

APPENDIX L

Load Profiling Examples

Standard Load Profiles (SLP) will be used for non-interval metered customers (residential and secondary) to determine their hourly usage for hourly settlement purposes with MISO. Non-interval metered customers are assigned to one of twelve secondary standard load profiles based on customer type and usage characteristics. Unlike secondary customers, all primary served customers require interval meters which already provide hourly interval data used for hourly settlement purposes with MISO. The SLP type for a primary meter is designated as SLP 13.

Profiling distributes each customer's total monthly energy usage as measured by that customer's kilowatt-hour meter on an hour by hour basis. Once created the derived profiles can be combined with readings obtained from interval meters served by the same supplier to determine the hourly load to be submitted to MSIO to determine the Commercial Pricing (CP) node load.

The twelve standard secondary load profiles are described below.

Customer Class	Profiles	Profile No.	Description
Residential (D1)	One	1	All Residential Customers (Current Residential Profile)
Secondary - Energy Metered (D3) – Single Phase	One	2	Single Phase non-Residential Customers on energy metered rates (D3); (Current Single Phase Profile)
Secondary – Energy Metered (D3) – Three Phase	Two Manufacturing	3	0 -256,255 kWh/yr
		4	Over 256,255 kWh/yr
Secondary – Energy Metered (D3) – Three Phase	Four Non-Manufacturing (Note: Missing/invalid SIC Code data will be group as Non-Mfg)	5	0 – 46,523 kWh/yr
		6	46,524 – 114,615 kWh/yr
		7	114,616 – 277,400 kWh/yr
		8	Over 277,400 kWh/yr
Secondary – Energy Demand Metered (D4) – Three Phase	Four by Annual Load Factor	9	40 – 49% Annual Load Factor
		10	50 – 59% Annual Load Factor
		11	60 – 69% Annual Load Factor
		12	70% or Greater Annual Load Factor

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The twelve standard secondary load profiles, supplied by the Load Research Group each with 18 months worth of data, can be accessed in the information center at

<http://www.suppliers.detroitedison.com/internet/infocenter/infocenter.jsp> or use the links below.

- **1 All residential customers** - (CSV - 220 KB)
- **2 Single-phase non-residential (D3)** - (CSV - 220 KB)
- **3 (D3)Three-phase manufacturing Low segment** - (CSV - 220 KB)
[0 – 256,255 kWh/yr]
- **4 (D3)Three-phase manufacturing High segment** - (CSV - 220 KB)
[Over 256,255 kWh/yr]
- **5 (D3)Three-phase non-manufacturing Low segment** - (CSV - 220 KB)
[0 – 46,523 kWh/yr]
- **6 (D3)Three-phase non-manufacturing Medium-Low segment** - (CSV - 220 KB)
[46,524 – 114,615 kWh/yr]
- **7 (D3)Three-phase non-manufacturing Medium-High segment** - (CSV - 220 KB)
[114,616 – 277,400 kWh/yr]
- **8 (D3)Three-phase non-manufacturing High segment** - (CSV - 220 KB)
[Over 277,400 kWh/yr]
- **9 Demand metered(D4)annual load factor 40 - 49 percent** - (CSV - 220 KB)
[40 – 49% Annual Load Factor]
- **10 Demand metered(D4)annual load factor 50 - 59 percent** - (CSV - 220 KB)
[50 – 59% Annual Load Factor]
- **11 Demand metered(D4)annual load factor 60 - 69 percent** - (CSV - 220 KB)
[60 – 69% Annual Load Factor]
- **12 Demand metered(D4)annual load factor 70 percent or greater** - (CSV - 220 KB)
[70% or Greater Annual Load Factor]

For a more detailed discussion of load profiling, together with a description of how profiling (proxy) curves are obtained and applied, refer to Chapter 6.5 of the Supplier Handbook.

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Example

D3 Three Phase Manufacturing Low Segment Customer

A customer's specific energy usage can be profiled by using the following steps:

- 1) Identify the appropriate standard load profile the customer belongs to.
- 2) Obtain the monthly kWh usage from the kilowatt-hour meter for the chosen customer. For example, assume a D3 non-manufacturing customer's meter consumption of 50,000 kWh for the period of January 7, 2009 to February 5, 2009.
- 3) Using standard load profile 3 from above (**D3)Three-phase manufacturing Low segment**) add the hourly standard load profile values starting at 01:00 hours on January 7, 2009, through the values shown for 24:00 hours on February 5, 2009; the sum equals 40,206.45 kWhrs). This is the sum of the standard load profile values for the month of January 2009.
- 4) Next, take the monthly consumption value (50,000 kWh) and divide it by the sum of the hourly standard load profile values. This will be the Scaling Factor that will then be applied to each of the 720 proxy hours from January 7, 2009 to February 5, 2009.

Date	Hour	Hourly Standard Load Profile Value (from Curve 3)	Scaled Proxy Value = (Scaling Factor x Hourly Standard Load Profile Value)
1/7/2009	1	34.24 kWh	42.58023 kWh
1/7/2009	2	32.73 kWh	40.70242 kWh
1/7/2009	3	31.66 kWh	39.37179 kWh
1/7/2009	4	30.53 kWh	37.96655 kWh
1/7/2009	5	31.89 kWh	39.65782 kWh
⋮			
2/5/2009	24	39.41 kWh	49.00955 kWh
Totals		40,206.45 kWh	50,000 kWh

So, the Scaling Factor = $50,000 \text{ kWh} / 40,206.45 \text{ kWh} = 1.24358$

The Scaled Proxy Value for 1/7/09, hour 1 = $1.24358 \times 34.24 \text{ kWh} = 42.58023 \text{ kWh}$

The Scaled Proxy Value for 1/7/09, hour 2 = $1.24358 \times 32.73 \text{ kWh} = 40.70242 \text{ kWh}$

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- 5) This process is then repeated until all 720 Scaled Proxy Values are calculated. This will create a profile for the specific customer. The profile will consist of hourly kilowatt values when added together for the given period will equal the metered energy consumed for the same period, in this case 50,000 kWh.