

	JOB SAFETY ANALYSIS				Document Number	
	ANALISA KESELAMATAN KERJA				FOM OHS 26S	
					Revised	
					1	
Job Title NAMA PEKERJAAN	(Unloading Coal in Large Ship) <i>Pembongkaran Batubara di Kapal Besar</i>					
Job Doer(s) ORANG YANG MELAKUKAN PEKERJAAN	WORKERS' NAME NAMA PEKERJA				Date : 21 Maret 2011 <i>Tanggal</i>	
	Jamson Matondang Fitriyadi Silaban Toto Pranoto Surjono Muhamad Mahmud Yuli Kuswanto Jayadi Bainong (TM) Sutrisno (TM) Budi Santoso (TM) Andra Purwadi (TM) Agung Bhakti Frihatr	Mustakim Tri Hendriyanto Yulianto Okto Mufidu Alamsyah Bambang Sugiono Ahmad (TMK) Mulyadi Abdul Rais Manto (TG) Amiruddin (TG) Rusmadi (TG) Achmad Rusdiyanto	Mista Ali Hermanto Budi Thoyib Saefudin Sudarman Krisno Kusumo A Rudi Hartono Ahmad Zaini Dasuki Akmal Maulana	Wawan Hendra Wijaya Agus Suntoro Riwanto Imron Rosidi Halik Bunyamin Arifandi Moh Zuber Ramli M. Hasan Halik Rio Ade Nugroho	Status : NEW BARU <i>Status</i> : REVISED REVISI ✓	
DEPARTMENT DEPARTEMEN	Operation		LOCATION LOKASI		Jetty	
WORK SCOPE LINGKUP KERJA	Unloading Coal in Large Ship					
RELATED FPE FPE YANG TERKAIT	Roads Construction and Maintenance <i>Konstruksi & pemeliharaan jalan</i>		Load Lifting and Supporting <i>Penyanggaan dan pengangkatan beban</i>	✓	Electrical Worker Safety <i>Keselamatan pekerjaan listrik</i>	✓
	Isolation and Lockout <i>Isolasi dan lockout</i>		Operating vehicle and moving equipments <i>Operasi kendaraan & alat bergerak</i>	✓	Working close to water <i>Bekerja dekat air</i>	
	Working at Heights <i>Bekerja di ketinggian</i>	✓	Conditions of vehicles and moving equipments <i>Kondisi kendaraan & alat bergerak</i>	✓	Working in a confined space <i>Bekerja di ruang tertutup</i>	✓
Other Hazards BAHAYA LAINNYA	Manual Handling <i>Manual Handling</i>	✓	Guarding Machine		People water transportation <i>Perpindahan orang di atas air</i>	✓
	Working with/close to mooring lines <i>Bekerja dengan/dekat tali mooring</i>	✓	Environment <i>Lingkungan</i>	✓	Others Lainnya :	✓
Personal Protective Equipments <i>ALAT PELINDUNG DIRI (APD)</i>		Hand Gloves	Safety Helmet	Life Jacket		
		Safety Shoes	Safety Glasses	Dusk Mask		
Necessary Training for Workers <i>TRAINING YANG DIPERLUKAN UNTUK PEKERJA</i>		SOP, Safety Talk, Socialization, Observation				
Analyzed by (JSA Facilitators) <i>ANALISA OLEH (FASILITATOR JSA)</i>		Safety Talk, Observation		Approved By PENGESAHAN OLEH		
Name Nama	Signature Tandatangan		Name Nama	Signature Tandatangan		
Chamim Mubarak						



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NO	WORKING PROCEDURE LANGKAH KERJA	RISK/HAZARDS POTENTIAL POTENSI BAHAYA / RESIKO	RISK CONTROL KONTROL TERHADAP RESIKO
	Arrange the Procedures in logic order <i>Urutkan langkah kerja secara logis</i>	Consider any risk of death <i>Pikirkan terlebih dahulu apakah terdapat potensi kematian</i>	Make sure proper control is available for high/death risky procedure <i>Pastikan kontrol telah ada untuk langkah pekerjaan beresiko tinggi / kematian</i>
1	(Berthing/unberthing using mooring rope) <i>Proses Sandar / Lepas Kapal Bekerja dengan Tali mooring</i>	1.1 (Falling to sea) <i>Terjatuh kelaut</i>	1.1.a.(make sure to pull rope in safe condition) <i>Pastikan posisi saat menarik tali dalam keadaan aman</i> 1.1.b. (make sure that floor is not slippery there are no holes) <i>Pastikan lantai tidak licin dan tidak terdapat lubang</i> 1.1.c.(make sure to wear standard Life jacket and PPE correcty) <i>Pastikan Menggunakan Life Jacket dan APD standar dengan benar</i>
		1.2 (Got Hit by swinging rope) <i>Terhempas Tali kapal</i>	1.2.a. (Ensuring that position is not in rope swinging area) <i>Pastikan posisi tidak didalam area hempas tali</i> 1.2.b. (Moving further from tense rope) <i>Menjauh dari tali yang dalam keadaan kencang/tegang</i>
		1.3(Squeezed/nipped by rope) <i>Terjepit Tali</i>	1.3.a. (make sure that hand /parts of body is not in nip point) <i>Pastikan tangan / anggota badan tidak pada posisi titik jepit</i> 1.3.b. Saat bekerja dengan tali harus konsentrasi (tidak boleh menerima Telp / SMS) (<i>Full concentration during work (No messaging/telephoning)</i>)
		1.4 Ergonomi (<i>Ergonomy</i>)	1.4.a. (make sure that body, hands, and feet positions are in correct postion when pulling rope) <i>Pastikan posisi badan,tangan, kaki di saat menarik tali pada posisi yang benar,nyaman</i>

			1.4.b.(No pulling heavy rope alone) <i>Jangan memaksakan menarik tali yang berat sendiri</i>
2	(Ascending/descending to ship through Gang way / ship ladder) <i>Naik / turun ke kapal besar melalui Gang way / tangga kapal</i>	2.1. (Falling to sea) <i>Terjatuh ke laut</i>	2.1.a. (make sure that ladder is installed properly (ladder position, safety net) and there is additional ladder to jetty) <i>Pastikan tangga terpasang dengan benar (Posisi tangga, safety net) dan ada tangga tambahan untuk ke jetty</i>
			2.1.b. (make sure to wear standard life jacket and PPE) <i>Pastikan menggunakan life Jacket dan APD standar</i>
		2.2. (Slipping, stumbling, falling) <i>Terpeleset / tersandung / terjatuh</i>	2.2.a. (make sure that ladder is not slippery) <i>Pastikan tangga tidak licin</i>
			2.2.b. (Go through ladder by gripping onto railing) <i>Melalui tangga berpegang relling tangga</i>
			2.2.c (Go through ladder not by running) <i>Melalui tangga tidak dengan cara berlari</i>
			2.2.d. (Ascend by ladder step by step) <i>Naik tangga secara bertahap</i>
			2.2.e. (Wear standard PPE properly) <i>Gunakan APD standar dengan benar</i>
2.2.f. (At most three people are allowed ascend ladder simultaneously) <i>Maksimal 3 orang untuk naik tangga</i>			
3	(Walking on deck before unloading) <i>Berjalan di deck kapal sebelum proses bongkar</i>	3.1. (Stumbling/slipping) <i>Tersandung / Terpeleset</i>	3.1 a. (make sure that deck is not slippery) <i>Pastikan kondisi deck kapal tidak licin</i>
			3.1.b. (Walking on permitted path (Deck was painted using anti-slip paint)) <i>Berjalan di tempat yang sudah ditentukan (Deck dicat anti selip, tidak licin)</i>
			3.1.c. (make sure that there is no object blocking on deck) <i>Pastikan deck tidak terdapat benda yang menghalangi jalan</i>
			3.1.d. (Wear standard PPE properly) <i>Gunakan APD standar dengan benar</i>

			3.1.e Dilarang merokok / sesuai peraturan kapal (No smoking or according to ship's rules)
4	(Ascending/descending crane and ship ladder) Naik / turun Tangga Crane dan tangga palka	4.1. (Falling, slipping from top of ladder) Terjatuh / Terpeleset dari ketinggian tangga	<p>4.1.a. (make sure that the ladder's steps are not slippery) Pastikan anak tangga tidak licin</p> <p>4.1.b.(make sure to ascend ladder using three fulcrums) Pastikan menaiki tangga dengan 3 titik tumpu</p> <p>4.1.c. (Ascending ladder is not allowed if carrying heavy objects in hand preventing hands to grip onto railing) Menaiki tangga tangan tidak boleh memegang dan membawa barang berat yang mengakibatkan tangan tidak dapat berpegangan tangga</p> <p>4.1.d. (make sure to wear standard PPE properly with additional safety rope) Pastikan menggunakan APD standar dengan benar.tambahan tali pengaman.</p> <p>4.1.e (Coordinate properly) Lakukan koordinasi dengan baik</p>
5	(Operating ship crane) Mengoperasikan crane kapal	<p>5.1. (Crane is broken/ do not function properly) Crane Rusak / Tidak berfungsi baik</p> <p>5.2.(Crash between crane during unloading process) Benturan sesama crane dalam proses bongkar muatan</p>	<p>5.1.a.(Perform test before operating crane according to the procedure with assistance from ship crew) Lakukan test sebelum pengoperasin crane sesuai dengan prosedur didampingi ABK</p> <p>5.1.b. (Watch crane's condition and report immediately if there are any damages) Perhatikan kondisi crane segera laporkan kepada Port Capt bila ada kerusakan</p> <p>5.2.a (Coordinate unloading process properly according to plan) Koordinasikan proses pembongkaran dgn baik sesuai dengan rencana bongkar</p> <p>5.2.b.(Avoidi 2 cranes unload in 1 hold of ship) Hindari dalam 1 palka dibongkar 2 crane</p> <p>5.2.c. (Competent operator (SIO)) Operator berkopetensi (SIO)</p>

	5.2.d. (Operate crane according to valid operating procedure) Operasikan crane sesuai dengan prosedur pengoperasian yang berlaku
5.3. (Grab hits ship hold/wall/ladder in hold/hopper resulting in damages) Grab membentur tutup Palka / dinding palka / tangga dalam palka / Hopper yang mengakibatkan kerusakan	5.3.a. (make sure that operator hold competency (SIO)) Pastikan operator berkopetensi (SIO)
	5.3.b. (make sure that crane is in proper condition to use) Pastikan crane dalam kondisi layak pakai
	5.3.c. (make sure that crane is operated according to valid procedure) Pastikan crane dioperasikan sesuai dgn Prosedur yang berlaku)
	5.3.d. (Make sure that there is sufficient lighting) Pastikan penerangan cukup
	5.3.e. (If unloading cargo is difficult, then order riger/signalman to work) Bila kondisi mengambil cargo sulit gunakan pemberi aba2 (riger) / signalman
5.4. (Grab hits operator/heavy equipment in hold of ship) Grap menghantam operator / alat berat dlm palka	5.4.a. (make sure that operator is competent (SIO)) Pastikan operator berkopetensi (SIO)
	5.4.b. (make sure that crane is feasible to use) Pastikan crane dalam kondisi layak pakai
	5.4.c. (make sure that crane is operated according to applicable procedure) Pastikan crane dioperasikan sesuai dgn Prosedur yang berlaku
	5.4.d. (make sure that there is sufficient lighting) Pastikan penerangan cukup
	5.4.e. (If unloading cargo is difficult, then order riger/signalman to work) Bila kondisi mengambil cargo sulit gunakan pemberi aba2 (riger) / signalman
	5.4.f. (make sure that coordination is well performed between crane operator, signalman, and heavy equipment operator) Pastikan koordinasi berjalan dengan baik antara operator crane,signalman, operator alat berat

		5.5 (Ergonomy because of sitting for operating crane) <i>Ergonomi karena duduk mengoperasikan crane</i>	5.5.a Implement operator changing to operate ship crane (shift duty)) <i>Adakan pengantian operator untuk pengoperasian crane kapal (pergantian jaga)</i>
6	(Ascending/descending ship) <i>Naik / Turun Alat Berat Dari kapal</i>	6.1. (Got hit by falling heavy equipment during lifting crane) <i>Kejatuhan alat berat saat diangkat dengan crane</i>	6.1.a. make sure that wire, sachles, etc are installed properly and feasible to use) <i>Pastikan wire ,sachles, terpasang dengan benar dan kondisi layak pakai</i>
			6.1.b. (Avoid any position below lifted heavy equipment) <i>Tidak berada dibawah alat berat saat di angkat</i>
			6.1.c. (Competent crane operator (SIO)) <i>Operator crane berkompotensi (SIO)</i>
			6.1.d (make sure that crane is safe to use) <i>Pastikan crane dlm kondisi aman digunakan</i>
		6.2. (Squeezed/nipped during sachles/wire installation) <i>Terjepit saat pemasangan sachles,wire</i>	6.2.a (make sure that limbs position are not in pin point) <i>Pastikan posisi anggota badan tidak pada titik jepit</i>
			6.2.b (Use standard PPE properly) <i>Gunakan APD standar dengan benar</i>
7	(Walking on deck during coal unloading) <i>Berjalan di deck pada saat proses bongkar muatan batubara</i>	7.1. (Stumbled/slipped) <i>Tersandung / Terpeleset</i>	7.1 a. (make sure that deck is not slippery) <i>Pastikan kondisi deck kapal tidak licin</i>
			7.1.b. (Walk on permitted path (Deck was painted using anti-slip paint)) <i>Berjalan di tempat yang sudah ditentukan (Deck dicat anti selip, tidak licin)</i>
			7.1.c. (make sure that there are not any objects blocking on the way) <i>Pastikan deck tidak terdapat benda yang menghalangi jalan</i>
			7.1.b (Use standard PPE properly) <i>Gunakan APD standar dengan benar</i>
		7.2 (Got hit by falling grab/crane/coal) <i>Kejatuhan grab / crane / batu bara</i>	7.2.a (Avoid walking below crane during cargo unloading) <i>Tidak berjalan dibawah area sliwing crane saat bongkar muatan</i>
			7.2.b (Place warning sign about work conducted above) <i>Pasang tanda peringatan / barricade ada pekerjaan diatas</i>
7.2.c (Walk on safe/permitted path) <i>Berjalan di tempat yang disediakan / aman</i>			

			7.2.d (Use standard PPE properly) <i>Gunakan APD standar yang benar</i>
		7.3 (Shortness of breath because of coal dust) <i>Sesak napas karena debu batubara</i>	7.3.a (Use PPE mask properly) <i>Gunakan APD masker dengan benar</i>
8	(Using heavy equipment in hold of ship) <i>Bekerja dengan alat berat didalam palka.</i>	8.1. (Grab hits operator/heavy equipment in hold of ship) <i>Grap menghantam operator / alat berat dlm palka</i>	8.1.a. (make sure that operator holds competency (SIO)) <i>Pastikan operator berkopetensi (SIO)</i>
			8.1.b. (make sure that crane is in proper condition to use) <i>Pastikan crane dalam kondisi layak pakai</i>
			8.1.c. (make sure that crane is operated according to valid procedure) <i>Pastikan crane dioperasikan sesuai dgn Prosedur yang berlaku</i>
			8.1.d. (make sure there is sufficient lighting) <i>Pastikan penerangan cukup</i>
			8.1.e. (If condition of unloading cargo is difficult, then order riger/signalman to work) <i>Bila kondisi mengambil cargo sulit gunakan pemberi aba2 (riger) / signalman</i>
			8.1.f. (make sure that coordination is well conducted between crane operator, signalman, and heavy equipment operator) <i>Pastikan koordinasi berjalan dengan baik antara operator crane, signalman, operator alat berat</i>
		8.2. (Got hit by falling grab/crane/coal) <i>Kejatuhan grab / crane / batu bara</i>	8.2.a (make sure that there is good coordination between foreman and crane operator) <i>Pastikan terjalin koordinasi yang baik atau komunikasi yang baik antara operator crane, forman, dan operator crane</i>
			8.2.b (make sure that crane is in proper condition to use) <i>pastikan crane dalam kondisi layak pakai)</i>
			8.2.c (make sure that job shift handover is well performed) <i>Pastikan serahterima jaga dengan baik</i>
			8.2.d (make sure that lighting in hold of ship is sufficient) <i>Pastikan penerangan dalam palka cukup</i>

			8.2.e (Operate grab, crane, according to procedure) <i>Operasikan grab, crane sesuai prosedur</i>
			8.2.f (make sure that operator holds competency (SIO)) <i>Pastikan operator berkompotensi (SIO)</i>
		8.3 (Shortness of breath) <i>Sesak napas</i>	8.3.a (Use mask and PPE properly) <i>Gunakan masker dan APD dengan benar</i>
		8.4 (Eyes irritation) <i>Mata iritasi</i>	8.4.a (Use safety glasses properly) <i>Gunakan Kaca mata safety dengan Benar</i>
		8.5 (Ergonomy) <i>Ergonomi</i>	8,5.a (Use backsupport during heavy equipment operation) <i>Gunakn backsupport dalm pengoperasian alat berat</i>
		8.6 (Heavy equipment crashes hold of ship, personnel, cover, or manhold) <i>Alat berat menabrak palka, orang, tutup, manhold</i>	8.6.a (Operate equipment according to its procedure) <i>Operasikan alat sesuai dengan prosedur</i>
			8.6.b (Competent operator) <i>Operator berkompotensi</i>
9	(Break) <i>Istirahat</i>	9.1 (Littered trash/dirty lounge) <i>Sampah berserakan / ruang istirahat kotor</i>	9.1.a (Keep clean in ship/lounge) <i>Jagalah kebersihan dikapal / ruang istirahat</i>
			9.1.b (Dispose trash to waste bin) <i>Buanglah sampah pada tempat sampah</i>