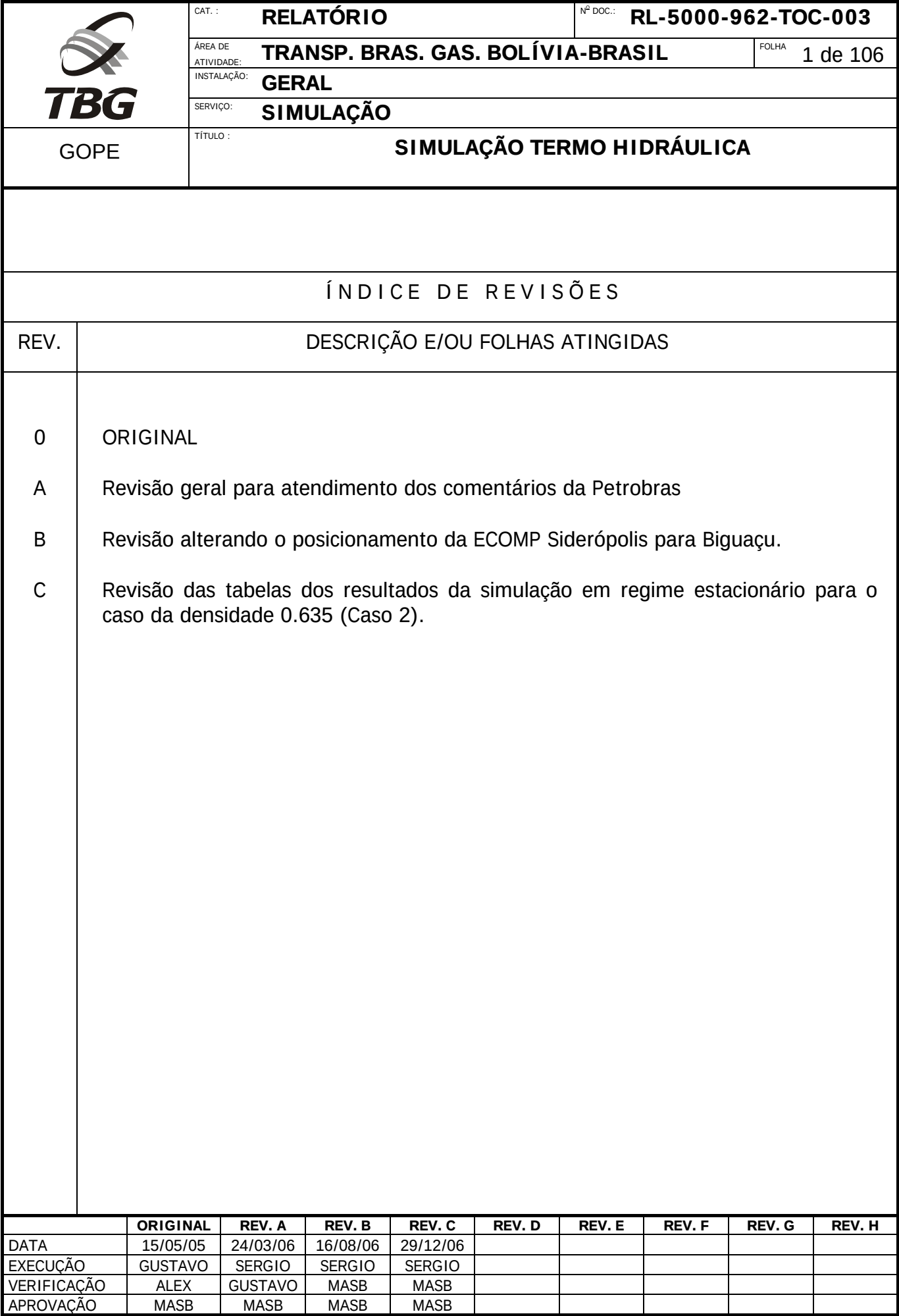






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ANEXO I - Diagrama Esquemático do Gasoduto

ANEXO II - RL-5200-974-TOC-001



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1. OBJETIVO

O presente relatório apresenta os resultados da simulação termo hidráulica, em regime permanente e regime transiente, para o sistema de transporte do gasoduto Bolívia - Brasil, conforme construído, para a capacidade nominal de entrega de 30,08 MMm³/d (TCQ/TCO/TCX/TCQFlex), sem considerar a disponibilidade do sistema, como por exemplo, paradas para manutenções preventivas ou corretivas dos turbocompressores das estações de compressão.

2. DADOS BÁSICOS

2.1. Condições de Simulação

2.1.1. Condições de Projeto

- Condições ambientais de verão;
- Vazão de entrega de 30,08 MMm³/d (distribuição conforme item 2.5)
- Regimes permanente e transiente.

2.1.2. Base de Referência da Vazão

- Temperatura de 20 °C
- Pressão de 1 atm.

2.1.3. Características do Solo

- Coeficiente de transferência de calor solo-tubo = 1,9 kcal/h.m².°C

2.1.4. Correlações Adotadas

Pipe Friction Factor : AGA ("Drag Factor" = 0,96)
Equation of State for z factor : SAREM

2.1.5. Rugosidade

Trechos: Fronteira-REPLAN, REPLAN-Araucária : 354 micropol
Trechos: Araucária-Canoas, REPLAN-Guararema : 708 micropol

2.1.6. Software utilizado

- *Pipeline Studio* versão 2.71

2.2. Temperatura

2.2.1. Temperatura do Solo

Comprimento (km)		Verão
km inicial	km final	(°C)
Rio Grande - Curitiba		
0	600	30
600	1244	28
1244	2056	26
2056	2296	24
Curitiba - Porto Alegre		
0	712.7	26
Campinas - Guararema		
0	155.3	26

2.2.2. Temperatura Ambiente

A temperatura ambiente considerada na simulação foi de 28° C (**média diária considerando o período dia/noite**) para todas as estações de compressão do trecho Fronteira-REPLAN e de 26° C para as estações do trecho REPLAN-Canoas.

2.3. Regime Transiente

A simulação em regime transiente considera um perfil de variação de vazão para atender ao TCQ Flex conforme contratos de transporte:

- Variação de 20% limitada a 14,25 MMm³/d das vazões do contrato de transporte TCQ (2,85 MMm³/d), mantendo a vazão remanescente constante;
- Variação máxima, aplicados aos pontos de entrega, no trecho norte (Corumbá – Campinas) de 1,62 MMm³/d e 1,23 MMm³/d no trecho sul (Campinas – Canoas) totalizando 2.85 MMm³/d;
- Considera a variação dentro do período de uma semana, de tal modo que o volume médio corresponde à vazão nominal considerada.

Tabela do perfil de variação de vazão entregue ao mercado, conforme condições TCQ Flex:

<i>Vazão Nominal (168 horas)</i>	<i>Vazão mínima (48 horas)</i>	<i>Vazão máxima (120 horas)</i>
30,08 MMm ³ /d	22,96 MMm ³ /d	32,93 MMm ³ /d



2.4. Estações de Compressão

Dados das estações de compressão conforme construídas.

2.4.1. Perda de Carga

Estação Nº	Nome	Perda de carga sucção (kgf/cm ² g)	Perda de carga descarga (kgf/cm ² g)
5	Corumbá	0,5	1,5
6	Miranda		
7	Anastácio		
8	Campo Grande		
9	Ribas do Rio Pardo		
10	Três Lagoas		
11	Mirandópolis		
12	Penápolis		
13	Iacanga		
14	São Carlos		
15	Araucária	0,3	0,4
16	Biguaçu		

2.4.2. Localização e Elevação

Estação Nº	Nome	Localização (a partir da fronteira) (km)	Elevação (m)
5	Corumbá	47,8	105
6	Miranda	171,3	105
7	Anastácio	286,1	165
8	Campo Grande	391,6	490
9	Ribas do Rio Pardo	519,2	390
10	Três Lagoas	647,3	315
11	Mirandópolis	775,7	420
12	Penápolis	894,0	450
13	Iacanga	1015,5	450
14	São Carlos	1137,5	780
15	Araucária	1739,0	915
16	Biguaçu	2022,0	20



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2.4.3. Configuração Atual

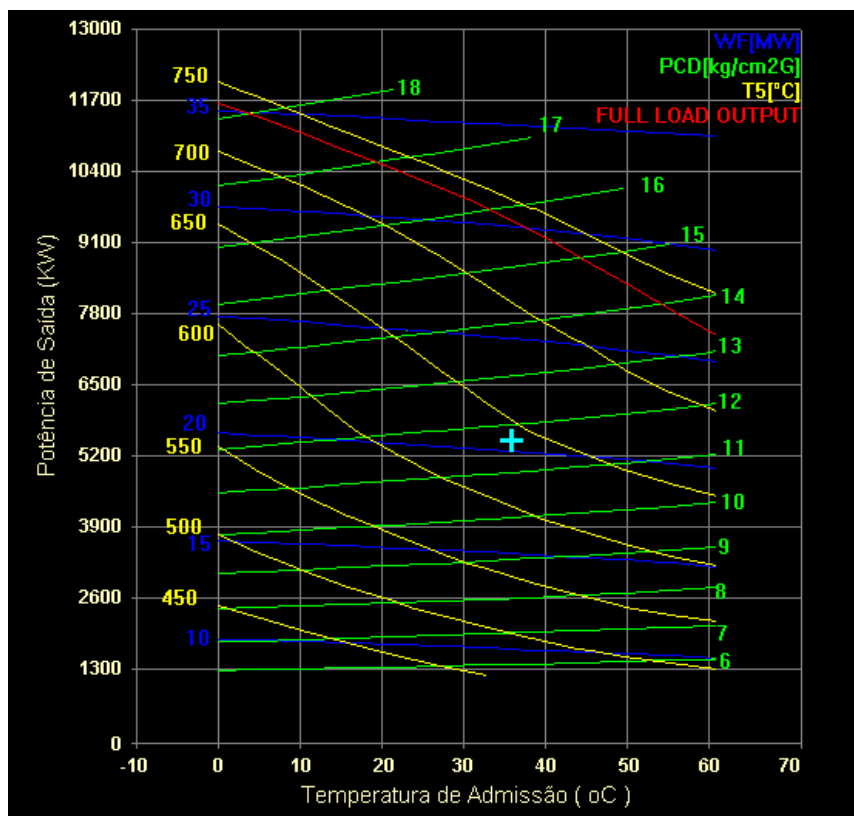
Est. No.	Nome	Acionador Fornecedor-Tipo - Potência Nominal (ISO)	Compressor Fornecedor-Tipo
5	Corumbá	Turbina a Gás SOLAR - Mars 100 - 15000 hp	Centrífugo MHI – 5V-3
6	Miranda	Turbina a Gás SOLAR - Mars 100 - 15000 hp	Centrífugo MHI – 5V-3
7	Anastácio	Turbina a Gás SOLAR - Mars 100 - 15000 hp	Centrífugo MHI – 5V-3
8	Campo Grande	Turbina a Gás SOLAR – Taurus 60 - 7000 hp	Centrífugo MHI – 3V-2
9	Ribas do Rio Pardo	Turbina a Gás SOLAR - Mars 100 - 15000 hp	Centrífugo MHI – 5V-3
10	Três Lagoas	Turbina a Gás SOLAR - Mars 100 - 15000 hp	Centrífugo MHI – 5V-3
11	Mirandópolis	Turbina a Gás SOLAR - Mars 100 - 15000 hp	Centrífugo MHI – 5V-3
12	Penápolis	Turbina a Gás SOLAR – Taurus 60 - 7000 hp	Centrífugo MHI – 3V-2
13	Iacanga	Turbina a Gás SOLAR - Mars 100 - 15000 hp	Centrífugo MHI – 5V-3
14	São Carlos	Turbina a Gás SOLAR - Mars 100 - 15000 hp	Centrífugo MHI – 5V-3
15	Araucária	Motor a Gás Waukesha – L 7042 GSI – 1192 hp	Recíproco Nuovo Pignone – 2SHM/1
16	Biguaçu	Motor a Gás Waukesha – L 5790 GSI – 1013 hp	Recíproco Nuovo Pignone – 2HM/1

2.4.4. Performance

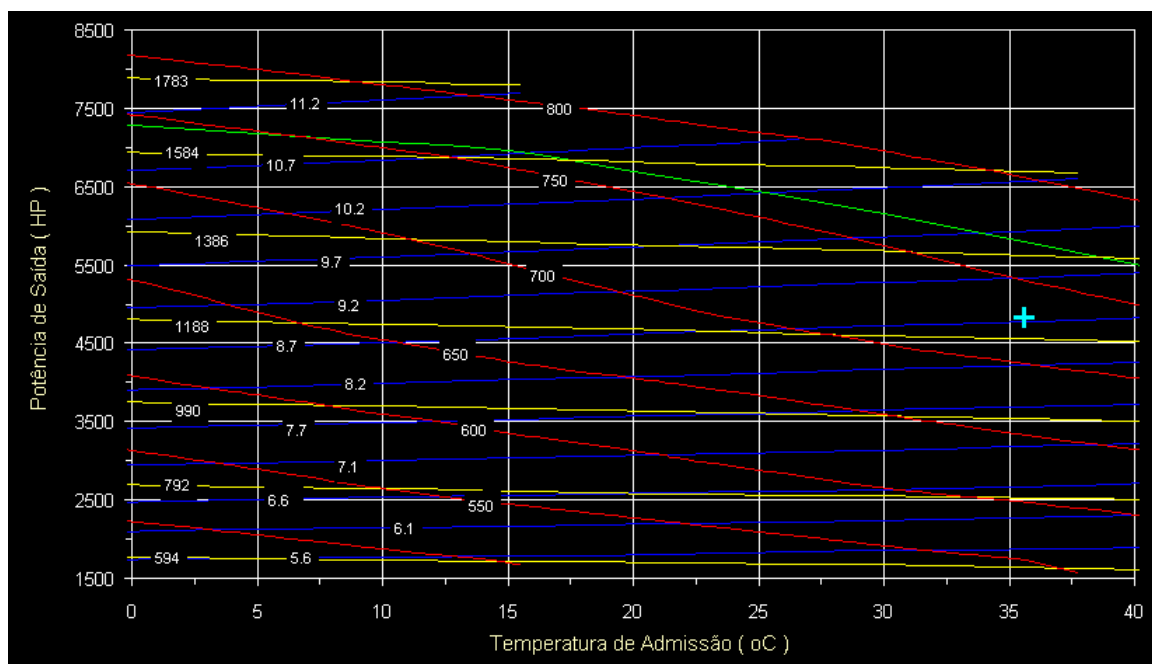
ANEXO II – Relatório de Análise dos Resultados dos Testes de Operação das Novas Estações de Compressão – RL-5200-974-TOC-001.

2.4.5. Curvas características

- MARS 100 – 15000 hp



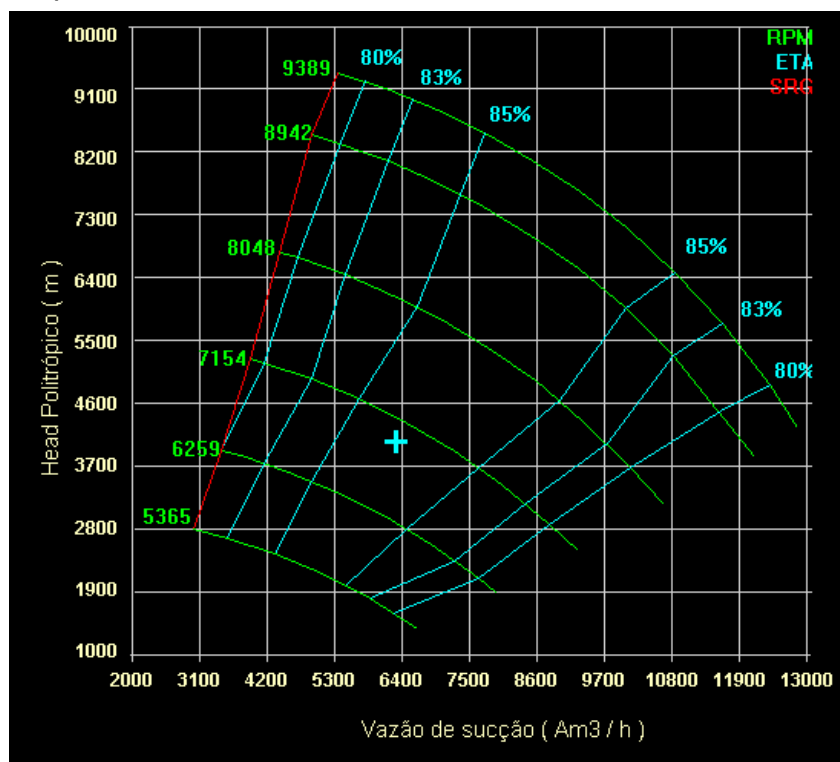
- TAURUS 60 – 7000 hp



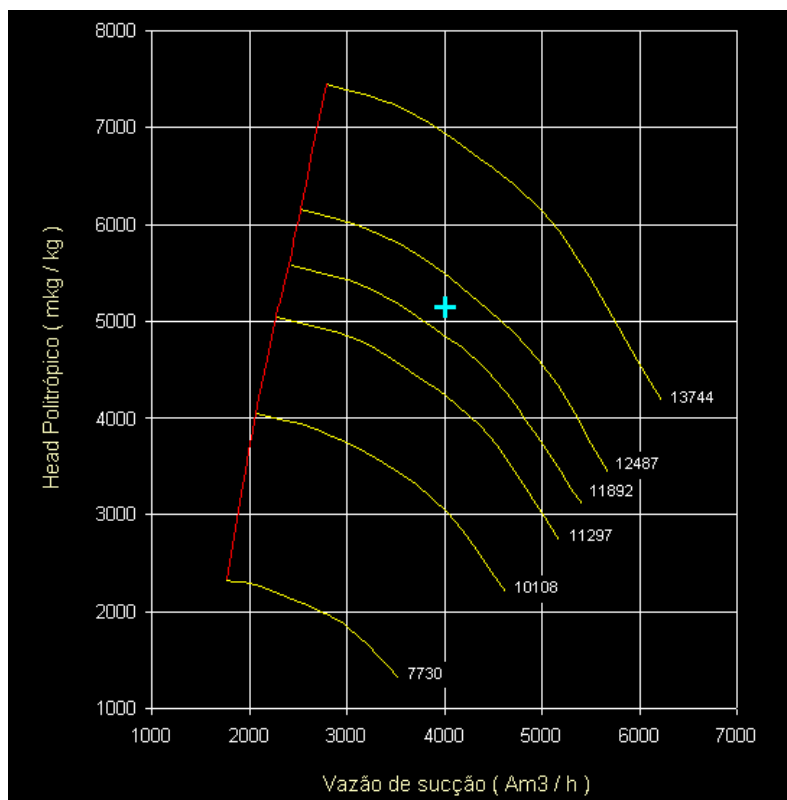


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- Compressor MHI – 5V-3



- Compressor MHI – 3V-2





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2.5. Cenário de Distribuição de Demandas

Qualquer alteração na distribuição das demandas afeta os resultados das simulações deste relatório.

Estações de Entrega	Vazão MM m ³ /d	Nominal	Flex 20%(MM m ³ /d)	
			Min	Max
CORUMBA		0.05	0.05	0.05
CAMPO GRANDE		1.35	1.35	1.35
TRÊS LAGOAS		1.95	1.95	1.95
BILAC		0.08	0.08	0.08
BOA ESPERANÇA DO SUL		0.08	0.08	0.08
SÃO CARLOS		0.40	0.30	0.5
RIO CLARO		1.14	0.89	1.14
LIMEIRA		0.76	0.60	1.00
AMERICANA		0.50	0.35	0.60
REPLAN		1.00	0.70	1.30
Camp RIO2		6.1	4.33	6.63
JAGUARIUNA		1.70	1.40	1.70
ITATIBA		0.55	0.45	0.90
GUARAREMA		0.35	0.30	0.35
EMED Guararema		6.70	3.20	6.70
Total Trecho Norte		22.71	16.03	24.33
GEMINI		0.89	0.865	0.91
EE CAMPINAS		0.03	0.03	0.03
INDAIATUBA		0.08	0.08	0.14
EE SUMARE		0.3	0.3	0.40
ITU		0.68	0.65	0.83
PORTO FELIZ		0.04	0.04	0.10
ARAÇOIABA DA SERRA		0.07	0.05	0.07
CAMPO LARGO		0.05	0.1	0.15
ARAUCÁRIA CIC		0.6	0.6	0.80
ARAUCÁRIA UTE		0.77	0.77	0.77
REPAR		0.3	0.2	0.50
JOINVILLE		0.17	0.15	0.23
GUARAMIRIM		0.26	0.16	0.26
GASPAR		0.13	0.1	0.16
BRUSQUE		0.04	0.04	0.12
TIJUCAS		0.15	0.12	0.19
SAO P ALCÂNTARA		0.06	0.04	0.11
TUBARAO		0.08	0.06	0.13
URUSSANGA		0.26	0.16	0.29
NOVA VENEZA		0.18	0.18	0.18
VARZEA DO CEDRO		0.1	0.1	0.1
ARARICÁ		0.05	0.05	0.05
CACHOEIRINHA		0.16	0.16	0.16
Igrejinha		0.02	0.02	0.02
REFAP		0.35	0.35	0.35
CANOAS		0.75	0.75	0.75
CANOAS UTE		0.8	0.8	0.8
Total Trecho Sul		7.37	6.925	8.6
Total		30.08	22.96	32.93



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NOTAS:

1. Perfil de demanda previsto para 30,08 MM m³/d obtido através de estudo de mercado realizado pela TBG, conforme solicitação Petrobras;
2. A vazão nominal para o trecho sul (REPLAN-Canoas) é a máxima possível permitida para o escoamento do gás considerando todas as obrigações contratuais;
3. A vazão nominal para o REPLAN-Guararema é a máxima possível permitida para o escoamento do gás considerando todas as obrigações contratuais, como também a necessidade de uma pressão mínima na EMED de Guararema (interconexão com os gasodutos da Petrobras) de 45 kgf/cm² g;

2.6. Pressão de Entrega Nominal Contratual

- Corumbá - REPLAN – 35 kgf/cm²g
- REPLAN - Guararema – 35 kgf/cm²g
- REPLAN – Siderópolis – 35 kgf/cm²g
- Siderópolis – Canoas – 24 kgf/cm²g

NOTAS:

1. Para efeito de penalidades contratuais, a pressão mínima de entrega é 10% inferior às pressões nominais informadas acima;

2.7. Máxima Pressão Admissível de Operação

A máxima pressão de operação no Trecho Norte (da fronteira até a REPLAN) e Trecho Sul da REPLAN até Araucária é de 99,84 kgf/cm². A máxima pressão de operação para os Trechos Araucária - Canoas e REPLAN - Guararema é de 75 kgf/cm².



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2.8. Estações de Entrega

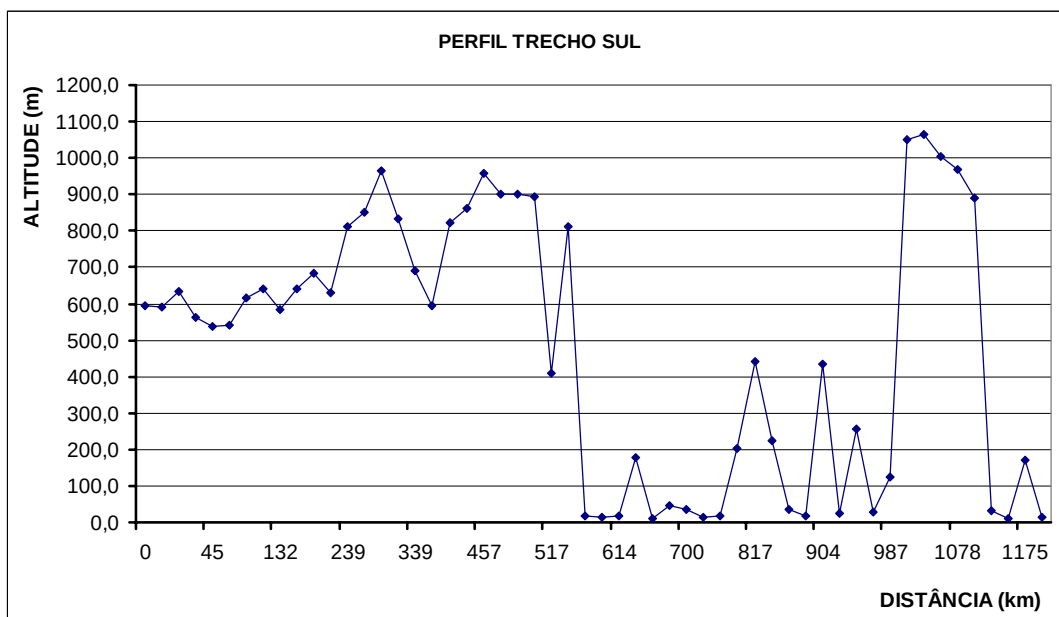
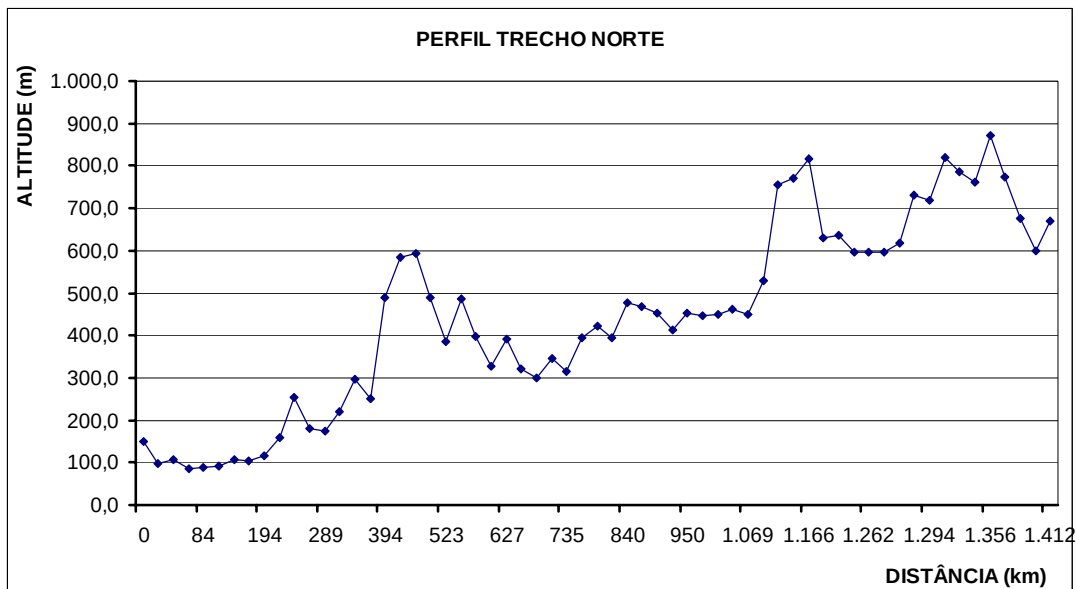
2.8.1. Tipo, Capacidade e Localização

ITEM	ESTADO	CITY-GATE	TIPO	CAPACIDADE DAS ESTAÇÕES Mínima-Máxima (m³/d)	km DESENVOLVIDO
TRECHO CORUMBÁ-REPLAN					
1	MS	CORUMBÁ	IV	39.600 - 990.000	28,26
2	MS	CAMPO GRANDE	V	96.000 - 1800.000	394,60
3	MS	UTE TRES LAGOAS	VI	96.000 - 1800.000	704,08
4	SP	BILAC	III	23.200 - 432.500	857,75
5	SP	BOA ESPERANÇA DO SUL	V	96.000 - 1800.000	1.096,24
6	SP	SÃO CARLOS	IV	39.600 - 990.000	1.150,74
7	SP	RIO CLARO	IV	39.600 - 990.000	1.204,78
8	SP	LIMEIRA	V	96.000 - 1800.000	1.223,70
9	SP	AMERICANA	V	96.000 - 1800.000	1.245,87
10	SP	REPLAN	IV	39.600 - 990.000	1.262,56
TRECHO REPLAN - GUARAREMA					
11	SP	JAGUARIUNA	VI	192.000 - 3600.000	6,93
12	SP	ITATIBA	V	96.000 - 1800.000	46,29
13	SP	GUARAREMA	V	96.000 - 1800.000	136,45
TRECHO REPLAN - CANOAS					
14	SP	GEMINI	IV	39.600 - 990.000	2,00
15	SP	SUMARÉ	IV	39.600 - 990.000	16,013
16	SP	CAMPINAS	V	96.000 - 1800.000	28,713
17	SP	INDAIATUBA	III	23.200 - 432.500	45,300
18	SP	ITU	VI	192.000 - 3600.000	68,753
19	SP	PORTO FELIZ	V	96.000 - 1800.000	85,000
20	SP	ARAÇOIABA DA SERRA	III	23.200 - 432.500	110,215
21	SP	CAMPO LARGO	III	23.200 - 432.500	457,500
22	PR	ARAUCARIA CIC	V	96.000 - 1800.000	476,365
23	PR	UTE ARAUCÁRIA	Vampliado	96.000 - 2500.000	478,412
24	PR	REPAR	IV	39.600 - 990.000	478,412
25	SC	JOINVILLE	II	13.600 - 255.000	585,212
26	SC	GUARAMIRIM	III	23.200 - 432.500	614,212
27	SC	BLUMENAU/GASPAR	IV	39.600 - 990.000	669,909
28	SC	BRUSQUE	II	13.600 - 255.000	692,542
29	SC	TIJUCAS	II modificado	23.200 - 432.500	728,782
30	SC	SÃO PEDRO ALCÂNTARA	I	4.500 - 112.000	768,060
31	SC	TUBARÃO	II	13.600 - 255.000	895,073
32	SC	COCAL DO SUL	III	23.200 - 432.500	925,840
33	SC	NOVA VENEZA	II modificado	23.200 - 432.500	948,381
34	RS	VÁRZEA DO CEDRO	III	23.200 - 432.500	1078,418
35	RS	IGREJINGHA	I	4.500 - 112.000	1139,000
36	RS	ARARICÁ	III	23.200 - 432.500	1156,000
37	RS	CACHOEIRINHA	IV	39.600 - 990.000	1185,585
38	RS	CANOAS	V	96.000 - 1800.000	1191,115
39	RS	REFAP	IV	39.600 - 990.000	1191,115
40	RS	UTE CANOAS	VI	192.000 - 3600.000	1191,115

2.9. Características do Gasoduto

2.9.1. ANEXO I – Diagrama Esquemático do Sistema de Transporte de Gás

2.9.2. Perfil do Gasoduto



2.10. Características do Gás

2.10.1.Caso 1 – Gás nas condições contratuais consideradas no projeto original – densidade = 0,6 e poder calorífico superior mínimo = 9000 kcal/m³;

2.10.2.Caso 2 – Gás nas condições atuais de transporte – densidade = 0,635 e poder calorífico superior = 9326 kcal/m³;



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3. RESULTADOS DA SIMULAÇÃO (CASO 1)

Características do Gás

Densidade	0,600
CO ₂	1,35 %
Poder Calorífico	37,681 MJ/m ³ 9000 kcal/m ³

3.1. Relatório da Simulação em Regime Permanente

* TERMOHIDRAULICO 30MM - REV.DEZ_2006 *

Default Initial Values Selected:

=====

Pressure 95.347
Flow 0.700
Temperature 27.113
Specific Gravity 0.600
Heating Value 37.681
CO2 percent 1.350

=====

* Problem Size Report *

	Number	Maximum
	<u>Used</u>	<u>Allowed</u>
External Regulators	61	5000
Equipment Devices	185	3000
Drivers/Turbines	6	500
Legs	309	10000
Nodes	475	20000
Knots	3663	30000
Stations	12	500
Banks	12	1000
Groups	12	1000
Plants	0	10



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Compressor Perf Types	7	500
Driver/Turb Perf Types	4	500
Cylinder Types	2	500
Fluids	2	100
Qualities	6	26

* Reference Conditions Report *

Reference Pressure = 0.00 KG/CM2G
Reference Temperature = 20.00 (DEG C)

* Leg Hydraulic Summary Report ----- Time = 0.000 (HRS) *

Leg ID	Pressure KG/CM2G		Flow (MMM3/D)		Line Pack (KPM3)	Temperature (°C)	
	Head	Tail	Head	Tail		Head	Tail
0A	99.49	98.8	31.602	31.602	161.693	51.7	51.12
0B	98.8	98.01	31.602	31.602	166.6748	51.12	50.51
0C	98.01	96.21	31.602	31.602	411.176	50.51	49.08
0D	96.21	93.4	31.602	31.602	634.6705	49.08	46.97
0E	93.4	87.25	31.602	31.602	1317.684	46.97	42.89
0F	87.25	82.84	31.602	31.602	851.2073	42.89	40.35
0G	82.84	76.02	31.602	31.602	1161.14	40.35	36.91
0H	76.02	69.98	31.602	31.602	878.8697	36.91	34.25
1A	99.49	93.51	31.484	31.484	1408.787	51.7	46.95
1B	93.51	86.94	31.484	31.484	1387.783	46.95	42.58
1C	86.94	80.57	31.484	31.484	1194.82	42.58	39.02
1D	80.57	72.06	31.484	31.484	1303.768	39.02	34.9
2A	99.49	93.59	31.377	31.377	1334.955	51.7	47.01
2B	93.59	88.23	31.377	31.377	1211.507	47.01	43.37
2C	88.23	83.23	31.377	31.377	830.0681	43.37	40.32
2D	83.23	77.44	31.377	31.377	1212.11	40.32	37.59
2E	77.44	71.82	31.377	31.377	900.8537	37.59	35.1
3A	99.49	93.42	31.268	31.268	1482.819	51.7	46.8
3B	93.42	86.73	31.268	31.268	1456.32	46.8	42.34
3C	86.73	79.72	31.268	31.268	1321.252	42.34	38.44
3D	79.72	77.99	31.268	31.268	293.7817	38.44	37.58
3E	77.99	76.77	31.268	31.268	202.8583	37.58	37.03
3F	76.77	71.7	31.268	31.268	786.3882	37.03	34.75
4A	99.49	96.42	31.16	31.16	759.322	51.7	49.1
4B	96.42	89.91	31.16	31.16	1471.289	49.1	44.32
4C	89.91	84.18	31.16	31.16	1097.09	44.32	40.77
4D	84.18	77.66	31.16	31.16	1204.53	40.77	37.44
4E	77.66	72.53	31.11	31.11	781.8854	37.44	35.05



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5A	98.31	95.92	30.992	30.992	620.5933	48	46.04
5B	95.92	89.15	30.992	30.992	1534.818	46.04	41.26
5C	89.15	84.74	30.992	30.992	904.1152	41.26	38.6
5D	84.74	77.69	30.992	30.992	1279.943	38.6	34.89
5E	77.69	69.9	30.992	30.992	1202.542	34.89	31.42
6A	98.32	93.5	30.869	30.869	1138.535	48	44.23
6B	93.5	88.49	30.869	30.869	1066.433	44.23	40.82
6C	88.49	83	30.869	30.869	982.6361	40.82	37.51
6D	83	77.05	30.869	30.869	1158.688	37.51	34.6
6E	77.04	71.84	30.869	30.869	837.3613	34.6	32.28
7A	98.33	95.44	30.751	30.751	544.4634	48	45.76
7B	95.44	94.94	30.751	30.751	276.4692	45.76	45.29
7C	94.94	93.68	30.751	30.751	240.182	45.29	44.37
7D	93.68	87.47	30.751	30.751	1298.797	44.37	40.16
7E	87.47	86.33	30.751	30.751	331.3809	40.16	39.5
7F	86.33	82.84	30.751	30.751	562.5681	39.5	37.4
7G	82.84	81.04	30.751	30.751	409.0922	37.4	36.51
7H	81.04	72.83	30.751	30.751	1150.572	36.51	32.17
8A	98.33	91.57	29.291	29.291	1622.314	48	42.42
8B	91.57	89.61	29.291	29.291	644.0811	42.42	40.96
8C	89.61	87.42	29.291	29.291	328.0864	40.96	39.47
8D	87.42	87.18	29.291	29.291	278.1515	39.47	39.36
8E	87.18	84.97	29.291	29.291	316.2411	39.36	37.91
8F	84.97	79.14	29.291	29.291	1444.101	37.91	34.85
8G	79.14	73.1	29.291	29.291	1172.852	34.85	32.08
9A	98.34	98.5	29.181	29.181	141.0284	48	47.93
9B	98.5	92.44	29.181	29.181	1275.286	47.93	43
9C	92.43	91.07	29.181	29.181	580.7109	43	41.88
9D	91.07	86.81	29.181	29.181	965.0919	41.88	38.95
9E	86.81	82.46	29.181	29.181	1090.041	38.95	36.41
9F	82.46	77.93	29.181	29.181	846.4622	36.41	33.94
9G	77.93	73.19	29.181	29.181	953.0758	33.94	31.9
10A	98.34	93.23	29.071	29.071	1425.955	48	43.14
10B	93.23	90.62	29.071	29.071	532.1166	43.14	41.08
10C	90.62	88.6	29.071	29.071	669.2	41.08	39.5
10D	88.6	87.03	27.121	27.121	481.4106	39.5	38.21
10E	87.03	83.01	27.121	27.121	957.3378	38.21	35.32
10F	83.01	78.69	27.121	27.121	946.8262	35.32	32.61
10G	78.69	74.43	27.121	27.121	907.0192	32.61	30.33
11A	98.33	93.79	27.018	27.018	1492.721	48	42.89
11B	93.79	89.53	27.018	27.018	1201.038	42.89	39.08
11C	89.53	88.19	27.018	27.018	292.1445	39.08	38.05
11D	88.19	85.96	27.018	27.018	847.7421	38.05	36.33
11E	85.96	83.35	26.938	26.938	581.3736	36.33	34.54
11F	83.35	80.82	26.938	26.938	682.6203	34.54	33
11G	80.82	80.41	26.938	26.938	98.0428	33	32.77
11H	80.41	78.6	26.938	26.938	392.7087	32.77	31.73
12A	98.34	96.46	26.849	26.849	471.7025	48	45.99
12B	96.46	94.45	26.849	26.849	830.8846	45.99	43.52
12C	94.45	89.95	26.849	26.849	1412.348	43.52	39.25
12D	89.95	86.84	26.849	26.849	705.4417	39.25	36.86
12E	86.84	86.61	26.849	26.849	256.7437	36.86	36.66



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12F	86.61	85.13	26.849	26.849	300.7491	36.66	35.61
12G	85.13	83.52	26.849	26.849	424.1992	35.61	34.53
12H	83.52	78.47	26.849	26.849	1332.417	34.53	31.6
13A	98.32	98.25	26.755	26.755	190.0437	48	47.6
13B	98.25	96.66	26.755	26.755	236.3957	47.6	46.18
13C	96.66	94.21	26.755	26.755	878.1808	46.18	43.35
13D	94.21	90.43	26.755	26.755	1198.741	43.35	39.71
13E	90.43	89.15	26.755	26.755	320.5305	39.71	38.66
13F	89.15	88.21	26.755	26.755	117.2338	38.66	37.98
13G	88.21	86.88	26.755	26.755	375.9254	37.98	36.95
13H	86.88	86.32	26.755	26.755	115.1781	36.95	36.54
13I	86.32	85.49	26.755	26.755	138.9639	36.54	35.95
13J	85.49	85.48	26.755	26.755	179.5036	35.95	35.94
13K	85.48	79.05	26.675	26.675	1378.232	35.94	31.81
13L	79.05	78.04	26.675	26.675	154.96	31.81	31.19
13M	78.04	78.64	26.675	26.675	111.6058	31.19	31.76
13N	78.64	76.79	26.675	26.675	213.1007	31.76	30.55
13O	76.79	76.17	26.675	26.675	103.7721	30.55	30.2
14A	98.34	97.56	26.578	26.578	144.2595	48	47.24
14B	97.56	96.32	26.578	26.578	355.7165	47.24	45.83
14C	96.32	96.81	26.178	26.178	205.1616	45.83	45.79
14D	96.81	93.91	26.178	26.178	711.8043	45.79	42.88
14E	93.91	93.91	26.178	26.178	202.3432	42.88	42.62
14F	93.91	93.97	26.178	26.178	268.7758	42.62	42.34
14G	93.97	92.33	26.178	26.178	496.8877	42.34	40.74
14H	92.33	91.79	26.178	26.178	125.8143	40.74	40.27
14I	91.79	91.32	26.178	26.178	243.3095	40.27	39.75
14J	91.32	91	26.178	26.178	141.1501	39.75	39.44
14K	91	90.28	26.178	26.178	254.5458	39.44	38.78
14L	90.28	87.68	25.038	25.038	433.2418	38.78	36.73
14M	87.68	87.77	25.038	25.038	274.6974	36.73	36.68
14N	87.77	87.58	25.038	25.038	189.1683	36.68	36.47
14O	87.58	85.9	24.278	24.278	670.9879	36.47	35.01
14P	85.9	85.35	24.278	24.278	91.9015	35.01	34.6
14Q	85.35	85.24	24.278	24.278	152.9701	34.6	34.49
14R	85.24	84.77	24.278	24.278	92.5333	34.49	34.14
14S	84.77	83.2	23.778	23.778	499.7094	34.14	32.97
14T	83.2	82.3	23.778	23.778	228.4672	32.97	32.35
14U	82.3	81.93	23.778	23.778	114.1146	32.35	32.12
14AA	81.81	81.43	6.488	6.488	217.0234	31.85	30.76
14AA1	81.43	81.21	6.488	6.488	128.2951	30.76	30.21
14BA	81.21	80.7	6.188	6.188	113.3192	30.21	29.53
14CA	80.7	80.48	6.188	6.188	199.2673	29.53	28.94
14DA	80.48	80.69	6.158	6.158	64.0566	28.94	28.97
14EA	80.69	79.61	6.158	6.158	351.0156	28.97	27.69
14FA	79.61	79.23	6.078	6.078	582.319	27.69	27.1
14GA	79.23	78.21	5.398	5.398	399.7551	27.1	26.29
14HA	78.01	78.11	5.358	5.358	255.286	23.89	24.57
14IA	78.11	77.21	5.358	5.358	225.5601	24.57	24.38
14JA	77.21	76.86	5.288	5.288	542.3029	24.38	25.13
14KA	76.86	75.93	5.288	5.288	199.3355	25.13	24.76
14LA	75.93	75.76	5.288	5.288	306.7011	24.76	25.17



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14MA	75.76	75.75	5.288	5.288	50.018	25.17	25.23
14NA	75.75	75.69	5.288	5.288	137.1304	25.23	25.38
14OA	75.69	74.14	5.288	5.288	380.8599	25.38	24.79
14PA	74.14	74.43	5.288	5.288	221.5963	24.79	25.4
14QA	74.43	73.54	5.288	5.288	508.4343	25.4	25.39
14RA	73.54	73.75	5.288	5.288	195.5659	25.39	25.78
14AS	73.75	71.88	5.288	5.288	513.28	25.78	25.01
14TA	71.88	71.51	5.288	5.288	97.4988	25.01	24.9
14UA	71.51	71.72	5.288	5.288	48.5674	24.9	25.17
14VA	71.72	70.98	5.288	5.288	63.1567	25.17	24.69
14WA	70.98	71.67	5.288	5.288	191.3912	24.69	25.6
14XA	71.67	70.86	5.288	5.288	103.3709	25.6	25.09
14YA	70.86	71.02	5.288	5.288	161.0118	25.09	25.49
14ZA	71.02	70.6	5.288	5.288	43.5174	25.49	25.2
14BB	70.6	69.31	5.288	5.288	88.3312	25.2	24.31
14CB	69.31	69.98	5.288	5.288	74.7358	24.31	25.08
14DB	69.98	69.51	5.288	5.288	72.5516	25.08	24.83
14EB	69.51	69.18	5.288	5.288	627.9058	24.83	25.64
14FB	69.18	70.77	5.288	5.288	78.8074	25.64	27.05
14GB	70.77	69.84	5.288	5.288	46.1422	27.05	26.25
14HB	69.84	71.02	5.288	5.288	46.2032	26.25	27.26
14IB	71.02	68.5	5.288	5.288	294.7476	27.26	25.26
14JB	68.5	68.93	5.288	5.288	168.0441	25.26	25.89
14KB	68.93	69.41	5.288	5.288	147.1218	25.89	26.4
14LB	69.41	67.31	5.288	5.288	59.9945	26.4	24.66
14MB	67.31	68.95	5.288	5.288	464.7068	24.66	26.67
14NB	68.95	68.17	5.288	5.288	68.4793	26.67	26.02
14OB	68.17	68.97	5.288	5.288	76.1726	26.02	26.76
14PB	68.97	69.28	5.288	5.288	129.1906	26.76	27
14QB	69.28	67.11	5.288	5.288	198.1025	27	25.25
14RB	67.11	67.96	5.288	5.288	76.0316	25.25	26.11
14SB	67.96	65.78	5.288	5.288	180.0302	26.11	24.5
14TB	65.78	66.89	5.288	5.288	72.6913	24.5	25.68
14UB	66.89	65.36	5.288	5.288	258.6107	25.68	24.84
14VB	65.36	63.66	5.288	5.288	254.583	24.84	24.09
14WB	63.66	64.34	5.288	5.288	44.0494	24.09	24.87
14XB	64.34	63.2	5.288	5.288	213.1856	24.87	24.45
14YB	63.2	62.87	5.288	5.288	213.219	24.45	24.82
14ZB	62.87	62.39	5.238	5.238	361.8764	24.82	25.32
14ZB1	62.39	62.32	4.638	4.638	40.1752	25.32	25.34
15A	70.75	70.63	3.664	3.664	35.3512	37.8	36.81
15B	70.63	70.58	3.664	3.664	96.2176	36.81	34.76
15C	70.58	70.26	3.664	3.664	46.7136	34.76	33.68
15D	70.26	68.95	3.664	3.664	393.4337	33.68	28.83
15E	68.95	68.4	3.664	3.664	161.5224	28.83	27.79
15F	68.4	68.57	3.664	3.664	111.0065	27.79	27.69
15G	68.57	72	3.664	3.664	363.1167	27.69	29.19
15H	72	70.78	3.664	3.664	399.809	29.19	27.07
15I	70.78	70.43	3.494	3.494	124.8614	27.07	26.7
15J	70.43	69.77	3.494	3.494	229.955	26.7	26.23
15K	69.77	69.61	3.494	3.494	48.2085	26.23	26.14
15L	69.61	69.49	3.494	3.494	39.2994	26.14	26.09



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15M	69.49	69.44	3.234	3.234	45.0579	26.09	26.09
15N	69.44	67.74	3.234	3.234	323.1092	26.09	25.3
15O	67.74	67.75	3.234	3.234	103.8654	25.3	25.6
15P	67.75	66.79	3.234	3.234	119.3107	25.6	25.11
15Q	66.79	65.55	3.234	3.234	43.5505	25.11	24.2
15R	65.55	66.32	3.234	3.234	28.9231	24.2	25.06
15S	66.32	65.66	3.234	3.234	57.1146	25.06	24.71
15T	65.66	67.43	3.234	3.234	100.4372	24.71	26.55
15U	67.43	67.04	3.104	3.104	57.835	26.55	26.22
15V	67.04	66.16	3.104	3.104	53.6912	26.22	25.52
15W	66.16	66.67	3.104	3.104	143.0061	25.52	26.22
15X	66.67	66.68	3.104	3.104	71.1134	26.22	26.27
15Z	66.68	66.3	3.064	3.064	112.9167	26.27	26.03
15AA	66.3	64.19	3.064	3.064	58.4296	26.03	24.31
15BA	64.19	65.81	3.064	3.064	63.8443	24.31	26.04
15CA	65.81	64.2	3.064	3.064	58.1228	26.04	24.74
15DA	64.2	65.41	3.064	3.064	60.7363	24.74	26.05
15EA	65.41	64.86	3.064	3.064	53.8525	26.05	25.64
15FA	64.86	65.35	3.064	3.064	108.9918	25.64	26.26
15GA	65.35	63.92	2.914	2.914	278.2594	26.26	25.45
15HA	63.92	64.54	2.914	2.914	89.2944	25.45	26.2
15IA	64.54	63.2	2.914	2.914	31.5411	26.2	25.02
16A	74.6	72.97	2.91	2.91	132.6583	41.34	35.27
16A1	72.97	72.18	2.85	2.85	41.7934	35.27	33.58
16B	72.18	73.47	2.85	2.85	109.3829	33.58	32.49
16C	73.47	70.63	2.85	2.85	55.8956	32.49	29.38
16D	70.63	72.44	2.85	2.85	35.9178	29.38	30.54
16E	72.44	69.45	2.85	2.85	62.9167	30.54	27.55
16F	69.45	70.14	2.85	2.85	24.3903	27.55	28.06
16G	70.14	68.65	2.85	2.85	24.2902	28.06	26.71
16H	68.65	70.83	2.85	2.85	56.1057	26.71	28.42
16I	70.83	68.61	2.85	2.85	63.4847	28.42	26.38
16J	68.61	69.74	2.85	2.85	24.2729	26.38	27.35
16K	69.74	68.3	2.85	2.85	24.2333	27.35	26.09
16L	68.3	69.26	2.85	2.85	24.1651	26.09	26.94
16M	69.26	67.61	2.85	2.85	24.068	26.94	25.53
16N	67.61	67.91	2.85	2.85	27.4547	25.53	25.89
16O	67.91	67.99	2.85	2.85	51.412	25.89	26.08
16P	67.99	68.85	2.85	2.85	60.0725	26.08	26.86
16Q	68.85	67.75	2.85	2.85	104.3634	26.86	26
16R	67.75	68.74	2.85	2.85	104.2245	26	26.94
16S	68.74	68.85	2.85	2.85	54.7018	26.94	26.98
16T	68.85	68.61	2.85	2.85	195.2567	26.98	26.69
16U	68.61	68.92	2.85	2.85	65.1275	26.69	26.94
16V	68.92	68.66	2.85	2.85	38.6104	26.94	26.69
16W	68.66	68.11	2.85	2.85	25.2201	26.69	26.22
16X	68.11	68.55	2.85	2.85	38.4011	26.22	26.65
16Y	68.55	67.01	2.85	2.85	79.8632	26.65	25.46
16Z	67.01	67.88	2.85	2.85	27.2848	25.46	26.3
16AA	67.88	67.74	2.85	2.85	39.3	26.3	26.23
16BA	67.74	67.68	2.85	2.85	24.633	26.23	26.23
16CA	67.68	67.65	2.85	2.85	29.7093	26.23	26.24



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16DA	67.65	66.01	2.77	2.77	28.2333	26.24	24.88
16EA	66.01	65.55	2.77	2.77	26.3365	24.88	24.63
16FA	65.55	64.98	2.77	2.77	44.9345	24.63	24.45
16GA	64.98	65.79	2.77	2.77	82.8795	24.45	25.66
16HA	65.79	64.21	2.77	2.77	56.0368	25.66	24.52
16IA	64.21	66.22	2.77	2.77	72.0861	24.52	26.64
16KA	66.22	65.58	2.77	2.77	43.813	26.64	26.1
16LA	65.58	64.98	2.51	2.51	25.9537	26.1	25.62
16MA	64.98	64.36	2.51	2.51	28.3762	25.62	25.17
16NA	64.36	64.36	2.51	2.51	74.1922	25.17	25.52
17A	64.36	64.56	2.51	2.51	19.3384	25.52	25.83
17B	64.56	64	2.51	2.51	18.4064	25.83	25.44
17B1	64	64.55	2.51	2.51	57.7663	25.44	26.28
17C	64.55	63.61	2.33	2.33	141.5769	26.28	25.94
17D	63.61	62.26	2.33	2.33	64.3838	25.94	25.1
17E	62.26	61.98	2.33	2.33	91.835	25.1	25.57
17F	61.98	60.71	2.33	2.33	16.9578	25.57	24.49
17G	60.71	61.59	2.33	2.33	20.2767	24.49	25.56
17H	61.59	61.07	2.33	2.33	43.0482	25.56	25.41
17I	61.07	55.22	2.33	2.33	76.703	25.41	21.11
17J	55.22	55.24	2.33	2.33	157.0059	21.11	24.77
17K	55.24	53.7	2.33	2.33	64.8715	24.77	24.16
17L	53.7	53.41	2.33	2.33	46.1146	24.16	24.64
17M	53.41	53.28	2.33	2.33	25.0687	24.64	24.91
17N	53.28	53.44	2.33	2.33	23.9655	24.91	25.41
17O	53.44	52.48	2.33	2.33	38.1814	25.41	24.85
17P	52.48	51.97	2.33	2.33	106.3245	24.85	25.68
17Q	51.97	50.61	2.33	2.33	66.0169	25.68	24.99
17R	50.61	50.25	2.33	2.33	28.2509	24.99	25.04
17S	50.25	48.34	2.23	2.23	186.3391	25.04	25.49
17T	48.34	48.11	2.23	2.23	14.0619	25.49	25.41
17U	48.11	50.23	2.23	2.23	57.8286	25.41	28.26
17V	50.23	48.64	2.23	2.23	29.7419	28.26	26.32
17W	48.64	49.73	2.23	2.23	17.7668	26.32	27.74
17X	49.73	48.01	2.23	2.23	39.2708	27.74	25.79
17Y	48.01	48.28	2.23	2.23	19.0815	25.79	26.35
17Z	48.28	48.64	2.21	2.21	52.9012	26.35	27.09
17AA	48.64	47.75	2.21	2.21	16.7535	27.09	26.07
17BA	47.75	47.81	2.21	2.21	51.1862	26.07	26.58
17CA	47.81	47.52	2.21	2.21	26.7801	26.58	26.41
17DA	47.52	47.06	2.16	2.16	34.5866	26.41	26.14
17EA	47.06	46.45	2.16	2.16	38.0958	26.14	25.8
17FA	46.45	45.17	2.16	2.16	28.2738	25.8	24.63
17GA	45.17	45.45	2.16	2.16	12.1615	24.63	25.27
17HA	45.45	45.19	2.16	2.16	25.4985	25.27	25.39
17IA	45.19	44.95	2.16	2.16	39.7853	25.39	25.73
17JA	44.95	44.69	2	2	32.4154	25.73	25.83
18A	75	74.55	9.3	9.3	92.2816	29.65	29.29
18A1	74.55	74.23	9.3	9.3	52.8472	29.29	29.05
18B	74.23	73.96	7.6	7.6	69.9719	29.05	28.76
18C	73.96	72.99	7.6	7.6	230.1558	28.76	27.89
18D	72.99	72.5	7.6	7.6	62.1609	27.89	27.5



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18E	72.5	71.97	7.6	7.6	164.2661	27.5	27.15
18F	71.97	71.56	7.6	7.6	124.6567	27.15	26.9
18G	71.56	69.99	7.6	7.6	262.0118	26.9	25.93
18H	69.99	69.87	7.05	7.05	91.692	25.93	25.98
18I	69.87	68.2	7.05	7.05	459.2818	25.98	25.39
18J	68.2	67.52	7.05	7.05	271.5027	25.39	25.43
18K	67.52	66.94	7.05	7.05	164.055	25.43	25.3
18L	66.94	65.66	7.05	7.05	71.2917	25.3	24.34
18M	65.66	66.08	7.05	7.05	41.7164	24.34	24.87
18N	66.08	65.67	7.05	7.05	75.4047	24.87	24.72
18O	65.67	65.5	7.05	7.05	64.0832	24.72	24.77
18P	65.5	64.92	7.05	7.05	49.7618	24.77	24.39
18Q	64.92	65.16	7.05	7.05	290.1789	24.39	25.51
18Q1	65.16	64.38	7.05	7.05	306.2299	25.51	25.55
18R	64.38	64.34	6.7	6.7	42.1682	25.55	25.62
18S	64.34	63.89	6.7	6.7	44.0192	25.62	25.3
18T	63.89	64.12	6.7	6.7	56.5813	25.3	25.66
18U	64.12	63.29	6.7	6.7	141.7916	25.66	25.23
18V	63.29	63.27	6.7	6.7	99.4948	25.23	25.48
14GAA	78.21	78.01	5.358	5.358	148.1499	26.29	23.89
14AAA	81.93	81.81	7.378	7.378	49.301	32.12	31.85

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:: Equipment Hydraulic Summary Report ::
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Equipment ID	Mode Control	Pressure KG/CM2G		Flow (MMM3/D)	Temperatura (DEG C)		Spc (Grv)	Heating Value (MJ/M3)
		Up	Down		Up	Down		
VE1	Block Valve	93.4	93.4	31.6	46.97	46.97	0.6	37.68
VE2	Block Valve	87.25	87.25	31.6	42.89	42.89	0.6	37.68
VE3	Block Valve	82.84	82.84	31.6	40.35	40.35	0.6	37.68
VE4	Block Valve	76.02	76.02	31.6	36.91	36.91	0.6	37.68
VE5	Block Valve	93.51	93.51	31.48	46.95	46.95	0.6	37.68
VE6	Block Valve	86.94	86.94	31.48	42.58	42.58	0.6	37.68
VE7	Block Valve	80.57	80.57	31.48	39.02	39.02	0.6	37.68
VE8	Block Valve	93.59	93.59	31.38	47.01	47.01	0.6	37.68
VE9	Block Valve	88.23	88.23	31.38	43.37	43.37	0.6	37.68
VE10	Block Valve	83.23	83.23	31.38	40.32	40.32	0.6	37.68
VE11	Block Valve	77.44	77.44	31.38	37.59	37.59	0.6	37.68
VE12	Block Valve	93.42	93.42	31.27	46.8	46.8	0.6	37.68



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VE13	Block	86.73	86.73	31.27	42.34	42.34	0.6	37.68
	Valve							
VE14	Block	79.72	79.72	31.27	38.44	38.44	0.6	37.68
	Valve							
VE15	Block	96.42	96.42	31.16	49.1	49.1	0.6	37.68
	Valve							
VE16	Block	89.91	89.91	31.16	44.32	44.32	0.6	37.68
	Valve							
VES-10060	Block	95.92	95.92	30.99	46.04	46.04	0.6	37.68
	Valve							
VES-10070	Block	89.15	89.15	30.99	41.26	41.26	0.6	37.68
	Valve							
VES-10080	Block	84.74	84.74	30.99	38.6	38.6	0.6	37.68
	Valve							
VES-10090	Block	77.69	77.69	30.99	34.89	34.89	0.6	37.68
	Valve							
VES-10140	Block	93.5	93.5	30.87	44.23	44.23	0.6	37.68
	Valve							
VES-10150	Block	88.49	88.49	30.87	40.82	40.82	0.6	37.68
	Valve							
VES-10160	Block	83	83	30.87	37.51	37.51	0.6	37.68
	Valve							
VES-10170	Block	77.05	77.04	30.87	34.6	34.6	0.6	37.68
	Valve							
VES-10190	Block	93.68	93.68	30.75	44.37	44.37	0.6	37.68
	Valve							
VES-10200	Block	87.47	87.47	30.75	40.16	40.16	0.6	37.68
	Valve							
VES-10280	Block	91.57	91.57	29.29	42.42	42.42	0.6	37.68
	Valve							
VES-10290	Block	84.97	84.97	29.29	37.91	37.91	0.6	37.68
	Valve							
VES-10300	Block	79.14	79.14	29.29	34.85	34.85	0.6	37.68
	Valve							
VES-10320	Block	92.44	92.43	29.18	43	43	0.6	37.68
	Valve							
VES-10330	Block	86.81	86.81	29.18	38.95	38.95	0.6	37.68
	Valve							
VES-10340	Block	82.46	82.46	29.18	36.41	36.41	0.6	37.68
	Valve							
VES-10350	Block	77.93	77.93	29.18	33.94	33.94	0.6	37.68
	Valve							
VES-10400	Block	93.23	93.23	29.07	43.14	43.14	0.6	37.68
	Valve							
VES-10420	Block	83.01	83.01	27.12	35.32	35.32	0.6	37.68
	Valve							
VES-10430	Block	78.69	78.69	27.12	32.61	32.61	0.6	37.68
	Valve							
VES-10450	Block	93.79	93.79	27.02	42.89	42.89	0.6	37.68
	Valve							
VES-10460	Block	88.19	88.19	27.02	38.05	38.05	0.6	37.68
	Valve							
VES-10470	Block	83.35	83.35	26.94	34.54	34.54	0.6	37.68
	Valve							
VES-10540	Block	94.45	94.45	26.85	43.52	43.52	0.6	37.68
	Valve							
VES-10550	Valve	89.95	89.95	26.85	39.25	39.25	0.6	37.68



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VES-10560	Block Valve	83.52	83.52	26.85	34.53	34.53	0.6	37.68
VES-10580	Block Valve	94.21	94.21	26.75	43.35	43.35	0.6	37.68
VES-10590	Block Valve	90.43	90.43	26.75	39.71	39.71	0.6	37.68
VES-10610	Block Valve	79.05	79.05	26.67	31.81	31.81	0.6	37.68
VES-10660	Block Valve	93.91	93.91	26.18	42.88	42.88	0.6	37.68
VES-10670	Block Valve	91.79	91.79	26.18	40.27	40.27	0.6	37.68
VES-10680	Block Valve	87.77	87.77	25.04	36.68	36.68	0.6	37.68
VES-10690	Block Valve	85.24	85.24	24.28	34.49	34.49	0.6	37.68
VE40040	Block Valve	81.43	81.43	6.49	30.76	30.76	0.6	37.68
VE40050	Block Valve	80.7	80.7	6.19	29.53	29.53	0.6	37.68
VE40060	Block Valve	80.69	80.69	6.16	28.97	28.97	0.6	37.68
VE40070	Block Valve	79.61	79.61	6.16	27.69	27.69	0.6	37.68
VE40080	Block Valve	79.23	79.23	5.4	27.1	27.1	0.6	37.68
VE40090	Block Valve	78.01	78.01	5.36	23.89	23.89	0.6	37.68
VE40100	Block Valve	77.21	77.21	5.29	24.38	24.38	0.6	37.68
VE40110	Block Valve	76.86	76.86	5.29	25.13	25.13	0.6	37.68
VE40120	Block Valve	75.75	75.75	5.29	25.23	25.23	0.6	37.68
VE40130	Block Valve	74.43	74.43	5.29	25.4	25.4	0.6	37.68
VE40170	Block Valve	73.75	73.75	5.29	25.78	25.78	0.6	37.68
VE40140	Block Valve	71.88	71.88	5.29	25.01	25.01	0.6	37.68
VE40150	Block Valve	70.86	70.86	5.29	25.09	25.09	0.6	37.68
VE40200	Block Valve	69.51	69.51	5.29	24.83	24.83	0.6	37.68
VE40210	Block Valve	69.18	69.18	5.29	25.64	25.64	0.6	37.68
VE40220	Block Valve	68.93	68.93	5.29	25.89	25.89	0.6	37.68
VE40230	Block Valve	68.17	68.17	5.29	26.02	26.02	0.6	37.68
VE40240	Block Valve	65.78	65.78	5.29	24.5	24.5	0.6	37.68
VE40250	Block Valve	64.34	64.34	5.29	24.87	24.87	0.6	37.68
VE40260	Block Valve	62.87	62.87	5.29	24.82	24.82	0.6	37.68
VE40270	Block Valve	62.32	62.32	3.67	25.34	25.34	0.6	37.68



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VE60040	Block	70.26	70.26	3.66	33.68	33.68	0.6	37.68
	Valve							
VE60050	Block	68.95	68.95	3.66	28.83	28.83	0.6	37.68
	Valve							
VE60060	Block	68.57	68.57	3.66	27.69	27.69	0.6	37.68
	Valve							
VE60070	Block	72	72	3.66	29.19	29.19	0.6	37.68
	Valve							
VE60080	Block	70.78	70.78	3.49	27.07	27.07	0.6	37.68
	Valve							
VE60090	Block	69.49	69.49	3.23	26.09	26.09	0.6	37.68
	Valve							
VE60100	Block	67.74	67.74	3.23	25.3	25.3	0.6	37.68
	Valve							
VE60110	Block	67.43	67.43	3.1	26.55	26.55	0.6	37.68
	Valve							
VE60120	Block	66.67	66.67	3.1	26.22	26.22	0.6	37.68
	Valve							
VE60270	Block	66.3	66.3	3.06	26.03	26.03	0.6	37.68
	Valve							
VE60320	Block	65.35	65.35	2.91	26.26	26.26	0.6	37.68
	Valve							
VE60190	Block	72.44	72.44	2.85	30.54	30.54	0.6	37.68
	Valve							
VE60200	Block	67.91	67.91	2.85	25.89	25.89	0.6	37.68
	Valve							
VE60210	Block	68.85	68.85	2.85	26.98	26.98	0.6	37.68
	Valve							
VE60220	Block	68.66	68.66	2.85	26.69	26.69	0.6	37.68
	Valve							
VE60230	Block	67.65	67.65	2.77	26.24	26.24	0.6	37.68
	Valve							
VE60240	Block	64.98	64.98	2.77	24.45	24.45	0.6	37.68
	Valve							
VE60250	Block	66.22	66.22	2.77	26.64	26.64	0.6	37.68
	Valve							
VE60290	Block	64.36	64.36	2.51	25.52	25.52	0.6	37.68
	Valve							
VE80020	Block	63.61	63.61	2.33	25.94	25.94	0.6	37.68
	Valve							
VE80030	Block	61.59	61.59	2.33	25.56	25.56	0.6	37.68
	Valve							
VE80040	Block	55.22	55.22	2.33	21.11	21.11	0.6	37.68
	Valve							
VE80050	Block	53.7	53.7	2.33	24.16	24.16	0.6	37.68
	Valve							
VE80060	Block	52.48	52.48	2.33	24.85	24.85	0.6	37.68
	Valve							
VE80070	Block	50.25	50.25	2.23	25.04	25.04	0.6	37.68
	Valve							
VE80080	Block	48.11	48.11	2.23	25.41	25.41	0.6	37.68
	Valve							
VE80090	Block	48.64	48.64	2.21	27.09	27.09	0.6	37.68
	Valve							
VE80100	Block	47.06	47.06	2.16	26.14	26.14	0.6	37.68
	Valve							
VE80110	Valve	45.45	45.45	2.16	25.27	25.27	0.6	37.68



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VE90050	Block Valve	72.5	72.5	7.6	27.5	27.5	0.6	37.68
VE90060	Block Valve	71.56	71.56	7.6	26.9	26.9	0.6	37.68
VE90070	Block Valve	69.87	69.87	7.05	25.98	25.98	0.6	37.68
VE90080	Block Valve	68.2	68.2	7.05	25.39	25.39	0.6	37.68
VE90090	Block Valve	67.52	67.52	7.05	25.43	25.43	0.6	37.68
VE90100	Block Valve	66.08	66.08	7.05	24.87	24.87	0.6	37.68
VE90110	Block Valve	65.16	65.16	7.05	25.51	25.51	0.6	37.68
VE90120	Block Valve	64.34	64.34	6.7	25.62	25.62	0.6	37.68
VE90130	Block Valve	63.29	63.29	6.7	25.23	25.23	0.6	37.68
VEFRONT-BLKV-1	Block Valve	84.18	84.18	31.16	40.77	40.77	0.6	37.68
VES-10040	Block Valve	77.66	77.66	31.16	37.44	37.44	0.6	37.68
VES-10210	Block Valve	81.04	81.04	30.75	36.51	36.51	0.6	37.68
VES-10410	Block Valve	88.6	88.6	29.07	39.5	39.5	0.6	37.68
VES-10600	Block Valve	85.48	85.48	26.75	35.94	35.94	0.6	37.68
VES-90040	Block Valve	74.23	74.23	9.3	29.05	29.05	0.6	37.68
VE60140	Valve	74.6	74.6	2.91	41.34	41.34	0.6	37.68
R1-UP-RESI-1	Resistance	69.98	69.63	31.6	34.25	34.12	0.6	37.68
R2-UP-RESI-1	Resistance	72.06	71.72	31.48	34.9	34.78	0.6	37.68
R3-UP-RESI-1	Resistance	71.82	71.48	31.38	35.1	34.98	0.6	37.68
R4-UP-RESI-1	Resistance	71.7	71.36	31.27	34.75	34.63	0.6	37.68
R5-UP-RESI-1	Resistance	72.53	72.03	31.11	35.05	34.88	0.6	37.68
R6-UP-RESI-1	Resistance	69.9	69.4	30.99	31.42	31.23	0.6	37.68
R7-UP-RESI-1	Resistance	71.84	71.33	30.87	32.28	32.09	0.6	37.68
R8-UP	Resistance	72.83	72.32	29.4	32.17	31.99	0.6	37.68
R9-UP-RESI-1	Resistance	73.1	72.58	29.29	32.08	31.89	0.6	37.68
R10UP-RESI-1	Resistance	73.19	72.68	29.18	31.9	31.72	0.6	37.68
R11UP-RESI-1	Resistance	74.43	73.91	27.12	30.33	30.15	0.6	37.68
R12UP-RESI-1	Resistance	78.6	78.1	26.94	31.73	31.55	0.6	37.68
R13UP-RESI-1	Resistance	78.47	77.97	26.85	31.6	31.43	0.6	37.68
R14UP-RESI-1	Resistance	76.17	75.67	26.67	30.2	30.02	0.6	37.68
R15UP	Resistance	62.32	62.03	3.67	25.34	25.22	0.6	37.68
R16UP-RESI-1	Resistance	63.2	62.88	2.91	25.02	24.89	0.6	37.68
RG70-REGU-1	Bypass	70.75	70.75	3.66	37.8	37.8	0.6	37.68
RG70A-REGU-1	Max PD	81.93	75	9.3	32.12	29.65	0.6	37.68
COOLER1	Resistance	99.84	99.49	31.48	62.81	51.7	0.6	37.68
COOLER2	Resistance	99.84	99.49	31.38	61.12	51.7	0.6	37.68
COOLER3	Resistance	99.84	99.49	31.27	61.59	51.7	0.6	37.68
COOLER4	Resistance	99.84	99.49	31.16	61.37	51.7	0.6	37.68
COOLER5	Resistance	99.84	98.31	30.99	66.33	48	0.6	37.68



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COOLER6	Resistance	99.84	98.32	30.87	66.07	48	0.6	37.68
COOLER7	Resistance	99.84	98.33	30.75	64.32	48	0.6	37.68
COOLER8	Resistance	99.84	98.33	29.29	62.86	48	0.6	37.68
COOLER9	Resistance	99.84	98.34	29.18	62.42	48	0.6	37.68
COOLER10	Resistance	99.84	98.34	29.07	62.09	48	0.6	37.68
COOLER11	Resistance	99.84	98.33	27.02	58.81	48	0.6	37.68
COOLER12	Resistance	99.84	98.34	26.85	54.97	48	0.6	37.68
COOLER13	Resistance	99.84	98.32	26.75	55	48	0.6	37.68
COOLER14	Resistance	99.84	98.34	26.58	56.4	48	0.6	37.68
COOLER15	Resistance	71	70.75	3.66	37.8	37.8	0.6	37.68
COOLER16	Resistance	75	74.6	2.91	41.34	41.34	0.6	37.68
IZOZOG	Max PD	69.63	99.84	31.48	34.12	62.81	0.6	37.68
CHIQUITOS	Max PD	71.72	99.84	31.38	34.78	61.12	0.6	37.68
ROBORE	Max PD	71.48	99.84	31.27	34.98	61.59	0.6	37.68
YACUSES	Max PD	71.36	99.84	31.16	34.63	61.37	0.6	37.68

Cmprs ID	Head (N.M/KG)	Actual Flow (M3/H)	Adiab Effic Percent	Disch Temper (DEG C)	Power Required (HP)	Power Available (HP)
IZOZOG	47839.43	17580.97	85	62.81	20293.5	38757.64
CHIQUITOS	43772.3	17017.23	85	61.12	18504.8	38629.12
ROBORE	44295.21	17038.7	85	61.59	18661.14	39186.04
YACUSES	44457.79	16980.9	85	61.37	18664.66	39550.18

* External Regulator Hydraulic Report --- Time = 0.000 (HRS) *

.....
:: External Regulator Flow Balance Report ::
.....

Mass (TONN/H)	Units (MMM3/D)	Volumetric flow	Units
Total	input	flow	952.153
Total	output	flow	952.153
Network	flow	balance	0

.....
:: External Regulator Hydraulic Summary Report ::
.....

External Regulator ID	Spec. Mode Control	Pressure KG/CM2G	Flow (MMM3/D)	Temperature (DEG)	Gravity	Heating Value (MJ/M3)
-----	-----	-----	-----	-----	-----	-----



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INPUT	Max Pres	99.49	-31.601	51.7	0.6	37.68
CORUMBA	Max Flow	77.66	0.05	37.44	0.6	37.68
CAMPO_GRANDE	Max Flow	72.83	1.35	32.17	0.6	37.68
TRES_LAGOAS	Max Flow	88.6	1.95	39.5	0.6	37.68
BILAC	Max Flow	85.96	0.08	36.33	0.6	37.68
BOA_ESPERAN·A_SUL	Max Flow	85.48	0.08	35.94	0.6	37.68
S·O_CARLOS	Max Flow	96.32	0.4	45.83	0.6	37.68
RIO_CLARO	Max Flow	90.28	1.14	38.78	0.6	37.68
LIMEIRA	Max Flow	87.58	0.76	36.47	0.6	37.68
AMERICANA	Max Flow	84.77	0.5	34.14	0.6	37.68
REPLAN	Max Flow	81.93	1	32.12	0.6	37.68
EE_SUMARE	Max Flow	81.21	0.3	30.21	0.6	37.68
EE_CAMPINAS	Max Flow	80.49	0.03	28.94	0.6	37.68
ITU	Max Flow	79.24	0.68	27.1	0.6	37.68
ARA·OIABA_DA_SERRA	Max Flow	77.21	0.07	24.38	0.6	37.68
ARAUCARIA_CIC	Max Flow	62.4	0.6	25.32	0.6	37.68
REPAR	Max Flow	62.33	0.3	25.34	0.6	37.68
JOINVILLE	Max Flow	69.94	0.17	26.98	0.6	37.68
GUARAMIRIM	Max Flow	68.71	0.26	26.06	0.6	37.68
GASPAR	Max Flow	66.75	0.13	26.58	0.6	37.68
BRUSQUE	Max Flow	66.04	0.04	26.29	0.6	37.68
TIJUCAS	Max Flow	64.78	0.15	26.28	0.6	37.68
SAO_P_ALCANTARA	Max Flow	73.03	0.06	35.19	0.6	37.68
TUBARAO	Max Flow	68.19	0.08	26.26	0.6	37.68
URUSSANGA	Max Flow	66.24	0.26	26.15	0.6	37.68
NOVA_VENEZA	Max Flow	65.33	0.18	26.34	0.6	37.68
VARZEA_DO_CEDRO	Max Flow	52	0.1	25.16	0.6	37.68
ARARICA	Max Flow	50.28	0.05	26.5	0.6	37.68
CACHOEIRINHA	Max Flow	48.06	0.16	25.84	0.6	37.68
REFAP	Max Flow	47.87	0.35	25.94	0.6	37.68
CANOAS	Max Flow	47.87	0.75	25.94	0.6	37.68
JAGUARIUNA	Max Flow	74.23	1.7	29.05	0.6	37.68
ITATIBA	Max Flow	69.99	0.55	25.93	0.6	37.68
GUARAREMA	Max Flow	64.38	0.35	25.55	0.6	37.68
EMED_GUARAREMA	Max Flow	63.27	6.7	25.48	0.6	37.68
INDAIATUBA	Max Flow	79.61	0.08	27.69	0.6	37.68
ARAUCARIA_UTE	Max Flow	62.33	0.77	25.34	0.6	37.68
CANOAS_UTE	Max Flow	47.87	0.8	25.94	0.6	37.68
PORTO_FELIZ	Max Flow	78.21	0.04	26.29	0.6	37.68
CAMPO_LARGO	Max Flow	62.87	0.05	24.82	0.6	37.68
GEMINI	Max Flow	81.81	0.89	31.85	0.6	37.68
EMED_CAMPINAS_RIO	Max Flow	81.93	4.47	32.12	0.6	37.68
IGREJINHA	Max Flow	50.71	0.02	26.43	0.6	37.68
CAMP_RIO2	Max Flow	81.93	1.63	32.12	0.6	37.68
C1-FUEL	Max Flow	69.63	0.118	34.12	0.6	37.68
C2-FUEL	Max Flow	71.72	0.108	34.78	0.6	37.68
C3-FUEL	Max Flow	71.48	0.108	34.98	0.6	37.68
C4-FUEL	Max Flow	71.36	0.108	34.63	0.6	37.68
C5-FUEL	Max Flow	72.03	0.118	34.88	0.6	37.68
C6-FUEL	Max Flow	69.4	0.123	31.24	0.6	37.68
C7-FUEL	Max Flow	71.33	0.118	32.09	0.6	37.68
C8-FUEL	Max Flow	72.32	0.11	31.99	0.6	37.68



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C9-FUEL	Max Flow	72.58	0.11	31.89	0.6	37.68
C10-FUEL	Max Flow	72.69	0.11	31.72	0.6	37.68
C11-FUEL	Max Flow	73.92	0.103	30.15	0.6	37.68
C12-FUEL	Max Flow	78.1	0.09	31.55	0.6	37.68
C13-FUEL	Max Flow	77.97	0.094	31.43	0.6	37.68
C14-FUEL	Max Flow	75.68	0.096	30.02	0.6	37.68
C15-FUEL	Max Flow	62.06	0.004	25.22	0.6	37.68
C16-FUEL	Max Flow	63.61	0.004	26.01	0.6	37.68

* Station Hydraulic Summary Report ----- Time = 0.000 (HRS) *

=====

Station ID: C5	Bank ID: CORUMBÁ	Current Mode: Max PD
----------------	------------------	----------------------

=====

Member ID	Type	Operating Status	UP Pressure KG/CM2G	Down Pressure KG/CM2G	Flow (MMM3/D)	Power Required (HP)	Speed (RPM)
-----	----	-----	-----	-----	-----	-----	-----
U5A	Cmp	Bank Control	72.03	99.84	15.5	9504	7723.39
U5B	Cmp	Bank Control	72.03	99.84	15.5	9504	7723.39

=====

Station ID: C6	Bank ID: MIRANDA	Current Mode: Max PD
----------------	------------------	----------------------

=====

Member ID	Type	Operating Status	UP Pressure KG/CM2G	Down Pressure KG/CM2G	Flow (MMM3/D)	Power Required (HP)	Speed (RPM)
-----	----	-----	-----	-----	-----	-----	-----
U6A	Cmp	Bank Control	69.4	99.84	15.43	10368.2	8021.47
U6B	Cmp	Bank Control	69.4	99.84	15.43	10368.2	8021.47

=====

Station ID: C7	Bank ID: ANASTÁCIO	Current Mode: Max PD
----------------	--------------------	----------------------

=====

Member ID	Type	Operating Status	UP Pressure KG/CM2G	Down Pressure KG/CM2G	Flow (MMM3/D)	Power Required (HP)	Speed (RPM)
-----	----	-----	-----	-----	-----	-----	-----
U7A	Cmp	Bank Control	71.33	99.84	15.38	9565.3	7734.99
U7B	Cmp	Bank Control	71.33	99.84	15.38	9565.3	7734.99

=====

Station ID: C8	Bank ID: CAMPO GRANDE	Current Mode: Max PD
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=====



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Member ID	Type	Operating Status	UP Pressure KG/CM2G	Down Pressure KG/CM2G	Flow (MMM3/D)	Power Required (HP)	Speed (RPM)
U8A	Cmp	Bank Control	72.32	99.84	7.32	4391.6	11247.52
U8B	Cmp	Bank Control	72.32	99.84	7.32	4391.6	11247.52
U8C	Cmp	Bank Control	72.32	99.84	7.32	4391.6	11247.52
U8D	Cmp	Bank Control	72.32	99.84	7.32	4391.6	11247.52

Station ID: C9 Bank ID: RIBAS DO RIO PARDO Current Mode: Max PD

Member ID	Type	Operating Status	UP Pressure KG/CM2G	Down Pressure KG/CM2G	Flow (MMM3/D)	Power Required (HP)	Speed (RPM)
U9A	Cmp	Bank Control	72.58	99.84	14.59	8529.1	7401.36
U9B	Cmp	Bank Control	72.58	99.84	14.59	8529.1	7401.36

Station ID: C10 Bank ID: T_LAGOAS Current Mode: Max PD

Member ID	Type	Operating Status	UP Pressure KG/CM2G	Down Pressure KG/CM2G	Flow (MMM3/D)	Power Required (HP)	Speed (RPM)
U10A	Cmp	Bank Control	72.69	99.84	14.54	8447	7372.1
U10B	Cmp	Bank Control	72.69	99.84	14.54	8447	7372.1

Station ID: C11 Bank ID: MIRANDÓPOLIS Current Mode: Max PD

Member ID	Type	Operating Status	UP Pressure KG/CM2G	Down Pressure KG/CM2G	Flow (MMM3/D)	Power Required (HP)	Speed (RPM)
U11A	Cmp	Bank Control	73.91	99.84	13.51	7309.8	6981.94
U11B	Cmp	Bank Control	73.91	99.84	13.51	7309.8	6981.94

Station ID: C12 Bank ID: PENÁPOLIS Current Mode: Max PD



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Member ID	Type	Operating Status	UP Pressure KG/CM2G	Down Pressure KG/CM2G	Flow (MMM3/D)	Power Required (HP)	Speed (RPM)
-----	----	-----	-----	-----	-----	-----	-----
U12A	Cmp	Bank Control	78.1	99.84	6.71	2993.9	9644.73
U12B	Cmp	Bank Control	78.1	99.84	6.71	2993.9	9644.73
U12C	Cmp	Bank Control	78.1	99.84	6.71	2993.9	9644.73
U12D	Cmp	Bank Control	78.1	99.84	6.71	2993.9	9644.73

Station ID: C13

Bank ID: IACANGA

Current Mode: Max PD

Member ID	Type	Operating Status	UP Pressure KG/CM2G	Down Pressure KG/CM2G	Flow (MMM3/D)	Power Required (HP)	Speed (RPM)
-----	----	-----	-----	-----	-----	-----	-----
U13A	Cmp	Bank Control	77.97	99.84	13.38	5982.8	6388.15
U13B	Cmp	Bank Control	77.97	99.84	13.38	5982.8	6388.15

Station ID: C14

Bank ID: SÃO CARLOS

Current Mode: Max PD

Member ID	Type	Operating Status	UP Pressure KG/CM2G	Down Pressure KG/CM2G	Flow (MMM3/D)	Power Required (HP)	Speed (RPM)
-----	----	-----	-----	-----	-----	-----	-----
U14A	Cmp	Bank Control	75.68	99.84	13.29	6606.8	6683.37
U14B	Cmp	Bank Control	75.68	99.84	13.29	6606.8	6683.37

Station ID: C15

Bank ID: ARAUCARIA

Current Mode: bypass

Member ID	Type	Operating Status	UP Pressure KG/CM2G	Down Pressure KG/CM2G	Flow (MMM3/D)	Power Required (HP)	Speed (RPM)
-----	----	-----	-----	-----	-----	-----	-----
U15A	Cmp	Bank Control	62.06	70	1.78	304.8	883.44
U15B	Cmp	Bank Control	62.06	70	1.78	304.8	883.44
U15C	Cmp	Closed	(Not operating)				
U15D	Cmp	Closed	(Not operating)				

Station ID: C16

Bank ID: BIGUAÇU

Current Mode: Max Ratio



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Member ID	Type	Operating Status	UP Pressure KG/CM2G	Down Pressure KG/CM2G	Flow (MMM3/D)	Power Required (HP)	Speed (RPM)
-----	----	-----	-----	-----	-----	-----	-----
U16A	Cmp	Bank Control	62.88	75	0.97	243.6	616.19
U16B	Cmp	Bank Control	62.88	75	0.97	243.6	616.19
U16C	Cmp	Bank Control	62.88	75	0.97	243.6	616.19
U16D	Cmp	Closed	(Not operating)				

* Node Mass Balance Error Report Time = 0.000 (HRS) *

Threshold Level = 0.0000 (MMM3/D)

No Mass Balance Errors above Threshold

::

:: Pressure/Flow Violation Reports ::

::

ALL XREGS FALL WITHIN PRESSURE BOUNDS

ALL EQUIPMENT FALL WITHIN PRESSURE BOUNDS

ALL BANKS FALL WITHIN PRESSURE BOUNDS

ALL INTERNAL LEG KNOTS FALL WITHIN PRESSURE BOUNDS

::

:: Setpoint/Constraint Violation Reports ::

::

ALL XREGS COMPLY WITH MONITORED CONSTRAINTS

ALL EQUIPMENT COMPLY WITH MONITORED CONSTRAINTS

ALL BANKS COMPLY WITH MONITORED CONSTRAINTS

TRANSIENT GAS NETWORK MODEL (TGNET)

RELEASE 7.3 LEVEL 00 24-FEB-2004

STEADY-STATE MODULE

3.2. Resumo dos Resultados – Regime Permanente

3.2.1. Estoque (Empacotamento)

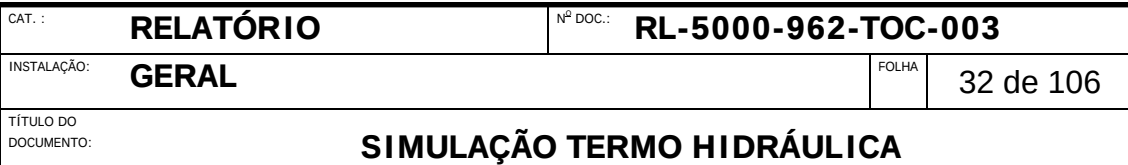
Trecho	Corumbá-Replan	Replan-Guararema	Replan-Canoas	Total
Empacotamento MMm ³	58.036	3.327	18.945	80.308



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3.2.2. Estações de Entrega

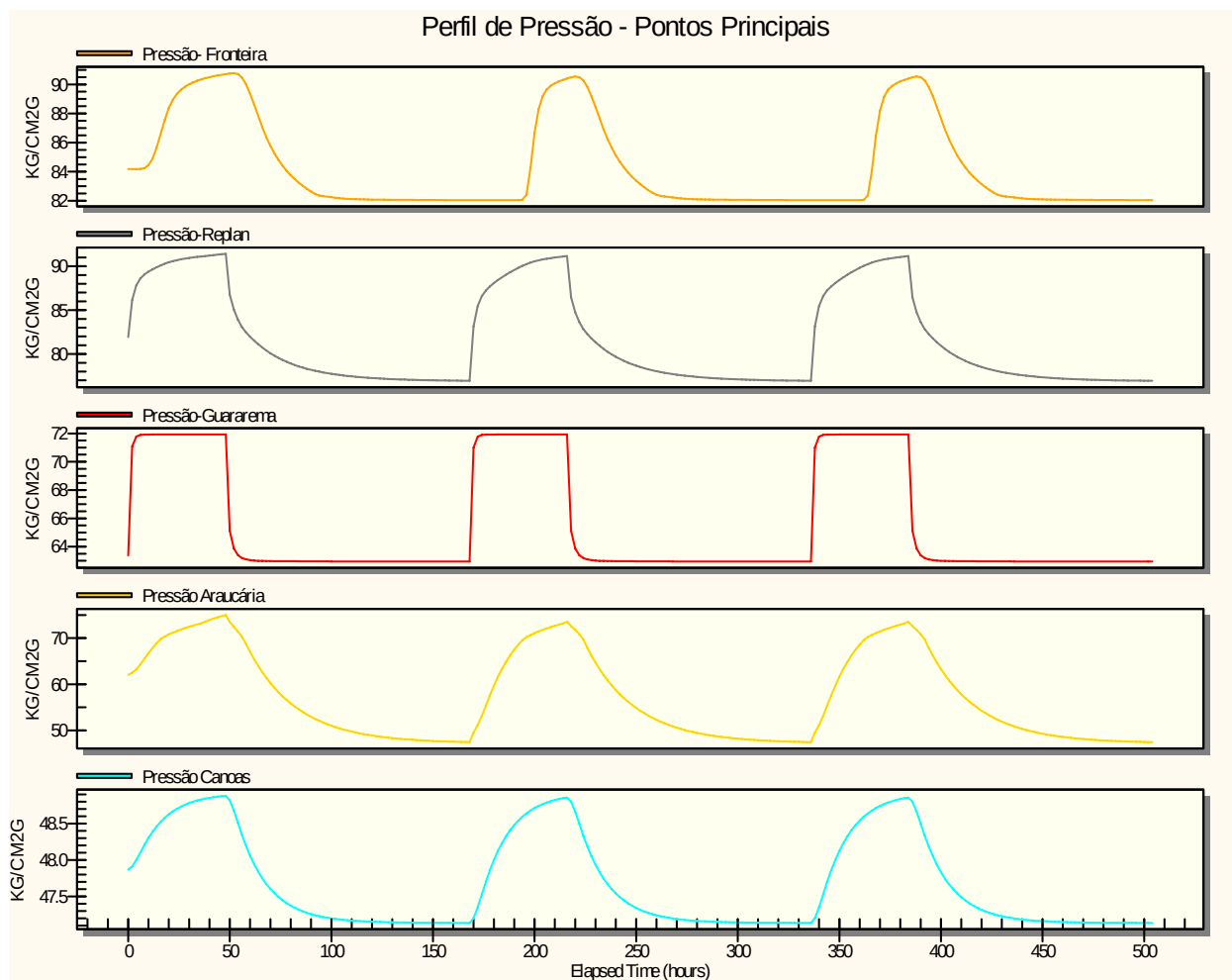
	ESTAÇÕES	Km desenvolvido	Vazão (MMm3/d)	Temperatura de chegada (°C)	Pressão de entrada (Kgf/cm²)	Pressão controlada (Kgf/cm²)	Pressão mínima (Kgf/cm²)	Vazão de combustível (Mm3/d)
TRECHO CORUMBÁ-REPLAN								
1	CORUMBA	28.26	0.05	37.43	77.65	35.00	31.50	0.0619
2	CAMPO GRANDE	394.60	1.35	32.17	72.82	35.00	31.50	1.6706
3	TRÊS LAGOAS	704.08	1.95	39.50	88.59	35.00	31.50	2.4131
4	BILAC	857.75	0.08	36.33	85.95	35.00	31.50	0.0990
5	BOA ESPERANÇA DO SUL	1096.24	0.08	35.94	85.47	35.00	31.50	0.0990
6	SÃO CARLOS	1150.74	0.40	45.83	96.31	35.00	31.50	0.4950
7	RIO CLARO	1204.48	1.14	38.78	90.28	35.00	31.50	1.4108
8	LIMEIRA	1223.70	0.76	36.47	87.58	35.00	31.50	0.9405
9	AMERICANA	1245.87	0.50	34.14	84.76	35.00	31.50	0.6188
10	REPLAN	1262.56	1.00	32.11	81.92	35.00	31.50	1.2375
11	EMED Campinas Rio	1262.56	4.47	32.11	81.92	35.00	31.50	0.0000
12	Camp. RIO2	1262.56	1.63	32.11	81.92	35.00	31.50	2.0171
TRECHO REPLAN-GUARAREMA								
13	JAGUARIUNA	6.93	1.70	29.05	74.23	35.00	31.50	2.1038
14	ITATIBA	46.29	0.55	25.93	69.99	35.00	31.50	0.6806
15	GUARAREMA	136.45	0.35	25.55	64.38	35.00	31.50	0.4331
16	EMED Guararema	155.30	6.70	25.48	63.27	35.00	31.50	0.0000
TRECHO REPLAN-CANOAS								
17	GEMINI	2.00	0.89	31.85	81.80	35.00	31.50	0.0000
18	EE SUMARE	16.01	0.30	30.21	81.20	35.00	31.50	0.3711
19	EE CAMPINAS	28.71	0.03	28.94	80.47	35.00	31.50	0.0371
20	INDAIATUBA	45.30	0.08	27.69	79.59	35.00	31.50	0.0990
21	ITU	68.75	0.68	27.10	79.22	35.00	31.50	0.8412
22	PORTO FELIZ	85.00	0.04	26.29	78.19	35.00	31.50	0.0495
23	ARAÇÓIABA DA SERRA	110.22	0.07	24.38	77.19	35.00	31.50	0.0866
24	CAMPO LARGO	457.50	0.05	24.82	62.82	35.00	31.50	0.0619
25	ARAUCÁRIA CIC	476.37	0.60	25.31	62.35	35.00	31.50	0.7422
26	ARAUCÁRIA_UTE	478.41	0.77	25.33	62.28	35.00	31.50	0.9525
27	REPAR	478.41	0.30	25.33	62.28	35.00	31.50	0.3711
28	JOINVILLE	585.21	0.17	27.13	70.10	35.00	31.50	0.2103
29	GUARAMIRIM	614.21	0.26	26.09	68.65	35.00	31.50	0.3216
30	GASPAR	669.91	0.13	26.46	66.27	35.00	31.50	0.1608
31	BRUSQUE	692.54	0.04	26.21	65.39	35.00	31.50	0.0495
32	TIJUCAS	728.78	0.15	26.18	63.86	35.00	31.50	0.1856
33	SAO P ALCÂNTARA	768.06	0.06	25.04	61.09	35.00	31.50	0.0742
34	TUBARAO	895.07	0.08	25.86	52.70	35.00	31.50	0.0990
35	URUSSANGA	925.84	0.26	25.77	49.92	35.00	31.50	0.3216
36	NOVA VENEZA	948.38	0.18	41.16	70.69	35.00	31.50	0.2227
37	VARZEA DO CEDRO	1078.42	0.10	24.99	55.22	24.00	21.60	0.1237
38	Igrejinha	1139.00	0.02	26.37	53.22	24.00	21.60	0.0247
39	ARARICÁ	1156.00	0.05	26.44	52.45	24.00	21.60	0.0619
40	CACHOEIRINHA	1185.59	0.16	25.68	49.70	24.00	21.60	0.1979
41	REFAP	1191.12	0.35	25.77	49.42	24.00	21.60	0.4330
42	CANOAS	1191.12	0.75	25.77	49.42	24.00	21.60	0.9278
43	CANOAS_UTE	1191.12	0.80	25.77	49.42	24.00	21.60	0.9896
TOTAL			30.08				TOTAL	22.30



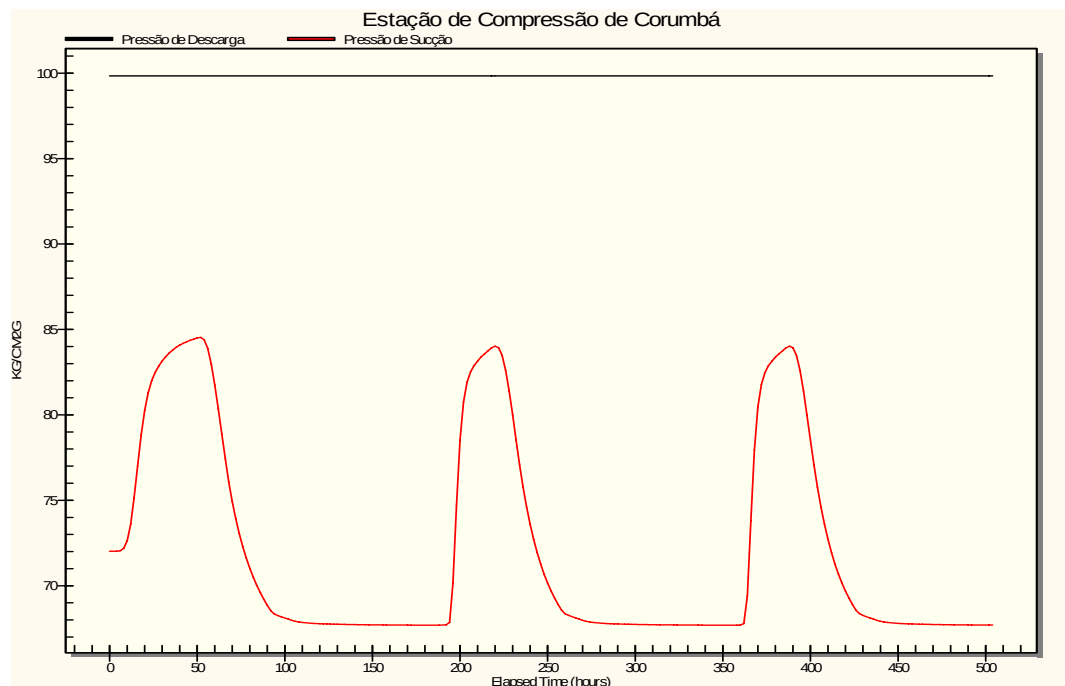
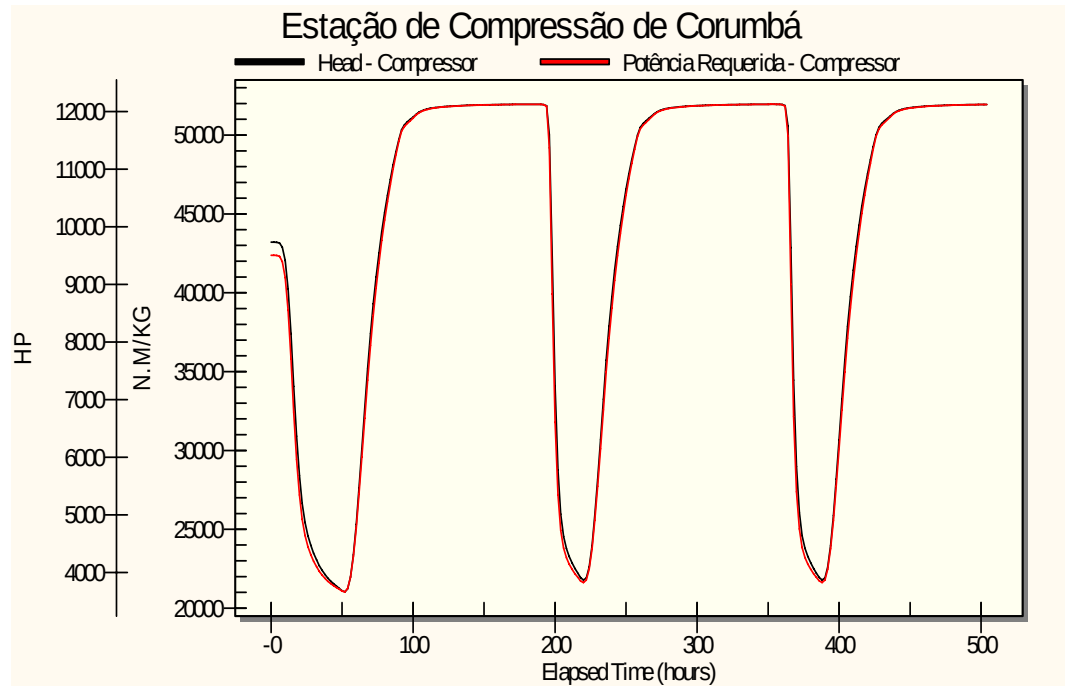
ESTAÇÕES DO TRECHO NORTE							
	Unidades operando	Vazão na estação MMm³/d	Pressão de sucção (°C)	Pressão de descarga (°C)	Potência Req./ Maq (HP)	Ef. Adiabática (%)	Gás Combustível (MMm³/d)
Corumbá	2	30.99	72.03	99.84	9504.03	82.41	0.1178
Miranda	2	30.87	69.40	99.84	10368.2	82.80	0.1230
Anastacio	2	30.75	71.33	99.84	9565.3	82.67	0.1178
Campo Grande	4	29.29	72.32	99.84	4391.56	80.26	0.1100
Ribas Rio Pardo	2	29.18	72.58	99.84	8529.07	83.21	0.1102
Três Lagoas	2	29.07	72.69	99.84	8446.96	83.25	0.1102
Mirandópolis	2	27.02	73.92	99.84	7309.76	83.97	0.1028
Penapolis	4	26.85	78.10	99.84	2993.9	80.53	0.0896
Iacanga	2	26.75	77.97	99.84	5982.75	83.57	0.0941
São Carlos	2	26.58	75.68	99.84	6606.83	83.96	0.0962
ESTAÇÕES DO TRECHO SUL							
	Unidades operando	Vazão na estação MMm³/d	Pressão de sucção (°C)	Pressão de descarga (°C)	Potência Req./ Maq (HP)	Ef. Adiabática (%)	Gás Combustível (MMm³/d)
Araucária	3	3.66	62.06	71	227.486	100	0.0040
Biguaçu	3	2.91	62.88	75	193.046	100	0.0042
						TOTAL	1.080

3.3. Regime Transiente (Gráficos)

3.3.1. Pontos principais - Pressão

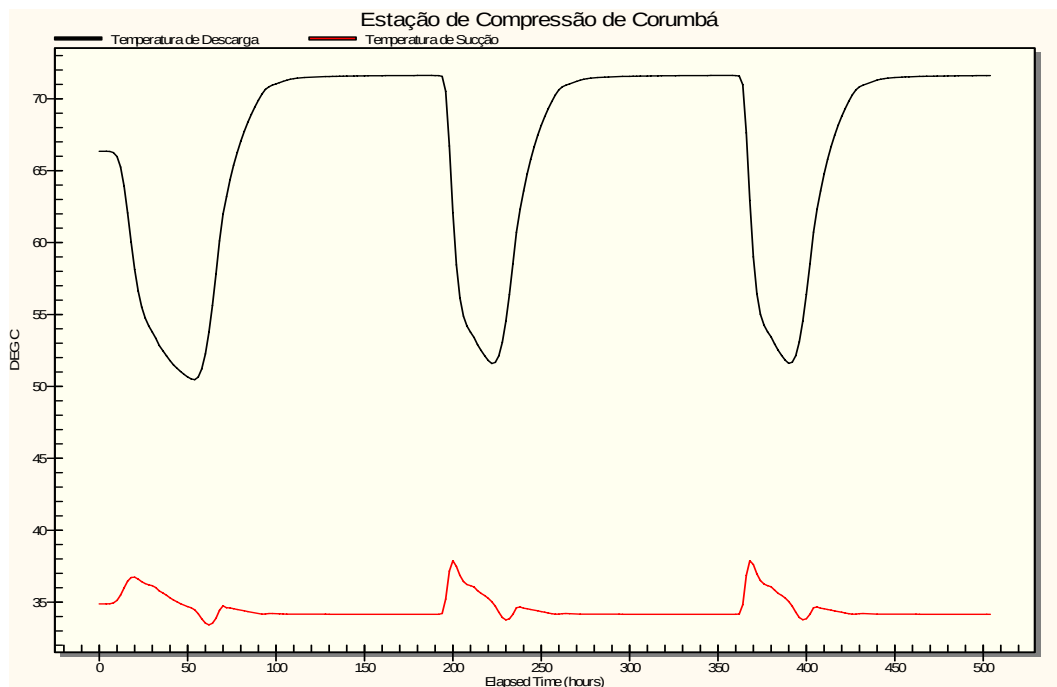
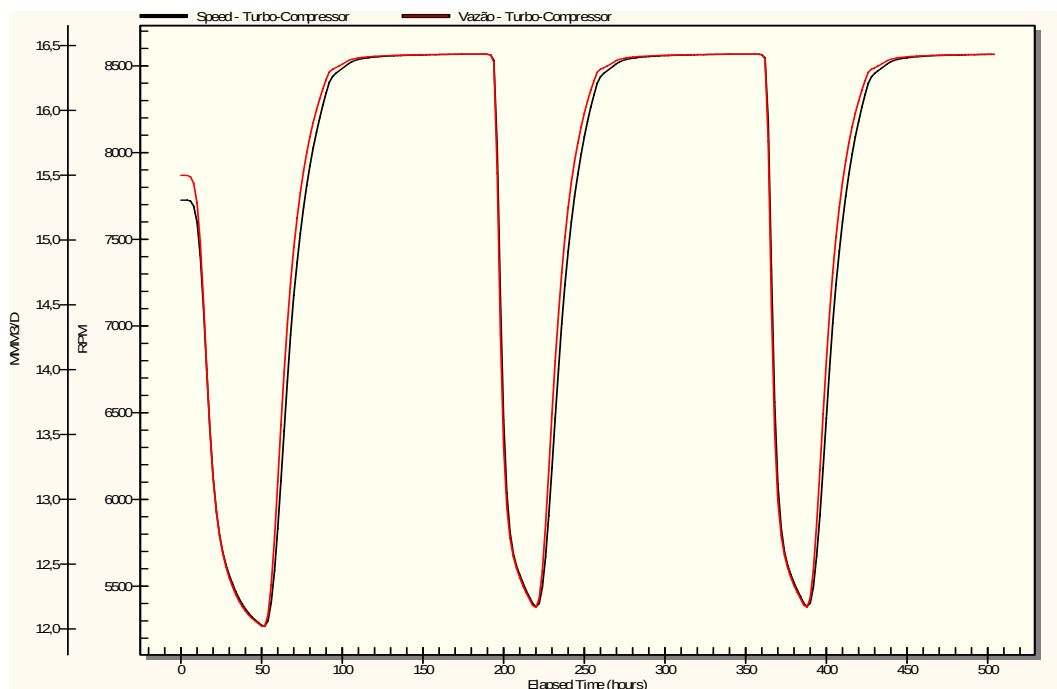


3.3.2. Estação de Compressão – Corumbá

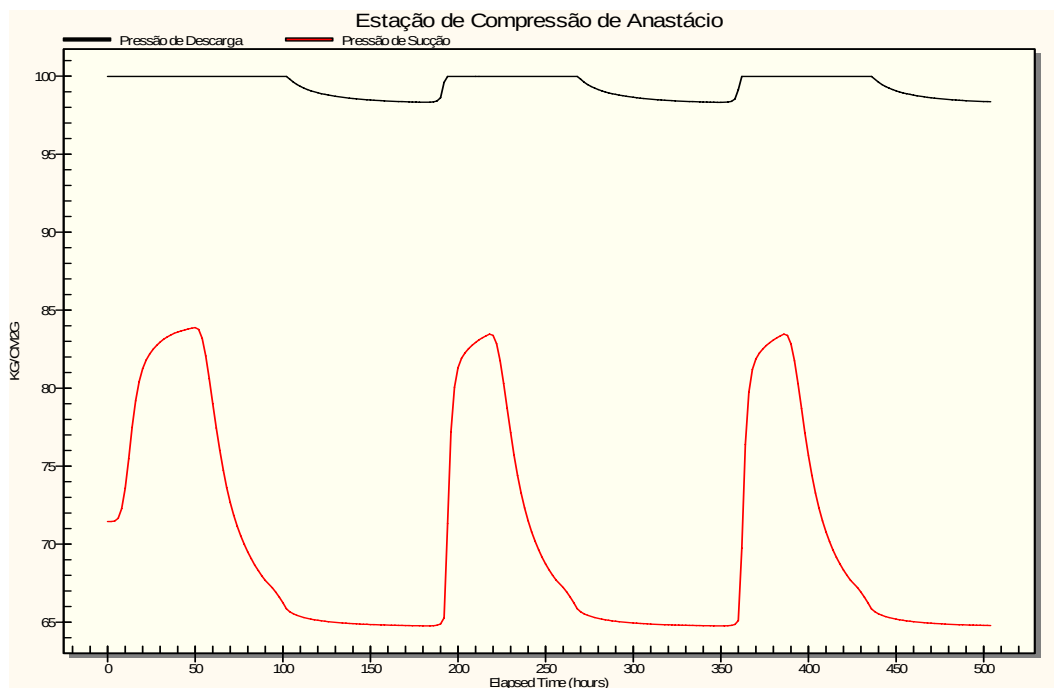
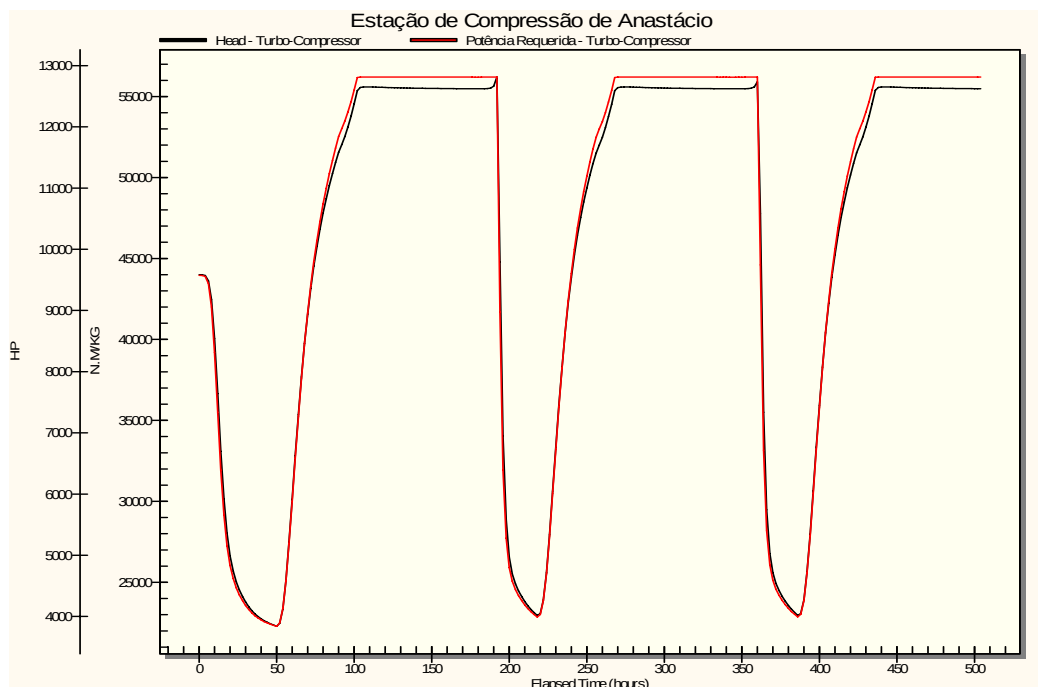




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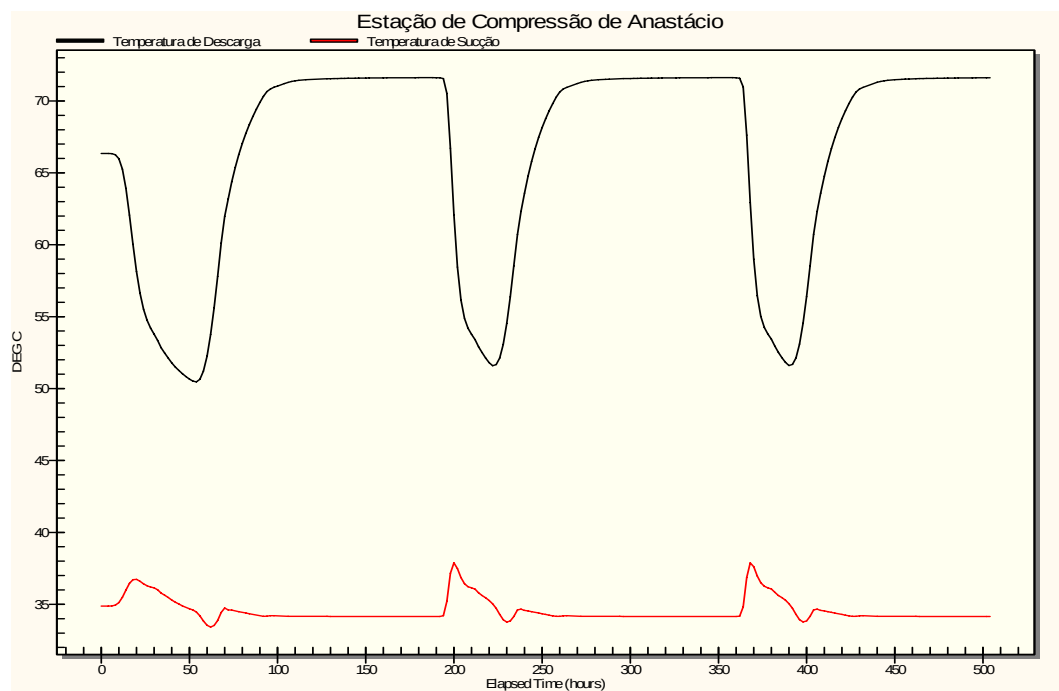
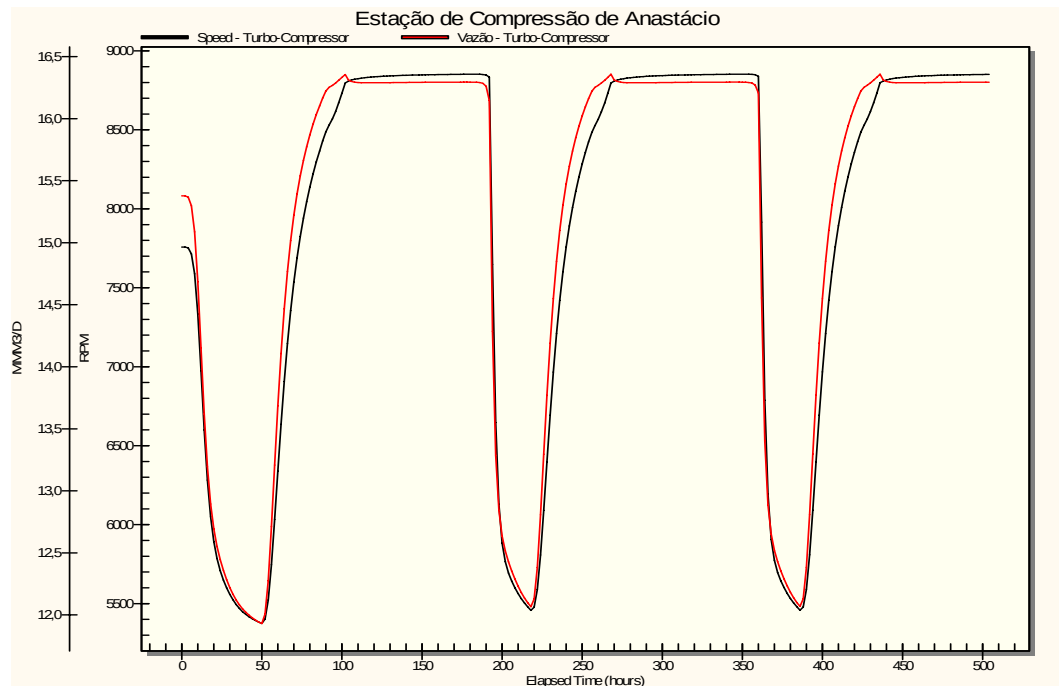


3.3.3. Estação de Compressão – Anastácio

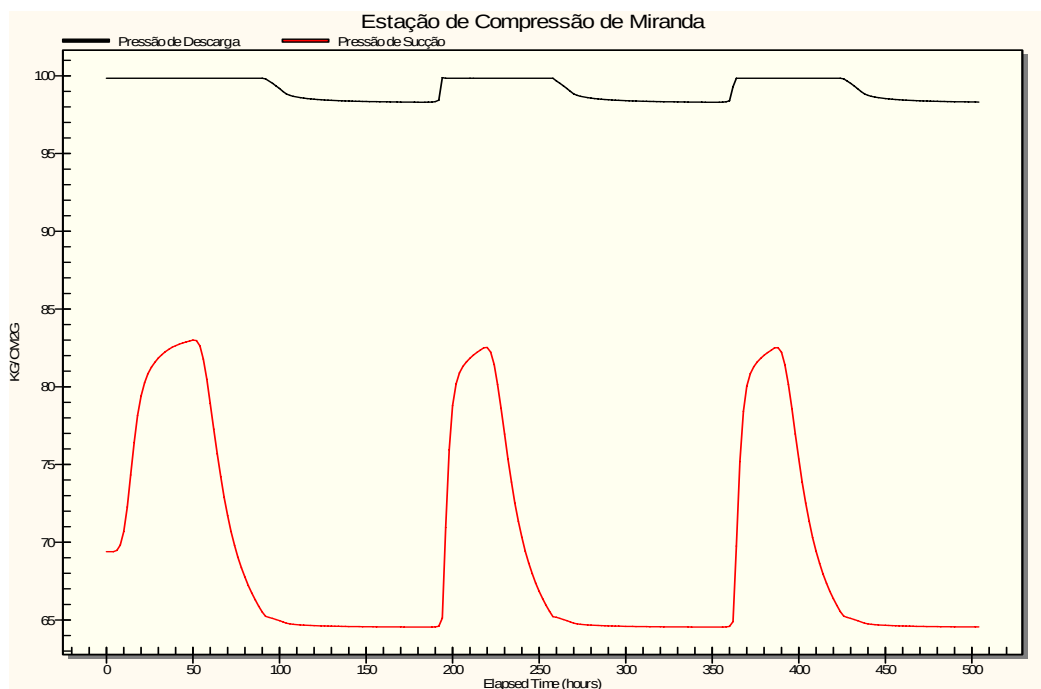
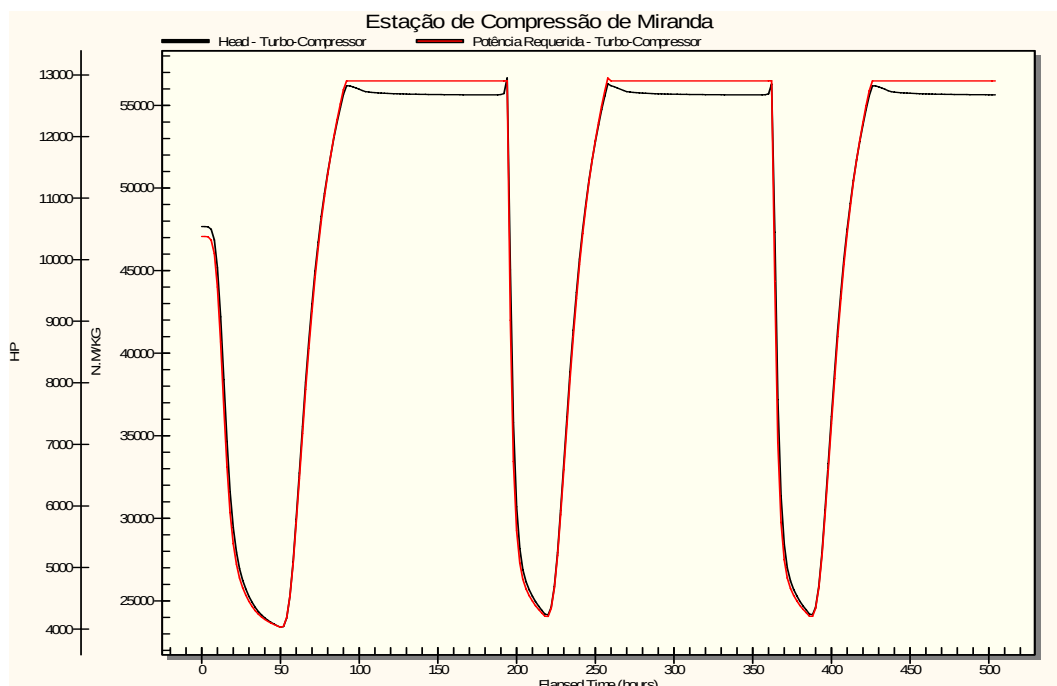




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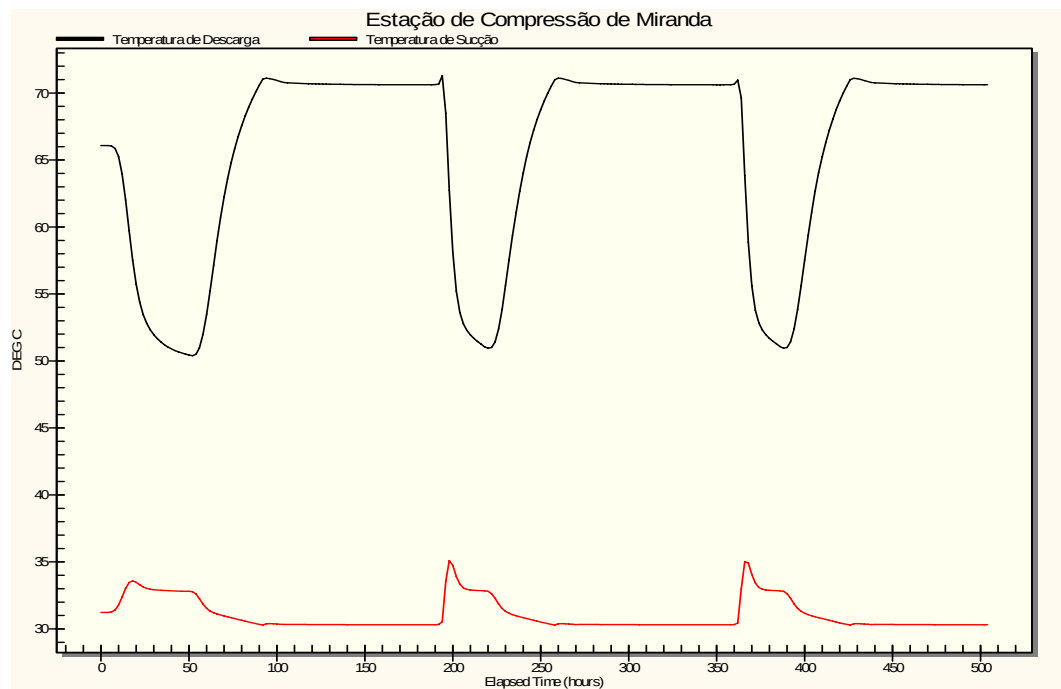
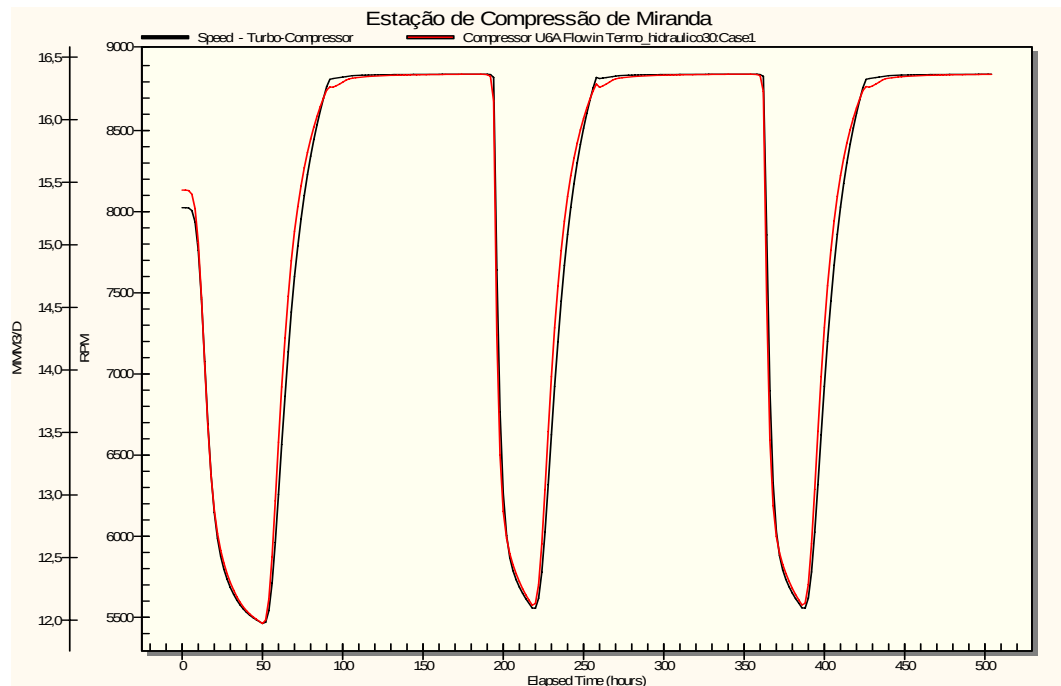


3.3.4. Estação de Compressão – Miranda

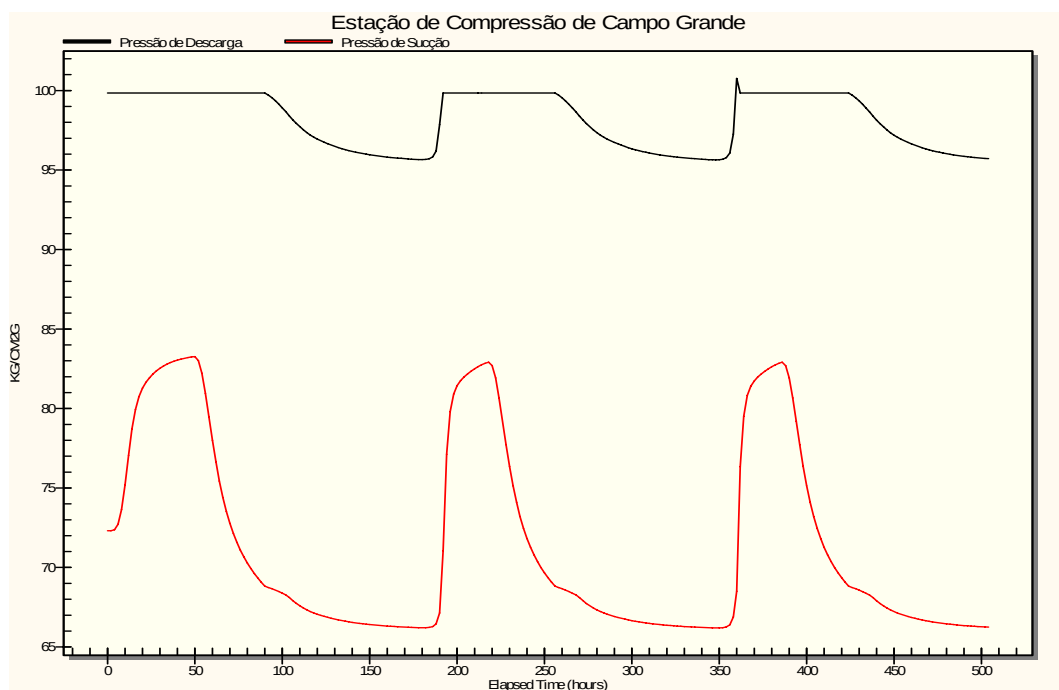
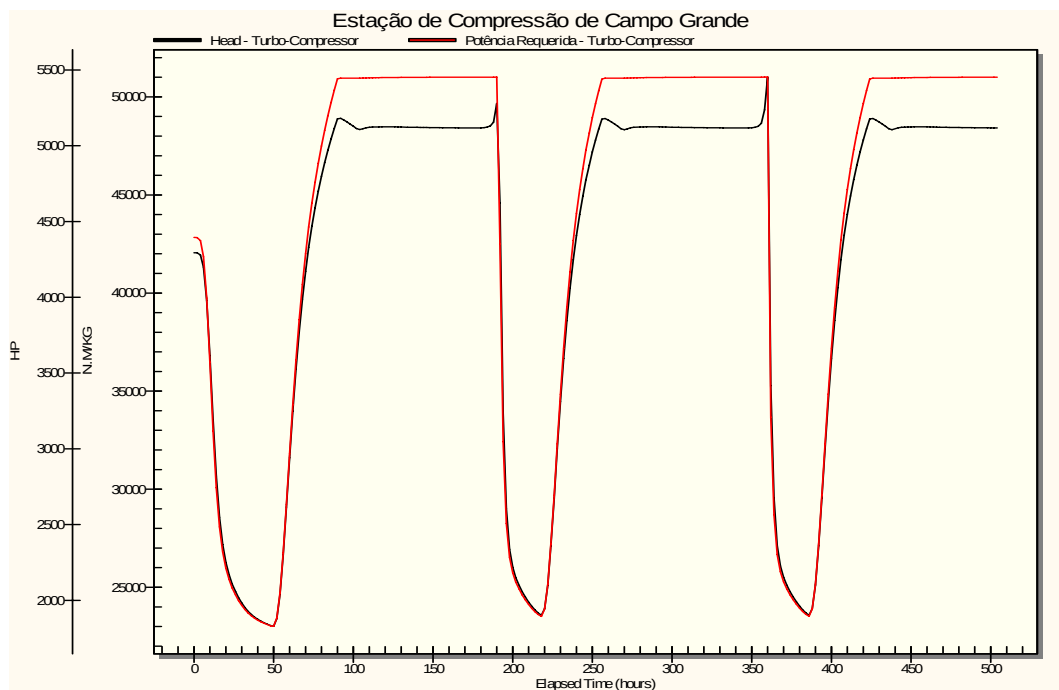


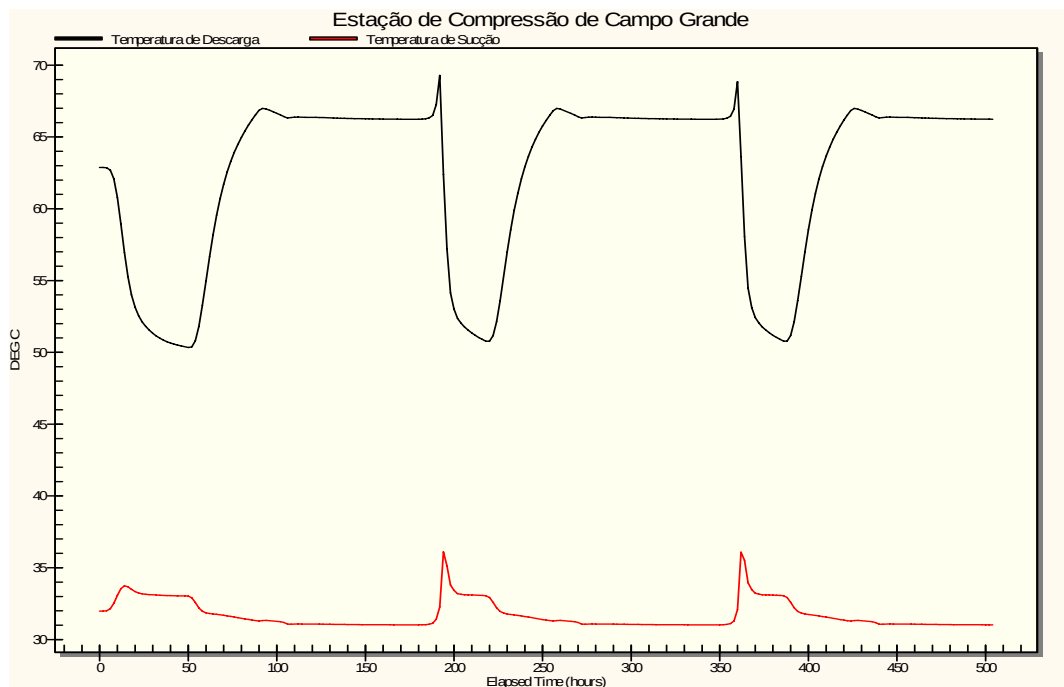
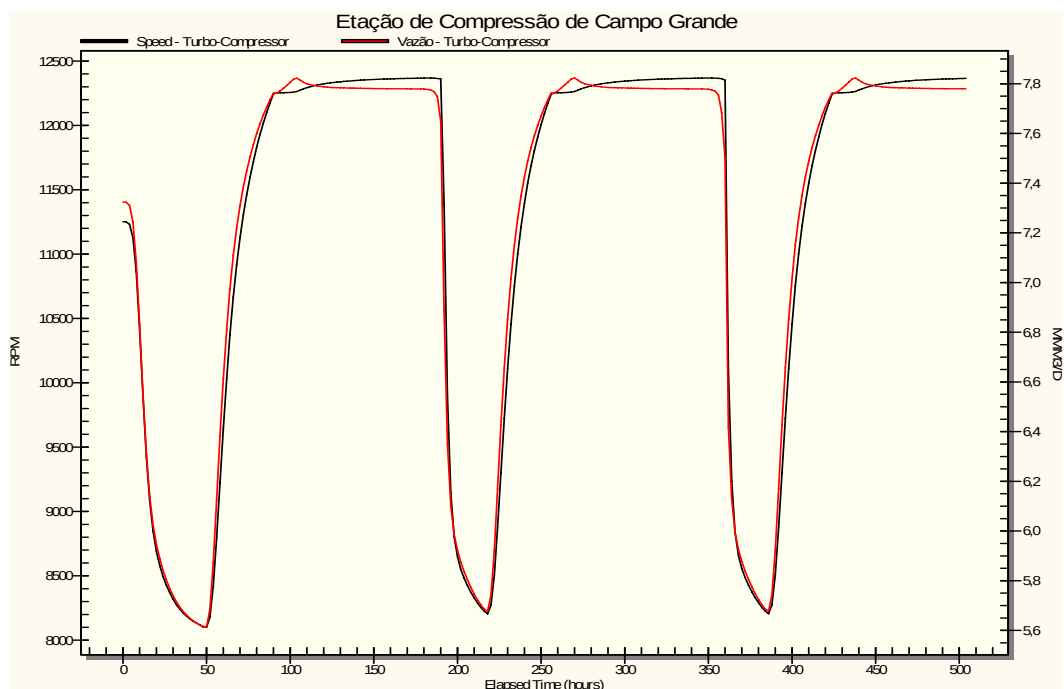


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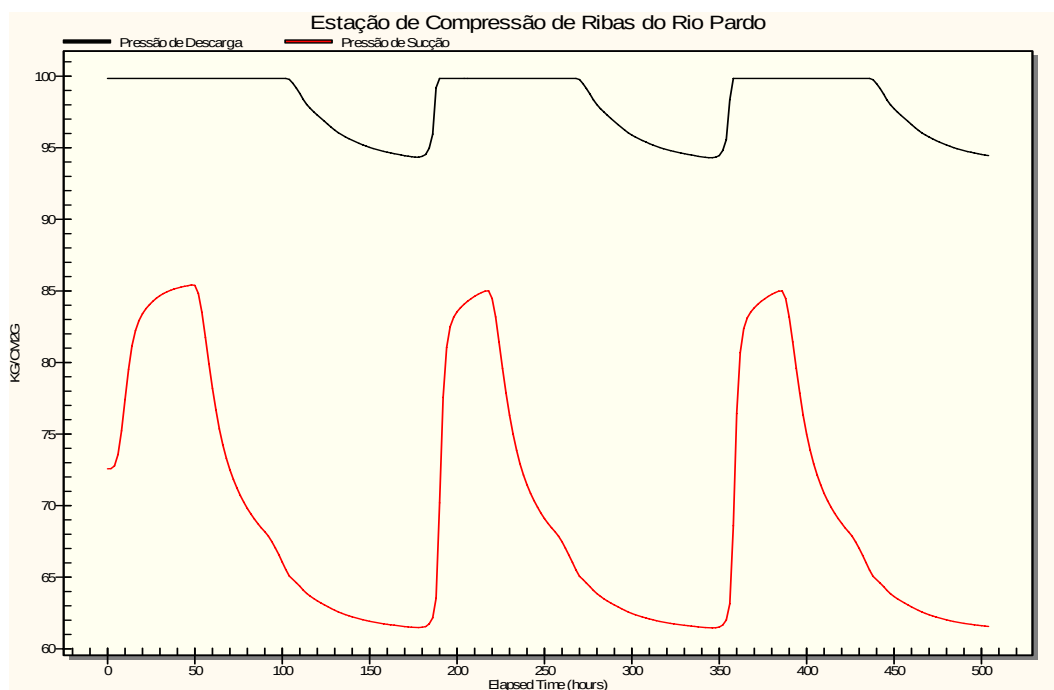
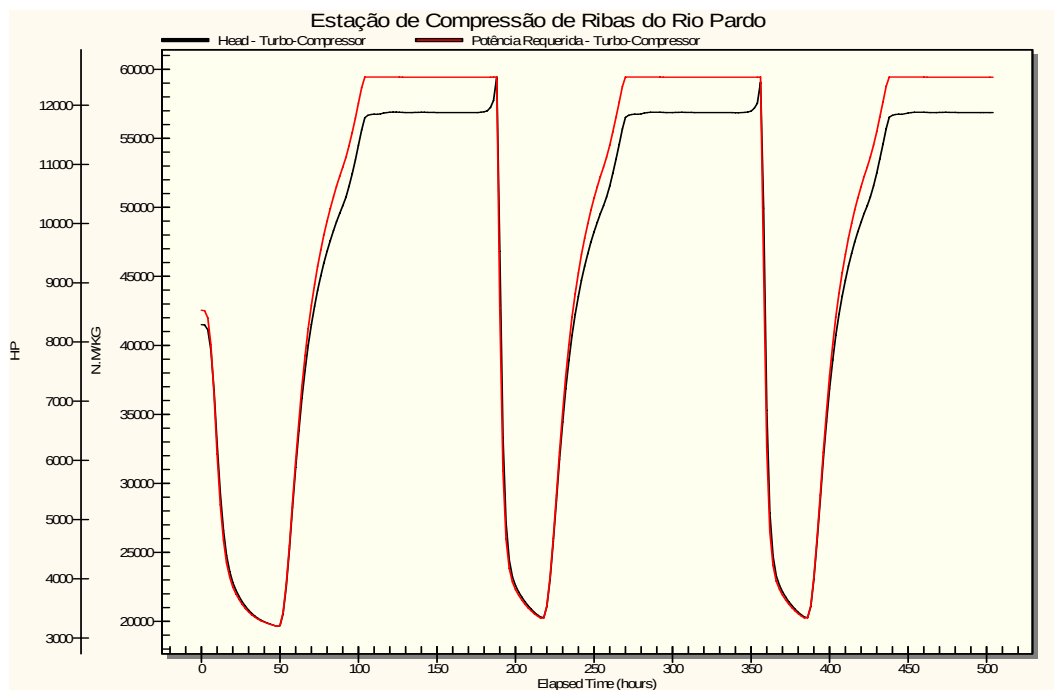


3.3.5. Estação de Compressão – Campo Grande.



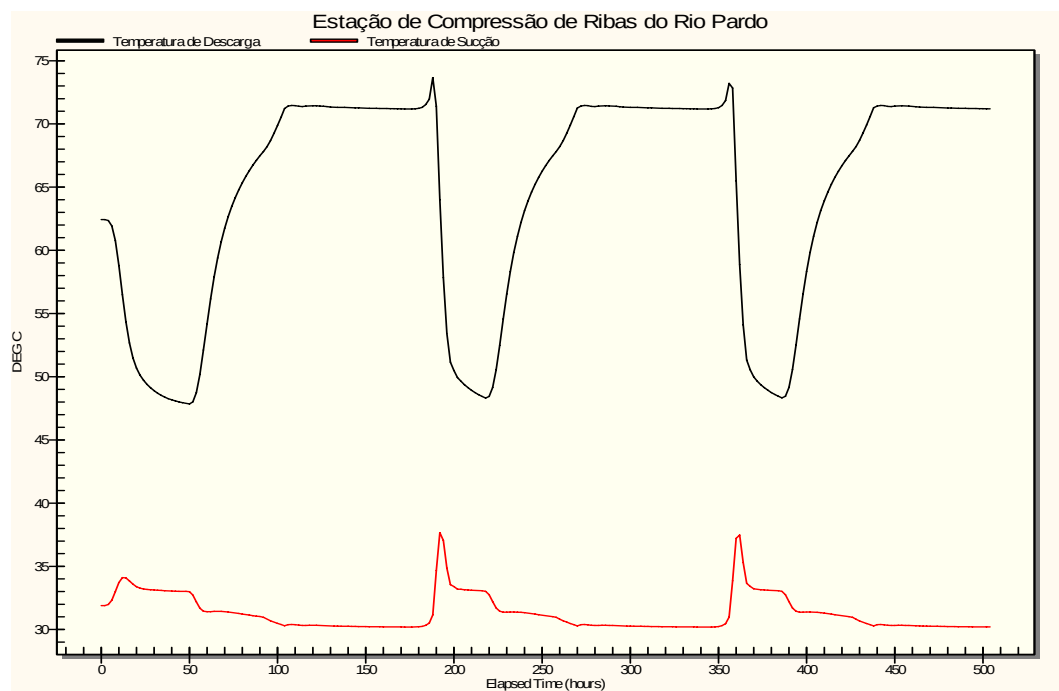
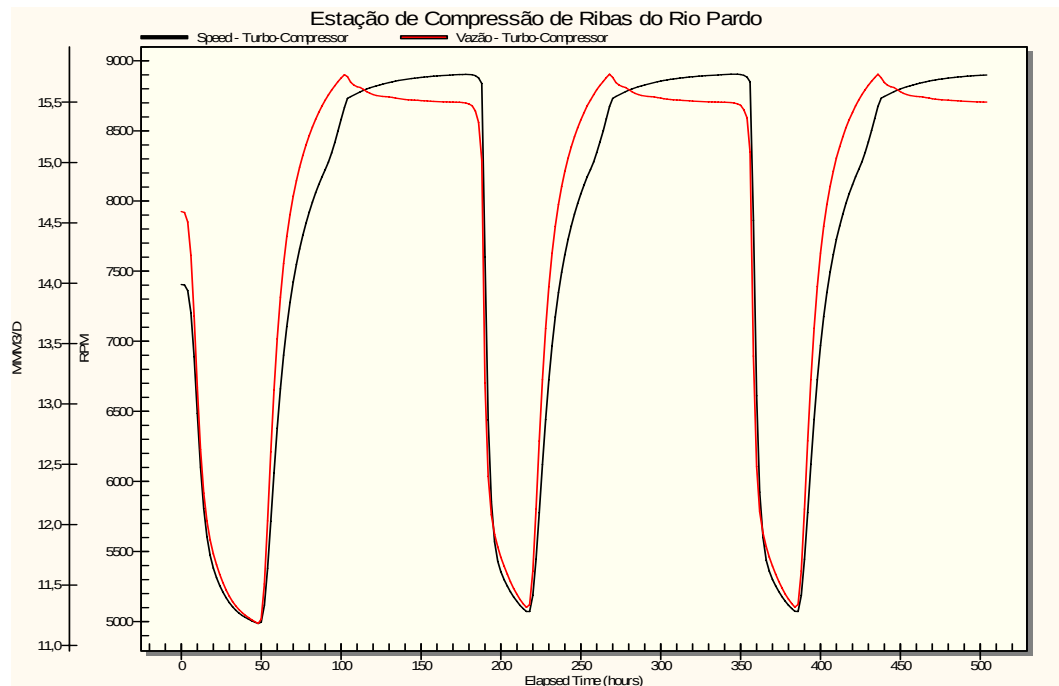


3.3.6. Estação de Compressão – Ribas do Rio Pardo.

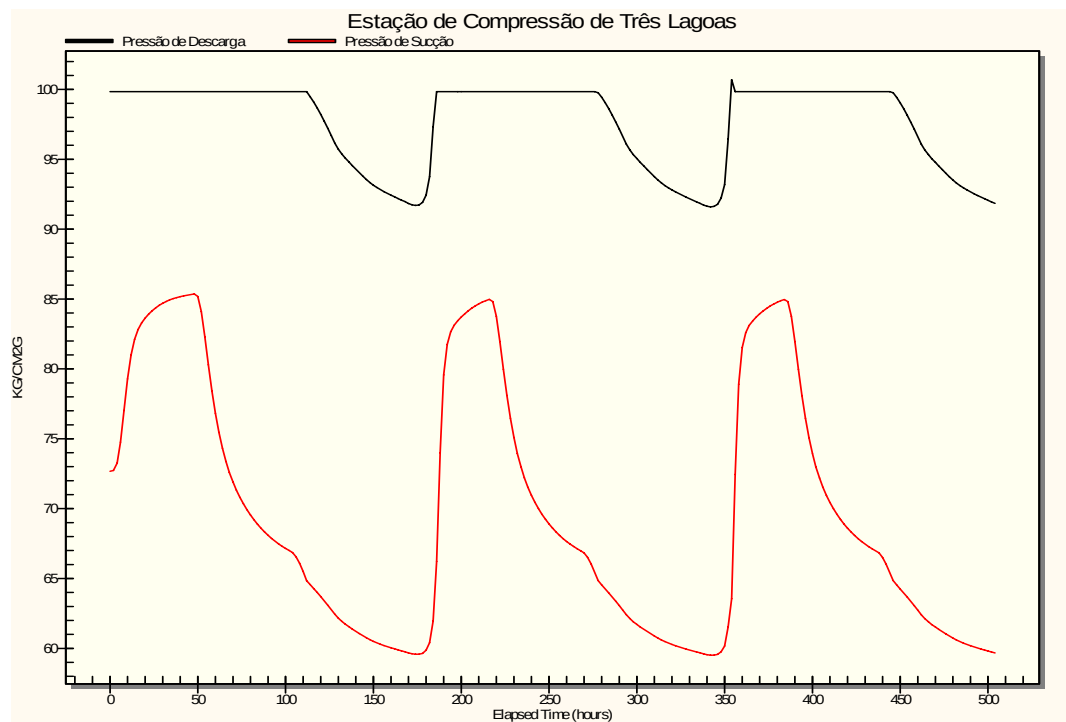
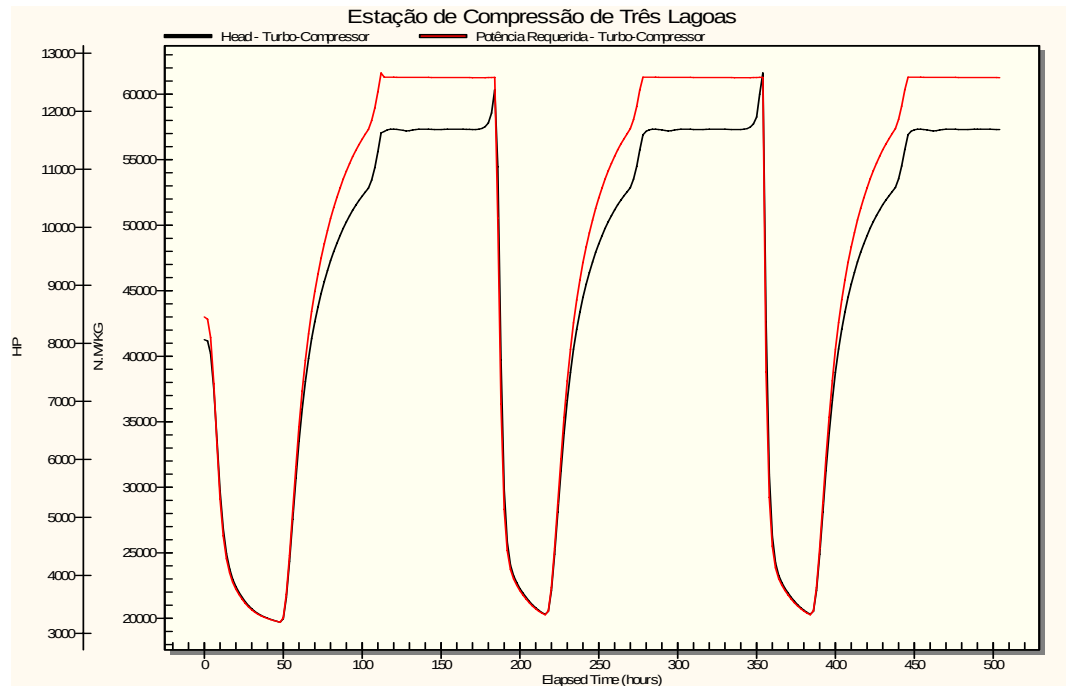




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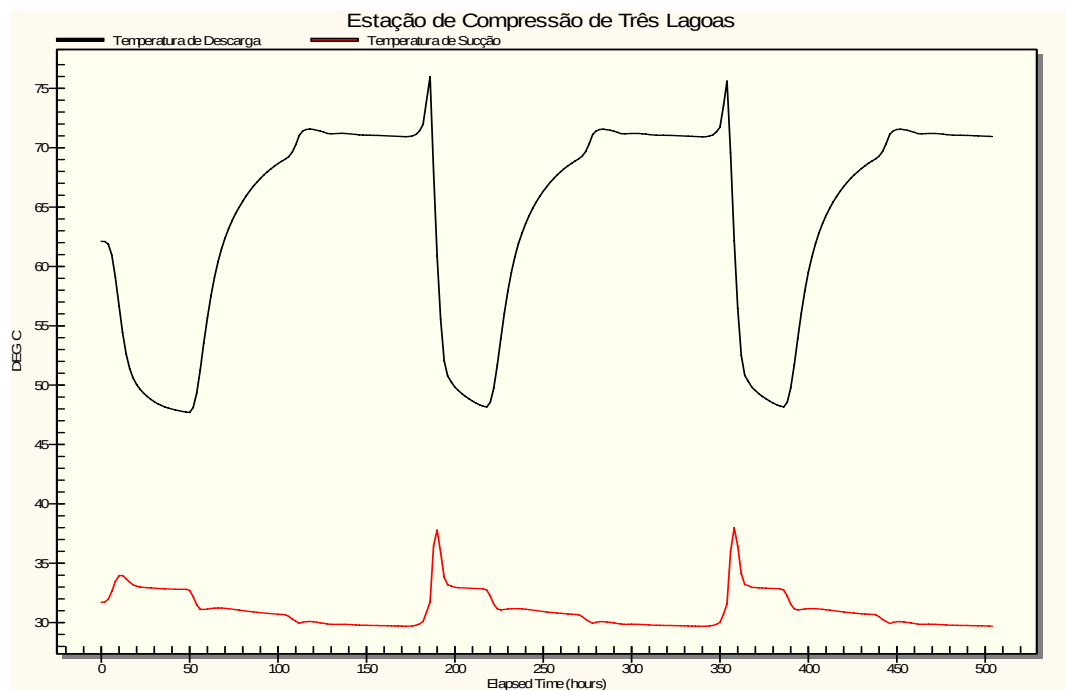
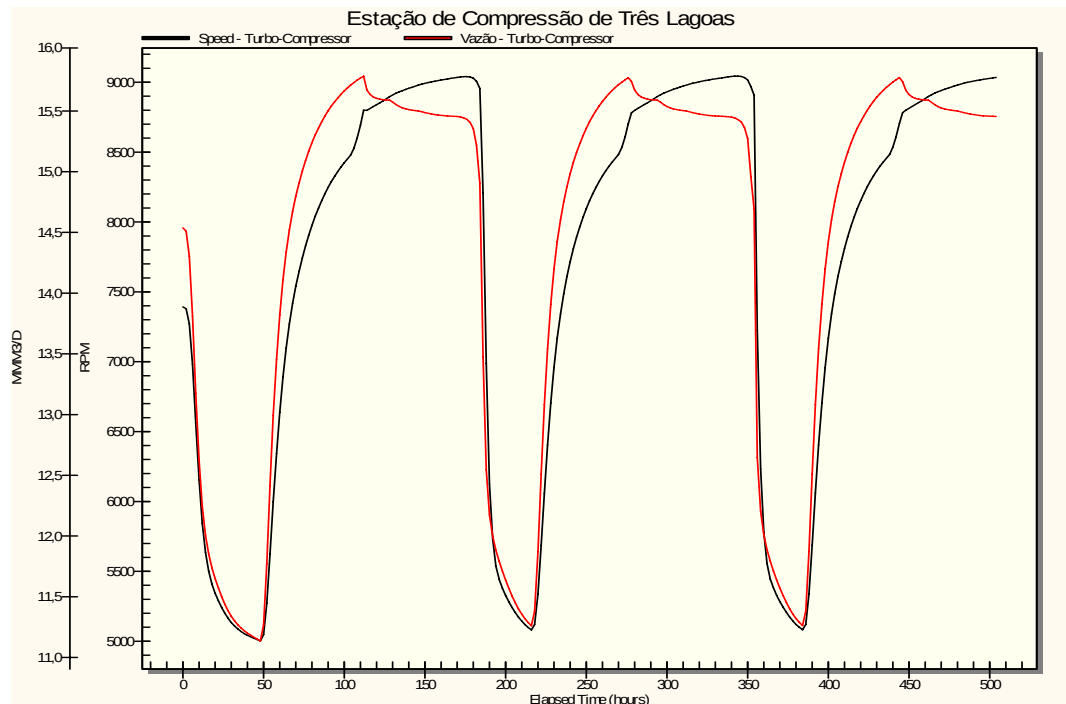


3.3.7. Estação de Compressão – Três Lagoas.

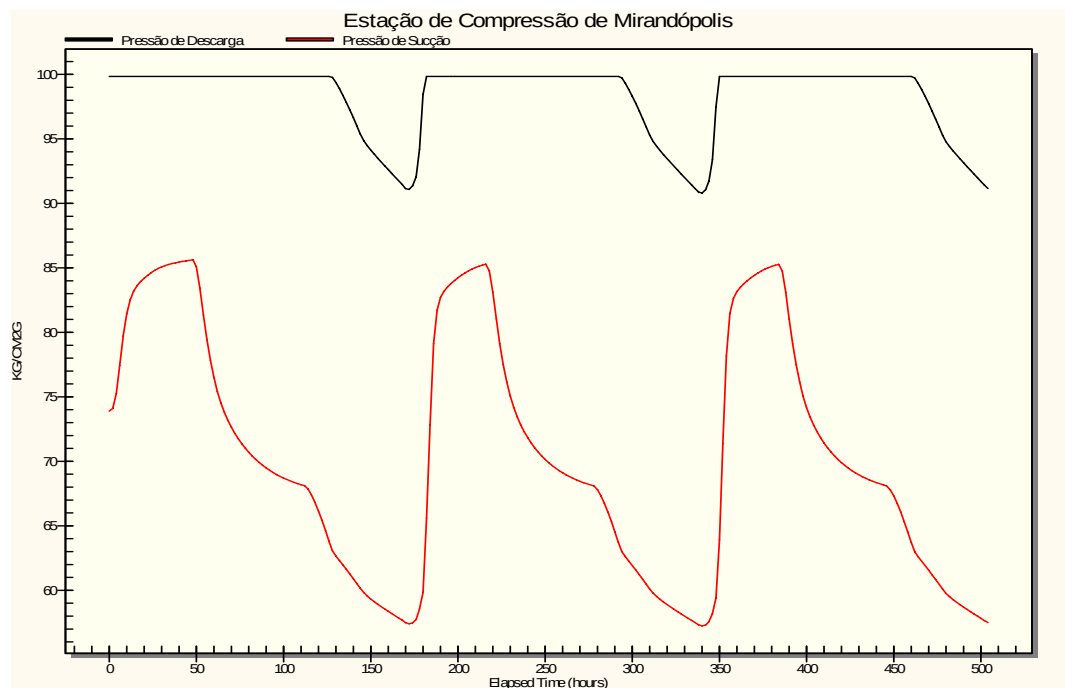
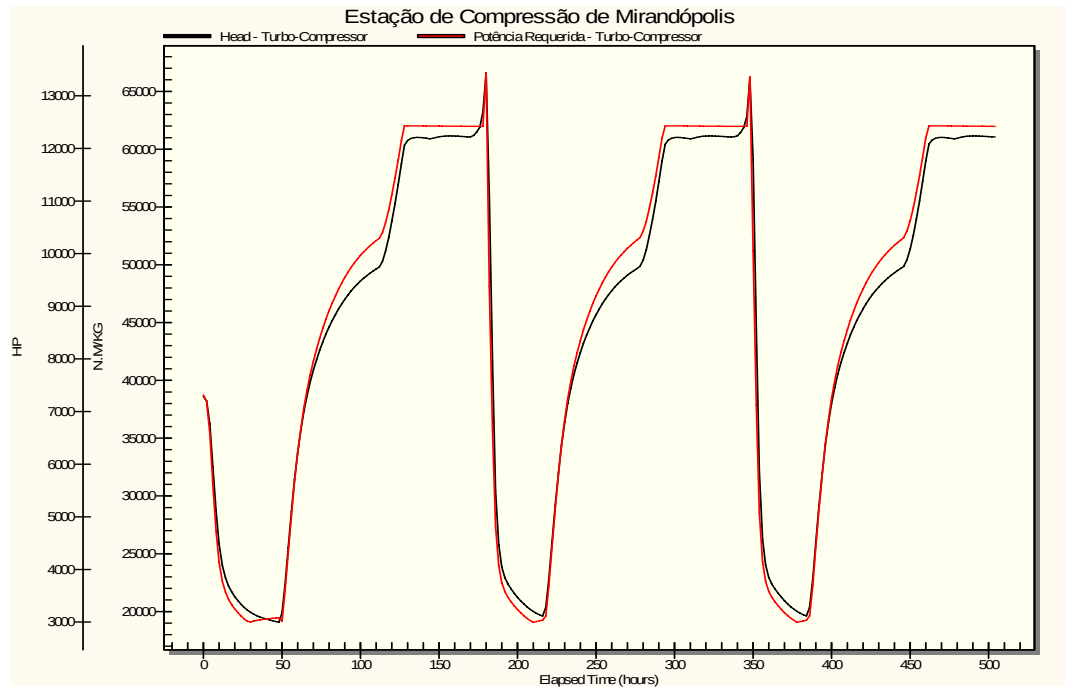




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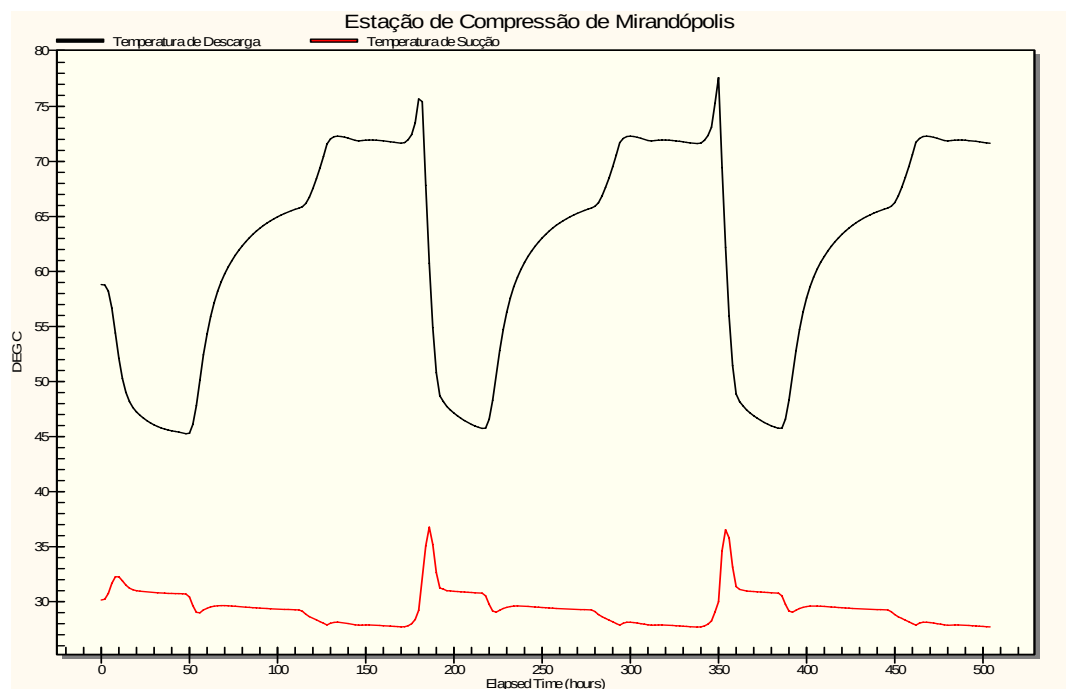
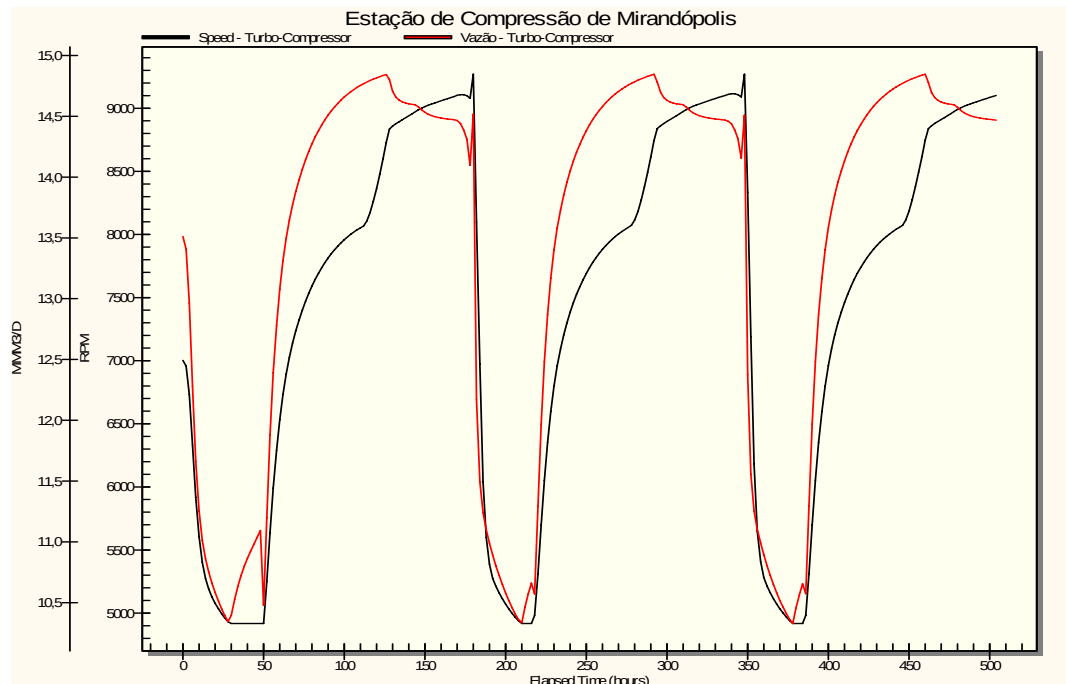


3.3.8. Estação de Compressão – Mirandópolis

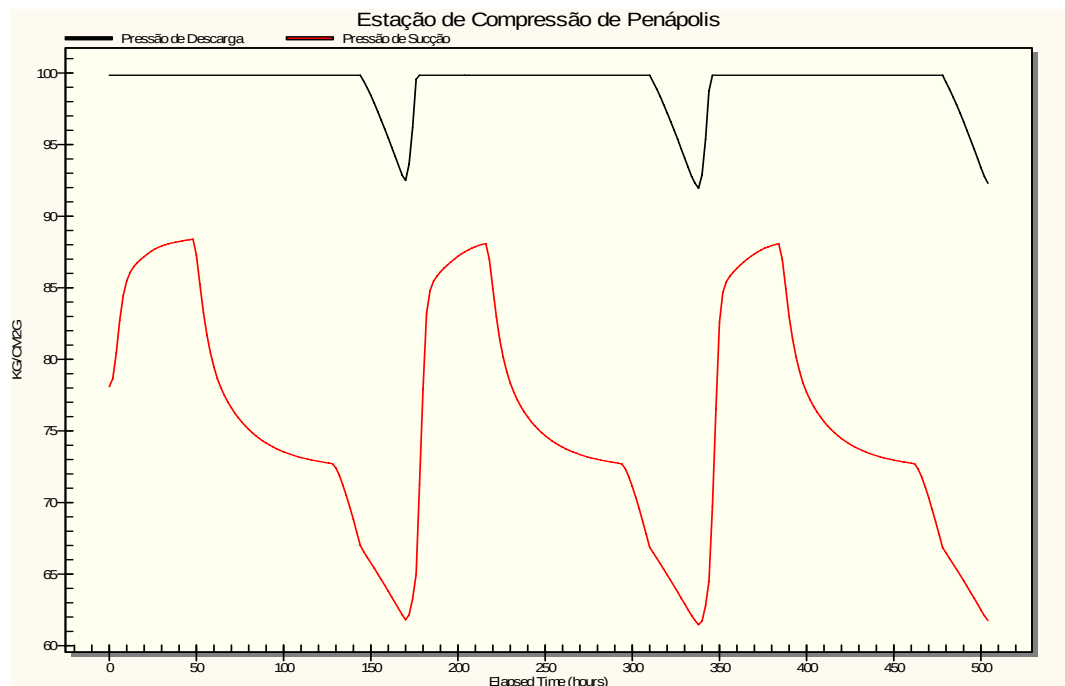
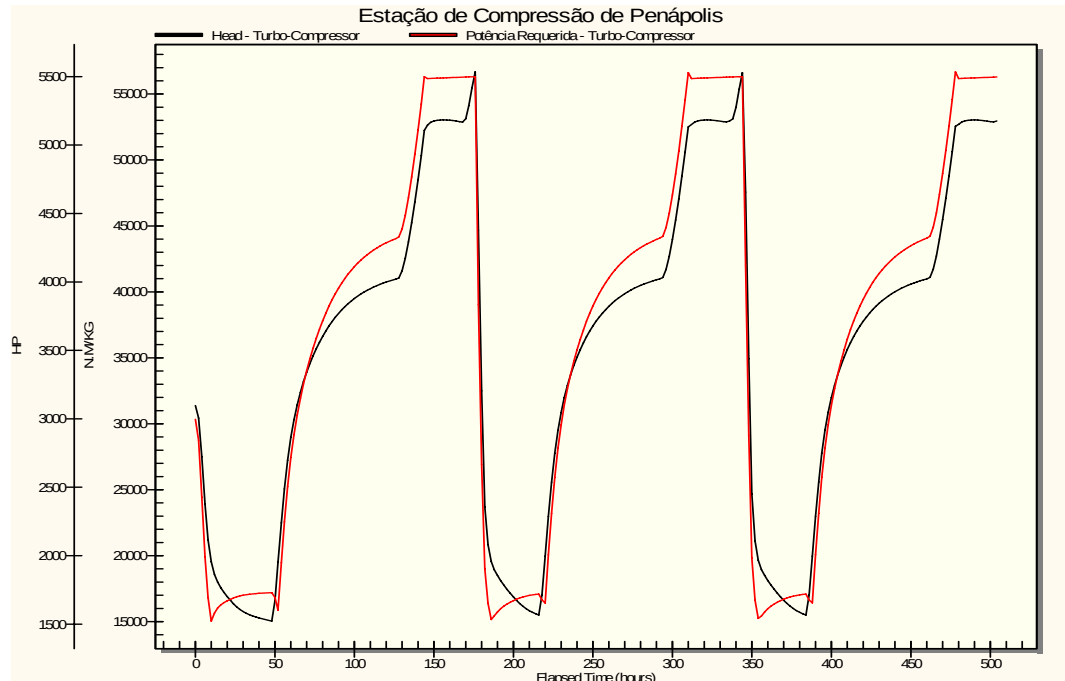


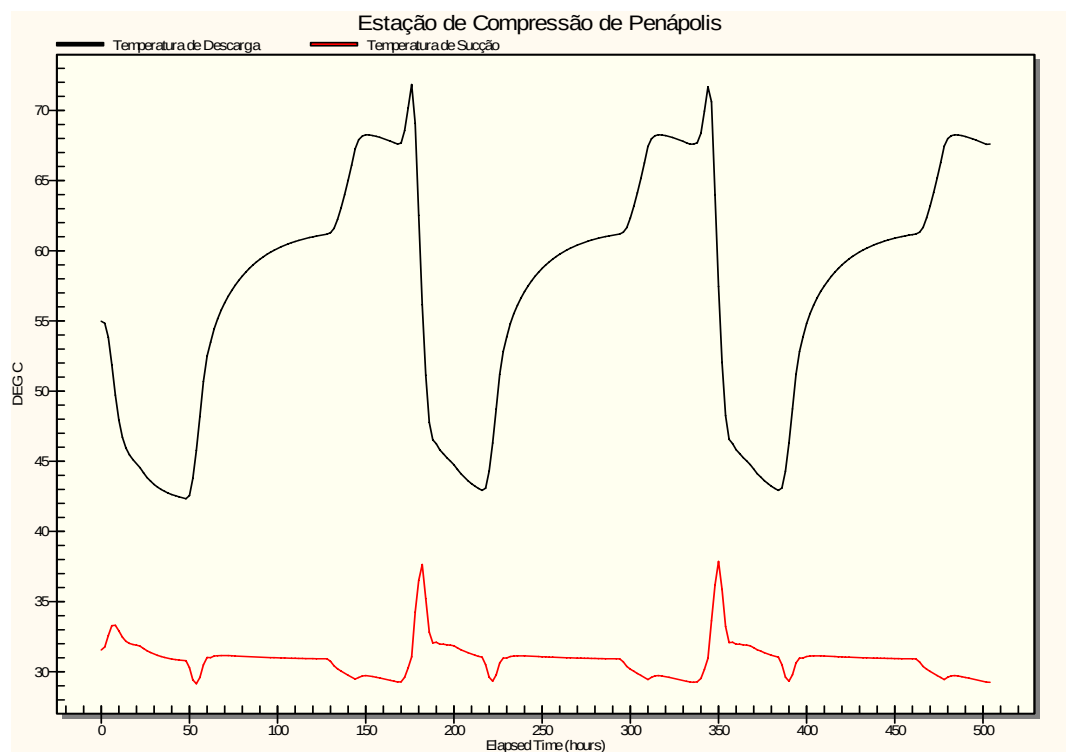
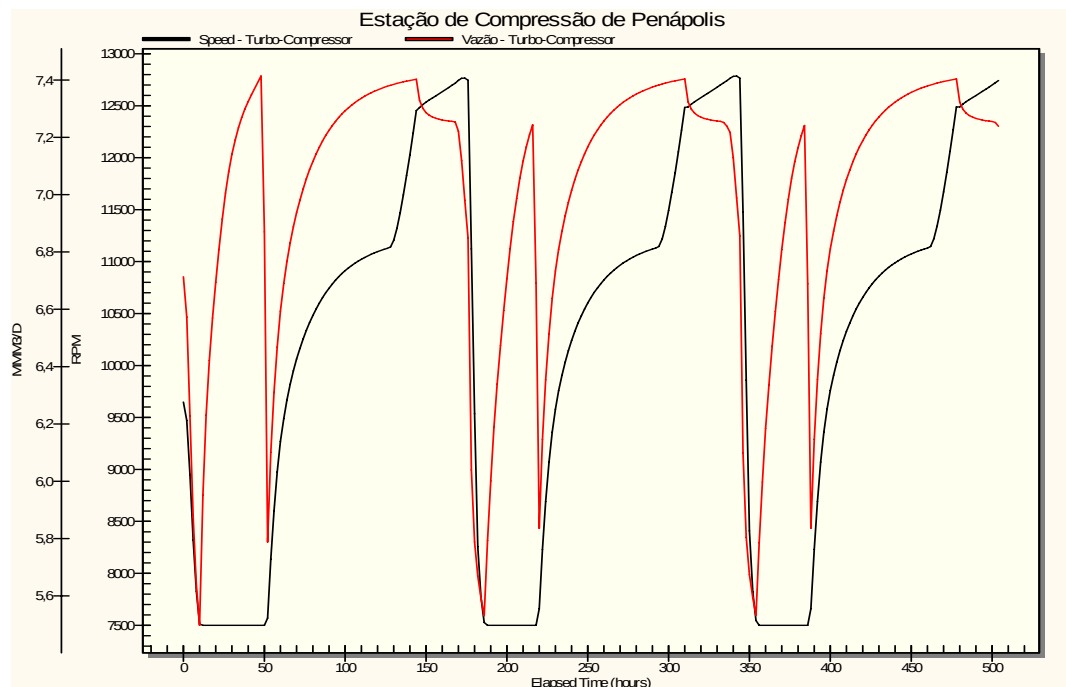


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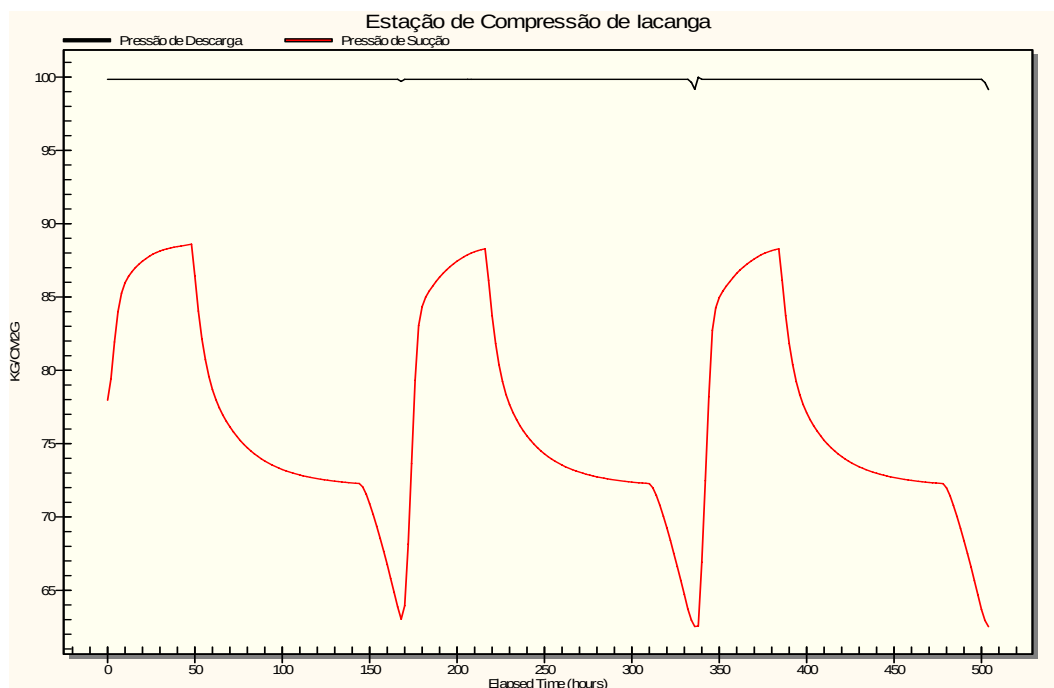
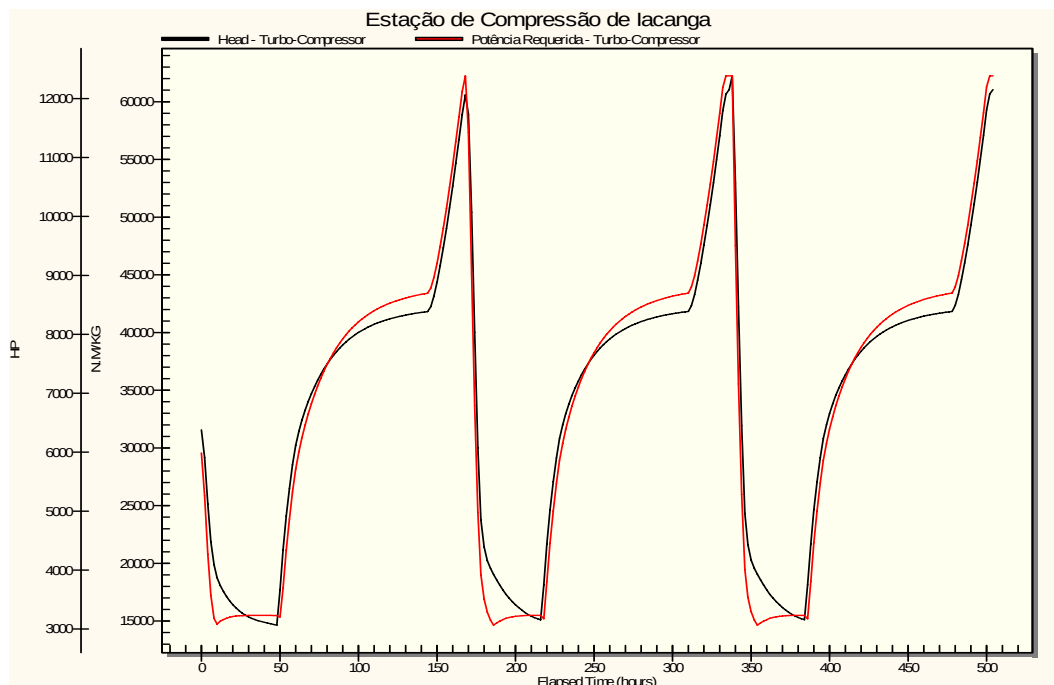


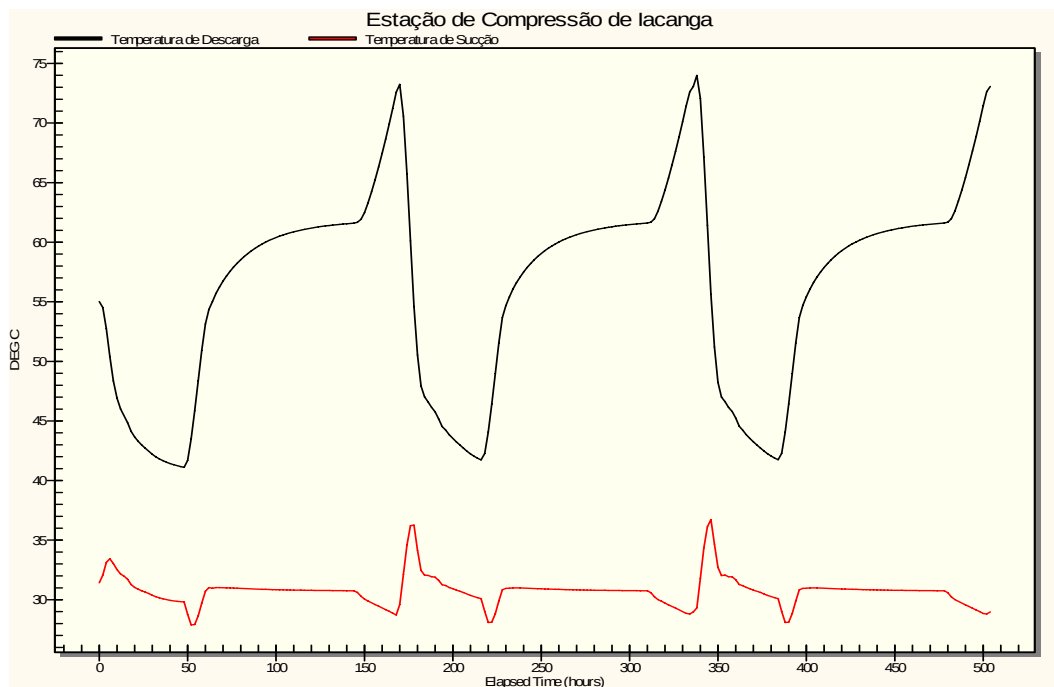
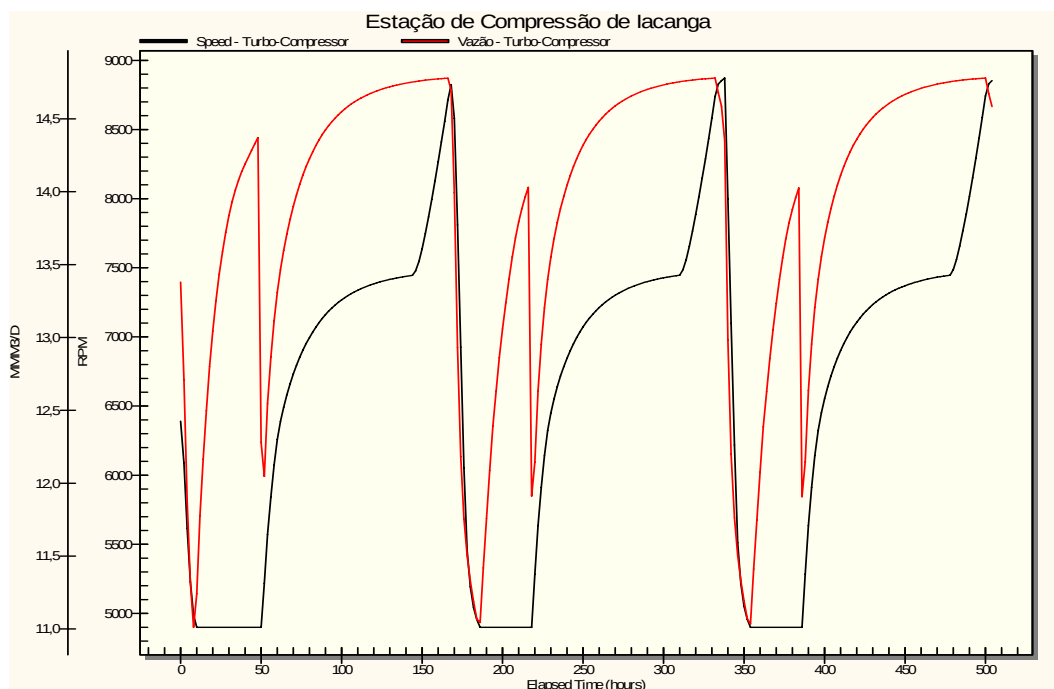
3.3.9. Estação de Compressão – Penápolis



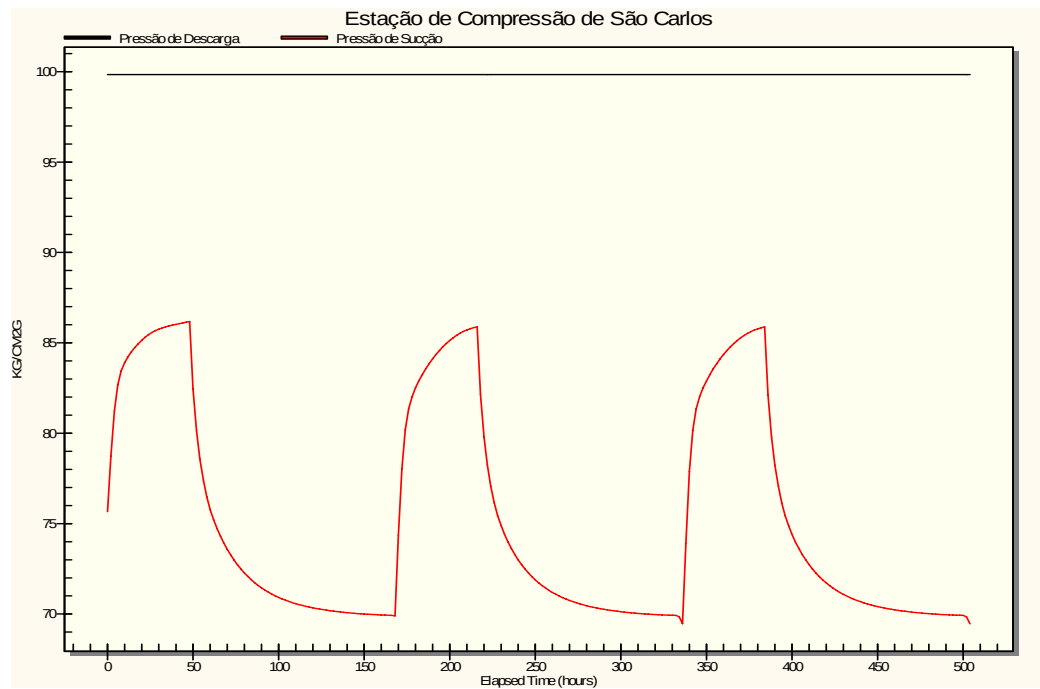
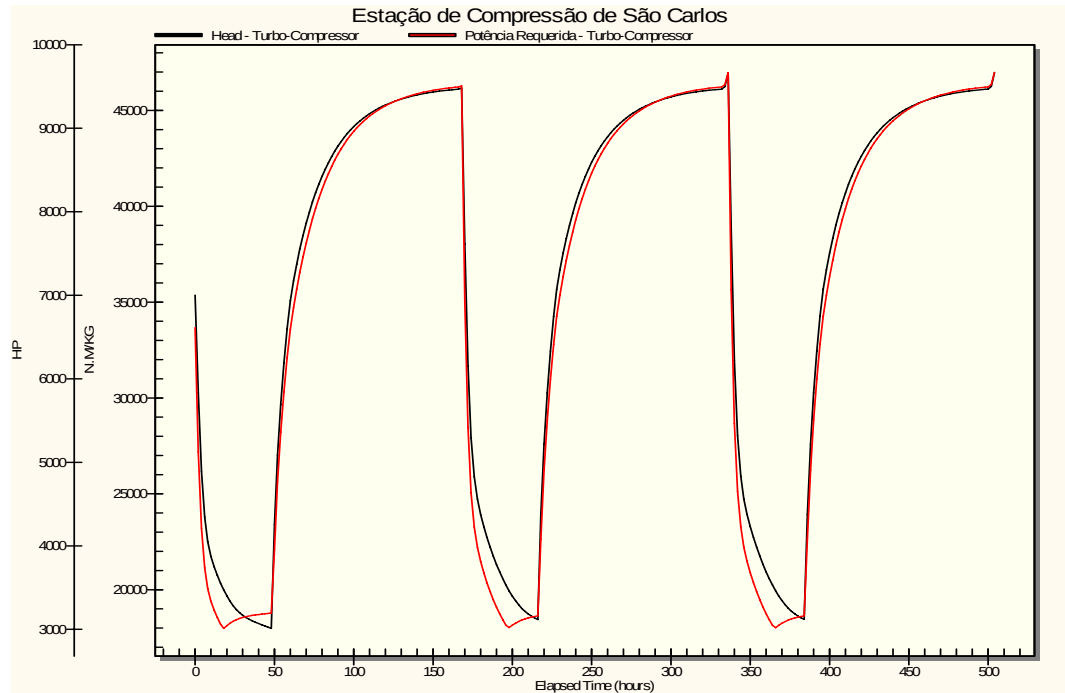


3.3.10. Estação de Compressão – lacanga.



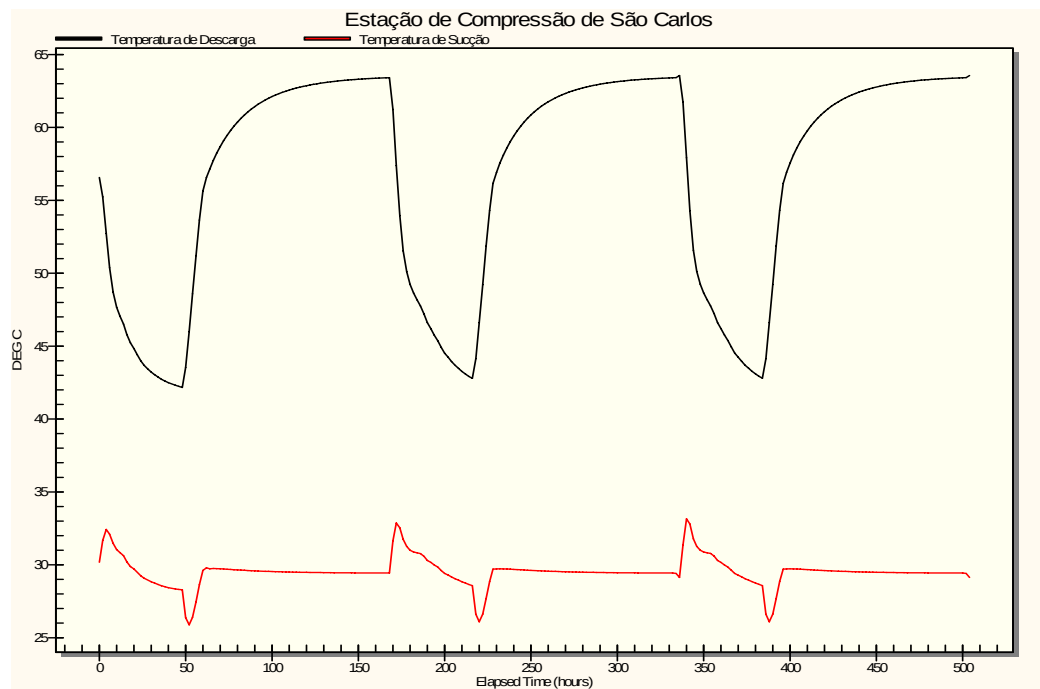
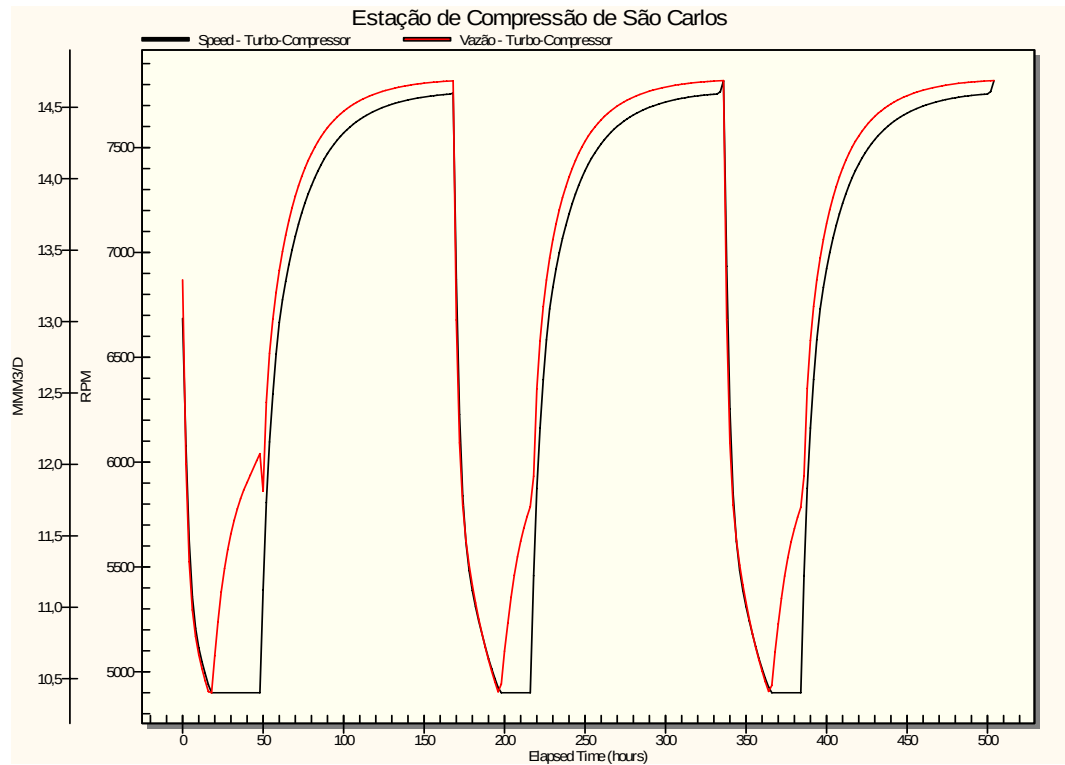


3.3.11. Estação de Compressão – São Carlos

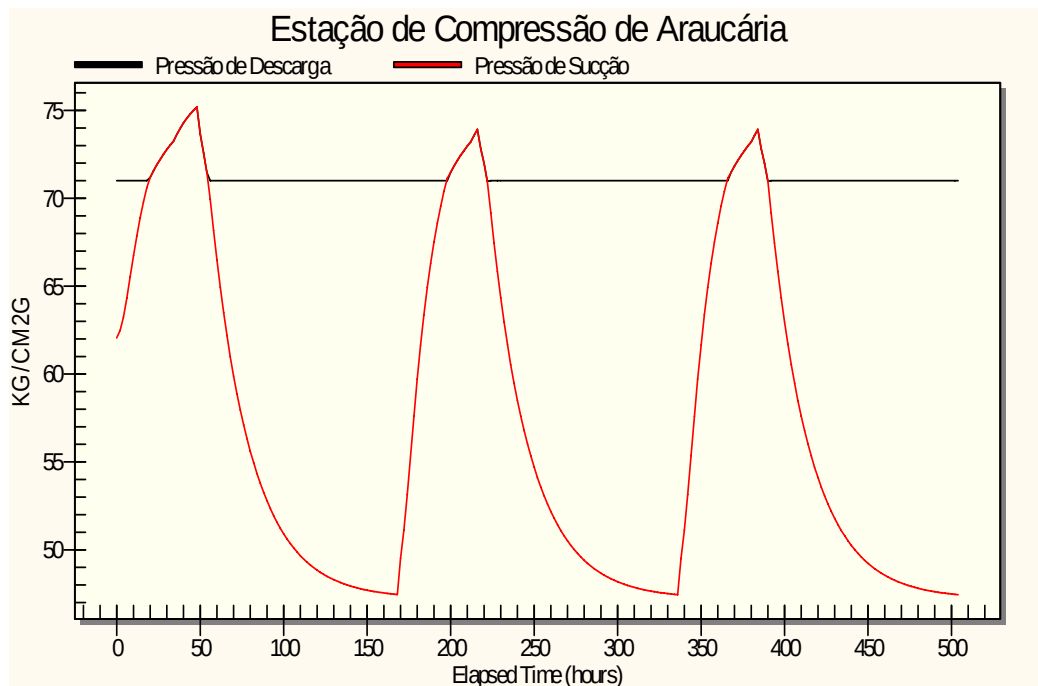
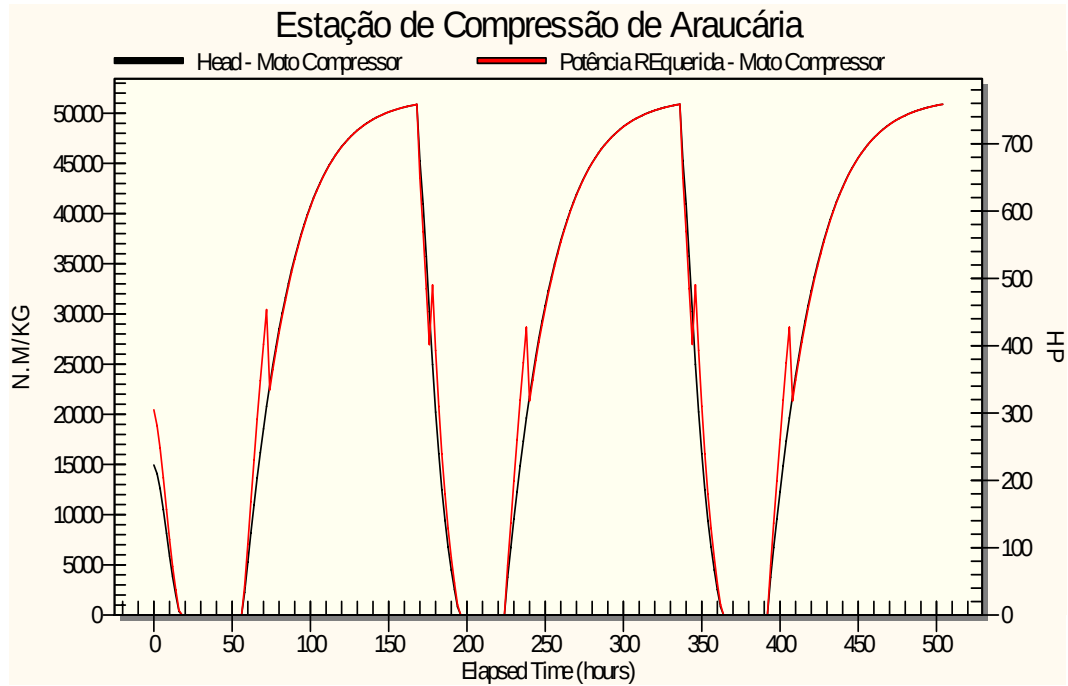




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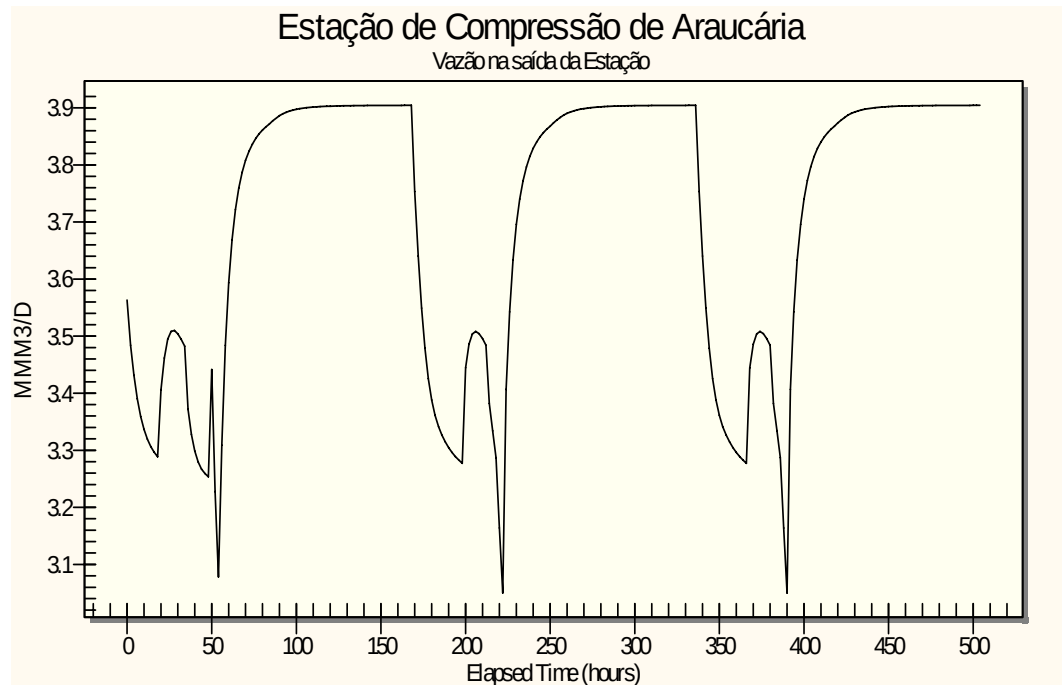
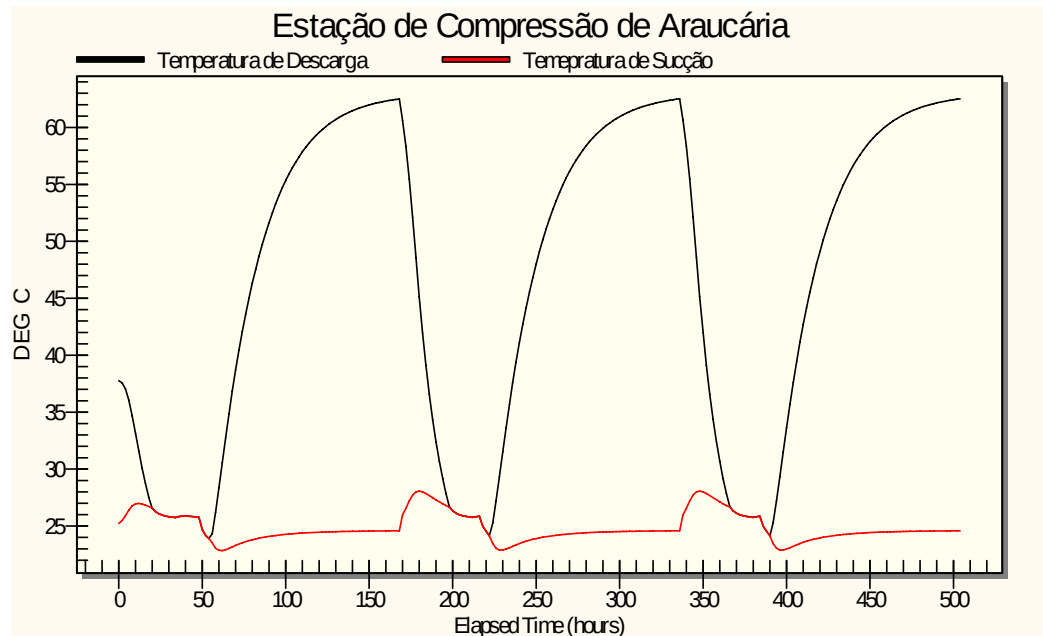


3.3.12. Estação de Compressão – Araucária

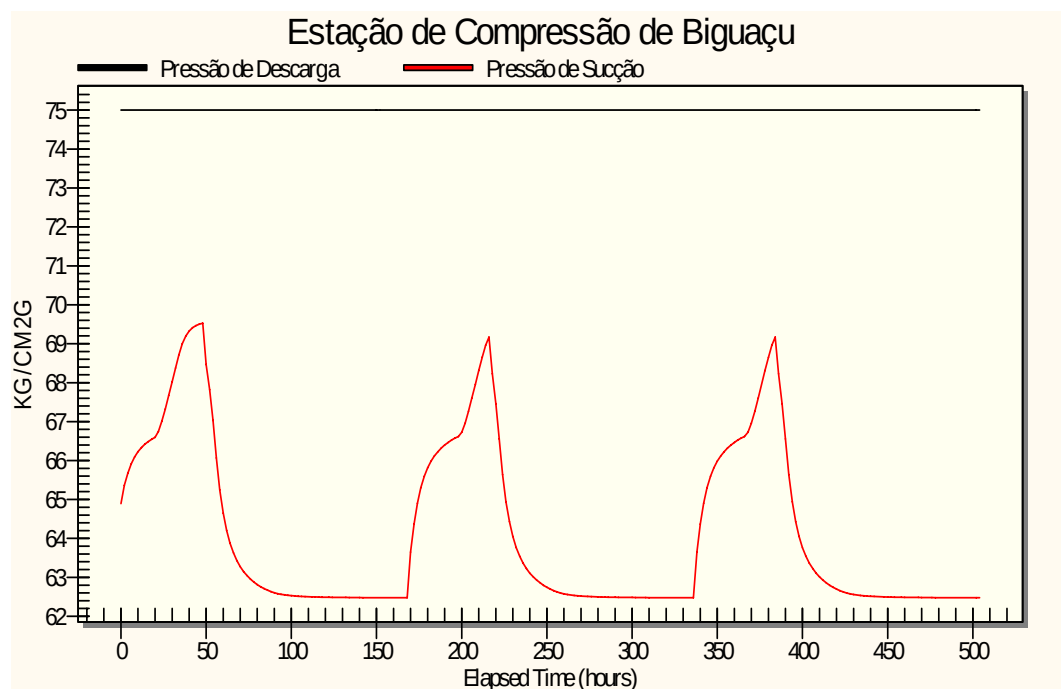
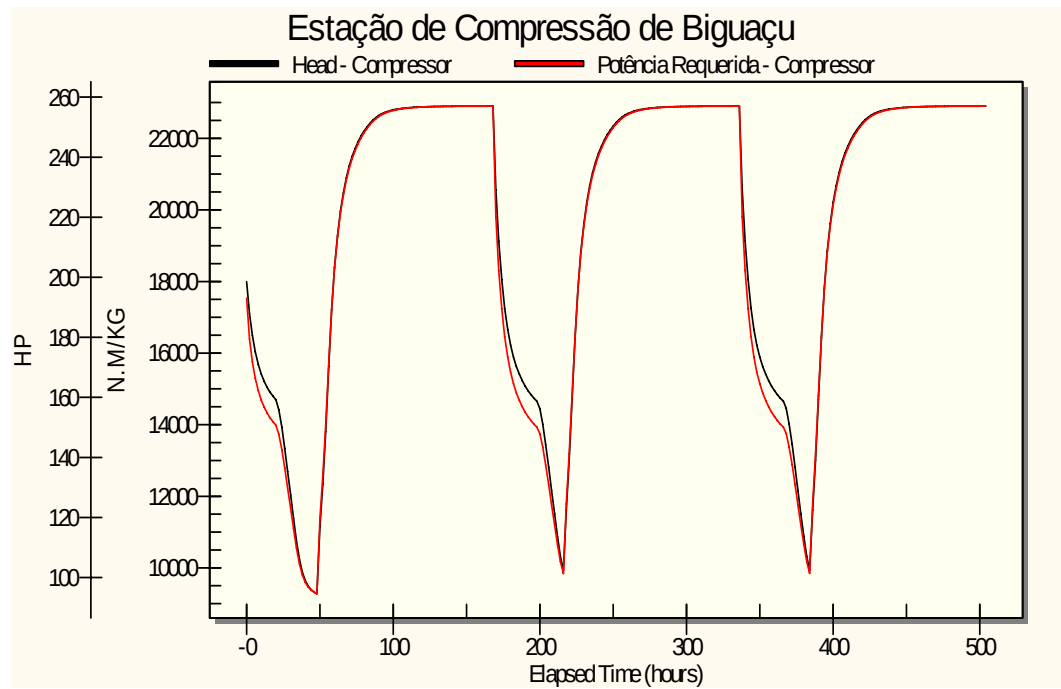


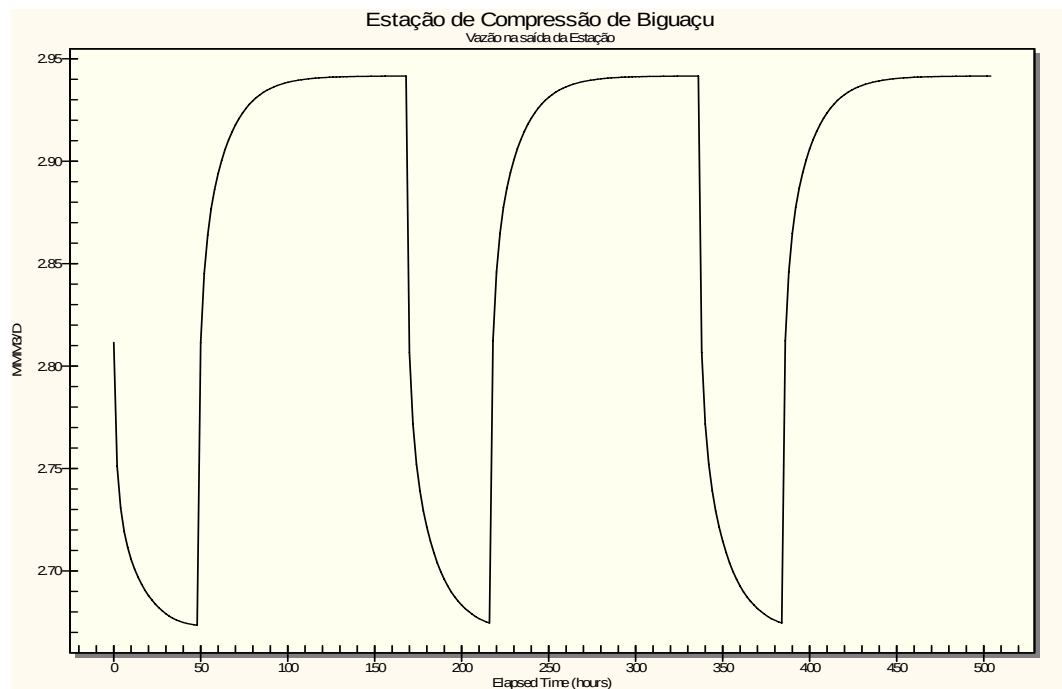
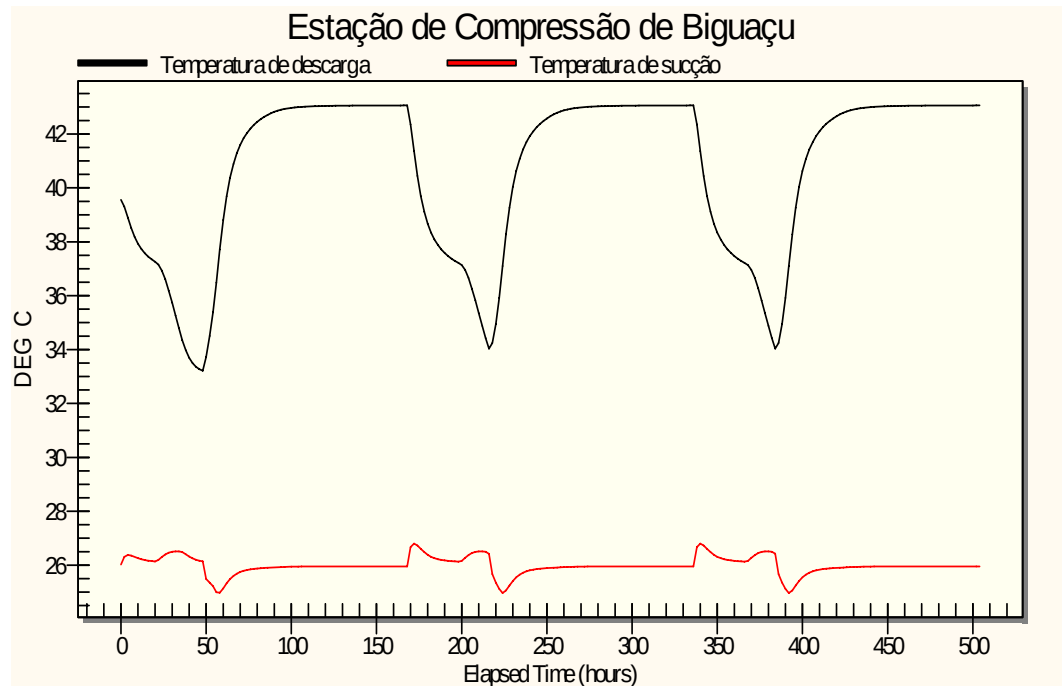


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3.3.13. Estação de Compressão – Biguaçu



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3.4. Performance das Estações de Compressão – Regime Transiente

	Condição		
5	mínima	Q	24.04
		Ps	84.59
		Pd	99.84
		Ts	34.59
		Td	50.44
	Máxima	Q	32.86
		Ps	67.71
		Pd	99.84
		Ts	34.15
		Td	71.59

	Condição		
6	mínima	Q	23.91
		Ps	83.05
		Pd	99.84
		Ts	32.81
		Td	50.39
	Máxima	Q	32.73
		Ps	64.55
		Pd	98.32
		Ts	30.31
		Td	70.61

	Condição		
7	mínima	Q	23.82
		Ps	83.80
		Pd	99.84
		Ts	33.41
		Td	50.12
	Máxima	Q	32.72
		Ps	65.73
		Pd	99.84
		Ts	30.88
		Td	70.81

	Condição		
8	mínima	Q	22.41
		Ps	83.31
		Pd	99.84
		Ts	33.04
		Td	50.29
	Máxima	Q	31.31
		Ps	68.19
		Pd	98.48
		Ts	31.23
		Td	66.45

	Condição		
9	mínima	Q	22.33
		Ps	85.46
		Pd	99.84
		Ts	33.03
		Td	47.86
	Máxima	Q	31.52
		Ps	65.11
		Pd	99.84
		Ts	30.30
		Td	71.07

	Condição		
10	mínima	Q	22.23
		Ps	85.42
		Pd	99.84
		Ts	32.82
		Td	47.69
	Máxima	Q	31.61
		Ps	64.84
		Pd	99.84
		Ts	29.95
		Td	71.03

	Condição		
11	mínima	Q	20.19
		Ps	85.69
		Pd	99.84
		Ts	30.70
		Td	45.21
	Máxima	Q	29.74
		Ps	63.17
		Pd	99.84
		Ts	27.91
		Td	71.28

	Condição		
12	mínima	Q	20.02
		Ps	88.45
		Pd	99.84
		Ts	30.80
		Td	42.29
	Máxima	Q	29.65
		Ps	67.04
		Pd	99.84
		Ts	29.47
		Td	67.21

	Condição		
13	mínima	Q	19.93
		Ps	88.66
		Pd	99.84
		Ts	29.82
		Td	41.05
	Máxima	Q	29.60
		Ps	63.28
		Pd	99.84
		Ts	28.78
		Td	72.02

	Condição		
14	mínima	Q	19.76
		Ps	86.25
		Pd	99.84
		Ts	28.14
		Td	41.96
	Máxima	Q	29.41
		Ps	69.12
		Pd	99.84
		Ts	28.01
		Td	63.65

	Condição		
15	mínima	Q	2.98
		Ps	70.30
		Pd	70.30
		Ts	23.79
		Td	23.79
	Máxima	Q	3.90
		Ps	47.47
		Pd	70.00
		Ts	24.58
		Td	61.11

	Condição		
16	mínima	Q	2.67
		Ps	69.50
		Pd	75.00
		Ts	26.17
		Td	33.29
	Máxima	Q	2.94
		Ps	61.13
		Pd	75.00
		Ts	25.94
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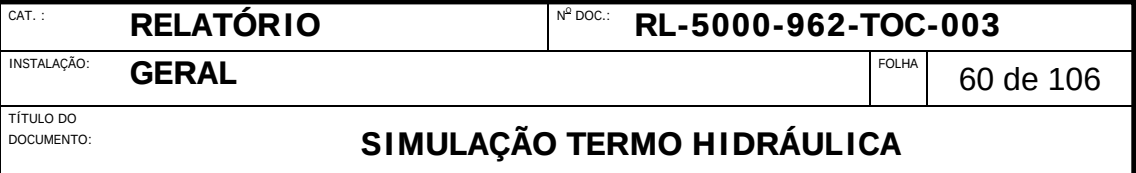


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Q - Vazão, MMm³/d @ 20°C e 1 atm;
Ps - Pressão de Sucção, Kg/cm²g;
Pd - Pressão de descarga, Kg/cm²g;
Ts - Temperatura de Sucção, °C;
Td - Temperatura de Descarga, °C.

3.5. Cálculo de Gás Combustível

Gás Combustível		
Gás Combustível para Turbinas (Norte) e Motor (Sul)		
	steady-state	transiente flex 20% (máximo)
Vazão Total Fronteira	31.159 MM m3/d	33.62 MM m3/d
Volume Total Fronteira	11373.035 MM m3	12271.3 MM m3
Total Gás Combustível	1.085 MM m3/d	1.326 MM m3/d
Volume Gás Combustível	396.025 MM m3	484.050 MM m3
% Gás Combustível	3.608 %	4.107 %
Gás Combustível para Estações de Entrega e Utilidades das Estações de Compressão		
Utilidades das Estações de Entrega		
Vazão / estação de entrega (Base: Média do Consumo Atual)		580 m3/d
Total de estações de entrega		40
Total consumo de Gás Combustível nas EEs		23200 m3/d
Utilidades das Estações de Compressão		
Vazão / Geração ECOMP (Base: cálculo teórico com dados dos equipamentos)		3600 m3/d
Total ECOMPs		12
Total consumo de Gás Combustível para Geração		43200 m3/d
Outras Utilidades (aquecimento Gás Combustível) (Base: Média do Consumo Atual)		7000 m3/d
Total Consumo de Gás Combustível para Utilidades		73400 m3/d
Total Gás Combustível do Sistema	=	1 399 565.12 m3/d
	=	4.1629 %
	+	
Gás Não Contado (GNC) = 0,5%	=	4.6629 %



	Number <u>Used</u>	Maximum <u>Allowed</u>
External Regulators	61	500
Equipment Devices	185	3000
Drivers/Turbines	6	500
Legs	309	10000
Nodes	475	20000
Knots	3663	30000
Stations	12	500
Banks	12	1000
Groups	12	1000
Plants	0	10
Compressor Perf Types	7	500
Driver/Turb Perf Types	4	500
Cylinder Types	2	500



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Fluids	2	100
Qualities	6	26

* Reference Conditions Report *

Reference Pressure = 0.00 KG/CM2G
Reference Temperature = 20.00 (DEG C)

* Leg Hydraulic Summary Report ----- Time = 0.000 (HRS) *

Leg ID	Pressure KG/CM2G		Flow (MMM3/D)		Line Pack (KPM3)	Temperature (DEG)	
	Head	Tail	Head	Tail		Head	Tail
0A	99.49	98.77	31.578	31.578	164.925	51.7	51.12
0B	98.77	97.96	31.578	31.578	169.9641	51.12	50.52
0C	97.96	96.09	31.578	31.578	419.1028	50.52	49.09
0D	96.09	93.18	31.578	31.577	646.3585	49.09	46.97
0E	93.18	86.79	31.578	31.578	1339.4928	46.97	42.84
0F	86.79	82.19	31.577	31.578	863.0457	42.84	40.22
0G	82.19	75.06	31.578	31.578	1173.1814	40.22	36.6
0H	75.06	68.71	31.578	31.578	883.3391	36.6	33.74
1A	99.49	93.29	31.46	31.46	1435.6591	51.7	46.96
1B	93.29	86.46	31.46	31.46	1410.7131	46.96	42.53
1C	86.46	79.82	31.46	31.46	1210.5468	42.53	38.84
1D	79.82	70.89	31.46	31.46	1314.1545	38.84	34.47
2A	99.49	93.36	31.354	31.354	1360.3695	51.7	47.01
2B	93.36	87.8	31.354	31.354	1231.8105	47.01	43.33
2C	87.8	82.57	31.354	31.354	841.8038	43.33	40.18
2D	82.57	76.54	31.354	31.354	1225.2225	40.18	37.34
2E	76.54	70.64	31.354	31.354	906.6323	37.34	34.68
3A	99.49	93.21	31.246	31.246	1511.1124	51.7	46.81
3B	93.21	86.25	31.246	31.246	1480.3898	46.81	42.29
3C	86.25	78.94	31.246	31.246	1338.3693	42.29	38.25
3D	78.94	77.13	31.246	31.246	296.7387	38.25	37.35
3E	77.13	75.86	31.246	31.246	204.6765	37.35	36.76
3F	75.86	70.53	31.246	31.246	791.3797	36.76	34.33
4A	99.49	96.31	31.138	31.138	774.1984	51.7	49.11
4B	96.31	89.55	31.138	31.138	1497.4474	49.11	44.31
4C	89.55	83.57	31.138	31.138	1113.4465	44.31	40.66
4D	83.57	76.77	31.138	31.138	1218.1074	40.66	37.18
4E	76.77	71.38	31.088	31.088	787.2203	37.18	34.64
5A	98.32	95.84	30.973	30.973	633.4227	48	46.05
5B	95.84	88.82	30.973	30.973	1564.0372	46.05	41.24
5C	88.82	84.23	30.973	30.973	919.1165	41.24	38.5
5D	84.23	76.88	30.973	30.973	1297.1122	38.5	34.63
5E	76.88	68.71	30.973	30.973	1212.0719	34.63	30.92
6A	98.32	93.33	30.852	30.852	1161.5394	48	44.23
6B	93.32	88.11	30.852	30.852	1085.9025	44.23	40.77
6C	88.11	82.37	30.852	30.852	998.0215	40.77	37.35



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6D	82.37	76.17	30.852	30.852	1172.8284	37.35	34.31
6E	76.17	70.7	30.852	30.852	844.0276	34.31	31.83
7A	98.33	95.3	30.737	30.737	555.5887	48	45.74
7B	95.3	94.81	30.737	30.737	281.9479	45.74	45.3
7C	94.81	93.5	30.737	30.737	244.879	45.3	44.36
7D	93.5	87.04	30.737	30.737	1322.094	44.36	40.09
7E	87.04	85.86	30.737	30.737	336.7542	40.09	39.43
7F	85.86	82.2	30.737	30.737	570.9857	39.43	37.24
7G	82.2	80.33	30.737	30.737	414.5592	37.24	36.33
7H	80.33	71.71	30.737	30.737	1161.8385	36.33	31.72
8A	98.33	91.3	29.278	29.278	1654.3685	48	42.41
8B	91.3	89.28	29.278	29.278	655.6911	42.41	40.96
8C	89.28	86.98	29.278	29.278	333.69	40.96	39.42
8D	86.98	86.76	29.278	29.278	282.7449	39.42	39.34
8E	86.76	84.43	29.278	29.278	321.2756	39.34	37.83
8F	84.43	78.38	29.278	29.278	1463.8405	37.83	34.68
8G	78.38	72.05	29.278	29.278	1184.1533	34.68	31.74
9A	98.34	98.53	29.171	29.171	144.0147	48	47.96
9B	98.53	92.19	29.171	29.171	1300.8726	47.96	42.99
9C	92.19	90.81	29.171	29.171	591.496	42.99	41.91
9D	90.81	86.37	29.171	29.171	981.9475	41.91	38.92
9E	86.37	81.86	29.171	29.171	1106.7831	38.92	36.32
9F	81.86	77.11	29.171	29.171	857.241	36.32	33.73
9G	77.11	72.16	29.171	29.171	961.9688	33.73	31.56
10A	98.34	93.05	29.063	29.063	1454.7408	48	43.19
10B	93.05	90.32	29.063	29.063	542.0565	43.19	41.1
10C	90.32	88.24	29.063	29.063	681.0588	41.1	39.53
10D	88.24	86.62	27.113	27.113	489.6148	39.53	38.24
10E	86.62	82.41	27.113	27.113	972.3275	38.24	35.28
10F	82.41	77.89	27.113	27.113	959.3113	35.28	32.47
10G	77.89	73.42	27.113	27.113	916.2125	32.47	30.08
11A	98.33	93.63	27.012	27.012	1523.0294	48	42.97
11B	93.63	89.19	27.012	27.012	1223.5026	42.97	39.15
11C	89.19	87.79	27.012	27.012	297.2486	39.15	38.1
11D	87.79	85.5	27.012	27.012	861.9282	38.1	36.38
11E	85.5	82.76	26.932	26.932	590.4415	36.38	34.53
11F	82.76	80.13	26.932	26.932	692.2718	34.53	32.95
11G	80.13	79.7	26.932	26.932	99.3431	32.95	32.71
11H	79.7	77.81	26.932	26.932	397.6297	32.71	31.62
12A	98.34	96.38	26.845	26.845	481.4397	48	46.01
12B	96.38	94.31	26.845	26.845	847.5001	46.01	43.59
12C	94.31	89.64	26.845	26.845	1439.0951	43.59	39.34
12D	89.64	86.38	26.845	26.845	717.6486	39.34	36.9
12E	86.38	86.17	26.845	26.845	260.9892	36.9	36.72
12F	86.17	84.61	26.845	26.845	305.6101	36.72	35.63
12G	84.61	82.94	26.845	26.845	430.6963	35.63	34.53
12H	82.94	77.67	26.845	26.845	1350.3005	34.53	31.49
13A	98.32	98.27	26.753	26.753	194.0534	48	47.63
13B	98.27	96.58	26.753	26.753	241.3043	47.63	46.2
13C	96.58	94.06	26.753	26.753	895.7192	46.2	43.42
13D	94.06	90.13	26.753	26.753	1221.3949	43.42	39.8
13E	90.13	88.79	26.753	26.753	326.2589	39.8	38.73



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13F	88.79	87.8	26.753	26.753	119.2605	38.73	38.02
13G	87.8	86.41	26.753	26.753	382.1992	38.02	36.98
13H	86.41	85.83	26.753	26.753	117.0454	36.98	36.56
13I	85.83	84.95	26.753	26.753	141.1602	36.56	35.95
13J	84.95	84.96	26.753	26.753	182.3082	35.95	35.96
13K	84.96	78.22	26.673	26.673	1397.2115	35.96	31.67
13L	78.22	77.15	26.673	26.673	156.6955	31.67	31.01
13M	77.15	77.8	26.673	26.673	112.8425	31.01	31.63
13N	77.8	75.84	26.673	26.673	215.3645	31.63	30.34
13O	75.84	75.19	26.673	26.673	104.7703	30.34	29.97
14A	98.34	97.52	26.579	26.579	147.2657	48	47.24
14B	97.52	96.22	26.579	26.579	362.9752	47.24	45.85
14C	96.22	96.77	26.179	26.179	209.352	45.85	45.87
14D	96.77	93.74	26.179	26.179	726.093	45.87	42.95
14E	93.74	93.76	26.179	26.179	206.2961	42.95	42.73
14F	93.76	93.86	26.179	26.179	274.0999	42.73	42.49
14G	93.86	92.15	26.179	26.179	506.6653	42.49	40.88
14H	92.15	91.58	26.179	26.179	128.236	40.88	40.41
14I	91.58	91.11	26.179	26.179	247.9545	40.41	39.9
14J	91.11	90.79	26.179	26.179	143.8353	39.9	39.6
14K	90.79	90.04	26.179	26.179	259.3492	39.6	38.93
14L	90.04	87.28	25.039	25.039	441.0488	38.93	36.82
14M	87.28	87.41	25.039	25.039	279.4874	36.82	36.8
14N	87.41	87.23	25.039	25.039	192.5039	36.8	36.6
14O	87.23	85.49	24.279	24.279	682.6277	36.6	35.14
14P	85.49	84.91	24.279	24.279	93.451	35.14	34.71
14Q	84.91	84.81	24.279	24.279	155.5281	34.71	34.61
14R	84.81	84.31	24.279	24.279	94.0703	34.61	34.25
14S	84.31	82.67	23.779	23.779	507.7427	34.25	33.05
14T	82.67	81.73	23.779	23.779	231.9879	33.05	32.4
14U	81.73	81.34	23.779	23.779	115.8315	32.4	32.16
14AA	81.21	80.83	6.489	6.489	220.2523	31.9	30.84
14AA1	80.83	80.59	6.489	6.489	130.1994	30.84	30.29
14BA	80.59	80.06	6.189	6.189	114.9848	30.29	29.6
14CA	80.06	79.84	6.189	6.189	202.1742	29.6	29.02
14DA	79.84	80.07	6.159	6.159	65.0008	29.02	29.07
14EA	80.07	78.92	6.159	6.159	356.1491	29.07	27.76
14FA	78.92	78.56	6.079	6.079	590.7633	27.76	27.17
14GA	78.56	77.48	5.399	5.399	405.4986	27.17	26.31
14HA	77.28	77.4	5.359	5.359	258.9507	24.02	24.66
14IA	77.4	76.44	5.359	5.359	228.7661	24.66	24.39
14JA	76.44	76.1	5.289	5.289	549.7967	24.39	25.11
14KA	76.1	75.11	5.289	5.289	201.9926	25.11	24.69
14LA	75.11	74.95	5.289	5.289	310.6317	24.69	25.09
14MA	74.95	74.93	5.289	5.289	50.6535	25.09	25.16
14NA	74.93	74.88	5.289	5.289	138.8665	25.16	25.31
14OA	74.88	73.23	5.289	5.289	385.3901	25.31	24.67
14PA	73.23	73.56	5.289	5.289	224.0777	24.67	25.31
14QA	73.56	72.63	5.289	5.289	513.9265	25.31	25.29
14RA	72.63	72.85	5.289	5.289	197.594	25.29	25.71
14AS	72.85	70.88	5.289	5.289	518.1637	25.71	24.88
14TA	70.88	70.49	5.289	5.289	98.311	24.88	24.76



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14UA	70.49	70.72	5.289	5.289	48.9658	24.76	25.05
14VA	70.72	69.93	5.289	5.289	63.6568	25.05	24.53
14WA	69.93	70.68	5.289	5.289	192.8821	24.53	25.51
14XA	70.68	69.81	5.289	5.289	104.1609	25.51	24.95
14YA	69.81	69.99	5.289	5.289	162.1793	24.95	25.38
14ZA	69.99	69.54	5.289	5.289	43.8249	25.38	25.08
14BB	69.54	68.18	5.289	5.289	88.8808	25.08	24.12
14CB	68.18	68.9	5.289	5.289	75.1722	24.12	24.93
14DB	68.9	68.39	5.289	5.289	72.9765	24.93	24.66
14EB	68.39	68.06	5.289	5.289	631.1417	24.66	25.54
14FB	68.06	69.76	5.289	5.289	79.2387	25.54	27.04
14GB	69.76	68.77	5.289	5.289	46.4088	27.04	26.2
14HB	68.77	70.03	5.289	5.289	46.4753	26.2	27.28
14IB	70.03	67.35	5.289	5.289	296.304	27.28	25.16
14JB	67.35	67.82	5.289	5.289	168.7523	25.16	25.82
14KB	67.82	68.33	5.289	5.289	147.7959	25.82	26.38
14LB	68.33	66.1	5.289	5.289	60.2225	26.38	24.51
14MB	66.1	67.86	5.289	5.289	466.2844	24.51	26.67
14NB	67.86	67.03	5.289	5.289	68.7352	26.67	25.98
14OB	67.03	67.88	5.289	5.289	76.4571	25.98	26.77
14PB	67.88	68.21	5.289	5.289	129.7415	26.77	27.03
14QB	68.21	65.92	5.289	5.289	198.7809	27.03	25.16
14RB	65.92	66.82	5.289	5.289	76.2409	25.16	26.08
14SB	66.82	64.51	5.289	5.289	180.3999	26.08	24.35
14TB	64.51	65.7	5.289	5.289	72.7943	24.35	25.6
14UB	65.7	64.07	5.289	5.289	258.8892	25.6	24.7
14VB	64.07	62.28	5.289	5.289	254.3687	24.7	23.87
14WB	62.28	63	5.289	5.289	43.9778	23.87	24.71
14XB	63	61.8	5.289	5.289	212.7422	24.71	24.25
14YB	61.8	61.45	5.289	5.289	212.5288	24.25	24.64
14ZB	61.45	60.95	5.239	5.239	360.3541	24.64	25.16
14ZB1	60.95	60.87	4.639	4.639	39.9801	25.16	25.19
15A	70.75	70.62	3.664	3.664	35.7551	39.25	38.19
15B	70.62	70.58	3.664	3.664	97.414	38.19	35.98
15C	70.58	70.24	3.664	3.664	47.3388	35.98	34.8
15D	70.24	68.87	3.664	3.664	399.5012	34.8	29.42
15E	68.87	68.31	3.664	3.664	164.3091	29.42	28.23
15F	68.31	68.49	3.664	3.664	113.0077	28.23	28.07
15G	68.49	72.25	3.664	3.664	370.8004	28.07	29.59
15H	72.25	70.99	3.664	3.664	409.6039	29.59	27.28
15I	70.99	70.63	3.494	3.494	127.9872	27.28	26.86
15J	70.63	69.95	3.494	3.494	235.7475	26.86	26.32
15K	69.95	69.77	3.494	3.494	49.4239	26.32	26.21
15L	69.77	69.66	3.494	3.494	40.2894	26.21	26.15
15M	69.66	69.61	3.234	3.234	46.194	26.15	26.14
15N	69.61	67.8	3.234	3.234	331.0799	26.14	25.26
15O	67.8	67.83	3.234	3.234	106.3624	25.26	25.56
15P	67.83	66.8	3.234	3.234	122.1304	25.56	25.02
15Q	66.8	65.46	3.234	3.234	44.5315	25.02	24.05
15R	65.46	66.31	3.234	3.234	29.5669	24.05	24.96
15S	66.31	65.6	3.234	3.234	58.3878	24.96	24.58
15T	65.6	67.52	3.234	3.234	102.729	24.58	26.54



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15U	67.52	67.11	3.104	3.104	59.1985	26.54	26.2
15V	67.11	66.17	3.104	3.104	54.9257	26.2	25.45
15W	66.17	66.73	3.104	3.104	146.2732	25.45	26.2
15X	66.73	66.75	3.104	3.104	72.763	26.2	26.26
15Z	66.75	66.36	3.064	3.064	115.5266	26.26	26.01
15AA	66.36	64.07	3.064	3.064	59.7096	26.01	24.16
15BA	64.07	65.84	3.064	3.064	65.224	24.16	26.01
15CA	65.84	64.11	3.064	3.064	59.3796	26.01	24.62
15DA	64.11	65.42	3.064	3.064	62.0352	24.62	26.01
15EA	65.42	64.83	3.064	3.064	55.023	26.01	25.58
15FA	64.83	65.37	3.064	3.064	111.3605	25.58	26.24
15GA	65.37	63.85	2.914	2.914	284.2017	26.24	25.38
15HA	63.85	64.53	2.914	2.914	91.1658	25.38	26.18
15IA	64.53	63.09	2.914	2.914	32.1912	26.18	24.92
16A	74.6	72.86	2.91	2.91	135.4528	40.71	35
16A1	72.86	72.02	2.85	2.85	42.6184	35	33.37
16B	72.02	73.42	2.85	2.85	111.5655	33.37	32.51
16C	73.42	70.37	2.85	2.85	56.9791	32.51	29.3
16D	70.37	72.33	2.85	2.85	36.5991	29.3	30.59
16E	72.33	69.12	2.85	2.85	64.082	30.59	27.47
16F	69.12	69.86	2.85	2.85	24.8167	27.47	28.03
16G	69.86	68.26	2.85	2.85	24.706	28.03	26.6
16H	68.26	70.62	2.85	2.85	57.085	26.6	28.47
16I	70.62	68.24	2.85	2.85	64.5981	28.47	26.32
16J	68.24	69.45	2.85	2.85	24.6869	26.32	27.36
16K	69.45	67.92	2.85	2.85	24.6438	27.36	26.03
16L	67.92	68.95	2.85	2.85	24.5693	26.03	26.94
16M	68.95	67.18	2.85	2.85	24.4629	26.94	25.44
16N	67.18	67.51	2.85	2.85	27.8872	25.44	25.82
16O	67.51	67.6	2.85	2.85	52.2312	25.82	26.02
16P	67.6	68.53	2.85	2.85	61.0581	26.02	26.87
16Q	68.53	67.36	2.85	2.85	106.0741	26.87	25.96
16R	67.36	68.45	2.85	2.85	105.9384	25.96	26.97
16S	68.45	68.57	2.85	2.85	55.6381	26.97	27.03
16T	68.57	68.34	2.85	2.85	198.6444	27.03	26.74
16U	68.34	68.69	2.85	2.85	66.2799	26.74	27
16V	68.69	68.41	2.85	2.85	39.2997	27	26.74
16W	68.41	67.82	2.85	2.85	25.6625	26.74	26.24
16X	67.82	68.31	2.85	2.85	39.0752	26.24	26.69
16Y	68.31	66.66	2.85	2.85	81.2319	26.69	25.42
16Z	66.66	67.59	2.85	2.85	27.7449	25.42	26.32
16AA	67.59	67.45	2.85	2.85	39.9786	26.32	26.24
16BA	67.45	67.39	2.85	2.85	25.0573	26.24	26.23
16CA	67.39	67.36	2.85	2.85	30.221	26.23	26.25
16DA	67.36	65.6	2.77	2.77	28.6975	26.25	24.79
16EA	65.6	65.11	2.77	2.77	26.7417	24.79	24.52
16FA	65.11	64.51	2.77	2.77	45.6003	24.52	24.31
16GA	64.51	65.39	2.77	2.77	84.1097	24.31	25.59
16HA	65.39	63.7	2.77	2.77	56.8433	25.59	24.36
16IA	63.7	65.87	2.77	2.77	73.1322	24.36	26.63
16KA	65.87	65.18	2.77	2.77	44.4796	26.63	26.06
16LA	65.18	64.54	2.51	2.51	26.3327	26.06	25.55



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16MA	64.54	63.88	2.51	2.51	28.7726	25.55	25.06
16NA	63.88	63.89	2.51	2.51	75.1999	25.06	25.44
17A	63.89	64.1	2.51	2.51	19.6021	25.44	25.76
17B	64.1	63.51	2.51	2.51	18.654	25.76	25.34
17B1	63.51	64.11	2.51	2.51	58.5432	25.34	26.24
17C	64.11	63.13	2.33	2.33	143.4615	26.24	25.89
17D	63.13	61.7	2.33	2.33	65.1656	25.89	24.99
17E	61.7	61.42	2.33	2.33	92.86	24.99	25.47
17F	61.42	60.07	2.33	2.33	17.1315	25.47	24.32
17G	60.07	61.01	2.33	2.33	20.4789	24.32	25.46
17H	61.01	60.46	2.33	2.33	43.4828	25.46	25.3
17I	60.46	54.24	2.33	2.33	77.185	25.3	20.65
17J	54.24	54.27	2.33	2.33	157.207	20.65	24.5
17K	54.27	52.64	2.33	2.33	64.8063	24.5	23.86
17L	52.64	52.32	2.33	2.33	45.9852	23.86	24.37
17M	52.32	52.19	2.33	2.33	24.9804	24.37	24.66
17N	52.19	52.36	2.33	2.33	23.8742	24.66	25.2
17O	52.36	51.34	2.33	2.33	38.0038	25.2	24.61
17P	51.34	50.79	2.33	2.33	105.6398	24.61	25.51
17Q	50.79	49.35	2.33	2.33	65.4461	25.51	24.79
17R	49.35	48.96	2.33	2.33	27.9573	24.79	24.83
17S	48.96	46.91	2.23	2.23	183.8197	24.83	25.32
17T	46.91	46.65	2.23	2.23	13.8283	25.32	25.23
17U	46.65	48.84	2.23	2.23	56.9	25.23	28.29
17V	48.84	47.17	2.23	2.23	29.2581	28.29	26.25
17W	47.17	48.3	2.23	2.23	17.4667	26.25	27.76
17X	48.3	46.49	2.23	2.23	38.5781	27.76	25.7
17Y	46.49	46.76	2.23	2.23	18.7188	25.7	26.28
17Z	46.76	47.11	2.21	2.21	51.8854	26.28	27.07
17AA	47.11	46.18	2.21	2.21	16.4176	27.07	26
17BA	46.18	46.2	2.21	2.21	50.103	26	26.53
17CA	46.2	45.89	2.21	2.21	26.191	26.53	26.35
17DA	45.89	45.4	2.16	2.16	33.7901	26.35	26.07
17EA	45.4	44.74	2.16	2.16	37.1652	26.07	25.7
17FA	44.74	43.4	2.16	2.16	27.5277	25.7	24.45
17GA	43.4	43.68	2.16	2.16	11.8261	24.45	25.12
17HA	43.68	43.39	2.16	2.16	24.7823	25.12	25.23
17IA	43.39	43.11	2.16	2.16	38.6183	25.23	25.6
17JA	43.11	42.81	2	2	31.4211	25.6	25.7
18A	75	74.54	9.3	9.3	94.3784	29.66	29.29
18A1	74.54	74.2	9.3	9.3	54.0388	29.29	29.04
18B	74.2	73.92	7.6	7.6	71.5389	29.04	28.75
18C	73.92	72.9	7.6	7.6	235.2331	28.75	27.87
18D	72.9	72.38	7.6	7.6	63.5041	27.87	27.46
18E	72.38	71.83	7.6	7.6	167.7629	27.46	27.1
18F	71.83	71.41	7.6	7.6	127.2789	27.1	26.85
18G	71.41	69.75	7.6	7.6	267.3374	26.85	25.82
18H	69.75	69.64	7.05	7.05	93.4965	25.82	25.88
18I	69.64	67.88	7.05	7.05	467.9964	25.88	25.25
18J	67.88	67.19	7.05	7.05	276.3825	25.25	25.29
18K	67.19	66.59	7.05	7.05	166.9131	25.29	25.15
18L	66.59	65.21	7.05	7.05	72.4689	25.15	24.12



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18M	65.21	65.67	7.05	7.05	42.3866	24.12	24.68
18N	65.67	65.24	7.05	7.05	76.6157	24.68	24.52
18O	65.24	65.07	7.05	7.05	65.0928	24.52	24.57
18P	65.07	64.44	7.05	7.05	50.526	24.57	24.17
18Q	64.44	64.74	7.05	7.05	294.5674	24.17	25.34
18Q1	64.74	63.93	7.05	7.05	310.7713	25.34	25.4
18R	63.93	63.9	6.7	6.7	42.7758	25.4	25.47
18S	63.9	63.42	6.7	6.7	44.6421	25.47	25.13
18T	63.42	63.67	6.7	6.7	57.3747	25.13	25.51
18U	63.67	62.79	6.7	6.7	143.7334	25.51	25.06
18V	62.79	62.78	6.7	6.7	100.8094	25.06	25.32
14GAA	77.48	77.28	5.359	5.359	150.2425	26.31	24.02
14AAA	81.34	81.21	7.379	7.379	50.0367	32.16	31.9

Equipment Hydraulic Summary Report

Equipment ID	Mode of Control	Pressure		Flow (MMM3/D)	Temperature (DEG C)		Spc Grv	Heating Value (MJ/M3)
		Up	Down		Up	Down		
VE1	Block Valve	93.18	93.18	31.58	46.97	46.97	0.635	39.05
VE2	Block Valve	86.79	86.79	31.58	42.84	42.84	0.635	39.05
VE3	Block Valve	82.19	82.19	31.58	40.22	40.22	0.635	39.05
VE4	Block Valve	75.06	75.06	31.58	36.6	36.6	0.635	39.05
VE5	Block Valve	93.29	93.29	31.46	46.96	46.96	0.635	39.05
VE6	Block Valve	86.46	86.46	31.46	42.53	42.53	0.635	39.05
VE7	Block Valve	79.82	79.82	31.46	38.84	38.84	0.635	39.05
VE8	Block Valve	93.36	93.36	31.35	47.01	47.01	0.635	39.05
VE9	Block Valve	87.8	87.8	31.35	43.33	43.33	0.635	39.05
VE10	Block Valve	82.57	82.57	31.35	40.18	40.18	0.635	39.05
VE11	Block Valve	76.54	76.54	31.35	37.34	37.34	0.635	39.05
VE12	Block Valve	93.21	93.21	31.25	46.81	46.81	0.635	39.05
VE13	Block Valve	86.25	86.25	31.25	42.29	42.29	0.635	39.05
VE14	Block Valve	78.94	78.94	31.25	38.25	38.25	0.635	39.05
VE15	Block Valve	96.31	96.31	31.14	49.11	49.11	0.635	39.05
VE16	Block Valve	89.55	89.55	31.14	44.31	44.31	0.635	39.05
VES-10060	Block Valve	95.84	95.84	30.97	46.05	46.05	0.635	39.05
VES-10070	Block Valve	88.82	88.82	30.97	41.24	41.24	0.635	39.05
VES-10080	Block Valve	84.23	84.23	30.97	38.5	38.5	0.635	39.05
VES-10090	Block Valve	76.88	76.88	30.97	34.63	34.63	0.635	39.05
VES-10140	Block Valve	93.33	93.32	30.85	44.23	44.23	0.635	39.05
VES-10150	Block Valve	88.11	88.11	30.85	40.77	40.77	0.635	39.05
VES-10160	Block Valve	82.37	82.37	30.85	37.35	37.35	0.635	39.05
VES-10170	Block Valve	76.17	76.17	30.85	34.31	34.31	0.635	39.05
VES-10190	Block Valve	93.5	93.5	30.74	44.36	44.36	0.635	39.05
VES-10200	Block Valve	87.04	87.04	30.74	40.09	40.09	0.635	39.05
VES-10280	Block Valve	91.3	91.3	29.28	42.41	42.41	0.635	39.05
VES-10290	Block Valve	84.43	84.43	29.28	37.83	37.83	0.635	39.05



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VES-10300	Block Valve	78.38	78.38	29.28	34.68	34.68	0.635	39.05
VES-10320	Block Valve	92.19	92.19	29.17	42.99	42.99	0.635	39.05
VES-10330	Block Valve	86.37	86.37	29.17	38.92	38.92	0.635	39.05
VES-10340	Block Valve	81.86	81.86	29.17	36.32	36.32	0.635	39.05
VES-10350	Block Valve	77.11	77.11	29.17	33.73	33.73	0.635	39.05
VES-10400	Block Valve	93.05	93.05	29.06	43.19	43.19	0.635	39.05
VES-10420	Block Valve	82.41	82.41	27.11	35.28	35.28	0.635	39.05
VES-10430	Block Valve	77.89	77.89	27.11	32.47	32.47	0.635	39.05
VES-10450	Block Valve	93.63	93.63	27.01	42.97	42.97	0.635	39.05
VES-10460	Block Valve	87.79	87.79	27.01	38.1	38.1	0.635	39.05
VES-10470	Block Valve	82.76	82.76	26.93	34.53	34.53	0.635	39.05
VES-10540	Block Valve	94.31	94.31	26.84	43.59	43.59	0.635	39.05
VES-10550	Block Valve	89.64	89.64	26.84	39.34	39.34	0.635	39.05
VES-10560	Block Valve	82.94	82.94	26.84	34.53	34.53	0.635	39.05
VES-10580	Block Valve	94.06	94.06	26.75	43.42	43.42	0.635	39.05
VES-10590	Block Valve	90.13	90.13	26.75	39.8	39.8	0.635	39.05
VES-10610	Block Valve	78.22	78.22	26.67	31.67	31.67	0.635	39.05
VES-10660	Block Valve	93.74	93.74	26.18	42.95	42.95	0.635	39.05
VES-10670	Block Valve	91.58	91.58	26.18	40.41	40.41	0.635	39.05
VES-10680	Block Valve	87.41	87.41	25.04	36.8	36.8	0.635	39.05
VES-10690	Block Valve	84.81	84.81	24.28	34.61	34.61	0.635	39.05
VE40040	Block Valve	80.83	80.83	6.49	30.84	30.84	0.635	39.05
VE40050	Block Valve	80.06	80.06	6.19	29.6	29.6	0.635	39.05
VE40060	Block Valve	80.07	80.07	6.16	29.07	29.07	0.635	39.05
VE40070	Block Valve	78.92	78.92	6.16	27.76	27.76	0.635	39.05
VE40080	Block Valve	78.56	78.56	5.4	27.17	27.17	0.635	39.05
VE40090	Block Valve	77.28	77.28	5.36	24.02	24.02	0.635	39.05
VE40100	Block Valve	76.44	76.44	5.29	24.39	24.39	0.635	39.05
VE40110	Block Valve	76.1	76.1	5.29	25.11	25.11	0.635	39.05
VE40120	Block Valve	74.93	74.93	5.29	25.16	25.16	0.635	39.05
VE40130	Block Valve	73.56	73.56	5.29	25.31	25.31	0.635	39.05
VE40170	Block Valve	72.85	72.85	5.29	25.71	25.71	0.635	39.05
VE40140	Block Valve	70.88	70.88	5.29	24.88	24.88	0.635	39.05
VE40150	Block Valve	69.81	69.81	5.29	24.95	24.95	0.635	39.05
VE40200	Block Valve	68.39	68.39	5.29	24.66	24.66	0.635	39.05
VE40210	Block Valve	68.06	68.06	5.29	25.54	25.54	0.635	39.05
VE40220	Block Valve	67.82	67.82	5.29	25.82	25.82	0.635	39.05
VE40230	Block Valve	67.03	67.03	5.29	25.98	25.98	0.635	39.05
VE40240	Block Valve	64.51	64.51	5.29	24.35	24.35	0.635	39.05
VE40250	Block Valve	63	63	5.29	24.71	24.71	0.635	39.05
VE40260	Block Valve	61.45	61.45	5.29	24.64	24.64	0.635	39.05
VE40270	Block Valve	60.87	60.87	3.67	25.19	25.19	0.635	39.05
VE60040	Block Valve	70.24	70.24	3.66	34.8	34.8	0.635	39.05
VE60050	Block Valve	68.87	68.87	3.66	29.42	29.42	0.635	39.05
VE60060	Block Valve	68.49	68.49	3.66	28.07	28.07	0.635	39.05
VE60070	Block Valve	72.25	72.25	3.66	29.59	29.59	0.635	39.05
VE60080	Block Valve	70.99	70.99	3.49	27.28	27.28	0.635	39.05
VE60090	Block Valve	69.66	69.66	3.23	26.15	26.15	0.635	39.05
VE60100	Block Valve	67.8	67.8	3.23	25.26	25.26	0.635	39.05
VE60110	Block Valve	67.52	67.52	3.1	26.54	26.54	0.635	39.05
VE60120	Block Valve	66.73	66.73	3.1	26.2	26.2	0.635	39.05
VE60270	Block Valve	66.36	66.36	3.06	26.01	26.01	0.635	39.05



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VE60320	Block Valve	65.37	65.37	2.91	26.24	26.24	0.635	39.05
VE60190	Block Valve	72.33	72.33	2.85	30.59	30.59	0.635	39.05
VE60200	Block Valve	67.51	67.51	2.85	25.82	25.82	0.635	39.05
VE60210	Block Valve	68.57	68.57	2.85	27.03	27.03	0.635	39.05
VE60220	Block Valve	68.41	68.41	2.85	26.74	26.74	0.635	39.05
VE60230	Block Valve	67.36	67.36	2.77	26.25	26.25	0.635	39.05
VE60240	Block Valve	64.51	64.51	2.77	24.31	24.31	0.635	39.05
VE60250	Block Valve	65.87	65.87	2.77	26.63	26.63	0.635	39.05
VE60290	Block Valve	63.89	63.89	2.51	25.44	25.44	0.635	39.05
VE80020	Block Valve	63.13	63.13	2.33	25.89	25.89	0.635	39.05
VE80030	Block Valve	61.01	61.01	2.33	25.46	25.46	0.635	39.05
VE80040	Block Valve	54.24	54.24	2.33	20.65	20.65	0.635	39.05
VE80050	Block Valve	52.64	52.64	2.33	23.86	23.86	0.635	39.05
VE80060	Block Valve	51.34	51.34	2.33	24.61	24.61	0.635	39.05
VE80070	Block Valve	48.96	48.96	2.23	24.83	24.83	0.635	39.05
VE80080	Block Valve	46.65	46.65	2.23	25.23	25.23	0.635	39.05
VE80090	Block Valve	47.11	47.11	2.21	27.07	27.07	0.635	39.05
VE80100	Block Valve	45.4	45.4	2.16	26.07	26.07	0.635	39.05
VE80110	Block Valve	43.68	43.68	2.16	25.12	25.12	0.635	39.05
VE90050	Block Valve	72.38	72.38	7.6	27.46	27.46	0.635	39.05
VE90060	Block Valve	71.41	71.41	7.6	26.85	26.85	0.635	39.05
VE90070	Block Valve	69.64	69.64	7.05	25.88	25.88	0.635	39.05
VE90080	Block Valve	67.88	67.88	7.05	25.25	25.25	0.635	39.05
VE90090	Block Valve	67.19	67.19	7.05	25.29	25.29	0.635	39.05
VE90100	Block Valve	65.67	65.67	7.05	24.68	24.68	0.635	39.05
VE90110	Block Valve	64.74	64.74	7.05	25.34	25.34	0.635	39.05
VE90120	Block Valve	63.9	63.9	6.7	25.47	25.47	0.635	39.05
VE90130	Block Valve	62.79	62.79	6.7	25.06	25.06	0.635	39.05
VEFRONT- BLKV-1	Block Valve	83.57	83.57	31.14	40.66	40.66	0.635	39.05
VES-10040	Block Valve	76.77	76.77	31.14	37.18	37.18	0.635	39.05
VES-10210	Block Valve	80.33	80.33	30.74	36.33	36.33	0.635	39.05
VES-10410	Block Valve	88.24	88.24	29.06	39.53	39.53	0.635	39.05
VES-10600	Block Valve	84.96	84.96	26.75	35.96	35.96	0.635	39.05
VES-90040	Block Valve	74.2	74.2	9.3	29.04	29.04	0.635	39.05
VE60140	Block Valve	74.6	74.6	2.91	40.71	40.71	0.635	39.05
R1-UP-RESI- 1	Resistance	68.71	68.35	31.58	33.74	33.6	0.635	39.05
R2-UP-RESI- 1	Resistance	70.89	70.54	31.46	34.47	34.33	0.635	39.05
R3-UP-RESI- 1	Resistance	70.64	70.3	31.35	34.68	34.54	0.635	39.05
R4-UP-RESI- 1	Resistance	70.53	70.18	31.25	34.33	34.19	0.635	39.05
R5-UP-RESI- 1	Resistance	71.38	70.87	31.09	34.64	34.44	0.635	39.05
R6-UP-RESI- 1	Resistance	68.71	68.2	30.97	30.92	30.7	0.635	39.05
R7-UP-RESI- 1	Resistance	70.7	70.19	30.85	31.83	31.61	0.635	39.05
R8-UP R9-UP-RESI- 1	Resistance	71.71	71.19	29.39	31.72	31.51	0.635	39.05
R10UP-RESI- 1	Resistance	72.05	71.53	29.28	31.74	31.52	0.635	39.05
R10UP-RESI- 1	Resistance	72.16	71.64	29.17	31.56	31.35	0.635	39.05



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R11UP-RESI-1	Resistance	73.42	72.9	27.11	30.08	29.86	0.635	39.05
R12UP-RESI-1	Resistance	77.81	77.3	26.93	31.62	31.42	0.635	39.05
R13UP-RESI-1	Resistance	77.67	77.16	26.84	31.49	31.29	0.635	39.05
R14UP-RESI-1	Resistance	75.19	74.68	26.67	29.97	29.77	0.635	39.05
R15UP	Resistance	60.87	60.58	3.67	25.19	25.05	0.635	39.05
R16UP-RESI-1	Resistance	63.09	62.77	2.91	24.92	24.77	0.635	39.05
RG70-REGU-1	Bypass	70.75	70.75	3.66	39.25	39.25	0.635	39.05
RG70A-REGU-1	Max PD	81.34	75	9.3	32.16	29.66	0.635	39.05
COOLER1	Resistance	99.84	99.49	31.46	62.5	51.7	0.635	39.05
COOLER2	Resistance	99.84	99.49	31.35	60.82	51.7	0.635	39.05
COOLER3	Resistance	99.84	99.49	31.25	61.31	51.7	0.635	39.05
COOLER4	Resistance	99.84	99.49	31.14	61.07	51.7	0.635	39.05
COOLER5	Resistance	99.84	98.32	30.97	66.07	48	0.635	39.05
COOLER6	Resistance	99.84	98.32	30.85	65.67	48	0.635	39.05
COOLER7	Resistance	99.84	98.33	30.74	63.97	48	0.635	39.05
COOLER8	Resistance	99.84	98.33	29.28	62.54	48	0.635	39.05
COOLER9	Resistance	99.84	98.34	29.17	62.11	48	0.635	39.05
COOLER10	Resistance	99.84	98.34	29.06	61.78	48	0.635	39.05
COOLER11	Resistance	99.84	98.33	27.01	58.59	48	0.635	39.05
COOLER12	Resistance	99.84	98.34	26.84	54.82	48	0.635	39.05
COOLER13	Resistance	99.84	98.32	26.75	54.85	48	0.635	39.05
COOLER14	Resistance	99.84	98.34	26.58	56.26	48	0.635	39.05
COOLER15	Resistance	71	70.75	3.66	39.25	39.25	0.635	39.05
COOLER16	Resistance	75	74.6	2.91	40.71	40.71	0.635	39.05
IZOZOG	Max PD	68.35	99.84	31.46	33.6	62.5	0.635	39.05
CHIQUITOS	Max PD	70.54	99.84	31.35	34.33	60.82	0.635	39.05
ROBORE	Max PD	70.3	99.84	31.25	34.54	61.31	0.635	39.05
YACUSES	Max PD	70.18	99.84	31.14	34.19	61.07	0.635	39.05

Cmprs ID	Head (N.M/KG)	Actual Flow M3/H	Adiab Speed RPM	Dschrg Effic (PERCNT)	Power Required (HP)	Power Available (HP)
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IZOZOG	46601.86	17534.93	85	62.5	20905.61	38757.64
CHIQUITOS	42573.29	16936.8	85	60.82	19033.6	38629.12
ROBORE	43088.43	16964.8	85	61.31	19197.75	39186.04
YACUSES	43223.18	16904.53	85	61.07	19191.45	39550.18

* External Regulator Hydraulic Report ---- Time = 0.000 (HRS) *



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External Regulator Flow Balance Report

	Mass Units (TONN/H)	Volumetric Units (MMM3/D)
Total Input - Vazão	1006.902	31.578
Total Output - Vazão	1006.902	31.578
Network flow balance	0	0

External Regulator Hydraulic Summary Report

External Regulator ID	Mode Control	Pressure KG/CM2G	Flow (MMM3/D)	Temperature (DEG)	Specific Gravity	Heating Value (MJ/M3)
INPUT	Max Pres	99.49	-31.578	51.7	0.635	39.05
CORUMBA	Max Flow	76.77	0.05	37.18	0.635	39.05
CAMPO_GRANDE	Max Flow	71.71	1.35	31.72	0.635	39.05
TR S_LAGOAS	Max Flow	88.24	1.95	39.53	0.635	39.05
BILAC	Max Flow	85.5	0.08	36.38	0.635	39.05
BOA_ESPERAN A_DO_SUL	Max Flow	84.96	0.08	35.96	0.635	39.05
S O_CARLOS	Max Flow	96.22	0.4	45.85	0.635	39.05
RIO_CLARO	Max Flow	90.04	1.14	38.93	0.635	39.05
LIMEIRA	Max Flow	87.23	0.76	36.6	0.635	39.05
AMERICANA	Max Flow	84.31	0.5	34.25	0.635	39.05
REPLAN	Max Flow	81.34	1	32.16	0.635	39.05
EE_SUMARE	Max Flow	80.59	0.3	30.29	0.635	39.05
EE_CAMPINAS	Max Flow	79.84	0.03	29.02	0.635	39.05
ITU	Max Flow	78.56	0.68	27.17	0.635	39.05
ARA OIABA_DA_SERRA	Max Flow	76.44	0.07	24.39	0.635	39.05
ARAUC RIA_CIC	Max Flow	60.95	0.6	25.16	0.635	39.05
REPAR	Max Flow	60.87	0.3	25.19	0.635	39.05
JOINVILLE	Max Flow	70.99	0.17	27.28	0.635	39.05
GUARAMIRIM	Max Flow	69.66	0.26	26.15	0.635	39.05
GASPAR	Max Flow	67.52	0.13	26.54	0.635	39.05
BRUSQUE	Max Flow	66.75	0.04	26.26	0.635	39.05
TIJUCAS	Max Flow	65.37	0.15	26.24	0.635	39.05
SAO_P_ALC NTARA	Max Flow	72.86	0.06	35	0.635	39.05
TUBARAO	Max Flow	67.36	0.08	26.25	0.635	39.05
URUSSANGA	Max Flow	65.18	0.26	26.06	0.635	39.05
NOVA_VENEZA	Max Flow	64.11	0.18	26.24	0.635	39.05
VARZEA_DO_CEDRO	Max Flow	48.96	0.1	24.83	0.635	39.05
ARARIC	Max Flow	45.89	0.05	26.35	0.635	39.05
CACHOEIRINHA	Max Flow	43.11	0.16	25.6	0.635	39.05
REFAP	Max Flow	42.81	0.35	25.7	0.635	39.05



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CANOAS	Max Flow	42.81	0.75	25.7	0.635	39.05
JAGUARIUNA	Max Flow	74.2	1.7	29.04	0.635	39.05
ITATIBA	Max Flow	69.75	0.55	25.82	0.635	39.05
GUARAREMA	Max Flow	63.93	0.35	25.4	0.635	39.05
EMED_GUARAREMA	Max Flow	62.78	6.7	25.32	0.635	39.05
INDAIATUBA	Max Flow	78.92	0.08	27.76	0.635	39.05
ARAUC_RIA_UTE	Max Flow	60.87	0.67	25.19	0.635	39.05
CANOAS_UTE	Max Flow	42.81	0.9	25.7	0.635	39.05
PORTO_FELIZ	Max Flow	77.48	0.04	26.31	0.635	39.05
CAMPO_LARGO	Max Flow	61.45	0.05	24.64	0.635	39.05
GEMINI	Max Flow	81.21	0.89	31.9	0.635	39.05
EMED_CAMPINAS_RIO	Max Flow	81.34	4.47	32.16	0.635	39.05
IGREJINHA	Max Flow	46.76	0.02	26.28	0.635	39.05
CAMP_RIO2	Max Flow	81.34	1.63	32.16	0.635	39.05
C1-FUEL	Max Flow	68.35	0.117	33.6	0.635	39.05
C2-FUEL	Max Flow	70.54	0.107	34.33	0.635	39.05
C3-FUEL	Max Flow	70.3	0.108	34.54	0.635	39.05
C4-FUEL	Max Flow	70.18	0.108	34.19	0.635	39.05
C5-FUEL	Max Flow	70.87	0.115	34.44	0.635	39.05
C6-FUEL	Max Flow	68.2	0.121	30.7	0.635	39.05
C7-FUEL	Max Flow	70.19	0.115	31.61	0.635	39.05
C8-FUEL	Max Flow	71.19	0.108	31.51	0.635	39.05
C9-FUEL	Max Flow	71.53	0.108	31.52	0.635	39.05
C10-FUEL	Max Flow	71.64	0.108	31.35	0.635	39.05
C11-FUEL	Max Flow	72.9	0.1	29.86	0.635	39.05
C12-FUEL	Max Flow	77.3	0.088	31.42	0.635	39.05
C13-FUEL	Max Flow	77.16	0.092	31.29	0.635	39.05
C14-FUEL	Max Flow	74.68	0.094	29.77	0.635	39.05
C15-FUEL	Max Flow	60.58	0.005	25.05	0.635	39.05
C16-FUEL	Max Flow	62.77	0.004	24.77	0.635	39.05
C6-FUEL-2	Max Flow	68.2	0	30.7	0.635	39.05

* Station Hydraulic Summary Report ----- Time = 0.000 (HRS) *

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Station ID: C5	Bank ID: CORUMBÁ	Current Mode: Max PD
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Member ID	Type	Operating Status	UP Pressure KG/CM2G	Down Pressure KG/CM2G	Flow (MMM3/D)	Power Required (HP)	Speed (RPM)
-----	----	-----	-----	-----	-----	-----	-----
U5A	Cmp	Bank Control	70.87	99.84	15.49	9785.1	7641.97
U5B	Cmp	Bank Control	70.87	99.84	15.49	9785.1	7641.97



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Station ID: C6 Bank ID: MIRANDA Current Mode: Max PD

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Member ID	Type	Operating Status	UP Pressure KG/CM2G	Down Pressure KG/CM2G	Flow (MMM3/D)	Power Required (HP)	Speed (RPM)
-----	----	-----	-----	-----	-----	-----	-----
U6A	Cmp	Bank Control	68.2	99.84	15.43	10652.6	7930.59
U6B	Cmp	Bank Control	68.2	99.84	15.43	10652.6	7930.59

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Station ID: C7 Bank ID: ANASTÁCIO Current Mode: Max PD

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Member ID	Type	Operating Status	UP Pressure KG/CM2G	Down Pressure KG/CM2G	Flow (MMM3/D)	Power Required (HP)	Speed (RPM)
-----	----	-----	-----	-----	-----	-----	-----
U7A	Cmp	Bank Control	70.19	99.84	15.37	9824.5	7643.69
U7B	Cmp	Bank Control	70.19	99.84	15.37	9824.5	7643.69

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Station ID: C8 Bank ID: CAMPO GRANDE Current Mode: Max PD

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Member ID	Type	Operating Status	UP Pressure KG/CM2G	Down Pressure KG/CM2G	Flow (MMM3/D)	Power Required (HP)	Speed (RPM)
-----	----	-----	-----	-----	-----	-----	-----
U8A	Cmp	Bank Control	71.19	99.84	7.32	4515.2	11107.15
U8B	Cmp	Bank Control	71.19	99.84	7.32	4515.2	11107.15
U8C	Cmp	Bank Control	71.19	99.84	7.32	4515.2	11107.15
U8D	Cmp	Bank Control	71.19	99.84	7.32	4515.2	11107.15

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Station ID: C9 Bank ID: RIBAS DO RIO PARDO Current Mode: Max PD

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Member ID	Type	Operating Status	UP Pressure KG/CM2G	Down Pressure KG/CM2G	Flow (MMM3/D)	Power Required (HP)	Speed (RPM)
-----	----	-----	-----	-----	-----	-----	-----
U9A	Cmp	Bank Control	71.53	99.84	14.58	8740.2	7303.76
U9B	Cmp	Bank Control	71.53	99.84	14.58	8740.2	7303.76

Station ID: C10	Bank ID: T_LAGOAS	Current Mode: Max PD
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Member ID	Type	Operating Status	UP Pressure KG/CM2G	Down Pressure KG/CM2G	Flow (MMM3/D)	Power Required (HP)	Speed (RPM)
-----	----	-----	-----	-----	-----	-----	-----
U10A	Cmp	Bank Control	71.64	99.84	14.53	8654	7273.66
U10B	Cmp	Bank Control	71.64	99.84	14.53	8654	7273.66

Station ID: C11	Bank ID: MIRANDÓPOLIS	Current Mode: Max PD
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Member ID	Type	Operating Status	UP Pressure KG/CM2G	Down Pressure KG/CM2G	Flow (MMM3/D)	Power Required (HP)	Speed (RPM)
-----	----	-----	-----	-----	-----	-----	-----
U11A	Cmp	Bank Control	72.90	99.84	13.51	7485.7	6884.46
U11B	Cmp	Bank Control	72.90	99.84	13.51	7485.7	6884.46

Station ID: C12	Bank ID: PENÁPOLIS	Current Mode: Max PD
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Member ID	Type	Operating Status	UP Pressure KG/CM2G	Down Pressure KG/CM2G	Flow (MMM3/D)	Power Required (HP)	Speed (RPM)
-----	----	-----	-----	-----	-----	-----	-----
U12A	Cmp	Bank Control	77.3	99.84	6.71	3055.7	9484.45
U12B	Cmp	Bank Control	77.3	99.84	6.71	3055.7	9484.45
U12C	Cmp	Bank Control	77.3	99.84	6.71	3055.7	9484.45
U12D	Cmp	Bank Control	77.3	99.84	6.71	3055.7	9484.45

Station ID: C13	Bank ID: IACANGA	Current Mode: Max PD
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Member ID	Type	Operating Status	UP Pressure KG/CM2G	Down Pressure KG/CM2G	Flow (MMM3/D)	Power Required (HP)	Speed (RPM)
-----	----	-----	-----	-----	-----	-----	-----
U13A	Cmp	Bank Control	77.16	99.84	13.29	6774.1	6591.48



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U13B	Cmp	Bank Control	77.16	99.84	13.29	6774.1	6591.48
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Station ID: C14	Bank ID: SÃO CARLOS	Current Mode: Max PD
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Member ID	Type	Operating Status	UP Pressure KG/CM2G	Down Pressure KG/CM2G	Flow (MMM3/D)	Power Required (HP)	Speed (RPM)
-----	----	-----	-----	-----	-----	-----	-----
U14A	Cmp	Bank Control	74.68	99.84	13.29	6774.1	6591.48
U14B	Cmp	Bank Control	74.68	99.84	13.29	6774.1	6591.48

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Station ID: C15	Bank ID: ARAUCARIA	Current Mode: bypass
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Member ID	Type	Operating Status	UP Pressure KG/CM2G	Down Pressure KG/CM2G	Flow (MMM3/D)	Power Required (HP)	Speed (RPM)
-----	----	-----	-----	-----	-----	-----	-----
U15A	Cmp	Bank Control	60.58	71	1.83	406.9	919.05
U15B	Cmp	Bank Control	60.58	71	1.83	406.9	919.05
U15C	Cmp	Closed	(Not Operating)				
U15D	Cmp	Closed	(Not Operating)				

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Station ID: C16	Bank ID: BIGUAÇU	Current Mode: Max Ratio
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Member ID	Type	Operating Status	UP Pressure KG/CM2G	Down Pressure KG/CM2G	Flow (MMM3/D)	Power Required (HP)	Speed (RPM)
-----	----	-----	-----	-----	-----	-----	-----
U16A	Cmp	Bank Control	62.77	75	0.97	240.7	605.59
U16B	Cmp	Bank Control	62.77	75	0.97	240.7	605.59
U16C	Cmp	Bank Control	62.77	75	0.97	240.7	605.59
U16D	Cmp	Closed	(Not Operating)				



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* Node Mass Balance Error Report Time = 0.000 (HRS) *

Threshold Level = 0.0000 (MMM3/D)
No Mass Balance Errors above Threshold

:::::::::::::::::::::::::::::::::::::::
:: Pressure/Flow Violation Reports ::
::

ALL XREGS FALL WITHIN PRESSURE BOUNDS
ALL EQUIPMENT FALL WITHIN PRESSURE BOUNDS
ALL BANKS FALL WITHIN PRESSURE BOUNDS
ALL INTERNAL LEG KNOTS FALL WITHIN PRESSURE BOUNDS

:::::::::::::::::::::::::::::::::::::::
:: Setpoint/Constraint Violation Reports ::
::

ALL XREGS COMPLY WITH MONITORED CONSTRAINTS
ALL EQUIPMENT COMPLY WITH MONITORED CONSTRAINTS
ALL BANKS COMPLY WITH MONITORED CONSTRAINTS

TRANSIENT GAS NETWORK MODEL (TGNET)
RELEASE 7.3 LEVEL 00 24-FEB-2004

STEADY-STATE MODULE

4.2. Resumo dos Resultados (Regime Permanente)



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4.2.1. Empacotamento (Estoque)

Trecho	Corumbá-Replan	Replan-Guararema	Replan-Canoas	Total
Empacotamento MMm³	58.970	3.387	19.152	81.509

4.2.2. Estações de Entrega

	ESTAÇÕES	Km desenvolvido	Vazão (MMm3/d)	Temperatura de chegada (°C)	Pressão de entrada (Kgf/cm²)	Pressão controlada (Kgf/cm²)	Pressão mínima (Kgf/cm²)	Vazão de combustível (Mm3/d)
TRECHO CORUMBÁ-REPLAN								
1	CORUMBA	28.26	0.05	37.18	76.76	35.00	31.50	0.0619
2	CAMPO GRANDE	394.60	1.35	31.72	71.70	35.00	31.50	1.6706
3	TRÊS LAGOAS	704.08	1.95	39.53	88.23	35.00	31.50	2.4131
4	BILAC	857.75	0.08	36.38	85.49	35.00	31.50	0.0990
5	BOA ESPERANÇA DO SUL	1096.24	0.08	35.96	84.95	35.00	31.50	0.0990
6	SÃO CARLOS	1150.74	0.40	45.85	96.22	35.00	31.50	0.4950
7	RIO CLARO	1204.48	1.14	38.93	90.03	35.00	31.50	1.4108
8	LIMEIRA	1223.70	0.76	36.60	87.22	35.00	31.50	0.9405
9	AMERICANA	1245.87	0.50	34.25	84.30	35.00	31.50	0.6188
10	REPLAN	1262.56	1.00	32.15	81.33	35.00	31.50	1.2375
11	EMED Campinas Rio	1262.56	4.47	32.15	81.33	35.00	31.50	0.0000
12	Camp RIO2	1262.56	1.63	32.15	81.33	35.00	31.50	2.0171
TRECHO REPLAN-GUARAREMA								
13	JAGUARIUNA	6.93	1.70	29.04	74.20	35.00	31.50	2.1038
14	ITATIBA	46.29	0.55	25.82	69.75	35.00	31.50	0.6806
15	GUARAREMA	136.45	0.35	25.40	63.93	35.00	31.50	0.4331
16	EMED Guararema	155.30	6.70	25.31	62.78	35.00	31.50	0.0000
TRECHO REPLAN-CANOAS								
17	GEMINI	2.00	0.89	31.90	81.20	35.00	31.50	0.0000
18	EE SUMARE	16.01	0.30	30.29	80.58	35.00	31.50	0.3711
19	EE CAMPINAS	28.71	0.03	29.02	79.83	35.00	31.50	0.0371
20	INDAIATUBA	45.30	0.08	27.76	78.91	35.00	31.50	0.0990
21	ITU	68.75	0.68	27.17	78.55	35.00	31.50	0.8412
22	PORTO FELIZ	85.00	0.04	26.31	77.47	35.00	31.50	0.0495
23	ARAÇOIABA DA SERRA	110.22	0.07	24.39	76.43	35.00	31.50	0.0866
24	CAMPO LARGO	457.50	0.05	24.64	61.40	35.00	31.50	0.0619
25	ARAUCÁRIA CIC	476.37	0.60	25.16	60.90	35.00	31.50	0.7422
26	ARAUCÁRIA UTE	478.41	0.47	25.19	60.82	35.00	31.50	0.5814
27	REPAR	478.41	0.30	25.19	60.82	35.00	31.50	0.3711
28	JOINVILLE	585.21	0.17	27.35	70.28	35.00	31.50	0.2103
29	GUARAMIRIM	614.21	0.26	26.15	68.78	35.00	31.50	0.3216
30	GASPAR	669.91	0.13	26.44	66.31	35.00	31.50	0.1608
31	BRUSQUE	692.54	0.04	26.18	65.41	35.00	31.50	0.0495
32	TIJUCAS	728.78	0.15	26.15	63.81	35.00	31.50	0.1856
33	SAO P ALCÂNTARA	768.06	0.06	24.93	60.90	35.00	31.50	0.0742
34	TUBARAO	895.07	0.08	25.76	52.12	35.00	31.50	0.0990
35	URUSSANGA	925.84	0.26	25.63	49.17	35.00	31.50	0.3216
36	NOVA VENEZA	948.38	0.18	41.49	70.73	35.00	31.50	0.2227
37	VARZEA DO CEDRO	1078.42	0.10	24.80	54.40	24.00	21.60	0.1237
38	Igrejinha	1139.00	0.02	26.31	52.28	24.00	21.60	0.0247
39	ARARICÁ	1156.00	0.05	26.40	51.46	24.00	21.60	0.0619
40	CACHOEIRINHA	1185.59	0.16	25.55	48.54	24.00	21.60	0.1979
41	REFAP	1191.12	0.35	25.65	48.23	24.00	21.60	0.4330
42	CANOAS	1191.12	0.75	25.65	48.23	24.00	21.60	0.9278
43	CANOAS UTE	1191.12	1.10	25.65	48.23	24.00	21.60	1.3607
TOTAL			30.08				TOTAL	22.30



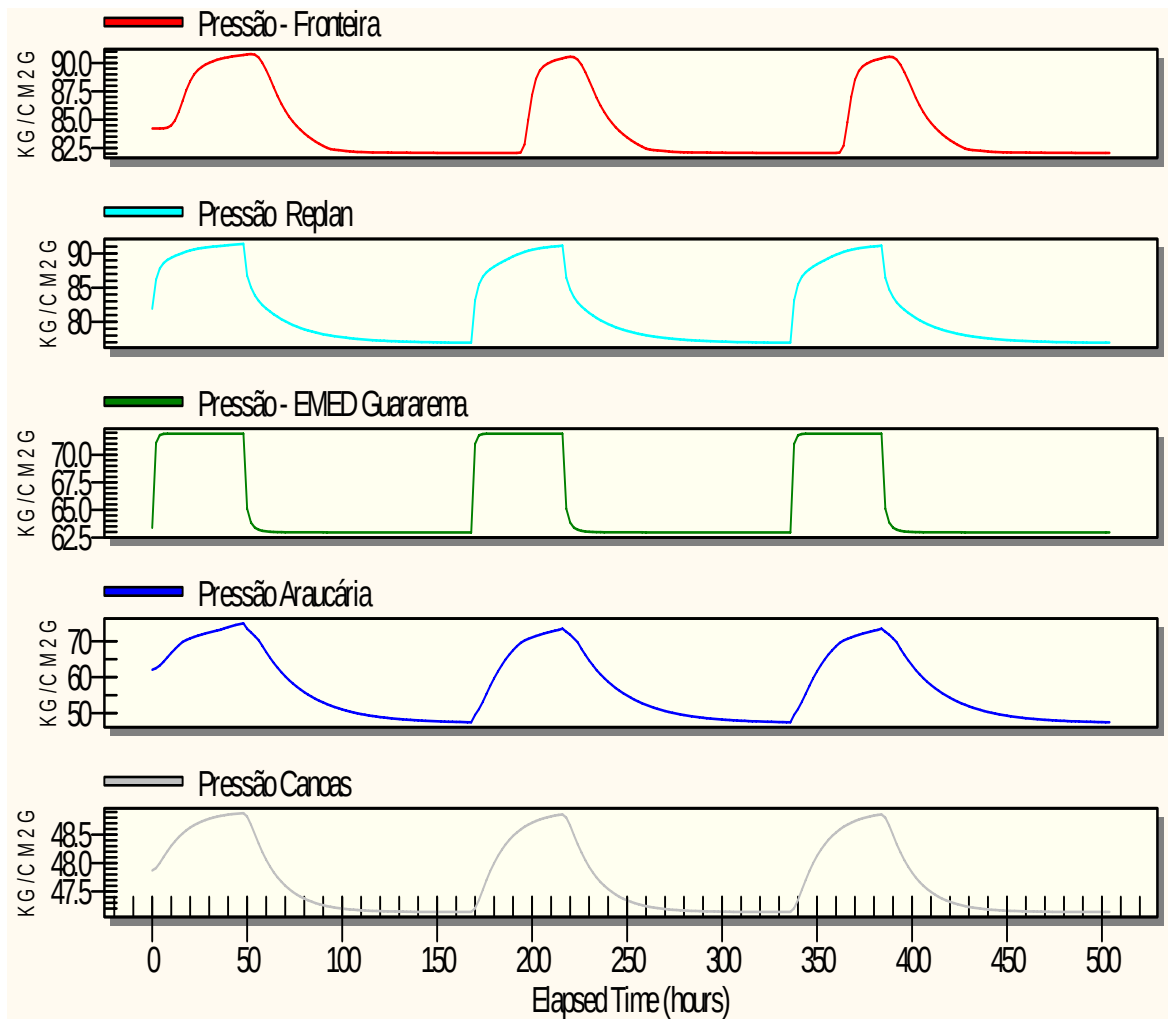
CAT. :	RELATÓRIO	Nº DOC.:	RL-5000-962-TOC-003
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4.2.3. Estações de Compressão

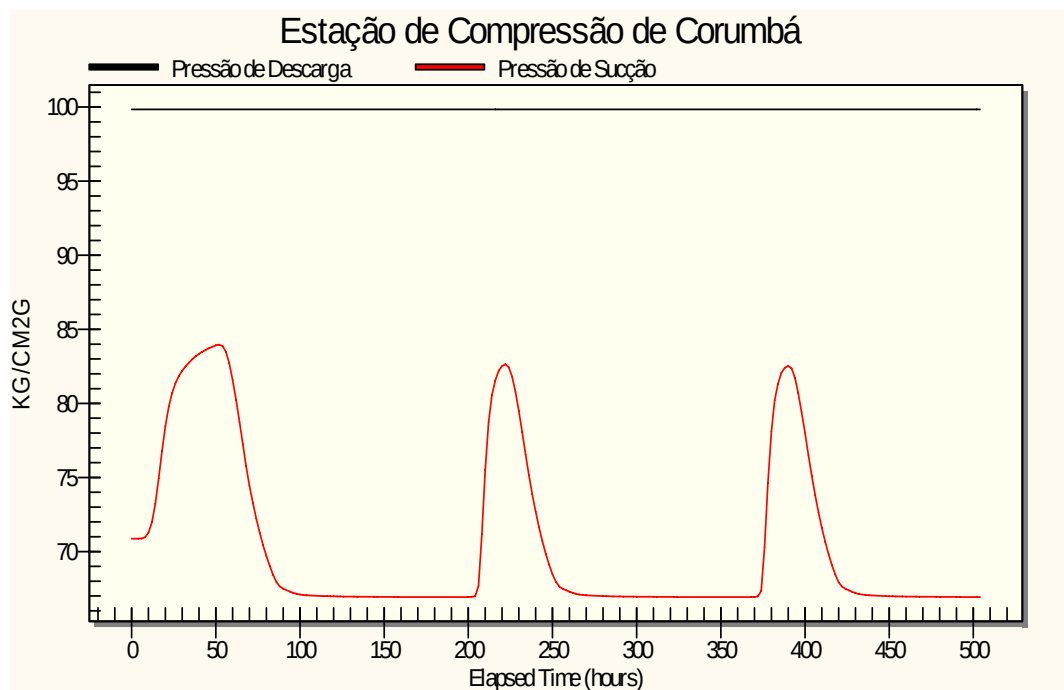
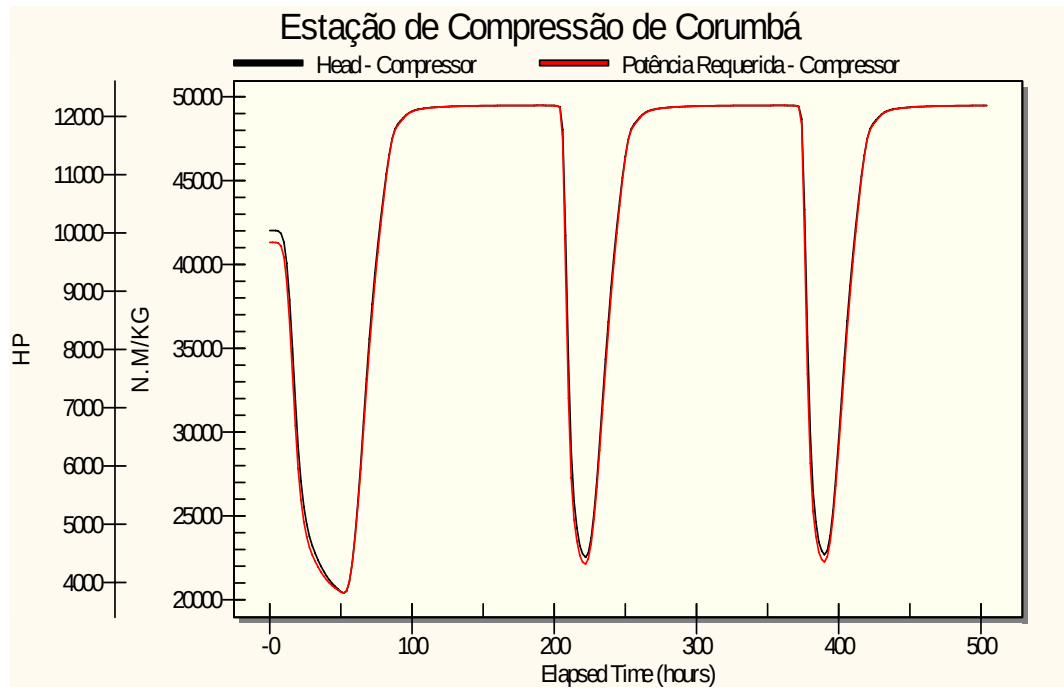
ESTAÇÕES DO TRECHO NORTE							
	Unidades operando	Vazão na estação MMm³/d	Pressão de sucção (°C)	Pressão de descarga (°C)	Potência Req./ Maq (HP)	Ef. Adiabática (%)	Gás Combustível (MMm³/d)
Corumbá	2	30.97	70.87	99.84	9785.08	82.29	0.1150
Miranda	2	30.85	68.20	99.84	10652.60	82.67	0.1205
Anastacio	2	30.74	70.19	99.84	9824.46	82.55	0.1154
Campo Grande	4	29.28	71.19	99.84	4515.22	80.17	0.1085
Ribas Rio Pardo	2	29.17	71.53	99.84	8740.23	83.10	0.1077
Três Lagoas	2	29.06	71.64	99.84	8654.02	83.13	0.1077
Mirandópolis	2	27.01	72.90	99.84	7485.67	83.88	0.1000
Penapolis	4	26.84	77.30	99.84	3055.67	80.47	0.0877
Iacanga	2	26.75	77.16	99.84	6104.30	83.49	0.0919
São Carlos	2	26.58	74.68	99.84	6774.14	83.89	0.0942
ESTAÇÕES DO TRECHO SUL							
	Unidades operando	Vazão na estação MMm³/d	Pressão de sucção (°C)	Pressão de descarga (°C)	Potência Req./ Maq (HP)	Ef. Adiabática (%)	Gás Combustível (MMm³/d)
Araucária	2	3.66	60.58	71.00	406.93	100.00	0.0045
Biguaçu	3	2.91	62.77	75.00	240.68	100.00	0.0040
						TOTAL	1.057

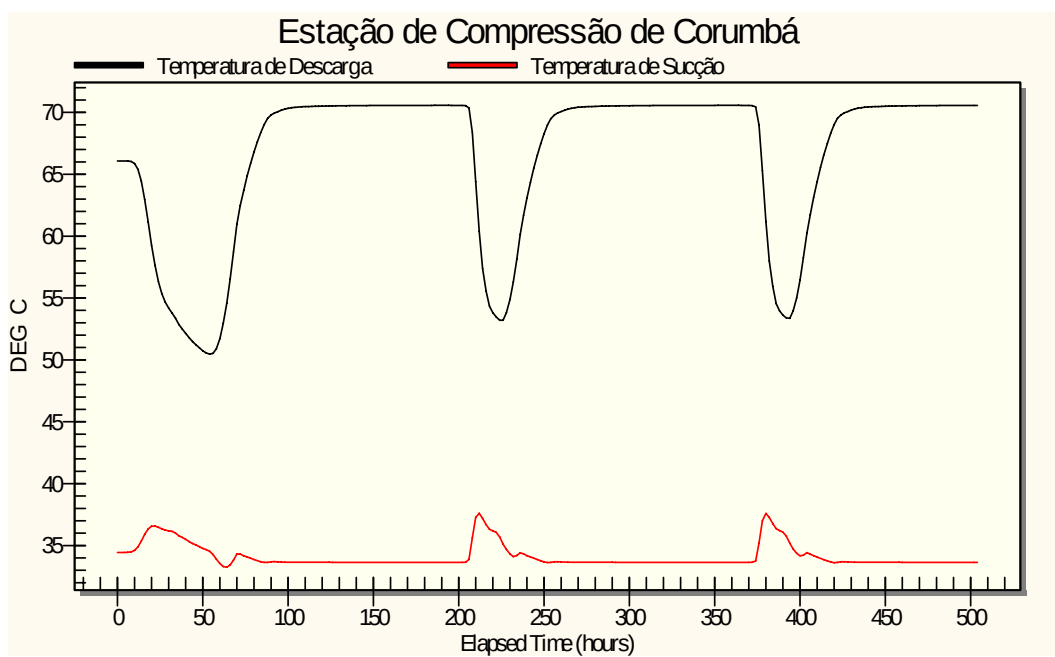
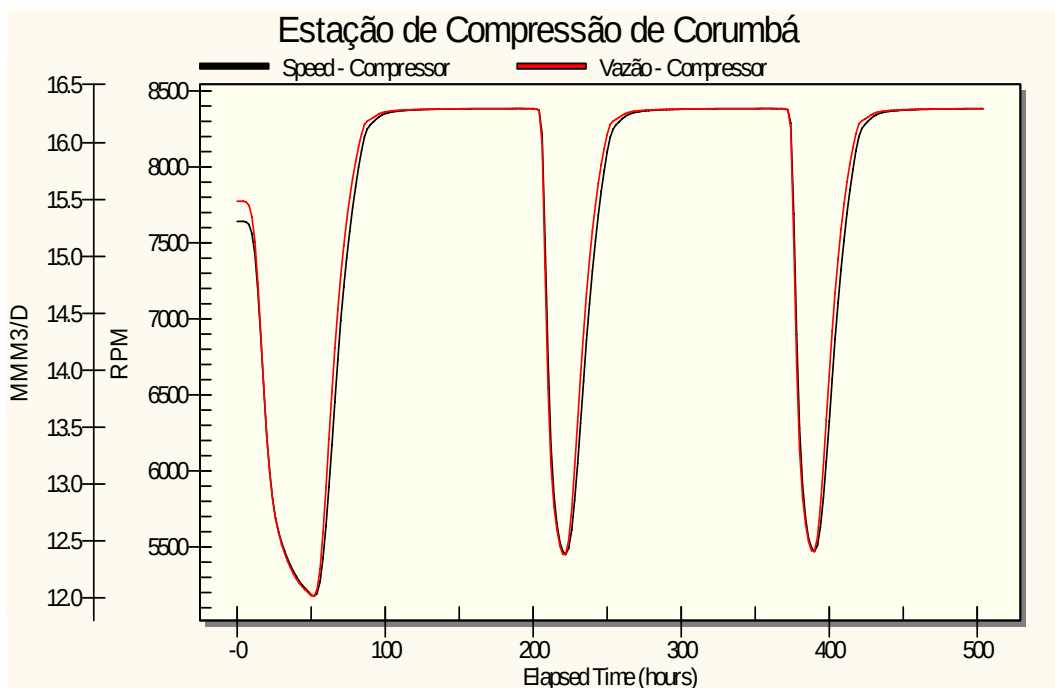
4.3. Regime Transiente (Gráficos)

4.3.1. Perfil de Pressão – Pontos Principais

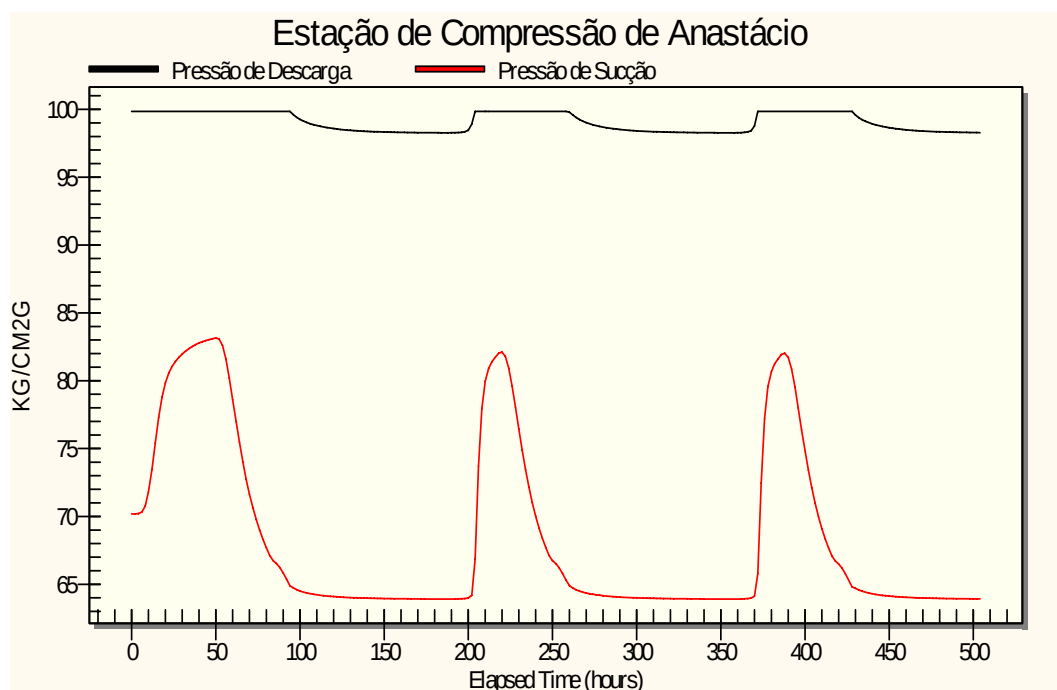
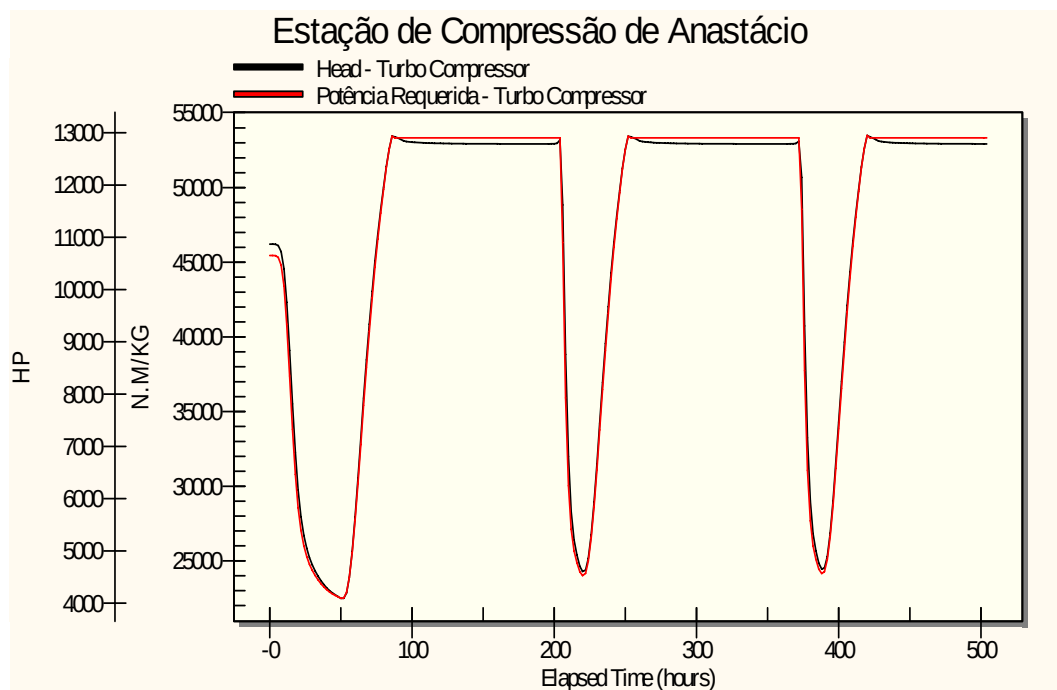


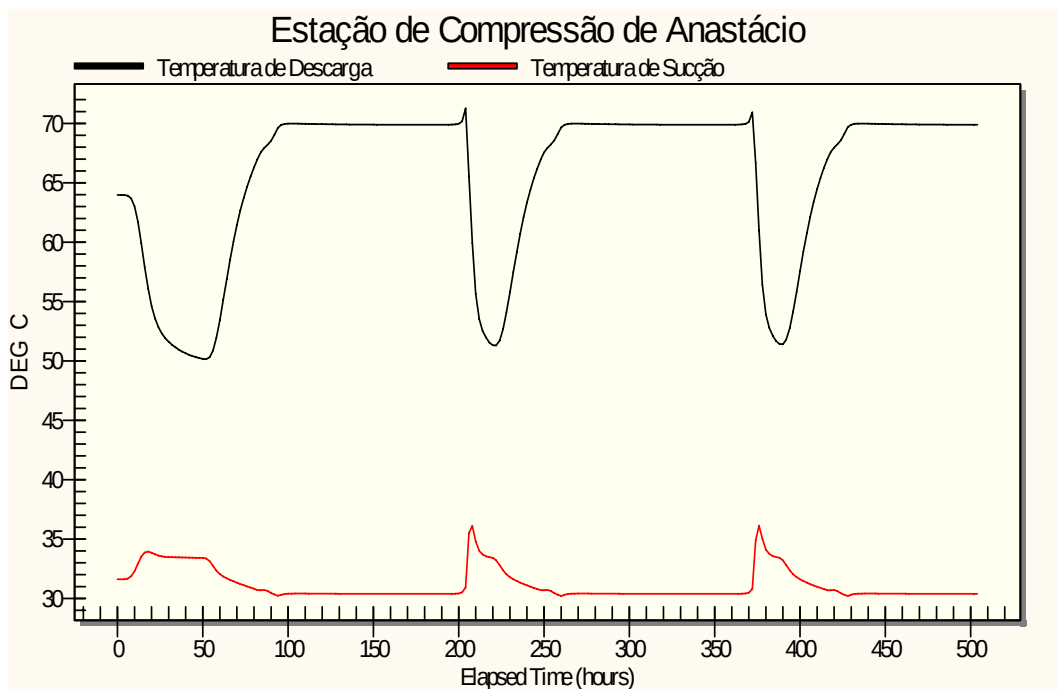
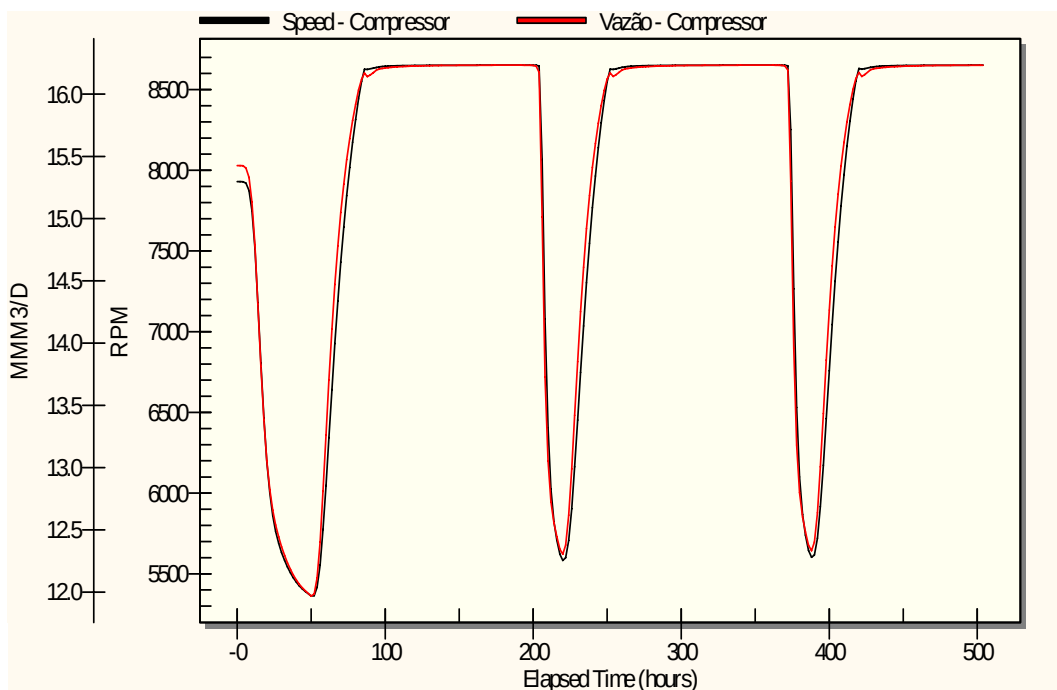
4.3.2. Estação de Compressão - Corumbá



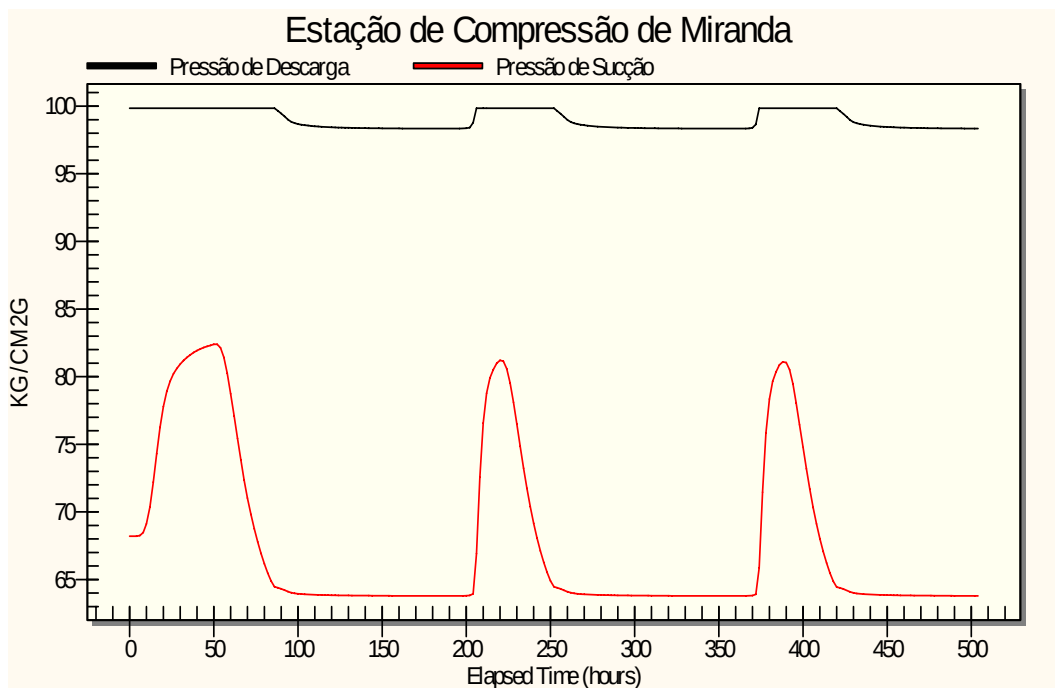
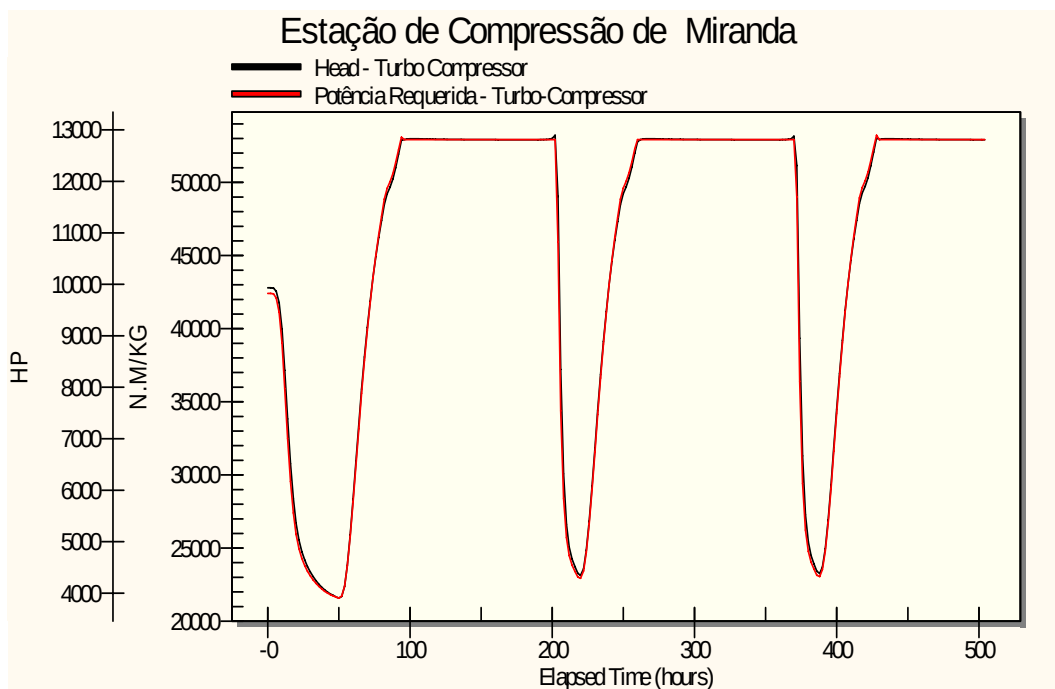


4.3.3. Estação de Compressão – Anastácio





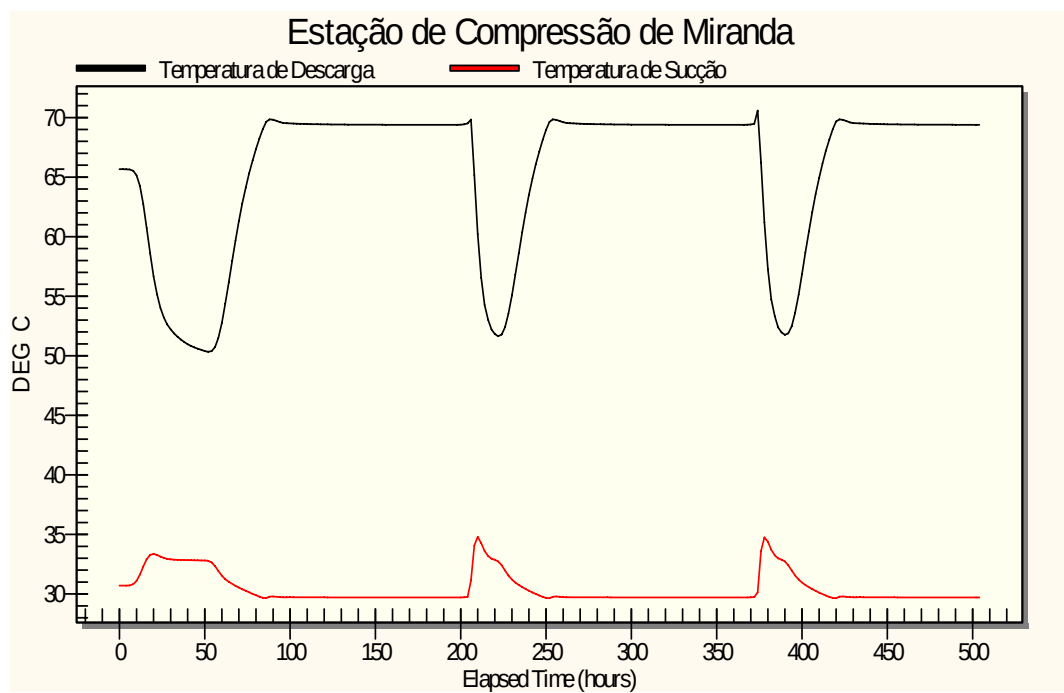
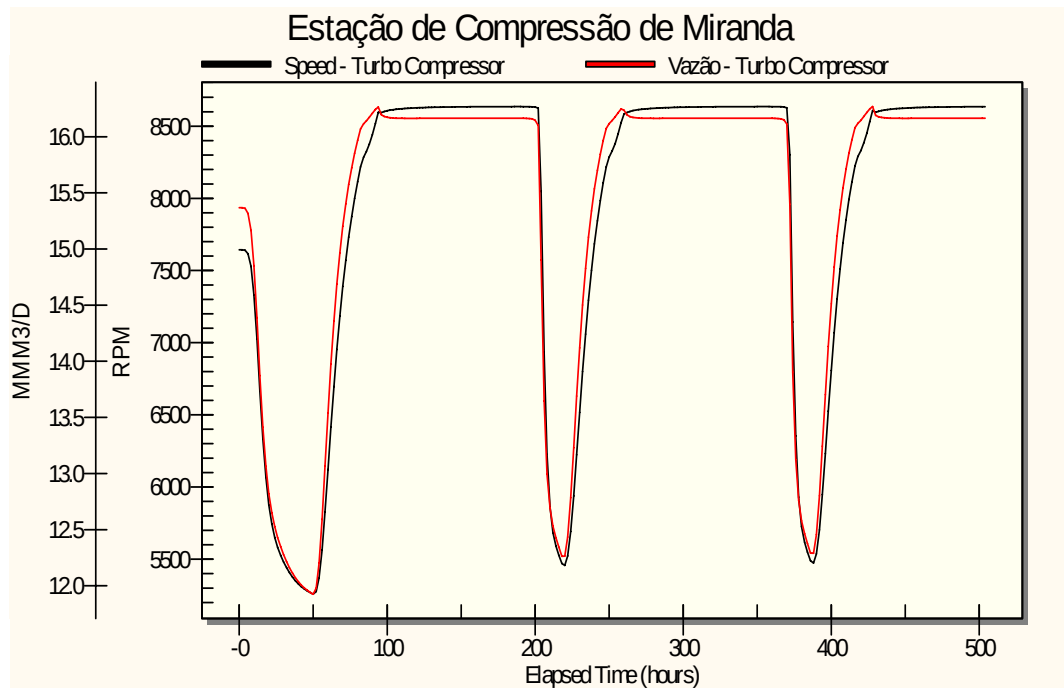
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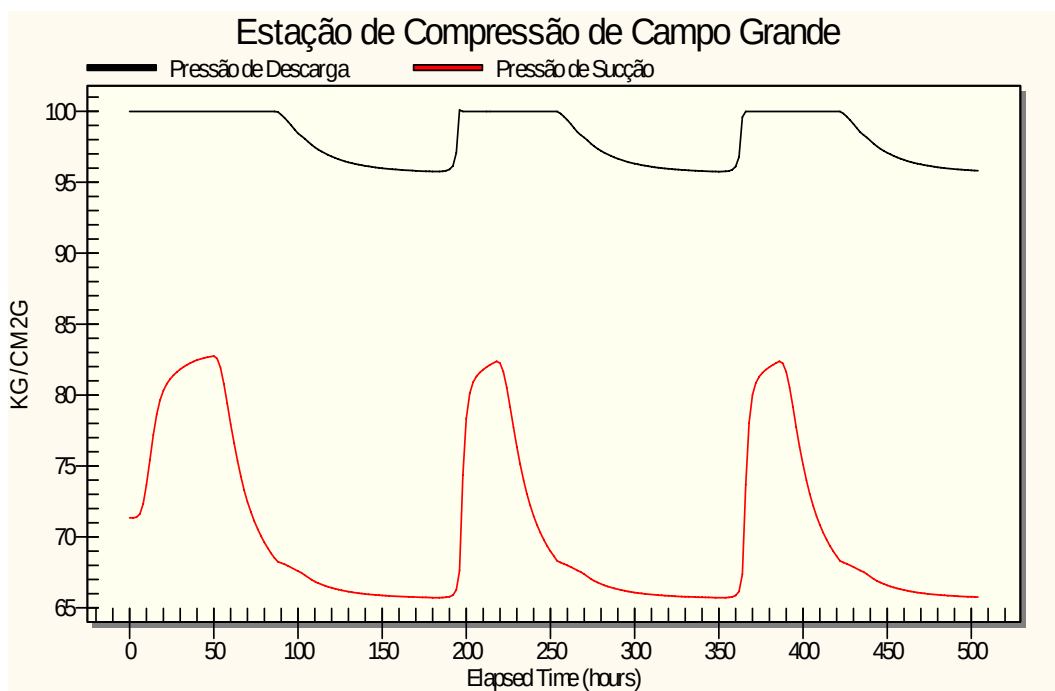
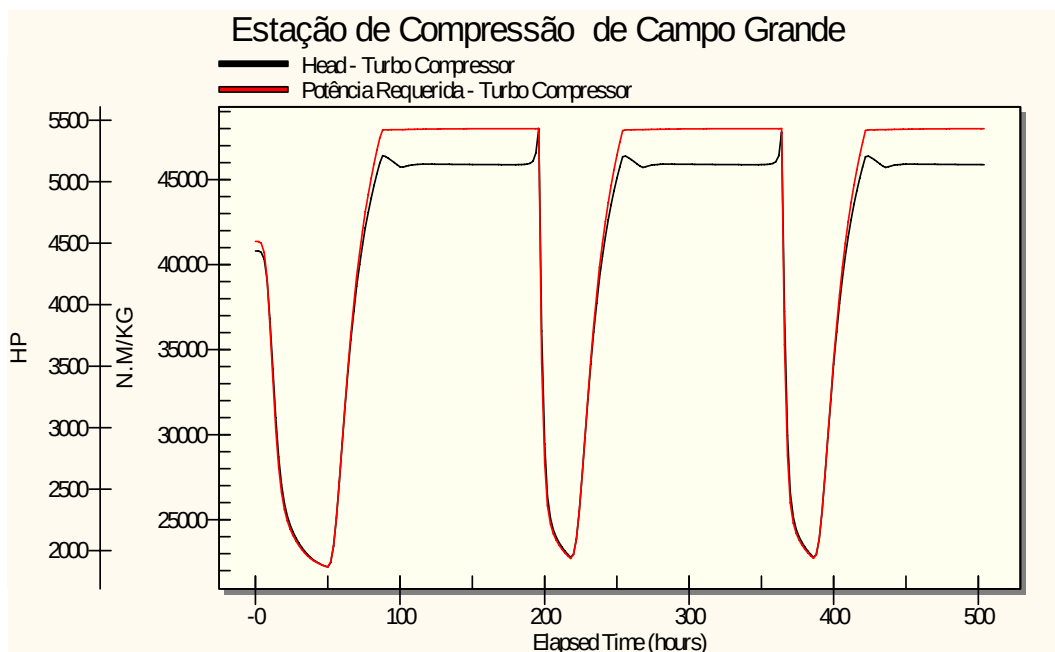
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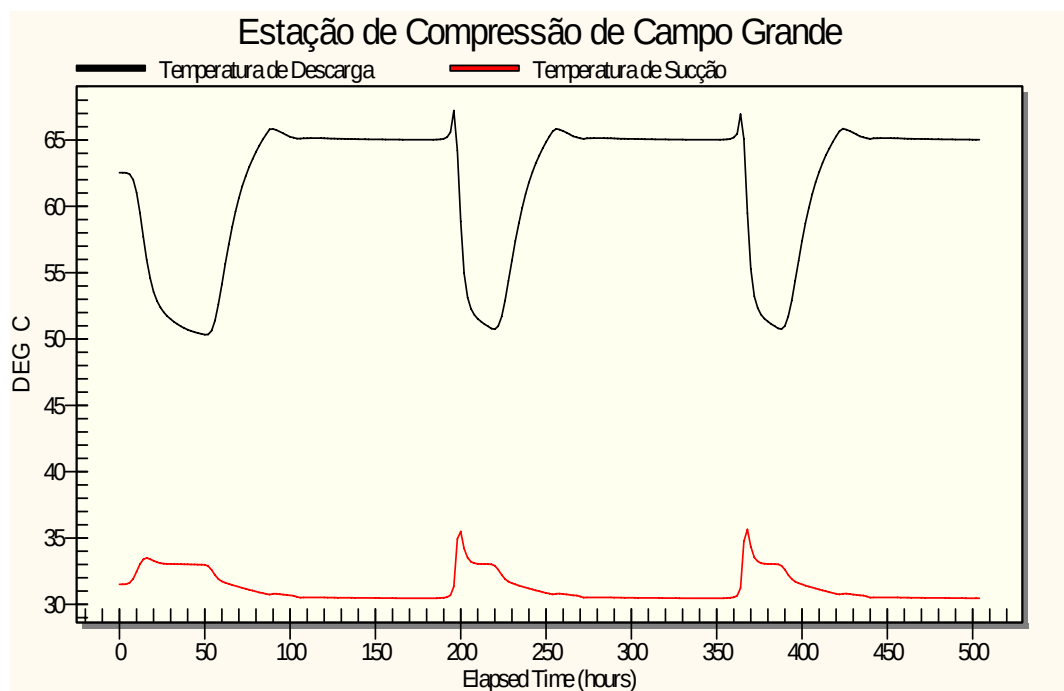
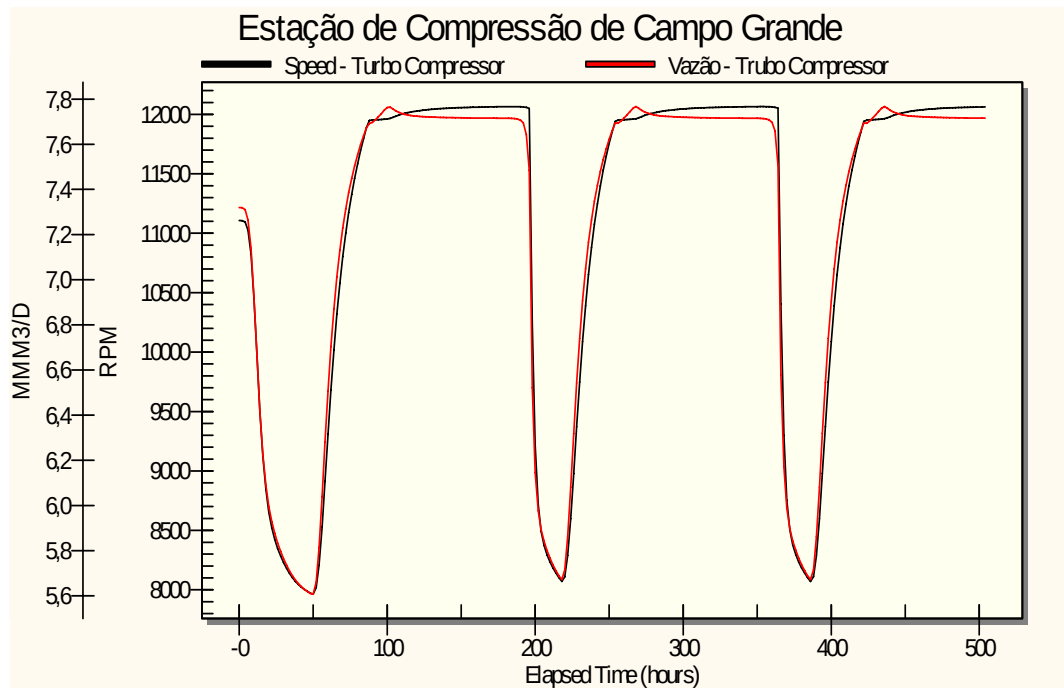
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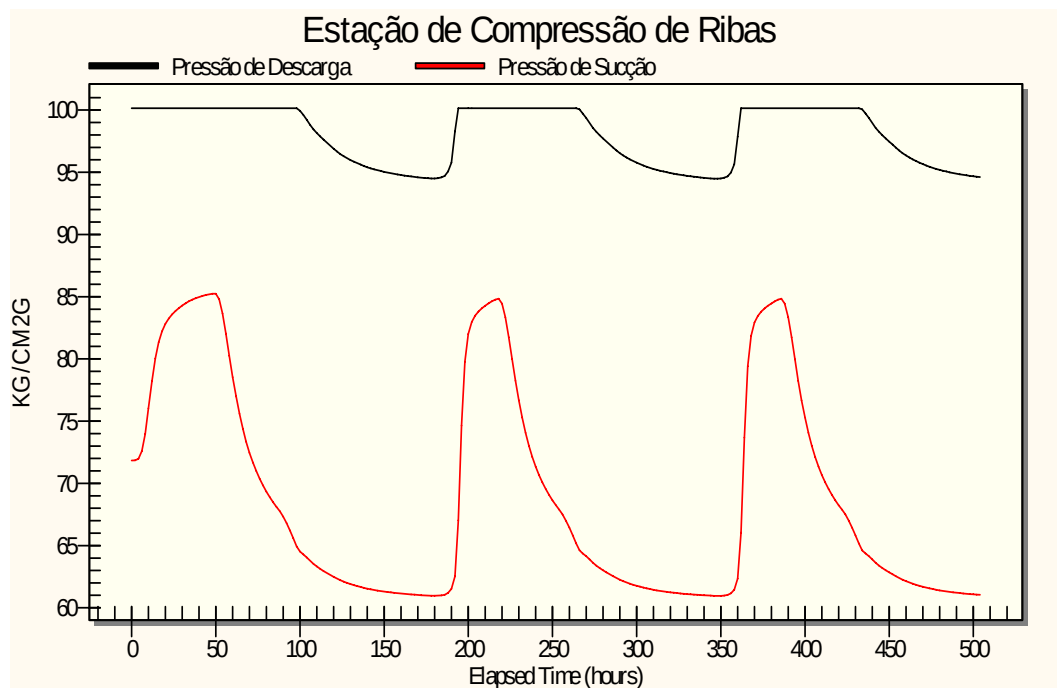
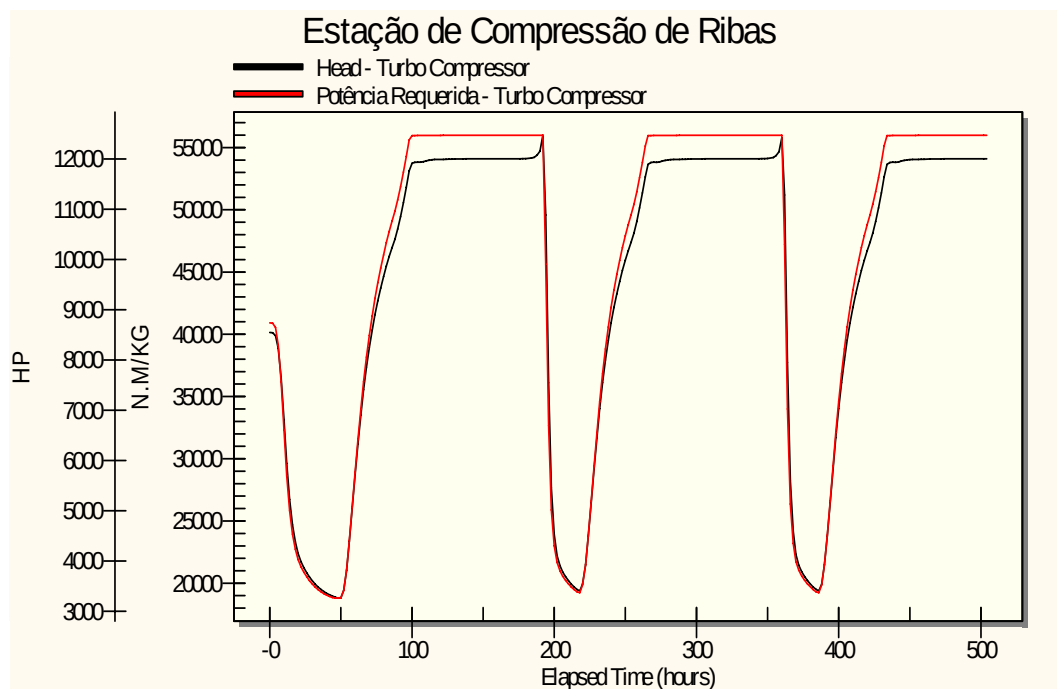
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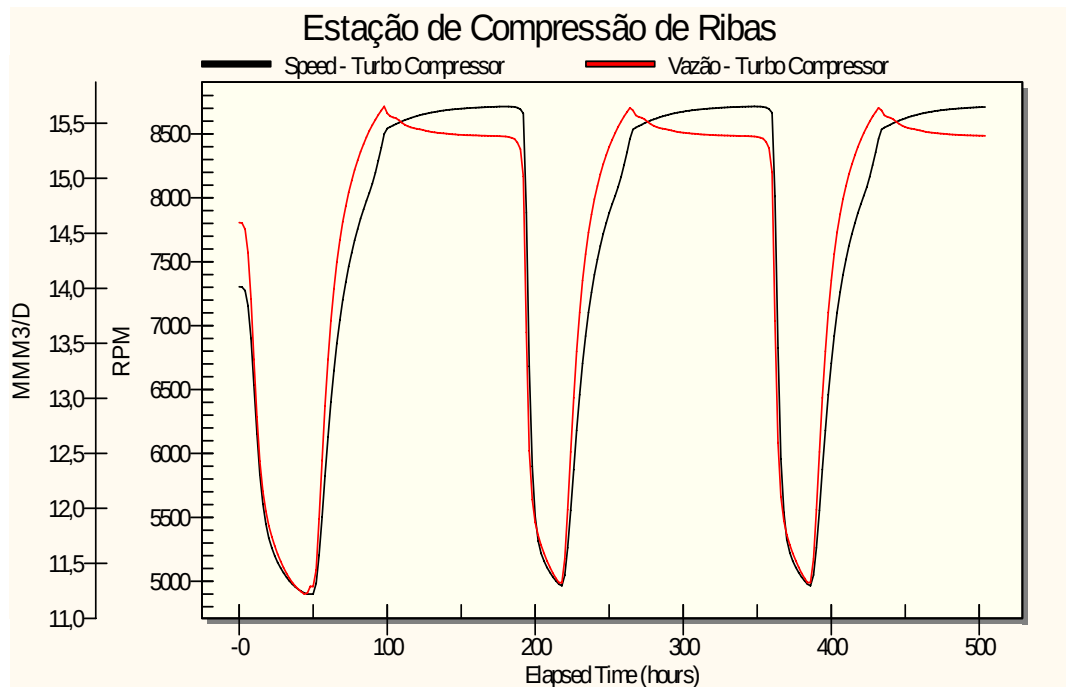
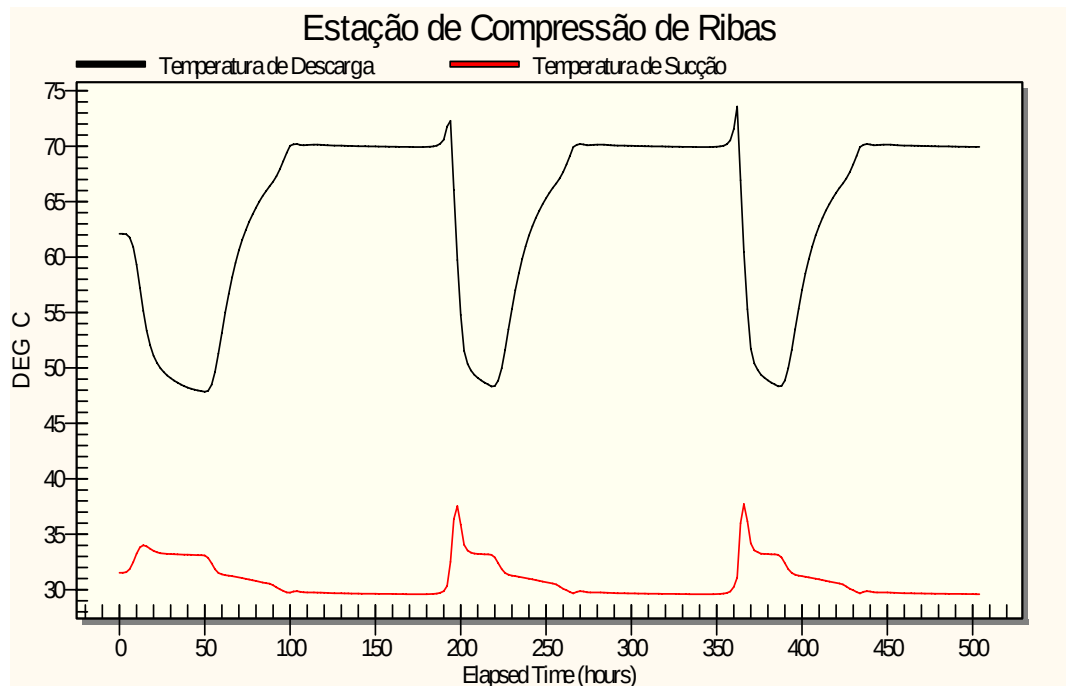
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4.3.6. Estação de Compressão – Ribas do Rio Pardo.

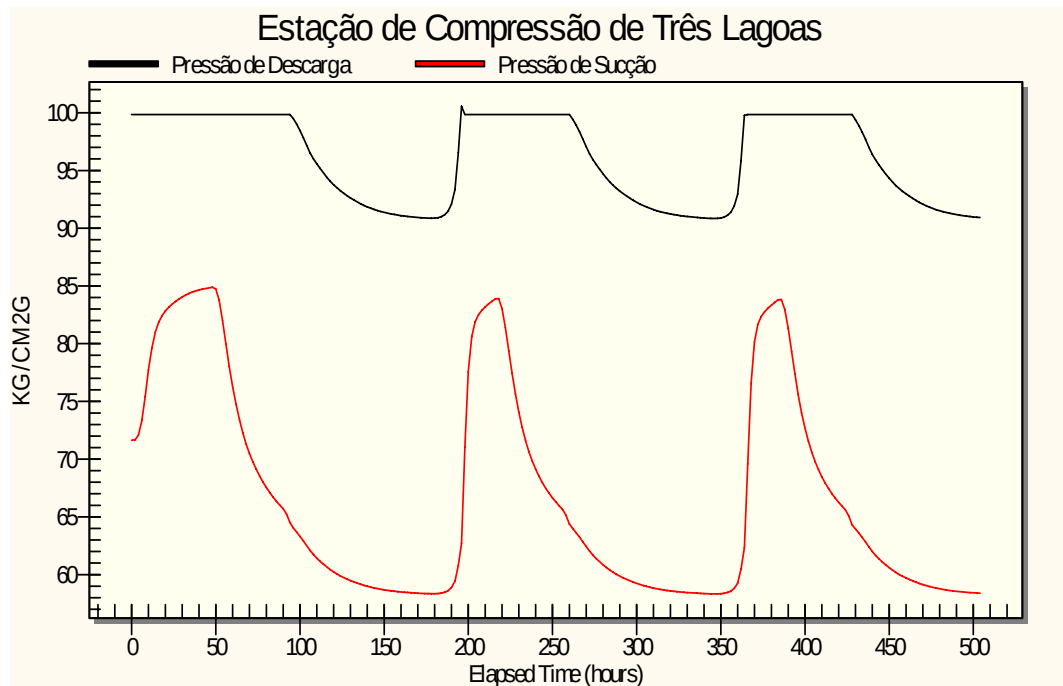
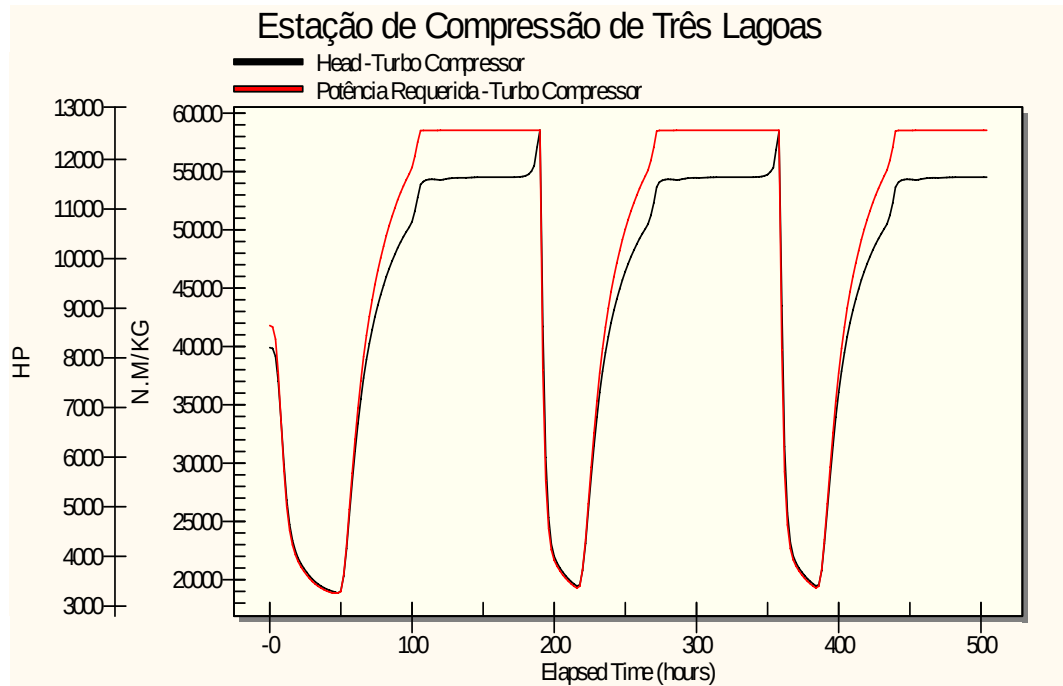




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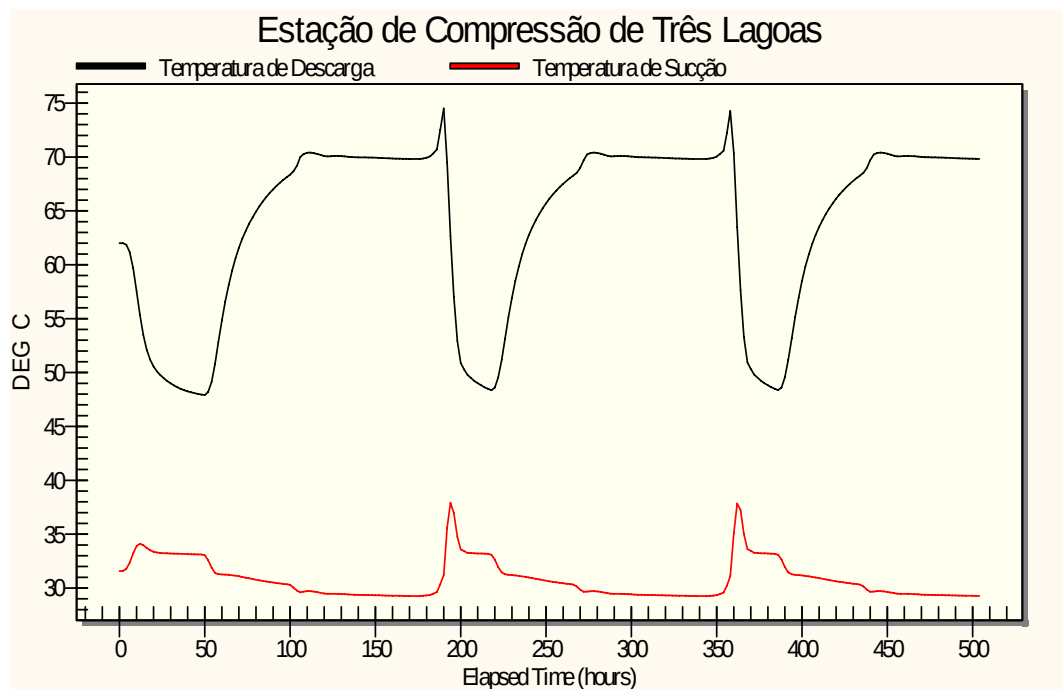
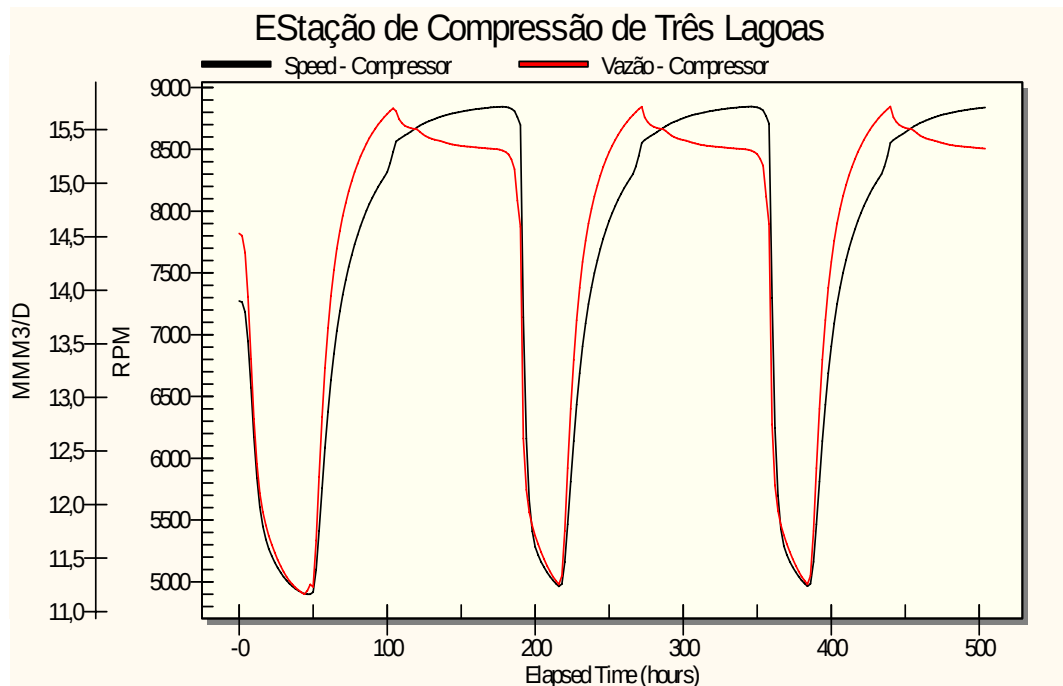
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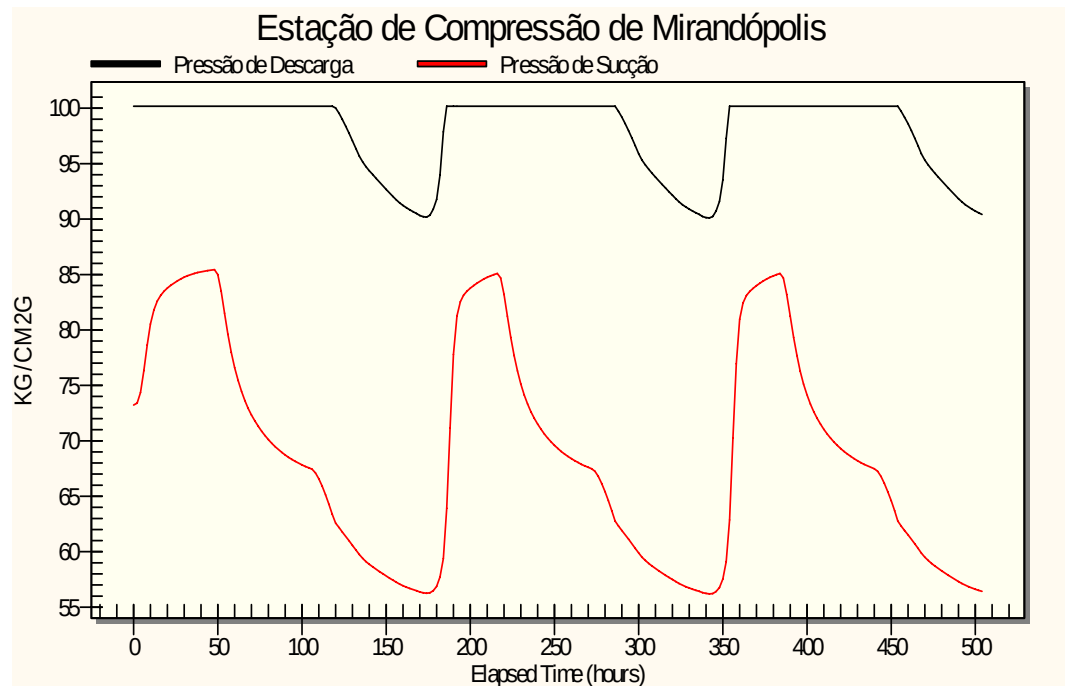
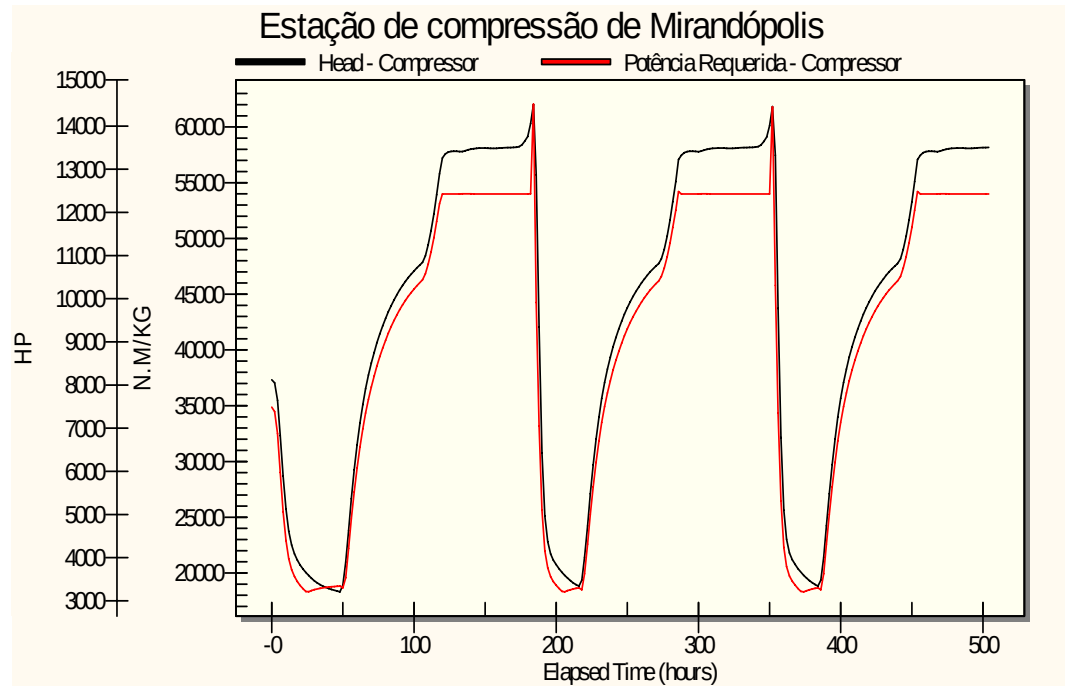
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4.3.8. Estação de Compressão – Mirandópolis





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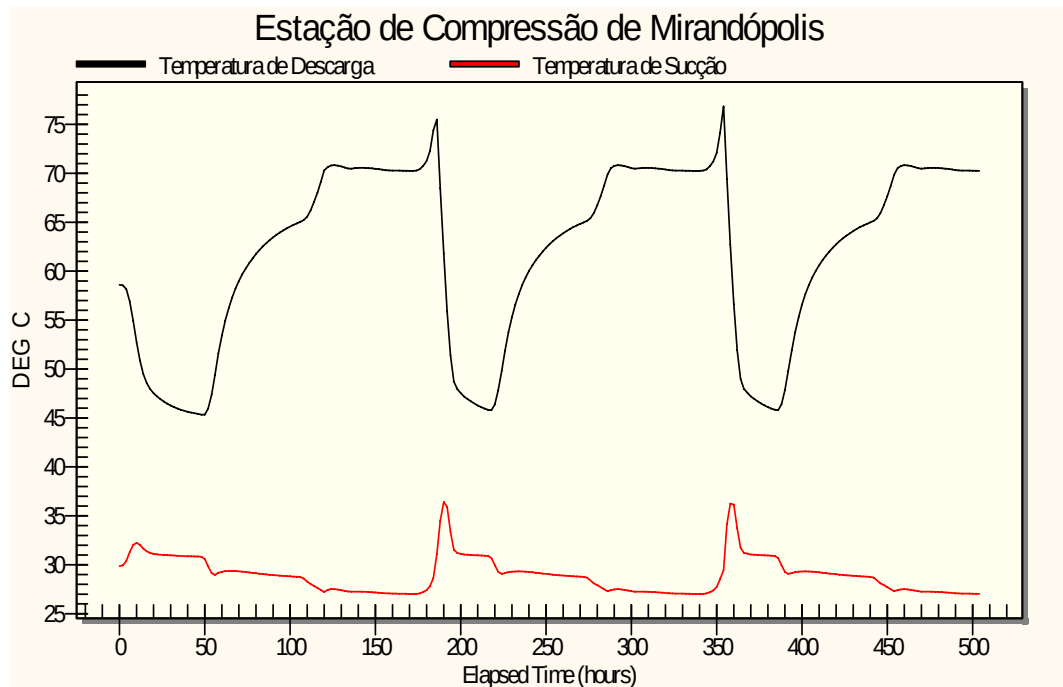
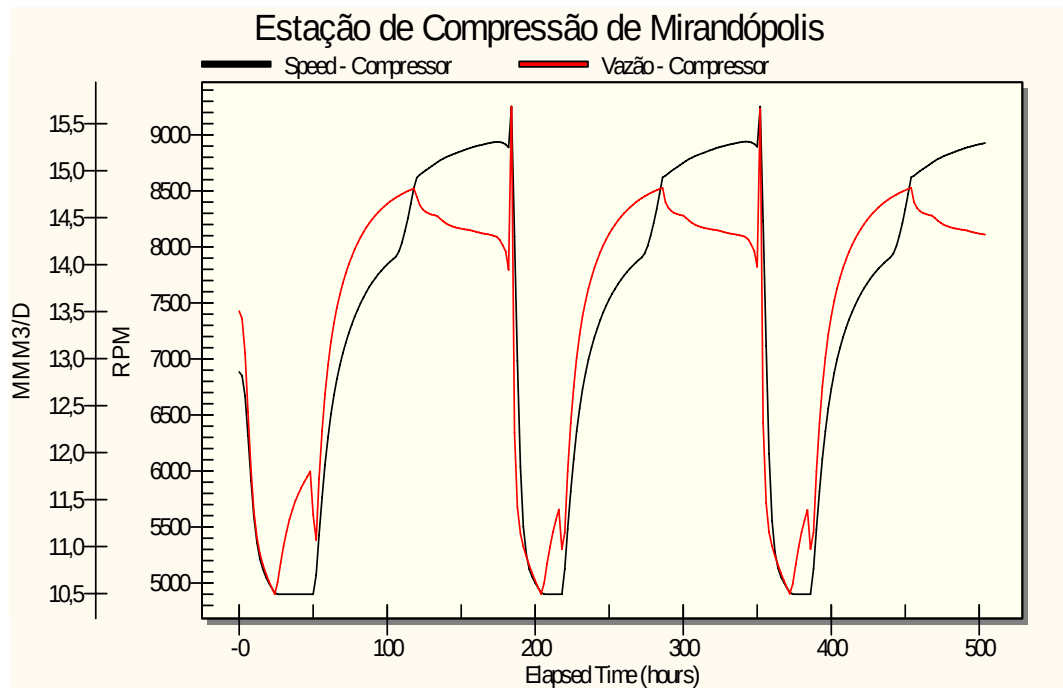
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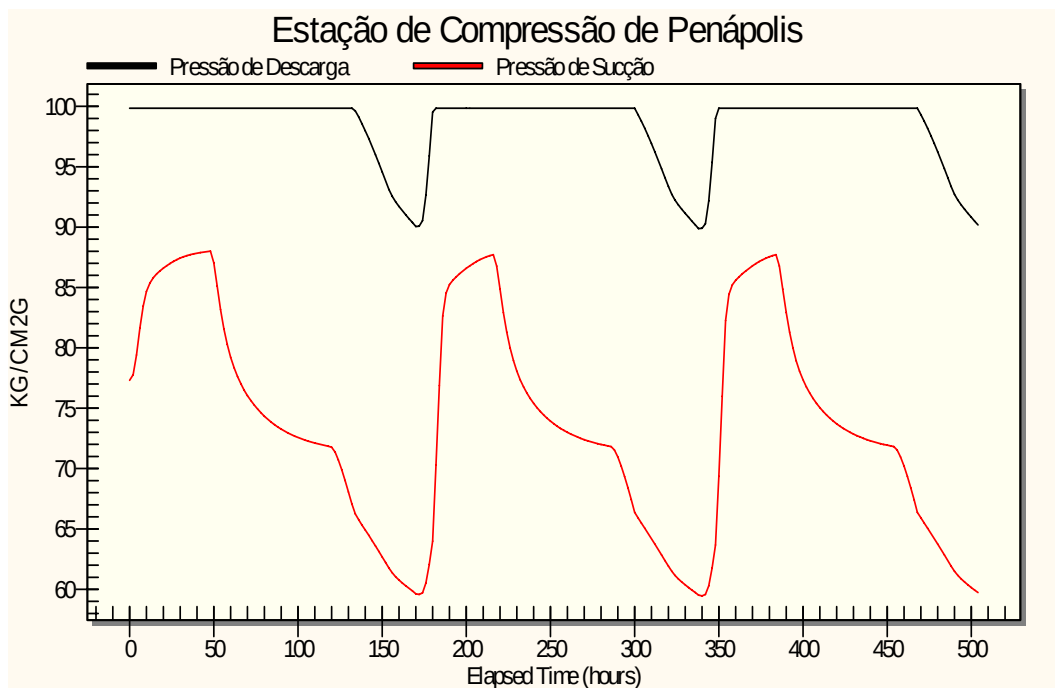
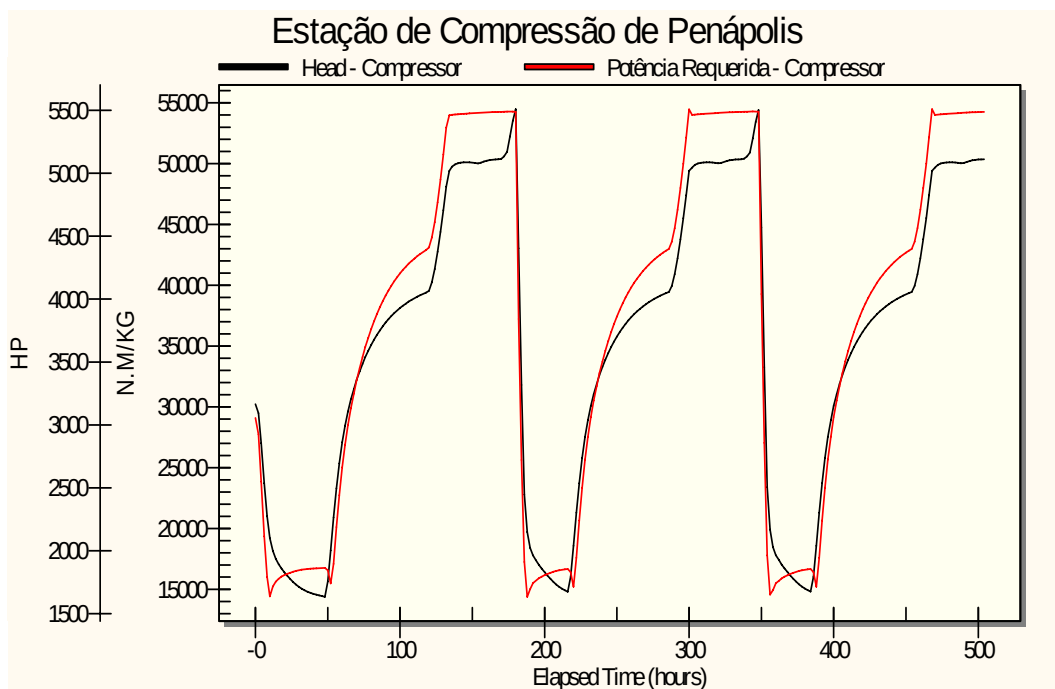
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4.3.9. Estação de Compressão – Penápolis





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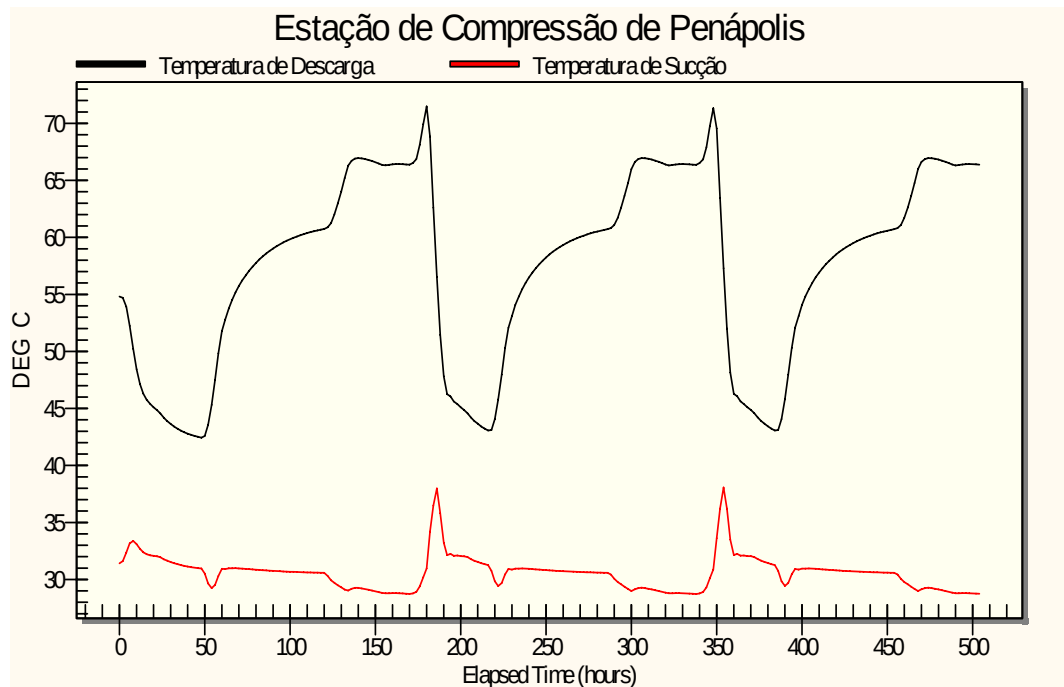
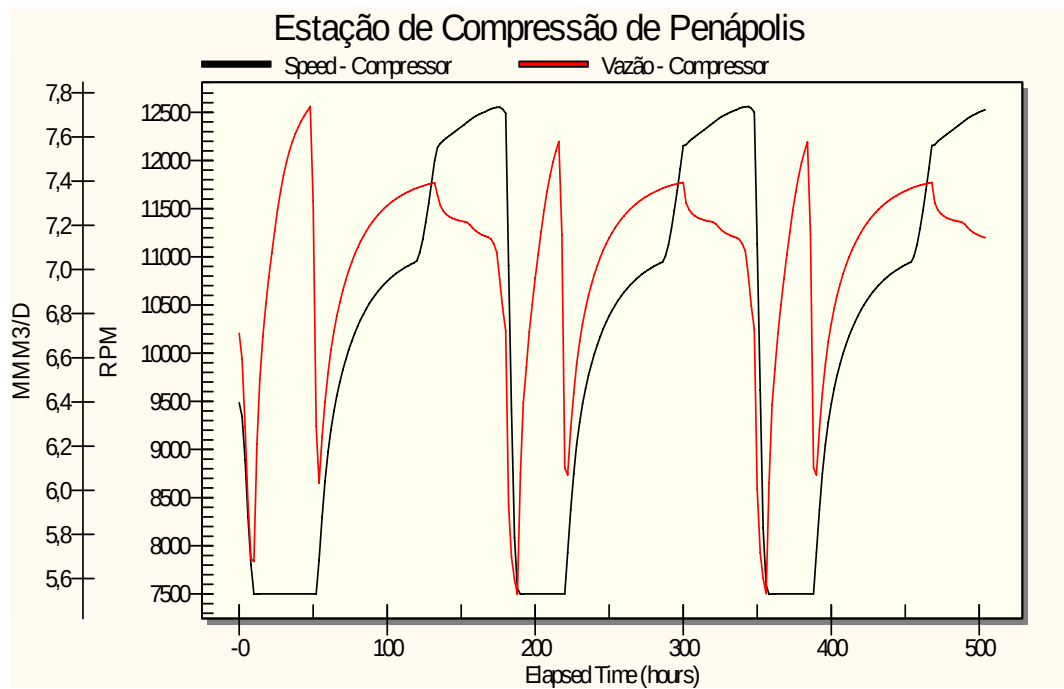
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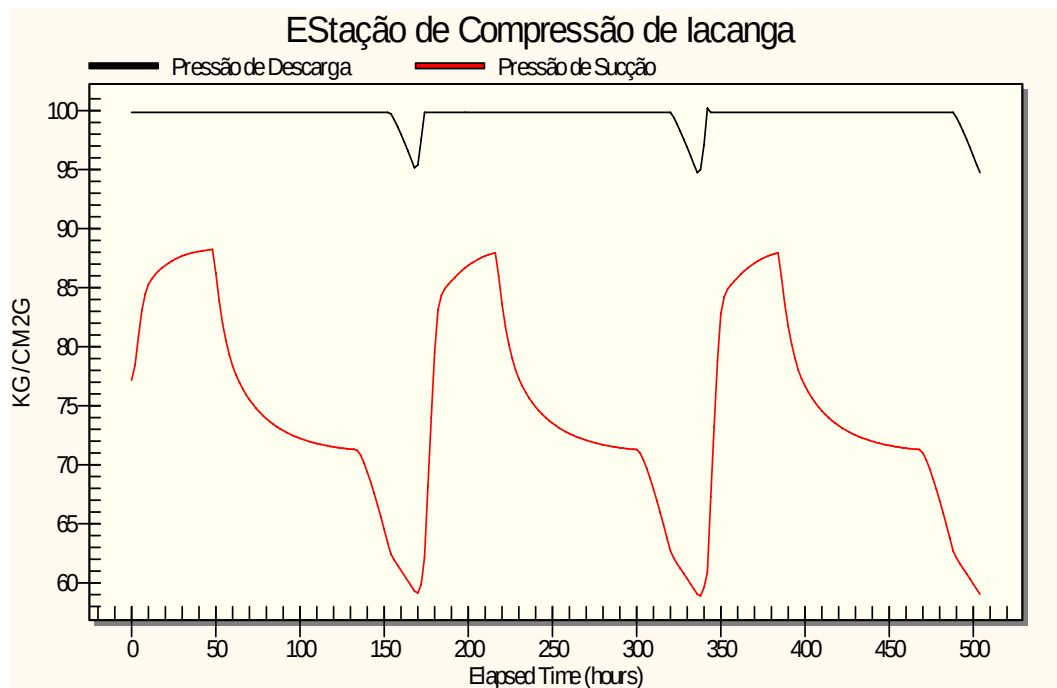
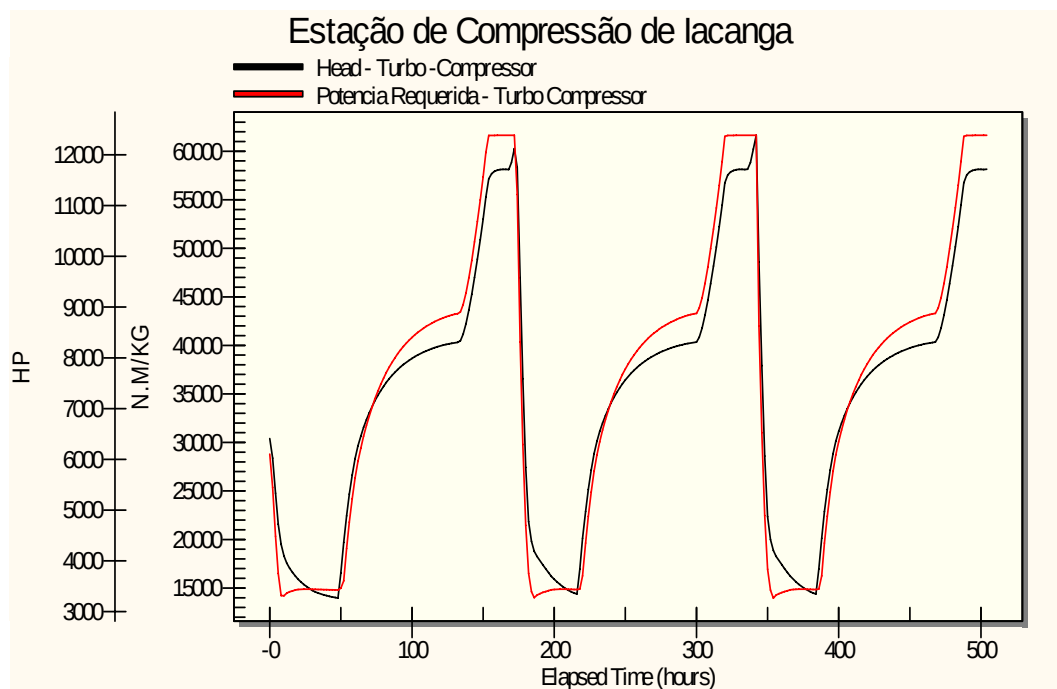
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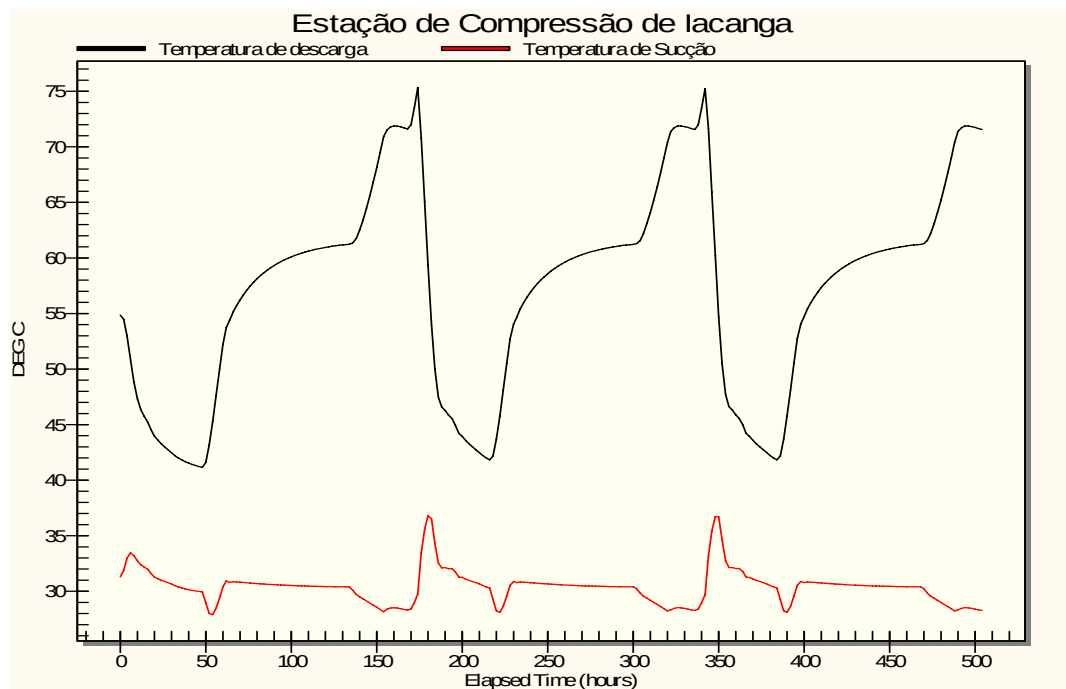
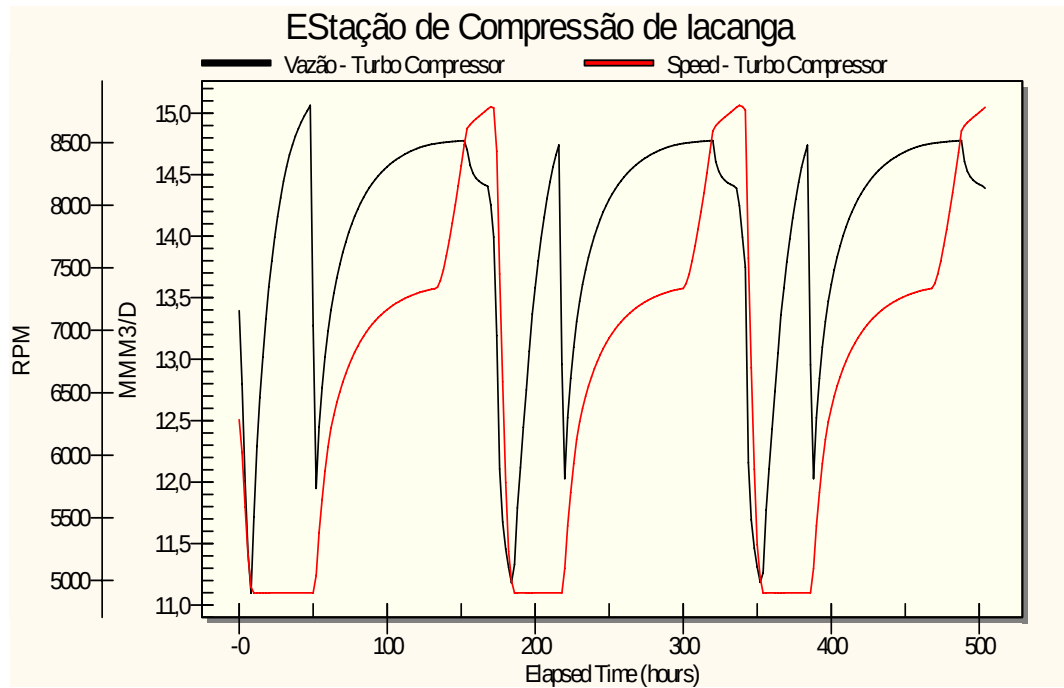


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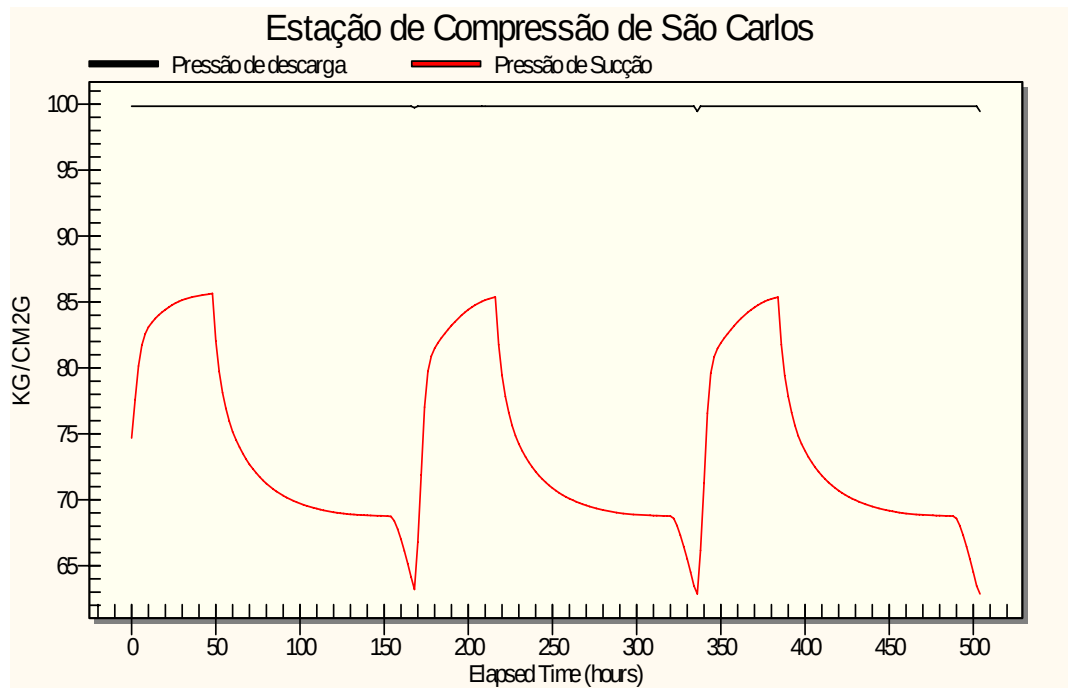
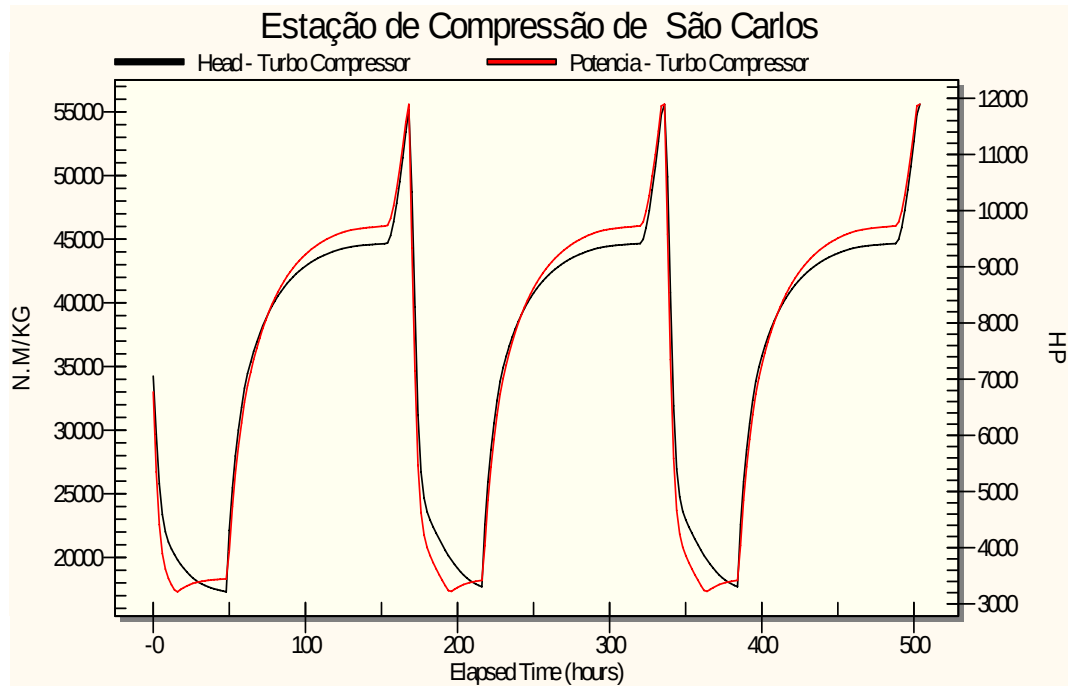




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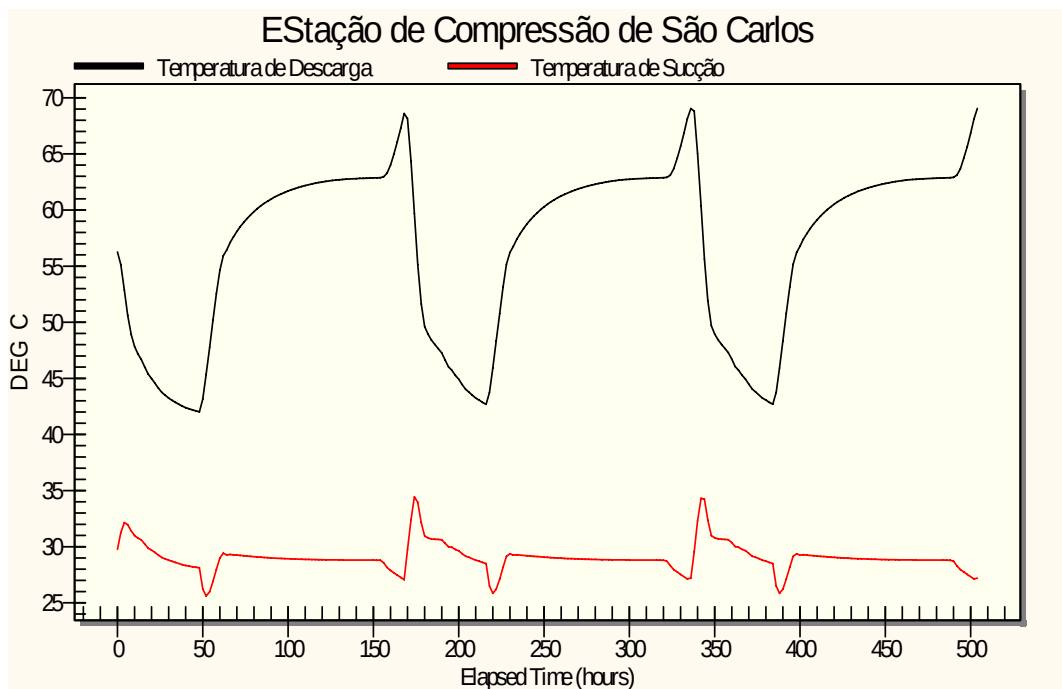
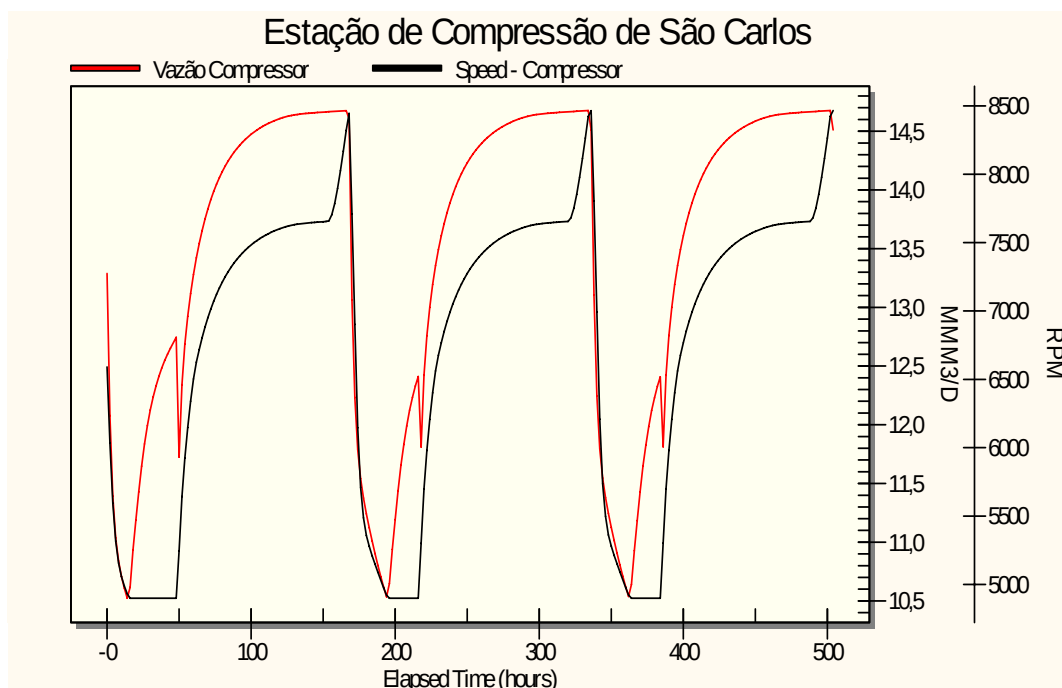


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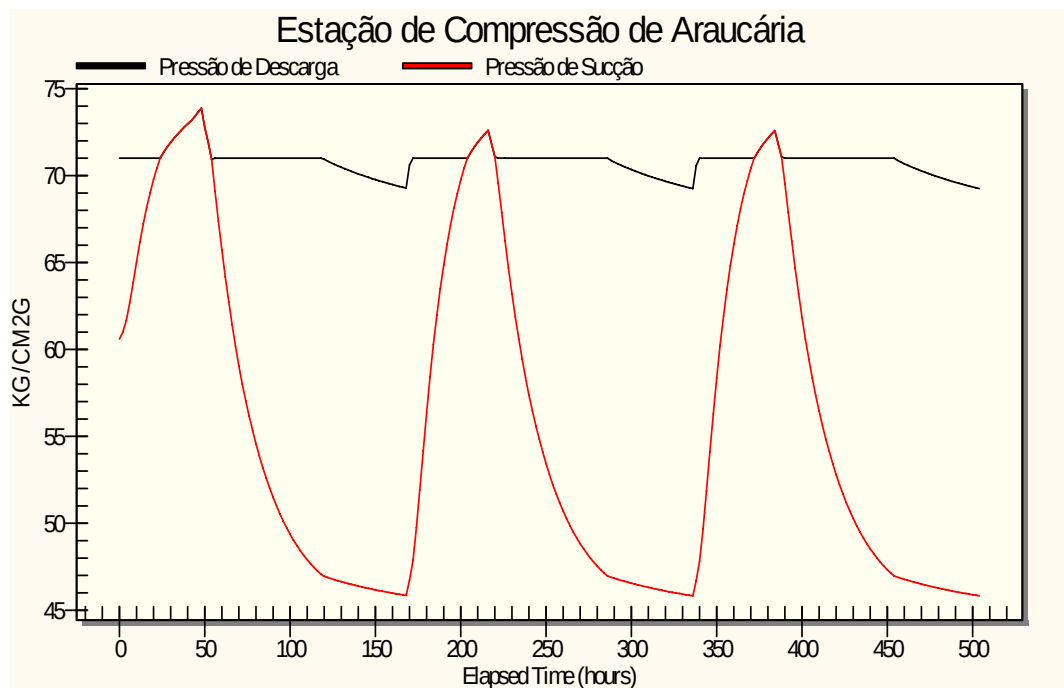
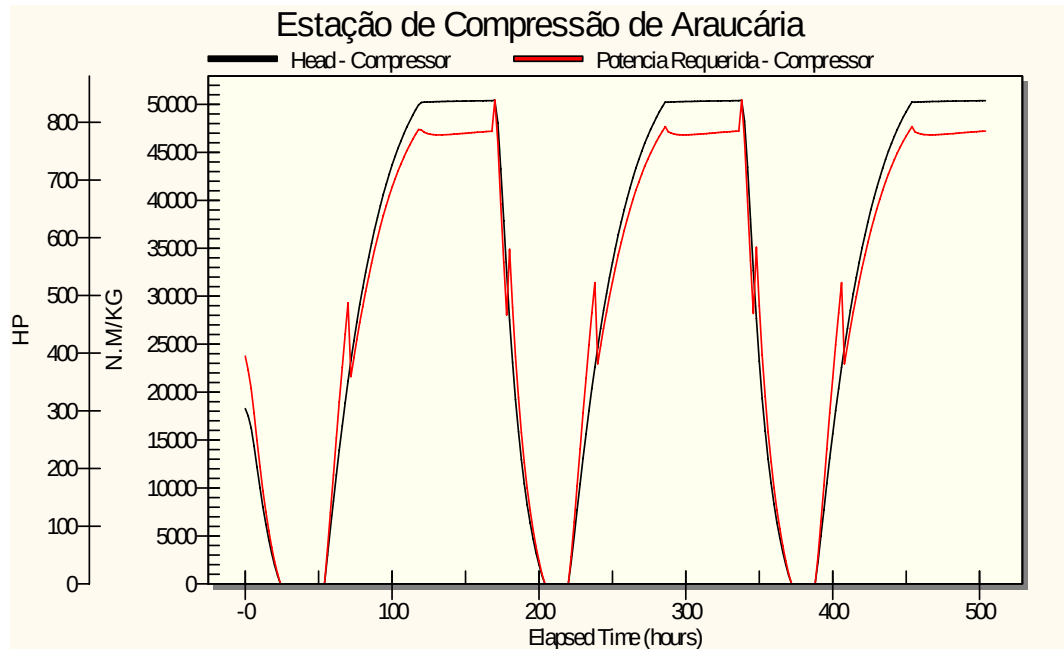




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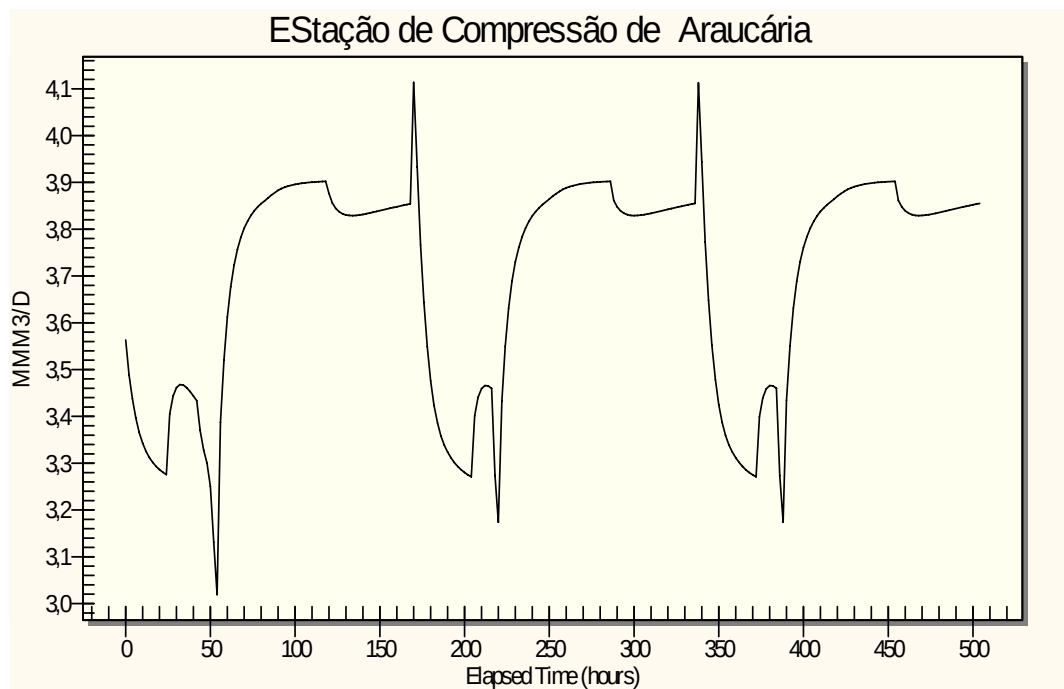
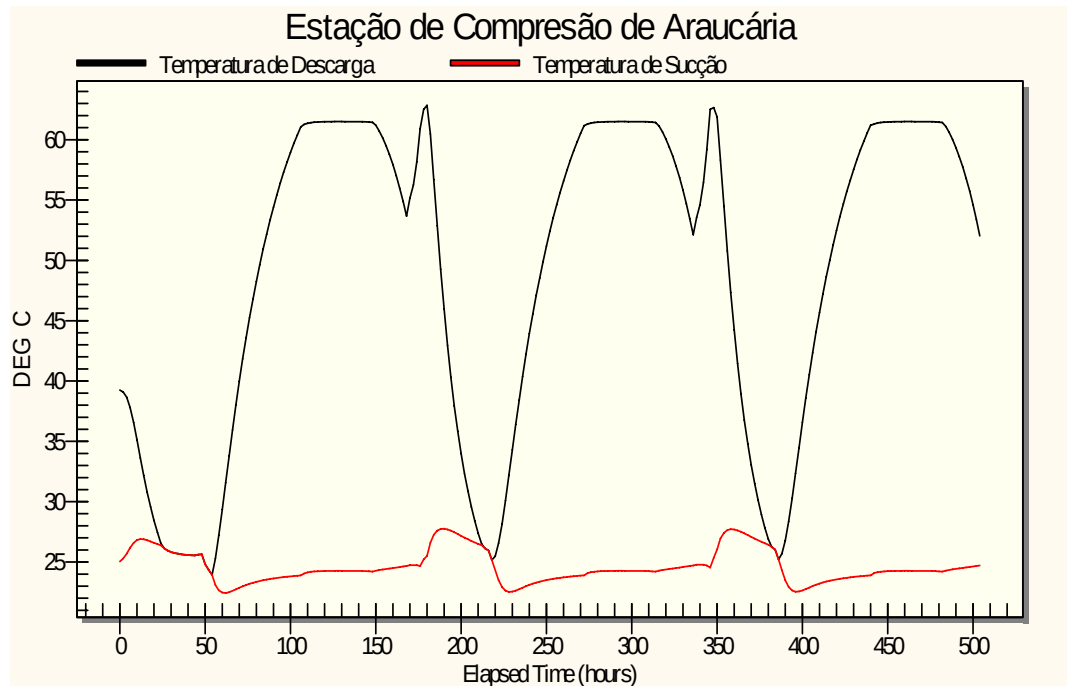


4.3.12. Estação de Compressão – Araucária

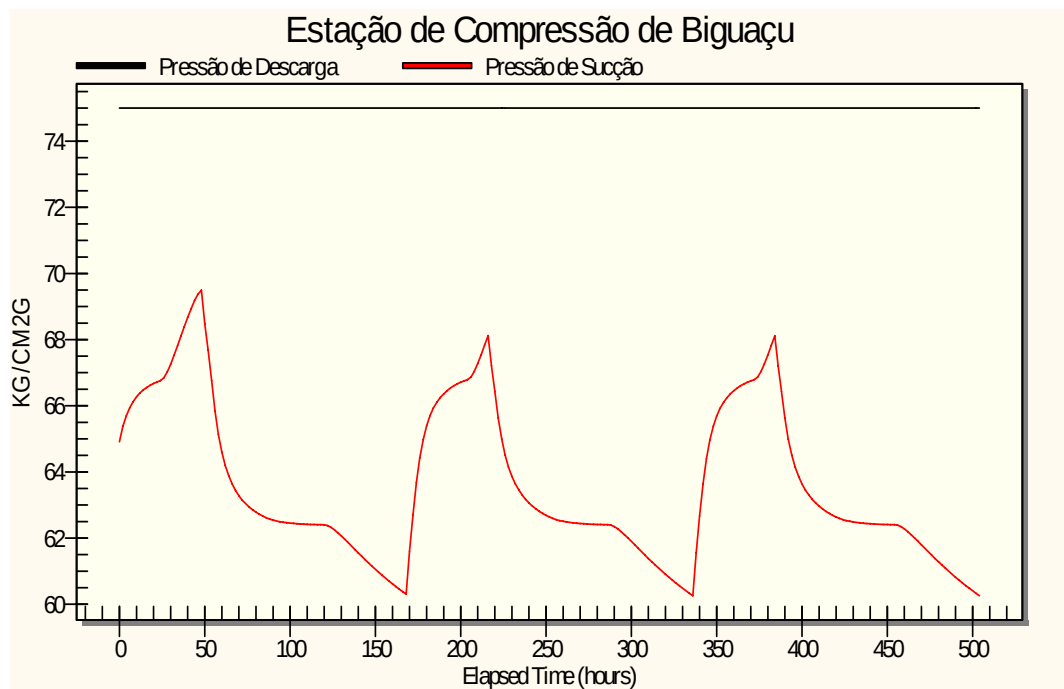
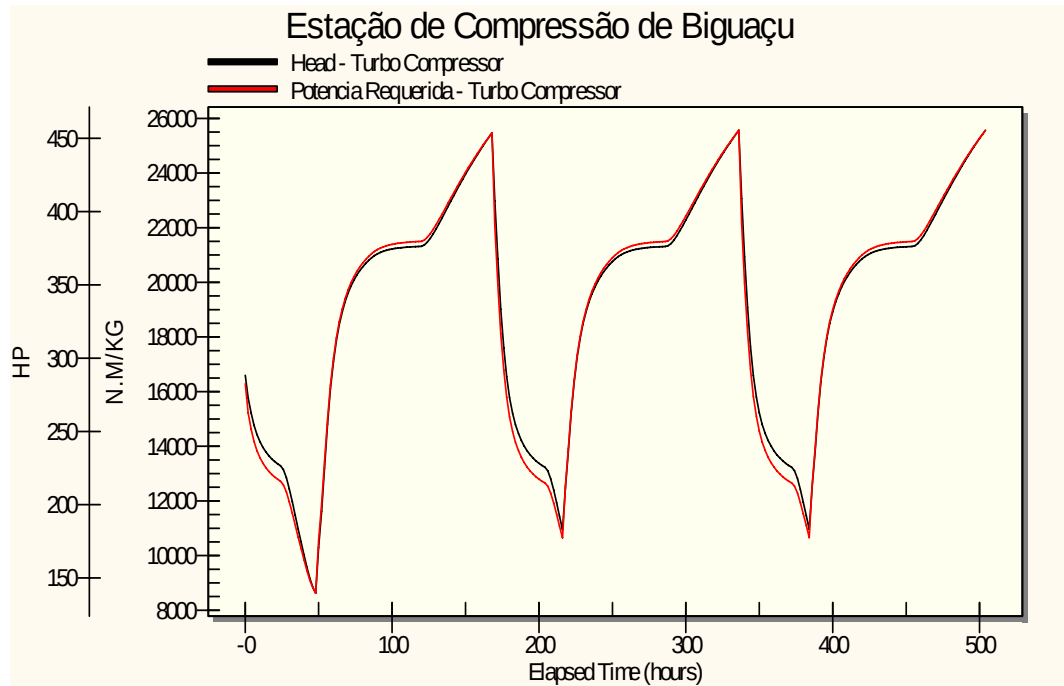


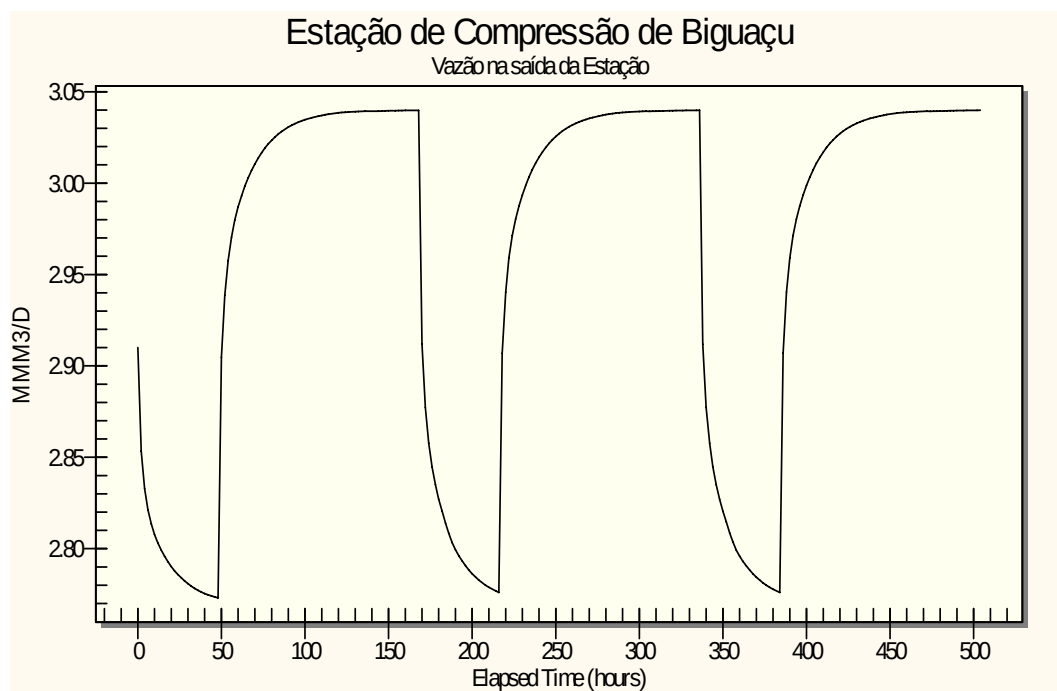
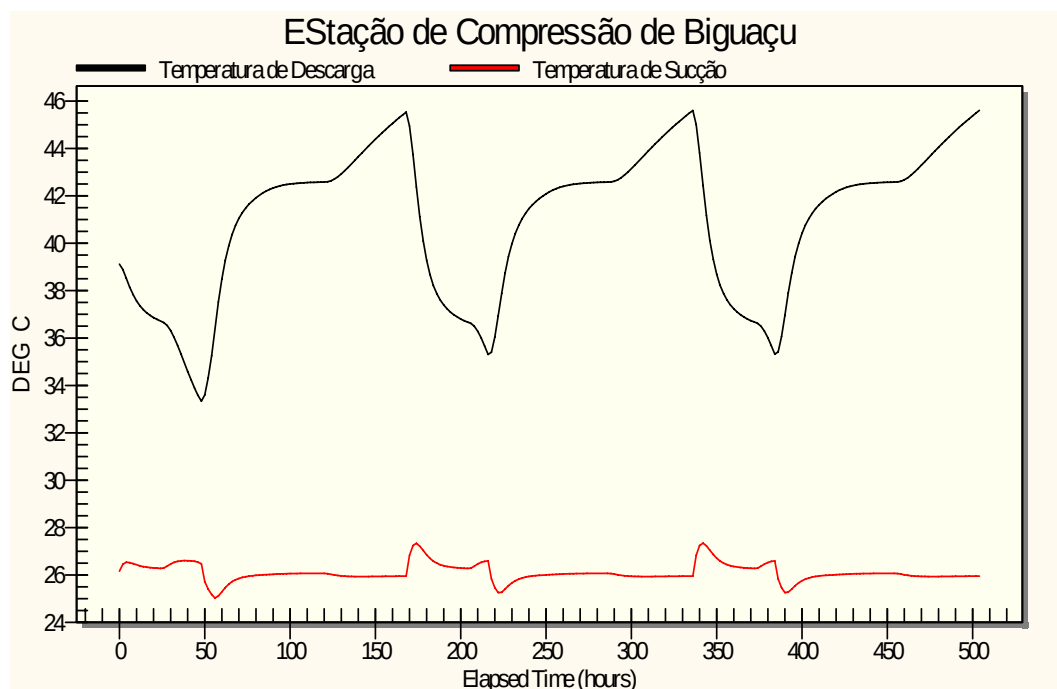


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4.3.13. Estação de Compressão – Biguaçu





4.4. Performance das Estações de Compressão - Regime Transiente



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	Condição		
5	mínima	Q	24.04
		Ps	84.59
		Pd	99.84
		Ts	34.59
		Td	50.44
	Máxima	Q	32.86
		Ps	67.71
		Pd	99.84
		Ts	34.15
		Td	71.59

	Condição		
6	mínima	Q	23.91
		Ps	83.05
		Pd	99.84
		Ts	32.81
		Td	50.39
	Máxima	Q	32.73
		Ps	64.55
		Pd	98.32
		Ts	30.31
		Td	70.61

	Condição		
7	mínima	Q	23.82
		Ps	83.80
		Pd	99.84
		Ts	33.41
		Td	50.12
	Máxima	Q	32.72
		Ps	65.73
		Pd	99.84
		Ts	30.88
		Td	70.81

	Condição		
8	mínima	Q	22.41
		Ps	83.31
		Pd	99.84
		Ts	33.04
		Td	50.29
	Máxima	Q	31.31
		Ps	68.19
		Pd	98.48
		Ts	31.23
		Td	66.45

	Condição		
9	mínima	Q	22.33
		Ps	85.46
		Pd	99.84
		Ts	33.03
		Td	47.86
	Máxima	Q	31.52
		Ps	65.11
		Pd	99.84
		Ts	30.30
		Td	71.07

	Condição		
10	mínima	Q	22.23
		Ps	85.42
		Pd	99.84
		Ts	32.82
		Td	47.69
	Máxima	Q	31.61
		Ps	64.84
		Pd	99.84
		Ts	29.95
		Td	71.03

	Condição		
11	mínima	Q	20.19
		Ps	85.69
		Pd	99.84
		Ts	30.70
		Td	45.21
	Máxima	Q	29.74
		Ps	63.17
		Pd	99.84
		Ts	27.91
		Td	71.28

	Condição		
12	mínima	Q	20.02
		Ps	88.45
		Pd	99.84
		Ts	30.80
		Td	42.29
	Máxima	Q	29.65
		Ps	67.04
		Pd	99.84
		Ts	29.47
		Td	67.21

	Condição		
13	mínima	Q	19.93
		Ps	88.66
		Pd	99.84
		Ts	29.82
		Td	41.05
	Máxima	Q	29.60
		Ps	63.28
		Pd	99.84
		Ts	28.78
		Td	72.02

	Condição		
14	mínima	Q	19.76
		Ps	86.25
		Pd	99.84
		Ts	28.14
		Td	41.96
	Máxima	Q	29.41
		Ps	69.12
		Pd	99.84
		Ts	28.01
		Td	63.65

	Condição		
15	mínima	Q	2.98
		Ps	70.30
		Pd	70.30
		Ts	23.79
		Td	23.79
	Máxima	Q	3.90
		Ps	47.47
		Pd	70.00
		Ts	24.58
		Td	61.11

	Condição		
16	mínima	Q	2.67
		Ps	69.50
		Pd	75.00
		Ts	26.17
		Td	33.29
	Máxima	Q	2.94
		Ps	61.13
		Pd	75.00
		Ts	25.94
		Td	45.11



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Q - Vazão, MMm³/d @ 20°C e 1 atm;
Ps - Pressão de Sucção, Kgf/cm²g;
Pd - Pressão de descarga, Kgf/cm²g;
Ts - Temperatura de Sucção, °C;
Td - Temperatura de Descarga, °C.

4.5. Cálculo do Gás Combustível

Gás Combustível		
Gás Combustível para Turbinas (Norte) e Motor (Sul)		
	steady-state	transiente flex 20% (máximo)
Vazão Total Fronteira	31.1382 MM m3/d	33.33 MM m3/d
Volume Total Fronteira	11365.443 MM m3	12165.45 MM m3
Total Gás Combustível	1.085 MM m3/d	1.326 MM m3/d
Volume Gás Combustível	396.025 MM m3	484.050 MM m3
% Gás Combustível	3.610 %	4.144 %
Gás Combustível para Estações de Entrega e Utilidades das Estações de Compressão		
Utilidades das Estações de Entrega		
Vazão / estação de entrega (Base: Média do Consumo Atual)		580 m3/d
Total de estações de entrega		40
Total consumo de Gás Combustível nas EEs		23200 m3/d
Utilidades das Estações de Compressão		
Vazão / Geração ECOMP (Base: cálculo teórico com dados dos equipamentos)		3600 m3/d
Total ECOMPs		12
Total consumo de Gás Combustível para Geração		43200 m3/d
Outras Utilidades (aquecimento Gás Combustível) (Base: Média do Consumo Atual)		7000 m3/d
Total Consumo de Gás Combustível para Utilidades		73400 m3/d
Total Gás Combustível do Sistema	=	1 399 565.12 m3/d
	+	= 4.1991 %
Gás Não Contado (GNC) = 0,5%	=	4.6991 %



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5. CONCLUSÃO

5.1. O sistema de transporte do Gasoduto, conforme construído, atende as condições contratuais de re-entrega de gás do TCQ, TCO, TCX e TCQ-Flex nas pressões mínimas exigidas conforme as distribuições das demandas e do TCQ-Flex previstas no item 2.5. Qualquer alteração nas distribuições das demandas e do TCQ-Flex acima referenciadas afeta os resultados das simulações deste relatório;

5.2. A vazão nominal para o trecho sul (REPLAN-Canoas) é de 7,37 MM m³/d, sendo a máxima possível permitida para o escoamento do gás considerando o TCQ-Flex e as pressões mínimas de entrega contratuais;

5.3. A vazão nominal para o REPLAN-Guararema é de 9,3 MM m³/d, sendo a máxima possível permitida para o escoamento do gás considerando o TCQ-Flex e as pressões mínimas de entrega contratuais, como também a necessidade de uma pressão mínima na EMED de Guararema (interconexão com os gasodutos da PETROBRAS) de 45 kgf/cm² g;

5.4. A vazão nominal para o trecho Corumbá-REPLAN é de 30,08 MM m³/d, o que pode ser evidenciado através da análise dos resultados dos testes de capacidade das estações de compressão do trecho norte, ANEXO II deste relatório;

5.5. Este relatório não considera a confiabilidade e disponibilidade do sistema de transporte de gás, ou seja, os resultados apresentados demonstram apenas a capacidade de atendimento das obrigações contratuais de re-entrega de gás com a configuração atual instalada sem considerar as paradas necessárias devido as manutenções preventivas e corretivas destas instalações.

5.6. Os resultados encontrados com a variação na especificação do gás @ 0,6 / 37,68 MJ/m³ e @ 0,635 / 39,05 MJ/m³ demonstraram um aumento de 1,8 % na vazão de gás combustível para o caso de menor densidade e poder calorífico. Este aumento não foi tão significativo, pois, o aumento da vazão de gás combustível devido à redução do poder calorífico foi compensado pela redução da potência total requerida pelas estações de compressão.