT OCCURS SUBSEQUENT
TO THE DATE OF THE WAIVER, NOT AS TO ANY CONTINUANCE OF A BREACH AFTER THE
WAIVER.
WE HEREBY UNDERTAKE TO PROMPTLY HONOR YOUR DRAFT(S) DRAWN ON US,
INDICATING OUR LETTER OF CREDIT NUMBER IS ISSUED, PRESENTABLE
AND PAYABLE AND WE GUARANTY TO THE DRAWERS, ENDORSERS, AND BONA FIDE
HOLDERS OF THIS LETTER OF CREDIT, THAT DRAFTS UNDER AND IN COMPLIANCE WITH
THE TERMS OF THIS LETTER OF CREDIT WILL BE HONORED. THIS LETTER OF CREDIT
MAY NOT BE TRANSFERRED OR ASSIGNED BY US.
SUBJECT TO THE EXPRESS TERMS AND CONDITIONS HEREIN, FUNDS UNDER THIS
LETTER OF CREDIT ARE AVAILABLE TO YOU BY PRESENTATION AT OUR OFFICES
LOCATED AT [] OF BENEFICIARY'S DRAWING CERTIFICATE ISSUED
SUBSTANTIALLY IN THE FORM OF ANNEX 1 ATTACHED HERETO AND WHICH FORMS AN
INTEGRAL PART HEREOF, DULY COMPLETED AND PURPORTEDLY BEARING THE
ORIGINAL SIGNATURE OF AN OFFICER OF THE BENEFICIARY. PRRESENTATION OF ANY

DRAWING CERTIFICATE UNDER THIS LETTER OF CRI	EDIT MAY BE MADE IN PERSON TO
US OR MAY BE SENT TO US BY TELEX TO [	] OR BY FACSIMILE
TRANSMISSION TO FACSIMILE TELEPHONE NUMBER	R [].

ALL COMMISSIONS AND CHARGES WILL BE BORNE BY THE ACCOUNT PARTY. IF DOCUMENTS, IN COMPLIANCE WITH THE TERMS OF THIS LETTER OF CREDIT, ARE RECEIVED BEFORE 10:00 AM (EASTERN TIME) ON A BUSINESS DAY, PAYMENT WILL BE EFFECTED ON OR BEFORE 5:00 PM (EASTERN TIME) ON THE NEXT BUSINESS DAY. IF DOCUMENTS, IN COMPLIANCE WITH THE TERMS OF THIS LETTER OF CREDIT ARE RECEIVED AFTER 10:00 AM ON A BUSINESS DAY, PAYMENT WILL BE EFFECTED ON OR BEFORE 5:00 PM ON THE SECOND BUSINESS DAY FOLLOWING SUCH DATE OF RECEIPT.

EXCEPT AS EXPRESSLY STATED HEREIN, THIS UNDERTAKING IS NOT SUBJECT TO ANY AGREEMENT, CONDITION OR QUALIFICATION. THIS LETTER OF CREDIT DOES NOT INCORPORATE, AND SHALL NOT BE DEEMED MODIFIED OR AMENDED BY REFERENCE TO ANY DOCUMENT, INSTRUMENT OR AGREEMENT (A) THAT IS REFERRED TO HEREIN (EXCEPT FOR THE UNIFORM CUSTOMS, AS DEFINED BELOW), OR (B) IN WHICH THIS LETTER OF CREDIT IS REFERRED TO OR TO WHICH THIS LETTER OF CREDIT RELATES.

OUR OBLIGATION UNDER THIS LETTER OF CREDIT SHALL BE OUR INDIVIDUAL OBLIGATION AND IS IN NO WAY CONTINGENT UPON THE REIMBURSEMENT WITH RESPECT THERETO, OR UPON OUR ABILITY TO PERFECT ANY LIEN, SECURITY INTEREST OR ANY OTHER REIMBURSEMENT.

THIS LETTER OF CREDIT EXPIRES WITH OUR CLOSE OF BUSINESS ON [364 days from effective date]; HOWEVER, IT IS A CONDITION OF THIS LETTER OF CREDIT THAT IT SHALL BE DEEMED AUTOMATICALLY EXTENDED WITHOUT AMENDMENT FOR 364 DAYS FROM THE PRESENT OR ANY FUTURE EXPIRATION DATE HEREOF, UNLESS AT LEAST SIXTY (60) DAYS BEFORE ANY SUCH EXPIRATION DATE WE NOTIFY YOU BY REGISTERED MAIL ADDRESSED TO: [address of beneficiary, ATTN: \_\_\_\_\_\_], THAT WE ELECT NOT TO RENEW THIS LETTER FOR SUCH ADDITIONAL PERIOD.

THIS LETTER OF CREDIT IS SUBJECT TO THE UNIFORM CUSTOMS AND PRACTICE FOR DOCUMENTARY CREDITS (1993 REVISION) INTERNATIONAL CHAMBER OF COMMERCE, PUBLICATION NO. 500. IF THIS LETTER OF CREDIT EXPIRES DURING THE INTERRUPTION OF BUSINESS AS DESCRIBED IN ARTICLE 17 THEREOF WE HEREBY SPECIFICALLY AGREE TO EFFECT PAYMENT IF THE LETTER OF CREDIT IS DRAWN AGAINST WITHIN 30 DAYS AFTER THE RESUMPTION OF BUSINESS.

## ANNEX 1 TO [BANKNAME] IRREVOCABLE LETTER OF CREDIT NO. \_\_\_\_\_

[INSERT DATE]
[BANK NAME]
[ATTENTION]
[BANK ADDRESS 1]
[BANK ADDRESS 2]
LADIES AND GENTLEMEN:
THE UNDERSIGNED, A DULY ELECTED AND ACTIN
OFFICER OF UNITIL ENERGY SYSTEMS, INC. (THE "BENEFICIARY"), HEREBY CERTIFIES
TO [INSERT BANK NAME] (THE "BANK"), WITH REFERENCE TO IRREVOCABLE LETTER O
CREDIT NO DATED, ISSUED BY THE BANK IN FAVOR OF
THE BENEFICIARY (THE "LETTER OF CREDIT"), AS FOLLOWS AS OF THE DATE THEREOF:
1. THE BENEFICIARY IS A PARTY TO THAT CERTAIN [INTERCONNECTION
AGREEMENT], EFFECTIVE, BETWEEN THE BENEFICIARY AND
[CUSTOMER NAME] (THE "AGREEMENT").
2. BENEFICIARY IS MAKING A DRAWING UNDER THE LETTER OF CREDIT IN THE
AMOUNT OF \$ BECAUSE [CHECK APPLICABLE PROVISION]:
[] (A) THERE CURRENTLY EXIST ONE OR MORE UNPAID AMOUNTS WHICH
[CUSTOMER NAME] IS OBLIGATED TO PAY PURSUANT TO THE TERMS OF THE
AGREEMENT.
[] (B) THE BENEFICIARY HAS RECEIVED NOTICE FROM THE BANK OF ITS INTENTIO
NOT TO RENEW THE LETTER OF CREDIT BEYOND THE CURRENT EXPIRATION DATE AND
[CUSTOMER NAME] HAS FAILED, PRIOR TO THE CLOSE OF BUSINESS ON
[INSERT DATE WHICH IS NOT MORE THAN THIRTY (30) DAYS BEFORE
THE PRESENT EXPIRATION DATE], TO DELIVER TO BENEFICIARY A REPLACEMENT

LETTER OF CREDIT SATISFYING THE REQUIREMENTS OF THE AGREEMENT. 3. BASED UPON THE FOREGOING, THE BENEFICIARY HEREBY MAKES DEMAND UNDER THE LETTER OF CREDIT FOR PAYMENT OF U.S. DOLLARS \_\_\_\_\_ AND \_\_\_\_\_/100THS (U.S. \$\_\_\_\_\_\_). 4. FUNDS PAID PURSUANT TO THE PROVISIONS OF THE LETTER OF CREDIT SHALL BE WIRE TRANSFERRED TO THE BENEFICIARY IN ACCORDANCE WITH THE FOLLOWING **INSTRUCTIONS:** UNLESS OTHERWISE PROVIDED HEREIN, CAPITALIZED TERMS WHICH ARE USED AND NOT DEFINED HEREIN SHALL HAVE THE MEANING GIVEN EACH SUCH TERM IN THE LETTER OF CREDIT. IN WITNESS WHEREOF, THIS CERTIFICATE HAS BEEN DULY EXECUTED AND DELIVERED ON BEHALF OF THE BENEFICIARY BY ITS DULY ELECTED AND ACTING OFFICER AS OF THIS \_\_\_\_\_, DAY OF \_\_\_\_\_, \_\_\_\_. BENEFICIARY: UNITIL ENERGY SYSTEMS, INC.

NAME:

TITLE: