

PROJECT:		REVISION		PREPARED BY		CHECKED BY		APPROVED BY		PDC-4160-03															
DOCUMENT No.:										DATE: 06/26/07															
LOADS LIST										kW = A/D		CONSUMED LOAD		kVA = kW lg φ		PAGE: 1									
Equipments										RATED POWER		NOMINAL LOAD		LOAD FACTOR = A/B		EFFICIENCY		NOMINAL VOLTAGE		RPM		POWER FACTOR		REMARKS	
Tag Equipment	Description	Load Classification (1)	kW		P.U.		P.U.		kV	RPM	cos φ	Continuous (3)		Intermittent (3)		Spare (3)									
												kW	kVA	kW	kVA	kW	kVA								
1	D3.140511	2nd Deethanizer Bottom Pump # 1	E	670,00	746,00	0,90	0,95	4,16	3.600,00	0,90	●	702,31	340,14	○		○									
2	D3.140509	2nd Ethane Shipping Pump # 1	E	1.010,00	1.119,00	0,90	0,95	4,16	3.600,00	0,90	●	1.058,70	512,75	○		○									
3	D3.141017	Refrigerant Gas Turbine Starter Motor # 3	E	335,00	373,00	0,90	0,95	4,16	3.600,00	0,87	●			○	351,15	199,01	○								
4	D3.140103	Gas Turbine Starter Motor # 3	E	535,00	596,80	0,90	0,95	4,16	3.600,00	0,90	●			○	560,80	271,61	○								
5	D3.140512	2nd Deethanizer Bottom Pump # 2	E	670,00	746,00	0,90	0,95	4,16	3.600,00	0,90	○			○			●	702,31	340,14						
6	D4.140510	2nd Ethane Shipping Pump # 2	E	1.010,00	1.119,00	0,90	0,95	4,16	3.600,00	0,90	○			○			●	1.058,70	512,75						
7	D3.141018	Refrigerant Gas Turbine Starter Motor # 4	E	335,00	373,00	0,90	0,95	4,16	3.600,00	0,87	○			●	351,15	199,01	○								
8	D3.140104	Gas Turbine Starter Motor # 4	E	535,00	596,80	0,90	0,95	4,16	3.600,00	0,90	○			●	560,80	271,61	○								
9	PDC-480-05	PDC-480-05	E	1.950,96	2.167,55	0,90	1,00	4,16		0,86	○	1.385,73	821,40	●	297,96	179,07	○	418,93	252,39						
10	PDC-480-06	PDC-480-06	E	2.342,13	2.601,98	0,90	1,00	4,16		0,87	○	1.355,37	800,94	●	716,95	382,01	○	472,12	283,51						
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REMARKS:

1) **Load Classification**
 - Essential Loads (E): A load that when failing, will affect the continuity, the quality or the quantity of the product
 - Non Essential Loads (NE): A load that when failing, will not affect the continuity, the quality or the quantity of the product.
 - Vital Loads (V): A load that when failing, can cause an unsafe condition of the process and/or electrical installation, jeopardize life or cause major damage to the installation

2) **Rated Power**
 For Motors: shaft power at the operation point
 For instrumentation, computers, communication, HVAC: load required during normal operation
 For lighting: total load during dark hours
 For workshops: average total load in normal operations

3) **Type of Load**
 - Continuous (C): Continuously required for normal operation
 - Intermittent (I): Intermittent or eventually required for normal operation
 - Spare (S): Spare or Stand-by Loads

4) **Sizing Criteria**
 Transformer shall be sizing in a such way, that the Peak Load value multiply by a design factor must not exceed the air forced cooling capacity (ONAF). In the same way, the operation in normal conditions must not exceed the natural cooling capacity (ONAN).

Demand Factor "x", "y", "z"

Continuous Demand →
 $(MD = xE + yF)$
15 min. Peak Load →
 $(PL = xE + yF + zG)$
Maximum Connected Load →
 $(MCL = xE + yF + zG)$

Common (C)	4.502,11 kW	2.475,24 kVA	Intermittent (I)	2.838,80 kW	1.502,31 kVA	Spare (S)	2.692,05 kW	1.388,80 kVA	TOTAL kVA $(= \sqrt{kW^2 + kVA^2})$
	5.137,69 kVA			3.211,81 kVA			2.953,08 kVA		

Design Factor: **1,20**

Transformer and Feeder Sizing

Minimum ONAF Capacity	8.451 kVA	H + K
Reserve	757 kVA	N - H
Transformer Capacity	7.500 kVA	KVA
	9.375 kVA	KVA

ONAN	ONAF
314	892
Ampsere	Ampsere
1.041	1.303
Ampsere	Ampsere

Primary Voltage: **13,80** kV
 Secondary Voltage: **4,16** kV

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