

**Niagara Mohawk Power Corp**

**High Efficiency Motors, Adjustable Speed Drives**

NMPC's High Efficiency Motors and Adjustable Speed Drives program offers rebates to commercial and industrial customers to promote the installation of high efficiency motors and adjustable speed drives in the short term and ultimately transform the market for these devices. While all commercial and industrial customers are eligible for the program, NMPC has concentrated its efforts on large industrial customers with long hours of operation and/or varying motor loads.

Recommendations to potential program participants are often made through NMPC's Energy Audits program. If the Energy Audit identifies opportunities to install or replace motors and adjustable speed drives, the NMPC representative helps with identifying retrofit opportunities and locating the appropriate equipment vendors. The NMPC representative also assists with development of a sales proposal to facilitate the decision to install high efficiency motors or adjustable speed drives.

One of the most important lessons learned by NMPC is that participation levels can be stimulated by changing rebate amounts. In 1992 NMPC increased the rebate levels for the program substantially over their 1991 levels, especially for motors in the 10 to 150 horsepower (hp) range. For example, the rebate in 1991 for a 125 hp motor with a minimum nominal efficiency of 95% was \$457. In 1992 the rebate amount for the same motor was \$1,200. The increased rebate levels were highly successful in enhancing participation rates, so much so that NMPC decreased the 1993 rebate schedule which went into effect in September of 1992. Rebate applications pre-approved prior to that date and installed before the end of the year were eligible for the higher rebate levels, and many customers took advantage of the situation. As a result, energy savings accrued during the last two months of 1992 represent nearly half of all the net savings the program achieved over the two years it has been offered.

The High-Efficiency Motors and Adjustable Speed Drives program has achieved total annual savings of 76.0 GWh and lifecycle savings of 1,140.7 GWh in the two years 1991 and 1992. Total summer coincident peak demand reductions have been 1.4 MW and total winter coincident peak demand reductions have been 1.5 MW for the period 1991 to 1992. To achieve these savings levels, NMPC spent a total of \$5.34 million on the program.

To NMPC's credit, the High Efficiency Motors and Adjustable Speed Drives Program has been remarkably cost effective. The Results Center calculates that the cost of saved energy, based on a measure lifetime of 15 years, decreased between the first and second years of the program, from 1.05¢/kWh in 1991 to 0.68¢/kWh in 1992 at a 5% real discount rate.

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| <b>NIAGARA MOHAWK POWER CORP</b><br><i>High Efficiency Motors, Adjustable Speed Drives</i> |   |
| <b>Sector:</b>   | <i>Commercial and Industrial</i>                          |
| <b>Measures:</b>   | <i>High-efficiency motors and adjustable speed drives</i> |
| <b>Mechanism:</b>  | <i>Rebates for qualifying purchases</i>                   |
| <b>History:</b>  | <i>Started in 1991, over 800 rebates paid.</i>            |
| <b>1992 Program Data</b>   |   |
| <i>Energy savings:</i>   | <i>67.6 GWh</i>   |
| <i>Lifecycle energy savings:</i>   | <i>1,014.0 GWh</i>  |
| <i>Peak capacity savings:</i>  | <i>1.1 MW summer</i>                                      |
|  | <i>1.0 MW winter</i>                                      |
| <i>Cost:</i>   | <i>\$4,482,000</i>  |
| <b>Cumulative Data (1991 - 1992)</b>   |   |
| <i>Energy savings:</i>   | <i>84.5 GWh</i>   |
| <i>Lifecycle energy savings:</i>   | <i>1,140.7 GWh</i>  |
| <i>Peak Capacity Savings:</i>  | <i>1.4 MW summer</i>                                      |
|  | <i>1.5 MW winter</i>                                      |
| <i>Cost:</i>   | <i>\$5,339,800</i>  |

The Results Center produced 126 profiles of the most successful energy efficiency and renewable energy programs in the United States and around the world in the early and mid 1990s. With the support of the John D. and Catherine T. MacArthur Foundation, Ted Flanigan directed a research team at Colorado-based IRT Environment to produce and distribute these exceptional examples. Thanks to strong demand for solid case studies, The Results Center was supported by dozens of major utilities and energy associations worldwide. Today, The Results Center is managed again by Ted Flanigan, now at California-based EcoMotion Incorporated, a firm focused on strategic consulting, information dissemination, program design, outreach services, and aggressive implementation. To nominate highly successful programs, contact: The Results Center, c/o EcoMotion, 15375 Barranca Parkway, F-104, Irvine, CA 92618, (949) 450-7155, or [TFlanigan@EcoMotion.us](mailto:TFlanigan@EcoMotion.us)