Program Description

The objective of the Direct Load Control Program (DLCP) is to achieve load reduction during NY ISO called emergencies resulting in peak demand reduction at times of electric capacity shortfall. Reduction in system peak demand is achieved by the direct remote control of selected load by Con Edison without prior notice to the customer.

We are installing a thermostat product that uses two-way communication. The thermostat is a 7-day programmable thermostat connected to a controller module with integrated 2-way wireless communication hardware. This product allows energy providers to control central air-conditioners during peak demand periods to reduce energy usage. The product also allows for either compressor cycling or temperature set-point adjustment control strategies. Additionally, the product will provide compressor duty cycling and temperature data for precise impact measurement.

Participation in this program is voluntary.

Implementation Plan

The DLCP implementation team has been assembled to include a project management team, product provider, installation and data contractors.   Applied Energy Group, Inc. will provide full turnkey project management for the installation of 10,000 direct load control devices in Con Edison's continuous service territory. Their experience with turnkey project management services for neighboring utilities has facilitated the successful installation of over 4,000 direct load control devices on Long Island. They will handle all aspects of the implementation plan – customer intake, installation scheduling, event scheduling, reporting, load reduction calculations. Additionally, they will assist with program design and planning.

Evaluation results of the pilot program conducted during the summer 2001 capability period indicated a high level of customer satisfaction with the two-way programmable thermostat with Internet connectivity. Currently, the only manufacturer that supplies a two-way communicating programmable thermostat is the Carrier Corporation. The newest version of the Carrier product will provide critical run time data. We will be able to calculate load reduction with greater accuracy without the added cost of installing advanced metering. Carrier will supply 10,000 programmable thermostats with two-way communication for this project.

Silicon Energy is the sole provider of the inter-active software for the Carrier thermostat. They designed and developed the residential module for the Carrier product to provide two-way communication for control of central air-conditioning loads, data storage and retrieval of run-time data from the thermostat.

Honeywell-DMC has been selected to install the Carrier thermostat based on their experience with this product and their ability to supply a significantly trained technical work force for installation. Honeywell-DMC has installed over 5,000 of these devices for other local utilities and will bring the required technical expertise to meet the aggressive installation schedule for the summer 2002 capability period.

Each team member has experience in the successful installation of a large number of these devices.

Marketing Strategy

Preliminary estimates indicate the number of central air-conditioning (cac) units in Con Edison's service territory to be approximately 250,000. Research data supplied by our advertising group, Mezzina Brown, indicates a strong concentration of cac in Westchester, Staten Island and North Queens.

We will target these areas with the placement of ads in local newspapers, supplemental inserts, direct mail and telemarketing efforts. Con Edison supports a number of NYSERDA programs, in particular the Keep Cool Bounty Program, using our extensive Customer Outreach and Education efforts with much success. We will utilize these same communication channels – Customer News, Con Edison Internet sites and Energy Hot-Line - for the DLC Program.

Monitoring & Verification

The Silicon Energy EMM suite is the web-based platform for the interface with the Carrier product. The Carrier product provides real time confirmation that a thermostat received a control signal. The product offers a wide variety of options, including giving the customer the ability to override the signal or in extreme cases, giving the utility the ability to disallow an override. EMM enables the utility to download compressor duty cycles and room temperature data for a designated 7-day period stored in the thermostat for precise impact measurement. The software is also used to schedule curtailment events.

Different control strategies can be employed for load control. The Carrier product allows for duty cycling or temperature control. The duty cycle and

temperature data, when downloaded for analysis, will provide more precise measurement for load reduction.

Calculating these reductions is done by analyzing the duty cycle data for all participants, removing free riders (no cac at time of event) by percentage as an adjustment to gross kW reduction, determine the average controlled duty cycle during curtailment and a similar uncontrolled period (baseline).

EMM provides a reporting mechanism to capture this data, along with detailed event information.