



Marriott Hotel-Guam USES System Performance Results – Summation T-2 (3 units)

DM II Pro Data Logger recording graphs Timed Interval Samplings Results: Averaged between 12:30 to 12:50 Aug 25, 2012

| Graph Title | USES System OFF (12:30 to 12:40 PM) | USES System ON (12:40 to 12:50 PM) | Change/ Savings |
|----------------|-------------------------------------|------------------------------------|--------------------|
| Real Power | 130,000 Watts | 115,000 Watts | - 15,000 Watts |
| Apparent Power | 155,000 Volt Amps | 115,000 Volt Amps | - 40,000 Volt Amps |
| Current | 181 Amps | 135 Amps | - 46 Amps |
| Reactive Power | 80,000 VAR | 15,000 VAR | - 65,000 VAR |
| Voltage | 280Volts | 281Volts | + 1 Volts |
| Power Factor | .85 | .995 | + 14 |

KWH and Demand as billed by the Utility Company is based on all above factors.

50% of Real Power Savings plus 50% of Apparent Power Savings totaled together = Total kWh typically billed

$$15,000 \text{ Watts} / 2 = 7,500 \text{ Watts}$$

$$40,000 \text{ VA} / 2 = \underline{20,000 \text{ VA}}$$

$$\text{Total } 27,500 = 27.5 \text{ kWh} / 3 \text{ units} = \text{approx. } 9.16 \text{ kWh per USES unit.}$$

$$9.16 \text{ kWh} \times (4) \text{ USES units (normal number of USES units running)} = 36.64 \text{ kWh}$$

Anticipated savings resulting from all above changes is 32 to 36 kWh reduction. = 34 as a conservative average.

If we take the 34 kWh conservative average and divide by (4) USES units then the average becomes 8.5 kWh per USES unit.

2. Actual new projected monthly savings results based on the recorded information from graphs.

$$\text{Daily : } 34 \text{ kWh} \times 24 \text{ hours} \times 30 \text{ days} = 24,480 \text{ kWh}$$

$$(2) \text{ USES off : } (2) \text{ USES units} \times 8.5 \text{ kWh each} \times 10 \text{ hours} \times 30 \text{ days} = 5,100 \text{ kWh}$$

$$24,480 \text{ kWh}$$

$$- \underline{5,100 \text{ kWh}}$$

$$19,380 \text{ kWh Total } 19,380 \text{ kWh} \times .28 = \$5,426.40/\text{mo.} \times 12 = \$65,116.80/\text{Yr. (Monthly/Annual savings T-2 only)}$$

All Three Services Summation

| kWh reductions | |
|----------------|--|
| T-1 | 48,348 kWh |
| T-2 | 19,380 kWh |
| T-3 | <u>30,398 kWh</u> |
| Total | 98,126 kWh x .28 = \$27,475.28/month x 12 months = \$329,703.36 Annually |

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