CH&P Demonstration at the Con Edison Learning Center (TLC)

Project Status Report

NYSERDA CHP In NYS
Session 8 - Small Commercial

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CH&P Demo at the Con Edison TLC
Project Status Report

Presentation Outline

- Background –
  1. The Learning Center
  2. Installation Reason
- Preliminary Steps
- Permitting Process
- Current Status & Plans
- Recommendations

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Background – Con Edison selected the TLC as a demo site to:

1. Reduce overall energy costs
2. Improve reliability
3. Backup power
4. Combination of 1-3

Assessment of the reasons behind the purchase of a CH&P unit will impact its placement which is a key element in the installation process.

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CH&P Learning Center Installation

Con Edison's Learning Center, located in Queens just across the East River from midtown Manhattan, offers a state-of-the-art training and conference center:

1. Commercial Office Building
2. Three Stories Tall – Approximately 185,000 sq. ft.
3. Between 700 – 1,000 Employees on a Daily Basis
4. Operates on a 6AM – 5PM Basis
5. Peak Load of Between 1.2 – 1.5 MW

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CH&P Learning Center Installation

1. Con Edison is currently participating in several microturbine demonstration projects to assess their applicability to reduce network constraints and provide customers with energy savingalternatives.

2. Expected annual savings from single microturbine about

$ 35,000

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IR PowerWorks™ 70 kW Rated Unit Selected

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Preliminary Steps – Unit Location Considerations

1. Noise
2. Vibration
3. Interconnection
   - Electric
   - Gas
4. Unit Access
5. Structural
6. Venting
7. Monitoring

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Unit at the Learning Center originally selected for placement on the loading platform (Bay Area).

-Easy Unit Access
-Isolated from Work Space
-Next to Kitchen
-Access to Exhaust Vent, Gas, and Electric Panel
-No Structural Issues

Current Status – Single unit uncrated and already in-place, under review for two additional units and possible roof placement.

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Operation Plans:

-CHP unit to provide base load power based on 24/7 operations
-Backup/Emergency power provided by 50 kW diesel
-Strictly emergency/safety loads
-CHP unit to displace approximately 70 kW of general load (TBD)
-Waste heat to provide domestic hot water related to kitchen load

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Building & Utility Permitting Process

- Building & Utility Application Requirements
- Electrical Drawings (Raised Seal)
- Mechanical Drawings (Raised Seal)
- Architectural Drawings (Structural Issues)
- Exhaust Requirements (Environmental Permit Based on Size)

Note: Consider the use of an Expeditor

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Consolidated Edison Learning Center CH&P Unit

Current Status:

1. Unit delivered to loading dock area, uncrated and in place for initial installation plans
2. Preliminary engineering drawings completed

Remaining Tasks:

1. Complete evaluation of additional units and roof placement
2. Finalize engineering drawings based on evaluation
3. Finalize permit applications and submit
4. Once approved complete installation (rigging?, gas, electrical, venting)
5. Monitoring plan
6. Commissioning

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Con Edison has expanded the NYSERDA CH&P Demo project to include additional CH&P units. The current engineering study will include the TLC roof as an alternative site.

Key Issues for Roof Installation–

- ***Structural Integrity***
- ***Interconnection issues both gas and electric***
- ***Vibration***

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Building & Utility Permitting Process – Learning Center

Current Status – Preliminary engineering drawings completed. Must complete the evaluation of additional units and roof placement. Based on single 70 kW unit no environmental permit required. If three units undertaken environmental permit required.

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Recommendations

- Consider the reasons behind installation carefully
- Based on unit selected carefully review economics (Check Utility Tariff!)
- Tariffs vary across utility and drastically impact economics if contract demand charges are required
- For example, if unit is less than 15% of peak demand SC 14 Stand By Service not in effect for Con Edison Customers.
- Retain consultant to assist in placement, permitting,installation, and initial monitoring

CH&P represents an important and key technology to assist both utilities and customers in NYS.