

Kaizen Location	Kaizen Title: E B3 - Convert existing paint ASH (AMU) to Adiabatic Humidification Model							Originating Location	Originator:				
	NAMC: Shop:								NAMC:		Cost Center:		
	Process/Equipment:								Dept:		Date:	11/15/2012	
Kaizen Type	<input type="radio"/> Operational <input checked="" type="radio"/> Equipment Modification <input type="radio"/> Major Equipment							Phone #:					
	Kaizen ID #		E-0000-0492		Plant ID#:		Electric Utility Emissions Data		Gas Emissions				
	CO2		2.080 lbs/kWH		CO ₂ /MMBTU		SO2		117.08 lbs/MMBTU				
Nox		lbs/MWH				Nox		lbs/MWH					
Resources	Check all that apply: <input type="checkbox"/> Electricity <input checked="" type="checkbox"/> Natural Gas <input checked="" type="checkbox"/> Air <input checked="" type="checkbox"/> Comp. <input checked="" type="checkbox"/> Steam <input checked="" type="checkbox"/> Chilled Water <input checked="" type="checkbox"/> Water <input checked="" type="checkbox"/> WWT <input type="checkbox"/> POTW <input type="checkbox"/> Other <input type="checkbox"/>												
Kaizen Description	Background/Description: Current TMC ASH/AMU design uses a combination of natural gas burner, wet wall, steam humidification, chilled water coils and steam reheat to achieve operational set point. Wet walls are approximately 85% efficient at reaching desired enthalpy point and steam systems are usually only 50% efficient in the deliver of heat.												
	Current Situation (Before Kaizen)					Projected Situation (After Kaizen)							
	Production Hours		Non-Production hours			Production Hours		Non-Production hours					
	22 Hrs/Day		2 Hrs/Day			22 Hrs/Day		2 Hrs/Day					
22 Days/Mo.		8 Days/Mo.			22 Days/Mo.		8 Days/Mo.						
12 Months		5 Mo.			12 Months		5 Mo.						
1 # of units		1 # of units			1 # of units		1 # of units						
Summer Booth Temperature, Humidity, Enthalpy Winter Booth Temperature, Humidity, Enthalpy Avg Winter OA, Avg Winter Hum, OA Enthalpy 50% OA Humidity, 41 Outside Air Temperature, 70 T Lvg Reheat, 70% Hum Lvg Reheat					Summer Booth Temperature, Humidity, Enthalpy Winter Booth Temperature, Humidity, Enthalpy Avg Winter OA, Avg Winter Hum 50% OA Humidity, 41 Outside Air Temperature, 70 T Lvg Reheat, 70% Hum Lvg Reheat								
Current Paint ASH Equipment Line Up 95 T Lvg Pre Heat, 10 % Hum Lvg Pre Heat, 27.4 Enthalpy 62 T Lvg Wet Wall, 85 % Hum Lvg Wet Wall, 25.87, 68.20 64 T Lvg Direct St, 90 % Hum Lvg Direct ST, 27.89, 77.67 Total Energy Use 17.27					Proposed Paint ASH Equipment Line Up 100 T Lvg Pre Heat, 10 % Hum Lvg Pre Heat, 29.3 Enthalpy High pressure humidification, TAKE-UP ZONE, RO/DI water 1,000psi (9 gpm), Steam (minimal) Total Energy Use 16.58								
Energy Use	Energy units		Energy Use Before Kaizen (Energy units/yr)			Energy Use After Kaizen (Energy Units/yr)			Energy Savings (Energy Units/yr)				
	Electricity (kWh)	Non-prod	-			-			(1,017,484.9)				
	Gas (MMBtu)		325,400.4			312,351.1							
	Compressed Air (kSCF)		-			-							
	Steam (kLB)		-			-							
	Chilled Water (kTon)		-			-							
	Water (kGal)		1,581.8			1,581.8							
	WWT (kGal)		949.1			949.1							
POTW (kGal)		949.1			949.1								
Other: Explain		-			-								
CO ₂ (metric tons)		17,285.8			15,632.3								
Cost / Savings	Implementation Cost					Projected Annual Savings							
	Engineering Services:						Electricity (kWh)						
	Material:	\$ -					Gas (MMBtu)						
	Labor: Contract						Compressed Air (kscf)	\$ -					
	Labor: In House						Steam (kLB)	\$ -					
	Other:	\$ -					Chilled Water (kTon)	\$ -					
	Other:	\$ -					Water	\$ -					
	Other:	\$ -					WWT (kGal)	\$ -					
	Other:	\$ -					POTW (kGal)	\$ -					
	Other:	\$ -					Other: Explain	\$ -					
Total:						Total:							
Approval	Energy Reduction A-3. Approval is granted to proceed with this project.							Simple Payback Period (vrs): 3.53					
	President	VP	GM	AGM	Coord	Shop Mgr	Shop Cap	Orig	Schedule				
Completion Data (Implementation Review)	Confirmation (Post Implementation)												
	Actual Annual Savings	\$/unit	Actual Reduction	Actual Savings	Implementation Notes			Post Implementation Verification					
	Electricity (kWh/yr)		0	\$ -	Actual Cost	\$ -			AGM	Coord	Shop Mgr	Shop Cap	Orig
	Gas (MMBtu/yr)		0	\$ -									
	Compressed Air (kSCF/yr)		0	\$ -									
	Steam (kLB/yr)		0	\$ -									
	Chilled Water (kTon/yr)		0	\$ -									
	Water (kGal/yr)		0	\$ -									
	WWT (kGal/yr)		0	\$ -									
	POTW (kGal/yr)		0	\$ -									
	Other: Explain	\$ -	0	\$ -									
	CO ₂ (metric ton/yr)		0	\$ -									
PLANT													
Planning	Originator	Engineering Review	Management	ESCO Team	Engineering Review	Validation							