

Project: Site

## Input Report (English)

### Utilities

Contribution From Name	Bus Name	In/Out Service	Nominal Voltage	----- Contribution Data -----			PU (100 MVA Base)	
				DutyUnits	X/R	R PU	X PU	
U-AVISTA	N-PRIMARY FUSED	In	13,200	<b>3P:</b> 17,297 Amps	1.00	<b>Pos:</b> 0.179	0.179	
				<b>SLG:</b> 0 Amps	1.00	<b>Zero:</b> 00.000	000.000	

### Induction Motors

Name Phases	# of Motors	Bus Name Connection	In/Out Service	L-L Volts	Status	# of Poles	----- Contribution Data -----		
							Base kVA	Xd"	X/R
M-AERATION BLOWER ABC	1	P-AERATION BLOWE Wye	In	480	Running	4	5.01	0.169	10.0
M-AIR COMPRESSOR ABC	1	P-AIR COMPRESSOR Wye	In	480	Running	4	10.03	0.169	10.0
M-BOILER BLOWER ABC	1	N-BOILER BLOWER Wye	In	480	Running	4	25.07	0.169	10.0
M-BOILER WATER PUMP ABC	1	N-BOILER WATER PU Wye	In	480	Running	4	15.04	0.169	10.0
M-CEMENT BLOWER ABC	1	N-CEMENT BLOWER Wye	In	480	Running	4	50.13	0.169	10.0
M-CHARGE CONV ABC	1	P-CHARGE CONV Wye	In	480	Running	4	75.20	0.169	10.0
M-CONV #8 ABC	1	P-CONV #8 Wye	In	480	Running	4	30.08	0.169	10.0
M-CONV 1 & 4 ABC	1	P-CONV 1 & 4 Wye	In	480	Running	4	20.05	0.169	10.0
M-CONV 2 & 5 ABC	1	P-CONV 2 & 5 Wye	In	480	Running	4	20.05	0.169	10.0
M-CONV#7 ABC	1	P-CONV #7 Wye	In	480	Running	4	75.20	0.169	10.0
M-DUST COLLECTOR	1	P-DUST COLLECTOR	In	480	Running	4	20.05	0.169	10.0

Project Name: Site   
 TCC Name: All.tcc  
 Reference Voltage: 480 V  
 Current Scale: X 10^0  
 TCC Notes:  
 TCC Comment:  
 Fault Duty Option: Study Result - Bus Fault Current

-----  
 ALL INFORMATION PRESENTED IS FOR REVIEW, APPROVAL, INTERPRETATION,  
 AND APPLICATION BY A REGISTERED ENGINEER ONLY.  
 SKM DISCLAIMS ANY RESPONSIBILITY AND LIABILITY RESULTING  
 FROM THE USE AND INTERPRETATION OF THIS SOFTWARE.  
 -----

CAPTOR (Computer Aided Plotting for Time Overcurrent Reporting)  
 COPYRIGHT SKM SYSTEMS ANALYSIS, INC. 1983-2007  
 -----

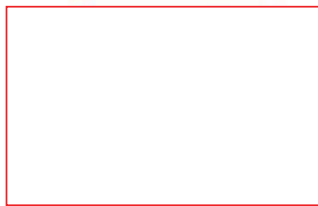
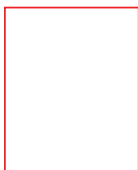
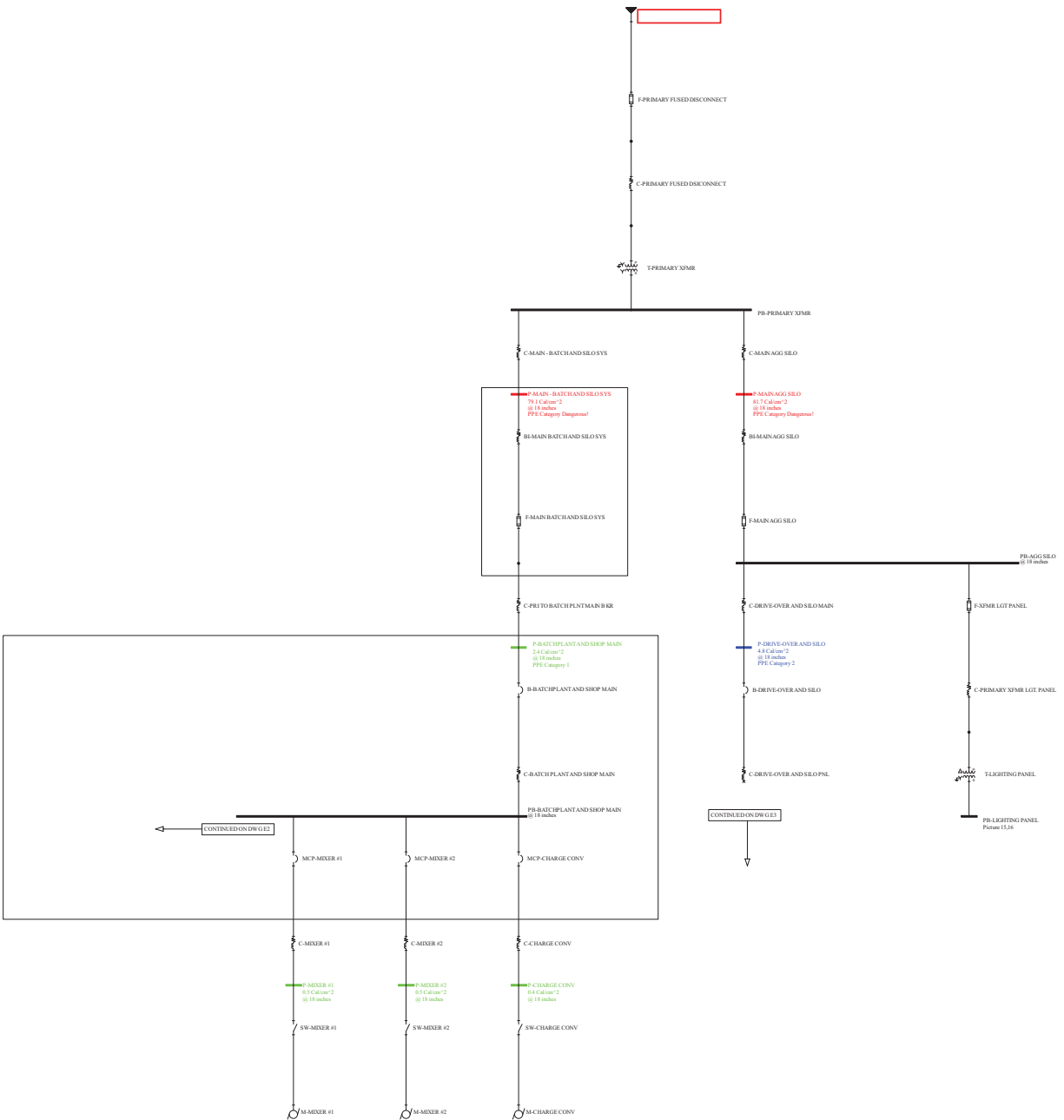
-----  
 Device Name: B-AIR COMPRESSOR TCC Name: All.tcc  
 Bus Name: PB-DRIVE-OVER AND SILO Bus Voltage: 480.0V  
 Function Name: Phase  
 Manufacturer: WESTINGHOUSE  
 Description: 50-100A  
 Type: FDB SER C  
 AIC Rating: 14kA Fault Duty: 12201.4A  
 Frame: FDB 480V 50A Curve Multiplier: 1  
 Time Multiplier: 1 Time Adder: 0  
 Trip: 50A  
 Setting: 1) Opening Clearing Cur


-----  
 Device Name: B-BATCHPLANT AND SHOP MAIN TCC Name: All.tcc  
 Bus Name: P-BATCHPLANT AND SHOP MAIN Bus Voltage: 480.0V  
 Function Name: Phase  
 Manufacturer: CUTLER-HAMMER  
 Description: LS, 300-600A Fixed Plug  
 Type: HLD, RMS 310  
 AIC Rating: 65kA Fault Duty: 20018.9A  
 Frame: HLD 480V 600A Curve Multiplier: 1  
 Time Multiplier: 1 Time Adder: 0  
 Sensor: 600A  
 Plug: 600A  
 Setting: 1) LTPU (1.0 x P) Fixed (600A)  
           2) LTD (Fixed) Fixed  
           3) STPU (2-8 x P) 6 (3600A)  
           4) STD (Fixed) Fixed I^2 t In  
           5) INST (5500A) Fixed (5500A)



Bus Name	Bus kV	Protective Device Name	Bus Bolted Fault (kA)	Bus Arcing Fault (kA)	Prot Bolted Fault (kA)	Prot Arcing Fault (kA)	Prot Trip/ Delay Time (sec.)	Breaker Opening Time (sec.)	Equip Type	Gap (mm)	ArcFlash Boundary (in)	Working Distance (in)	Incident Energy (ca/cm2)	Required Protective FR Clothing Category
P-MAIN - BATCH AND SILO SYS	0.480	F-PRIMARY FUSED DISCONNECT	21.74	12.73	16.59	9.71	1.790	0.000	PNL	25	231.68	18.00	79.12	Category Dangerous! - No FR Category Found
P-MAIN AGG SILO	0.480	F-PRIMARY FUSED DISCONNECT	21.15	12.43	16.19	9.52	1.881	0.000	PNL	25	236.34	18.00	81.74	Category Dangerous! - No FR Category Found
P-BATCHPLANT AND SHOP MAIN	0.480	F-MAIN BATCH AND SHOP MAIN DISCONNECT	20.02	11.86	4.13	2.45	0.083	0.000	PNL	25	27.26	18.00	2.36	Category 1 - Arc-rated FR Shirt & Pants
P-CHARGE CONV	0.480	MCP-CHARGE CONV	9.53	6.29	9.16	6.05	0.015	0.000	PNL	25	9.12	18.00	0.39	Category 0 - Nonmelting, Flammable Materials with Weight >= 4.5 oz/sq yd
P-MIXER #2	0.480	MCP-MIXER #2	12.44	7.90	12.11	7.69	0.015	0.000	PNL	25	10.59	18.00	0.50	Category 0 - Nonmelting, Flammable Materials with Weight >= 4.5 oz/sq yd
P-MIXER #1	0.480	MCP-MIXER #1	12.44	7.90	12.11	7.69	0.015	0.000	PNL	25	10.59	18.00	0.50	Category 0 - Nonmelting, Flammable Materials with Weight >= 4.5 oz/sq yd
P-HYD	0.480	MCP-HYD	6.96	4.81	6.87	4.75	0.015	0.000	PNL	25	7.64	18.00	0.29	Category 0 - Nonmelting, Flammable Materials with Weight >= 4.5 oz/sq yd
P-COLOR SYSTEM J-BOX	0.480	F-COLOR BELT	5.17	3.73	5.01	3.62	0.004	0.000	PNL	25	2.96	18.00	0.06	Category 0 - Nonmelting, Flammable Materials with Weight >= 4.5 oz/sq yd
P-COLOR BELT SYSTEM MOTORS	0.480	B-COLOR BELT	4.47	3.30	4.33	3.19	0.014	0.000	PNL	25	5.65	18.00	0.18	Category 0 - Nonmelting, Flammable Materials with Weight >= 4.5 oz/sq yd
P-AERATION BLOWER	0.480	MCP-AERATION	1.92	1.60	1.91	1.59	0.015	0.000	PNL	25	3.70	18.00	0.09	Category 0 - Nonmelting, Flammable Materials with Weight >= 4.5 oz/sq yd
P-DUST COLLECTOR	0.480	MCP-DUST COLLECTOR	3.90	2.93	3.85	2.90	0.015	0.000	PNL	25	5.51	18.00	0.17	Category 0 - Nonmelting, Flammable Materials with Weight >= 4.5 oz/sq yd
P-CEMENT BLOWER	0.480	MCP-CEMENT BLOWER	8.66	5.80	8.44	5.65	0.015	0.000	PNL	25	8.64	18.00	0.36	Category 0 - Nonmelting, Flammable Materials with Weight >= 4.5 oz/sq yd

Category 0-1
Category 2
Category 3
Category 4
Dangerous
Not included in an HAZOP



ONE-LINE:   
 Prepared for: 

August 7, 2012

# WARNING

**Category** **0** **Appropriate PPE Required**  
**Arc Flash and Shock Hazard**

**FLASH PROTECTION SHOCK PROTECTION**

Flash Haz @: **18 inches** Voltage **480 VAC**  
Min Arc Rating: **0.09 cal/cm<sup>2</sup>**  
Prot Bound: **4 inches** Limited App **42 inches**  
Glove Class: **00** Restr'd App **12 inches**  
Clothing Cat: **Category 0** Prohi'd App **1 inches**

Clothing Required:  
Nonmelting, Flammable Materials with Weight >=  
4.5 oz/sq yd

EQUIPP-AERATION BLOWER

Date:08/07/12

# WARNING

**Category** **0** **Appropriate PPE Required**  
**Arc Flash and Shock Hazard**

**FLASH PROTECTION SHOCK PROTECTION**

Flash Haz @: **18 inches** Voltage **480 VAC**  
Min Arc Rating: **0.21 cal/cm<sup>2</sup>**  
Prot Bound: **6 inches** Limited App **42 inches**  
Glove Class: **00** Restr'd App **12 inches**  
Clothing Cat: **Category 0** Prohi'd App **1 inches**

Clothing Required:  
Nonmelting, Flammable Materials with Weight >=  
4.5 oz/sq yd

EQUIPP-AIR COMPRESSOR

Date:08/07/12

# WARNING

**Category** **1** **Appropriate PPE Required**  
**Arc Flash and Shock Hazard**

**FLASH PROTECTION SHOCK PROTECTION**

Flash Haz @: **18 inches** Voltage **480 VAC**  
Min Arc Rating: **2.4 cal/cm<sup>2</sup>**  
Prot Bound: **27 inches** Limited App **42 inches**  
Glove Class: **00** Restr'd App **12 inches**  
Clothing Cat: **Category 1** Prohi'd App **1 inches**

Clothing Required:  
Arc-rated FR Shirt & Pants

EQUIPP-BATCHPLANT AND SHOP MAIN

Date:08/07/12

# WARNING

**Category** **0** **Appropriate PPE Required**  
**Arc Flash and Shock Hazard**

**FLASH PROTECTION SHOCK PROTECTION**

Flash Haz @: **18 inches** Voltage **480 VAC**  
Min Arc Rating: **0.35 cal/cm<sup>2</sup>**  
Prot Bound: **9 inches** Limited App **42 inches**  
Glove Class: **00** Restr'd App **12 inches**  
Clothing Cat: **Category 0** Prohi'd App **1 inches**

Clothing Required:  
Nonmelting, Flammable Materials with Weight >=  
4.5 oz/sq yd

EQUIPP-BOILER BLWR & WTR PMP

Date:08/07/12