OTAC EQUIPMENT CALCULATION FORMAT

The following format is to be used to determine each projects' operating expenses for OTAC. Please use this format for your projects' calculation and submit to the Director of Engineering Services for review.

Although this is done in an attempt to standardize calculations, not all projects will utilize every part of the calculation format. Accordingly, clearly indicate any deviations from the standard format on your calculation package.

Calculation Guidelines:

1. All projects will include (Equipment Depreciation) in their calcul-tions. Verify with the Director of Engineering Services for the Estimated Life Factor.

2. It is understood that Water Chilling Units operating at partial load for overtime use will consume more KW per Ton than at full load. For the sake of this calculation, howeve we will use (design KW per Ton).

3. Projects that operate their central plant continuously will show on their calculation package only those cost attributable to the overtime use.

4. Concerning labor costs, it is the position of the Property Management Division that engineering labor relative to plant operation will be required in most cases. Using the projected OTAC operating hours multiplied by $15.00 per hour for your Man-Power calculations.

5. If your control system specifics can easily provide "ventilation only" (no heat/no cooling-circulation of air handling unit only), provide a separate calculation. If you cannot provide "V.O.", begin research on how we can accomplish this for later discussion.

6. Minimum load for Water Chilling Units over 300 Tons will be 30% of full load. Minimum load for W.C.U.'s 300 Tons and smaller is at your discretion, but is assumed not to be over 30% of full load.

7. At times, you may have overtime requests in excess of "minimum load." The calculation considers this and includes "minimum load" and "other load conditions. The formulas are the same, and they are included to clarify and simplify the calculation.

8. In most cities, code requires the introduction of fresh air and the removal of toilet exhaust anytime the building is occupied. It is recommended that these be operated and associated costs be the overtime calculation.

9. Formulas that include equipment amperage should use actual operating amps in lieu of nameplate amperage.

10. Relative to the chilled water/condenser water pump calculation, it is understood that electrical consumption for the chilled water pump will change with the number of A.H.U.'s operating. For this calculation, howeve we will use the operating amperage of both pumps at the minimum load condition ,as the difference would be negligible.

11. In regard to cooling tower fan electrical calculation, an assumption of 50% run time of one fan may be used. Feel free to calculate using actual conditions if these conditions can be verified.

12. Air compressor run time percentage is assumed to be 33% for all projects. At 100% occupancy verify actual run-time to estimate.

13. On equipment depreciation, I recommend using 30 years for estimated equipment life and assume $785.00/per ton of plant capacity for equipment cost. If you can identify actual equipment cost, please do so.

14. Relative to the equipment maintenance calculation, total the project budget amounts for account numbers (#) -Filters, Water treatment, and HVAC Supplies for use in your total maintenance costs.

15. When calculating the AHU electrical consumption of Variable Air Volume systems, use actual operating amperage of the AHU at least two hours after start-up.

16. It is the intent of the 20% overhead to recover the costs of relative to overtime heating. You may adjust this number to reflect actual costs incurred.

This calculation has been structured to assure fair and equitable billing of overtime HVAC in those instances where numerous tenants request overtime HVAC. On the following work sheets enter your cost values only in the "green cells", or unprotected cells where information values are required.

The following data will be required to conduct the OTAC calculations:

1. Project Name
2. Chiller Unit
3. Chiller Tonnage Capacity
4. Chiller Design KW per Ton
5. Min.Load # AHU's & VAV Boxes
6. Average Amperage per AHU
7. Building Average Voltage
8. Average Cost per KW
9. # Condenser Pumps
10. Total Condenser GPM Rate
11. Cycles of Concentration
12. Chill water pump Amperage
13. Condenser pump Amperage
14. Cooling Tower Amperage
15. Cooling Tower Run-time
16. O.A. & T.E. Fan Amperage
17. Air Compressor Amperage
18. Air Compressor Run-time
19. Equipment Cost for Plant
20. Equipment Estimated Life
21. Annual Run-time
22. Maintenance Cost;
    a. Air filters
    b. Water treatment
    c. HVAC Supplies
    d. Misc. Supplies
    e. Man-power
23. Water & Sewage Cost

OVERTIME HVAC OPERATING CALCULATIONS

Project:	**Project Name**			
Chiller Unit:		= 1	Chiller	
Design KW:		= 0.74	KW Per Ton	
Minimum Load # AHU's:		= 2	#AHU's	
Chiller Tonnage Rating:		= 200	Tonnage	

Step One: Electrical Costs:
A. Water Chilling Unit:

Total Chiller KWh Per Condition

(1)Condition #1 : 60 **Min.Tonnage**

Min.Load(# AHU's)= 2
Design KW per Ton x Min.Load
.00 KW x 30% of Total Tons
(KW x .30 x %Tons)= Total KW per hr.

#1 44.40 **KWh**

(2) Condition #2:
AHU's= 3
KW x(min.load in tons/number AHU's)x
KW(tonnage% divided by min.AHU's)x

#2 66.60 **KWh**

(3) Condition #3:
AHU's= 4
KWx(min.load in tons/number AHU's)x
KW(tonnage% divided by min.AHU's)x

#3 88.80 **KWh**

(4) Condition #4:
AHU's= 5
KWx(min.load in tons/number AHU's)x
KW(tonnage% divided by min.AHU's)x

#4 111.00 **KWh**

(5) Condition #5:
AHU's= 6
KWx(min.load in tons/number AHU's)x
KW(tonnage% divided by min.AHU's)x

#5 133.20 **KWh**

(6) Condition #6:
AHU's= 7
KWx(min.load in tons/number AHU's)x
KW(tonnage% divided by min.AHU's)x

#6 155.40 **KWh**

(7) Condition #7:
AHU's= 8
KWx(min.load in tons/number AHU's)x
KW(tonnage% divided by min.AHU's)x

#7 177.60 **KWh**

AHU Fan Motor Amperage:	=	**15.00**		**AMPS**
Average # VAV's Per AHU:	=	**6**		**VAV's**
VAV Box Fan Motor Amperage:	=	**0.75**		**AMPS**
Building Average Voltage:	=	**475**		**Volts**
VAV & AHU AMP Total:	=	**19.50**		**AMPS**

Step One: Electrical Costs
B. Air Handling Units:

Total AHU KWh Per Condition

(1)Condition #1 :
Min.load(AHU's):
#AHU's= **2**
#VAV's= **12**
#AHU'S x Volts x Amps x 1.732 / 1000

#1 **32.09** **KWh**

(2) Condition #2:
AHU's= **3**
#VAV's= **18**
#AHU'S x Volts x Amps x 1.732 / 1000

#2 **48.13** **KWh**

(3) Condition #3:
AHU's= **4**
#VAV's= **24**
#AHU'S x Volts x Amps x 1.732 / 1000

#3 **64.17** **KWh**

(4) Condition #4:
AHU's= **5**
#VAV's= **30**
#AHU'S x Volts x Amps x 1.732 / 1000

#4 **80.21** **KWh**

(5) Condition #5:
AHU's= **6**
#VAV's= **36**
#AHU'S x Volts x Amps x 1.732 / 1000

#5 **96.26** **KWh**

(6) Condition #6:
AHU's= **7**
#VAV's= **42**
#AHU'S x Volts x Amps x 1.732 / 1000

#6 **112.30** **KWh**

(7) Condition #7:
AHU's= **8**
#VAV's= **48**
#AHU'S x Volts x Amps x 1.732 / 1000

#7 **128.34** **KWh**

Average KW Cost:		=	**$0.065**		**Cost Per KW**
Building Average Voltage:		=	**475**		**Average Voltage**

Step One: Electrical Costs
C. MISC. Equipment

Total MISC. KWh Per Condition

c. Pump Systems:

Chill water pumps:	1	=	23.0	AMPS
Condenser pumps:	1	=	23.0	AMPS
DW Booster Pumps:	2	=	12.0	AMPS
Total ChWP+CWP+DWBP:	4	=	58.0	AMPS
Volt x(total amps)x 1.732/1000=KWh				

c. 47.72 KWh

d. Cooling Tower Fans:

Fan motors:	1	=	39.5	AMPS
Run Time % Per Hour:		=	50%	FRT
Volt x(total amps) x 1.732/1000=KWh				

d. 16.25 KWh

e. O.A. & T.E. Fans - (Single Phase):

Outside Air Fans:	0	=	0.0	AMPS
Exhaust Fans:	0	=	0.0	AMPS
Total O.A.+ T.E.F.:	0	=	0.0	AMPS
Volt x(total amps)/ 1000=KWh				

e. 0.00 KWh

e. O.A. & T.E. Fans - (Three Phase):

Outside Air Fans:	8	=	18.5	AMPS
Exhaust Fans:	8	=	9.0	AMPS
Total O.A.+ T.E.F.:	16	=	27.5	AMPS
Volt x(total amps)x 1.732/1000=KWh				

e. 22.62 KWh

f. Air Compressors:

Compressors:	2	=	11.5	AMPS
Run Time % Per Hour:			33%	ACRT
Volts x Amps x 1.732 x (%)/1000				

f. 3.12 KWh

g. Hot Water Heaters / Boiler:

GAS BURNER:	0	=	0.0	MBH
Hot Water Pump:	0	=	0.0	AMPS
Volts x Amps x 1.732 x (%)/1000				

g. 0.00 KWh

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Step One: Electrical Costs G. Total Electrical Costs:	Total OTAC. KWh Per Condition

(1) Condition #1:Min.Load(AHU's)=	2	AHU

a. Water Chilling Unit:	a.	44.40	KWh
b. Air Handling Units:	b.	32.09	KWh
c. Chilled/Condenser Pumps:	c.	47.72	KWh
d. Cooling Tower Fans	d.	16.25	KWh
e. Outside Air/Toilet Exhaust Fans:	e.	22.62	KWh
f. Air Compressor:	f.	3.12	KWh
g. Hot Water System:	g.	0.00	KWh
Total KWh Condition #1:		**166.20**	**KWh**

(2) Condition #2:Min.Load(AHU's)=	3	AHU

a. Water Chilling Unit:	a.	66.60	KWh
b. Air Handling Units:	b.	48.13	KWh
c. Chilled/Condenser Pumps:	c.	47.72	KWh
d. Cooling Tower Fans	d.	16.25	KWh
e. Outside Air/Toilet Exhaust Fans:	e.	22.62	KWh
f. Air Compressor:	f.	3.12	KWh
g. Hot Water System:	g.	0.00	KWh
Total KWh Condition #2:		**204.44**	**KWh**

(3) Condition #3:Min.Load(AHU's)=	4	AHU

a. Water Chilling Unit:	a.	88.80	KWh
b. Air Handling Units:	b.	64.17	KWh
c. Chilled/Condenser Pumps:	c.	47.72	KWh
d. Cooling Tower Fans	d.	16.25	KWh
e. Outside Air/Toilet Exhaust Fans:	e.	22.62	KWh
f. Air Compressor:	f.	3.12	KWh
g. Hot Water System:	g.	0.00	KWh
Total KWh Condition #3:		**242.68**	**KWh**

(4) Condition #4:Min.Load(AHU's)=	5	AHU

a. Water Chilling Unit:	a.	111.00	KWh
b. Air Handling Units:	b.	80.21	KWh
c. Chilled/Condenser Pumps:	c.	47.72	KWh
d. Cooling Tower Fans	d.	16.25	KWh
e. Outside Air/Toilet Exhaust Fans:	e.	22.62	KWh
f. Air Compressor:	f.	3.12	KWh
g. Hot Water System:	g.	0.00	KWh
Total KWh Condition #4:		**280.92**	**KWh**

Step One: Electrical Costs G. Total Electrical Costs:	Total OTAC. KWh Per Condition

(5) Condition #5:Min.Load(AHU's)=	6	AHU

a. Water Chilling Unit:	a.	133.20	KWh
b. Air Handling Units:	b.	96.26	KWh
c. Chilled/Condenser Pumps:	c.	47.72	KWh
d. Cooling Tower Fans	d.	16.25	KWh
e. Outside Air/Toilet Exhaust Fans:	e.	22.62	KWh
f. Air Compressor:	f.	3.12	KWh
g. Hot Water System:	g.	0.00	KWh
Total KWh Condition #5:		**319.17**	**KWh**

(6) Condition #6:Min.Load(AHU's)=	7	AHU

a. Water Chilling Unit:	a.	155.40	KWh
b. Air Handling Units:	b.	112.30	KWh
c. Chilled/Condenser Pumps:	c.	47.72	KWh
d. Cooling Tower Fans	d.	16.25	KWh
e. Outside Air/Toilet Exhaust Fans:	e.	22.62	KWh
f. Air Compressor:	f.	3.12	KWh
g. Hot Water System:	g.	0.00	KWh
Total KWh Condition #6:		**357.41**	**KWh**

(7) Condition #7:Min.Load(AHU's)=	8	AHU

a. Water Chilling Unit:	a.	177.60	KWh
b. Air Handling Units:	b.	128.34	KWh
c. Chilled/Condenser Pumps:	c.	47.72	KWh
d. Cooling Tower Fans	d.	16.25	KWh
e. Outside Air/Toilet Exhaust Fans:	e.	22.62	KWh
f. Air Compressor:	f.	3.12	KWh
g. Hot Water System:	g.	0.00	KWh
Total KWh Condition #7:		**395.65**	**KWh**

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Water Make-Up Cost:		=	**$2.87**	**W.M.Cost**
# of Pumps Used:		=	**1**	**Pumps**
Condenser Pump Rate:		=	**600**	**GPM's**
Chiller tonnage Rating:		=	**200**	**Tons**

Step Two: City Water Consumption
A. Cooling Tower Evaporation Rate:

Total Cost Per Hour Per Condition

(1) Condition #1:Min.Load(AHU's)=		**60**	Tons	**Total Values:**	
Evaporation Rate = 1% of GPM rate:				**0.30**	**%Ton**
# of Pumps:	**1**			**600.00**	**PGPM**
Total Pump GPM Rate:	**600**			**6.00**	**1%Rt**
Bleed Cycles= (Egpm/C-1)		**4**	cycl	**2.00**	**CGPM**
Total Make-up = Rate + Cycles				**8.00**	**TMup**
Hourly Evaporation rate= E rate x 60 min.				**480.00**	**HMup**
#1 Load tonnage x Hourly E rate= Make-Up Rate				**144**	**LMup**
Total Load evaporation make-up:Condition #1				**$0.55**	**Prhr**

(2) Condition #2:Min.Load(AHU's)=		**90**	Tons	**Total Values:**	
Evaporation Rate = 1% of GPM rate:				**0.45**	**%Ton**
# of Pumps:	**1**			**600.00**	**PGPM**
Total Pump GPM Rate:	**600**			**6.00**	**1%Rt**
Bleed Cycles= (Egpm/C-1)		**4**	cycl	**2.00**	**CGPM**
Total Make-up = Rate + Cycles				**8.00**	**TMup**
Hourly Evaporation rate= E rate x 60 min.				**480.00**	**HMup**
#1 Load tonnage x Hourly E rate= Make-Up Rate				**216.00**	**LMup**
Total Load evaporation make-up:Condition #2				**$0.83**	**Prhr**

(3) Condition #3:Min.Load(AHU's)=		**120**	Tons	**Total Values:**	
Evaporation Rate = 1% of GPM rate:				**0.60**	**%Ton**
# of Pumps:	**1**			**600.00**	**PGPM**
Total Pump GPM Rate:	**600**			**6.00**	**1%Rt**
Bleed Cycles= (Egpm/C-1)		**4**	cycl	**2.00**	**CGPM**
Total Make-up = Rate + Cycles				**8.00**	**TMup**
Hourly Evaporation rate= E rate x 60 min.				**480.00**	**HMup**
#1 Load tonnage x Hourly E rate= Make-Up Rate				**288.00**	**LMup**
Total Load evaporation make-up:Condition #3				**$1.10**	**Prhr**

(4) Condition #4:Min.Load(AHU's)=		**150**	Tons	**Total Values:**	
Evaporation Rate = 1% of GPM rate:				**0.75**	**%Ton**
# of Pumps:	**1**			**600.00**	**PGPM**
Total Pump GPM Rate:	**600**			**6.00**	**1%Rt**
Bleed Cycles= (Egpm/C-1)		**4**	cycl	**2.00**	**CGPM**
Total Make-up = Rate + Cycles				**8.00**	**TMup**
Hourly Evaporation rate= E rate x 60 min.				**480.00**	**HMup**
#1 Load tonnage x Hourly E rate= Make-Up Rate				**360.00**	**LMup**
Total Load evaporation make-up:Condition #4				**$1.38**	**Prhr**

Step Two: City Water Consumption A. Cooling Tower Evaporation Rate:			Total Cost Per Hour Per Condition	
(5) Condition #5:Min.Load(AHU's)=	**180**	Tons	**Total Values:**	
Evaporation Rate = 1% of GPM rate:			**0.90**	**%Ton**
# of Pumps: **1**			**600.00**	**PGPM**
Total Pump GPM Rate: **600**			**6.00**	**1%Rt**
Bleed Cycles= (Egpm/C-1)	**4**	cycl	**2.00**	**CGPM**
Total Make-up = Rate + Cycles			**8.00**	**TMup**
Hourly Evaporation rate= E rate x 60 min.			**480.00**	**HMup**
#1 Load tonnage x Hourly E rate= Make-Up Rate			**432.00**	**LMup**
Total Load evaporation make-up:Condition #5			**$1.65**	**Prhr**
(6) Condition #6:Min.Load(AHU's)=	**210**	Tons	**Total Values:**	
Evaporation Rate = 1% of GPM rate:			**1.05**	**%Ton**
# of Pumps: **1**			**600.00**	**PGPM**
Total Pump GPM Rate: **600**			**6.00**	**1%Rt**
Bleed Cycles= (Egpm/C-1)	**4**	cycl	**2.00**	**CGPM**
Total Make-up = Rate + Cycles			**8.00**	**TMup**
Hourly Evaporation rate= E rate x 60 min.			**480.00**	**HMup**
#1 Load tonnage x Hourly E rate= Make-Up Rate			**504.00**	**LMup**
Total Load evaporation make-up:Condition #6			**$1.93**	**Prhr**
(7) Condition #7:Min.Load(AHU's)=	**240**	Tons	**Total Values:**	
Evaporation Rate = 1% of GPM rate:			**1.20**	**%Ton**
# of Pumps: **1**			**600.00**	**PGPM**
Total Pump GPM Rate: **600**			**6.00**	**1%Rt**
Bleed Cycles= (Egpm/C-1)	**4**	cycl	**2.00**	**CGPM**
Total Make-up = Rate + Cycles			**8.00**	**TMup**
Hourly Evaporation rate= E rate x 60 min.			**480.00**	**HMup**
#1 Load tonnage x Hourly E rate= Make-Up Rate			**576.00**	**LMup**
Total Load evaporation make-up:Condition #7			**$2.20**	**Prhr**

Step Two: Water Make-Up Cost (B)Water & Sewage charges:	Water Make-Up Cost Per Unit Hour	
(1) Water Cost Format		
750 gallons = 1 unit charge		
Load Make-up divided by 1 unit(750)x cost		
Unit Cost per 750 gal. = $00.00 unit		
LMup / 1 unit= Unit x Cost=Cost per/hr.		
Total Water Make-up Unit Cost:	**$2.87**	**Unhr**

Standard Operating Hours:		=	3796	Hrs
Hourly Man Power Cost:		=	$15.00	PrHr

Step Three: Equipment Depreciation

Total Cost Per Hour

Equipment cost= $785.00 per plant ton or use actual cost.
Estimated Life= 30 years for standard operating hours.
25 years for 25% above operating hours.
20 years for 40% above operating hours.
Annual Run Time= Project standard operating hours plus OTAC hours.
Equipment Cost divided by (Estimated life x Annual run time).

***.Plant Capacity:**	1700	Tons			
1.Equipment Cost:	$785	Per Ton	1.	$1,334,500	$$$$$
2.Estimated Life:	20	Years	2.	20	Years
3.SOH's+OTAC Hours:	5314	Hours	3.	5314	Hours
Total Equipment Depreciation Cost:				$12.56	Prhr

Step Four: Equipment Maintenance Cost

E.M.C. = Maintenance Cost divided by Annual operating hours.

Maintenance Cost:

		Total Cost Per Year	
1. Air Filters	1.	$12,000	A.F.
2. Water Treatment & Supplies	2.	$16,000	W.T.
3. HVAC Supplies	3.	$22,000	HVAC
4. MISC. Supllies	4.	$8,000	MISC
5. Man Power Per Hour:	5.	$22,776	M.P.
6. Total Maintenance Cost:	6.	$80,776	TOT.
7. Annual Operating Hours:	7.	5314	AOH
Total Equipment Maintenance Cost:		$15.20	Prhr

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Step Five: Calculation Totals Per Condition			Total Cost Per Hour	
(A) Condition #1:Min.Load(AHU's)=	**2**	AHU		
1. Electrical Cost:	=		**$10.80**	**E.C.**
2. Water Cost:	=		**$0.55**	**W.C.**
3. Equipment Depreciation Cost:	=		**$12.56**	**EDC**
4. Equipment Maintenance Cost:	=		**$15.20**	**EMC**
Total Cost Per Hour:Condition #1	**=**		**$39.00**	**Prhr**
(B) Condition #2:Min.Load(AHU's)=	**3**	AHU		
1. Electrical Cost:	=		**$13.29**	**E.C.**
2. Water Cost:	=		**$0.83**	**W.C.**
3. Equipment Depreciation Cost:	=		**$12.56**	**EDC**
4. Equipment Maintenance Cost:	=		**$15.20**	**EMC**
Total Cost Per Hour: Condition #2	**=**		**$41.88**	**Prhr**
(C) Condition #3:Min.Load(AHU's)=	**4**	AHU		
1. Electrical Cost:	=		**$15.77**	**E.C.**
2. Water Cost:	=		**$1.10**	**W.C.**
3. Equipment Depreciation Cost:	=		**$12.56**	**EDC**
4. Equipment Maintenance Cost:	=		**$15.20**	**EMC**
Total Cost Per Hour: Condition #3	**=**		**$44.63**	**Prhr**
(D) Condition #4:Min.Load(AHU's)=	**5**	AHU		
1. Electrical Cost:	=		**$18.26**	**E.C.**
2. Water Cost:	=		**$1.38**	**W.C.**
3. Equipment Depreciation Cost:	=		**$12.56**	**EDC**
4. Equipment Maintenance Cost:	=		**$15.20**	**EMC**
Total Cost Per Hour: Condition #4	**=**		**$47.40**	**Prhr**
(E) Condition #5:Min.Load(AHU's)=	**6**	AHU		
1. Electrical Cost:	=		**$20.75**	**E.C.**
2. Water Cost:	=		**$1.65**	**W.C.**
3. Equipment Depreciation Cost:	=		**$12.56**	**EDC**
4. Equipment Maintenance Cost:	=		**$15.20**	**EMC**
Total Cost Per Hour: Condition #5	**=**		**$50.16**	**Prhr**

Step Five: Calculation Totals Per Condition			Total Cost Per Hour	
(F) Condition #6:Min.Load(AHU's)=	**7**	AHU		
1. Electrical Cost:		=	**$23.23**	**E.C.**
2. Water Cost:		=	**$1.93**	**W.C.**
3. Equipment Depreciation Cost:		=	**$12.56**	**EDC**
4. Equipment Maintenance Cost:		=	**$15.20**	**EMC**
Total Cost Per Hour:Condition #6		**=**	**$52.92**	**Prhr**
(G) Condition #7:Min.Load(AHU's)=	**8**	AHU		
1. Electrical Cost:		=	**$25.72**	**E.C.**
2. Water Cost:		=	**$2.20**	**W.C.**
3. Equipment Depreciation Cost:		=	**$12.56**	**EDC**
4. Equipment Maintenance Cost:		=	**$15.20**	**EMC**
Total Cost Per Hour: Condition #7		**=**	**$55.68**	**KWh**

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Management Overhead Cost:	=	20%

Step Seven: Total Operating Cost Per Condition		Cost Per Hour	
#1 Condition: Operating Cost:		$39.00	PrHr
Management Overhead=	20%	$7.80	
Total Operating Cost: Condition #1		$46.80	PrHr
#2 Condition: Operating Cost:		$41.88	PrHr
Management Overhead=	20%	$8.38	
Total Operating Cost: Condition #2		$50.26	PrHr
#3 Condition: Operating Cost:		$44.63	PrHr
Management Overhead=	20%	$8.93	
Total Operating Cost: Condition #3		$53.56	PrHr
#4 Condition: Operating Cost:		$47.40	PrHr
Management Overhead=	20%	$9.48	
Total Operating Cost: Condition #4		$56.88	PrHr
#5 Condition: Operating Cost:		$50.16	PrHr
Management Overhead=	20%	$10.03	
Total Operating Cost: Condition #5		$60.19	PrHr
#6 Condition: Operating Cost:		$52.92	PrHr
Management Overhead=	20%	$10.58	
Total Operating Cost: Condition #6		$63.50	PrHr
#7 Condition: Operating Cost:		$55.68	PrHr
Management Overhead=	20%	$11.14	
Total Operating Cost: Condition #7		$66.82	PrHr

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Company Name Here

Project Name
OTAC OPERATING COST CALCULATIONS

Full Floor Operating Cost Per Hour	Cost Per Hour
1. Electrical Cost	$13.29
2. Water Cost	$0.83
3. Depreciation Cost	$12.56
4. Maintenance Cost	$15.20
Subtotal Hourly Cost	$41.88
Overhead 20%	$8.38
OTAC Cost Per Hour	$50.00