

## ENERGY USAGE COMPARISON BETWEEN CLEAN AND DIRTY COILS

A study performed by a major HVAC manufacturer illustrates the impact dirty coils have on energy costs. The study compares the operation of a clean coil versus a 'moderately dirty' coil. The comparison between clean and dirty operation shows the benefit of having clean coils.

A season has been defined in this study as 1,000 hours of operation. The energy cost for the dirty coil is based on the number of hours to give the equivalent cooling capacity of the clean coil.

The results of the study appear below. Charts showing the energy and cost savings are on the back.

| Tonnage | KW Hours per Season (Clean) <sup>1</sup> | Total Cost per Season (Clean) <sup>2</sup> | KW Hours per Season (Dirty) <sup>3</sup> | Total Cost per Season (Dirty) <sup>2</sup> | Total Savings Per Season |
|---------|--|--|--|--|--------------------------|
| 3       | 4,100                                    | \$320                                      | 5,700                                    | \$448                                      | <b>\$128</b>             |
| 5       | 5,500                                    | \$470                                      | 8,100                                    | \$687                                      | <b>\$217</b>             |
| 7 1/2   | 7,400                                    | \$650                                      | 11,200                                   | \$964                                      | <b>\$314</b>             |
| 10      | 12,300                                   | \$1,000                                    | 16,800                                   | \$1,394                                    | <b>\$394</b>             |
| 15      | 16,000                                   | \$1,370                                    | 24,400                                   | \$2,092                                    | <b>\$722</b>             |
| 20      | 20,800                                   | \$1,790                                    | 32,400                                   | \$2,794                                    | <b>\$1,004</b>           |
| 25      | 27,000                                   | \$2,290                                    | 40,800                                   | \$3,493                                    | <b>\$1,203</b>           |
| 30      | 30,800                                   | \$2,680                                    | 48,900                                   | \$4,205                                    | <b>\$1,525</b>           |
| 40      | 41,500                                   | \$3,570                                    | 66,400                                   | \$5,716                                    | <b>\$2,146</b>           |
| 50      | 52,100                                   | \$4,470                                    | 82,300                                   | \$7,056                                    | <b>\$2,586</b>           |
| 60      | 63,000                                   | \$5,390                                    | 98,600                                   | \$8,404                                    | <b>\$3,014</b>           |

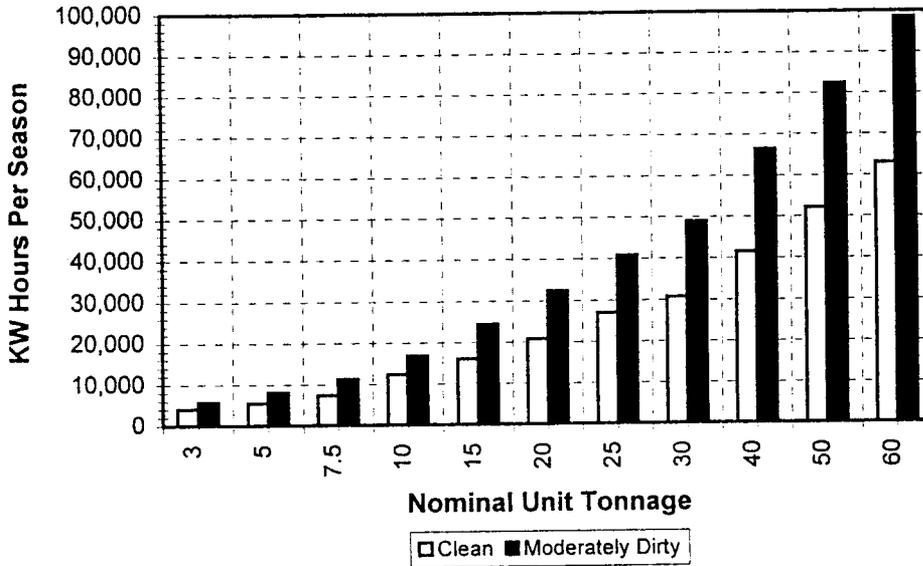
1. Unit operating at 80 °F ambient temperature, 45 °F saturated suction temperature (standard design), F22 refrigerant, 1000 hours of operation (minimal seasonal operation).

2. Based on current Consolidated Edison Service Class 9 rates: \$0.0276/Kwh + \$0.0199/Kwh fuel adjustment charge + \$6.36 per KW demand per month + 14.1% tax.

3. Unit operating at 140 °F - 144 °F saturated condensing temperatures at 45 °F saturated suction temperature (337-354 psi head pressure) to simulate dirty condenser operation multiplied by required hours to give the equivalent cooling to Table 1 figures.

### Electric Usage Comparison

Clean Condenser Coil Vs. Dirty Condenser Coil



### Electric Cost Comparison

Clean Condenser Coil Vs. Dirty Condenser Coil

