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OKOS LLC REFERENCE LIST

(as at December 31, 2022)

(A) OPERATION & MAINTENANCE OF COKE OVEN BATTERIES

Country	Customer	Location of Facility	Description of Job	Performed in
Russia	EVRAZ ZSMK	West Siberian Iron & Steel Mills, city of Novokuznetsk	Adjustment of bracing system for operating Coke oven battery No.1	2022
Russia	EVRAZ ZSMK	West Siberian Iron & Steel Mills, Novokuznetsk	Repeated regulation and heating mode adjustment of operating Coke oven battery No.7	2022
Russia	EVRAZ ZSMK	West Siberian Iron & Steel Mills, Novokuznetsk	Repeated regulation and heating mode adjustment of operating Coke oven battery No.1	2020
Kazakhstan	ArcelorMittal Temirtau	ArcelorMittal Temirtau , city of Temirtau	Adjustment of heating mode of coke oven batteries No. 1 to 5	2019
Iran	Esfahan Steel Company	Esfahan Steel Mills, town of Esfahan	Technical assistance in adjustment of heating mode and alignment of buckstays of coke oven battery No.3	2018-2019
India	Rashtriya Ispat Nigam Ltd.	Vishakhapatnam Steel Plant, Andhra Pradesh State	Technical assistance in operation of coke oven batteries No.1, 2 & 3 of Coke plant and By-product shop	2008 - 2010
Bosnia & Herzegovina	Global Ispat Koksna Industrija d.o.o. Lukavac	By-product coke plant, Lukavac, Valevo, Kolubarsk district	Technical assistance in operation of coke oven battery No.5 of Coke plant and By-product shop	2007 - 2008
India	Steel Authority of India Limited (SAIL)	Bhilai Steel Plant, Chhattisgarh State	Technical assistance in operation of Coke Oven Batteries No. 9 & 10. Chamber volume is 41.6 m3	2002 - 2004

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(B) REPAIRS OF COKE OVEN BATTERIES

Country	Customer	Location of Facility	Description of Job	Performed in
Kazakhstan	ArcelorMittal Temirtau	ArcelorMittal Temirtau, city of Temirtau, Karaganda Region	Coke oven battery No.7: lifting the flashplates in ovens 712-701 area at the coke side, including the related mechanical installation and refractory work, i.e. replacing cross tie-rods, inspecting anchorage spring units and resetting their loads, replacing oven sills and sole refractories, and ceramic welding work. Also, some additional work at the pusher side.	2022
Kazakhstan	ArcelorMittal Temirtau	ArcelorMittal Temirtau, city of Temirtau, Karaganda Region	Coke Oven Battery No.7: Through-wall and 4-6 flues deep rebuilding of heating walls, incl. repair of regenerators, corbel area, replacing oven sole refractories, flashplates, door frames, and cross tie-rods.	2020 – 2022
Kazakhstan	ArcelorMittal Temirtau	ArcelorMittal Temirtau, city of Temirtau, Karaganda Region	Rebricking of COBs No.3 & 4 heating walls: through-wall and 4 to 8 flues deep, incl. repairs of the regenerator area, replacement of oven sole refractories, replacement of flashplates and door frames.	2019 – 2022
India	TATA Steel BSL Limited	Iron & Steel Mills in Meramandali, distr. Dhenkanal, Odisha state	Hot repairs of coke oven battery No.2 (Coke Oven Shop No.1). Full length rebricking of heating walls.	2019 - 2020
Russia	EVRAZ ZSMK	West Siberian Iron & Steel Mills, city of Novokuznetsk	Technical supervision and technical assistance for hot repairs of heating walls, regenerators of coke oven battery No. 4	2019
India	Bhushan Steel Limited	Integrated Iron & Steel Plant at Meramandali, Dhenkanal, Odisha State	Technical supervision/services to restore inclined flues and provide proper heating for defective walls of Coke Oven No.1, Battery No.2	2017-2018
South Africa	Termostav-Mraz	ArcelorMittal Newcastle & Vanderbijlpark	Hot repair of coke oven batteries No.2 & 4 End flues repair to the depth of 6 verticals	2017
India	Steel Authority of India Limited (SAIL)	Bhilai Steel Plant, Chhattisgarh State	Hot repair of coke oven battery No.2 using ceramic welding	2016
Russia	Severstal	Integrated Iron & Steel Plant of Severstal, Cherepovets, Vologda Region	Hot repair of coke oven battery No.8. Through-wall repair	2014 - 2015
China	Zhong Hong Xin	Integrated Iron & Steel Plant of HBIS company, Handan, Hebei province	Hot repair of coke oven batteries No. 2, 3 & 4: - replacing fully regenerators' checker bricks (49 pcs.); - repair the walls and sealing faces of regenerators; - repairing sole ducts; - repairing corbel area.	2014 - 2015
China	Hua Chen	Integrated Iron & Steel Plant of HBIS company, Fengfeng, Hebei province	Hot repair of coke oven battery No.1 & 2 Through-wall repair / end flues repair 4-6 verticals deep.	2013 - 2014
China	Hua Chen	Integrated Iron & Steel Plant	Hot repair of coke oven battery No.1 & 2	

		of HBIS company at Xuanhua, Hebei province	Through-wall repair / end flues repair 4-6 verticals deep.	2012 - 2013
India	Rashtriya Ispat Nigam Ltd.	Vishakhapatnam Steel Plant, Andhra Pradesh State	Hot repair of coke oven batteries 1 & 3. Full wall repair.	2011 - 2015
China	Zhong Hong Xin	Integrated Iron & Steel Works of HBIS company, Tangshan, Hebei province	Hot repair of coke oven batteries No.1 & 2 (H=5.5 m): - through-wall repair (52 pcs.); - end flues repair 4-6 flues deep (44 pcs.); - repair of reinforcing equipment; - ceramic welding; - adjustment of heating mode of coke ovens.	2009 - 2012
China	Zhong Hong Xin	Integrated Iron & Steel Plant at Sanming, Fujian province	Hot repair of coke oven battery No.1 (H=4.3 m): - end flues repair 4-6 flues deep (66 pcs.); - repair of reinforcing equipment; - ceramic welding; - adjustment of heating mode of coke ovens.	2010 - 2011
China	Zhong Hong Xin	Integrated Iron & Steel Plant of HBIS company, Handan, Hebei province	Hot repair of coke oven batteries No. 2, 3 & 4 (H=4.3 m): - through-wall repair (13 pcs.); - end flue repair 4-8 flues deep (72 pcs.); - repair of reinforcing equipment; - ceramic welding; - adjustment of coke ovens heating mode.	2007 - 2011
China	Zhong Hong Xin	Integrated Iron & Steel Plant of Hagzhou Iron & Steel Group Co., Hangzhou, Zhejiang province	Hot repair of coke oven battery No.2 (H=4.3 m): - through-wall repair (15 pcs.); - end flues repair to the depth of 6 vertical flues (56 pcs.); - repair of reinforcing equipment; - adjustment of coke ovens' heating mode.	2008 - 2010
China	Zhong Hong Xin	Integrated Iron & Steel Plant at Xiangtan, Hunan province	Hot repair of coke oven batteries No.1 & 2 (H=4.3 m): - through-wall repair (2 pcs.); - end flue repair to the depth of 4 vertical flues (64 pcs.); - repair of bracing equipment; - replacing 2 courses of regenerator checker bricks (176 pcs.); - regenerators repair; - adjustment of coke ovens heating mode.	2006 - 2009
Bosnia & Herzegovina	ArcelorMittal Zenica	Integrated Iron & Steel Plant at Zenica	Hot repairs of refractory heating wall brickwork by ceramic welding at Coke oven battery No.6.	2007 - 2008
China	Zhong Hong Xin	Integrated Iron & Steel Plant at Jiuquan, Gansu province	Hot repairs of coke oven batteries No.1 & 2 (H=4.3 m): - through-wall repair; - end flue repair to the depth of 4-6 vertical flues; - repair of the bracing equipment.	2003 - 2008

Russia	Ural Steel (former NOSTA)	Integrated Iron & Steel Plant at Novotroitsk, Orenburg region	Hot repair of coke oven batteries No.4 & 5 by ceramic welding.	2004 - 2005
Russia	Severstal	Integrated Iron & Steel Plant at Cherepovets, Vologda region	Hot repairs of coke oven battery No.10 (H=7 m): - through-wall repair (2 pcs.)	2005
Czech Republic	Arcelor Mittal Ostrava (Nova Hut)	Integrated Iron & Steel Plant at Ostrava	Hot repair of coke oven battery No.11 (H=7 m): - end flue repair to the depth of 4-6 vertical flues.	2001 - 2004
Kazakhstan	ArcelorMittal Temirtau	Integrated Iron & Steel Plant at Temirtau, Karaganda region	Hot repairs of coke oven battery No.5 by ceramic welding and semi-dry gunniting.	2001
Egypt	Al Nasr Company for Coke & Chemicals	Integrated Iron & Steel Plant at Helwan	Hot repair of refractory brickwork of coke oven battery No.3 by flame gunniting.	2000
India	Steel Authority of India Limited	Bhilai Steel Plant, Chhattisgarh State	Hot repair of coke oven battery No.9 (H=7 m): - end flue repair to the depth of 4-6 vertical flues	1998 - 1999

(c) DRYING, HEATING-UP & COMMISSIONING OF COKE OVEN BATTERIES

Country	Customer	Location of Facility	Description of Job	Performed in
India	Bhushan Power & Steel Limited	Coke Plant at Rengali (Thelkoloi vill., Odisha state)	Technical assistance and supervision of heating-up, commissioning & operation of new coke oven battery No. 1 (5.5 m height, Paul Wurth design)	2016 - 2017
India	Bhushan Steel Ltd.	Integrated Iron & Steel Plant at Meramandali, Dhenkanal, Odisha State	Technical assistance and supervision of heating-up, commissioning & operation of top-charging coke oven battery (7.63 m height, Paul Wurth design); providing ceramic welding of the moisture plugs (2960 pcs.) during the process of heating-up.	2013
India	Bhushan Steel Ltd.	Integrated Iron & Steel Plant at Meramandali, Dhenkanal, Odisha State	Technical assistance and supervision of heating-up, commissioning & operation of stamp charging coke oven batteries No. 1 & 2 (4.3 m height, Chinese design).	2010 - 2011
India	Jindal Stainless Ltd.	Kalinga Nagar Industrial Complex, Duburi, Odisha State	Technical assistance and supervision of heating-up, commissioning & operation of stamp charging coke oven batteries No.1 & 2 (4.3 m height, Chinese design).	2008 - 2011
India	Neelachal Ispat Nigam Ltd. (former Konark MetCoke)	Kalinga Nagar Industrial Complex, Duburi, Odisha State	Technical assistance and supervision of heating-up, commissioning & operation of coke oven battery No.1 (7 m height).	2004

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(d) CONSTRUCTION & RECONSTRUCTION OF COKE OVEN BATTERIES
(incl. re-commissioning after long-term shutdowns/mothballing)

Country	Customer	Location of Facility	Description of Job	Performed in
Bosnia & Herzegovina	ArcelorMittal Zenica	Integrated Iron & Steel Plant at Zenica	Re-construction of coke oven battery No.6, including: - preparatory works; - heating the coke oven battery up with liquid gas; - commissioning & charging of coke oven battery; - commissioning of the by-product plant; - adjustment of coke oven machines and mechanisms; - adjusting hydraulic & heating mode of the COB; - preventive repairs of heating walls by ceramic welding; - local personnel training	2007 - 2008
India	Mecon Limited	Vishakhapatnam Steel Plant, Andhra Pradesh State	Technical assistance in construction of Coke Oven Battery No.4 along with CDQ (coke dry quenching plant).	2005 - 2006
Bosnia & Herzegovina	Global Ispat Koksna Industrija d.o.o. Lukavac	By-product coke plant, Lukavac, Valevo, Kolubarsk district	Re-construction of coke oven battery No.5, including: - preparatory works; - heating-up of coke oven battery with liquid gas; - commissioning & charging of coke oven battery; - commissioning of the by-product plant; - adjustment of coke oven machines and mechanisms; - adjusting hydraulic & heating mode of the COB; - local personnel training;	2004 - 2006
Russia	EVRAZ Group	West-Siberian Integrated Iron & Steel Plant, Novokuznetsk, Kemerovo region	Master contract on re-construction of complex of coke oven battery No.1: - technical supervision for developing design and engineering documentation under the project - supplying refractories; - construction & erection works under the project; - heating-up, commissioning & charging of the battery.	1996-2006* * project started in 1996, later on it was postponed several times of Customer's own accord

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(e) EXPERT APPRAISAL OF INDUSTRIAL SAFETY

Country	Customer	Location of Facility	Description of Job	Performed in
Russia	Urals Steel	The 'Urals Steel' Iron & Steel Plant, town of Novotroitsk, Orenburg Region	Inspecting and evaluating technical condition of coke oven batteries No.1, 3, 4	2019
Kazakhstan	ArcelorMittal Temirtau	ArcelorMittal Temirtau , city of Temirtau	Inspecting and evaluating technical condition of coke oven batteries No. 1-5	2019
Russia	EVRAZ ZSMK	West Siberian Iron & Steel Mills, city of Novokuznetsk	Inspecting and evaluating technical condition of coke oven batteries No.1 and 4 to 7.	2018
Bosnia & Herzegovina	ArcelorMittal Zenica	Integrated Iron & Steel Plant at Zenica	Inspecting and evaluating technical condition of coke oven battery No.6.	2018
Russia	Severstal	Integrated Iron & Steel Plant at Cherepovets, Vologda region	The Industrial safety appraisal of coke oven batteries No. 9 & 10	2004
Russia	Koks	Kemerovo By-product plant	The Industrial safety appraisal of coke oven batteries No. 4 & 5	2004
Russia	Altay Koks	By-product plant at Zarinsk, Altay region	The Industrial safety appraisal of CDQs of coke oven batteries No. 3 & 4	2003
Russia	NLMK Group	Novolipetsk Integrated Iron & Steel Plant, Lipetsk	The Industrial safety appraisal of coke oven battery No.7	2002
Russia	EVRAZ Group	Nizhniy Tagil Integrated Iron & Steel Plant, Sverdlovsk region	The Industrial safety appraisal of coke oven batteries No. 9 & 10	2002
Russia	NLMK Group	Novolipetsk Integrated Iron & Steel Plant, Lipetsk	The Industrial safety appraisal of coke oven batteries No. 1, 2, 3 & 4	2000
Russia	EVRAZ Group	West-Siberian Integrated Iron & Steel Plant, Novokuznetsk, Kemerovo region	The Industrial safety appraisal of coke oven batteries No. 3, 4, 5, 6 and 7	2000
Russia	MMK Group	Magnitogorsk Integrated Iron & Steel Plant, Chelyabinsk region	The Industrial safety appraisal of coke oven battery No.2	2000
Russia	Ural Steel (former NOSTA)	Integrated Iron & Steel Plant at Novotroitsk, Orenburg region	Technical survey of coke oven batteries No. 5 & 6	2000
Russia	Altay Koks	By-product plant at Zarinsk, Altay region	The Industrial safety appraisal of equipment at the tar production shop of BPP.	1999

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