

BRAZILIAN RECOVERY BOILER SAFETY COMMITTEE

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CSCRBU - BRAZILIAN AND URUGUAY RECOVERY BOILER SAFETY COMMITTEE

June 6, 2019

55th Anniversary International Recovery Boiler Conference



CSCRBU

- Since 2001
 - Two meetings per year
 - Next meeting will be at Suzano Imperatriz mill on the last week of November, during The 16th Recovery Boiler Operators Annual Meeting
 - 5 sub committees:
 - Combustion
 - Safety
 - Maintenance
 - ESP
 - Water treatment
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- 1- Brazil and Uruguay recovery boiler database maintenance
 - 2 - Exchange information with other international committees (BLRBAC, SNRBC, FRBC)
 - 3 - Incident analysis
 - 4 - Incident presentation
 - 5 - Non ordinary issues
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- 43 recovery boilers - 39 in operation
 - 1 Hibernated (Cenibra)
 - 3 Under project (Westrock, Klabin OG and Bracell LP)
 - 3 Recovery boilers retrofits since 2009
 - 9 New recovery boiler since 2009
 - Typical age: 21 years
 - Typical size: : 2790 tss/day
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DATA BASE

CSCRB - ESP COMMITTEE - Mai-2019															Person incharge
#	Group	Mill	Supplier	Status	Start up (ano)	Retrofit (ano)	Age (anos)	Capacity Original (tss virgin/d)	Capacity Real (tss virgin/d)	Pressure (barg)	Temp(°C)	Steaming rate (t/h)	Area (m2)	Ratio (tss/m2/day)	
1	Bracell - BA	Camaçari	CBC	Running	2008		10	3000	3300	85	490	494	149,2	22,1	Reinaldo Fernandes <reinaldo_fernandes@bracell.com>
2	Bracell - LP	Lençóis Paulista	CBC	Running	2002	2008	16	700	826	85	480	120	44	18,8	Cesar Anfe <canfe@bracell.com>
3	Bracell - LP	Lençóis Paulista	Andritz	Project	20121		0								Cesar Anfe <canfe@bracell.com>
4	OJI	CENIBRA	CBC	Hibernated	1977	2003	41	1440	1800	65	450	200	93,86	19,2	Virgilio Procópio <virgilio.procopio@cenibra.com.br>
5	OJI	CENIBRA	CBC	Running	1992	2004	26	2050	2700	65	450	422	138,13	19,5	Virgilio Procópio <virgilio.procopio@cenibra.com.br>
6	OJI	CENIBRA	CBC	Running	2006		12	3500	3500	66	450	524	189	18,5	Virgilio Procópio <virgilio.procopio@cenibra.com.br>
7	CMPC	CMPC	B&W	Running	2002		16	2087	2087	64	465	300	125	16,7	Daniel Sidoruk <daniel.sidoruk@cmprs.com.br>
8	CMPC	CMPC	Valmet	Running	2015		3	6200	6200	95	490	1075	271	22,9	Daniel Sidoruk <daniel.sidoruk@cmprs.com.br>
9	COCELPA	COCELPA	Valmet	Running	1988	2010	30	160	270	45	425	30	12	22,5	Cristiano Dreher <cristiano.dreher@cocelpa.com.br>
10	Eldorado	Eldorado	Valmet	Running	2012		6	6800	6800	85	485	1116	293	23,2	Murilo Sanches <murilo.sanches@eldoradobrasil.com.br>
11	Suzano	Aracruz CR-A	Valmet	Running	2001		17	3440	3440	64	450	524	156,7	22,0	Ronaldo Schuster <ronaldo.schuster@suzano.com.br>
12	Suzano	Aracruz CR-B	Valmet	Running	1991	2002	27	2200	3600	64	450	524	165,7	21,7	Ronaldo Schuster <ronaldo.schuster@suzano.com.br>
13	Suzano	Aracruz CR-C	Andritz	Running	1997	2000	21	2200	3300	64	455	433	130,8	25,2	Ronaldo Schuster <ronaldo.schuster@suzano.com.br>
14	Suzano	Jacarei - CR-3	CBC	Running	1994		24	1430	1990	90	470	240	101	19,7	Marco Aurelio <marco.rodrigues@suzano.com.br>
15	Suzano	Jacarei - CR-4	CBC	Running	2002		16	2500	2990	93	480	360	149	20,1	Marco Aurelio <marco.rodrigues@suzano.com.br>
16	Suzano	Tres Lagoas H1	Valmet	Running	2009		9	5300	5500	86	487	822	242	22,7	Eduardo Ferraz <eduardo.ferraz@suzano.com.br>
17	Suzano	Tres Lagoas H2	Andritz	Project	2017		1	8690	8690	86	485	1280	366	23,7	Eduardo Ferraz <eduardo.ferraz@suzano.com.br>
18	Suzano	Imperatriz	Valmet	Running	2013		5	7000	7000	95	492	1207	323,2	21,7	Alvaro Rosa <alvarorosa@suzano.com.br>
19	Suzano	Limeira CR-A	Valmet	Running	1972		46	270	510	42	380	65	24,11	21,2	Paulo Seleri <paulo.seleri@suzano.com.br>
20	Suzano	Limeira CR-B	Valmet	Running	1981	2000	37	270	510	42	380	65	24,11	21,2	Paulo Seleri <paulo.seleri@suzano.com.br>
21	Suzano	Limeira CR-C	CBC	Running	2002	2007	16	1100	1700	46	400	180	69	24,6	Paulo Seleri <paulo.seleri@suzano.com.br>
22	Suzano	Mucuri CR-1	Valmet	Running	1992	2007	26	1750	3000	85	480	420	144	20,8	Hildomar Raimondi <hramondi@suzano.com.br>
23	Suzano	Mucuri CR-2	Valmet	Running	2007		11	4700	4700	85	480	738	251	18,7	Hildomar Raimondi <hramondi@suzano.com.br>
24	Suzano	Suzano GTV	Valmet	Running	1973	2004	45	670	811	50	380	110	49	16,6	Gilberto Vanderlei <gilbertos@suzano.com.br>
25	Suzano	Suzano CR-3	CBC	Running	1987	2002	31	800	1400	50	420	218	64,1	21,8	Gilberto Vanderlei <gilbertos@suzano.com.br>
26	Iguacu	Iguacu	São Caetano	Running	1972		46	320	320	12	190	24	18,92	16,9	Wilson Lopes <wilsonlopes@iguacuelulose.com.br>
27	International Paper	Luiz Antonio	CBC	Running	1991	2005	27	890	1702	64	450	245	66	25,8	Edivaldo Verdlle <edivaldo.verdlle@paper.com>
28	International Paper	Mogi Guaçu CR-4	B&W	Running	1976		42	187	320	29	350	28	14,04	22,8	Rafael Salvatte <rafael.salvatte@paper.com>
29	International Paper	Mogi Guaçu CR-6	Andritz	Running	1985	2006	33	950	1144	27,6	340	120	51,85	22,1	Rafael Salvatte <rafael.salvatte@paper.com>
30	International Paper	Nova Campina	CBC	Running	2006		12	400	400	42	400	74	26	15,4	Charles Dhagou <charles.bezerra@paper.com>
31	Jari	Monte Dourado	BHI	Running	1979	1988	39	1360	1750	59	450	276	89	19,7	Jose Cogul <jose.cogul@grupojari.com.br>
32	Klabin	Correa Pinto	CBC	Running	1987	1992	31	580	750	85	480	110	49	15,3	Petronio de Oliveira Jr <pjunior@klabin.com.br>
33	Klabin	Telemaco Borba CR-1	Valmet	Running	1977	2000	41	1100	1850	46	430	235	92,5	20,0	Cristianne Perez <cperez@klabin.com.br>
34	Klabin	Telemaco Borba CR-2	CBC	Running	2007		11	1700	1700	106	503	243	79,6	21,4	Cristianne Perez <cperez@klabin.com.br>
35	Klabin	Ortigueira CR-1	CBC	Running	2016		2	7000	7000	104	503	1200	315,4	22,2	Geraldo Simao <gsimao@klabin.com.br>
36	Klabin	Ortigueira CR-2	Andritz	Project	2021		-3								Geraldo Simao <gsimao@klabin.com.br>
37	Klabin	Otacilio Costa	CBC	Running	1998		20	1100	1050	89	483	170	69,1	15,2	Glmar Packer <gpacker@klabin.com.br>
38	Trombini	Trombini	Orcepa	Running	1989	2000	29	140	180	21	420	30	10	18,0	Marcos Gatti <mgatti@tbo.trombini.com.br>
39	Suzano/Stora	Veracel Celulose	Valmet	Running	2005	2011	13	4000	4800	93,6	490	630	210	22,9	Estanislau Zutaufas <estanislau.zutaufas@veracel.com.br>
40	Westrock	Tres Barras CR-1	Andritz	Running	1999		19	850	600	64	460	126	47,4	12,7	Fernando Wessler <fernando.wessler@mwv.com>
41	Westrock	Tres Barras CR-2	CBC	Project	2021		-3								Fernando Wessler <fernando.wessler@mwv.com>
42	Arauco/Stora	Montes del Plata	Andritz	Running	2014		4	5710	5710	97	494	928	289	19,8	Enrique Debera <enrique.debera@montesdelplata.com.uy>
43	UPM	UPM	Andritz	Running	2007		11	4450	5796	94	490	780	210	27,6	Carolina Pesce <carolina.pesce@upm.com>
#	Average		N/P	N/P	N/P	N/P	20,1	2474,9	2792,4	68,3	445,2	417,2	130,3	20,6	N/P

DATA BASE - HIGHLIGHTS

Company	Capacity (tss/d)	Pressure (barg)	Temp (°C)	Area (m ²)	Ratio (tss/m ² .d)
IP-LA	1700	64	450	66	25,8
Suzano TL	8690	86	486	366	23,7
Klabin TB	1700	106	503	79,6	21,4
Bracell	13000				



EXCHANGED INFORMATION

- Keeping up to date with BLRBAC, SNRBC and FRBC
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LAST CSCRBU MEETING - HIGHLIGHTS

- Leak detectors – One company presented its technology, others will be invited to present those in our next meeting
 - BFW contamination: After one serious event, all mills changed the way this item is evaluated. There is space for better performance. Golden rule pH lower than 6,0 – shutdown the boiler
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LAST CSCRBU MEETING - HIGHLIGHTS

- Sootblower lance life cycle evaluation:
Maintenance group is discussing it. A position paper is scheduled for our next meeting, Active issue on last BLRBAC meeting
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INCIDENTS

- 150 incidents since 2001
 - 37 accidents
 - 27 critical leakages
 - 80 non critical leakages
 - 6 TDE
 - 16 ESP's
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INCIDENTS PRESENTATION

- It will happen on Nov 2019 during our next meeting
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INCIDENTS REMARKS

- As previously disclosed:
 - Ash hopper capacity
 - BFW contaminations
 - Means of frozen smelt removal
 - Superheater operational procedures
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FINNISH RECOVERY BOILER COMMITTEE

MAJOR CONCERNS

- Bring BFW events to a zero impact point as far as the boiler is concern
 - Consider higher times between GSD's
 - Big boilers feasibility limit
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THANKS FOR YOUR TIME
